NOTICE: Beginning in the fall of 1988, UTK’s academic programs will be conducted under a semester calendar. Students entering under this catalog, or previous quarter calendar catalogs, will not graduate under the same curricula. However, the University is committed to intensive academic advising such that no student’s program will be delayed due to the change to the semester calendar. Transition plans for all curricula will be available prior to the calendar change.

CAUTION: The course offerings and requirements of the University are continually under examination and revision. This catalog presents the offerings and requirements in effect at the time of publication but is no guarantee that they will not be changed or revoked. Current information may be obtained from the following sources:

Admission Requirements — Director of Admissions
Course Offerings — Department offering course
Degree Requirements — Office of the Registrar, faculty advisor, head of major department, College Advising Center, or dean of college/school
Fees and Tuition — Office of the Treasurer

EEO/TITLE IX/SECTION 504 STATEMENT
The University of Tennessee, Knoxville does not discriminate on the basis of race, sex, color, religion, national origin, age, handicap, or veteran status in provision of educational opportunities or employment opportunities and benefits. UTK does not discriminate on the basis of sex or handicap in the education programs and activities which it operates, pursuant to the requirements of Title IX of the Education Amendments of 1972, Pub. L. 92-318, and Section 504 of the Rehabilitation Act of 1973, Pub. L. 93-112, respectively. This policy extends to both employment by and admission to the University.
Inquiries concerning Title IX and Section 504 should be directed to the Office of the Director for Affirmative Action, 405E Andy Holt Tower, 974-2498. Charges of violation of the above policy should also be directed to the Office of the Director for Affirmative Action.
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## ACADEMIC CALENDAR FOR 1986-88

### Summer Quarter, 1986
- **June 18**: Orientation (Freshmen and Transfer)
- **June 19**: Registration First or All Terms
- **June 20**: Classes Begin
- **July 4**: Independence Day (No Classes)
- **July 22-24**: Classes Begin, Second Term
- **July 25**: Drop Deadlines, Full Term and Second Term - See Timetable

### Fall Quarter, 1986
- **September 22**: Orientation (Transfer)
- **September 23**: Orientation (Freshmen)
- **September 22-23**: Upperclass and Graduate Registration
- **September 23-24**: Freshmen and Transfer Registration
- **September 25**: Classes Begin
- **November 8**: Homecoming (No Classes)
- **November 27-29**: Thanksgiving (No Classes)
- **December 4**: Classes End
- **December 5**: Study Day
- **December 6-10**: Final Evaluation Period (Alternative Period)
- **December 12**: Commencement

### Winter Quarter, 1987
- **January 5**: Orientation
- **January 5-6**: Registration
- **January 7**: Classes Begin
- **January 9**: Drop Deadlines - See Timetable
- **January 19**: Martin Luther King Birthday (No Classes)
- **March 13**: Classes End
- **March 14**: Study Day
- **March 16-19**: Final Evaluation Period (Alternative Period)
- **March 21**: Commencement

### Spring Quarter, 1987
- **March 26**: Orientation
- **March 26-27**: Registration
- **March 28**: Classes Begin
- **April 17-18**: Easter (No Classes)
- **June 3**: Classes End
- **June 4**: Study Day
- **June 5-9**: Final Evaluation Period (Alternative Period)
- **June 12**: Commencement

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### Timetable
- **Orientation (Freshmen and Transfer)**
- **Registration First or All Terms**
- **Classes Begin**
- **Independence Day (No Classes)**
- **Classes End, First Term**
- **Registration, Second Term**
- **Classes Begin, Second Term**
- **Drop Deadlines, Full Term and Second Term - See Timetable**
- **Classes End**
- **Commencement**

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### Key Dates
- **Orientation (Transfer)**
- **Classes Begin**
- **Drop Deadlines - See Timetable**
- **Homecoming (No Classes)**
- **Thanksgiving (No Classes)**
- **Study Day**
- **Final Evaluation Period (Alternative Period)**
- **Commencement**

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### Additional Notes
- **Martin Luther King Birthday (No Classes)**
- **Easter (No Classes)**
- **Classes End**
- **Study Day**
- **Final Evaluation Period (Alternative Period)**
- **Commencement**

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### Key Dates
- **Orientation**
- **Registration**
- **Classes Begin**
- **Drop Deadlines - See Timetable**
- **Martin Luther King Birthday (No Classes)**
- **Classes End**
- **Study Day**
- **Final Evaluation Period (Alternative Period)**
- **Commencement**
The University

Continuing a tradition of service begun in 1794, The University of Tennessee's Knoxville campus carries out a unique mission in higher education in the Volunteer State. Leadership in graduate and professional studies, research and creative activity, and public service enriches selective undergraduate programs and defines UT Knoxville's distinctive identity as the state's "campus of excellence."

UTK Chancellor Jack Reese heads the campus, which offers a broad range of undergraduate, graduate, and professional degree programs. Among UT Knoxville's more than 25,000 students are men and women from every county in Tennessee, each of the 50 states, and more than 90 countries.

Faculty and staff are working constantly to enhance the quality of students' educational experiences. Because of its effectiveness in using information from student tests and surveys to improve teaching and service to students in 1984, UT Knoxville was the only university in the U.S. selected to receive an award by the National Council for Measurement in Education.

Development in graduate education has been accompanied by growth of major research programs, particularly in the field of energy, and expanded cooperation with Oak Ridge National Laboratory and the Tennessee Valley Authority.

The "Science Alliance" between UT Knoxville and ORNL is designated as the top priority in Tennessee's Centers of Excellence program for higher education. The most recent step taken to strengthen cooperative instructional and research activities is the Distinguished Scientist Program, designed to attract some of the nation's most eminent scientists to joint appointments at the two institutions.

Public service activities extend the utilization of the University's resources throughout the state. Continuing education programs respond to the needs of working adults who are seeking college degrees or preparing for career advancement by keeping up with the latest developments in their professional fields.

UTK students enjoy a wide variety of cultural activities. The Clarence Brown Theatre, named for the Hollywood director and UTK graduate and benefactor, is the home of one of the nation's most innovative theatre programs.

Libraries with more than 2 million volumes and volume-equivalents enhance an educational program dedicated to keeping pace with a changing society.

Additions and extensive alterations of Hodges Library will provide a new 350,000-square-foot main library in the heart of the campus. The new library will meet critical research space needs for students and faculty and incorporate the latest advances in computer and automation technology.

Colleges and Schools

The University's colleges and schools offer programs at the primary campuses at Knoxville, Memphis, Martin and Chattanooga. The Knoxville campus also offers programs at Oak Ridge, Tullahoma, Nashville, Chattanooga, Memphis, and Kingsport.

Historical Background

The University of Tennessee traces its origins back to the days when George Washington was President of the United States—back to the days even before Tennessee became a state.

In 1784, two years before statehood was achieved, the Legislature of the Federal Territory which later became Tennessee granted a charter to Blount College, the earliest predecessor of the University at Knoxville.

Blount College was named in honor of William Blount, Governor of the Territory, and was located near the center of Knoxville's present business district.

With its founding as Blount College, the University is listed as one of the older institutions of higher education in the nation. It was strictly non-sectarian in character, which was unusual for an institution of higher education in that day. The institution has remained non-denominational to the present time and is said to be the oldest such institution west of the Appalachian Divide.

Blount College for a few years admitted women as students, thus becoming the first coeducational college in the United States. It is probable, though, that these first coeds were engaged in preparatory rather than collegiate study. The institution later restricted enrollment to men, but reestablished its coeducational status on a permanent basis in 1892.

In 1807 the institution began to widen the scope of its service area. During that year the State Legislature changed the institution's name to "East Tennessee College" and made it the recipient of one-half of the proceeds of the sale of land set aside by Congress for the support of colleges. In 1826 the present site at Knoxville, the 40-acre tract known as "The Hill," was acquired by East Tennessee College.

In 1840, the State Legislature changed the institution's name to "East Tennessee University." The Civil War forced the institution to close for a period; its buildings were used as a hospital for Confederate troops and were later occupied by Union troops. East Tennessee University reopened after the war, and from that time to the present, the institution has enjoyed its most significant advances.

In 1869, East Tennessee University was selected by the State Legislature as Tennessee's Federal Land-Grant Institution, under terms of the Morrill Act passed by Congress in 1862. This designation enabled the University to broaden its offerings by establishing an Agricultural and Mechanical College. The new program was supported by an endowment resulting from the sale of land warrants received by Tennessee from the federal government.

Ten years later, in 1879, East Tennessee University was chosen by the State Legislature as Tennessee's State University, and its name was changed to "The University of Tennessee." By this act the University became pledged to the service and interest of the entire state. The state pledged to the University its own name and reputation, promising the institution a vital role in the progress of the state.
The University today is a statewide institution in terms of its physical locations as well as its services. The Center for the Health Sciences, founded in Nashville and taken over by the University in 1879, was moved to Memphis in 1911. The Martin campus was established as a private institution, Hall-Moody Junior College, and it became a part of The University of Tennessee in 1927. The School of Social Work at Nashville became part of the University in 1951. A fourth primary campus was established at Chattanooga in 1968 with the merger of the University with the University of Chattanooga. The University's Nashville Center, established in 1947, was made the fifth primary campus in 1971. UTN's academic programs were merged with those of Tennessee State University in 1979.

Agriculture Experiment Stations were established at Jackson, Spring Hill (Columbia), Springfield, Lewisburg, Crossville, Wartburg, Oak Ridge, Greeneville, and Grand Junction. The Division of Continuing Education, Knoxville, conducts evening classes, workshops and off-campus programs, conferences, and non-credit programs for the campus. The Agricultural and Extension Service, with district offices at Jackson, Nashville, Cookeville, Chattanooga, and Knoxville, has agricultural extension leaders and agents in each of Tennessee's 95 counties.

In 1968, the Board of Trustees reorganized the institution into a University system, giving a central administrative staff responsibility for statewide functions of the University. Each primary campus came under the administrative direction of a chancellor.

State Legislatures and Governors of Tennessee, particularly those of the past half century, have shown an active interest in the development of The University of Tennessee. Such support has helped the University broaden and strengthen its efforts to meet the educational, research, and service needs of the people of Tennessee through programs which have earned national and international recognition.

**Academic Policies and Costs**

Any and all course offerings, academic requirements, and other information contained in this publication are subject to change and/or revocation without notice. See page 2 for sources of current information.

**Admission to The University of Tennessee, Knoxville**

**ADMISSIONS PHILOSOPHY AND GOALS**

As the state's largest and most comprehensive university, The University of Tennessee (UTK) seeks to provide high quality educational programs for all students who have the academic ability and motivation to adapt to and profit from a baccalaureate education. Similar opportunities are available at the graduate level, see the Graduate Catalog. While the majority of students at UTK are residents of the State of Tennessee, the University welcomes qualified students from other states as well as from outside the United States. Students from a variety of cultures add richness and diversity to the total educational experience for all.

The curricula, supporting programs, and administrative policies have been designed to serve students bringing with them a variety of academic backgrounds and experience. Generally, UTK entering students have:

1. An outstanding record of total academic performance in high school or college;
2. A good past academic record, particularly in subjects related to fields of interest;
3. A level of motivation and interest sufficient to offset negative aspects of prior academic performance;
4. A change in career goals as an adult, resulting in a need for formal education at the university level; or
5. A quality education at the secondary or college level from an institution in another country.

UTK admission policies are designed to reflect sensitivity, flexibility, and quality. The goals are sensitivity to the diverse needs and life histories of individuals, flexibility in the strategies worked out in behalf of a student and the University towards the achievement of individual goals, and quality in the standards and expectations for all involved in the various courses and programs.

Honors courses and sections and special programs challenge a student who previously has demonstrated outstanding overall academic attainment or skills in a particular subject area. However, experience has shown that many students whose past academic records are average can achieve a high level of attainment. This achievement is of vital importance to the student, the University, and the State. The student's motivation must be sufficiently strong and the University must provide the necessary attention of concerned teachers and advisors. UTK encourages persons whose interests and goals have changed with time. Many adults who have little or no college work find that, after some years in the working world, they are both willing and able to take advantage of the study opportunities provided by a major university such as UTK. Others who have completed a program of study or have received a degree may desire to expand their knowledge or prepare for a different vocation and may re-enroll or transfer previous credits to UTK.

Thus the University is a point of re-entry into higher education for many. Not all who come here seek a degree. For some, the goal is the attainment of particular skills and the development of certain interests through selected courses. Although the same academic standards apply to all, individual variations in academic background are recognized to the maximum extent possible in admissions procedures. UTK attempts to assist each student in the identification and achievement of realistic academic goals.

**ADMISSION TO THE UNIVERSITY AND ASSOCIATION WITH A COLLEGE OR SCHOOL**

There are two distinct steps in the acceptance of a student by the University. These steps are separate and may occur simultaneously. The initial step is admission to The University of Tennessee, Knoxville.

This admission action occurs only once, unless a student leaves the University for some reason and then returns after a time lapse. The second step involves dual selection:

1. selection by the student of the school or college offering the desired educational program, and
2. selection by a college or school of those students who have the necessary academic preparation for the programs in the college and who can be adequately accommodated by the available staff, space, and facilities.

These matching processes occur continuously in most colleges and schools. A student may be admitted to the University, select a particular college, and be accepted into that college all at the same time when all conditions are favorable.

Many students are undecided about a major when they enroll or, perhaps, have not had an opportunity to validate their tentative choices. This is a common situation and should not be a cause of concern. An undergraduate education has many objectives other than that of finding a suitable first career. With careful planning, a student can explore alternatives and accomplish some of these objectives with little, if any, loss of time.

All students are initially admitted to The University of Tennessee, Knoxville, on the basis of criteria stated subsequently. Individuals may remain students of UTK as long as they are in good academic standing. Upon graduation, UTK can confer a baccalaureate degree and they become its alumni. Whatever their specific college, a large portion of time for undergraduate students is shared university experience (e.g., residence and dining hall life, social, athletic, and cultural events; fraternities, sororities, and other organizations; sports; hobby and other interest group activities). An important sharing experience occurs in many of the early college courses taken by students having varied career interests. This condition is proper, since, as professionals or specialists, graduates will be called upon to inhabit a complex world and play a role as citizens in a shared public enterprise.

Admission to UTK entities one to take many courses and to participate in programs which do not lead to an academic degree. However, completion of a baccalaureate degree requires the selection of, and acceptance by, one of the colleges on the Knoxville campus which grants undergraduate degrees. These units and the various degrees available are summarized subsequently in Table IV. Admission as a University student does not guarantee acceptance by any particular school or college, since each degree-granting unit defines its own standards as presented subsequently. A student must associate with a college or school in order to receive a degree, since there is no general university degree.

A student is expected to complete the association process at a time well in advance of the completion of degree requirements. Many upper division courses are available only to students who have been accepted into a particular major. Non-majors may not be allowed to take such courses. A University student should contact the college
with which association is desired to

determine the latest time (in terms of course-

work required for the degree) at which

association is possible. Ideally a University

student will determine the college or school of

choice and actively work toward associating

with that organization to the Admissions

Office. The score report is a necessary part of

the application.

In order to be admitted to UTK freshmen

applicants must meet the following criteria.

**Tennessse Residents:**

1. High School GPA of 2.75 or greater (on a

   4.00 scale) and report of test scores; or

2. High School GPA of 2.40 or greater, and

   ACT composite score of 15 or more

   (composite SAT of 700); or

3. High School GPA of 2.00 or greater, and

   ACT composite score of 18 or more

   (composite SAT of 780).

If the high school GPA is less than 2.00

and the ACT composite score is less than 12

(composite SAT of 600), admission is denied.

An combination of High School GPA and

composite test scores not listed above will

be reviewed by the Campus Admissions

Review Committee. Any applicant in this cat-

gory will be notified by the Admissions

Office and will have the opportunity to submit

additional information in writing prior to an

doing admission decisions. Factors other than test

scores and grade point average such as the

type of courses taken in high school, the

pattern of activities and career

goals are considered by the committee.

**Out-of-State Residents:**

1. High School GPA of 2.25 or greater, ACT

   composite score of 18 or greater (com-

   composite SAT of 780).

   If the high school GPA is less than 2.25

   and the ACT composite is less than 18

   (composite SAT less than 780), admission is
denied.

An out-of-state applicant who is denied
 admissions because either the ACT composite
 score is below 18 or the HSGPA is less

than 2.25 may make a written appeal of the

decision to the Director of Admissions.

**Advanced Placement Examinations:**

Freshmen admitted to UTK may receive

credit on the basis of performance on one or

more of the Advanced Placement Examina-

tions offered each May by the College

Entrance Examination Board in 13 subject

areas. The tests are usually taken by high

school students preparing to enter college

during their junior or senior year.

Departmental awards are given to such students who have

earned credit by AP examinations.

**Transfer Applicants:**

A student who has attempted 12 quarter

hours or more of college credit coursework

at one or more accredited institutions of

higher learning must apply for admission as a

transfer student. In addition to high school

transcripts, a complete transcript of all work

at each college or university attended should be

sent by those institutions directly to the

UTK Admissions Office. Transcripts carried by the student may be useful in the advising

and course selection process, but they are

not acceptable in the admissions file. Trans-

fer students who have taken neither the ACT

nor the SAT are not required to do so. Upon

admission to UTK, a student may be

classified as a freshman, sophomore, junior,
or senior, according to the number of hours

passed (see page 20). Only those courses in

which a grade of C or better was earned shall be eligible for transfer credit.

The faculty, through the deans and direc-

tors of the colleges and schools at UTK, has

the responsibility for determining which

courses from other institutions will be

accepted for transfer credit. Certain transfer-

able courses are not equivalent to specific

UTK courses. These courses may be used to

meet specific curriculum requirements only with approval of the UTK college or

school in which the student’s program is

located.

Prospective transfers to UTK are encour-

aged to complete a sequence of related

courses rather than transferring a single

course from a series. Students at two-year

community colleges, particularly within the

State of Tennessee, are encouraged to com-

plete the associate degree requirements prior to transferring to UT, provided that

such action is consistent with their educa-

tional goals.

In order to be considered for admission to

UTK, a transfer applicant must have a transfer

course grade point average of 2.00 or better (on a

4-point scale).

**International Student Applicants:**

All international students who hold or who are

required to hold non-immigrant visas while

resident in the United States are classified as

international students. In addition to the

information below, a pamphlet entitled "UTK

Overseas Applicant Information," may be

requested from the Admissions Office or

from the Center for International Education

(see page 36).

To apply for admission for undergraduate

study, an international student is required to

provide the following:

1. A completed application for undergradu-

ate admission.

2. Authenticated copies of all academic

   records. These records should describe

   the courses of instruction in terms of

   years spent in school and types of sub-

   ject matter covered, with grades earned

   in each subject.

3. Evidence of English proficiency according

   to the following requirements for students

   whose first language is not English.

   a. Any applicant to the undergraduate pro-

      gram whose first language is not

      English—with the exception of some

      transfers from regionally accredited col-

      leges or universities in the United States

      (see below)—must present an "Advanced

      Placement Test in English as a Foreign

      Language (TOEFL)" score of at least 525 (earned within two

      years prior to application) before being

      admitted; final consideration cannot be

      granted until test results are received by

      the Director of Admissions.

   b. The University of Tennessee English

      Placement Test must be taken prior to

      registration; this test will determine

      whether the student needs to take more

      English and, if so, at what level. The

      English Placement Test grants no credit.
Students assigned to special English courses must enroll the first quarter of attendance, stay continuously enrolled in the assigned courses until completion of all requirements, and should complete the requirements within the first year of continuous enrollment at The University of Tennessee, Knoxville.

c. An undergraduate student whose first language is not English is exempted from taking the UTK English Placement Test and from presenting a TOEFL score of 525 provided that the student has satisfied all requirements for freshman composition with a grade of C or better at a college or university in the United States which is accredited by a regional association.

d. A United States citizen or permanent resident whose first language is not English but who has graduated from a high school in a country whose first language is English, may be admitted under the conditions that apply to United States citizens whose first language is English. Any other United States citizen or permanent resident whose first language is not English must conform to the regulations stated in a, b, and c above.

4. Applicants from certain countries are required to make a significant monetary deposit prior to issuance of Form I-20 to secure a student visa. This deposit is credited to tuition and fees. The balance is remitted to the student at the beginning of each quarter in four quarterly installments.

5. International students must enroll in the health and accident insurance plan provided by UTK. International students are subject to various enrollment limitation regulations comparable to those affecting U.S. citizens. The Admissions Office will notify any applicant of any applicable regulations in effect at the time of application.

Visiting Student Applicants

A visiting (temporary) student is one who is actively enrolled in a program at another accredited institution of higher learning but who is required to take courses at UTK because of the availability of certain coursework or because of temporary residence in the Knoxville area.

Visiting students desiring to continue at UTK for more than one quarter must file an application for admission as a transfer student. Students desiring to attend UTK on an interim basis for only one quarter must submit, in addition to the application form, (1) a letter of good standing from the institution at which enrolled, and (2) a statement of the objective for enrolling one quarter at UTK. This statement should describe desired UTK coursework for at least the subject areas of coursework to be taken here.

Since academic records will not be available at UTK for visiting students, academic advising will be limited to information about courses offered at UTK. Such information is obtained from the department offering a course. Use of UTK courses in a visiting student's degree program is a matter to be determined by the home institution, not by UTK. Visiting students must have the required background (prerequisites) and meet all other course requirements the same as any other student. Academic overloads will not be permitted.

Re-Entry Student Applicants

A re-entry student is one who has graduated from high school 3 years or more prior to making application for admission, if applying as a freshman, or who has not attended any college, university, or technical school and received course credit within 3 years preceding application. Freshman re-entry students should submit high school transcript(s) to the Admissions Office and be interviewed by an admissions counselor or respond to a written questionnaire, as requested. ACT/SAT scores are not required for admission but may be needed for association with a college or a school. Transfer re-entry students should submit a high school transcript, transcript(s) of all previous college-level work, a goals statement and be interviewed by an admissions counselor.

No applicant who has attended UTK will be considered a re-entry student. Former UTK students should follow readmissions procedures as described on page 21 of this catalog.

Non-Degree Student Applicants

Persons desiring to take courses for credit, but who do not intend to pursue a degree, should apply for non-degree status. Working adults may choose to apply through the University Evening School for convenience. The Admissions Office processes all applications, regardless of intended registration location. Non-degree students are often part-time students, though this is not a requirement. Non-degree students must show evidence of satisfactory preparation for the courses they wish to take. The high school class of a non-degree student must have graduated (otherwise, an early admission application must be filed). Former University of Tennessee students may not be admitted in this category prior to the receipt of a bachelor's degree.

If there is a change in educational goals leading to interest in a degree program, a non-degree student must meet all previously indicated transfer, admission, or college association requirements for admission to degree seeking. More than 90 quarter hours of accumulated college credit (from all institutions attended) may be used by a non-degree student in any subsequent degree program at UTK.

Exceptions to Admissions Requirements

University admission requirements for the various categories are thought to be reasonable and consistent with good educational practice. Thus, these requirements are not normally waived or modified for any applicant, except as specifically noted. However, unusual circumstances sometimes exist. If a potential student feels that some part of the requirements for the category sought should not apply to him, that person should write a letter to the Director of Admissions. The Dean of Admissions and Records has the prerogative of making exceptions on the minimum criteria for applicants who do not show high aptitude in certain academic skills but show other indications of ability to progress through UTK and earn a degree. The letter should clearly state the specific circumstances prompting the appeal and what changes in the stated requirements are sought. The reply to this letter will indicate whether any exception to the requirements will be made, the reasons for the decision, and will describe any further action which the applicant might take.

Deadlines for Applications

Applications for undergraduate admission and all supporting credentials must be received by the Director of Admissions no later than August 15 for the fall quarter admission; December 1 for winter quarter admission; February 17 for spring quarter admission; and May 26 for summer quarter admission, except as noted below.

Applications for the Professional Interior Design program must be received no later than March 1 for admission to the summer and fall quarters. Selection will be made by April 1. November 1 is the deadline for application for the spring quarter; enrollment is closed for the winter quarter. An applicant who is not accepted may be reconsidered if application is made for a future class.

Former students who have been dropped from the University for academic or disciplinary reasons must apply for readmission to the Director of Readmissions no later than six weeks before the start of classes of the quarter the student wishes to enter. Former students in good standing who have not been registered for at least one quarter must (except for summer quarters) apply for readmission no later than three weeks prior to the start of classes.

FEE CLASSIFICATION FOR THE PURPOSE OF PAYING UNIVERSITY FEES AND FOR ADMISSION PURPOSES

Students are classified as in-state or out-of-state for the purpose of paying University fees. The classification is determined by the information recorded on the application for admission and may be reviewed as the result of submission of a subsequent fee classification questionnaire. Notice of classification is sent back shortly after the student applies to the University. The determination is made in accordance with the Regulations established by the Board of Trustees, with the intent that all public institutions of higher education in Tennessee apply uniform classification rules. Basically, these regulations state that (1) students receiving parental support are classified according to parental domicile, and (2) an emancipated student independent of parents may establish in-state classification by producing satisfactory evidence of Tennessee domicile with proof that the move to Tennessee was not primarily for obtaining educational opportunities for themselves, dependent(s), or any other students of the Regulations may be obtained from the Residency Clerk in the appropriate Admissions Office - undergraduate, 320 Student Services Building; graduate, 218 Student Services Building; 112 Law Building; veterinary medicine, 320 Student Services Building. Additional appeals may be directed to the Fee Classification Coordinator, Room 320 Student Services Building. If a student classified out-of-state applies for in-state classification and is reclassified, the in-state classification shall be effective as of the date
on which reclassification was sought. However, out-of-state tuition will be charged for any term during which reclassification is sought and obtained unless application for reclassification is made to the classification officer on or before the last day of regular registration of that term. Rule 1720-1.1-80. Effective July 1, 1978 and afterwards, all students receiving a bachelor’s degree must have completed one unit of American history on the high school level or nine quarter hours of collegiate American history in order to receive a bachelor’s degree as required by the General Assembly of the State of Tennessee (Tennessee Code Annotated Section 49-3253).

The University of Tennessee, Knoxville, does not discriminate on the basis of race, sex, color, religion, national origin, age, handicap, or veteran status in provision of educational opportunities or employment opportunities and benefits.

Special State and Federal Laws for Educational Purposes

AMERICAN HISTORY

Effective July 1, 1978 and afterwards, all students receiving a bachelor’s degree must have completed one unit of American history on the high school level or nine quarter hours of collegiate American history in order to receive a bachelor’s degree as required by the General Assembly of the State of Tennessee (Tennessee Code Annotated Section 49-3253).

The University of Tennessee, Knoxville, does not discriminate on the basis of race, sex, color, religion, national origin, age, handicap, or veteran status in provision of educational opportunities or employment opportunities and benefits.

UTK does not discriminate on the basis of sex or handicap in the education programs and activities which it operates, pursuant to the requirements of Title IX of the Education Amendments of 1972, Pub. L. 92-318; and Section 504 of the Rehabilitation Act of 1973, Pub. L. 93112; respectively. This policy extends to both employment and admission to the University.

Inquiries concerning Title IX and Section 504 should be directed to the Director for Affirmative Action, 405-D Andy Holt Tower, Knoxville, TN 37996-0144, 974-2498.

Charges of violation of the above policy should also be directed to the Director for Affirmative Action.

SENIOR AND DISABLED PERSONS

Persons 60 years of age or older and/or totally disabled persons who are domiciled in Tennessee may audit courses without pay unless expressed consent of the student concerned.

The University of Tennessee, Knoxville, requires assignment of an individual student number for internal identification of each student's record. The University began using the social security number as the student identification number prior to January 1, 1975; therefore, the federal law allows continued use of this number. However, if a student does not desire the social security number to be used, notification to the University must be made at the time of application for admission; a student identification number prior to January 1, 1975; therefore, the federal law allows continued use of this number. However, if a student does not desire the social security number to be used, notification to the University must be made at the time of application for admission; a student identification number will be assigned instead. For prompt and accurate retrieval of records and for conducting business about their own records, students and alumni should give their student identification number. Student identification numbers, whether a social security number or an assigned number, are used administratively within the University only and are not given to third parties without expressed consent of the student concerned.

STATE BOARD OF EDUCATION

Effective November 1978, the Tennessee State Board of Education requires all students preparing for a teaching career in Tennessee to pass a standardized test of basic skills (Pre-Professional Skills Test) prior to admission to teacher education programs. The University of Tennessee administers this test each quarter.

College Association

College of Agriculture

The College of Agriculture grants and encourages association at the time of admission. Students who seek College of Agriculture association in candidacy for the Bachelor of Science in Agriculture must offer one unit of American history, or two units of algebra; for the Bachelor of Science in Forestry, the Bachelor of Science in Wildlife and Fisheries Science, and the Bachelor of Science in Agricultural Engineering, two units of algebra, one unit of geometry and one-half unit of trigonometry or equivalent.

Students must have an overall GPA of 2.0 for all previous college work (including UTK) for transfer into the college. Out-of-state students desiring to transfer into certain heavily enrolled programs of the College of Agriculture may be required to have a higher GPA. Students desiring a B.S. degree in Agriculture in conjunction with meeting the requirements for admission to the College of Veterinary Medicine should seek association in the pre-veterinary medicine curriculum offered in the Department of Animal Science.

School of Architecture

The School of Architecture grants and encourages provisional association at the time of admission to the University. The program of the School is carefully designed by stages, and students who are not ready for association at the time of university admission should consult with an Architecture advisor to plan a program that will include early required courses. (This program has limited enrollment; specific entrance requirements as noted below.)

FRESHMAN GUIDELINES:

1. Applicants with an ACT composite score of 27 (SAT 1100) or above are admitted.
2. Applicants with a total of 55 or above (using the formula of the high school grade point average times 10 plus the ACT composite score) are admitted provided their ACT composite is at least 20 (SAT 840).
3. Applicants with an ACT composite score of 16 (SAT 720) or below are refused.
4. Applicants not falling into the above categories are refereed to the Architectural Admissions Committee.

TRANSFER GUIDELINES:

Transfer students as well as intercollegiate transfer students are required to have at least a 2.3 grade point average to be considered.

SECOND YEAR ENTRY:

1. Satisfactory completion of first year architectural program with grade point average of at least 2.3. Exceptions may be made by petition only.
2. A personal interview and evaluation of applicant’s work by a designated member of the School of Architecture.
3. Application to the School of Architecture no later than June 15 preceding the start of the second year.

SECOND BACCALAUREATE DEGREE PROGRAM:

1. Applicants must have a Bachelor’s Degree from an accredited college or university with a minimum grade point average of 2.5.
2. Applicants are required to have credit for Math 1840-50 or Math 1550-60 and Physics 2240-50-60 or their equivalents before beginning the program.

OTHER REQUIREMENTS:

Students must attain an overall 2.3 grade point average by the end of the 48 hours (attempts in order to make up credit in the program. Delinquent students will be put on "temporary status" for one quarter.
These students will have one quarter to raise the overall GPA to 2.3 or have a minimum of 2.3 on each quarter’s work until the overall average is raised to 2.3. If GPA is not brought up to a 2.3, the student will be dropped from the architecture program.

HIGH SCHOOL CREDITS: Students who seek School of Architecture association in candidacy for the Bachelor of Architecture must offer the following units: Algebra; 2; Trigonometry; 5; Geometry, 1; Science or Humanities, 4.5.

College of Business Administration

The College of Business Administration welcomes serious and qualified students with a professional interest in business and encourages association at the time of admission to the University, while permitting association from a later date by transfer from other academic programs of The University of Tennessee, Knoxville. Association takes place at the lower-division (or pre-major) level and is followed by progression to the upper-division (or major) level.

Association at the lower-division level does not guarantee acceptance into the upper-division. Progression to the upper-division is based on the space available in the College as a whole and in the major area requested. The academic progress of those associated with the lower-division programs of the College is evaluated periodically. Those failing to make acceptable progress toward meeting the standards for progression to the upper division are encouraged to seek alternative educational opportunities. Progression standards may be higher than the minimum standards set forth below. Current standards can be determined by consultation with an advisor in the Undergraduate Programs Office.

All College of Business students, whether entering freshmen or transfers, are associated with the College at the lower-division level before progression to the upper-division. Association decisions for entering freshmen and students transferring from other institutions or majors are made at the time of admission to the University on the basis of a request to associate with the College. Students in other Colleges of the University must apply for association at the earliest possible date (and below) by making application to the Associate Dean for Undergraduate Programs (Room 52, Glock Business Administration Building). The minimum requirement is that the student be in association with the College for the last 45 quarter hours of coursework.

I. ASSOCIATION AT THE LOWER DIVISION LEVEL

A. Entering Freshmen. Must have completed at the high school level two units of algebra and one unit of geometry. A unit of advanced mathematics or trigonometry may be offered in lieu of the second unit of algebra or the unit of geometry.

B. Transfers from other Institutions. In making an association decision relative to transfer applicants from other institutions, the overall quality of the academic record is reviewed and indicators of seriousness of purpose such as course repeats, withdrawals, etc. Particular attention is given to performance in the courses required as lower-division work in the curricula of the College of Business Administration.

1. Acceptance into the lower-division. Those accepted with more than 66 hours must make application for major upon completion of the quarter in association with the College.

2. Denial. Those who are denied association with the College of Business and who then choose to associate with another college in the University may subsequently seek association with the College. Such students must follow the procedures outlined below for transfers from other UTK programs. Since association at a later date cannot be guaranteed, these students should consult with the academic advisors in the Undergraduate Programs Office to determine the best educational options.

C. Transfers from Other UTK Programs. Any student in another UTK program must apply for association with the College at the earliest possible date, but prior to completion of 115 hours of coursework. ONLY IN EXCEPTIONAL CASES WILL APPLICATION BE CONSIDERED AFTER 115 HOURS OF COURSEWORK (at UTK or elsewhere) HAVE BEEN ATTEMPTED. Students who intend to follow a CBA curriculum should apply for association promptly so that they may be guided by CBA academic advisors and so that the College can better manage its resources. It should not be supposed that association must be granted to students with a substantial number of hours in the CBA; on the contrary, an academic record which reflects substantial academic work which follows the CBA curriculum of another College in which a student is officially enrolled will be taken as prima facie evidence of an intent to evade this policy and will result in denial of association. The academic record of the student seeking to transfer from other UTK programs is examined to determine like lower-division courses required as a part of a Business curriculum.

II. PROGRESSION TO THE UPPER DIVISION (MAJOR)

Students associated with the College must, the next quarter enrolled, after completing 66 hours (at UTK and/or other institutions), apply for progression to the upper-division. Progression will be assessed by the Associate Dean for Undergraduate Programs, who will examine the student’s academic record. In order to be considered for acceptance into a major, the student must have followed one of the business curricula listed in the catalog and must have earned a minimum 2.3 GPA, cumulative over the courses specifically required in the lower-division of that curriculum, or to include at least 66 hours from the following areas (or equivalent as required in a specific business curriculum):

- English and/or Speech
- Mathematics
- Social Science
- Natural Science
- Computer Science
- Statistics
- Accounting
- Economics

In determining acceptance into the upper-division, the record will be examined for overall quality of academic work and seriousness of purpose manifested in course repeats, withdrawals, and course sequencing. THE 2.3 GPA OVER AT LEAST 66 HOURS FROM THE COURSES ABOVE IS A MINIMUM. Higher standards are employed from time to time in order to balance student demand with College instructional capacity. Standards in effect at any time may be secured from an academic advisor in the Undergraduate Programs Office of the College. Shortly after progression, the student will be notified of one of three possible outcomes:

A. Full Acceptance
B. Deferral for no more than two quarters. In this case the student will be given specific academic standards which must be met during the deferral period if full acceptance is to be granted.
C. Denial. Those denied progression to the major will not be allowed to take upper-division Business courses without prior approval from the Undergraduate Programs Office of the College. Such approval will normally be given in routine fashion for those courses required as a part of majors in other colleges or courses required as a part of a Business minor by those properly enrolled in such a minor.

* All lower-division students who have not applied for progression to the upper-division upon completion of 75 hours will be reviewed and a progression determination will be made at that time.
* Progression standards for those who transfer to the College from other UTK Colleges or from other institutions will be the same as those who associate with the College as entering freshmen except that the College will consider the GPA in prescribed courses taken at UTK only in making a progression decision.
* Full acceptance may be granted to students who are enrolled in the prescribed CBA curriculum and have not completed all the lower-division courses prescribed, but who have superior academic records.
College of Communications

Association with the College of Communications may be made at any time. The minimum requirement is that students be in association with the college for the last 45 quarter hours of coursework. Those interested in this college should obtain a copy of the College of Communications Guidebook on admission.

Freshmen associated with the College of Communications are temporarily classified as pre-majors. They may apply for progression to major degree program after they pass typing and spelling proficiency tests and attain a score of 70 percent or better on a College Grammar Test and complete, with at least a 2.0 cumulative average, the following courses:

- English 1010 or 1011; 1020; 1032 (with a minimum grade of C in each course)
- 12 hours of natural science
- History 1501-20
- Communications 1110 or 1118
- 9 hours of foreign language
- Sociology 1510

A final decision may be deferred until students complete the core courses in their intended major within a minimum grade of B in one core course and no grade below C in other core courses. Students granted early admission must also meet these standards. Students must pass the college's typing and spelling tests and attain a score of 70 percent or better on a College Grammar Test before enrolling in or preregistering for any course in the college other than Communications 1110 or 1118. Students may not enroll in courses numbered 3000 or above in the college (with the exception of Advertising 3000) until they have successfully completed the core courses. The core courses by major are:

Advertising—Communications 1110 or 1118, Journalism 2215, Advertising 3000
Broadcasting—Journalism 2215, Advertising 3000, Broadcasting 2750
Journalism—Journalism 2215, Journalism 2220, Journalism 2230

Communications students must earn at least a C grade in all College of Communications courses that fulfill graduation and progression requirements.

Transfer students may apply for association with the College of Communications after they have completed all the pre-major requirements including the core courses, and have attained at least a 2.0 average in all work attempted.

College of Education

Application for association with the College of Education may be made at any time. The minimum requirement is that students be in association with the college for the last 45 quarter hours of coursework. Students desiring to teach, in addition to associating with the College of Education, must also gain admittance to Teacher Education. Applicants are encouraged to begin the multiphase admission process during their first quarter as a full-time student and complete the process by no later than their 60th quarter hour. The minimum academic criterion appears in the College of Education section of this catalog.

College of Engineering

The College of Engineering grants and encourages association at the time of admission as a University student, since students associated with the college have priority for registration in courses offered by the college. The minimum requirement is that students be in association with College of Engineering for the last 45 quarter hours of coursework. At the time of association with the college, a student makes a decision as to his/her major and an advisor will be assigned from that department. The College has no formal Advising Center. Students Liberal Arts or Business Administration.

REQUIREMENTS FOR FRESHMAN ASSOCIATION

1. Applicants with an ACT composite score of 23 (SAT 940) or above are associated.
2. Applicants presenting a combined score of high school GPA x 10 plus ACT composite equal to 53 or above are associated with the college, provided the ACT composite is 16 (SAT 720) or above.
3. In addition to the above guidelines, freshmen must meet the following high school credits:
   - a. Two units of algebra;
   - b. One unit of geometry;
   - c. One-half unit of trigonometry (may be included in another math course);
   - d. One unit of physics or chemistry. International freshmen applicants are reviewed by representatives of the College of Engineering and the Admissions Office. The decision for international students is based upon the academic record, English language proficiency, and the number of international students from the applicant's home country already in the college.

TRANSFER STUDENTS FROM OUTSIDE UTK

All transfer applicants—Tennessee residents, out-of-state students and international students—are reviewed by a College Association Committee prior to an Association decision, regardless of transfer GPA. This committee normally is composed of the Associate Dean for Academic Affairs of the College and the Head of the Department with which Association is desired. Factors considered in the transfer student decision:

1. Overall academic performance in previous college work;
2. Incidence of withdrawals, incompletes, or other evidence of poor academic progress;
3. The level of prior interest in engineering, as evidenced by the grades in math courses or equivalents as listed on page 140 of this catalog;
4. ACT composite equal to 53 or above are associated.

International students—Request for admission by the College of Engineering grants and encourages association of eligible students for all programs except Professional Interior Design and the Coordinated Undergraduate Program in Dietetics. These restricted programs have specific entrance requirements noted below. In all cases, the minimum requirement is that students be in association with the College of Human Ecology for at least the last 45 quarter hours of coursework. Students must have an overall GPA of 2.0 in all previous college work for transfer into the College of Human Ecology.

PROFESSIONAL INTERIOR DESIGN PROGRAM

1. Automatic admission
   a. Freshmen with composite ACT score of 21 (SAT 780) and high school cumulative GPA of 2.25 or above
   b. Transfers from other departments and colleges within UTK having a composite ACT of 18 (SAT 780) and high school cumulative GPA of 2.25 or above
2. Admission by departmental review
   a. Transfers not meeting automatic admission criteria: college GPA and high school GPA will be evaluated; composite ACT will be considered if available.
   b. Schedule for admission by departmental review:
      (1) Transfers within UTK——each quarter, 2 weeks before end of quarter
      (2) Transfers outside UTK——twice a year, November 1 and March 1

COORDINATED UNDERGRADUATE PROGRAM IN DIETETICS

1. Completion of freshman and sophomore courses or equivalents as listed on page 140 of this catalog.
2. An overall GPA of 2.2 or above
3. Personal interview
4. Recommendations from faculty and/or employer

College of Human Ecology

The College of Human Ecology grants and encourages association at the time of admission to the University for all programs except Professional Interior Design and the Coordinated Undergraduate Program in Dietetics. These restricted programs have specific entrance requirements noted below. In all cases, the minimum requirement is that students be in association with the College of Human Ecology for at least the last 45 quarter hours of coursework. To be eligible for association a student must:

1. Have completed a minimum of two years (2 units) of study in high school in one foreign language. Deficiency may be removed by completing one year of study at the college level or by passing a proficiency examination. Beginning in Fall 1987, no course work completed in order to satisfy an association requirement in foreign language may be used to satisfy graduation requirements.
2. Have completed one unit of algebra and one unit of geometry (or two units of algebra) in high school. As of Fall 1987, two units of algebra and one unit of geometry. Deficiency may be removed by obtaining a score of 22 or above on the mathematics portion of the ACT; by passing a proficiency examination
administered by the mathematics department; or by passing an appropriate non—credit course offered through the Evening School.

Association for the Bachelor of Science in Chemistry requires at least 1.5 units of algebra and one unit of geometry. The two-year Pre-Pharmacy, Pre-Nursing, and Allied Health Programs have the basic mathematics requirement but no language requirements.

Students who desire to associate with Liberal Arts should ensure that they have an advisor in the college whether or not they meet these requirements. (Go to the Liberal Arts Advising Center.)

College of Nursing

The minimum requirement is that students be in association with the College of Nursing for the last 45 quarter hours of coursework. The College of Nursing has a two-fold selection process:

1. Entering freshmen are selected on the basis of a composite ACT score of 18 (SAT 780), and a minimum high school GPA of 2.50.

2. Students must petition to progress to upper-division nursing courses. This petition must be completed during the sophomore year by the fifth class day of Winter Quarter. The minimum requirement for progression to upper-division courses is completion of lower-division requirements with a grade of C. However, since the college has limited clinical facilities available in the community, the college GPA is used as the selection criterion. The cut-off varies from year to year but generally will be found in the 2.80 to 3.00 range.

Transfer and change of major students must apply to the college by March 1 if they intend to begin upper-division nursing courses in the Fall. The cut-off GPA for these students is generally 3.00. Students who have a lower overall GPA but have shown significant improvement in lower-division courses required by the College of Nursing will have this partial GPA weighted more heavily in the selection process.

General Academic Regulations

Credit Hours, Grades, and Grade Point Average

The basic unit of credit at The University of Tennessee, Knoxville, is the quarter hour. This normally represents one hour of lecture or recitation or two hours of laboratory work per week. Each course at the University carries a number of quarter hours of credit as specified in the course description. At the completion of each course, a student will be assigned a grade reflecting the student's performance in the course. Passing grades normally carry with them a certain number of quality points per quarter hour of credit in the course. A student's grade point average is obtained by dividing the number of quality points the student has accumulated at UTK by the number of quarter hours the student has attempted at UTK, not including hours for which grades of N, NC, P, S, SI, and W have been received.

Undergraduate Grades:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Performance Level</th>
<th>Quality Points Per Quarter Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Superior</td>
<td>4</td>
</tr>
<tr>
<td>B+</td>
<td>Good</td>
<td>3.5</td>
</tr>
<tr>
<td>B</td>
<td>Average</td>
<td>3</td>
</tr>
<tr>
<td>C+</td>
<td>Below Average</td>
<td>2.5</td>
</tr>
<tr>
<td>C</td>
<td>Failure</td>
<td>2</td>
</tr>
<tr>
<td>D</td>
<td>Below Average</td>
<td>1</td>
</tr>
<tr>
<td>F</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

TEMPORARY GRADES

A student receiving a grade of I or SI should arrange with the instructor to take whatever action is needed to remove the grade at the earliest possible date, and in any event, within two years after the course was attempted. A student need not be enrolled at the University to remove a temporary grade.

I (incomplete) is assigned to a student whose work is satisfactory but who has failed to complete a laboratory, shop, or other part of the course by the fifth class day of Winter Quarter. The minimum requirement for progression to upper-division courses is completion of lower-division requirements with a grade of C. However, since the college has limited clinical facilities available in the community, the college GPA is used as the selection criterion. The cut-off varies from year to year but generally will be found in the 2.80 to 3.00 range.

Transfer and change of major students must apply to the college by March 1 if they intend to begin upper-division nursing courses in the Fall. The cut-off GPA for these students is generally 3.00. Students who have a lower overall GPA but have shown significant improvement in lower-division courses required by the College of Nursing will have this partial GPA weighted more heavily in the selection process.

Grades that do Not Influence Grade Point Average

The following grades carry no quality points, and hours on which these grades are earned are not counted in computing a student's grade point average.

NC (no credit) indicates failure to complete a course satisfactorily when taken on an S/NC basis.

SI (incomplete) is assigned when the work is satisfactory but when a portion of the course is not completed. The grade is awarded only in courses where S/NC grading has been elected. The grade of SI is not computed in the average.

GRADES THAT DO NOT INFLUENCE GRADE POINT AVERAGE

The following grades carry no quality points, and hours on which these grades are earned are not counted in computing a student's grade point average.

NC (no credit) indicates failure to complete a course satisfactorily when taken on an S/NC basis.

SI (incomplete) is assigned when the work is satisfactory but when a portion of the course is not completed. The grade is awarded only in courses where S/NC grading has been elected. The grade of SI is not computed in the average.

GRADE LEVEL OF CREDIT

The basic unit of credit at The University of Tennessee, Knoxville, is the quarter hour. Each course at the University carries a certain number of quarter hours of credit. The minimum requirement is that students meet these requirements. (Go to the Liberal Arts Advising Center.)

FRESHMAN ENGLISH

English 1010 or 1011, 1020, 1031 or 1032, or 1033, 1018-28-38, 1211, 1221, 1431, 1441, and 1451 are offered on a system of A, B+, B+, C+, C, I, NC, W grading.

All entering freshmen, except international students, must enroll in English 1010, 1011, or 1018 (see p. 181 of this Catalog for course descriptions).

WRITING COMPETENCE

The faculty of all colleges expect students to communicate effectively in standard written English in laboratory reports, examinations, essays, and other written assignments.

WRITING DEFICIENCY

By checking the column headed "English Deficiency" on their selection form, students may indicate to the College of Nursing that they have deficiencies in writing. Such students are required to begin work in the laboratory at the start of their next term in residence and continue this work until their writing is deemed adequate. The adequacy of a student's writing will be determined by:

a) demonstration of adequate skills on the Writing Laboratory Diagnostic Test. A passing grade on this test excuses a student from required laboratory attendance for one year. Reports in subsequent years of writing deficiency will require the student to demonstrate his/her writing proficiency once again; or

b) demonstration, to the satisfaction of the Writing Laboratory director, of adequate writing skills in assignments and work sessions designated by the Director.

Release by the director of the Writing Laboratory excuses a student from required laboratory attendance for one year. Reports in subsequent years of a writing deficiency will require the student to demonstrate his/her writing proficiency once again.

A student must fulfill the above requirements to graduate. However, if a student has no obligation to the Writing Laboratory in the term before graduation, a new report in the final term will not prevent graduation.

A student deficient in writing who fails to demonstrate his/her writing proficiency once again may be retained by the Registrar.
must first make an appointment to attend Writing Laboratory unless required to attend a minimum of one session per week in the Writing Laboratory unless excused by the director. A student who has four (4) unexcused absences in the term for which he/she holds a writing hold will be put on probation for his/her following term in residence. A student who has four (4) unexcused absences in his/her probationary term will be dismissed from the University and will be ineligible to apply for readmission for one academic term.

REPEATING COURSES
For all courses taken prior to and during an undergraduate student's first 45 quarter hours (attempted) of collegiate study, only the last grade earned in a course that a student repeats will be counted in computing his or her grade point average. These courses must be repeated before a student attempts 90 quarter hours of credit in order to be eligible for this policy. For all courses taken beyond the 45 quarter hour provision, all grades in all hours will be included when computing the grade point average. Unless it is otherwise specified in the course description, no course may be repeated more than twice and no course may be repeated in which a grade of C or better has already been earned. Exceptions to the number of times a course may be repeated will only be granted with prior written permission of the student’s college dean. Each course is counted only once in determining credit hours presented for graduation.

GRADUATING SENIOR PRIVILEGES
A senior who fails one subject during the quarter of intended graduation has the privilege of standing an examination in that subject at the beginning of or during the next quarter, and, if successful, receiving the degree at the next commencement. A senior who has received the grade of I in any subject will, on request to the instructor, be given the opportunity to remove the deficiency before the close of the quarter, but not later than the last day before commencement, provided the student successfully passes the course. No student may repeat a course for the purpose of raising a grade already received, with the exception of NC. A graduating student may not do additional work to raise a grade that was previously described.

LAW SCHOOL GRADES
Law students are graded on a numerical scale from 0.0 to 4.0. Quality points per quarter hour of credit in a given course are equal to the numerical grade received in the course. Grades of 4.0 and below count as failures. Some courses are graded on an S/NC basis.

REQUIREMENTS FOR ASSOCIATION WITH A DEGREE-GRANTING UNIT
There are presently nine undergraduate degree-granting academic units on the Knox campus:
1. College of Agriculture
2. School of Architecture
3. College of Business Administration
4. College of Communications
5. College of Fine Arts
6. College of Engineering
7. College of Human Ecology
8. College of Liberal Arts
9. College of Nursing

The College of Law and the College of Veterinary Medicine are not described here, since these units award a professional degree. Descriptions of these colleges, their programs, and admission requirements are found in the Graduate Catalog.

In order to become associated with one of these colleges or schools, one must:
1. Be admitted as a University student as outlined in the following sections, either through the Admissions Office at the time of application for University admission or to the unit at some later time;
2. Apply to the desired school or college as outlined in the following sections, either through the Admissions Office at the time of application for University admission or to the unit at some later time;
3. Be accepted by the school or college, with all official records reflecting this acceptance.

If high school courses are needed to meet association requirements, the need may be met through non-credit or correspondence courses available through the UTK Evening School or the Center for Extended Learning. Such courses can be taken as a UTK student or prior to and during the undergraduate years. Students admitted to the University on the basis of the GED Test (see Table III) must demonstrate the attainment of any required background knowledge or skill as specified in the association requirements for the desired college. Association requirements may be met through the presentation of high school credits, by the satisfactory completion of an examination, or by any of the other means open to any student who lacks some college association requirement.

Questions concerning the association requirements and their application should be directed to the offices listed in Table II. These sources can also supply information about the various programs offered. Detailed information is also presented in this catalog on pp. 14-16 and in the various college and school sections.

A listing of degrees, major subject areas, and various options within each college or school is presented in Table IV.

ACADEMIC ADVISING AT UTK
Faculty, administrators, and professional staff on this campus are available for advising both a responsibility and an opportunity for improving each student's pattern of undergraduate education. There are many situations during an academic program when a student will find informal academic and career advice helpful. For instance, a great number of students in U.S. colleges and universities change their programs of study at least once during the undergraduate years—sometimes as the result of exposure to vocational possibilities they did not know about when they first enrolled, sometimes through recognition of aptitudes and interests in themselves of which they had been unaware, and sometimes out of the realization that there are aspects of their originally-chosen field for which they are unsuited. The objective of the academic advising system at UTK is to help every student at each stage to define the choices that must be made and to give any needed guidance.

At the time of application for admission to UTK, each student is asked to indicate whether he/she has already identified a preferred college or school. Students who complete the dual selection process at the time of university admission and are accepted into a particular college are assigned an advisor in that college at the time of initial registration for courses. Assignment of advisors is made through the offices listed in Table I by the major department. Colleges which have limited or competitive enrollment plans normally assign advisors to students only after several quarters at UTK. Students who express an interest in a college but have not yet met association requirements may, however, be assigned to that college. Advising centers in each college handle all freshmen and a substantial amount of sophomore advising; major advisors within the college, working closely with the advising center, guide advanced students. At all levels, campus-wide guidelines for good advising are supplemented by specific college standards, guidelines, and evaluations.
Prior to advanced registration, during each main term of the academic year (i.e., during Spring and Fall semesters) has the obligation to consult an advisor for a substantial conference.

Students who are admitted as university students and have not yet declared an interest in a specific college are advised by the College of Liberal Arts Advising Center, 220 Ayres Hall, with the assistance of advisors in other colleges and career planning. This advising center is the largest and best equipped on the campus to serve "university" students.

New students at UTK should review carefully the prescribed curricula of the respective degree-granting units and should choose courses in accordance with their college preference (even prior to actual college association). An advisor assists a student in selecting subjects to ensure a well-balanced education and interprets university and college policies and requirements. However, the student (not the advisor) bears the ultimate responsibility for selecting courses, meeting course prerequisites, and adhering to policies and procedures. Specific details about advising are available from advising centers, advisors, and departmental offices, as well as through notices and the campus newspaper.

Part-time students, particularly those registering in the University Evening School, should establish contact with an advisor in the college with which they are associated or in which they have expressed an interest.

Assistance to students with academic problems or questions is provided by course professors, advisors, department heads, and college deans or advising centers. Numerous other sources of academic, career, and personal counseling exist on the UTK campus and are available to admitted students. These are described subsequently in this catalog under the title "Student Affairs and Services." Handicapped students with special requests should contact Handicapped Student Services, 900 Volunteer Boulevard, (615) 974-6087.

Registration

Dates for orientation and registration are announced to new transfer and freshman students when the Certificate of Admission is issued. Graduate students are instructed when to register upon receipt of their Admission Status. Former students who have been absent from UTK other than the summer term and students who have withdrawn from the previous quarter will receive registration information with their letter of readmission. Law students should consult the Admissions Office, College of Law. Students enrolled in the College of Veterinary Medicine will be governed by the University’s registration date changes unless specified differently by the college. Evening School students should contact the University Evening School for information about registration.

Changes in Registration

Adding Courses and Changing Sections

Students may add courses through the eighth calendar day counted from the beginning of classes. This is the add deadline. Because of the nature of some courses, permission of the department head or instructor may be required to add a course after classes begin. Students may also, as departmental policies permit, change section of a course through the eighth day. Students must fill out and submit the appropriate form for section changes in order to receive credit for the course.

Dropping Courses

There are three drop deadlines at UTK prior to which students may drop courses. Consult the University timetable for announced calendar dates. For all first quarter undergraduate students, in all colleges, the drop deadline is 22 calendar days after the beginning of classes. For all other students (i.e., the first quarter of undergraduate study, students must observe the following drop deadlines. For all courses offered in the College of Liberal Arts, Education and Nursing, the drop deadline is 15 calendar days after the beginning of classes. For all courses offered in the College of Agriculture, Business Administration, Communications, Engineering, Human Ecology, Veterinary Medicine, and the School of Architecture, this is 22 calendar days after the beginning of classes.

Any course may be dropped before the drop deadline specified above without any notation on the academic record. In order to drop a course students must fill out and submit a drop form to the Registrar’s Office. Evening School students should consult the University Evening School timetable for procedures to drop courses. Graduate students should consult the Graduate Catalog for regulations concerning dropping courses. After the drop deadline, any undergraduate or graduate student who drops a course will receive the grade of F unless it can be demonstrated that the request to drop the course is based on circumstances beyond the student’s control. Examples of these circumstances are illness or injury (verified by the Student Health Service or private physician), or necessary change in work schedule occurring after the drop deadline (verified by the student’s employer). Examples of causes unacceptable for a late drop are improper registration by the student or failing a course.

Withdrawing From the University

All official withdrawals from the University for undergraduate day school are made through the Student Counseling Services Center. It is important that all students who leave the University before the end of a quarter report their withdrawal to this office. Official withdrawal from the University by Evening School students is made through the University Evening School.

If an undergraduate student officially withdraws from the University before the drop deadline of 15 days (or 22 days for first quarter undergraduate students) after the beginning of classes, the grade of W will be given in all courses in which the student is currently enrolled. Summer quarter drop deadlines are published in the summer quarter timetable. In cases of withdrawal before the drop deadline, the Student Counseling Services Center or the University Evening School will notify the Registrar of the date of withdrawal, who will then inform the instructors that the grade in those courses is automatically W. Graduates should consult the Graduate Catalog for regulations concerning withdrawal from the University. Any undergraduate student who withdraws from the University after the drop deadline of 15 calendar days (or 22 days for first quarter undergraduates) will receive the grade of F in all courses in which the student is currently enrolled unless it can be demonstrated that the request to withdraw is based on circumstances beyond the student’s control. Examples of these circumstances are listed above in the section on dropping courses.
Course Numbers and Levels

Each course offered by the University is identified by the name of the department offering the course and a four-digit course number. These numbers indicate course level, as follows.

Course Numbers and Levels
0000-0999 Non-credit; preparatory
1000-1999 Lower division—primarily for freshmen and sophomores.
2000-3999 Upper division—primarily for juniors and seniors; when taken for graduate credit, the letter "G" will precede the course credit hours on the grade report.
4000-4999 Graduate; sometimes available for undergraduate credit; when taken for undergraduate credit, the letter "U" will precede the course credit hours on the grade report.
5000-5999 Graduate; sometimes available for undergraduate credit.
6000-6999 Advanced graduate; open to graduate students only.
7000-7999 Law; occasionally open to other qualified students.
8000-8999 Law; occasionally open to other qualified students. Veterinary Medicine.

Teacher Certification

Teacher certification is a responsibility of the College of Education at The University of Tennessee, Knoxville. Students desiring certification must meet general education, professional education, and area of specialization requirements described in the Course of Education section of this catalog. In keeping with requirements of the Tennessee Department of Education, programs leading to teacher certification include a nine (9) hour requirement in health or physical education.

Honors Courses

Courses specifically designated as honors courses will be designated "Hon." Individuals selected on the basis of ACT scores and previous academic performance may be enrolled. There is no limit on the number of credits that may be earned in these courses except in the senior readings courses not requiring regular class attendance; these senior readings courses may total not more than nine credit hours toward graduation. (In the fields of science offering four-hour courses the total may be 12 hours.)

Letters are sent to entering freshmen who qualify for non-departmental honors courses. Students other than freshmen should consult the Director of Special Programs in the College of Liberal Arts concerning other honors courses open to students from all colleges.

Auditing Courses

Students registered for credit courses may enter classes as auditors. Auditors are under no obligation of regular attendance, preparation, recitation, or examination. They receive no credit. They may not take part in laboratory or field work. An audited course will not be recorded on the permanent record. The student's name will appear on the class role to inform the instructor that the student is properly enrolled as an auditor.

Auditors are required to register and pay fees. Prior to the add deadline, a change from credit to audit or from audit to credit may be made by completing the change of credit portion of the Undergraduate or Graduate Change of Registration Form and having it processed at a terminal in Drop/Add. After the add deadline and until the drop deadline, the signatures for a late add must be obtained. ONCE THE DROP DEADLINE HAS PASSED, A CHANGE FROM CREDIT TO AUDIT WILL NOT BE ALLOWED.

Minimum Class Size

An undergraduate course will not normally be given for fewer than fifteen students at the lower division; twelve at the upper division; and nine at the graduate level except by permission of the Provost. The University reserves the right to cancel, postpone, or combine when necessary.

Class Attendance and Eligibility Policy

Only students who are properly registered for a course may attend its classes on a regular basis. Any other person in the classroom for a special reason must obtain the consent of the instructor. It is the prerogative of the individual instructor to set the attendance requirements for a particular class. This means, for example, that an instructor in Freshman English may state in a syllabus how many absences are allowed before a student receives a grade of No Credit.

Deviation from Catalog Rules

The University offers a petitioning procedure through which students can occasionally gain exceptions to the general rules included in this catalog. It is the direct responsibility of the student who seeks to deviate from the rules to complete the petitioning process. In cases where this might affect the student's eligibility to enroll in a particular course, the student should begin the petitioning process during the previous quarter and must gain final approval for the petition no later than the add deadline of the quarter involved.

Progression Requirements

As shown elsewhere in this catalog, various academic programs have progression requirements. Detailed information on meeting these requirements is available from the individual units which have such academic progression requirements. Students are responsible for applying for progression and for meeting all prescribed conditions. Students who cannot meet progression requirements will be reassigned to University Student Status, and will be advised by the Liberal Arts Advising Center.

Students in programs not having progression requirements are subject only to the general academic retention standards described above.

Undergraduate Retention Standards

To be eligible to continue at The University of Tennessee, Knoxville, an undergraduate student must maintain a cumulative grade point average at or above the minimum acceptable level shown in the chart below. There are additional restrictions in individual programs, such as nursing, architecture, interior design, and coordinated undergraduate program in dietetics. The appropriate
section of this catalog should be consulted for details on retention standards for these programs.

### General Requirements for a Bachelor’s Degree

<table>
<thead>
<tr>
<th>Course Hours</th>
<th>Minimum Acceptable Grade Point Average</th>
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<tbody>
<tr>
<td>0-35.9</td>
<td>1.00</td>
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<tr>
<td>36-59.9</td>
<td>1.50</td>
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<tr>
<td>60-89.9</td>
<td>1.80</td>
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<tr>
<td>90 and above</td>
<td>2.00</td>
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</table>

A student whose cumulative grade point average falls below the minimum acceptable level in any quarter will be placed on academic probation for the subsequent quarter of enrollment. During the probationary quarter the student must attain the minimum acceptable cumulative average shown above, or a 2.00 average for that quarter, or be dropped from the University.

A student who has been previously dropped and readmitted will be placed on academic probation. Failure to meet the regular University standards of retention during the probationary quarter, or subsequent quarters prior to attaining good standing, will result in the student's being dropped from the University and being ineligible to make application for readmission for three academic quarters. A transfer student who has been conditionally admitted and fails to meet the regular University standards of retention during the probationary quarter, or any subsequent quarter before attaining good standing, will be dropped from the University and may not make application for readmission for three academic quarters.

### Academic Second Opportunity

As an aid to the serious re-entry student whose previous academic work was below average, the following policy regarding the treatment of previous college-level academic work is available. An undergraduate student who has not taken any college-level credit courses for three calendar years or more prior to admission or readmission to UTK may petition for Academic Second Opportunity. Whether or not Academic Second Opportunity is granted is at the discretion of the Committee. If granted, all previous academic work will remain on the permanent record, but the grades for such work will not be used in the computation of the grade point average or in the determination of good standing for retention purposes.

Prior courses in which a “C” grade or better has been earned may be used to meet major, distribution, and graduation requirements; the previous grades will be changed to a Satisfactory (S) grade. At least 90 hours of letter grades (A-F) must be earned after admission or readmission in order to qualify for graduation with honors. Academic Second Opportunity may be declared only once. All petitions for Academic Second Opportunity must be submitted to the Committee on Readmissions no sooner than completion of the first quarter at UTK, and no later than one calendar year following admission or readmission to UTK.

### Readmission

A student in good academic standing who has withdrawn from school or has been absent for a quarter other than the summer quarter must make application for readmission. Transfer students must apply for readmission no later than March 6, for spring quarter, 1985, May 30 for summer quarter, 1985, and no later than August 15 for fall quarter, 1985.

A student who has been dropped academically must make application for readmission. Readmission is not automatic. Application must be made no later than February 13, for spring quarter, 1985, May 9 for summer quarter, 1985, and no later than August 19, for fall quarter, 1985. The Committee on Readmissions may approve or refuse the application for readmission. Students are strongly encouraged to appear in person before the Committee on Readmissions.

### General Policies

A. Any student who attains a quarterly average of 2.00 may continue in residence at the University, even though the cumulative average does not meet the minimum acceptable level above.

B. Summer quarter is considered a regular academic quarter in satisfying the requirements for retention. Any absence due to academic deficiency.

C. Quarter hours attempted are used only for determining the minimum acceptable level for the grade point average. Satisfactory/no credit hours are included in the hours attempted but excluded in calculating minimum cumulative grade point average requirements for retention.

D. Students who transfer to other accredited colleges or universities and return to The University of Tennessee, Knoxville must submit official transcripts and have an acceptable combined cumulative grade point average before being readmitted to the University.

E. Correspondence courses are open to students who have been dropped from the University for academic reasons only with the permission of the dean of the college or school in which they were enrolled.

F. To register for courses in any branch, center, or division of the University, a student must meet the readmission regulations that govern courses at the Knoxville campus.

G. The Committee on Readmissions will consider the applicant's total record, including the academic record and other factors which may be expected to influence academic performance. A student who is admitted is at the discretion of the Committee on Readmissions.

H. There will be no tentative readmissions.

I. Students in architecture, nursing, interior design, and coordinated undergraduate program in dietetics are advised to note the special requirements as stated in those sections of this catalog.

Comment: The University of Tennessee, Knoxville, is committed to helping students overcome academic deficiencies. A letter notifying a student of academic probation will be sent about the same time as the quarterly grade report. This letter will advise conferring with the student's dean before completing registration for the probationary quarter.

### General Requirements

To receive a bachelor’s degree from The University of Tennessee, Knoxville, a student must complete all of the requirements listed below. It should be noted that some of the colleges and schools within the University have special requirements above and beyond those stated here, and students are advised to consult the appropriate section of this catalog for any further degree requirements. Each program presented by the candidate for the bachelor’s degree is reviewed and approved for meeting the degree requirements by the Office of the Dean of Admissions and Records.

1. Complete satisfactorily all requirements of the curriculum the student is enrolled, as described in the portion of this catalog devoted to the college or school offering the curriculum. Curriculum requirements change frequently, and students should pay close attention to the second page of this catalog. A student is allowed to satisfy requirements for a bachelor's degree under any curriculum in effect during the student's attendance at UT, Knoxville, provided the curriculum has been in effect within 10 years of the date of graduation. This does not obligate the University to offer a discontinued course. Programs may be adjusted by the student's faculty advisor and college dean, in consultation with the Registrar's Office. A student who transfers to UTK subsequent to prior enrollment at a community college, junior college, or another senior institution may elect the UTK catalog in effect at the time of enrollment at the other institution provided that the student enrolls at UTK within one year after the last period of study at the institution from which the student is transferring.

2. Achieve a grade point average of at least 2.00 on all work attempted at The University of Tennessee.

3. Each student is required to achieve a 2.00 grade point average in the senior year. The senior year is interpreted to mean the last forty-five hours of work earned at UTK (at least three quarters as a minimum). If a student does not pass enough hours per quarter to earn forty-five hours during the last three quarters, then the last four or more quarters will be counted. All courses taken during each quarter considered as the senior year will be used in computing the average.

4. Complete the last 90 hours of credit offered for the bachelor’s degree at an accredited senior college.

5. Complete the last 45 hours of credit offered for the bachelor’s degree in residence at The University of Tennessee, Knoxville. In the College of Agriculture at least 27 quarter hours of upper-division technical agriculture approved by the student's faculty advisor must be completed at The University of Tennessee, Knoxville. Credit for correspondence courses

General Requirements for a Bachelor's Degree

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taught by the faculty of the Knoxville campus may be counted as part of this requirement, with the exception of the correspondence credit limitation noted below. Special arrangements to allow work taken at other University of Tennessee campuses to be counted as part of this requirement must be approved by the dean of the student's major college or school and the Dean of Admissions and Records.

(6) Comply with the state law that one unit of American history at the high school level or nine quarter hours of collegiate work be satisfactorily completed. This requirement is effective for those graduating July 1, 1978, or afterwards. It may be satisfied by completing History 2510-20 (or 2518-28) and History 2511 or 2521. History 3311 or 3321 may be used in lieu of three hours of American history. Students should consult the catalog of enrollment to determine how the nine hour's credit for fulfillment of this requirement is to be included in the individual curricula.

(7) Satisfy all financial obligations (fees or fines) owed to the University.

(8) Pay to the Treasurer's Office a $20.00 graduation fee no later than the beginning of the quarter of graduation.

(9) File an application for a degree with the Office of the Registrar, Room 209 Student Services Building, no later than the eighth day of classes of the quarter of intended graduation. This deadline is imperative in order that all necessary processing can take place toward the degree.

SECOND BACHELOR'S DEGREE

A student who holds a bachelor's degree may receive a second bachelor's degree from The University of Tennessee, Knoxville, by satisfying the following:

1. Meet all requirements of both degrees, as specified above.
2. Complete at least 45 quarter hours beyond the first bachelor's degree.
3. Attend the University for at least three quarters beyond the minimum time required for the first bachelor's degree.
4. Declare the intention to work for a second bachelor's degree with the Office of Registrar.

Program Assessment and Improvement Through Student Evaluation

In order for the University to assess and improve its academic programs, periodic measurements of student perceptions and intellectual growth must be obtained. As a requirement for graduation every student shall participate in one or more evaluative procedures, which may include examinations in general education and/or the major field of study. The evaluative information obtained through testing is used solely to improve the quality of the educational experience for future generations of students.

Seniors Eligible for Graduate Credit

A senior at The University of Tennessee, Knoxville, who has completed at least 45 quarter hours or less to complete the requirements for a bachelor's degree and has at least a 3.00 grade point average, may take sufficient work for graduate credit to fill out a schedule of 15 hours of combined undergraduate and graduate work per quarter, subject to the approval of each quarter of the Vice Chancellor for Graduate Studies and Research.

Correspondence Work

A student may offer by correspondence as much as one-fourth of the total hours required for the degree sought and have this work count toward the degree. Credit for undergraduate courses in correspondence in the major subjects shall be limited to one-fourth of the total credit hours required. Correspondence credits are not accepted for students enrolled in the College of Law or, except by prior permission, for students in the Center for the Health Sciences.

All courses taken by correspondence for which degree credit is given must meet degree program requirements of the Knoxville campus. In addition, all currently enrolled UTK students who intend to take correspondence courses must have the approval of the dean of the college or school with which the student is enrolled prior to registering for any college-credit correspondence course. Degree credit will not be granted for correspondence courses taken at an institution other than The University of Tennessee by a UTK student if an equivalent correspondence course is available from The University of Tennessee Center for Extended Learning.

A senior may take only nine hours of the last year's work (the last 45 quarter hours) by correspondence, and this must be taken with The University of Tennessee, Knoxville. If the student is a senior transfer, no work may be taken by correspondence.

Students taking work for teacher certification purposes should consult the State Department of Education of their respective states concerning the amount of correspondence credit allowed for teacher certification.

Proficiency Examination

A proficiency examination may be given in any academic course offered for undergraduate credit. The University policy is to reserve to departments the decisions as to which courses, if any, cannot be passed by proficiency examinations. However, the University faculty feels that it is a rare course for which mastery cannot be tested by appropriate examination(s).

When applying to a department for a proficiency examination, a student should present evidence of having developed the abilities, knowledge, and attitudes expected of those who have taken the course in question. The giving of the examination must be approved by the head of the department in which the course is offered. A fee of must be paid in advance at the Office of the Registrar.

Subject to the grading policy of the college in which the student is enrolled, and except for courses which are graded on an S/NC basis, a student who passes a proficiency examination and who wishes to have the grade recorded must offer for attempt the examination on the grade (A, B+, B, C+, or C) or take an S. An S gives credit for the course but does not affect the grade point average. If a grade of D or F is made on a proficiency examination, the department is expected to note the attempt but no record of the examination is made on the student's transcript. The maximum credits obtainable through proficiency examination and the use of proficiency examinations to remove the failing grades (also the grade of I) are determined by the department offering the proficiency examination.

Entering international students whose native language is not English are required to take the UTK English Proficiency Examination to determine placement in the appropriate English course. No credit for any English course is awarded through this special examination.

CLEP Credit

When approved by a given department, nationally recognized examinations, such as the appropriate subject examinations of the College Level Examinations Program (CLEP) of the College Entrance Examination Board, may be used as proficiency examinations in one or more courses offered by that department. In such cases the final decision as to whether or not credit is to be given on this basis rests with the department awarding credit, and as the number of credit hours and the specific courses for which such examinations are to be taken as evidence of acceptable proficiency.

The Mathematics Department recognizes the following CLEP examinations. For information on cutoff scores, write the Department or stop by the Department office.

1. General Examination in Mathematics: may be used for waiver of the Basic Skills Requirement in Mathematics of the College of Liberal Arts. No credit is awarded, but successful students will be exempt from the requirement.

2. Subject Examination in Calculus with Elementary Functions: 8 hours of credit awarded in Math 1840-50 for scores exceeding the cutoff. Students who take this examination must also take the optional 'free response' section.

3. Subject Examinations in College Algebra and in Trigonometry: may be taken to remove entrance deficiencies in algebra or in trigonometry, respectively.

CLEP CREDIT FOR FRESHMAN COMPOSITION

I. Under the two conditions listed below, entering freshmen may be allowed credit in English Composition for the CLEP General Examination in English Composition or for the CLEP Subject Examination in either College Composition or Freshman English, provided that the examination selected include a writing sample.

a) Students entering with a CLEP score of at least 750 on the General or 65 on the Subject Examination (approximately 83rd percentile) and with ACT scores of 25. English and Composition, may take a sophomore English course, preferably Literature of the Western World. If they earn a B in it, they will receive credit for 1010-20-31, a grade of A; if they earn a B in sophomore English, their grade in 1010-20-31 will be either S or B.
b) Students entering with a CLEP score of 700 at least on the General or 60 on the Subject Examination (approximately 84th percentile) and with ACT scores of 25, English and Composite, may receive Honors Freshman Composition 1038. If they earn a 3.0 in it, they will receive credit for 1018-28 with a grade of A. If they earn a 3.0 in 1038, their grade in 1018-28 will be either S or B.

II. Students transferring into the University with lower-division credit for any CLEP composition score of at least 55 or 55 may have that credit substituted for the appropriate freshman course(s) provided that they have already passed a sophomore literature course or courses with an average grade of at least B, and that those with less than junior standing pass a sophomore or upper-division English course at the University with a grade of at least B.

Honors Categories for Graduation
Honors are conferred upon graduating students who have displayed a high level of achievement during their university career.

Records of honors receive their degrees with:

honors... 3.00 through 3.39

high honors... 3.40 through 3.74

highest honors... 3.75 through 4.00

These honors categories are based on a student's cumulative average at the end of the quarter preceding the graduation quarter. For all students entering Fall, 1985 and thereafter, honors categories are based only on the average earned at The University of Tennessee, Knoxville. Students must have earned at least 90 quarter hours at UT in order to qualify for honors categories. For all others, the honors category is based on the average earned at UT and the combined average of all college work attempted, with the lower of the two averages determining the honors category.

If, at graduation, a student’s grade point average would allow a higher honors category than that determined at the end of the quarter preceding the graduation quarter, the student may, upon written request, receive a substitute diploma indicating the higher category. Courses may not be repeated for the purpose of raising an honors category.

Beginning with the Spring, 1989 commencement, honors categories will be based on the following scale:

Cum laude 3.5 through 3.64

Magna cum laude 3.5 through 3.79

Summa cum laude 3.8 through 4.00

Accelerated Program
The University operates on a four-quarter plan, and a majority of its courses, especially at the lower division, are offered every quarter. Through appropriate arrangements of courses and attendance during the summer quarters, students may frequently complete their degree programs in less than four years. A student's faculty advisor should be consulted for assistance in planning an accelerated program.

Advanced Military Service and Air Force Aerospace Studies
Students who elect to enroll in the advanced military courses (junior and senior years) are obligated by written agreement with the government to complete the courses and to accept a commission if tendered.

Special Requirements for Student-Athletes
Student-athletes participating in intercollegiate sports under the provisions of the National Collegiate Athletic Association and the Southeastern Conference, in addition to the University's academic continuation and retention policies, must fulfill the following academic progress requirements for continuation of eligibility to participate in intercollegiate sports:

1. A Freshman who has had no previous college enrollment must, to maintain eligibility for competition during the second and third quarters, pass a minimum of five (5) quarter hours of acceptable degree credit in the quarter preceding participation in a given sport.

2. Student-athletes qualifying for eligibility beyond the first year of residence must have satisfactorily completed 30 quarter hours between the beginning of the last season and the next season for the sport. No more than ten (10) quarter hours of correspondence or transfer credit may be used to satisfy this requirement. The student-athlete must have also passed at least eight (8) quarter hours of acceptable degree credit during the term preceding the beginning of the sport season and each subsequent quarter in which the sport season continues.

Degrees
Graduate School
Doctor of Business Administration
Doctor of Education
Doctor of Philosophy
Specialist in Education
Master of Accountancy
Master of Arts
Master of Business Administration
Master of Engineering
Master of Fine Arts
Master of Mathematics
Master of Music
Master of Science in Nursing
Master of Public Administration
Master of Public Health
Master of Science in Library Science
Master of Science in Planning
Master of Science in Social Work

College of Agriculture
Bachelor of Science in Agriculture
Bachelor of Science in Agricultural Engineering
Bachelor of Science in Forestry
Bachelor of Ornamental Horticulture and Landscape Design
Bachelor of Science in Wildlife and Fisheries Science

School of Architecture
Bachelor of Architecture

College of Business Administration
Bachelor of Science in Business Administration

College of Communications
Bachelor of Science in Communications

College of Education
Bachelor of Science in Education

College of Engineering
Bachelor of Science in Aerospace Engineering
Bachelor of Science in Chemical Engineering
Bachelor of Science in Civil Engineering
Bachelor of Science in Electrical Engineering
Bachelor of Science in Engineering Physics
Bachelor of Science in Engineering Science
Bachelor of Science in Industrial Engineering
Bachelor of Science in Mechanical Engineering
Bachelor of Science in Metallurgical Engineering

College of Human Ecology
Bachelor of Science in Home Economics
Bachelor of Science in Interior Design
Bachelor of Science in Tourism, Food and Lodging Administration

College of Law
Doctor of Jurisprudence

College of Liberal Arts
Bachelor of Arts
Bachelor of Fine Arts
Bachelor of Music
Bachelor of Science
Bachelor of Science in Chemistry
Bachelor of Science in Social Work

College of Nursing
Bachelor of Science in Nursing

College of Veterinary Medicine
Doctor of Veterinary Medicine

Fees and Expenses
University fees and other charges are determined by the Board of Trustees and are subject to change without notice. The general fees in effect at the time of publication are as follows:

MAINTENANCE FEE
Undergraduate Students Per Quarter $319
Graduate Students Per Quarter $396
Law Students Per Semester $670
Veterinary Students Per Quarter $706

All students both in and out-of-state are required to pay the established maintenance fee.

TUITION (additional for all out-of-state students)
Subject Exempted Students Per Quarter $718
Per Semester $1076

Tuition is required of all students who are classified as non-residents for fee assessment purposes.

NOTE: In lieu of the above charge for tuition and/or maintenance fee, part-time students may elect to pay fees computed by the quarter hour credit (or audit) at the rates shown below, total charge not to exceed the regular maintenance fee for in-state students or the maintenance fee plus tuition for out-of-state students.
In-State service fee of $2 per day will be charged regular registration day a graduated late first regular business day following the last regular registration day. Effective the payments with the Bursar's Office) on the pay their fees (or make satisfactory arrange-
ents with the Bursar's Office) on the preregister for a quarter must in incomplete) a student is registered and is immediately responsible for payment of fees. Students who preregister for a quarter must pay their fees (or make satisfactory arrange-
mits with the Bursar's Office) on the regular registration dates in order to avoid late payment service charges. Effective the first regular business day following the last regular registration day a graduated late service fee of $2 per day will be charged during the next ensuing five regular business days.

Students who do not preregister but register through the "secondary" registration procedures will be granted two additional days after the final regular registration day to pay their fees (or make satisfactory arrange-
ments with the Bursar's Office) before the graduated late service fee begins. Such stu-
dents will be charged the graduated late service fee beginning with the third regular business day following the last regular registration day. (Minimum charge $6 third day, $8 fourth day, $10 fifth day.)

Additional Late Service Fees

Students who have not completed reg-
istration and paid their appropriate charges (or made satisfactory arrangements with the Bursar's Office) within five regular business days after the last regular registration day will be charged an additional $10 late service fee (total $20).

After 10 regular business days students will be charged a second additional $10 late service fee (total $30). After 15 regular business days students will be charged a third additional $10 late service fee (total $40). After 20 regular business days students will be charged a fourth additional $10 late service fee (total $50), and may, at the discretion of the University, be withdrawn from school and assessed the appropriate fees as of the date dropped.

A $10 service fee is applicable to exten-
sion accounts and room and board charges which are not paid (or deferral arrangements made) within seven calendar days after the date payment was due.

REINSTATEMENT SERVICE FEE $30

A student withdrawn (or subject to with-
drawal) for failure to pay appropriate fees who is reinstated for the quarter will be charged a $30 reinstatement service fee.

RETURNED CHECK SERVICE FEE POLICY

In the event a check given to the Universi-
ty in payment of initial fees and charges fails to clear the bank, the late registration serv-

ice fee in effect at the time the check is re-

redeemed will be assessed, plus a $10 Returned Check Service Fee.

If the student responds promptly to the first notice regarding the returned check but cannot redeem the check within a week, the $5 Delayed Payment Service Fee will be added. Any student who does not respond within seven days from the date of the first notice may be subject to withdrawal from the University and will be assessed an additional $10 Service Fee plus the $5 Delayed Pay-

ment Service Fee.

For other returned checks the service charge will be $10 if the check is made good within seven days from the date of notice and $15 if made good after seven days.

Only under extenuating circumstances will a student be reinstated after official with-
drawal for failure to pay fees or redeem a bad check.

DEFERRED PAYMENT SERVICE FEE $10

This service fee is applicable when any part of a student's fees and other charges deferred with the approval of the Bursar's Office, including accounts which must be billed to outside agencies, organizations and institutions. This fee is also applicable when total residence hall charges are not paid within seven calendar days after the effective date of the residence hall assignment.

LATE PAYMENT SERVICE FEE $5

This fee is applicable when a suplemental charge (tuition, room and board adjustments, etc.) is not paid within seven calendar days after the date it is incurred. Students are expected to take responsibility for all Uni-
versity obligations promptly. The $10 deferred payment service fee will be added if it is necessary for the Bursar's Office to send a notice regarding non-payment of the adjustment.

APPLICATION FEE $15

Each first-time undergraduate, graduate, and College of law application for admission to The University of Tennessee, Knoxville, must be accompanied by a fee of $15 before it will be processed. This fee is refunda-
ble and is not required for transfers within the University system.

CLEP FEES

$5 per credit hour for evaluation and proficiency credit.

PROFICIENCY FEES

Fees for proficiency examinations are $15 per credit hour for undergraduates and $22 per credit hour for graduates. See page 22 for other information on proficiency, and CLEP examinations.

CO-OP REGISTRATION FEE $15

If credit is received, the appropriate quarter-
hour rate will be added.

AUDITOR'S FEE

Fees for courses being audited are the same as those taken for credit. Auditors do not take the examination, receive credit, or participate in class discussions.

REFUND OF FEES AND ADJUSTMENTS FOR WITHDRAWALS AND DROPPED COURSES

Withdrawal from school for the quarter after receiving a schedule must be by official notification to the Withdrawal Office, Student Counseling and Services Center, 900 Volun-
teer Boulevard. This is necessary whether or not fees have been paid, classes have been attended, or the schedule is incomplete. Fail-
ure to attend class does not automatically withdraw or drop a student from school or class.

The effective date of withdrawal is the date the Withdrawal Office is notified by comple-
tion of the official withdrawal request form. The appropriate percentage of fees will be charged unless this action is completed by the close of the last day designated for regu-
lar registration and before the first official day of classes of the quarter. Failure to promptly notify the Withdrawal Office when withdrawing will result in a fee assessment of a larger percentage. Withdrawal does not cancel fees and charges already incurred. The drop/add procedure must not be used to withdraw from school for the quarter.

For a regular academic quarter, withdrawal within seven calendar days beginning with...
the first day following regular registration permits a fee refund of 90 percent. Withdrawal between eight and 14 calendar days following regular registration permits a fee refund of 70 percent. Withdrawal between 15 and 21 calendar days following regular registration permits a 50 percent fee refund. Withdrawal between 22 and 28 calendar days following regular registration permits a 30 percent fee refund. Refunds, in accordance with the withdrawal refund policy, will be made after financial records are processed and audited.

Except when withdrawing from school for the quarter, there is no charge for courses dropped during the first seven calendar days following regular registration. For part-time students there is a 40 percent charge at the quarter hour rate for courses dropped between 8 and 21 calendar days following regular registration. There is 100 percent charge for courses dropped after the twenty-first day following registration. Students who drop courses are eligible for a refund only if the sum of the charges computed at the quarter hour rate for the hours continued plus the percentage assessed for the hours dropped results in an amount less than that paid. A course on a student's schedule is officially dropped and becomes effective on the date that the drop/add slip has been processed and recorded by the Admissions and Records Office. The student always has the responsibility of initiating drop/adds. Any refund due for dropped courses will be made after the final audit at the end of the quarter. The above deadlines will vary for withdrawals and drops in the College of Law because of the semester system.

Rental charges and adjustments are determined by the Office of Residence Halls in accordance with the terms of the housing agreement or contract.

OTHER INFORMATION REGARDING FEES
All charges and refunds will be made to the nearest even dollar. All charges are subject to subsequent audit and verification. The University reserves the right to correct any error by appropriate additional charges or refunds.

All students are required to have a validated fee receipt to complete the registration procedure. This includes graduate and teaching assistants, staff, and others, whose fees may be billed, prepaid, or waived. Delayed registration service fees are also applicable to such students.

No student is authorized to attend classes who has not obtained a class schedule from the Office of the Dean of Admissions and Records and a validated fee receipt from the Business Office.

The University is authorized by statute to withhold diplomas, grades, transcripts, and registration privileges on any student until student debts and obligations (other than Student Loan Fund notes which have not matured) owed to the University are satisfied.

Student Health Insurance. The University makes available, by contract with an insurance company, health insurance expressly for students. The program is designed to supplement the care provided by the campus Student Health Service and provide basic benefits at low group premium rates. Primary emphasis is placed on hospitalization benefits since in-patient care is not provided on campus. Students not otherwise covered are urged to avail themselves of this or comparable insurance since paying for hospitalization is the student's own responsibility.

Information about the insurance is mailed by the company to the student's home and participation in the program or in an alternative plan (or alternative coverage) is mandatory for international students. Students may obtain applications from the Student Health Service or the Office of International Student Affairs. Except for international students, enrollment for insurance is not a part of registration for classes. NOTE: The family health insurance policy should be carefully reviewed since most family policies do not cover the dependent child after a given age, some as early as age nineteen.

Military Deposits. All students registering for Air Force ROTC courses are required to make a deposit of $75 each for uniforms issued to them. All students who are members of the band are required to make a deposit of $50 each to cover damage to or loss of property issued to them. The unused portion of the deposits will be returned to the students after completion of the training. Identification cards, issued during registration or anytime during the year to all students, are prepared during registration of the first quarter a student enrolls in the University and are validated quarterly thereafter. The identification cards are required for many purposes such as use of library facilities, check-cashing facilities in the UTK Bookstore, and admission to various athletic, social, and cultural events. These cards are non-transferable and may not be duplicated. A current validated fee receipt is necessary to obtain a new or replacement ID card. IDENTIFICATION CARDS MUST BE CARRIED AT ALL TIMES FOR PURPOSES OF IDENTIFICATION. Lost or stolen cards should be replaced by contacting the Student ID Card Office at Room 344, University Center. There is a minimum charge for replacement or duplicate ID cards.

Arrangements while at UTK. Banking arrangements can be made with Knoxville banks. Some Knoxville banks require a wait period of 10 days before honoring withdrawals, if the deposit is a personal check. New students who wish to open a local checking account are encouraged to deposit a certified check or cashier's check unless they can pay initial college expenses by a personal check on a bank account already fully established.

Summer Quarter Fees and Expenses
Fees and expenses for the summer quarter are the same as for the other quarters during the academic year with the exception of the University Programs and Services Fee as noted above.

Although the summer quarter is divided into terms of varying lengths, tuition and fees are assessed at the regular quarter hour rate not to exceed the maximum charge for a complete regular quarter.

The refund policy covering withdrawals and dropped courses for the summer quarter is based on the length of the term for the course(s) dropped. No refund is applicable to term courses dropped later than 14 calendar days after the regular registration day for the course(s) involved.

Estimate of Expenses
The following estimates of the necessary expenses for an undergraduate student during the 1986-87 academic year are average. Actual expenses vary greatly according to the habits of economy or extravagance of the individual student. The room and meal estimates are averages based on accommodations and 20-meal board plan in University facilities. Estimates for equivalent accommodations and meals elsewhere will usually be somewhat higher.

Undergraduate
Maintenance Fee $1,128
Programs & Services Fee $183
Room and Meals $2,801
Books, Supplies, transportation, etc. $1,539

Total for Tennessee Residents $5,451
Add for Non-Resident Tuition $2,433

$7,884

These figures give a fair idea of average expenses, exclusive of clothing, travel, and pocket money. Expenditures for extracurricular activities are not included in the above.

Housing
The University strives to maintain convenient and comfortable residence hall facilities which are available to all single students at a reasonable cost. Many residence halls provide excellent study facilities, including computer rooms, and are all within easy walking distance of classrooms and other University facilities. Off-campus housing provides an atmosphere which is conducive to academic achievement and personal development and it is therefore recommended that all students reside in University housing. All first year students who are not living with a parent or guardian are required to live in University housing.

Housing contracts are a commitment for the academic year, September to June, or for shorter periods if the student enters the University during winter or spring. A Housing Application will be mailed as a part of the Application for Admission. Residence hall assignments for the academic year are made in the late spring and summer. The student must be admitted to the University prior to occupancy. If a student withdraws from the University, the housing contract is cancelled in accordance with policies stated in the contract. Students assigned to residence halls desiring a board plan will be issued contracts written to include both room and board. A contract for housing signed by a student is binding for the term of contract and is rigidly enforced by the University.

Additional information pertaining to single student housing may be obtained from the Office of Residence Halls, 405 Student Services Building, The University of Tennessee, Knoxville, Tennessee 37996-0241.

Off-Campus Housing
Students living in off-campus housing are expected to observe the same rules of conduct and standards that are applicable to all students. The student is responsible for obtaining off-campus housing. The University does not inspect or approve these facilities. Terms and condi-
tions for the rental of off-campus housing are between the student and the landlord. Information and assistance in locating off-campus housing is available in the Off-Campus Housing Office located in 336 University Center.

**Graduate Students.** Single graduate students may be assigned to the residence halls or the single student apartments. For information concerning University residence facilities, please refer to the appropriate paragraphs above describing Undergraduate Students and Off-Campus Housing.

**Married Students.** The University has provided modern apartment facilities in several locations for married students with families. In addition, single graduate students are accommodated on a space available basis. Information and application for these facilities may be secured from the Office of Rental Properties, The University of Tennessee, Knoxville, Tennessee 37996-0730.

**Food Service Facilities.** Excellent University-operated food service facilities have been provided. They are air-conditioned, conveniently located in relation to residence halls, and serve nourishing food at reasonable prices. The University recognizes the educational role that its food service facilities play in student life and group living. The Food Services Department employs a skilled dietetic and management staff to ensure that the student gets the highest quality meals at the lowest possible cost. Room and board meal arrangements are available. This plan offers the best combination of balanced, nutritious meals, carefully planned and served at a reasonable charge to the student. For students not under the Board Plan, meals can also be obtained from cafeterias operated on a cash basis.

In addition, the Food Services Department offers a charge plan whereby students may charge meals and have the bill rendered to their parents monthly. A prepaid charge plan, "Dining Plus," is available to certain students, faculty and staff. With a modest prepayment of at least $100.00 students may charge meals and receive an active bonus credit of 5% of the prepaid amount. With a prepayment of $200.00 or more students receive a bonus credit of 10% of the prepaid amount.

For the late evening snack or morning coffee cup, spots on campus are the delicatessens and grill operations. Students are invited to take advantage of the special "theme" meals offered in the University dining facilities throughout the year.

**Student Financial Aid.** The University of Tennessee, Knoxville (UTK) offers a comprehensive program of financial aid for students who otherwise would not be able to attend. Through these federal, state, and University programs, an eligible student may receive one or more types of assistance. In order to receive Federal financial aid, students must be a U.S. citizen or classified as a permanent resident. All students must also comply with current Selective Service laws prior to receipt of aid. Additionally, all students receiving Federal Financial Aid are expected to maintain satisfactory academic progress toward a degree. Students on academic probation are not eligible for financial aid until such time as they are readmitted to the University in good standing.

Financial need is defined as the difference between a family's resources and the total cost of attendance. If, after a deficiency, a student is considered to be in need of financial assistance, UTK utilizes the need analysis documents of both College Scholarship Service (CSS) and American College Testing (ACT). Through the use of CSS's Financial Aid Form (FAF) or ACT's Family Financial Statement (FFS), the Financial Aid Office determines the amount the parents and student can contribute toward educational expenses. For more detailed information on the determination of need, please refer to the brochure entitled, "Financial Aid Information," available in the Financial Aid Office.

UTK has three types of financial aid: scholarships and grants, loans, and part-time employment. These may be awarded individually or in combination according to the needs of the student. For detailed information on application procedures for each aid program, please refer to the brochure, "Financial Aid Information."

**Deadlines for Applications.**

Because a student's family resources can change significantly during an academic year, UTK requires each student to apply annually for renewal of financial aid. Students desiring assistance based upon financial need (some scholarships, grants, loans, and employment) must submit either the Financial Aid Form or the Family Financial Statement. Students desiring only scholarships based upon academic merit are not required to complete any application forms. UTK is not able to meet the financial needs of all applicants. Priority in awarding will be given to those students with financial need applications completed by the following dates: March 1 for undergraduate entering freshmen; April 1 for entering graduate, law, veterinary medicine, transfer, and currently enrolled students.

**TRANSFER STUDENTS.**

UTK Financial Aid applicants who have attended another college or university are required to have a Financial Aid Transcript sent to UTK whether financial aid was previously received or not. Forms and further information on this requirement are available in the Financial Aid Office.

**Scholarships and Grants.** Scholarships. The UTK scholarship program is made possible through funds provided by the University, outside foundations, estates, private businesses, civic groups, individuals, and alumni. The majority of these scholarships are coordinated by the Financial Aid Office. Some undergraduate scholarships for currently enrolled students are administered in the various schools and departments.

Most scholarships are awarded to students who demonstrate strong academic achievement and a proven need for assistance. There is, however, an academic merit scholarship program which makes awards on the basis of academic achievement only. To compete for merit scholarships only, a student must be admitted or currently enrolled by the priority deadline indicated above. An application form or financial statement is not necessary. Academic achievement for entering freshmen students is judged by the applicant's secondary school academic record and scores on the American College Testing Battery (ACT) or Standard Achievement Test (SAT). Academic achievement for currently enrolled and transferring students is judged by the recipient's college cumulative grade point average.

All scholarships, including merit scholarships, are highly competitive; despite the generosity of University friends and alumni, there are not enough funds to provide financial aid to all qualified students. Annual stipends range from $100 to $2100. Most scholarships are awarded for one year, with the recipients competing for scholarships each year of enrollment.

High school students should contact their school counselor or principal for information concerning scholarships offered by local individuals, national organizations and other organizations.

**Pell Grant.** This is a federal grant program for undergraduate students displaying a financial need for funds. Because the Pell Grant is an entitlement program, all undergraduate students applying for need-based financial assistance from the University must apply for this program. Other forms of financial aid will not be extended to a student until eligibility for the Pell Grant has been determined.

When the program is fully funded, maximum grants are $1,800 and not more than one-half the cost of education. The above regulations and provisions of the Pell Grant Program are correct as of December 1983 and are subject to change by federal legislative action.

**Supplemental Educational Opportunity Grants.** This is a program of direct grants available to undergraduate students with exceptional financial need. Grants must be matched by an equal amount of assistance from other sources, i.e., scholarships, loans, and earnings. No matching aid is required by the student's family resources. An SEOG may not be less than $200 or more than $2,000. The above regulations and provisions of the Supplemental Educational Opportunity Grant are correct as of December 1983 and are subject to change by federal legislative action.

The Tennessee Student Assistance Award is designed to further educational opportunities to residents of the state who display a financial need for assistance. Awards cover one-half of the maintenance fees for fall, winter, and spring quarters. Applicants must submit a copy of their Financial Aid Form/Family Financial Statement to the Tennessee Student Assistance Corporation.

More information may be obtained on this program by writing to the Tennessee Student Assistance Corporation, Capitol Towers, Suite 9, Nashville, Tennessee 37219.

**Student Loans.**

National Direct Student Loan. Long-term loans are available to students who have a proven need for financial assistance. Loan repayment and interest payments on National Direct Student Loan (NDSL) are deferred as long as the individual remains in
half-time attendance at an accredited institution of higher education in the United States. Repayment may be deferred for a period of three (3) years while the borrower is: serving as an Armed Forces Peace Corps, Vista, the U.S. Public Health Service, ACTION agency programs or as a full-time volunteer in a similar tax-exempt service organization, or while (s)he is temporarily, totally disabled or providing care for a spouse who is temporarily, totally disabled. Repayment may be deferred for two years while the borrower is serving an internship required for professional recognition. Interest is 5 percent per year on the unpaid balance. The maximum repayment period is 10 years with the current minimum monthly repayment of $30.

If upon graduation the borrower becomes a full-time teacher in a public or non-profit school which is designated by the Secretary as having a high enrollment of low-income families or becomes a teacher of the handicapped, 15 percent of the total principal plus interest may be canceled for the first half-year of teaching, 10 percent for the second year of teaching, 15 percent for each year thereafter. Cancellation for up to 50 percent of the loan may also be given at the discretion of the Department if the borrower is in full-time teaching, then the National Oceanic and Atmospheric Administration Corps, or the U.S. Public Health Service or for the years required for a full-time course of study leading to advanced professional training. The above regulations and provisions of the Nursing Student Loan Program are correct as of December 1983 and are subject to change by federal legislative action.

Health Professions Student Loan. This loan is available to UT Knoxville, or when the student is serving in the Armed Forces, Peace Corps, the National Oceanic and Atmospheric Administration Corps, or the U.S. Public Health Service or up to 5 years for a full-time course of study leading to advanced professional training. The above regulations and provisions of the Nursing Student Loan Program are correct as of December 1983 and are subject to change by federal legislative action.

Graduated Monthly Loan. This loan is available to students who are in attendence on at least a half-time basis. The student begins repayment of the amount borrowed plus any unpaid interest on the first day of the fourth month following graduation, withdrawal, or transfer from The University of Tennessee, Knoxville, or when the student ceases to carry at least one-half of the full-time academic workload. Minimum monthly installments will be $30 or 1/36th of the amount borrowed, whichever is greater. The borrower may choose to pay, without penalty, any or all of the interest before entering the normal repayment period. The above regulations and provisions of the University of Tennessee Student Loan Program are correct as of December 1982 and are subject to change by action of the Board of Trustees.

Nursing Student Loan. These loans are available to students who are enrolled or admitted as students in a course of study leading to a baccalaureate degree in nursing and who demonstrate an exceptional financial need. The program provides a long-term loan at a 6 percent interest rate with repayment beginning one month following termination of full-time study at an accredited school of nursing. Repayment may be deferred for a period of up to 3 years while the borrower is serving in the Armed Forces, Peace Corps, the National Oceanic and Atmospheric Administration Corps, or the U.S. Public Health Service or up to 5 years for a full-time course of study leading to advanced professional training. The above regulations and provisions of the Nursing Student Loan Program are correct as of December 1983 and are subject to change by federal legislative action.

Health Professions Student Loan. This loan is available to UT Knoxville, or when the student is serving in the Armed Forces, Peace Corps, the National Oceanic and Atmospheric Administration Corps, or the U.S. Public Health Service or up to 5 years for a full-time course of study leading to advanced professional training. The above regulations and provisions of the Nursing Student Loan Program are correct as of December 1983 and are subject to change by federal legislative action.

Guaranteed Student Loan. This loan from banks, savings and loan associations, or credit unions through a state guarantee agency will result in lower interest rates, lower out-of-pocket costs, and lower educational expenses. To receive a loan, the student must be enrolled or admitted in at least a half-time degree program and be in good standing with the University. Applicants may be required to provide a guarantor; indicating that they have financial need for these funds. Interest on such loans is paid by the federal government while the student is in attendance on at least a half-time basis.

The student begins repayment of the amount borrowed plus 9 percent interest per year on the unpaid balance six months following termination of half-time enrollment or graduation. The maximum repayment period is 10 years. The minimum monthly payment is $50.

Repayment may be deferred for a period of three years while the borrower is serving in the Armed Forces Peace Corps, Vista, the U.S. Public Health Service, ACTION agency programs or as a full-time volunteer in a similar tax-exempt service organization, or while (s)he is temporarily totally disabled or is providing care for a spouse who is temporarily totally disabled; repayment may be deferred for a period of two years while the borrower is serving an internship which is required to receive professional recognition. The maximum amount an undergraduate student may borrow for a 9-month period of enrollment is $2,500 up to an accumulated maximum of $12,500. The maximum amount a graduate student may borrow for a 9-month period of enrollment is $4,500 up to an accumulated maximum of $25,000 (including any amount borrowed as an undergraduate).

PLUS-Loan Program. The PLUS Loan Program provides a source of loan funds to the parents of dependent undergraduate students as well as to independent undergraduate and graduate/professional students. The parents can borrow up to $3,000 per year (not to exceed the cost of attendance minus other financial aid) for each undergraduate dependent child. Independent undergraduate students may borrow up to $2,500 per year; this amount includes PLUS loans.

Graduate/professional students are entitled to borrow up to $3,000 per year and may also borrow up to $5,000 per year under the PLUS program. The parents may borrow up to a total of $8,000 per year (not to exceed need) under GSL and PLUS combined. The cumulative maximum loan amount that can be borrowed by a parent for each dependent undergraduate child is $15,000. Independent undergraduate students may borrow a cumulative maximum of $12,500 (including GSL loans). The cumulative maximum loan for graduate/professional students is $15,000 in addition to a maximum of $25,000 from GSL. The interest rate on PLUS loans is currently 12 percent and there is no federal interest subsidy. Parent borrowers must begin repayment of interest within 60 days of loan disbursement. Student borrowers must begin repayment of interest within 60 days of loan disbursement, but payment on the principal will be deferred until the student is no longer enrolled as a full-time student or no longer qualifies for some other deferment.

Complete information on both loan programs is available at most banks and credit unions. In the state of Tennessee, write the Tennessee Student Assistance Corporation, Capitol B-3 Towers, Suite 9, Nashville, Tennessee 37219.

Health Education Assistance Loan. These loans are available from a banking institution to students enrolled or admitted in a course of study leading to a Doctor of Veterinary Medicine or a doctoral degree in clinical psychology. Students in Veterinary Medicine or a doctoral degree in clinical psychology may borrow an annual maximum of $20,000 up to an accumulated maximum of $80,000. Students in clinical psychology may borrow an annual maximum of $12,500 up to an accumulated maximum of $50,000. The interest rate may not exceed 12 percent per year and repayment begins nine months following completion of formal training (including a period of internship) or withdrawal from school. The maximum repayment period is 25 years and the entire loan must be repaid within 33 years of the date of execution of the promissory note. Repayment may be deferred for up to three years while the borrower is serving in the Armed Forces Peace Corps, Vista, or the National Health Service Corps. Repayment may be deferred for a period of four years while the borrower is engaged in an
Student Employment

Two employment programs are administered by the Financial Aid Office to help students fund their part-time employment.

College Work-Study. This is a federal work program which provides jobs for students who have financial need and who must earn a part of their educational expenses. Eligible students are placed in jobs on campus where they work approximately 15 hours per week. The rate of pay is at least the federal minimum wage.

Student Employment Service operates as a central referral agency. It coordinates listings of part-time employment from both University and private employers with the requests of students seeking part-time employment. Employment average from 15 to 20 hours of work per week. Part-time employment is a financial necessity to the student with a low grade point average, the student is advised to accept a job requiring fewer hours of work per week.

The University of Tennessee, Knoxville, wishes to express gratitude to the contributors and donors of the following scholarships:

- AACE Scholarship Fund
- George G. Abraham Scholarship Fund
- Roy & Mildred Acuff Scholarships in Band
- The Roy & Mildred Acuff Scholarship/Choral Program & UT Singers
- The Roy & Mildred Acuff Scholarship in Music
- Advertising Scholarship Fund
- Agrico Scholarship
- Agricultural Faculty-Alumni Scholarships
- Ahmed Alsaifar Graduate Scholarship
- James Thurman Alor and Judge Thurman Alor Memorial Scholarship
- Air Force ROTC
- Akima Club Interior Design Scholarship
- Alcoa Foundation Scholarships
- Howard F. Allen Memorial Scholarship
- Clyde and Grace W. Alley Scholarships
- Allied Chemical Foundation Fellowship Grant—Chemical Engineering
- Allied Chemical Grant—Industrial Engineering
- Allied Chemical Scholarship Grant—Industrial Engineering
- Allied Chemical Scholarship Grant—Mechanical Engineering
- Alpha Gamma Rho Scholarship Fund
- Alpha Delta Kappa Scholarships
- Joe Mac Alpin Memorial Scholarship
- Alissa Clark Scholarship in Business
- Alumni Music Scholarship
- American Home Economics Association Scholarship Fund
- American Society for Metals, Oak Ridge Section, Scholarship
- Appalachian Center for Tool and Manufacturing Engineers—Knoxville-Oak Ridge Chapter Scholarship
- Ida A. Anders Scholarship
- Arthur Anderson Alumni Scholarship
- Winifred Anderson MBA Fellowship
- Anderson County Agricultural Scholarship
- Ray & Mary Andrews Memorial Fund for Excellence in Design
- Anonymous Student Award
- Animal Husbandry Award

Anthropology Department Scholarship Fund
- Appalachian Opera Company Scholarship
- Arab Student Assistance Fund
- Architecture Scholarship
- Architecture Recreational Fund
- Armstead Award in Veterinary Medicine Fund
- Art and Communication Scholarship
- Army ROTC
- Max B. and Lalla B. Arnstein J. Clayton Arnold Teacher Training Scholarship
- General Henry H. Arnold Educational Fund
- Art Department Art Auction Scholarships
- Daniel Arthur Scholarship
- ASCE Armour T. Granger Memorial Scholarship
- Captain Samuel E. Ashler Memorial Scholarship
- Association of Government Accountant's Award
- Atlantic Richfield Charles H. Bacon Scholarship
- E. H. (Buddy) Avery
- Benefield Scholarship in Human Services Program Scholarship
- Bacon-Beard Scholarship in Philosophy Fund
- Mr. & Mrs. Karl Bahret Scholarship
- Hop Bailey, Sr. Scholarship
- Bain-Swiggert Poetry Prize
- John Bailey Journalism Scholarship
- Howard H. Baker Memorial Fund
- Band Scholarship
- Maryville College Scholarship
- Louis Earle Dunn Barbee Scholarship
- Paul Barnett Scholarship Fund
- John Barnett Scholarship
- Dorothy H. Barton Scholarship in Home Economics
- Col. T. H. Barton Scholarship
- Grace and Brodie Baynes Scholarship in Accounting
- Dr. & Mrs. Joe D. Beak
- C. Grier Bailey Scholarship in Transportation
- Beard Scholarship in Philosophy Fund
- Harry E. Beard Memorial Scholarship in Engineering
- Bedford County Farmers Cooperative Agricultural Scholarship
- Roy F. and Addie Bell Scholarships
- Bellottend Scholarship in Veterinary Medicine
- The Carl M. Bennett Scholarship
- James Bennett Scholarship in Marketing & Transportation
- Phil Shetterman Bennett
- Stelmon Bennett Agricultural Scholarship Fund
- Edna M. and King M. Benson Memorial Scholarship Fund
- Berkline Corporation Scholarship
- Bertha Walburn Clark Orchestral Instruments Scholarship
- Big Orange Swimming Scholarship
- Mr. and Mrs. E. J. Bilbro Scholarship
- J. J. Bird Memorial Scholarship
- Voula Bizas Scholarship
- Black Faculty Staff Association Scholarship Fund
- Bledsoe County Agricultural Scholarship
- Amanda Minx Bonham Scholarship
- Frederick T. Bonham Foundation Scholarship
- Walter Melvyn Bonham Scholarship
- Fred C. Bonham Business Award
- Book & Supply Store Scholarship Fund
- F. S. P. Borthwick
- Dr. Wade B. Bowell Scholarship
- Tutt and Elizabeth Bradford Journalism Excellence Fund
- Dr. and Mrs. Donald H. Bradley, Sr. Scholarship
- Endowment Fund
- Irene and Dudley Brewer Liberal Arts Scholarship Fund
- Sarah Allison Bronson Excellence Endowment Fund
- Brooks, Ledgerwood, Testerman Memorial Merit Scholarship Endowment
- Fred & Ruth Brown Scholarship
- Grover C. Brown Memorial Scholarship
- Neil Mann Brown Scholarship in Agriculture
- Neil Mann Brown Scholarship in Architecture
- William Lester Brown Memorial Scholarship
- Pat and Frank Bryant Scholarship Fund
- William P. Brubaker Scholarship
- Calvin A. Buehler Chemistry Scholarship
- W. W. Burchfiel Scholarship
- Eleanor R. Burke Scholarship
- Jim Burke Estes Kefauver Memorial Scholarship Fund
- Captain Robert A. Burke Scholarship
- Burton Industries Foundation Scholarships
- Catherine Burton Chi Omega Scholarship Fund
- Catherine Burton Scholarship Fund
- C & M. Livestock Market, Inc. Agriculture Scholarship
- Nashville State Community College—Pub Well Reporting Scholarship Fund
- John L. Callaway Civil Engineering Scholarship
- Campbell County Agricultural Scholarship Fund
- Dick Campbell Student Coach Award
- Carter Award in Electrical Engineering
- Central State Bank of Lexington Scholarship
- Certified Public Accountants Scholarship
- Myron G. Chapman Scholarship
- Dean F. A. Chamblin MBA Fellowship Award
- Forest Industries Management
- Frank Chance Agriculture Scholarship
- E. J. Chapman Agriculture Scholarship
- E. J. Chapman Memorial Scholarship Fund
- Chattanooga Hotel-Motel Association Scholarship Fund
- George S. Child, Sr. Memorial Law Scholarship
- Lorraine Ani Robert Child Scholarship
- James A. and Virginia Childress Agricultural Scholarship Fund
- The Church Street Methodist Church Scholarship
- Edward C. and Catherine Dougherty Cifers Scholarship Endowment Fund
- Claiborne County Farm Bureau-Farmers Cooperative Scholarship Fund
- Bertha Walburn Clark Orchestral Instruments Scholarship
- W. C. Clay Agricultural Scholarship
- Frank G. Clement Foundation Mental Health Scholarship
- Jesse Daniel Cleet Memorial Scholarship
- Ltton T. Cochran Scholarship
- Cocke County Farm Bureau Agricultural Scholarship
- Cooke Farmers Coop Agriculture Scholarship
- Coffee County Alumni Scholarship Fund
- Guy Coheleach Conservation Fund
- Professor J. W. Cole Meat Scholarship and Award
- William Cole Scholarship
- William E. Cole Memorial Scholarship Fund
- College of Business Capital Gifts Scholarship
- CCBG Accounting and Business Law Scholarship
- CCBG Burlington Fellowship in Transportation
- CCBG Business Administration
- CCBG Department of Management
- CCBG Department of Statistics and Management Science
- CCBG Marketing and Logistics
- CCBG Transportation/Logistics
- The College of Education Alumni Scholarship Fund
- The College of Education Economics General Scholarship
- Colonial Baking Company Scholarships
- Conservation Education Workshop Scholarship
- Cookeville PCA Scholarship
- Common Carrier Conference Irregular Route Scholarship
- J. A. Cooley Memorial Scholarship
- CPA Women’s Auxiliary Scholarship
- Carl Cowan Scholarship
The University/Honors And Awards

Gordon A. Hawkins Memorial Loan Fund
Dr. and Mrs. Timothy Gower Student Loan Fund
Flora Crilla Hodge Memorial Loan Fund
J. E. Hogan Loan Fund
Ruth Hope Memorial Loan Fund
R. N. Kesterson Loan Fund
Knoxville Academy of Medicine Loan Fund
J. E. Lutz Memorial Loan Fund
Clarence H. Moody Loan Fund
Ise Moore Memorial Loan Fund
Phi Kappa Phi Loan Fund
Phi Mu Alumnae Association Loan Fund
Mary Plummer Memorial Loan Fund
Maudie Powell Student's Aid Fund
James H. Rader Memorial Loan Fund
Charles C. Rifford Loan Fund
William Rule Loan Fund
Senior Memorial Loan Fund, 1922
Senior Memorial Loan Fund, 1925
Sarah Hawkins Sevier Memorial Fund
James A. Shull Loan Fund
J. Alien Smith Students' Aid Fund
Southern Railway Loan Fund (William Wilson
Finley Foundation)
B. R. Strong Trust Fund
Students Loan Fund (Special)
Students Loan Fund of the Tennessee Banker's Association (Fred Collins
Memorial Fund)
Mary Boyce Temple Loan Fund
Williamson County Farm Bureau Scholarship
Nathaniel S. Woodard Memorial Loan Fund

Honors and Awards

The honors and awards available to students at UTK are listed with donors below; the right not to award any of the honors or awards listed herein is reserved to The University of Tennessee, Knoxville.

Dean's List. Public announcement of students passing a quarter's work "With Highest Honors" (grades from 3.80 through 4.0). "With High Honors" (3.65 through 3.79), "With Honors" (3.5 through 3.54). To be eligible, a student must complete at least 12 hours, not counting work taken on satisfactory/no credit basis.

Victor M. Davis Awards. Granted each year to juniors who demonstrate exceptional campus leadership.

College of Agriculture

The American Society of Agricultural Engineers each year selects an outstanding agricultural engineering student.

The American Society of Agronomy makes available a Certificate of Merit for an outstanding junior in the College of Agriculture junior initiates with the highest grade point averages.

The American Society of Animal Science awards scholarships annually to students who demonstrate leadership ability.

The Block and Bridle Club recognizes students in Animal Science who are successful in their academic program, have made unusual contributions to the club's program, and show evidence of leadership in their chosen field.

Jesse David Clett Memorial Scholarship.

The Danforth Foundation Inc. provides a fellowship to support two weeks of leadership training at Camp Minuwanna on the shores of Lake Michigan for an outstanding agricultural student following the freshman year.

Kentucky-Tennessee Society of American Foresters Scholarship.

M. Jacob Animal Husbandry Award. Given by East Tennessee Packing Company.

J. B. Madden Memorial Foundation Fund. Established by J. B. Madden family, for prizes in livestock judging contests.

Student-Faculty Council Awards. Each year the College of Agriculture Student-Faculty Council presents plaques to four seniors, three juniors, and two sophomores in the college judged to be outstanding. Selection is based on scholarship, character and demonstrated leadership ability. Plaques are also presented to the two students in each class with the highest scholastic averages.

Tennessee Poultry Improvement Board Awards. Awards to students competing in poultry and poultry products judging.

School of Architecture

General Shale Products Corporation Fellowship Fund.

Scholarships Awarded to scholarships outstanding fifth year students.

Goodstein, Hahn, Shorr & Associates Draftsmanship Award. Awarded each spring to architecture student excelling in draftsmanship.

Malcolm Rice Achievement Award. Awarded annually to the third-year student showing most improvement with design studies.

Mason Contractors Association Of Chattanooga Scholarship. Awarded to a fifth-year architecture student from Hamilton County, Tennessee, or if none exists, from a bordering county in the State of Tennessee.

Ray and Mary Evelyn Andrus Award. Awarded to outstanding student in design.

College of Business Administration

Beta Gamma Sigma Awards. Plaques and awards given to the freshman and sophomore students with highest grade point averages by this national business honorary society.

Delta Sigma Pi Scholarship Key. Given by international fraternity to male senior with highest four-year scholastic average.

Lisbon M. Fox Memorial Undergraduate Scholarship. Awarded annually to the rising sophomore who is being admitted to a major in the College of Business Administration.

John Fred Holly, Jr. A memorial scholarship endowed by parents.

Knoxville Sales Executive Club Award. Plaque plus dinner in student's honor, to outstanding senior marketing major.

John M. and Suzanne W. Larsen Phi Kappa Phi Scholarship Award. Awarded to the College of Business Administration junior initiates with the highest grade point averages.

John M. and Suzanne W. Larsen Beta Gamma Sigma Outstanding Male and Female Awards. Awarded to the male and female College of Business Administration junior initiates with the highest grade point averages.

James R. and Dorothy Newman Transportation Scholarship. Given by the family.

Fulton Beverly Moore, III Memorial Real Estate Scholarship. A memorial scholarship fund endowed by parents.

Omega Pi Sigma Scholarship Key. Key to senior business education major with highest junior/senior academic average.

Shelby Companies Foundation Scholarship/Transportation and Logistics.

Smoky Mountain Chapter of the Bank Administration Institute. Cash award to a junior or senior who is a resident of Tennessee and majoring in banking.

Tennessee Eastman Scholarship in Office Administration. Awards to undergraduate students only. Recipients shall be selected on the basis of academic excellence.

William Way, Jr., Memorial Award. Gold medal or key to senior transportation major with highest academic average.

Zeta Lambda Chapter of Alpha Kappa Psi, Professional Business Fraternity. Awards annually the Alpha Kappa Psi Scholarship Award to the male student pursuing a degree in business who has attained the highest scholastic average for three years of collegiate work at this University.

College of Communications

Advertising Club of St. Louis College Award Citation. Given to outstanding man and woman graduating in Department of Advertising.

Alcoa Foundation Scholarship. Given to an outstanding undergraduate planning a career in public relations.

Alcoa Foundation Minority Scholarship. Given to an outstanding undergraduate minority student in the College.

Karl and Madira Bickel Scholarships. Freshman Scholarships up to $1,000. Upperclass Scholarships up to $1,500. Doctoral Scholarships up to $4,000. Open to all students showing academic performance (3.0 or better), professional promise, and need.

Edward J. Meeman International Communications Fellowships. Up to $1,500 each, to two outstanding graduate students from other countries.

Greater Knoxville Advertising Club Scholarship Fund. Awarded to an undergraduate student not majoring in advertising.

Greater Knoxville Ad Club Award. Given to outstanding graduate in Department of Advertising.

Maryville-Alcoa Daily Times Scholarship in Advertising. Awarded to juniors or seniors majoring in advertising.

Maryville-Alcoa Daily Times Scholarship in Journalism. Awarded to seniors or juniors majoring in journalism.

Hoyt B. Wooten Award. Given by family. Plaque and basic broadcasting library awarded to the outstanding senior student in recognition of scholarship and broadcasting achievement.

Journalism Faculty Scholarship. Given to an outstanding major in the School of Journalism.

Myron G. Chambers Scholarships. Given by Scripps-Howard Newspapers. $1,000 total to one or more outstanding undergraduates in the Department of Advertising.

Pen Women of America Scholarship. Given by the Knoxville Branch to an outstanding junior journalism student who has shown promise as a writer.

Frank B. Powers Scholarship. Given by Scripps-Howard Newspapers to one or more outstanding undergraduates in the Department of Advertising.

Sammo Lyn Pueli Award. Given to outstanding student in the public relations sequence in the School of Journalism.

Tom Siler Scholarship. Given by East Tennessee Professional Chapter of The Society of Professional Journalists. Sigma Delta Chi, to outstanding student in the School of Journalism.

Society of Professional Journalists Scholarships. Given by East Tennessee professional chapter of Sigma Delta Chi to news-editorial journalism or broadcasting news/public affairs majors. Funds are raised by the chapter's annual Front Page Follies and presented in the names of Tom Siler and Escar Thompson, distinguished East Tennessee journalists.

Society of Professional Journalists, Sigma Delta Chi Outstanding Graduate Citation. Certificate given by professional journalism society to outstanding graduate.

Willie C. Tucker Scholarship Award. Given by Society
of Professional Journalists, Sigma Delta Chi. Silver bowl or key to graduating senior with highest academic average.

College of Education

Knoxville Branch of American Association of University Women Award. Membership to senior women selected on basis of scholarship and leadership qualities.

New Repertory Dance Company Scholarship Fund. Awarded to dance majors.

Pi Lambda Theta Fraternity Scholarship Key. Key, to junior woman showing most outstanding qualities for professional leadership in education, attaining high scholastic average through junior year.

College of Engineering

American Association of Cost Engineers Scholarship

American Chemical Society. East Tennessee Section of the American Society for the Promotion of Science. An award each year to an outstanding senior in chemical engineering.

American Institute of Aeronautics and Astronautics. Award of one-year membership made to a branch member whose performance has been outstanding.

American Institute of Chemical Engineers Professional Achievement Award. Given to chemical engineering senior who has contributed most to student chapter. Name engraved on permanent plaque. Also certificate.

American Institute of Chemical Engineers Scholaristic Award. Given to chemical engineering junior who attained highest scholastic average in first two years. Certificate and handbook.

American Society of Mechanical Engineers. Award and certificate presented each year to a member of the student section for outstanding contribution to the department and the University.

Allen R. Cox Memorial Scholarship

Albert S. Fry Memorial Scholarship. An annual cash award to a sophomore or junior in civil engineering based on scholarship and activity in the ASCE student chapter.

The Arthur Brownlow Wood Memorial Scholarship Fund. A cash award made annually to one or more outstanding students in engineering.

Association of Textile Industries Engineers Award. A cash award made annually to one or more outstanding students majoring in textile engineering.

J. Mac Tucker Outstanding Senior Award. Recognized by the Student Section of the American Society of Mechanical Engineers. An award each year to an outstanding senior in the Department of Mechanical and Aerospace Engineering. Award is based on leadership, scholarship, and service.

Jere B. Ford Memorial Scholarship. A minimum award of $1,000 presented annually by the Tennessee Roadbuilders Association to an outstanding civil engineering student.

Joel F. Bailey Award. Award by Tennessee Tau Eta Chapter of Tau Beta Pi to a student in mechanical and aerospace engineering graduating with the highest scholastic record.

Kimley-Horn Scholarship in Civil Engineering.

Proctor & Gamble Minority Chemical Engineering Scholarship Fund. Awards can be made to minority U.S. citizens for the general practice of law in Tennessee.

John Milton Snoddy Scholarship Endowment Fund. Cash award in recognition of scholastic achievement and evidence of high potential as a future civil engineer, to one or more upperclass civil engineering students as selected by the civil engineering faculty.

L. Raymond Shobe Excellence in Engineering Mechanics Award. Given annually to student with outstanding record of undergraduate study in engineering mechanics at UT. Letter, plaque.

Taju Beta Pi Outstanding Senior Award. Given by the Tennessee Alpha Chapter. Recognition of a senior in engineering who displays outstanding service, leadership, and scholarship. Name on plaque.

Texaco Philanthropic Foundation

University of Tennessee Book and Supply Store Award. An electronic calculator awarded quarterly. Chosen by departmental committees in rotation. Given to an upperclass student on the basis of need and demonstrated academic performance.

WATTeC UT Engineering Scholarship

College of Human Ecology

Akima Club Interior Design Scholarship. Awarded to student enrolled in interior design. In-state tuition.


Dorothy H. Barton Scholarship. Awarded to an outstanding junior. Variable.

Jack Daniel Distillery Scholarship. Awarded to student enrolled in the tourism, food and lodging administration program.

Frank and Ruth Liggett DeFriese Scholarship. Awarded to student enrolled in tourism, food and lodging administration program.

Howard Johnson's Scholarship. Awarded to student from Hawkins County.

Jack Daniel Distillery Scholarship. Awarded to student enrolled in the tourism, food and lodging administration program.

Irene Hill Greene and Condon L. Greene Memorial Scholarship Fund. Awards can be made to minority students on basis of financial need and promise for the general practice of law in Tennessee.

Dorothea H. Barton Scholarship. Awarded to an outstanding junior. Variable.

Holiday Inns, Inc. Tourism, Food & Lodging Scholarship Fund. Awarded to 10 students majoring in the four year B.S. program. Variable.

Hawkins County Farm Bureau. Awarded to a freshman from Hawkins County.

Howard Johnson's Scholarship. Awarded to student enrolled in tourism, food and lodging administration program.

Tennessee Howard Johnson's Scholarship. Awarded to student enrolled in the tourism, food and lodging program.

Greater Knoxville Hotel-Motel Association Scholarship. Awarded to student enrolled in tourism, food and lodging administration program.

Lewisohn Scholarships. Endowed by Frederick Lewisohn. Ten, variable.

D. Dwight McDonald Scholarship. Awarded to an entering freshman.

Memphis Hotel-Motel Association Scholarship. Awarded to student enrolled in the tourism, food and lodging administration program.

Nashville Hotel-Motel Association Scholarship. Awarded to student enrolled in the tourism, food and lodging administration program.

Nellie Crooks Award. Award of reference books and journals to an outstanding junior.

National Institute of the Foodservice Industry. Awarded to student enrolled in the tourism, food and lodging administration program.

Omicron Nu Sophomore Scholarship Award. Awarded by the home economics honor fraternity.

Roane County Council of Home Demonstration Clubs. Awarded to freshman from Roane County.

Schenley Industries Scholarship. Awarded to student enrolled in the tourism, food and lodging administration program.

Scruggs Restaurant Equipment, Inc., Scholarship. Awarded to student enrolled in tourism, food and lodging administration program.

Standard Textile Scholarship. Awarded to student enrolled in tourism, food and lodging administration program.

Stauffer Foundation Scholarship. Awarded to hospitality students throughout the United States.

Tennessee Chapter of Future Homemakers of America.

Tennessee Dietetic Association. Awarded to upperclass student enrolled in dietetics program.

Tennessee Rehabilitation Corporation Scholarship. Ten.

Tennessee Restaurant Association Scholarship. Awarded to student enrolled in tourism, food and lodging administration program.

University of Tennessee General Scholarships. Variable.

White Stores Scholarship. Awarded to an entering freshman.

College of Law

Callaghan and Company Prize. A copy of Brown on Personal Property to student who has attained the highest average during the junior year in the College of Law.

The Frank B. Creekmore Memorial Award. Established by the Creekmore family and friends in memory of Frank B. Creekmore, a prominent Knoxville attorney. The award is made annually to a second-year law student on the basis of financial need and promise for the general practice of law in Tennessee.

Herbert L. Davis Memorial Trust Fund. An award to the law student who has the highest scholastic average for the first two years of work in the College of Law.

Knoxville Auxiliary to the Tennessee Bar Association. An award to the law student who has the highest scholastic average in the first year of work in the College of Law.

Lawyers Cooperative Publishing Company and the Bancroft-Whitney Company. The joint publishers of American Jurisprudence offer separately bound topics from the encyclopedia to students receiving the highest grades in each subject.

Michie/Bobbs-Merrill Law Publishing of Charlottesville, Virginia. A prize copy of Tennessee Code Annotated awarded to the student who has attained the highest average during three years of study.

Cyril A. Soans Prize. A prize to be awarded for the best paper by a law student on a topic pertaining to the protection or regulation of intellectual property.

The Southern Title Insurance Company Real Property Prize. Offered annually by the Southern Title
Insurance Company to that student enrolled in the College of Law who submits the best Memorandum of Law and is selected by the Prize Committee of the College of Law faculty.

United States Law Week Award. An award consisting of a year’s subscription to the Law Week established by the students for the member of the senior class who makes the most scholarly progress during the senior year.

West Publishing Company Award. A title selected from its Hornbook Series. Offered annually to that member of each of three classes who achieves the highest academic average in the class.

West Publishing Company Award. A title selected from Corpus Juris Secundum. Offered annually to that member of each of the three classes who has made the most significant contribution toward overall legal scholarship.

College of Liberal Arts
John M. Allen Mathematics Prize. Medal, to outstanding graduate in Pure Mathematics, determined by competitive examination covering material found in the following courses: Mathematics 1540-50-60, Mathematics 1540-50-60, and Mathematics 2540-55-56.

Bain-Swiggart Poetry Prize. For excellence in writing in conventional forms of English poetry.

Phi Sherman Bennett Prize. Established by the late Hon. William J. Bryan, cash award to student submitting best essay discussing principles of free government.

Biologia Award. Plaque, to the outstanding biology senior.

Eleanor R. Burke Award. For excellence in exposition writing, Founded in honor of the daughter of a former head of the English department.

Captain Robert A. Burke Award. For excellence in English prose fiction. Founded in honor of the son of a former head of the English department.

Chi Omega Prize. Given by Pi chapter of sorority to the senior woman majoring in the social sciences, who has the greatest proficiency in the subject.

Dorothy and Edgar D. Eaves Outstanding Teaching Award and Summer Fellowship Awards. Awarded each year to the G.T.A. in mathematics with previous teaching experience who is nominated the outstanding teacher of the year in his or her group. Award of $50 each year to beginning G.T.A. in mathematics who is named the outstanding teacher of the year in his or her group. One or more awards are made to qualified high school teachers who wish to continue their training in mathematics by attending summer school at UT K.
Gamma Sigma Delta, agricultural honorary society for undergraduate seniors, graduate students, faculty, and agricultural alumni. Seniors selected must be in the upper one-fourth of their graduating class in the College of Agriculture with at least a 3.0 average. Graduate students must have attained at least a 3.5 average in at least 24 hours toward the advanced degree. They must have shown promise or superior ability in carrying on advanced study and/or research directly concerned with agriculture and of making worthy contributions to their respective fields.

Gamma Theta Upsilon, honor society for students majoring in geology.

Golden Key National Honor Society National scholastic honor society for students in all fields of study. Induction is held in the fall for invited students who have completed at least 30 hours of University work and a minimum 3.2 GPA. Senior candidates must rank in the upper one-fourth of their class, with a minimum 3.0 average.

Iota Lambda Sigma, for industrial education students. No one may be initiated until he has acquired a minimum of 9 hours of industrial education courses with at least a 3.0 average.

Kappa Delta Pi, honor society for professionals and students in education. A minimum 3.5 grade point average is required. The society recognizes outstanding contributions to field of education. Membership is by invitation.

Mortar Board, for senior students. Members are elected from students with a minimum 3.0 average for nine quarters of University studies.

National Slavic Honor Society (Dobro Slov), for students in their third year of study of Slavic literature, culture, or related subjects with a minimum average grade of 85 percent or its letter or point equivalent in the subject area and an 80 percent overall average. Members are chosen from the undergraduate and graduate students and faculty of the institution.

Omicron Delta Epsilon, honor society in economics for students and faculty. Student members must have a minimum 3.0 overall average.

Omicron Delta Kappa, for junior and senior students.

Omicron Nu, for home economics students. Members are elected from the upper one-fourth of the senior class and upper one-fifth of the junior class, not to exceed 20 percent of any given class.

Order of the Coif, for law students.

Phi Alpha Delta, for law students.

Phi Beta Lambda professional fraternity for students enrolled in the College of Business Administration. Prospective members must be enrolled in at least two courses in the college with a minimum of 2.2 overall average.

Phi Beta Kappa, the oldest national academic honorary society, for liberal arts juniors and seniors who are candidates for either the Bachelor of Arts or the Bachelor of Science in Chemistry degree. Grade point average varies with number of hours completed; minimum is 3.50. At least 90 hours must have been earned at UTK. Students must have completed the second college year course (or equivalent) in a foreign language. Election takes place in October and April. For detailed statement of requirements, inquire in Liberal Arts Student Academic Affairs Office, 218 Ayres Hall.

Phi Chi Theta, professional fraternity for women interested in education. Any female student enrolled in the College of Education is eligible to receive the benefits by maintaining a minimum GPA of 3.0 in Education courses.

Phi Delta Kappa, honorary professional fraternity in education connected with approved colleges and universities of graduate rank maintaining schools, colleges, or departments of education pursuing excellence in service, teaching, and research.

Phi Delta Phi, for law students.

Phi Eta Sigma, for freshmen who have a minimum grade point average of 3.5, the first quarter or first three quarters while carrying a full academic load. All candidates must rank in upper 20 percent of their respective class.

Phi Kappa Phi, broadest of the national honor societies, recognizing all fields of learning. Prospective members must be seniors ranking among the upper 10 percent of their class, with a minimum 3.0 average. Meeting these requirements does not necessarily assure election.

Pi Delta Phi, for French students. Prospective members must have a minimum B-minus average in all French courses taken.

Pi Kappa Lambda, for students in music and music education.

Pi Lambda Theta, a national honor and professional association in education. Open to juniors and seniors with a minimum 3.2 GPA and graduate students with a minimum 3.5 GPA. Membership is by invitation.

Pi Sigma Alpha, for political science students and faculty. Student members are elected solely on the basis of scholarship.

Pi Tau Sigma, for mechanical engineering students. Prospective junior members must rank in the upper one-fourth, and senior members in the upper one-third of their respective mechanical engineering class.

Scabbard and Blade, military science honor society for upperclassmen.

Scrabblen Senior Society, local society for students and faculty. Membership is by invitation.

Sigmas Alpha Iota, professional music fraternity for women interested in music. A 2.5 overall average is required.

Sigmas Delta Chi, professional journalism society. Active membership shall be limited to journalism and broadcasting majors having at least a 2.3 overall grade average and having completed at least 45 hours.

Sigmas Delta Pi, for Spanish students. Prospective members must have a minimum 3.75 average in all University work and a minimum 3.2 average in Spanish and must have completed a junior year in Spanish literature or be registered in the last term of such a course.

Sigmas Gamma Epsilon, honor society for students in earth sciences. Membership is by invitation, based on scholarship and interest.

Sigmas Pi Sigma, physics honors society for upperclass and graduate students, faculty members, and qualified alumni.

Sigmas Theta Tau, national nursing honor society for those students who have demonstrated outstanding scholarship, achievement, professional leadership potential, and/or marked achievement in the field of nursing. Undergraduate students having completed at least two quarters in the upper-division curriculum with a 3.0 average are eligible for membership, as are graduate students who have completed one-half the master's program with a 3.25 average.

Sigma XI, scientific research society for advanced graduate students and faculty. Prospective members must have shown noteworthy achievement as original investigators in the pure or applied science fields. Exceptionally brilliant and promising undergraduate and graduate students may be elected to associate membership.

Tau Beta Pi, national honor society for engineering students. The top one-eighth of the junior engineering class and the top one-fifth of the senior engineering class, scholastically ranked, may be elected. Elections are held in the fall and winter quarters. The organization conducts programs and projects of benefit to students and the University.

Torchbearers epitomize the finest qualities of The University of Tennessee student. Each year the seniors who have contributed the most to the University during their college careers are selected as Torchbearers. Selection is based on scholarship, activities, character, and service.

Xi Sigma Pi, forestry honor society for upperclass and graduate students, faculty members, and persons who have attained a national reputation in forestry. Students must have completed 110 quarter hours of credit, including 15 hours in professional forestry courses. When practical, initiates are selected during the junior year to provide the greatest degree of benefits of active membership.

**Student Affairs and Services**

**Career Planning and Placement Service**

The Career Planning and Placement Service assists students in assessing career alternatives and in making a successful transition from The University to the world of work. The Service is well-staffed and well-equipped to provide individualized and group assistance to UTK students. The Service is especially well-known for offering effective placement help by means of campus recruiting, job referrals, and other sources of job contacts.

Included in the specific programs offered at Career Planning and Placement are, DISCOVER, a computer aided career guidance system to help answer questions like "What can I do with my major?"; CAREER PLACEMENT NEWS, A 10-hour seminar on Career Decision-Making to assist in choosing a major area of study; CAREER LIBRARY, Books, magazines, articles, brochures, videotapes, and job newsletter; career related; CAREER CONNECTIONS, A comprehensive career newspaper published each fall, with the latest news relating to the job market; CAREER FOCUS, Panel discussions of recruiters discussing specific areas in the job market; COOPERATIVE EDUCATION, Opportunities for alternating quarters of school and full-time work experience; CAREER CARNIVAL, An annual career fair providing a great opportunity to speak informally with representatives from 80-100 different companies about their entry level jobs and hiring practices; SUMMER JOBS, A Summer Job Fair, held in Winter quarter. A weekly summer and job newsletter is printed in winter and spring and sent to interested students; CREDIT COURSES, Take a course, identify career goals, learn effective job seeking methods and prepare for your career while receiving an hour credit; COUNSELORS, Opportunity to talk to a counselor concerning a choice of electives, career planning, resume critique, or for job-seeking assistance; FOOTWORK, A program permitting students to interview professionally in career fields they are considering. Over 200 professionals are available through this program to discuss their careers with students; EMPLOYER INFORMATION, One can read information on hundreds of companies that recruit at UT. Learn about types of majors sought, departmental units, job descriptions, career profiles, annual reports, and other pertinent information; WORKSHOPS, Instruction in the secrets to successful interviewing, resume preparation, and other topics; ON-CAMPUS INTERVIEWS, Attend an orientation workshop as a third-quarter junior to register for on-campus interviews during your senior year. Over 12,000 interviews are scheduled each year with approximately 350 different companies; JOBS NEWSLETTER,
Hundreds of job openings, published biweekly—one newsletter for positions in education and business; another for industry, and government; and, ALUMNI CREDENTIAL SERVICE. Sign up for assistance in the job search after your degree work is finished. Available even years after your graduation.

For information regarding Career Planning and Placement Services call 974-5435.

Handicapped Student Services

The Office of Handicapped Student Services provides counseling and academic support services to insure that handicapped students have access to educational opportunities provided at the University of Tennessee. Any student having a disability which restricts his/her participation in academic life is eligible for services. Services provided include personal and career counseling, interpreters, reader referral, and other services designed to meet the student’s individual needs. Assistance is available for making arrangements for special in-class assistance. Information regarding transportation and housing is provided. The office serves in a liaison capacity with the Tennessee Office of Vocational Rehabilitation. Registration and other forms of administrative assistance and academic support are provided through the Office of the Dean of Admissions and Records.

Participation in the services program is on a voluntary basis; confidentiality is maintained. Students desiring any services are encouraged to contact the Office of Handicapped Student Services so that any necessary arrangements can be made. The office is located at 900 Volunteer Boulevard. Phone number: 974-6087.

The Educational Assistance Program

The Educational Assistance Program (EAP) is a federally funded project (Special Services for Disadvantaged Students) designed to help freshman and sophomore students who may, because of previous academic weaknesses or disadvantages, have difficulty in achieving academic success during their initial University experience. The program offers specially designed courses in mathematics, biology, English, and educational psychology. The courses function in such a manner that each student receives individual help and is given every opportunity for success. The opportunities include small classes, the availability of the professor for individual help, special help sessions, individual and small-group tutors, self-paced courses, individual academic advising each quarter, and both academic and personal counseling services. In addition, the EAP staff attempts to serve as liaison for the student in any area of University experience in which the student needs help.

The offices of the program are located on the second floor of the Student Counseling Center at 900 Volunteer Boulevard. Phone number: 974-6087.

Black Cultural Center

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

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

Minority Student Affairs

The Office of Minority Student Affairs is designed to enhance the quality of life for Minority Students. Working in conjunction with other campus and community groups, the office helps identify, encourage, and assist students who have academic potential and motivation to develop their talents at UTK.

Housed within the Black Cultural Center, the office furnishes information about educational, employment, and financial assistance opportunities, offers tutorial services and career development programs.

The office is located at 812 Volunteer Boulevard.

Student Orientation Office

This office is dedicated to helping the new student adjust to the university setting, concerning itself with general, personal, and scholastic difficulties of the student during the first year of enrollment on the Knoxville campus. The office is responsible for the summer orientation program, specifically designed for the fall-quarter new student, as well as orientation programs for freshmen and transfer students presented prior to the beginning of each quarter.

Student Conduct Office

This office is concerned with the individual rights and responsibilities of students. The personnel of this office serve as advisors to the student judicial system and, when necessary, initiate appropriate discipline proceedings.

Center for International Education

International students interested in applying to UTK should consult the requirements listed on p. 12 of this Catalog, or for graduate studies, the Graduate Catalog.

The Center for International Education (CIE), 201 Alumni Hall, assists students and faculty from other countries with matters of particular concern to them during their stay in the United States. CIE provides advice concerning visas and with the U.S. Immigration and Naturalization Service. The Center is the University’s official representative to INS, to international educational organizations and to foreign governments. It maintains records on all UTK-related U.S. visa holders.

The CIE is a liaison with international students and scholars and the faculty and other University units. It is eligible to try out. Additional information can be obtained by writing to the Director of Women's Athletics. Phone number: 974-5415

Women's Center

The Women's Center is the coordinating unit for women's programs on the Knoxville Campus. It functions as a resource center for all University departments and organizations in the areas of women's programs and activities. The Center's primary objectives are the development of programs for women, the collection of media resources about women, and comprehensive information exchange service regarding women's activities through UTK. The Women's Center is located in 301 University Center.

Intercollegiate Athletics for Women

This department is responsible for the organization and operation of women's athletic teams at The University of Tennessee, Knoxville. Presently, there are seven varsity teams for women—basketball, cross country, swimming/diving, tennis, volleyball, and indoor and outdoor track and field. The program is under the direction of the National Collegiate Athletic Association and the Southeastern Conference with teams competing in SEC Championships and the NCAA National tournaments. Teams abide by all NCAA and SEC rules in regard to scholarships, recruiting, safety, and eligibility. Any full-time female undergraduate student is eligible to try out. Additional information can be obtained by writing to the Director of Women's Athletics. Phone number: 974-5415.
Student Health Service

Health services provided by the University are available to any student who has paid the health fee (either through paying the full University Programs and Services Fee or, if taking fewer than 9 hours, paying the option- al health fee). These out-patient services are available continuously throughout every quarter.

The Health Service has a regular staff of professional physicians, nurses, laboratory, and x-ray technicians of Tennessee licensure. Outpatient services in the fields of general practice, internal medicine and psychiatry are available on a full-time basis while specialty consultants in urology, surgery, and gynecology are available on campus through referral by a staff physician. Care beyond that provided by the regular staff can be arranged for the student if desired. Those students requiring allergy injections may arrange to receive them at the Clinic.

Virtually all medical services at the campus clinic are provided to eligible students at no additional cost while charges are made for services such as x-rays, lab tests, and injections received through the evening/weekend clinic at The University Of Tennessee Memorial Hospital.

The primary clinic at 1818 Andy Holt Avenue maintains scheduled daytime hours Monday through Friday. Emergency care during evenings and weekends is available through the emergency room. Ambulance and transportation service for the campus is provided by the Campus Police.

Appointments for consultation are generally admitted by an appropriate specialist at The University of Tennessee Memorial Hospital unless other arrangements are desired. Since inpatient care is sometimes necessary, it is important for the student to have hospitalization insurance. Student group health insurance is available and may be purchased during a designated period at the beginning of each quarter.

The Health Service personnel will cooperate with students and family physicians in ensuring the continuity of quality health care during the university career.

Student Counseling Services Center

The Student Counseling Services Center provides services designed to help students with educational, vocational, personal, and social problems. Professional counselors work with the student in a setting that allows confidential discussion of the student's concerns. The student may concentrate on a specific problem or may work on the general adjustment to academic life. Various groups are employed to meet the developmental needs of the student. These group settings provide the opportunity to share and learn from others and/or improve specific skills. Psychological tests may be used for self-evaluation. Also, an information library is maintained.

The Center also works with the faculty and student personnel staff to develop educational programs and projects to meet the needs of various groups at the University. The Student Withdrawal Office, located in the Center, handles the withdrawals of all students from the University.

All students, student spouses, and to a limited extent, pre-college students are eligible for counseling and services of the Center. Appointments for counseling may be made by phone or in person at the Student Counseling Services Center at 900 Volunteer Boulevard.

Student Rights and Responsibilities

By registering in the University, the student neither loses the rights nor escapes the duties of a citizen. Enjoying greater opportunities than the average citizen, the University student has greater responsibilities. Each student's personal life should be conducted in a context of mutual regard for the rights and privileges of others. It is further expected that students will demonstrate respect for the law and for the necessity of orderly conduct in the affairs of the community.

Students are responsible for being fully acquainted with the University catalog, handbooks, and other regulations relating to students and for complying with them in the interest of an orderly and productive community. The student handbook, Hilltopics, is published and distributed annually so that students are aware of the University Standards of Conduct and all disciplinary regulations and procedures.

Since conduct and actions will be measured on an adult standard, students should understand that they assume full responsibility for the consequences of their actions and behavior. The academic community will be judged in large measure by the actions of its members. Therefore, it is incumbent upon students to include the implications for their community in their criteria for determining appropriate behavior.

Failure or refusal to comply with the rules and policies established by the University may subject the offender to disciplinary action up to and including suspension from the University.

Religious Resources

The University, established by a government that recognizes no distinction among religious beliefs, seeks to promote no creed nor to exclude any. However, it will always be diligent in promoting the religious spirit and life of its students.

CHURCH CENTERS

Church centers are maintained on or adjacent to the campus for University students. These are the Baptist Student Center, John XXIII Catholic Center, Presbyterian Student Center, Tyson House (Episcopal), Lutheran Student Center, Wesley Foundation (Methodist), Hilliel Foundation, Christian Student Center, and Christian Student Fellowship.

Student Organizations

On the University campus there are a large number of student chapters of professional organizations, special interest clubs, and other extracurricular organizations. These organizations and clubs provide broad opportunities for student participation.

A full listing of all student organizations on the campus will be found in Hilltopics. All of these clubs and organizations are under the general supervision of the Student Activities Office.

Ombudsman Office

Personnel of the Ombudsman Office in the University Center assist students in the resolution of problems encountered with any aspect of the University. The office is open during the regular working day and students are welcome to drop in at their convenience. Problems are treated confidentially and are dealt with expeditiously. This office supplements existing appeals channels and actively seeks better ways for the University to service student needs.

Writing Laboratory

To aid students in regaining and improving their skills in writing, the University operates a Writing Laboratory. Students who have successfully completed the English Composition sequence may voluntarily visit the Laboratory at any time for diagnostic help with their writing problems.

Hearing and Speech Services

The Hearing and Speech Center, located at the corner of Yale Avenue and Stadium Drive, offers complete diagnostic and therapeutic services to all University students with hearing and/or speech problems. There is no charge for services to University students.

The Center serves as clinical observation and training facility for students majoring in speech and hearing disorders. It also serves as a community Hearing and Speech Center, providing diagnostic and therapy services for speech, language and hearing disorders for persons of all ages who have been referred to the Center.

Services Provided to Handicapped Students

Services relating to academic programs for students with physical disabilities, whether permanent or temporary (due to sickness or accident), are coordinated by the Office of the Dean of Admissions and Records, 305 Student Services Building. In conjunction with the Office of Handicapped Student Services, the Office of Residence Halls, the Physical Plant Office, the U.T. Bookstore, the Student Activities Office, and the academic departments, efforts are made to insure that attendance at The University of Tennessee, Knoxville, is as convenient as possible for students with physical disabilities.

These services include assistance during registration (preregistration, collection of class schedules, payment of fees, drop and add); the adjustment of schedules to assure classroom accessibility; the securing of special parking permits, elevator keys, tickets for special events; and similar efforts to relieve the special mobility problems of the students. The Physical Plant Office coordinates efforts to eliminate physical barriers to the degree possible, with priority being given to access and facilities for academic buildings.

Vehicle Operation and Parking

The University of Tennessee endeavors to
provide adequate traffic control and parking facilities for vehicles being operated by students and staff. The parking lots, located on the perimeter and throughout the Main Campus and Agriculture Campus; and enroute, buses travel by the perimeter areas near Lake Loudoun Blvd. Faculty and staff parking area is located throughout the campus. See copy of UTK parking map.

Each person who operates a motor vehicle in connection with attendance or employment at the University must register that vehicle with the Traffic Section of the Security Department. THERE IS NO CHARGE FOR VEHICLE REGISTRATION; however, a parking permit is required for parking on all University lots, streets, parking structures, or leased lots with the following exceptions:

1. Staff and students with current UTK motor vehicle registration stickers on their vehicles may park in any unreserved staff area (except those around residence halls) between the hours of 10 PM and 7 AM, Monday through Friday, and 12 Noon Saturday to 7 AM Monday; however, general parking is permitted in staff areas around the residence halls from 5 PM to 7 AM.

2. Staff and students with current UTK parking permits may park in unreserved staff areas around the academic buildings from 5 PM to 7 AM.

3. Overnight parking is not permitted in the Student Aquatic Center parking area nor in Student Commuter parking areas.

4. At times, certain areas will be reserved for parking for special events, such as athletic events. Parking for these events will be by special parking permit for the specific event.

The University of Tennessee Traffic and Parking Authority determines the traffic and parking policy on the Knoxville Campus. Traffic and parking regulations are published each year, and copies of these regulations are available when students and staff register their vehicles. Additional copies may be obtained from the Traffic Section of the Security Department at 1115 UT Drive or at the Campus Information Center at the entrance to Circle Park.

Cultural Opportunities

Both the University and the surrounding Knoxville area offer varied cultural opportunities. Exhibits, concerts, recitals, and lectures as well as plays are available throughout the year.

THEATRE

The UT Theatres, under the aegis of the Department of Speech and Theatre, present several series of plays in three adjoining, excellently equipped theatres: The Clarence Brown Theatre (600 seats), Laboratory Theatre (150 seats), and the Carousel Theatre (400 seats). Productions range from one-night presentations to complete three-art operas with symphonic accompaniment, and from television opera to selected scenes from the classic repertory.

The McClung Museum

Officially dedicated in 1983, the McClung Museum is actively involved in the collecting, preservation, and exhibition of objects in the fields of anthropology, archaeology, decorative and fine arts, geology, local history and architecture, and natural history. Temporary and permanent exhibits are presented on those subjects. The Eleanor Deane Audigier Art Collection exhibition features a selection of originals and copies of art objects from various periods through the turn of the century. The collection was presented to the University by Louis Bailey Audigier in memory of his wife. Archaeological specimens, some as old as 12,000 years, that have been removed from the University’s extensive excavations in the Tennessee River Valley are included in a major exhibit in the Main Gallery. In the Green Memorial Room are exhibits on the history of Knoxville, the University and East Tennessee. Changing temporary lobby exhibits and other exhibits in the Museum are installed throughout the year.

ART

Art exhibitions of international, national, regional, and local artists and craftsmen are sponsored on a regular basis by the UTK Department of Art in the galleries of the Art and Architecture Building.

Arrowmont School of Arts and Crafts, Gatlinburg, Tennessee, displays works by faculty and students during the summer months.

Christmas Art Sale is an annual event sponsored by the Department of Art and held in the Art Gallery of the Museum in early December. Students, faculty, and regional artists display modestly priced works for purchase in time for Christmas. Numerous art exhibitions are scheduled in the Art Gallery throughout the year.

Ralph E. Dunford Art Collection and the Marian G. Heard Crafts Collection are housed and exhibited in the University Center. These collections are supplemented each year with purchases made possible through student programs. Acquisitions of quality works by area artists are emphasized by the selection committee.

MUSIC

UT Choral Groups consist of Concert Choir, University Chorus, Chamber Singers, and UT Singers. These choirs are open to all students by audition, except University Chorus which does not require auditions.

UT Singers are known as the University’s "Good Will Ambassadors." Among the many projects of this group are the annual statewide tour each spring and tours abroad on alternate years.

UT Opera Theatre and Workshop presents three productions yearly. The varied program of operatic music ranges from one-act complete three-art operas with symphonic accompaniment, and from television opera to selected scenes from the classic repertory.

UT Symphony Orchestra plays several concerts on campus yearly as well as serving as orchestra for opera and choral productions.

UT Bands: UT’s marching band, celebrated as "The Pride of the Southland," presents outstanding entertainment on football Saturdays at both home and out-of-town games.

During winter and spring quaters, the band is divided into two concert groups which tour the South: a variety pep band that performs at basketball games, and the laboratory group which provides valuable training for its members.

Requests for information on scholarships and memberships should be sent to the Director, Pride of the Southland Band.

Fine Arts Presentations, scheduled under the auspices of the Department of Music, consist of a series of Faculty Recitals which feature vocal and instrumental music, and student Recitals presented by upperclass and graduate members of the music department in partial fulfillment of degree requirements, and concerts by the Bands, Symphony Orchestra, Jazz Ensemble, Percussion Ensemble, and small ensembles.

The Scottish Rite Masonic Chair of Choral Art brings to the University of Tennessee campus a distinguished conductor and/or composer in the field of choral music who serves as a guest lecturer for workshops sponsored by the Department of Music.

The Grace Moore Collection. After the death of opera star Grace Moore, a native of East Tennessee, her family donated to the University a large collection of memorabilia which is viewed by appointment at the Frank H. McClung Museum.

CONCERTS

There are two committees on campus charged with the responsibility of providing the University community with the finest names in popular and cultural programs.

Campus Entertainment Board. This student and staff committee has the exclusive responsibility to sponsor popular entertainment on campus through its major concert series and the presentation of other concerts at various locations across the campus.

Cultural Attractions Committee. A student, faculty, and staff committee, this group is responsible for the presentation of programs in the arts to include dance, music, and theatrical production.

LECTURES

Each quarter the Issues Committee presents programs around a current theme. The programs feature speakers who are considered experts and represent diverse points of view on a variety of topics.

BROADCASTING

WUOT, operating on 91.9 mhz. from Knoxville, and WUTC, operating on 88.1 mhz. from Chattanooga, serve the public radio needs and interests of people in East Tennessee with cultural, informational, and
<table>
<thead>
<tr>
<th>Area of Information or Question</th>
<th>Contact</th>
<th>Telephone</th>
</tr>
</thead>
<tbody>
<tr>
<td>University admission requirements</td>
<td>Admissions Office</td>
<td>(615) 974-2184</td>
</tr>
<tr>
<td>Application forms</td>
<td>320 Student Services Building</td>
<td></td>
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<tr>
<td>Transfer credit evaluation</td>
<td></td>
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<tr>
<td>Residency classification</td>
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<tr>
<td>Fee information</td>
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<tr>
<td>International student requirements, services</td>
<td>Admissions Office</td>
<td>(615) 974-3177</td>
</tr>
<tr>
<td></td>
<td>Office of International Student Affairs</td>
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<tr>
<td></td>
<td>201 Alumni Hall</td>
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<tr>
<td>College association requirements, courses, programs</td>
<td>Refer to Table II</td>
<td></td>
</tr>
<tr>
<td>Veteran's Affairs</td>
<td>Veteran's Benefits</td>
<td>(615) 974-2103</td>
</tr>
<tr>
<td></td>
<td>209 Student Services Building</td>
<td></td>
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<tr>
<td>Transcript of previous work at UTK</td>
<td>Registrar—Transcripts</td>
<td>(615) 974-2101</td>
</tr>
<tr>
<td>Financial aid, loans, work-study, student employment, scholarships</td>
<td>Financial Aid Office</td>
<td>(615) 974-3131</td>
</tr>
<tr>
<td></td>
<td>115 Student Services Building</td>
<td></td>
</tr>
<tr>
<td>Readmission of former UTK students (absent for one or more quarters except Summer)</td>
<td>Readmissions Office</td>
<td>(615) 974-4379</td>
</tr>
<tr>
<td></td>
<td>212 Student Services Building</td>
<td></td>
</tr>
<tr>
<td>Handicapped students' facilities, programs, services</td>
<td>Dean of Admissions &amp; Records Office</td>
<td>(615) 974-2105</td>
</tr>
<tr>
<td></td>
<td>305 Student Services Building</td>
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<tr>
<td></td>
<td>Handicapped Student Services</td>
<td>(615) 974-6087</td>
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<tr>
<td></td>
<td>900 Volunteer Boulevard</td>
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</tr>
<tr>
<td>Single student on-campus housing</td>
<td>Single Student Residence Halls</td>
<td>(615) 974-3411</td>
</tr>
<tr>
<td></td>
<td>405 Student Services Building</td>
<td></td>
</tr>
<tr>
<td>Married student housing</td>
<td>Married Students Housing</td>
<td>(615) 974-3431</td>
</tr>
<tr>
<td></td>
<td>107 South Stadium Hall</td>
<td></td>
</tr>
<tr>
<td>Off-campus housing opportunities in non-university property</td>
<td>Off-Campus Housing</td>
<td>(615) 974-5276</td>
</tr>
<tr>
<td></td>
<td>336 University Center</td>
<td></td>
</tr>
<tr>
<td>Evening school schedules, registration</td>
<td>University Evening School</td>
<td>(615) 974-5361</td>
</tr>
<tr>
<td></td>
<td>451 Communications and University Extension Building</td>
<td></td>
</tr>
<tr>
<td>Correspondence courses, CLEP tests</td>
<td>Center for Extended Learning</td>
<td>(615) 974-5135</td>
</tr>
<tr>
<td></td>
<td>420 Communications and University Extension Building</td>
<td></td>
</tr>
<tr>
<td>Orientation sessions for new students, tutors, general information</td>
<td>Orientation Office</td>
<td>(615) 974-2435</td>
</tr>
<tr>
<td></td>
<td>412 Student Services Building</td>
<td></td>
</tr>
<tr>
<td>ACT, GED testing; vocational and psychological counseling</td>
<td>Student Counseling Services Center</td>
<td>(615) 974-2196</td>
</tr>
<tr>
<td></td>
<td>900 Volunteer Boulevard</td>
<td></td>
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<tr>
<td>Graduate programs, courses at UTK</td>
<td>The Graduate School</td>
<td>(615) 974-3251</td>
</tr>
<tr>
<td></td>
<td>218 Student Services Building</td>
<td></td>
</tr>
<tr>
<td>Admission to units of the University of Tennessee Center for Health Sciences in Memphis (refer to Health Sciences Catalog)</td>
<td>Director of Admissions</td>
<td>(901) 528-5500</td>
</tr>
<tr>
<td></td>
<td>The UT Center for the Health Sciences</td>
<td></td>
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<tr>
<td></td>
<td>62 South Dunlap Street</td>
<td></td>
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<td></td>
<td>Memphis, TN 38103</td>
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</tr>
</tbody>
</table>
TABLE II
TERMS COMMONLY USED IN ADMISSION AND REGISTRATION PROCEDURES AT UTK

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admission</td>
<td>The process of being admitted to UTK as a university student with the opportunity to take classes. (See page 11)</td>
</tr>
<tr>
<td>Association</td>
<td>The process of acceptance of an admitted student into a particular academic degree program of a college or school at UTK. (See page 14)</td>
</tr>
<tr>
<td>Progression</td>
<td>An internal evaluation process in some colleges or degree programs by means of which an associated student's academic standing is examined to determine if prior work is complete and if the student should proceed towards completion of the remaining degree requirements. The most common evaluation point is at the end of the sophomore year.</td>
</tr>
</tbody>
</table>
| Lower division        | 1. A course normally taken during the freshman and sophomore years. In the UTK courses numbering system, lower division courses carry 1000 and 2000 numbers (see page 20). Credit for lower division courses completed at another institution may be labeled "LD credit."  
2. A term referring to a student’s location in the progression of coursework leading to an undergraduate degree and implying freshman or sophomore classification. |
| Upper division        | 1. Courses normally taken during the junior and senior years (3000 and 4000 numbers at UTK). A student taking primarily junior and senior courses is said to be an upper division student. Credit for upper division courses may be labeled "UD credit" on a transfer evaluation.  
2. The state of being classified as a junior or senior. |
<p>| Add deadline          | The latest date in an academic quarter at UTK when a course may be added to a student’s class schedule without approval of someone other than the student (exception: when the additional hours produce an academic overload, see page 19). |
| Drop deadline         | The latest date in an academic quarter at UTK for removing a course from a student’s official course schedule without approval of someone other than the student (see page 19). |
| Curriculum            | The set of courses offered in a particular degree program. More generally, the courses (in total) offered in a college or university. The plural word is curricula. |
| Prerequisite           | A requirement to be completed (or a level of skill or knowledge to be demonstrated) before enrollment in a course, a degree program, or association with a college. |
| Corequisite           | A course to be taken or a requirement to be fulfilled at the same time as a particular course is being taken. |
| Application deadline  | The date which all documents required for the admissions file of a prospective student must be received by the UTK Admissions Office (see page 13). |
| Admissions file       | The set of documents related to a request for admission to UTK. The set contains the application form and official transcripts of previous work in high school or college and may contain standardized test scores (ACT for freshman applicants), a statement of career objectives, forms for international students, or other information required by the Admissions Office or by a particular college or school. |
| Registration          | The process of officially gaining entrance into one or more courses.                                                                      |
| Orientation           | A meeting (or series of meetings) designed to acquaint a new student with the facilities, policies, sources of information and assistance, and academic and social atmosphere of UTK. |
| Quarter hour          | The unit of academic credit at UTK (see page 17).                                                                                       |
| Semester hour         | A unit of academic credit used in the UT Law College and at many colleges and universities. Three quarter hours is equivalent to two semester hours. |
| Academic load         | The total quarter hours of credit for all courses taken during a specified time—quarter, mini-term, semester.                               |
| Full-time             | One who is registered for 12 quarter hours or more during a quarter.                                                                   |
| Quarter               | The division of the calendar year used in academic scheduling at UTK. A quarter is roughly 3 months in duration. More specifically, courses normally last for approximately 11 weeks. |
| Quality points        | UTK compiles academic performance records through use of a scale assigning 4 &quot;quality points&quot; per quarter hour of credit for an &quot;A&quot; grade ranging to 1 quality point per quarter hour of credit for a &quot;D&quot; grade (see page 17). |</p>
<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade point</td>
<td>An average on the 4-point scale determined by dividing the total accumulated quality points by the corresponding total of quarter hours of credit attempted. Certain grades do not influence this computation (see page 17). High schools have a similar procedure for computing an average on the numerical grading scale (often abbreviated as HSGPA).</td>
</tr>
<tr>
<td>AP exam</td>
<td>An Advanced Placement Examination in a specific subject area available nationally to high school students from the College Entrance Examination Board (CEEB). Obtain information on taking the examination from a high school guidance counselor. Information on UTK course credit for these examinations is available from the Admissions Office. (See page 12.)</td>
</tr>
</tbody>
</table>
| CLEP test                                 | Subject area examination administered by the College Entrance Examination Board. Details and comparisons with the AP exam can be obtained from:  

   The College-Level Examination Program  
   Box 1821  
   Princeton, NJ 08540

Refer to page 22 for statements on acceptance of CLEP text scores for academic credit at UTK. |
| Proficiency exam                           | A test given to a student admitted to UTK to evaluate knowledge or skills normally acquired through completion of a particular UTK course. Refer to page 22 for details. |
| TOEFL test                                 | An internationally-administered examination measuring ability to use the English language. Required of any international student applying to UTK whose native language is not English (see page 12 for exceptions). For information and to make arrangements to take the examination, contact:  

   The Test of English as a Foreign Language  
   Educational Testing Service  
   Princeton, NJ 18540

English Proficiency Test                    | A test taken at UTK prior to initial registration (but after admission) by undergraduate international students to determine what English course (if any) must be taken at UTK. This local test is in addition to the minimum TOEFL test requirement. (See page 12.) |
<p>| University honors courses                 | Non-departmental enrichment courses available (by invitation only) from the University Honors Program (p. 54). |
| Honors course or section                   | A version of a regular course reserved for students with superior preparation for that course. See, for example, English honors (p. 181); Chemistry honors (p. 170); Mathematics honors (p. 190); History honors (p. 187). |
| Evening school                             | An administrative unit of UTK’s Division of Continuing Education designed to serve students who work during the major portion of the day (see page 93). |
| Major                                     | The principal education interest of a student as represented by one of the curricula offered by the various colleges at UTK. The undergraduate degree may or may not carry the same title as the major. Every student has one or more majors but may or may not have a concentration within a major or be following an option within a major. |
| Minor                                     | A secondary subject area interest (to the major) represented by a specified set of hours and/or courses. Differs from “concentration” in that a minor is not a subdivision of the major subject area. |
| Concentration                             | A collection of courses within a major which focus on a particular subject area. The term “concentration” describes the nature of the set of courses; the term “option” designates the mechanism by which a student enters into a particular concentration. |
| Option                                    | A concentration of elective courses within a major which emphasizes one aspect of the major, chosen by a student according to his/her interests. |
| Accredited                                | A term applied to a school or specific program which has been recognized by some national or regional organization as meeting certain academic standards for quality and educational environment. |</p>
<table>
<thead>
<tr>
<th>Admissions Category</th>
<th>Admissions Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FRESHMAN</strong></td>
<td><strong>In-state</strong> Applicants must have high school grade point average of at least 2.00 and ACT composite score of at least 12 (combined SAT score of 600).</td>
</tr>
<tr>
<td></td>
<td><strong>Out-of-State</strong> Applicants must have high school grade point average of at least 2.25 and ACT composite score of at least 18 (combined SAT score of 780).</td>
</tr>
<tr>
<td><strong>FRESHMAN—GED Diploma</strong></td>
<td>Applicant's high school class must have graduated; must be at least 18 years old; and must have an average standard score of at least 50 on the high school level General Education Development Test. High school transcript(s) showing all work completed must be submitted.</td>
</tr>
<tr>
<td><strong>FRESHMAN—EARLY ADMISSION</strong></td>
<td>Must have completed junior year in high school, have a high school grade point average of at least 3.50, and have an ACT composite score of 28 or above. Application is subject to review and approval by the Director of Admissions following an interview.</td>
</tr>
<tr>
<td><strong>FRESHMAN RE-ENTRY</strong></td>
<td>Must have graduated from high school at least 3 years prior to application. Submit transcript, be interviewed by UTK admissions counsellor or respond to written questionnaire, as requested. ACT scores not required for admission, but may be needed for association.</td>
</tr>
<tr>
<td><strong>TRANSFER In-state</strong></td>
<td>At least 12 quarter hours of college credit work attempted at an accredited institution of higher learning; honorable dismissal from all such institutions attended; transfer grade point average of at least 2.00.</td>
</tr>
<tr>
<td><strong>TRANSFER Out-of-state</strong></td>
<td>Same as for in-state transfer applicants except that those applicants desiring college or school association at the time of admission will have the admissions decision made by the College Committee on Admissions.</td>
</tr>
<tr>
<td><strong>INTERNATIONAL</strong></td>
<td>Refer to “International Student Applicants” in text.</td>
</tr>
<tr>
<td><strong>VISITING</strong></td>
<td>Refer to “Visiting Student Applicants” in text. One quarter limit in this category at UTK unless special permission is given by the Director of Admission.</td>
</tr>
<tr>
<td><strong>NON-DEGREE</strong></td>
<td>May not be a candidate for the bachelor's degree. Must show satisfactory evidence of preparation for the courses to be taken at UTK; applicant’s high school class must have graduated (this is not an early admissions category).</td>
</tr>
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</table>
### MAJORS, MINORS, CONCENTRATIONS AND TRACKS

<table>
<thead>
<tr>
<th>DEPARTMENT (UNIT)</th>
<th>MAJOR</th>
<th>CONCENTRATION/OPTION/TRACK/ ETC. WITHIN THE MAJOR</th>
<th>DEGREE</th>
</tr>
</thead>
</table>
| Institute of Agriculture  
College of Agriculture | Agriculture (Interdepartmental Unit) | Agricultural Biology | Bachelor of Science in Agriculture |
| Agricultural Economics and Rural Sociology | Agricultural Economics and Rural Sociology | Bachelor of Science in Agriculture |
| Agricultural Education (Intercollegiate program with the College of Education) | Agricultural Education | Bachelor of Science in Agriculture |
| Agricultural Engineering | Agricultural Engineering | Bachelor of Science in Agricultural Engineering |
| Agricultural Extension Education | Animal Science | Animal Science | Bachelor of Science in Agriculture |
| Food Technology and Science | Food Technology and Science | Bachelor of Science in Agriculture |
| Forestry, Wildlife, and Fisheries | Forestry | Bachelor of Science in Forestry |
| Ornamental Horticulture and Landscape Design | Ornamental Horticulture and Landscape Design | Bachelor of Science in Horticulture and Landscape Design |
| Plant and Soil Science | Plant and Soil Science | Bachelor of Science in Agriculture |
| Institute of Agriculture  
College of Veterinary Medicine | Veterinary Medicine | Doctor of Veterinary Medicine |
| School of Architecture | Architecture | Architectural Design | Bachelor of Architecture |
| College of Business Administration | Accounting | Accounting Management Science Option | Bachelor of Science in Business Administration |
| Business Administration (Interdepartmental Unit) | General Business | General Business Management Science Option | Bachelor of Science in Business Administration |
| Economics | Economics | Bachelor of Science in Business Administration |

1Minor available for students in other colleges.
<table>
<thead>
<tr>
<th>DEPARTMENT (UNIT)</th>
<th>MAJOR</th>
<th>CONCENTRATION/OPTION/TRACK ETC. WITHIN THE MAJOR</th>
<th>DEGREE</th>
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<tbody>
<tr>
<td>Finance</td>
<td>Finance</td>
<td>Investment Management, Real Estate, Corporate Financial Management, Banking and Financial Institutions, Insurance and Risk Management, Financial Planning and Services, Finance/Management Science Option</td>
<td>Bachelor of Science in Business Administration</td>
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<td>Management Science Programs</td>
<td>Marketing Management Science Option</td>
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<td>Marketing</td>
<td>Marketing Management Science Option, Transportation and Logistics, Statistics Management Science Option</td>
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<tr>
<td>Statistics</td>
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<td>Statistics Management Science Option, Statistics Management Science Option</td>
<td>Bachelor of Science in Business Administration</td>
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<td>Advertising</td>
<td>Advertising, Management Sequence, News and Public Affairs Sequence, Production/Performance Sequence, News/Editorial Sequence, Public Relations Sequence, Governmental Public Relations, Corporate Public Relations, Other Areas</td>
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<td>DEPARTMENT (UNIT)</td>
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<td>a. Exercise Physiology</td>
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<td>b. Motor Behavior/Sport Psychology</td>
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<td>c. Kinesiology/Biomechanics</td>
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<td>d. Sport Philosophy</td>
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<td>Environmental Sciences</td>
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<sup>2</sup>Minor available: Driver and Traffic Safety Education.

<sup>3</sup>Minor available.

<sup>4</sup>Minor available: Coaching.
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<th>DEPARTMENT (UNIT)</th>
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<th>CONCENTRATION/OPTION/TRACK ETC. WITHIN THE MAJOR</th>
<th>DEGREE</th>
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<td>Mechanical and Aerospace Engineering</td>
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<td>1. Early Childhood Development</td>
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<td>Chemistry</td>
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<td>Concentration B</td>
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*Minor available: Business.
*Business minor available to programs in Bachelor of Arts degree.
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<th>CONCENTRATION/OPTION/TRACK ETC. WITHIN THE MAJOR</th>
<th>DEGREE</th>
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<td>Computer Science</td>
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<td>Bachelor of Arts, Concentration in Literature, Concentration in Creative Writing, Concentration in English Language, Individualized Program, Honors Program</td>
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<td>DEPARTMENT (UNIT)</td>
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1Minor Available in Portuguese.
2Minor Available to Students in College of Education and the College of Liberal Arts.
Graduate Studies

The College of Law
Kenneth L. Penegar, Dean
Mary Jo Hoover, Associate Dean
Julia P. Hardin, Associate Dean
John A. Sebert, Jr., Associate Dean
N. Douglas Wells, Assistant Dean

The College of Law has, since 1890, continuously sought to provide high quality legal education in a university community. The college offers a professional curriculum leading to the degree of Doctor of Jurisprudence. The College of Law and the College of Business Administration offer a coordinated dual degree program leading to the conferment of both the Doctor of Jurisprudence and the Master of Business Administration degrees.

Information regarding admission, financial aid, academic policies, extracurricular activities, and student services is available in the "College of Law Bulletin." A copy may be obtained from the Admissions Office, The University of Tennessee, College of Law, 1505 W. Cumberland Avenue, Knoxville, Tennessee 37996. Completed application should be received before February 1 of the year of expected admission.

College of Veterinary Medicine
Hyram Kitchen, Dean
W. H. Grau, Jr., Associate Dean
C. F. Reed, Jr., Associate Dean

The College of Veterinary Medicine, established in 1974, offers a professional curriculum leading to the degree of Doctor of Veterinary Medicine (D.V.M.). The college offers graduate studies leading to the degrees of Master of Science (M.S.) and Doctor of Philosophy (Ph.D.). Residency training programs in the various clinical specialties are also offered. The Graduate Catalog contains complete information concerning the programs in the college.

Forms and instructions for making application for admission may be obtained from the Director of Admissions, 202 Student Services Building, The University of Tennessee, Knoxville, Tennessee 37996. Applications must be received by January 15 of the year of expected admission. All prerequisites must be completed by the end of the spring term of the year in which the student plans to enroll in the college.

The Graduate School
Clarence W. Minkel, Vice Provost and Dean of the Graduate School
Wayne T. Davis, Assistant Dean of the Graduate School
Linda R. Painter, Assistant Dean of the Graduate School
Alan D. Finnegan, Director, Graduate Admissions and Records
Rose Ann Trantham, Assistant Director, Graduate Admissions and Records

The University of Tennessee, Knoxville, is the official land-grant institution for the State of Tennessee. It is a comprehensive institution offering a wide range of graduate programs leading to the master’s and doctoral degrees. The University offers master’s programs in 104 fields of specialization and doctoral work in 51. Approximately 6,000 graduate students are enrolled, both on and off campus. Administration of graduate student policies and regulations, and associated record keeping, is the responsibility of the Dean of the Graduate School. Much of the day-to-day administration of graduate study is conducted by department heads or faculty advisors and committees responsible for particular programs. In addition to departmental units, numerous interdisciplinary programs, institutes and centers have been developed on campus and in locations throughout the state.

The Graduate School brings together faculty and graduate students as a community of scholars with a common interest in creative work and advanced study. Graduate programs are available to students desiring full-time study toward the master’s and doctoral degrees or professional certification, those interested in continuing education for updating and broadening knowledge, and those pursuing postdoctoral research. Traditionally, universities have provided graduate programs primarily for full-time, degree-oriented students. Serving the needs of students engaged full-time in intensive study and pursuit of a degree continues to be a major emphasis of UTK’s graduate effort. At the same time, the University employs a variety of modes, traditional and non-traditional, in offering quality programs designed to serve students.

Complete information concerning graduate study at The University of Tennessee, Knoxville, is available in the Graduate Catalog published annually. For a copy, write or come to the Office of Graduate Admissions and Records, 218 Student Services Bldg., The University of Tennessee, Knoxville, TN 37996-0220 or call (615) 974-3251.

Graduate School of Biomedical Sciences
W. E. Barnett, Director

Full-Time Faculty
Professors:
D. Billen, Ph.D. Tennessee; D. E. Olins, Ph.D. Rockefeller.

Assistant Professor:
C. Soumoff, Ph.D. California (Los Angeles).

Research Professor:
Research Associate Professor:
E. C. Uberbacher, Ph.D. Pennsylvania.

The Graduate School of Biomedical Sciences publishes supplementary information in addition to the regular Graduate Catalog. All inquiries concerning admission should be addressed to: Director, The University of Tennessee-Oak Ridge Graduate
# Majors and Degree Programs

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School of Biomedical Sciences, Biology Division, ORNL, P.O. Box Y, Oak Ridge, Tennessee 37831. Consult the Graduate Catalog for listing of graduate level courses.

Comparative and Experimental Medicine Joint Graduate Coordinating Committee: H. Kitchen (Chair); J. E. Fuhr; R. A. Griesemer; J. E. Lawler; R. L. Michel.

The Comparative and Experimental Medicine degree program (M.S. and Ph.D.) is jointly administered by the College of Veterinary Medicine, the College of Medicine/Knoxville Unit, and the UTK Graduate School. The graduate program is intended to prepare students for teaching and/or research careers in the health sciences, emphasizing the comparative approach to the study of pathology, immunopathology, aberrant metabolism, oncology, genetic disorders. For complete information, refer to the Graduate Catalog. The UTCHS College of Medicine/Knoxville Unit offers the courses listed below.

Medical Biology UNDERGRADUATE 4110-20-30 Undergraduate Research Participation (3-2) Experience in active biomedical research projects under supervision of faculty. Students may conduct their own research projects within designated areas. Prereq: Junior or Senior standing; prior consent of faculty member. S/NC grading only.

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

Energy, Environment, and Resources Center Director: E. W. Colgrazier, Jr., Ph.D. California Institute of Technology

The Energy, Environment, and Resources Center was created to encourage interdisciplinary research at UTK, directed at solutions to problems related to energy, the environment, and resource issues. The Center provides assistance to faculty interested in developing research and public service projects, manages research and development projects that involve several disciplines, and assists Tennessee government and industry in specific problems related to energy and environment. The Center has a close working relationship with Oak Ridge National Laboratory and the Tennessee Valley Authority.

Graduate School of Library and Information Science (620) Ann E. Prentice, Director

Associate Professors: J. M. Pemberton, Ph.D. Tennessee; W. C. Robinson, Ph.D. Illinois; G. M. Sinskankas, Ph.D. Pittsburgh.
Assistant Professors: M. H. Karrenbrock, Ed.D. University of Georgia; M. S. Stephenson, Ph.D. North Texas State.

The Graduate School of Library and Information Science provides a program leading to the preparation of librarians and information scientists for work in all types of libraries and information centers.

The Undergraduate Program The undergraduate library education program leads to a minor in the College of Education or the College of Liberal Arts. Students in other colleges may elect a minor in library and information science with the approval of their faculty advisors. The undergraduate minor is planned for the following groups of people: (1) students preparing for positions as school librarians in elementary and secondary schools; (2) teachers who wish to become better acquainted with books and other instructional materials; (3) school administrators who wish to explore the place of the library in the instructional program; (4) prospective candidates for the graduate program in library education; (5) persons seeking a position at the level of Library Associate as described in the manpower policy of the American Library Association.

The minimum requirements for a full-time position as school librarian in the state of Tennessee (both elementary and secondary) can be met through fulfilling the requirements for teacher certification and completion of the following library courses: 3510, 3520, 4320, 4140, 4150, 4270, 4330, and 4750.

The Graduate Program

The goal of the program is to prepare graduates to function effectively in libraries and information centers. For further information, write for a Graduate Catalog.

UNDERGRADUATE 3510 Books and Related Materials for Children (3) Readings based on materials for children in leisure time or classroom activities; criteria for selecting books, magazines, recordings, films and related materials; story-telling and other devices for encouraging reading. Undergraduate credit only. Prereq: Admission to teacher education or junior standing in College of Liberal Arts. (Same as Educ. C & I 3510.)
3520 Books and Related Materials for Young People (3) Basically same approach as 3510, but adapted to needs and interests of teenagers. Undergraduate credit only. Prereq: Admission to teacher education or junior standing in College of Liberal Arts. (Same as Educ. C & I 3520.)
4140 Libraries and Librarianship (3) Librarianship as an occupation: its organization, responsibilities, problems, and prospects.
4150 School Library Administration (3) Objectives, functions, and place of school library; relationship to local and state services; cooperative planning for quarters and materials; evaluation. (Same as Educ. C & I 4150.)
4160 School Library Media Program Management (3) Attitudes, knowledge and skills necessary to manage a school library media program at building and district levels. Curricular services and role of school library media program in curriculum development. Applica-

Life Sciences Coordinating Council: H. I. Adler (Chair); Physiology: H. G. Welch; Biotechnology: D. K. Dougall; Cellular, Molecular and Developmental Biology: J. M. Becker; Environmental Toxicology: W. R. Forkas; Ethology: G. B. Burghardt; Plant Physiology & Genetics: O. J. Schwartz.

The programs leading to the M.S. and Ph.D. degrees in Life Sciences are interdepartmental and intercollegiate programs which augment the programs of individual departments.

The graduate program in Life Sciences supports studies and research in the following concentrations: physiology, biotechnology, cellular, molecular and developmental biology, ethology, environmental toxicology, and plant physiology and genetics. Students interested in any of these areas should contact either the chair of Life Sciences or the director of the area of interest. For complete information, refer to the Graduate Catalog.

Graduate School of Planning (782) J. A. Spencer, Director


Associate Professor: G. E. Bowen, M.A. George Washington; D. P. Middendorf, Ph.D. Tennessee.

Assistant Professors: P. Fisher, Ph.D. Florida State; A. Loeb, Ph.D. Missouri.

The Graduate School of Planning offers a program of studies leading to the professional degree of Master of Science in Planning.

UNDERGRADUATE 4100 Survey of Planning (3) History of city development and of planning with special attention to the U.S. experience in urban and other levels of planning. State of the art, the process, the comprehensive plan, and the implementation devices. Planning issues in society. Not for credit for Master of Science in Planning degree. (Same as Urban Studies 4100.)
4270 Organization of Library Collections I (3) Acquisitions, cataloging, and maintenance of library collections.
4310 History of the Book (3) History of writing and various methods of bookmaking from earliest times through 19th century.
4320 Adult Materials and Reading Interests (3) Fiction and subject categories, popular and standard; evaluation of materials to meet adult interests; consideration of selection aids.
4330 Introduction to Reference Materials (3) Basic information sources and services for all libraries.
4750 Utilization of Instructional Media (3) (Same as Educ. C & I 4750 and Vocational-Technical Education 4750.) GRADUATE Consult the Graduate Catalog for listing of graduate level courses.

52 Graduate Studies/Comparative and Experimental Medicine
The Space Institute is a graduate education and research institute established in 1964 on a 365 acre lakeshore campus in Middle Tennessee. UTSI has evolved into an internationally recognized institution for graduate study and research in engineering, physics, mathematics, and computer science. The accredited academic programs and educational policies of the Space Institute have their origins in appropriate departments of The University of Tennessee, Knoxville. The more than 40 faculty members of the Institute carry out these accredited academic programs through classroom teaching, informal seminars, active research, and directing the research of their students in an environment of creative work and advance study. Programs are available to students devoting full-time effort toward M.S. and Ph.D. degrees or those interested in continuing education for updating and broadening knowledge and those who wish to pursue post-doctoral research. Graduate degree programs are available with majors in Aerospace Engineering, Aviation Systems, Computer Science, Electrical Engineering, Engineering Science, Industrial Engineering (Engineering Management Concentration), Mathematics, Mechanical Engineering, and Physics. In addition to the fundamental studies characteristic of each discipline, research opportunities are available in many areas including aerodynamics, atmospheric science, fluid mechanics, computer graphics, knowledge engineering, energy conversion processes, thermal sciences, space systems, remote sensing, propulsion, computational fluid dynamics, and other aspects of atmospheric and space flight.

The Institute has recently established a Center of Excellence in Laser Applications and offers graduate studies and research opportunities in laser diagnostics, laser materials interactions, pico second processes, and coherent and non-linear optics.

The Institute was established in part to increase the research and engineering resources of Tennessee through education and practice in relevant scientific and technical areas and in part to interface University faculty and student research with the Air Force Arnold Engineering Development Center. The faculty, research activities, and facilities of the Institute and those available at Arnold Center through appropriate contractual arrangements provide students an unusual opportunity for significant research in these areas. Students who enroll at UTSI are admitted to the Graduate School, The University of Tennessee, Knoxville. Graduate Research Assistantships are available for qualified students. Further information may be obtained from the Dean, The University of Tennessee Space Institute, Tullahoma, Tennessee 37388.

**Transportation Center**

Director:
M. S. Bronzini, Ph.D., Pennsylvania State, P.E.

Assistant Directors:

The Transportation Center, utilizing an interdisciplinary approach to transportation research, brings together both University faculty and students in a setting conducive to the solution of problems associated with the transportation of goods and people. The Center provides support for undergraduate and graduate students, as well as faculty, in projects associated with research in the field of transportation. Such support, while providing needed financial assistance to students, enables the Transportation Center to undertake research that ultimately contributes to the solution of the nation's transportation problems.

**Water Resources Research Center**

C. W. Colglazier, Acting Director, Ph.D., California Institute of Technology
T. R. Gangaware, Assistant Director, M.S. Tennessee

The Water Resources Research Center is a federally designated institute for the conduct of water research for the state. The purposes of the Center are: (1) to assist and support all the academic institutions of the state, public and private, in pursuing water resources research programs needed by the state; (2) to provide information, dissemination and technology transfer services to state and local government bodies, academic institutions, professional groups, environmental organizations, and others, including the general public, who have an interest in water resources matters; (3) to promote education in fields relating to water resources and to encourage the entry of promising students into careers in these fields.

**GRADUATE Consult the Graduate Catalog for a listing of graduate level courses.**
University Honors

Susan Becker, Director

TENNESSEE SCHOLARS PROGRAM

Each year, twenty-five outstanding high school students will be selected for a four year program of honors work. These students may have any major in any college offering the Bachelor's degree. In addition, Tennessee Scholars’ work includes:

- A minimum of four lower division honors courses
- A close relationship with a faculty mentor
- A one credit hour Tennessee Scholars seminar each term for four years

The Tennessee Scholars Program is administered by the University Honors committee which includes representatives from each of the nine baccalaureate colleges. Students are selected on the basis of ACT/SAT scores, high school GPA and the difficulty of the high school course of study, academic references, and a personal statement. Students who are selected as Tennessee Scholars are awarded substantial four year scholarships.

University-wide Honors Courses

These seminars and colloquia focus on various topics, issues, and problems, and are limited in size to 15-20 students. They are taught by faculty from all nine undergraduate colleges, and may be repeated.

University Honors courses are open to all undergraduate students on the basis of high school GPA, ACT/SAT scores, UT GPA of 3.25 or greater, or by strong professional recommendation.

University Honors (983)

1118-28-38 Honors: First Year (4,4,4) Small seminar classes taught by faculty from all the undergraduate colleges of the university. Open to first and second year students on the basis of GPA, test scores, or professional recommendation. Topics vary. May be repeated.

2118-28-38 Honors: Second Year (4,4,4) Small seminar classes taught by faculty from all the undergraduate colleges of the university. Open to all other students with a GPA of 3.25 or greater. Topics vary. May be repeated.

3118-28-38 Honors: Junior Colloquium (4,4,4) Small group studies of selected topics, issues, or problems. Open to juniors and seniors with a GPA of 3.25 or greater. May be repeated.

4118-28-38 Honors: Senior Colloquium (4,4,4) Small group studies of selected topics, issues, or problems. Open to juniors and seniors with a GPA of 3.25 or greater. May be repeated.

4101 Honors: Foreign Study (1-16) Open to any undergraduate honors student. Proposals must be approved in advance. See the Director of University Honors for further information.

4102 Honors: Off-Campus Study (1-16) Open to any undergraduate honors student. Proposals must be approved in advance. See the Director of University Honors for further information.

4103 Honors: Independent Study (1-16) Open to any undergraduate honors student. May be used by Tennessee Scholars preparing their senior projects. Proposals must be approved in advance. See the Director of University Honors for further information.

3018-28-38 Tennessee Scholars Seminar (1,1,1) Sequence limited to and required of all Tennessee Scholars each year. Maximum 12 hours. S/NC grading only.
Institute of Agriculture

The Institute of Agriculture traces its history to 1869 when the University was designated as Tennessee's Federal Land-Grant Institution. Under terms of the Federal Land-Grant Act, the University was enabled for the first time to offer instruction in agriculture. This later was expanded to include research for the development of new knowledge and extension for dissemination of such knowledge to rural people. Today, the Institute has four main divisions: College of Agriculture, College of Veterinary Medicine, Agricultural Experiment Station, and Agricultural Extension Service. In addition to agriculture and veterinary medicine the Institute conducts research and extension programs in home economics.

Agricultural Experiment Station

Dorsey M. Gossett, Dean
Thomas J. Whatley, Associate Dean
John I. Sewell, Assistant Dean

The Agricultural Experiment Station was established in 1887 by an act of Congress known as the Hatch Act. The purpose of the Experiment Station is to promote fundamental and applied research on all problems primarily affecting the people of Tennessee, but also having national and international implications. The research program embraces studies of the productivity of soils, plants, animals, other capital and people and the combination of these resources necessary to maintain a viable agriculture. Specific research projects relate to development of new and improved crop varieties, insect, disease, and weed control methods, cultural and harvesting techniques, and improved genetics, nutrition, physiology and management of livestock. Other studies deal with various aspects of processing and distributing food and fiber, consumer preferences, food safety and nutritional needs and maintenance of institutions to serve people.

The results of investigations are carried to the clientele in the form of bulletins, circulars, and reports through the Agricultural Extension Service, and the state educational system through the Colleges of Agriculture and Education.

Headquarters as well as the Main Station of the Agricultural Experiment Station are located at Knoxville. Eleven branch stations are located across the state. These stations are essential as research laboratories to test the performance of crop and livestock enterprises grown under different soil, climatic, and environmental conditions. The locations of the Branch Stations are as follows:

- Ames Plantation near Grand Junction includes 18,500 acres (about 10,000 acres in forest). The resources are held in trust by the Hobart Ames Foundation for use by the Institute of Agriculture. Large scale experiments involve forestry, farm management, crop production, and genetics and management of beef cattle and swine.
- Dairy Experiment Station near Lewisburg is operated in cooperation with USDA/SEA/AR. Major emphases are genetics, physiology, nutrition, and management of Jersey cattle. Production, handling and preservation of feed for dairy cattle are also being evaluated along with waste management systems.
- Forestry Experiment Stations and Arboretum at Oak Ridge, Tullahoma, and Wartburg. The 250-acre arboretum at Oak Ridge places emphasis on woody plants. Research in forestry studying genetics, species adaptation, fertilization, and other management practices is under way on the adjoining land. The Cumberland forest consists of two tracts of land in Morgan and Scott counties. Research at this location deals with many of the forest problems in the Cumberlands including strip-mine reclamation. The Highland Rim Forestry Station is located near Tullahoma. Research at this location deals primarily with tree improvement through genetics and also management problems associated with the forest of the Highland Rim.
- Highland Rim Experiment Station near Spring Hill is representative of high-phosphate Central Basin soils. Research studies are underway with agronomic crops, vegetables, fruits, ornamental horticulture, beef cattle, and dairy cattle of the Holstein breed.
- Middle Tennessee Experiment Station near Spring Hill is representative of high-phosphate Central Basin soils. Research studies are underway with agronomic crops, vegetables, fruits, ornamental horticulture, beef cattle, and dairy cattle of the Holstein breed.
- Milan Experiment Station is located in West Tennessee. Research emphases are production problems and mechanization of corn, cotton, and soybeans. Minimum tillage and other approaches to reduce soil erosion are a major thrust at this location.
- Plateau Experiment Station near Crossville consists of three farms. Studies with beef cattle, and agronomic vegetable crops provide information about results to be expected under the cooler, more humid climate and special soil conditions of the Cumberland Plateau.
- Tobacco Experiment Station is located near Greeneville. Extensive research on all phases of burley tobacco is in cooperation with USDA/SEA/AR. In addition, research is underway with beef cattle and other field crops.
- UT Martin—The research farm, adjacent to the UT Martin campus, is used for both research and teaching. The research staff at Martin, jointly employed by the Experiment Station and the School of Agriculture, cooperate with other station personnel in planning and conducting research on field crops, beef cattle, dairy cattle, and swine. Emphasis is on problems of importance to the northwestern part of the state.
- West Tennessee Experiment Station is located at Jackson. Major emphases are all phases of production on agronomic crops produced in the western part of the state. In addition, research deals with problems asso-
Agricultural Extension Service

M. L. Downen, Dean
Troy W. Hinton, Associate Dean
Mildred F. Clarke, Associate Dean
B. G. Hicks, Associate Dean

The Agricultural Extension Service serves the entire state of Tennessee. This educational service of the Institute of Agriculture is active in every county extending information on agriculture, home economics, and related subjects to farm families and other citizens. This educational organization was established July 1, 1914, by an act of Congress commonly known as the Smith-Lever Act. Staff members of the Agricultural Extension Service use a wide range of methods—farm and home visits, educational meetings, field demonstrations, publications, and mass media—in providing educational programs for people who do not have the opportunity to enroll in resident courses of instruction at colleges.

Extension staff members develop and carry out programs to meet the specific needs of the residents of their counties. They work with both adults and youth. Educational activities for boys and girls are carried out through 4-H Clubs which are organized in schools and in communities.

County, state, and federal governments cooperate in carrying out the Agricultural Extension Service program. The United States Department of Agriculture, the State of Tennessee, and county government provide the financial support. Any county which appropriates funds for the program may have an office located there to serve its residents. Most offices are located in county seat towns. Headquarters for the Agricultural Extension Service is at Knoxville and district administration offices are located in Cookeville, Knoxville, Chattanooga, Nashville, and Jackson.

As a distinct administrative unit of the Institute of Agriculture, the Agricultural Extension Service works closely with the other units of the Institute—the Agricultural Experiment Station, the College of Agriculture, the College of Veterinary Medicine—in providing a total program of research, instruction, and extension for developing the agriculture of the state.

College of Agriculture

O. Glen Hall, Dean
Gary Schneider, Assistant Dean

Curricula in Agriculture

Broad opportunities for individuals to prepare for a future in agriculture, forestry, and wildlife and fisheries science are offered in the College of Agriculture. The college provides curricula leading to the degrees of Bachelor of Science in Agricultural Engineering, Bachelor of Science in Forestry, Bachelor of Science in Ornamental Horticulture and Landscape Design and Bachelor of Science in Wildlife and Fisheries Science. The professional degree in agricultural engineering receives strong support from the College of Engineering and is fully accredited by the Accreditation Board for Engineering and Technology. The forestry curriculum is fully accredited by the Society of American Foresters.

A pre-professional curriculum in veterinary medicine is offered in the college. This program is designed to prepare students for admission to a College of Veterinary Medicine located on the Knoxville campus. Students pursuing programs leading to the degree of Bachelor of Science in Agriculture major in one of several specialized areas of agricultural science. The major areas are agricultural business, agricultural economics, and rural sociology, agricultural education, agricultural mechanization, animal science, food technology and science, and plant and soil science. Specific courses required for each of these areas are given under the department headings in this section of the catalog. A student must complete the curriculum outlined by the department in which the student is majoring in order to receive a degree. In all areas of specialization, particular emphasis is placed upon the sciences as a background for agricultural instruction; other courses are included to provide a liberal education. In all subject matter departments there is the opportunity to select elective courses appropriate to the educational objectives of individual students. The choice of electives in each curriculum should be made with the guidance of the faculty advisor.

All academic and general requirements of the University as stated in the front section of this catalog must be met by agricultural students, and they must complete the requirements in one of the organized curricula. Students transferring into the College of Agriculture from other than the UTK campus must have a grade point average of 2.0. Each curriculum leading to the degree of Bachelor of Science in Agriculture includes the requirements of the basic curriculum for agriculture. For this degree, the minimum requirement is 108 quarter-hour credits. A minimum of 45 hours in agricultural courses is required. For the degrees of Bachelor of Science in Forestry and the Bachelor of Science in Wildlife and Fisheries Science, the minimum requirement is 138 quarter-hour credits. For the degree of Bachelor of Science in Agricultural Engineering, the minimum requirement is 200 quarter-hour credits.

The use of transfer credit in technical agriculture appropriate to each organized curriculum will be considered and approved by the advisor of that curriculum and the dean of the College of Agriculture. When desirable, validating or proficiency examinations may be requested to determine competence in an area and to avoid unnecessary repetition. Such examinations should be taken during the first quarter in residence and must be conducted under the supervision of the head of the department in which the course is offered.

A minimum of 28 quarter hours of upper-division technical agriculture appropriate to a specified major requirement, and approved by the major advisor, must be completed in residence to fulfill the requirements of baccalaureate degrees offered in the college.

Satisfactory/No Credit Courses

Students may include a maximum of 30 hours in non-directed electives taken on a satisfactory/no credit basis in the total hours required for graduation.

Graduate Study in Agriculture

MASTER OF SCIENCE PROGRAMS

Programs of graduate study leading to the Master of Science degree are offered in all departments in the College of Agriculture. See the Graduate Catalog for details.

A Winter Short Term for Agricultural Extension personnel and other professional agricultural workers is held each year during the last half of the winter quarter. Those attending must be accepted by The Graduate School. Students may take three courses and earn nine quarter hours of graduate credit toward the Master of Science degree. A number of courses are offered annually in agricultural extension education and in other departments in the Colleges of Agriculture and Home Economics. Additional information and a five-year schedule of course offerings may be obtained by writing to the Head, Department of Agricultural Extension Education, College of Agriculture, Knoxville.

DOCTORAL PROGRAMS

Graduate study programs lead to the Doctor of Philosophy degree in animal sciences, agricultural economics, agricultural engineering, food technology and science, and plant and soil science.

General requirements and policies of The Graduate School of The University of Tennessee relating to admission to the Graduate School, residence, language, research, examination, and admission to candidacy shall apply to these programs and are described in the Graduate Catalog.

Facilities

The College of Agriculture uses the facilities on the agricultural campus, on University farms located near Knoxville, and on the main University campus. On the agricultural campus, agricultural students are found in main agricultural building, Morgan Hall; the Agricultural Engineering Building; McCord Hall; the Dairy Products Building; McLeod Food Technology Building; C. E. Breden Animal Sciences Building, which includes a large precision; Ellington Plant Sciences Building which houses the plant science departments; and greenhouses for teaching and experimental work. The buildings which have recently been erected provide facilities comparable to the best in the country for the departments which they serve.

Four farms adjacent to the main agricultural campus provide facilities to the students for instruction and experimental work. These farms, which are within eight miles of the agricultural campus, are used both for instructional and experimental purposes. Morgan Farm (80 acres), Cherokee Farm (550 acres), Plant Science Farm (212 acres), and a livestock farm (510 acres) provide excellent field laboratory facilities for the instructional programs offered in the College.
Cherokee Woodlot (120 acres), the Oak Ridge Forest (2,260 acres), and Ames Plantation (8,000 acres of forested land) provide excellent facilities for field work in forestry, wildlife and fisheries. Transportation by bus is provided for classes of agricultural students from the agricultural campus to the University farms and other points of interest where instruction may be given. Transportation by bus is provided between the agricultural campus and the main University campus so that students may make the change between classes without serious inconvenience.

The facilities of the University on the main campus are available to agricultural students. Courses in the basic sciences, business, communications, engineering, etc., are open to agricultural students and are taught on the main University campus.

Selection of Curriculum

Agricultural students who have determined their area of special interest may choose the curriculum most adaptable to their needs when they register as freshmen, and an advisor from the department will be assigned for their counseling. It is not necessary, however, that freshman students select their curriculum until the end of the first year. Those who are in doubt will be assigned a special advisor to assist them in choosing agriculture and to guide them in the planning of appropriate courses of study for the freshman year. When they choose a curriculum, an advisor will be assigned from that department.

Students with special interest in science, business, or production technology should consult the advisor about selection of appropriate electives. A foundation for advanced study beyond the baccalaureate degree may be established in any curriculum if appropriate electives are included; also, courses may be elected in any of the curricula leading to the degree of Bachelor of Science in Agriculture, in preparation for employment with the Agricultural Extension Service. For this purpose, the major-curriculum advisor and the agricultural-extension advisor should be consulted.

A very careful choice of electives enables a student with an above average academic record to complete the requirements of any major by satisfying all the requirements in each curriculum. For this purpose, the advisors of each curriculum should be consulted, the dean of the College of Agriculture should be informed, and each advisor should maintain a complete record of the student's progress. The multiple major will normally require more than 198 hours credit for graduation.

Optional Minors: Agricultural students may choose a minor in another college or department when they register as freshmen, and an advisor from the department will be assigned for their counseling. It is not necessary, however, that freshman students select their curriculum until the end of the first year. Those who are in doubt will be assigned a special advisor to assist them in choosing agriculture and to guide them in the planning of appropriate courses of study for the freshman year. When they choose a curriculum, an advisor will be assigned from that department.

Agricultural students who have determined their area of special interest may choose the curriculum most adaptable to their needs when they register as freshmen, and an advisor from the department will be assigned for their counseling. It is not necessary, however, that freshman students select their curriculum until the end of the first year. Those who are in doubt will be assigned a special advisor to assist them in choosing agriculture and to guide them in the planning of appropriate courses of study for the freshman year. When they choose a curriculum, an advisor will be assigned from that department.

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Optional Minors: Agricultural students may choose a minor in another college or department when they register as freshmen, and an advisor from the department will be assigned for their counseling. It is not necessary, however, that freshman students select their curriculum until the end of the first year. Those who are in doubt will be assigned a special advisor to assist them in choosing agriculture and to guide them in the planning of appropriate courses of study for the freshman year. When they choose a curriculum, an advisor will be assigned from that department.

A very careful choice of electives enables a student with an above average academic record to complete the requirements of any major by satisfying all the requirements in each curriculum. For this purpose, the advisors of each curriculum should be consulted, the dean of the College of Agriculture should be informed, and each advisor should maintain a complete record of the student's progress. The multiple major will normally require more than 198 hours credit for graduation.

Optiona
Agricultural Education

Advisors: Professors Wiegler and Craig; Associate Professor Todd

The curriculum in agricultural education is planned in cooperation with the College of Education. All agricultural education courses are offered in the College of Education.

This curriculum is designed to prepare students for entering professional agricultural educational service. Graduates are qualified to teach vocational agriculture. The curriculum also provides training for those who wish to enter farming, industry, and governmental services associated with agriculture, and other occupations.

The senior courses in agricultural education (except Ag. Ed. 4110) are taught at selected off-campus centers. These courses are scheduled concurrently each quarter during the regular school year.

Students should file applications for student teaching in the College of Education. (See admission to Teacher Education and Student Teaching section.)

Students meeting the requirements for general vocational agriculture certification may secure endorsements in ornamental horticulture and agriculture by meeting the following requirements:

Ornamental Horticulture—18 quarter hours of courses in ornamental horticulture and landscape design and/or plant and soil science. Subject matter areas must include plant propagation, greenhouse management, growing media, landscape design, and nursery management.

Agricultural Mechanics—18 quarter hours of courses in agricultural mechanization. Subject matter areas must include agricultural power and machinery, soil and water conservation, and agricultural structures.

Freshman

Economics electives 3
English 4140 3
Finance 3510 3
Non-departmental agriculture 3
Speech 3021 4
Statistics 3220 3
Electives 12

Total: 198 hours

Sophomore

Agricultural Economics 4120 or Business Law 4110 3
Electives 6

Total: 198 hours

Horticulture electives 3
Geology or physics elective 4
English, Journalism, speech electives 5
Agricultural Mechanization 3110 3
Agricultural Mechanization elective 3
Electives 9

Agricultural Education 4120 3
Agricultural Education 4110 3
Agricultural Education 4350-60 15
Special Education 3333 3
Agricultural electives 8 or 9
Health elective 3
Plant and soil science or ornamental horticulture and landscape design elective 3 or 4

Total: 198 hours

Agricultural Engineering

AGRICULTURAL ENGINEERING CURRICULUM

Advisors: Professors Luttrell, Bedsole, Henry, McDow, Tompkins, and Wilhelm.

The College of Agriculture, with the cooperation of the College of Engineering, offers a four-year curriculum leading to the degree of Bachelor of Science in Agricultural Engineering. The curriculum is fully accredited by the Accreditation Board For Engineering and Technology. Industry, government agencies, research and testing organizations, and foreign service offer employment opportunities to agricultural engineers.

The minimum requirements for admission include two units of algebra, one unit in geometry, and one-half unit in trigonometry. Students may remove deficiencies by registering for special classes during the freshman year.

The curriculum gives training in the fundamentals of engineering applied to problems of agriculture. In the senior year, the comprehensive design of systems and their components is emphasized.

Graduates may pursue careers in design, analysis, or development in the following specialties: animal machinery, agricultural structures and environment, electric power and processing, soil and water conservation engineering, and food engineering.

The curriculum provides for elective courses which can be taken in the student’s area of interest. Students should check with their advisors each quarter regarding the selection of courses.

Students majoring in agricultural engineering are eligible to participate in the Engineering Cooperative Scholarship program, Engineers’ Day program, and other student activities in the College of Engineering. They are also eligible for selection into Tau Beta Pi and Alpha Zeta. Agricultural engineering majors interested in the Cooperative Engineering Scholarship program should consult with the head of the Department of Agricultural Engineering.

Freshman

Hours Credit

Agricultural Education 4110-30-40-50 and 2120 20

Total: 198 hours

*One hour must be in PE.

†Non-departmental social science and humanities electives

‡Non-departmental agricultural electives

§Business administration electives

Elective

††Non-departmental social science and humanities electives

‡‡Non-departmental agricultural electives

§§Business administration electives

Electives

University of Agriculture/Agricultural Economics and Rural Sociology
AGRICULTURAL MECHANIZATION CURRICULUM

Advisors: Professors Luttrel, Bledsoe, Henry, Matthews, Tompkins, Smalling.
Associate Professors: Mote and Von Bernuth.

The agricultural mechanization curriculum is administered by the Department of Agricultural Engineering and leads to the degree of Bachelor of Science in Agriculture. The curriculum prepares students to apply principles, techniques, and systems of engineering, agricultural science, and business to the broad industry of agriculture.

Students majoring in the agricultural mechanization courses encompass power and machinery, electrification and processing, structures and environment, and soil and water conservation. Students, with assistance from their advisor, may structure their program to obtain either a broad or a highly specialized education.

Graduates are employed in industry, government, and educational institutions generally in the areas of management, promotion, sales, and training related to agricultural products, materials, and services. Minor in Agricultural Mechanization consists of 28 hours as follows: 3110, 3120, 3110, 3120, 3220, 4210, and any three (3)

Agricultural Extension Education

Advisors: Professors Dickson and Carter.

No formal undergraduate curriculum is offered in agricultural extension education, but undergraduate courses are available as electives in each formal curriculum. Courses are designed to: (1) develop in prospective extension workers and other interested students an understanding of the functions, responsibilities, and techniques of the Cooperative Agricultural Extension Service, and (2) provide prospective extension workers with practical extension work experience in selected training counties. Graduate majors and minors are offered in agricultural extension education. Graduate courses are designed to develop in present extension workers and other interested students those competencies needed for improving the effectiveness of their work. Professor Dickson will give guidance for desired emphasis in agricultural extension education.

Animal Science

Advisors: Professors Barth, Erickson, Lidwick, Mclaren, McNeil, Montgomery, Shreder, Smalls; Associate Professors Backus, Hitchcock, Katte, Heitman, Masincup, Robbins, Waller; Assistant Professors Bell, Godkin, Oliver, and Smalling.

The curriculum is designed to prepare students for leadership careers in livestock and in related industries. Swine, poultry, sheep, dairy, and beef cattle production and management may be involved; providing the opportunity for special or additional training in the dynamic livestock and husbandry technology (production). Through course selection, the student, therefore, may prepare for general or livestock farming, management, business, or science, or elect the pre-veterinary courses preparatory for specialization. Elective selection permits special training for work with feed companies, meat animal, milk, egg, or poultry production, managerial or marketing groups, or other educational agencies, supply and equipment business, agricultural extension services, agricultural communication, public relations, and various organizations associated with agriculture.

Students have the opportunity, through appropriate course selection, to obtain double majors by combining the animal science curriculum with another curriculum. Students majoring in the animal science curriculum may if they desire arrange to minor in various other curricula. The requirements for these minors shall be stipulated by the department supervising that particular curriculum. Students majoring in other curricula may opt to minor in animal science.

A minor in animal science consists of 28 credit hours including 2610, 2810, 3210, 3210, 3110, 3120, 3110, and one 3600 course and one 4800 course.

Students outside of the College of Agriculture should add Agriculture 1130-39.

Requests for substitution of similar courses in biology or zoology will be considered on an individual basis. It is suggested that the
The admission requirements listed below are designed to permit the student to receive a B.S. in Agriculture with a major in animal science upon completion of the first year in the College of Veterinary Medicine. The student needs to complete the requirements as established by the College of Veterinary Medicine. In addition, the student needs to complete the courses listed above, including Economics 2510-20 and, under electives, complete Agriculture 1150 or equivalent food technology and science course, Plant and Soil Science 2130, agriculture other than animal science, six hours. (suggested: Agriculture Mechanization 4160, Food Technology and Science 3840, Entomology and Plant Pathology 3210, Plant and Soil Science 3140). In addition, the following general requirements must be met in order to meet certain rules of UTK and the College of Agriculture in granting degrees:

(1) The last 45 hours of the three-year program must be taken at UTK.

(2) At least 18 hours of upper-division technical agriculture must be taken at UTK.

(3) The student must complete the first year in the UT College of Veterinary Medicine and with the substitution of appropriate courses from the first year and the completion of a minimum of 198 hours will be granted a B.S. in Agriculture with a major in animal science. It is the student's responsibility to complete the above requirements and to initiate the request for the degree.
plant pathology. The primary objective of offering a major at the graduate level is to provide training in those disciplines which deal with the natural hazards that are the major causes of losses in agricultural production. The training gives such a graduate the foundation necessary for coping with the multifaceted insect disease problems that constantly threaten Tennessee’s dynamic agriculture.

**Food Technology and Science**

Advisors: Professors: Collins, Jaynes and S. Melton; Associate Professors: Davidson and Mount.

Food technology and science is the application of the sciences and engineering to the manufacture, preservation, storage, transportation, and consumer use of food products. Processing of raw food materials into consumer products by canning, freezing, dehydration, fermenting, preserving, etc., is taught with emphasis on basic principles rather than on specific commodity procedures. Therefore, men and women who plan to enter food technology must have an interest in the sciences, particularly chemistry, biology, microbiology, and physics. This curriculum is designed to prepare students for a professional career in positions in the food industry such as food microbiologist, food chemist, quality evaluation and control supervisor, plant foreman and manager, ingredients specialist, etc. The Model Curriculum of the Institute of Food Technologists was used as a guide in developing this curriculum. A special problem course provides opportunity for practical training in food processing plants and laboratories or federal and state laboratories.

Minor in Food Technology and Science consists of 25-27 hours as follows: 3810 or 4810, 4130 or 4140, 4200, 4400 and three (3) elective Food Technology and Science courses numbered 2300 or above.

**Hours Credit**

<table>
<thead>
<tr>
<th>Course</th>
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<td>Microbiology 2910-19</td>
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<tr>
<td>Speech 2311</td>
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<td>6</td>
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<tr>
<td>Humanities-social sciences electives</td>
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<tr>
<td>Chemistry 1510-20-30</td>
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<td>Microbiology 2910-19</td>
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<td>Speech 2311</td>
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<tr>
<td>Communications electives</td>
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</tr>
<tr>
<td>Humanities-social sciences electives</td>
<td>6</td>
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<tr>
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<tr>
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<td><strong>Junior</strong></td>
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<td>Economics 2510-20</td>
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<td>Biochemistry 3110 or Nut. and Food Science 3140</td>
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**Food Technology and Science/Institute of Agriculture**

**Hours Credit**

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<td>Agriculture 2120</td>
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<tr>
<td>Botany 1510-20</td>
<td>9</td>
</tr>
<tr>
<td>Microbiology 2910-19</td>
<td>5</td>
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<td>Speech 2311</td>
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<td>Communications electives</td>
<td>6</td>
</tr>
<tr>
<td>Humanities-social sciences electives</td>
<td>6</td>
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<td>Computer Science electives</td>
<td>3</td>
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<tr>
<td>Computer Science 2300</td>
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<tr>
<td><strong>Junior</strong></td>
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<td>Agricultural Mechanization 3510</td>
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<td>Economics 2510-20</td>
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<tr>
<td>Biochemistry 3110 or Nut. and Food Science 3140</td>
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**Forestry, Wildlife and Fisheries**

Advisor: G. Schneider

The department offers two majors. The major in forestry leads to the degree Bachelor of Science in Forestry and the major in wildlife and fisheries science leads to the degree Bachelor of Science in Wildlife and Fisheries Science. The forestry major has three options, Forest Resource Management Option, Forest Recreation Option, and Wood Utilization Option.

**FOREST SCIENCE**

The possession of forestry is the science, the art, and the practice of managing and using for human benefit the natural resources which occur on in association with forest lands. Benefits are derived from the multiple resources of the forest: wood, water, wildlife, recreation, forage, and environmental amenities. Foresters are managers of these resources. Thus, our principal instructional objective is to provide the broad education needed to deal effectively with the complex of forest resources.

**FOREST RESOURCE MANAGEMENT OPTION**

The Forest Resource Management Option provides an opportunity to obtain an education related to the management of the broad spectrum of woodland resources. In addition to the core of required courses there are about 30 elective credit hours for broad studies of specialized training in one or more areas of forestry. These areas and examples of related fields of study include:

- **Forest Biology**—plant physiology and morphology, ecology, genetics, tree nutrition, forest soils.
- **Forest Business Management**—accounting, finance, market management, and finance.
- **Forest Economics**—economics, business administration, social science.
- **Forest Engineering**—mathematics, computer science, photogrammetry.
- **Forest Inventory**—mathematics, statistics, computer science, photogrammetry.
- **Forest Recreation**—natural and social sciences.
- **Wildlife Management**—ecology, zoology, botany.

The University has over 21,000 acres of additional land and facilities available to the teaching program. Contained within these areas is a wide variety of tree species and forest types ranging from elements of the boreal forest to southern pines and hardwoods.

Lumber, pulp and paper, and other wood-using industries cooperate in conducting tours and demonstrating industrial processes.

Up on completion of the four-year forestry curriculum the degree of Bachelor of Science in Forestry (B.S.F.) is awarded.

A minor in Forestry consists of 24 credit hours from any courses having a Forestry designation. Prerequisites will not be waived.

**Freshman**

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<tr>
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<tr>
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<td>Physics 1210</td>
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</tr>
<tr>
<td>Computer Science 1510</td>
<td>4</td>
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<tr>
<td><strong>Sophomore</strong></td>
<td>12</td>
</tr>
<tr>
<td>Agriculture 2210-50-60</td>
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<td>English 1010-20-33</td>
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<td>Mathematics 1700, 1841-51</td>
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<td>Physics 1210-22 and 2210 or 2220</td>
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<tr>
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Total: 198 hours

**Forrest Science**

- **Environmental Science**
- **Wildlife Management**
- **Forest Resource Management**
- **Forest Recreation**
- **Wood Utilization**

**Hours Credit**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
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<tbody>
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<td>Biological Mechanization 3130</td>
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<td>Forestry 4002-03-06-04-08</td>
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<td>21</td>
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Total: 198 hours

- **Agricultural Mechanization**
- **Forest Resource Management**
- **Forest Recreation**
- **Wood Utilization**

**Hours Credit**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>Agriculture 2120</td>
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<tr>
<td>Biological Mechanization 3130</td>
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<tr>
<td>Entomology and Plant Pathology 4030 or 4140, or Geography 3510</td>
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Total: 198 hours
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<th>Course</th>
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<td>Economic 2510-20</td>
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<td>Forestry 3040</td>
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<td>Forestry 3210</td>
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<td>Forestry 3050 or Ornamental Horticulture</td>
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<tr>
<td>and Landscape Design 3810 or Botany 3030</td>
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</tr>
<tr>
<td>Accounting 2110 or Political Science 3555</td>
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<td>or 3566</td>
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<td>Sociology 1510</td>
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<tr>
<td>Sociology 3130 or 3010 or Rural Sociology</td>
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<tr>
<td>3420 or Psychology 3120</td>
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<td>Journalism 2210</td>
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<td>Wildlife and Fisheries Science 3230</td>
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<td>Plant and Soil Science 3610</td>
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<td>Pathology 3140 or 3210</td>
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<td>Recreation 3140</td>
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<td>Forestry 4450</td>
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<td>Electives</td>
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| Hours Total: 198 hours |

**Or equivalent honors courses.**

**WOOD UTILIZATION OPTION**

The wood utilization option trains students for careers in forest products industries such as lumber, furniture, pulp and paper, or wood composites. Coursework is oriented toward the application of wood technology and engineering principles to wood processing, and sound background in basic sciences is required.

**Freshman**

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<td>Botany 1110-20</td>
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<td>Physics 1210-20</td>
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<td>Speech 2311</td>
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<td>Biology 2310</td>
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<td>Chemistry 1510-20-30</td>
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<td>Electives</td>
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<td>Junior</td>
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<tr>
<td>Entomology and Pathology 4140</td>
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**Or equivalent honors courses.**

**Industrial Engineering 3610-20; 3430-40... 15**

**Economics 2510-20... 3**

**Humantities-social science electives... 6**

**Communication elective... 3**

**Senior**

**Industrial Engineering 4060, 4200, 4520... 10**

**Entomology and Plant Pathology 3210... 4**

**Forestry 4150, 4540-50-60... 14**

**Accounting 2110... 4**

**Humantities-social science electives... 6**

**Technical electives... 12**

**Electives... 6**

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<td>Electives</td>
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</table>

**Or equivalent honors courses.**

**Total 202 hours**

---

**Ornamental Horticulture and Landscape Design**

Advisor: Professor Crater

Human needs go beyond food, clothing, and shelter. We require a degree of control over environment, especially immediate surroundings. Ornamental plants and their uses are recognized as part of the environment, hence a curriculum in ornamental horticulture and landscape design. The four areas of study within this curriculum are floriculture, nursery management, turfgrass management, and landscape design.

The area of floriculture includes the science of producing flowering plants in field and greenhouse, and the art and science of using these plants for the benefit of humans. Opportunities are available as greenhouse managers, floral designers, retail salespersons, garden writers, research workers, teachers, and related commercial areas.

Nursery management deals with the growing of trees, shrubs, and other ornamental plants for sale. It is necessary to be a nursery manager include horticultural knowledge and a business sense. Students in this area are prepared to work in nurseries, gardens, botanical gardens, and arboreta. They may find opportunities also in research, teaching, writing, sales, and landscape maintenance and installation.

Turfgrass management includes all aspects of growing and caring for turfgrass, whether it be golf greens or home lawns. The increasing number of golf courses and home lawns and the emphasis on better quality make new opportunities for turfgrass managers. Such opportunities include golf course superintendents, park and recreational turf managers, operation of a lawn or grounds maintenance business, producer and seller of sod, research, teaching, and sales.

Landscaping means modifying the outdoor environment for the greatest use, comfort, and enjoyment. It not only means the use of trees, shrubs, and other plant material to accomplish this goal, it also involves having an understanding of the requirements for working, recreation, and housing. Empha-
 applicy to the soil and to a better understanding of its properties and proper use. The plant and soil scientist must have a knowledge of the basic physical and biological sciences and, in addition, be trained in communication skills. The scientist may be broadly trained or may be in a more specific phase of the subject. Regardless of interest, many good jobs are available for the well-trained plant and soil scientist. Employment opportunities differ depending upon the individual training and interest. For the person who is scientifically inclined, positions are available in research with both public and private agencies. For those who wish to apply their knowledge to the solution of practical problems, positions are available with the Agricultural Extension Service as extension agents or as specialists, with the Soil Conservation Service, Forest Service, Farmers Home Administration, Production Credit Association, and other public agencies. Many plant and soil scientists are employed in private industry as technical specialists, supervisors, and salespersons. Banks and other financial institutions employ plant and soil scientists as appraisers and farm managers. Others may farm on their own, manage farms for others, or work in foreign agricultural programs. Certainly, plant and soil science is basic to all agriculture, and people trained in this important field will find many opportunities to serve in modern agriculture.

A minor in Plant and Soil Science consists of 24 credit hours including 3130, 4410, and at least 15 elective hours to be taken by electing two (2) courses from Group A and two (2) courses from Group B. 3610 will not be accepted as a course to meet minor requirements.

Each student selecting this major must complete the basic curriculum for agriculture and fulfill the major group requirements. The curriculum in plant and soil science showing the manner in which the required courses may be taken by years is as follows:

**Freshman**

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<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
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<tr>
<td>1English 1010, 1020, 1031 or 1033</td>
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<td>3Physics 1210 or 2210 or Geology 1410</td>
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<tr>
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**Sophomore**

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<tr>
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<tr>
<td>1Chemistry 1510–20–30 or 1110–20–30–30</td>
<td>12</td>
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</tr>
<tr>
<td>1Economics 2510</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Speech 2311</td>
<td>4</td>
<td></td>
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<tr>
<td>Social science or humanities electives</td>
<td>7</td>
<td></td>
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<tr>
<td>Plant and Soil Science 2130</td>
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**Junior**

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<td>Social science or humanities electives</td>
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<tr>
<td>Nutrition 3130 or Chemistry 2230 or Chemistry 3211 and 3219</td>
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<tr>
<td>Entomology and Plant Pathology 3130, 3210</td>
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<tr>
<td>Plant and Soil Science 3110</td>
<td>4</td>
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<td>Orn. Hort. and Landscape Design 3030, 3110, 3410, 3510</td>
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<td>2Orn. Hort. and landscape design electives</td>
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</tr>
<tr>
<td>3Botanical or Agricultural Electives</td>
<td>6-8</td>
<td></td>
</tr>
<tr>
<td>Botany 3210</td>
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**Senior**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>General elective</td>
<td>4</td>
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<tr>
<td>2Agricultural electives</td>
<td>9-11</td>
<td></td>
</tr>
<tr>
<td>1Electives</td>
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</tbody>
</table>

Total: 198 hours

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1Or equivalent honors courses.
2Students should consult with departmental advisor for suggested electives and suggested course of study.
3Mathematics 1540-50-60 may be substituted for students with high mathematics scores.
4To be selected from Agricultural Economics 3430, 4310; Agricultural Mechanics 2120, 3130, 4170, 4180; Plant and Soil Science 3610, 3710, 4120.
5To be selected from Biology 3116, 3120; Botany 4120, 4610; Biochemistry 3110; Chemistry 2140 and 2149.

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### Plant and Soil Science

Advisors: Professors Coffey, Parks, Reynolds, Seatz; Associate Professors Allen, Lessman, and Reich.

Plant and soil science deals with field and vegetable crops and soils. Plant science includes crop breeding and genetics for crop improvement and the introduction of new varieties, crop management for high quality products, and weed control for efficient crop production.

Soil science includes studies in soil formation and classification for better understanding of our soil resources; soil management for optimum crop production and conservation; soil fertility for utilizing fertilizers efficiently; and basic studies in chemistry, physics, and biology as they...

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### Credit for Cooperative Work

A maximum of nine quarter hours of credit may be earned by supervised employment on approved jobs. To receive credit, the student must receive the recommendation of the employer, must present a satisfactory written report, and must receive a passing grade from the University professor in charge. Employment periods shall be not less than 12 weeks. At least one quarter must be spent in study on the campus between periods of employment. Prerequisites: Junior classification, with grade point average of 2.0 or above, and permission of the department head and the dean of the College of Agriculture to register. Three credit hours each quarter.
GRADUATE Consult the Graduate Catalog for listing of graduate level courses.

Departmental Programs

Agricultural Economics and Rural Sociology

Professors:
- J. A. Martin (Head), Ph.D. Minnesota; M. B. Badenhop, Ph.D. Purdue; J. R. Brooker, Ph.D. Florida; C. L. Cleland, Ph.D. Wisconsin; Irving Dubov, Ph.D. California (Berkeley); L. H. Keltier, Ph.D. Kentucky; T. H. Kliindt, Ph.D. Kentuckly; F. O. Leuthold, Ph.D. Wisconsin; D. L. McLemore, Ph.D. Clemson; B. R. Moomaw, Ph.D. Purdue; S. D. Mundy, Ph.D. Tennessee; B. H. Pentecost, J. D. Tennessee; W. P. Ramney (Emeritus), Ph.D. Minnesota; E. B. Sappington, Ph.D. Illinois; J. T. Whitney, Ph.D. Purdue.

Associate Professors:

Assistant Professor:
- D. M. Markey, Ph.D. V.P.I. & S.U.

Agricultural Economics (047)

2410 Economics of Food and Rural Resources (3) Analysis of contemporary problems and issues of public concern relating to food, agriculture, and rural areas using fundamental economic concepts: Farm income, food prices, world food problems, natural resources, environment, rural development, F.S.

3120 Agricultural Prices (3) Factors affecting prices in agricultural production/consumption; prices in an enterprise economy; competitive, monopoly, and oligopoly pricing; space, form and time price differences; tools to measure economic efficiency. Prereq: Agriculture 1110 and Economics 2520 or consent of instructor. W.

3320 Marketing Farm Products (3) Survey of the U.S. food and fiber marketing systems; marketing options of farmers and agribusinesses; industry structure in market channels for agricultural products; basic tools to analyze marketing problems. Prereq: Agric. 1110 and Econ. 2520 or consent of instructor. F.S.

3410 Farm Business Analysis (3) Techniques of analyzing economic and physical performance of farm businesses. Farm records and accounts. Measures of farm performance, cost, net worth, and production efficiency. Analysis of performance of actual farm businesses. Prereq: Agric. 1110 and Econ. 2520. S.

3430 Agricultural Law (4) Survey of law and application to the farmer, his family, and agricultural industry. Property, contracts, torts, drainage and water rights, landlord-tenant relationships, taxation and insurance, forms of business organization, estate planning, regulatory laws, and other selected topics. W.

3440 Farm Income Tax Management (3) Legal and economic concepts and problems in organizing and managing a farm business within the framework of federal, state, and local income tax systems. Recognizing problem areas, utilizing tax planning incentives, and avoiding tax traps that may be encountered in organizing the business and operating and transferring the farm. Prereq: Junior standing. 3 hrs. W.

3510 Commodity Futures Markets (3) Futures market as an instrument in marketing of primary industry products; process of passing to others the risk of adverse price change; price analysis from two viewpoints; supply and demand and history (fundamentalist and chartist). Prereq: Junior standing. 3 hrs. F.S.

4120 Farm Management (3) Principles of farm organization and operation; the nature of managerial processes; economic aspects of crop, livestock, labor and machinery planning; use of budgeting techniques for planning field trips arranged. Prereq: Agriculture 1110 and Economics 2520. F.S.

4140 Agricultural Production Economics I (3) Application of Micro-economic theory to problem of resource allocation, production, pricing, scale of operation of agricultural firms; economic interpretation of technical agricultural production relationships. Prereq: Agriculture 1110 and Economics 2510. W.

4210 Problems in Agricultural Economics (1-3) Directed individual or team research and report writing. Off-campus internship and reporting. Special courses in specific topics. Student must arrange with instructor before registering. Graduate credit for non-majors only. May be repeated up to 9 credit hours. E.

4240 World Agriculture and Trade (3) Economic bases of world agricultural production and trade; resource location and tenant factors in location and marketing of agricultural goods and commercial policy. Prereq: Agriculture 1110 and Economics 2520, or consent of instructor. F.

4250 Agricultural and Rural Planning (3) Decision-making concepts applied to design and implementation of local action programs. Case examples from the U.S. and other countries. Prereq: Agriculture 1110 and Economics 2510, or consent of instructor.

4310 Agricultural Finance (3) Nature and source of capital; credit problems of farmers; kinds and sources of farm credit. Agricultural insurance and taxation. Prereq: Agriculture 1110 and Economics 2510. W.

4320 Agricultural Policy (3) Meaning of agricultural policy in democratic society; relationship of farm groups to public policy; problems arising from policies of agricultural investment and appraisal of results; current policy problems. Prereq: Agriculture 1110 and Economics 2520. W.

4330 Land Economics (3) Problems and policies of land use, conservation, development, taxation, and tenure; population growth and demand for land; principles and theories of rent, property, value, and income. Prereq: Agriculture 1110 and Economics 2520. S.

4610 Management of Farm Supply and Marketing Firms (3) Operations of firms selling farm supplies and merchandising agricultural products. Emphasis on accounting and pricing measures; farm price problems. Prereq: Agriculture 1110 and Economics 2510. F.

4630 Advanced Agricultural Marketing (3) Economics of market location and pricing; perfect market model; spatial equilibrium analysis, production and market location and transfer costs; processing and storage costs; maximizing returns; institutions and market flows; measuring effectiveness. Prereq: 3120 or 3320 or consent of instructor. W.

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

Rural Sociology (880)

3420 Rural Sociology (3) Nature of rural society; social systems concepts; rural-urban differences; nature of social relations; population characteristics and movement; problems of rural people; tenure, farm labor, health, services, educational facilities, churches, local government; impact of industrialization. F.

4450 Diffusion of Agricultural Technology (3) Analysis of diffusion process whereby new technology spreads from scientists to final adopters. Topics discussed include adoption process, communication behavior, mass media, role of professional change agents, opinion leadership, and two-step flow hypothesis. Prereq: Rural Sociology 3420, or consent of instructor. S.

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

Agricultural Engineering

Professors:
- H. Luttrell (Head), Ph.D. Iowa State; B. L. Bledsoe, Ph.D. Oklahoma State, P.E.; Z. A. Henry, Ph.D. Purdue; J. R. Brooker, Ph.D. Colorado State; J. R. McMillan, Ph.D. University of Tennessee; C. C. McManus, Ph.D. Purdue; J. J. McLeod, Ph.D. Agriculture; B. L. Bledsoe, Ph.D. Tennessee.

4110 Food Technology and Science in Agriculture (4) Introduction of microcomputer technology as related to agriculture; applications: microcomputer terminology and architecture; number system; input/output devices; operating systems and languages; applications and software; communication with peripherals and other systems. Prereq: basic course in computer programming. 2 hrs. and 1 lab.

4018 Honors: Seminar (3) Selected topics. Offered alternate years. Open to juniors by permission. F.

4120 Farm Management (3) Principles of farm organization and operation; the nature of managerial processes; economic aspects of crop, livestock, labor and machinery planning; use of budgeting techniques for planning field trips arranged. Prereq: Agriculture 1110 and Economics 2520. F.S.
Agricultural Engineering (066)

1130 Introductory Agricultural Engineering (3) Basic engineering principles, field of agricultural engineering. 2 hrs. and 1 lab. Prereq: Open only to freshmen and sophomore students in agricultural engineering. F.

3100 Seminar (1) Presentations, discussions, reports on research techniques. Prereq: Consent of department head. F.

3610 Soil and Water Conservation Engineering (4) Integration of hydrologic, agronomic, and engineering principles in solving agricultural water management problems involving flood and erosion control, drainage, irrigation, and water quality. Coreq: Plant and Soil Science 2130; Engr. Sci. and Mech. 3110. 3 hrs. and 1 lab. Graduate credit for non-majors only. F.

3620 Structures for Production, Environmental Control, and Waste Management (4) Analysis of loads and stresses; design of wood, steel, and concrete members; structural and environmental requirements of facilities for livestock and crop production and storage; physiologic requirements; heat loads; insulation; moisture relationships; ventilation and waste management. 3 hrs. and 1 lab. Graduate credit for non-majors only. F.


3640 Power Units and Machinery (4) Components and operating characteristics of internal combustion engines and tractor systems; functional analyses and capabilities of agricultural machines; machinery system performance and analysis. Prereq: Math 1550. Engr. Sci. and Mech. 3700; Mech. Engr. 3311. 3 hrs. and 1 lab. Graduate credit for non-majors only. F.

4120-30 Seminar (1,1) Presentations, discussions, reports. 4120—Professional development topics. 4130—Industry trip. Prereq: Consent of department head. W, S.

4220 Special Problems in Agricultural Mechanizing (3) Selection, analysis, solution, and report of research problem. May be repeated for maximum of nine credit hrs. when engaged in cooperative engineering or other approved industry work. Prereq: 3100 and consent of department head. 3 hrs. and 1 lab. E.

4230 Selected Topics in Agricultural Engineering (3) Develop new topics as required by current trends and problems in agricultural engineering. A.

4250 Electronic Applications in Agricultural Engineering (3) Design aspects of analog and digital electronics as applied to agricultural engineering. Study of sensing physical parameters and controlling these parameters. Theory and characteristics of digital electronics using modern technology for realization of design problems in agricultural engineering. Prereq: Elec. Engr. 3110, 3120. 2 hrs. and 1 lab. W.

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

Agricultural Mechanization (080)

2110 Agricultural Drawing and Mapping (3) Fundamentals of graphics and mapping, with emphasis on applications in agriculture and forestry. 1 hr. and 2 labs. F.

2130 Agricultural Surveying (3) Measurement of horizontal and vertical distances and angles; differential and profile leveling; topographic surveying and mapping; area computations. Prereq: Math 1560 or consent of instructor. 1 hr. and 2 labs. F.

3100 Seminar (1) Presentations, discussions, reports on research techniques. Prereq: Consent of department head. F.

3110 Agricultural Mechanics (3) Organizing, equipping, and managing school and farm shops; techniques, materials, and procedures in design and construction of shop projects; metal work and welding. 1 hr. and 2 labs. W.

3120 Forest Surveying (3) Principles, methods and instruments in measurement of horizontal and vertical distances and angles, with emphasis on forest management applications; computation of traverses, areas and volumes; map types, plotting and drafting. Prereq: Math 1841. 2 hrs. and 1 lab. W.

3140 Forest Surveying and Mapping (3) Use of low-precision methods of instruments including pacing, Abney level, topographic trailer tape, hand compass, and staff compass. Field measurements, computations and layouts involving random and true lines, traverses, topographic mapping, and forest roads. Prereq: 2140. Ten periods of 6 hrs. per period.

3210 Soil and Water Conservation Facilities (3) Leveling, topographic surveying, construction, and maintenance of drainage, irrigation, and erosion control systems. Prereq: Math 1560. 2 hrs. and 1 lab. S.

3220 Agricultural Structures (3) Functional planning of structures; environmental control, construction methods, properties of building materials, and cost estimation. Prereq: Math 1550. 2 hrs. and 1 lab. S.

3510 Food Engineering Technology (4) Application of basic engineering principles of food processing. Fluid flow, heat transfer, refrigeration, drying, evaporation, and materials handling. Prereq: Agriculture 2120 or Physics 1220. 3 hrs. and 1 lab. S.

3560 Electrical Systems in Agriculture (3) Electrical terms and fundamentals, distribution, wiring practice, governing codes, controls, and motors used in agricultural and residential facilities. Prereq: Physics 1220 or Agriculture 2120. 1 hr. and 1 lab. W.

4120-30 Seminar (1,1) Presentations, discussions, reports. 4120—Professional development topics. 4130—Industry trip. Prereq: Consent of department head. W, S.

4160 Agricultural Waste Utilization and Disposal (3) Techniques, equipment, and structures for utilizing, treating, and disposing of agricultural wastes by land spreading, lagooning, and processing. Prereq: Senior standing. 2 hrs. and 1 lab. F.

4710 Small Engines (3) Concepts and mechanics of small gasoline engines; selection, operation, adjustment, and repair of single cylinder engines. 2 hrs. and 1 lab. W.

4180 Equipment and Techniques for Application of Agricultural Chemicals (3) Equipment for application of liquid, solid, and gaseous chemicals; system components; operational characteristics; safety considerations; calibration; selection and management; materials handling and disposal methods. 2 hrs. and 1 lab. S.

4210 Agricultural Machinery and Tractors (4) Agricultural machinery and power units; adaptation to agricultural operations; selection, adjustment, and servicing. Prereq: Math 1550. 3 hrs. and 1 lab. W.

4220 Special Problems in Agricultural Mechanization (3) Selection, analysis, solution, and report of research problem. May be repeated for maximum of 9 credit hrs. when engaged in approved industry work. Prereq: 2130 or 2140. 3 hrs. and 1 lab. E.

4250 Electronic Applications in Agricultural Engineering (3) Design aspects of analog and digital electronics as applied to agricultural engineering. Study of sensing physical parameters and controlling these parameters. Theory and characteristics of digital electronics using modern technology for realization of design problems in agricultural engineering. Prereq: Elec. Engr. 3110, 3120. 2 hrs. and 1 lab. W.

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

Agricultural Extension Education (075)

Consult the Graduate Catalog for listing of graduate level courses.

Animal Science (113)

Consult the Graduate Catalog for listing of graduate level courses.

2610 Fundamentals of Food Animal Evaluation (4) Criteria for evaluation of bovine, equine, porcine, and ovine species. hone of animal classes, function, and use; soundness; technique in preparation for show and sale, vaccinating and immunizing, controlling parasites. Facilities needed in livestock management including buildings, fences, corrals, equipment, space requirements, and restraining devices. 2 hrs. and 1 lab.

2710 Introduction to Biometrical Aspects of Animal Science (3) Biometrical concepts for optimum comprehension of material presented in upper-division animal science courses. Basic ideas in probability and statistics related to animal production and health are introduced in relation to animal enterprises and management. Topics include description and interpretation of data, normal distributions and their prevalence in biological material. Planning effective experiments. Association or relationship of variables. Assessment of validity of hypotheses. 2 hrs. and 1 lab.

2810 Farm Animal Management Practices (3) Integration of management practices and skills into cattle, horse, sheep, poultry, and swine enterprises. Practices and skills include dehorning, castrating, docking, foot care, shearing, age determination, identification, preparing for show and sale, vaccinating and immunizing, controlling parasites. Facilities needed in livestock management including buildings, fences, corrals, equipment, space requirements, and restraining devices. 2 hrs. and 1 lab.

2820 Introduction to Light Horses (3) Scope and role of horse in society; market classes; function, and use; soundness; tack; introduction to management problems. May not be used by animal science majors. Prerequisite: Consent of instructor. 2 hrs. and 1 lab.

3210 Anatomy and Physiology of Farm Animals (4) Skeletal and joints, skeletal muscles, blood and microcirculation, and nervous cardiovascular, respiratory, digestive, renal, and endocrine systems; demonstration of physiological phenomena. Prereq: Biology 1210 or Agriculture 1130. 3 hrs. and 1 lab. (Same as Zoology 3220.)

3220 Physiology of Reproduction (3) Comparative anatomy and physiology of reproductive systems of higher vertebrates; gametogenesis, fertilization, implantation, prenatal growth, parturition, and initiation of lactation, endocrine regulation of reproductive phenomena. Prereq: Zoology 3210 or consent of instructor. 2 hrs. and 1 lab. (Same as Zoology 3220.)

3320 Animal Nutrition (3) Properties, functions, utilization, and deficiency symptoms of essential nutrients; nutritive value determinations and their use. Prereqs: Agriculture 1130 and one quarter of organic chemistry. 3 hours.

3330 Feeds and Ration Formulation (4) Feedstuffs, additives, feeding standards, nutrient requirements, and feeding of beef cattle, dairy cattle, horses, swine, poultry, and laboratory animals. Prereq: 3320. 2 hrs. and 2 labs.

3410 Heredity in Animals (3) Basic chromosomal mechanisms of Mendelian inheritance and their exceptions such as linkage and cytoplasmonic inheritance. Introduction to biochemical basis of heredity and to quantitative inheritance. Illustrations of principles related to species familiar to agriculture students. Prereq: Agriculture 1130. 2 hrs. and 1 lab.

3420 Principles of Animals Breeding (3) Genetic principles involved in breeding of economic species. Genetic basis of variation. Purification of variation according to various kinds of causative differences such as differences in genetic makeup and environment. Selection, evaluation of populations, mating systems and effects on populations. Planning breeding programs. Prereqs: 3410 or equivalent. 2 hrs. and 1 lab.

3430 Breeds of Farm Animals (3) Study of evolution and characteristics of breeds of domestic animals. Prospects for purebred industry and impact of crossbreeding programs. 2 hrs. and 1 lab.

3510 Animal Hygiene and Sanitation (4) Parasitic, viral, and bacterial organisms in farm animals; immunity to parasitic infections; principles of vaccine development and veterinary regulations and quarantine; herd health programs. Prereq: Microbiology 2010-11 or 2019-10 or consent of instructor. 3 hrs. and 1 lab.

3520 Avian Diseases (3) Major diseases; characteristics, prevention and treatment; management practices and systems for domestic birds, upland game birds and waterfowl. 2 hrs. and 1 lab.


3620 Dairy Cattle Judging and Classification (3) Comparative judging, oral reasons: type classification programs. Economic value of classification ratings. Prereq: 2610 or consent of instructor. 3 labs.

3630 Judging Poultry Products (3) Grading of poultry and poultry products, according to USDA standards; factors influencing quality. Prereq: 2610 or consent of instructor. 1 hr. and 2 labs.

3640 Horse Selection and Judging (3) Selection, judging, evaluation of soundness and scoring of working and pleasure horses for functional efficiency. Prereq: Consent of instructor. 1 hr. and 2 labs.

3810 Nutrition and Management of Laboratory Animals (3) Principles of feeding, breeding, and handling of animals in in-vitro investigations; specific species' requirements, peculiarities, and research for which best fitted; laws governing use and handling of laboratory animals; feeding of rats and 1130 and consent of instructor. 2 hrs. and 1 lab.

4110 Special Problems in Animal Science (1-4) Special research and/or special reports based on supervised independent study or review of literature dealing with subjects applicable to field of animal science; supervised work experience in state-federal laboratories or in private industry. May be repeated for a maximum of 4 hours. Prereq: Senior standing and consent of instructor and department head.

4210 Physiology of Lactation (3) Development, anatomy, and function of mammary glands; endocrine interactions for mammary development and milk secretion; factors affecting yield and composition of milk. Prereq: 3210.

4220 Avian Physiology (3) Anatomy and physiology of avian species with emphasis on poultry. Prereq: 3210. 2 hrs. and 1 lab.

4230 Applied Reproduction in Farm Animals (3) Applications of methods and techniques in collected, evaluating, processing, and preserving semen; insemination of females; pregnancy determination; gestation and parturition. Prereq: 3210 or consent of instructor. 3 hrs. and 1 lab.

4330 Feeding Applications for Farm Animals (3) Detailed application of feeding principles designed to allow students to discover and explore feeding options available to them through problem solving. Prereq: 3330. 1 hr. and 2 labs.

4340 Experimental Animal Nutrition Laboratory (2) Laboratory feeding trials to demonstrate the basic animal nutrition concepts including the preparation and feeding of experimental diets. Prereq: 3330. 2 hrs.

4610 Advanced Beef Cattle, Dairy Cattle, Horse Poul-

try, Sheep, and Swine Judging (2) Specialization in judging, evaluation, selection and presentation of oral reasons on classes of beef cattle, dairy cattle, horses, poultry, sheep, and swine. May not be repeated for credit. Prereq: Consent of instructor. 2 labs.

4620 Beef Cattle Production and Management (4) Integration of principles of nutrition, physiology, and breeding into complete beef cattle management program. Topics will include structure of industry, enterprise establishment, systems of production, production practices, and herd improvement program. Alternatives evaluated in terms of production responses and economic returns. Prereq: Completion of animal science sophomore and junior core courses or consent of instructor. 3 hrs. and 1 lab.

4630 Pork Production and Management (4) Integration of principles of selection, nutrition, breeding, physiology, and management into complete pork production and management program. Topics will include structure of industry, enterprise establishment, systems of production, production practices, and herd improvement program. Alternatives evaluated in terms of production responses and economic returns. Prereq: Completion of animal science sophomore and junior core courses or consent of instructor. 3 hrs. and 1 lab.

4640 Poultry Production and Management (4) Structure of poultry industry; organization and management of poultry enterprises including rearing, housing, feeding, processing, and marketing. Prereq: Completion of animal science sophomore and junior core courses or consent of instructor. 3 hrs. and 1 lab.

4650 Light Horse Production and Management (4) Integration of principles of nutrition, physiology, and breeding into light horse management program. Topics include structure of industry; systems and practices of production; improvement programs; tack, equipment, and facilities for both pleasure owners and commercial producers. Alternatives evaluated in terms of production responses and economic returns. Prereq: Completion of animal science sophomore and junior core courses or consent of instructor. 3 hrs. and 1 lab.

4660 Lamb and Wool Production and Management (4) Integration of principles of selection, nutrition, breeding, physiology, and marketing into complete lamb and wool production and management program. Topics will include structure of industry, enterprise establishment, systems of production, production responses, and economic returns. Prereq: Completion of animal science sophomore and junior core courses or consent of instructor. 3 hrs. and 1 lab.

4670 Food Animals Production (4) Application of production principles of selection, nutrition, breeding, physiology, and marketing into complete production program. Prereq: Consent of instructor. 3 hrs. and 1 lab.

4710 Seminar (2) Review of literature and presentations on special topics and current research in animal science field. Prereq: Senior standing. 1 hr. and 1 lab. GRADUATE Consult the Graduate Catalog for listing of graduate level courses.

Entomology and Plant Pathology (341)


Associate Professor: E. C. Bernhard, Ph.D. Georgia.

Assistant Professors: B. R. Reddick, Ph.D. Clemson; M. H. Windham, Ph.D. North Carolina State.

3060 Introduction to Forest Protection (4) (Same as Forestry 3060.)

3100 Plant Pathology (4) Principles of plant pathology illustrated by diseases of common agricultural crop plants. Prereq: Botany 1120 or Biology 1220. 3 hrs. and 1 lab. (Same as Botany 3100.) F. S.

3210 Economic Entomology (4) Structure, life histo-

ry, habits, and principles of control of important insect pests of crops, forest, orchard, and household. 3 hrs. and 1 lab. F. S.

3220 Apiculture (2) Biology of the honey bee, with emphasis on beekeeping equipment and apary manage-

ment practices relative to pollination of crops and production of honey and beeswax. W.
3250 Veterinary Entomology (4) Identification, biology and control of arthropods that attack major livestock species. Introduction to entomology, methods of insect control, major pest species groups and problems associated with specific host production operations. Not available for graduate credit. Prereq: Biology 1220 or equivalent. 3 hrs. and 1 lab.

4010 Biology of Soil Microorganisms (4) Morphology and physiology of soil organisms, decomposition of organic matter, chemical transformations, and interactions between soil organisms and higher plants. Prereq: 3130 or introductory microbiology. 3 hrs. and 1 lab. (Same as Microbiology 4810) S, A.

4030 Forest and Shade Tree Entomology (3) Identification, biology, ecology, and control of forest and shade pests. Prereq: 3210 or equivalent. 3 hrs. and 1 lab. S, A.

4140 Forest Pathology (3) Symptomatology, etiology, epidemiology, and control of forest diseases, including wood decay and other diseases important to urban and production forestry. Prereq: 3130 or Forestry 3000. 2 hrs. and 1 lab. May be taken for graduate credit. F.

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

### Food Technology and Science (390)

**Professors:**
J. T. Miles (Head), Ph.D. Wisconsin; J. L. Collins, Ph.D. Maryland; H. D. Jaques, Ph.D. Illinois; S. L. Melton, Ph.D. Tennessee; W. W. Overcast (Emeritus), Ph.D. Iowa State.

**Associate Professors:**
P. M. Davidson, Ph.D. Washington State; B. J. Demott, Ph.D. Michigan State; F. A. Draughn, Ph.D. Georgia; H. D. Lovedge, Ph.D. Kansas State; J. J. Mount, Ph.D. Ohio State; R. J. Rieman, Ph.D. Kansas State.

**Instructor:**
O. G. Sanders, M.S. Tennessee.

**2300 Food Laws and Regulations (3)** State and federal laws concerning food industry, Organization and operation of regulatory agencies. Food grades and standards. W.

**3020 Dairy Products I (4)** Production, processing, and distribution of fluid milk. Manufacture of frozen and condensed dairy products. 3 hrs. and 1 lab. W.

**3570 Evaluation and Grading Dairy Products (3)** Market standards and grades of dairy products with practice in grading milk, ice cream, butter, cheese, and other specialized dairy products. 1 hr. and 2 labs. S.

**3610 Meat Evaluation and Grading (3)** Grading standards for quality and quantity of principles of evaluating beef, pork, and lamb. Practice in grading and judging carcasses and cuts. 1 hr. and 2 labs. F.

**3810 Food Microbiology I (4)** General methods for the enumeration of microorganisms in food products. Factors which affect the growth of microorganisms in foods and methods for controlling their growth. Prereq: Microbiology 2910-19 or equivalent. 2 hrs. and 1 lab. F.

**3840 Meat Science (3)** Processing methods, carcass characteristics of meat animals; slaughter, cutting selection, curing, freezing, and cooking. 2 hrs. and 1 lab. W, S.

**4000 Problems in Food Technology (1-4)** Research problems in student’s area of interest. Required written report. Supervised experience in state or federal laboratories or approved industries encouraged. May be repeated. Maximum 8 credit hrs. Prereq: Consent of department head. E.

**4010 Food Technology and Science Seminar (1-3)** Review of literature; oral and written reports. May be repeated for a maximum of 3 credit hrs. Prereq: Junior standing and consent of instructor. F, W, S.

**4020 Food Processing I (4)** Design of food quality assurance programs with emphasis on sanitation. Application of general analytical techniques, regulations and unit operations to quality control in the food industry. Prereq: 3130. 3 hrs. and 1 lab. F.

**4100 Food Products (3)** Food products from crops with emphasis on types, manufacturing systems, quality attributes, and utility. A, S.

**4200 Bakery Products (3)** Baking ingredients and their interactions during production and storage of bakery products. Prereq: 4130 and Chemistry 2230 or equivalents. 2 hrs. and 1 lab. S.

**4610 Food Microbiology II (4)** Standard methods for the examination, cultivation, and identification of bacteria associated with food processing, food spoilage, and food poisoning. Prereq: 3810, 2 hrs. and 2 labs. W.

**4840 Meat Products Manufacturing (3)** Prepared meat products with emphasis on sausage making and information relating to cost controls, inspection, and meat science. Prereq: 3840 or consent of instructor. 1 hr. and 2 labs. W.

**4920 Analysis of Physical Properties of Foods (4)** Physical states of food materials, water, viscosity, colloids, gels, foams, cryostats, color, and fat quantitations of changes induced by processing. Prereq: 4200 and Agricultural Mechanization 3510 or consent of instructor. 3 hrs. and 1 lab. W.

**4940 Advanced Meat Science (3)** Qualitative and quantitative characteristics of meat and poultry as related to palatability, cookery, preservation, packaging, and merchandising. Prereq: Food Technology and Science 3840. A, F.

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

### Forestry, Wildlife and Fisheries

**Professors:**
G. Schneider Assistant Dean, Ph.D. Michigan State; J. W. Barrett (Emeritus), Ph.D. Syracuse; E. R. Buckner, Ph.D. North Carolina State; J. L. Byford (Emeritus), Ph.D. University of California; H. A. Core (Emeritus), Ph.D. Syracuse; R. W. Dimmick, Ph.D. Wyoming; M. R. Pelton, Ph.D. Georgia; E. Thor (Emeritus), Ph.D. North Carolina; J. L. Wilson; Ph.D. Tennessee; F. W. Woods, Ph.D. Tennessee.

**Associate Professors:**

**Assistant Professor:**
S. E. Schlarbaum, Ph.D. Colorado State.

### Forestry (396)

**1620 Introduction to Forestry (3)** History of forestry; establishment, care, protection, and use of forest stands; forest products industries; organization and agencies for establishment of forest policies; forest resources. F.

**2500 Conservation of Renewable Natural Resources (3)** Land, water, plants, and animals and their interrelationships that form the biologic and ecological basis for decisions about utilization of renewable natural resources; uses and abuses of forest, recreation, wildlife and fisheries resources, including management alternatives and aspects of pollution. S.

**3000 Current Events in Renewable Natural Resources (1)** Current events influencing forestry, wildlife, and fisheries management. Perspectives from other disciplines and professions which are affected by and which influence natural resource management. Extended views of natural resources, their allocation and management. Professional development and education for the disciplines of forestry, wildlife and fisheries. 1 hr. May be repeated. Maximum credit 4 hrs. S, F, J. (Same as Wildlife and Fisheries Science 3000) W.

**3020 Forest Environments and Ecology (3)** Environments and ecology of forests and associated lands; emphasis on the application of ecological principles to contemporary problems. Available for graduate credit for non-forestry majors only. Prereq: 8 hrs. of biology, botany, or zoology. 3 hrs. F.

**3040 Forests and Trees of Eastern North America (4)** Forest formations and associations of North America east of the Great Plains; dendrology and silvics of the trees that comprise them. Emphasis will be on identification, nomenclature and species relationships. Will include student use of microscopes, hand lenses and an interactive wood identification program on the University computing system. 3 hrs. and 1 lab. F, W.

**3050 Forests and Trees of Western North America (3)** Forest formations and associations of North America west of the Great Plains; dendrology and silvics of the trees that comprise them. Largely an audio-visual presentation with emphasis on edaphic, topographic and climatic site variables as they control species distributions. Available for graduate credit for non-forestry majors only. Prereq: 8 hrs. basic biology or botany. 2 hrs. and 1 lab. W.

**3060 Introduction to Forest Protection (4)** Biology of forest insects and diseases, including impact on forest ecosystems, control principles and techniques silviculture implications: principles of forest fire including behavior, weather influence, prevention, control organization: biological, economical, and sociological implications of forest fires. 3 hrs. and 1 lab. (Same as Entomology and Plant Path. 3060) W.

**3110 Forest Measurements and Biometry (4)** Measurements of individuals in animal and plant populations; linear regression, sampling of forest populations; growth and potential production. Prereq: Plant and Soil Sci-\textit{ences} 3610. 3 hrs. and 2 labs. Available for graduate credit for non-forestry majors only. W.

**3120 Wood Technology (2)** The fundamental structure, properties and use of wood. Prereq: 3040, 3050 (3050 may be taken concurrently) 2 hrs. and 2 labs. W.

**3125 Wood Identification (2)** Macro and micro identification of important commercial softwoods, hardwoods, and foreign woods. Will include student use of microscopes, hand lenses and an interactive wood identification program on the University computing system. 2 hrs. and 1 lab. W.

**3220 Forest Products and Utilization (3)** Harvesting, processing, marketing factors in stand conversion, intermediate and harvest cuts. Prereq: 3120. F.

**3240 Introduction to Forest Recreation (3)** Concepts
of leisure time in recreation. Historical development of forest recreation. Forest resources; development, management, and administration of forest recreation areas and systems. W.

3250 Ecological Problems of Forest Recreational Land (3) Examination of major forms of ecological impacts from recreational land use; emphasis on assessment techniques; evaluation of cases; recreation structure; survey and planning techniques for recreation areas; management of recreation areas; development of recreation facilities; interpretation of recreation resource; principles of recreation management. Prereq: 4150, or consent of instructor. S.

3260 Forest Land Use and Society (3) Past and present overviews of forest utilization in the U.S. from societal and economic perspectives. Role of societal factors influencing forest resource use including land ownership. World forest resource uses, and markets. Implications of alternative futures for forest resources. F.

3320 Principles of Silviculture (3) Influence of site factors of reproduction, growth, development, and forest management. Classification of forest tree species. Silvicultural laws. Prereq: 3202 or Biology 2130; 3040; Plant and Soil Science 2130 recommended. 2 hrs. and 1 lab. F.

4002 Utilization (3) Wood-using industries; processing forest products-sawmills, tree-log lumber grading, pulping operations; flooring plants, treating plants, plant layout, flow diagrams. Prereq: 3120 or permission of instructor. S.

4003 Field Methods of Timber Inventory (4) Field measurements of forest trees; timber cruising; determination of species and volume for specific purposes; tree and stand growth; site evaluation; field problems. Prereq: 3110 and Agricultural Mechanization 3120. S.

4004 Forest Practice (3) Management of forest lands by public and private organizations; "multiple-use" concept as it influences management decisions; impact of public policy for outdoor recreation or management decisions; management prescriptions. Prereq: 3202, 4006. S/NC. S.

4006 Silvicultural Methods (4) Methods and application of intermediate and regeneration cuttings; site preparation, planting and seedling, modifications of cutting methods to obtain desired goods and benefits. Prereq: 3060, 3320, 4002, 4003. S.

4007 Applied Forest Surveying, Road Construction, and Timber Harvesting (3) Application of surveying and road layout and construction techniques to forest problems. Interpretation and use of maps and aerial photographs in forestry field work. Discussion of forest operations, fuelwood operations, forest roads, and other management practices. Considerations in logging equipment selection and use. Prereq: Ag. Mech. 3120. S.

4020 Forest Watershed Management (3) Water as a forest resource; role of forests in the hydrologic cycle; control of water quantity, quality, and runoff; and watershed and woodland planning. Prereq: 3320 or consent of instructor. 3 hrs. Two overnight field trips. W.

4110-20-30 Problems in Forestry (1, 1.5, 1.5) Special research or individual problems in forestry. Prereq: Senior standing. Total not more than 9 hrs. E.

4150 Forest Resource Economics (3) Application of economic analysis to forest resource utilization. Principles of micro-economic analysis; timber production economics; economic analysis of major forest resource projects. Prereq: Econ. 2520 and senior standing, or permission of instructor. F.

4210 Forestry Organization and Administration (3) Planning, organizing, and leadership concepts and cases; problem analyses and decision making in forest resources management. Prereq: Senior standing in forestry. Prereq: 4150 or consent of instructor. 2 hrs. and 1 lab. W.

4220 Forest Resource Management (3) Decision-making principles, emphasizing forestry as an integration of resource uses. Models of forestry as a scientific, economic, and political process. Resource economics or science or consent of instructor. 2 hrs. and 1 lab. W.

4230 Forest Resource Management Plans (4) Field problems and case studies in forest resource management; the forest as a system; management of forest enterprises as a producer of timber, recreational services, watershed services, and wildlife; producing multiple services; preparation of a complete plan based on optimizing forest uses. Prereq: 4210. S.

4240 Interpreting Forest Resources (3) Principles and procedures of interpreting forest resources; importance of environmental interpretation to management of forest resources; development and administration of interpretive programs. Prereq: 3240 or equivalent. 2 hrs. and 1 lab. S.

4330 Forest Policy (3) History of forestry in United States with emphasis on development of forest resource policies; current policies influencing development and management of forest resources; brief survey of policy implications of forest resource organizations in public and private sectors. Prereq: 4004. W.

4340 Aerial Photography in Forest-Resource Management (3) Use of conventional aerial photographs in forest-resource management; interpretation of detail, aerial inventories, preparation of cover-type maps, uses of other remotely sensed imagery. Prereq: 3110 or equivalent. 1 hr. and 2 labs. S.

4420 Forest Tree Improvement (3) Forest tree improvement related to silviculture; nature and purposes of tree improvement; hybridization and selection; tree cytology and population genetics; importance of seed source; variation, selection of superior phenoypes, and development of seed orchards; hybridization; seed production and seed certification. Prereq: 4006 or consent of instructor. 2 hrs. and 1 lab. S.

4430 Regional Silviculture of the United States (3) Factors that influence silvicultural management of important tree species in North America. Importance of forests and forestry to a region; physiography, geology, soils, climate and weather, and regional biodiversity, silviculture, problems of protection, and silvical characteristics of the more important species. Prereq: 4006 or consent of instructor. F.

4440 Forest Recreation (3) Forest lands as a recreation resource; interrelationships of forest recreation and other management activities; development and management of forest recreation areas; socioeconomic and political determinants of recreation development and management. Possible overnight field trips required. Prereq: 6 credits in sociology and/or economics. Junior standing. 2 hrs. and 1 lab. S.

4450 Recreational Behavior in Forest Environment (3) Review of sociological and psychological theories relevant to forest recreation planning, management, and administration. Implication and application of behavioral concepts to forest recreation problems, and review of methodologies for assessing recreational behavior. Prereq: 3240 and 6 hrs. in behavioral psychology and/or sociology, or consent of instructor. 3 hrs. W.

4540 Wood Drying and Preservation (4) Concepts of wood drying including wood-moisture relations, specific gravity, sapwood-pith ratio, wood shrinkage, and environmental factors. Discussion of commercial drying practices. Relationship of wood moisture content to attack by wood-destroying organisms. Methods and materials used in commercial treating systems. Prereq: 3120, Math 1851, Physics 1220 or consent of instructor. 3 hrs. and 1 lab. S.

4550 Wood Composites and Gluing (4) Fundamentals of plywood and composite product manufacturing. Wood adhesive technology. Application of gluing to the manufacture of softwood, hardwood, and composite products. 3 hrs. and 1 lab. Overnight weekend plant trips may be required. W.

4560 Forest Products Marketing and Measurement (3) Discussion of market structure for various sectors of the forest products industry; standing timber, lumber, pulp and paper, wood composites, and treated products; measurement systems used by industry for the sale and transfer of these products. Right 3250, 4150, or consent of instructor. S.

4590 Forest Products Firewood (3) Marketing and production of forest products. Prereq: 3250, 4150, or consent of instructor. S.

4600 Forest Products Marketing and Measurement (3) Discussion of market structure for various sectors of the forest products industry; standing timber, lumber, pulp and paper, wood composites, and treated products; measurement systems used by industry for the sale and transfer of these products. Right 3250, 4150, or consent of instructor. S.

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

Wildlife and Fisheries Science (933)

2100 Introduction to Wildlife and Fisheries Science (2) Fundamentals of wildlife and fisheries management including the value of wild animals in the modern world; roles of research, management, protection, and law enforcement in the conservation of wildlife and fisheries resources. Prereq: Forestry 1620, 6 hrs. of Botany/Biology.

3000 Current Events in Renewable Natural Resources (1) Current events influencing forestry, wildlife, and fisheries management. Perspectives from other disciplines and professions which are affected by and influence natural resource management. Extend- ed views of natural resources, their allocation and management. Professional development and education for the disciplines of forestry, wildlife, and fisheries. 1 hr. May be repeated. Maximum credit 4 hrs. S/NC. (Same as Forestry 3000) W.

3200 Wildlife Resources and Their Conservation (3) Wild animal resources of the United States; their interrelationships with water, forests, and other plant and animal life; contribution to recreational opportunities and cultural development; importance and methods of conserving wildlife. General course for nonwildlife and fisheries science majors only. F.

3330 Law Enforcement in the Natural Resources (3) Law Enforcement as an integral part of natural resource management; fundamentals and general principles of state and federal laws and regulations governing natural resource management. Prereq: 3230.

4500 Game Mammals (4) Classification, identification, distribution, natural history, and management principles of game mammals in North America. Prereq: 3320. 3 hrs. and 1 lab. W.

4501 Game Birds (4) Biology, classification, identification, distribution, and management of game birds in North America. Prereq: 3230 or one year of zoology. 3 hrs. and 1 lab plus one weekend field trip. W.

4470 Field Techniques in Wildlife Management (3) Capturing, handling wildlife, wildlife restoration, controlling wildlife damage, and habitat management for wildlife. Prereq: 4450, 4460 or consent of instructor. 1 hr. and 2 labs. W.

4500 Problems in Wildlife and Fisheries Sciences (4) Special research or individual problem in wildlife and fisheries science. Prereq: Senior standing. May be repeated. Maximum 9 credit hrs. E.

4510 Fish Populations (4) Principles and methods of fish population estimation; sample techniques and equipment; population dynamics; age and growth. Prereq: Biology 3130, 8 hrs. mathematics, or consent of instructor. 3 hrs. and 1 lab or field period. W.

4520 Fisheries Management (4) Methods of warm and cold water fisheries management including techniques of biological assessment, public relations, habitat manipulation, and stocking. Prereq: Biology 3130 or consent of instructor. 3 hrs. and 1 lab or field period. S.

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

Ornamental Horticulture and Landscape Design (740)

Professors:

G. D. Crater (Head), Ph.D. Ohio State; L. M. Calahan, Ph.D. Rutgers; J. F. Rockwell (Emeritus), Ph.D. Michigan State; H. van de Werken, GAVST.
Horticulture College (Ferdericksford, Holland); D. B. Williams, Ph.D., Pennsylvania State.

Associate Professors: J. W. Day, Ph.D., Mississippi State; E. T. Graham, Ph.D., Pennsylvania State; G. L. McDaniel, Ph.D., Iowa State.

Assistant Professor: S. M. Rogers, M.L.A., University of Georgia.

2230 Environmental Horticulture (3) An introduction to awareness of and appreciation for ornamental plants and their use in the design of outdoor environments. This course may be taken for graduate credit by non-majors only. Prereq: 2130; 8 hrs. biological science. 3 hrs. and 1 lab.

3110 Greenhouse Management (3) Factors involved in the management of greenhouses for production and research. Structures, soils, pest control measures, heating, ventilating, lighting, water supply, crop success, andjurisdiction and standing consent of instructor. 2 hrs. and 1 lab.

310 Turfgrass Management (4) Practical turf-grass management; cultivar selection, identification, and establishment of turf-grasses, plant problems, and irrigation practices, thatch control; pest identification and control. Prereq: Plant and Soil Science 2130 and Plant and Soil Science 2130. 2 hrs. and 2 labs.

3100 Professional Practices in Ornamental Horticulture (3) Application of management and marketing practices for greenhouses, nurseries, flower shops, garden centers, plant stores, and landscaping firms. Investigating of practices and the solution of problems as they relate to the students' areas of interest in the establishment and operation of floricultural, nursery, landscape planning, and landscape design enterprises, including compliance with governmental regulations and other operational practices specific to the ornamental horticulture industry. 3 hrs.

3410 Basic Floriculture (3) Principles and practices employed in producing major cut flowers and potted plant crops. Application of principles of plant physiology as they relate to control of flowering, harvesting and irrigation practices, and pest control. Prereq: Plant and Soil Science 2130 and Plant and Soil Science 2130. 2 hrs. and 1 lab.

3500 Grounds Maintenance and Management (4) Identification, classification, adaptation, culture, and landscape design uses for ornamental trees, shrubs, and vines. Prereq: 8 hrs. of biological science and Agriculture 1140. 2 hrs. and 2 labs.

3810 Basic Landscape Plants (4) Identification, classification, adaptation, culture, and landscape design uses for ornamental trees, shrubs, and vines. Prereq: 3810. 1 hr and 2 labs.

3820 Supplementary Landscape Plants (3) Identification, classification, adaptation, culture and interior uses for foliage and flowering plants. 1 hr. and 2 labs.

4150 Nursery Production (4) Modern methods of production liners, field and container-grown woody ornamental plants. History and evolution of nursery industry and modern production recommendations for woody ornamental plants. Prereq: 3303, 3810 and Plant and Soil Science 2130. 2 hrs. and 2 labs.

4160 Nursery Management (3) Modern management methods for wholesale and retail nurseries, garden centers, and landscape contractors. Prereq: 3310. 2 hrs. and 1 lab.

4180 Park Design (4) Design criteria for parks and outdoor recreation systems. Park site selection, analysis, planning, and management as related to needs and natural and economic resources. Evaluation of aesthetic and functional quality of parks and their impact on environmental quality of rural and suburban communities. Prereq: 3810. 2 hrs. and 2 labs.

4190 Advanced Landscape Design (4) Comprehensive application of landscape design skills and knowledge through the development of a major project. Analysis, programming, planting design, construction detailing, estimating, specifications, contracts and bidding included in total project package. Prereq: 3510, 3630, 3630. 1 hr and 2.5 hrs. labs.

4220 Advanced Turfgrass Management (5) Principles and scientific basis of turfgrass culture: adaptation, ecology, control, soil fertility, and environmental stewardship. Climatic influences on grass culture; physiology of clipping and water management, traffic effects and compaction; and the physiological influences of pest infestations and control measures. Prereq: 3210. 3 hrs. and 1 lab.

4320 Specialty Floriculture (3) Special practices in the production of major cut flowers and potted plant crops. Production methods for scheduling flowering or vegetative growth of specialty flowers and ornamental plants. Prereq: 3410. 2 hrs. and 1 lab.

4400 Individual Problem Study (1-5) May be repeated to a maximum of 10 credit hrs.

4610 Seminar (1) Current problems in ornamental horticulture and landscape design. Prereq: Junior standing and consent of instructor.

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

Plant and Soil Science (792)

Professors: W. L. Parks (Acting Head), Ph.D., Purdue; F. F. Bell (Emeritus), Ph.D., Iowa State; D. L. Coffey, Ph.D., Purdue; H. A. Fribourg, Ph.D., Iowa State; J. E. Jeffery, Ph.D., North Dakota State; L. M. Josephson (Emeritus), Ph.D., Wisconsin; B. S. Pickert (Emeritus), Ph.D., Michigan State; J. H. Reynolds, Ph.D., Wisconsin; L. F. Seatz (Emeritus), Ph.D., North Carolina State; L. N. Skold (Emeritus), M.S., University of Minnesota; M. E. Springer (Emeritus), Ph.D., California (Berkeley); H. D. Swingler (Emeritus), Ph.D., Louisiana State.

Associate Professors: F. L. Allen, Ph.D., Minnesota; D. E. Detion, Ph.D., North Carolina State; W. A. Kruager, Ph.D., Illinois; D. G. Linzee, Ph.D., Purdue; J. T. MacDowell, Ph.D., Michigan State; R. J. Lewis, Ph.D., North Carolina State; V. H. Reich, Ph.D., Iowa State; D. S. West, Ph.D., Nebraska; J. D. Wolf, Ph.D., Auburn.

Assistant Professors: J. G. Gravell, Ph.D., Purdue; C. E. Sams, Ph.D., Michigan State.

2120 World Food Production and Crop Systems (3) Introduction to world crop plants and cropping systems with emphasis on origin and development, current technology and practices, and future (role, challenges, demands, landscapes, problems) of agriculture.

2130 Soils (4) Nature and properties of soils. Physical, chemical, biological processes in soils and their influence on plant growth. Prereq: Biology 1129 or 1520 or 1620. 3 hrs. and 1 lab. W, F, S.

3110 Soil Fertility and Fertilizers (4) Properties of soils in relation to plant nutrient availability and uptake. Methods of soil fertility evaluation and principles of managing chemical fertilizers. Prereq: 2130. 3 hrs. and 1 lab. W.

3120 Grain and Oil Crops (3) Distribution, improvement, morphology, culture, harvesting, and utilization of corn, small grains, grain sorghum, soybeans, and related crops. Prereq: 2130. 8 hrs. biological science. 2 hrs. and 1 lab. W.

3140 Forage Crops (4) Characteristics, adaptation, improvement, management, and utilization of grasses and legumes for pasture and silage production. Prereq: 2130. 8 hrs. biological science. 3 hrs. and 1 lab. W.

3160 Cotton and Tobacco (4) Characteristics, adaptation, improvement, culture, harvesting, and marketing of cotton and tobacco. Prereq: 2130. 8 hrs. biological science. 3 hrs. and 1 lab. F.

3170 Vegetable Crops (4) Characteristics, economic importance, adaptability and production of vegetables for fresh and processing markets with emphasis on both warm and cold season crops. May be taken for graduate credit by non-majors only. Prereq: 2130. 8 hrs. of biological science. 3 hrs. and 1 lab. S.

3180 Fruit Crops Management (4) Soils, planting, cultivation, development of fruit crops plantings; pest control, harvesting, packing, storage and pruning. Prereq: 2130. 8 hrs. biological science. 3 hrs. and 1 lab. W.

3250 Soils in Forestry (3) Soil as a medium for tree growth; relation of physical, chemical, and biological properties of soils to tree growth and management of forest stands. Soil properties of importance in road location, recreational development, and watershed management. Prereq: 2130; Forestry 3320. 2 hrs. and 1 lab. W.

3410 Soil and Plant Analysis (3) Applied methods of soil and plant analysis as they relate to crop nutrition and soil evaluation including sampling procedures, sample preparation, soil physicalchemical analysis, and soil management. Prereq: 3110. 1 hr. and 2 labs. W. Not for graduate credit.

3510 Statistics for Agricultural Research (3) Application of statistics to interpretation of agricultural research. Notation, descriptive statistics, probability distributions, confidence intervals, students ' t ' and chi-square tests, analysis of variance, mean separation procedures, linear regression and correlation. May be taken for graduate credit by non-majors only. Prereq: Math 1550 or 1580 or equivalent. 3 hrs. and 1 rec. F, W.

3810 Practicum in Plant and Soil Science (3-6) Spend one quarter working with agricultural related enterprises with area of work being related to a student's career interest. Requires consent of 5-person faculty committee and of academic advisor.
4110 Soil Chemistry (4) Colloidal systems; properties and behavior of colloidal soil materials; relations of chemical properties to plant nutrient availability. Prereq: 2130; Physics 1210. 3 hrs. and 1 lab. F.

4120 Principles of Crop Breeding (4) Genetic principles and techniques used in crop improvement. Prereq: Biology 3110 or equivalent. W.

4250 Agricultural Pesticides (4) Regulation of pesticide development, manufacture, transportation, marketing and use. Structure, use, mode of action, degradation and environmental impact of pesticides used in agriculture, forestry and related areas. Prereq: 1 year biological sciences and 1 year chemistry. 3 hrs. and 1 lab. F.

4320 Soil Formation, Morphology, and Classification

(4) Soil parent materials, basic pedogenic processes, soil forming processes, soil morphology and interpretation of morphology, taxonomic classification of soils. Use of soil surveys. Prereq: 2130. 3 hrs. and 1 lab. S.

4350 Soil Survey (2) Techniques of mapping soils, development of mapping legends and documentation and testing of mapping unit descriptions and interpretations. 1 hr. and 1 lab. Prereq: 4320 or concurrent. S.

4400 Problems in Plant and Soil Science (1-6) Special research or library problems in some phase of plant and soil science. May be repeated. Maximum credit 9 hrs. E.

4410 Crop Physiology and Ecology (4) Application of the principles of plant physiology and ecology to crop production. Effects of environmental factors (light, heat, water, soil, etc.) on physiological processes (respiration, photosynthesis, germination, flowering, etc.) Prereq: Botany 3210; 2130 and any PSS course at 3000-level except 3610. 3 hrs. and 1 lab. W.

4710 Principles of Weed Science (4) Principles of cultural, biological, and chemical control of weeds, effects on environment, principles of herbicide selectivity and activity, types of herbicides and specific recommendations for various crop and non-crop uses. Prereq: Agric. 1140 or 1120; Organic Chem. 2130 and any PSS course at 3000-level except 3610. 3 hrs. and 1 lab. S.

4910 Seminar (1) Review of literature. Oral and written reports. W.

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

Roy F. Knight, Dean
William J. Lauer, Associate Dean
Jon Coddington, Assistant to the Dean

The School of Architecture offers a program of professional studies which prepares its graduates for the practice of architecture. While emphasizing knowledge and skills required by architects in guiding the processes of building, the school is especially concerned that its students learn that kind of good judgment which particularly distinguishes the architect from all other professionals who serve the building industry. Therefore, the student is regularly called upon to pay attention to cultural, philosophical and ethical issues that appropriately concern the architect in performance of the art of building. The student is also required to discover and understand the principles by which our physical universe appears to operate in order to know the science of building as fully as possible. It is important for the student to learn the characteristics of the natural environment while learning the physical behavior of materials in structures. Furthermore, the program of the school is concerned with preparing the student to be adaptable to change. An understanding of society is important as we see it developing in sometimes surprising ways. This places special demands upon the architect. Consequently the program of the School emphasizes the process of learning with the intent of enabling its graduates to adapt to the changing circumstances of our world. How to learn about architecture is as important a matter for the student as learning itself.

Facilities

In the spring of 1981, a new building housing the School of Architecture and shared by the Art Department was completed. The Art and Architecture Building contains all the primary activities of the school. Expressly designed for the school in an open architectural competition, the building has received widespread recognition and has become one of the models sought out by other schools.

The building was designed by the Knoxville architectural firm of McCarty, Bullock, Holsapple, Inc. It contains as its major feature a large interior mall or street. Opening off this large gathering space, which serves as a campus focal point, are amply designed classrooms, a reference library which contains extensive slide collections and other reference materials, computer rooms, faculty offices, lecture rooms, administrative offices, an elaborate darkroom, workshop, and a gallery in which architecture as well as art exhibits are mounted.

The principal library holdings of the school are located in the James D. Hoskins Library, with additional volumes in the Undergraduate Library. A reading and reference room is maintained in the Art and Architecture Building.

Financial Assistance for Students

A number of scholarships are made available each year through the Architectural Endowment Fund, the Annual Fund and the Tennessee Architecture Foundation. Other scholarships have been funded by the Masonry Institute of Tennessee, the General Shale Corporation and other architectural firms, manufacturers of building materials, and other construction related industries. Scholarships are also available through the national headquarters of the American Institute of Architects. Honor students in all the upper four years are eligible for this aid, but it is primarily awarded to student's of third- and fourth-year standing.

Lecture Program

Throughout the academic year, the school organizes an extensive series of special lectures by experts in architecture and related subjects. Students are expected to attend regularly and benefit from this opportunity to hear the leading people of the field. The lectures are open to the University community and the public as well.

Included in the series is the ROBERT B. CHURCH MEMORIAL LECTURESHIP. Named for the school's second dean, it has become widely respected in the field as an honor to be appointed to this lectureship. The most prominent architects from around the world are brought to the school with income from the endowment.

Other important lectures are sponsored by the General Shale Corporation the Masonry Institute, the Architecture Annual Fund. Annually in the spring quarter a special program called TAASEST, 'The Annual Architecture Spring Thing' is arranged. Within a period of one week the entire school participates in special lectures, seminars, exhibits, and informal gatherings. Featured are discussions by a series of visiting experts. TAASEST is an event organized by students.

Publications

Students in the school each year publish The University of Tennessee Journal of Architecture. Continuing several years of excellent publications covering work of the school and current thinking in the field, this journal has become a widely recognized part of the school's participation in the profession.

Foreign Studies Program

Each year the school offers at least two opportunities for foreign study to its students. In cooperation with the Danish International Student Committee a program is regularly offered in Copenhagen taught by outstanding Danish architects and educators. Exchange programs are established with the Royal Melbourne Institute of Architecture, Melbourne, Australia and Chongqing Institute of Architecture and Engineering, Chongqing, Sichuan Province, China.

Within the school faculty, a person is assigned responsibility to lead a program in Europe each year at varied locations. These are designed to include visits to prominent new architectural sites and major historic locations. Most recently for two years the school has offered a program in Yugoslavia in which students and faculty from the universities of Belgrade and Zagreb join students and faculty from Tennessee in study.

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Studies abroad, which are aimed to include a full quarter's credit for advanced students, include design, history and theory of architecture, and directed independent study.

Memphis and Knoxville Community Design Centers

Each year, throughout the year, advanced students may be given opportunity to work at locations off-campus enrolling in a course; Arch. 4445 Design Service in Communities, or Arch. 4400 Special Design Studies. These programs enable students to gain first-hand experience and work alongside outstanding professional architects while dealing with actual community based projects. Students may enroll in additional courses at off-campus locations to complete a full quarter's program of study in keeping with curriculum requirements. During 1986 – 1989 the school will participate in a major way in Knoxville’s “Mainstreet” program funded by the National Trust for Historic Preservation, the U.S. Department of Housing and Urban Development and the City of Knoxville.

General Information

Students are advised to consult the University’s general requirements as stated in the front section of this catalog as well as the requirements described in the School of Architecture’s Student Handbook. Self advising will not be permitted in the School of Architecture. Students must plan their schedule by consulting with an assigned advisor. Electives will be chosen with the concurrence of the advisor and with full consideration of the necessary prerequisites.

Freshman Association Requirements

The School of Architecture, being a professional program and having limited resources, has a restricted enrollment based on the following criteria:

(1) Accept applicants with an ACT composite score of 27 (SAT 1100) or above.
(2) Accept applicants with a total of 55 or above using the formula of the high school grade point average times 10 plus the ACT composite score. A minimum ACT composite score of 20 (SAT 840) is required.
(3) Refer all applicants with an ACT score of 15 (SAT 720) or below.
(4) Refer applicants not falling into items 1, 2, or 3 to the Committee on Admissions. The committee meets during the second week of March.

Deadlines for Applications

Deadlines for application to the School of Architecture coincide with those set forth by the University of Tennessee. All applications must be received by August 1 for fall quarter admission, and no later than three weeks before the start of classes for admission to any other quarter. It should be noted that due to the strong sequential character of the curriculum and certain pre-requisite requirements that entry in any quarter other than Fall may be difficult.

Requirements for Progression to Second-Year Architecture

(1) Satisfactory completion of first-year architectural program with grade point average at least 2.3; exceptions may be made by petition only;
(2) Application to the School of Architecture no later than June 15 preceding the start of the second year.

Students must maintain an overall 2.3 grade point average by the end of 51 hours (attempted) in order to maintain “full status” in the program. Delinquent students must be put on “temporary status” for one quarter. These students will have one quarter to raise the overall GPA to 2.3 or have minimum 2.3 on each quarter’s work until overall average is raised to 2.3. If the GPA is not brought up to 2.3, the student will be dropped from the architecture program.

Third-Year Prerequisites

Students are required to have all first-and second-year deficiencies satisfactorily completed before entering the third-year design courses, Architecture 3100-3200-3300. Students progress and design work in second year will be reviewed by a committee of the faculty determining their readiness for advancement to third year. Students who register for a third-year design course holding first- or second-year deficiencies may be required to drop the course at any point during the quarter.

Progression to 4000-level Courses

Architecture students must have attained third-year standing in the school before being admitted to any 4000-level course, with the exception of 4000 Service Practicum. Students must complete all requirements of the curriculum through the third year before entering 4100.

Minor

An undergraduate minor in architecture is offered in order to enable students in other colleges to pursue studies in architecture which are relevant to their major areas of concentration. The minor will consist of not less than 15 hours. Persons interested must obtain the consent of the School of Architecture Academic Standards Committee and Dean of the School of Architecture, who will approve specific programs of study proposed by students.

Course Load

The average course load in any quarter is 16 credit hours. The minimum which may be taken by full-time students is 12 hours; the maximum which may be taken without approval of the Dean is 19 hours.

Satisfactory/No Credit Courses

These 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 may not count for required courses or architecture electives;
(2) a student who desires to take a course S/NC should indicate this intention at the start 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 for each quarter. Students who register for an architecture elective or required course with S/NC grading indicated will be required to change to regular grading.

Program Description

The curriculum for the Bachelor of Architecture degree includes a combination of required and elective courses which offer the student both a solid professional program of study and a sound general education. While the majority of the courses are designated as required, students may use the available architecture electives to expand their knowledge in areas of special interest. Academic minor architecture electives allow students to broaden their education in areas of general interest: the humanities, natural sciences, social sciences or arts. All electives are to be taken only with the approval of the student’s advisor.

Curricula for Architecture

All students studying for a Bachelor of Architecture degree will include the following requirements in their course of study. Students are not allowed to enroll simultaneously in two design courses. For any additional specialized requirements, the student should refer to the Student Handbook of the School of Architecture and the student’s advisor.

SERVICE PRACTICUM REQUIREMENT

A three-month, non-credit internship in an architect’s office is required. Upon petition, work in an engineer’s, or contractor’s office or related work may be approved by the school. This work must be evidenced by a letter from the employer indicating type and quality of student's work and time of employment prior to the fifth year. (See course description for Architecture 4000.)

Foreign students may need to obtain immigration and Naturalization Service Employment Authorization before service practicum begins. To obtain authorization, foreign students should take their I–94 form to the Office of International Student Affairs not more than 60 days nor less than 30 days before the anticipated starting dates. Beginning service practicum employment without INS authorization constitutes unauthorized employment and may jeopardize a foreign student’s continued stay in the United States.

<table>
<thead>
<tr>
<th>Course Load</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Year</td>
<td></td>
</tr>
<tr>
<td>Architecture 1100, 1200, 1300</td>
<td>3 4 4</td>
</tr>
<tr>
<td>Architecture 1101, 1201, 1301</td>
<td>3 2 2</td>
</tr>
<tr>
<td>EN 1010 or 1011, 1020, 1031, 1052 or 1053</td>
<td>3 3 3</td>
</tr>
<tr>
<td>Math 1840-50-60 or Math 1550-60;</td>
<td></td>
</tr>
<tr>
<td>Phil. 2510</td>
<td>4 4 4</td>
</tr>
<tr>
<td>History 1510-20</td>
<td>4 4 4</td>
</tr>
<tr>
<td>Approved Elective</td>
<td>4 4 4</td>
</tr>
<tr>
<td>Second Year</td>
<td></td>
</tr>
<tr>
<td>Architecture 2100*, 2200*, 2300*</td>
<td>4 4 4</td>
</tr>
<tr>
<td>Architecture 2101, 2201, 2301</td>
<td>2 2 2</td>
</tr>
<tr>
<td>Architecture 2114, 2214, 2314</td>
<td>4 4 4</td>
</tr>
<tr>
<td>Architecture 2207, 2307</td>
<td>3 3 3</td>
</tr>
<tr>
<td>Physics 1240-50-60</td>
<td>4 4 4</td>
</tr>
<tr>
<td>Approved Elective</td>
<td>4 4 4</td>
</tr>
<tr>
<td>Third Year</td>
<td></td>
</tr>
<tr>
<td>Architecture 3100*, 3200*, 3300*</td>
<td>0 6 6</td>
</tr>
<tr>
<td>Architecture 3107</td>
<td>3 3 3</td>
</tr>
</tbody>
</table>
These design courses.

Students are not allowed to enroll simultaneously in two of the following.

**Course Descriptions/School of Architecture**

**Bachelor of Architecture as a Second Degree**

A curriculum leading to a Bachelor of Architecture degree is available to students who already hold a bachelor's degree or an advanced degree in a related field. This program begins with intensive initial studies in architecture and is possible to complete within three years. A minimum of 9 quarters residency is required. The degree is the first professional degree recognized for purposes of eventual qualification for the first professional degree recognized for purposes of eventual qualification for the license to practice architecture.

Applicants must provide a transcript of previous academic work and must have attained at least a 2.5 overall grade point average. Appropriate goals and abilities must be shown by the applicant as well.

Second Degree students are required to submit a portfolio which demonstrates a proficiency in freehand and orthographic drawing skills prior to taking 1190 Basic Architecture I. If an otherwise qualified student does not have these skills, he or she can come to the School of Architecture the summer before entering the Second Degree Program and take an intensive drawing course which will fulfill the prerequisite.

**SECOND DEGREE PROGRAM MINIMUM REQUIREMENTS**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>First year</td>
<td></td>
</tr>
<tr>
<td>Architecture 1190, 1290, 1390</td>
<td>6 6 6</td>
</tr>
<tr>
<td>Architecture 1191, 1291, 1391</td>
<td>2 2 2</td>
</tr>
<tr>
<td>Architecture 2207, 2307, 3107</td>
<td>3 3 3</td>
</tr>
<tr>
<td>Architecture 2114, 2214, 2314</td>
<td>4 4 4</td>
</tr>
<tr>
<td>Second Year</td>
<td></td>
</tr>
<tr>
<td>Architecture 3100, 3200, 3300</td>
<td>6 6 6</td>
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<tr>
<td>Architecture 3114, 3214, 3317</td>
<td>3 3 3</td>
</tr>
<tr>
<td>Architecture 3116, 3216, 3315</td>
<td>4 4 4</td>
</tr>
<tr>
<td>Architecture 3217</td>
<td>3 3 3</td>
</tr>
<tr>
<td>Architecture elective</td>
<td>3 3 3</td>
</tr>
<tr>
<td>Third Year</td>
<td></td>
</tr>
<tr>
<td>Architecture 4200, 4300, 4600</td>
<td>6 6 6</td>
</tr>
<tr>
<td>Architecture 4101, 4501</td>
<td>3 3 3</td>
</tr>
<tr>
<td>Architecture 4116</td>
<td>4 4 4</td>
</tr>
<tr>
<td>Architecture elective</td>
<td>3 3 3</td>
</tr>
<tr>
<td>Architecture 4213, 4313</td>
<td>4 4 4</td>
</tr>
<tr>
<td>Architecture elective</td>
<td>3 3 3</td>
</tr>
</tbody>
</table>

Total: 143 hours

*Students are not allowed to enroll simultaneously in two of these design courses.

2To be admitted to the third year the student must submit work for review by a designated committee of faculty of the school. A GPA of 3.0 in Architecture 1190, 1290, 1390, 3100, 3200, 3300 is required along with an overall 2.5 GPA.

**Approved Electives List**

**Approved Electives: First & Second Year Students**

<table>
<thead>
<tr>
<th>Hours Credit</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>English 2570-70, 2640-50; Philosophy 1710, 2516; History 2020; Classics 3340; Foreign Language; Interior Design 2000.</td>
</tr>
</tbody>
</table>

**Approved Electives: Fourth & Fifth Year Students**

<table>
<thead>
<tr>
<th>Hours Credit</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Architecture Elective</td>
</tr>
<tr>
<td>3</td>
<td>Architecture 4100, 4200, 4300</td>
</tr>
<tr>
<td>3</td>
<td>Architecture 4101, 4201, 4301</td>
</tr>
<tr>
<td>3</td>
<td>Architecture 4102, 4202, 4302</td>
</tr>
</tbody>
</table>

**Total: 245 hours**

**Faculty**

**Professors:**

**Associate Professors:**
M. D. Herz, B. Arch. Columbia; W. E. Martella, B. Arch. California (Berkeley); M. S. Moffett, Ph.D. MIT; V. Narancic, B. Arch. Belgrade; J. S. Rabun, M. Arch. Texas; M. A. Robinson, M. Arch. Pennsylvania.

**Assistant Professors:**

110 Design Drawing (3) Principles of design through graphic presentation of field observations. Techniques of hand sketching and abstract graphic communication applied to local examples of buildings and sites. Exercises related to discussions in 1100. Training introduced which relates development of critical vision with drawing skill and the student's imaginative capabilities.

1111 Introduction to Architecture (3) Examination of scope and definition of architecture. Imaginative, intellectual, and professional background. The field in relation to contemporary society, the building industry, and allied design professions. Architectural design as a creative process; orientation to courses and programs of the school.


1191 Second Degree Program: Architecture Seminar (2) Theory and practice of architecture. Orientation to the profession and program of the school. Coreq: 1190. F.


1201 Visual Design Principles (2) Basis of visual order: proportion, scale, balance, figure-ground relationships, and rhythm. Light, shadow, and color. Creative abstract exercises and sketches to focus on basic architectural principles. Prereq: 1100 and 1101. W.

1290 Second Degree Program: Basic Architecture II (6) Principles of site development and basic approaches to designing and design of buildings in relation to function and context. Prereq: 1190 and 1191; coreq: 1291. W.

1291 Second Degree Program: Architecture Seminar (2) Planning and design of the environment: analysis of site conditions. Prereq: 1190 and 1191; coreq: 1290. W.


1301 Structural Types (2) Basic building structural types and approaches to construction and assembly of buildings: post and lintel, frames, slabs, stressed skin, geodesic frames, shells. Introduction to concepts of compression, tension, and bending moment. Properties of basic building materials. Prereq: 1200 and 1291. S.


1391 Second Degree Program: Architecture Seminar (2) Allocation of space in buildings in relation to structure types. Prereq: 1290 and 1291; coreq: 1390. S.


2100 Fundamentals of Site Design (4) Projects involving site orientation, climate, energy conservation, access, topography, grading and drainage. Prereq: 1300 and 1301; coreq: 2101. F.

2101 Design in the Environment (2) Introduction to design issues in the natural environment and in urban contexts. Review of exemplary approaches in current practice. Prereq: 1300 and 1301; coreq: 2100. F.

2114 Computer Applications in Architecture (4) Demonstration of computer use in architecture, including exercises in programming.

2200 Elements of Architecture (4) Design of small buildings with special consideration for site, internal circulation patterns, space allocation, and structural forms. Prereq: 1290 and 1291; coreq: 2201. W.

2201 Building Use (2) Introduction to techniques of building programming. Space allocation and balance. Inter-relationship of spaces in terms of use. Examination of user requirements. Typical approaches to entry, access, circulation, and public and private zoning. Diagrammatic presentations and sketches from field observations. Prereq: 2100 and 2101; coreq: 2201. W.

2207 Architectural History I (3) Development of architecture from antiquity through the Byzantine period, with consideration for cultural conditions and form of settlement.


2300 Order and Form in Building (4) Design of small buildings answering site and functional requirements. Emphasis on exploration of formal possibilities and structural implications in relation to program use. Presentation sketches, constructed drawings, and finished models. Prereq: 2200 and 2201; coreq: 2301. S.

2301 Models of Building Form (2) Experimentation in imaginative manipulation of form in
response to spatial and structural requirements. Prereq: 2200 and 2201; coreq: 2300. S.

2307 Architectural History II (3) Development of west- ern architecture from medieval period through the Baroque. Prereq: 2207. E.


3100 Architectural Design I: Review (6) Two or more building projects creatively executed, exploring architectur- al principles covered in first and second year courses. Concept diagrams, constructed drawings, and models for presentation of design solutions. Prereq: 2300 and 2301. F.

3107 Architectural History III (3) Study of the modern movement from its roots in Romanticism, Neo-Clas- sicism, and the Industrial Revolution through the work of modern movement masters, with applications to current design issues. Prereq: 2307. E.

3114 Structures in Wood and Steel (4) Introduction to analysis and design of simple steel and wood struc- tures based upon specific loading requirements. Use of codes, construction details, handbook, and design tables - selection of structural members. F.

3116 Environmental Control (4) Physical human physiological response to heat, light, and sound in buildings. Study of climatological factors which affect buildings; intro- duction to heating, ventilating, and air conditioning. F.

3200 Architectural Design I: Concepts (6) Building concepts, forms, and processes developed through devel- opment and presentation of designs for buildings of moderate complexity. Preliminary structure, material- s, location, energy considerations, and environmental setting. Solution to issues of site and context. Complete sketches, drawings, and models at site and building scales required. Prereq: 3100. W.

3214 Structures in Masonry and Concrete (4) Intro- duction to analysis and design of simple reinforced concrete and masonry structures based upon specific loading conditions. Use of construction codes, handbooks, and design tables. Prereq: 3114. W.

3216 Mechanical Systems in Architecture (4) Con- tinuation of the study of heating, ventilating, and air conditioning systems, including both passive and active systems. Energy systems, plumbing and fire protection systems. Prereq: 3116. W.

3217 Materials and Processes of Construction (4) Architectural materials and their use in building con- struction. W.

3300 Architectural Design II: Details (6) Design concept, form, and process developed through detailed develop- ment and presentation of designs for buildings of moderate complexity. Preliminary structure, material- s, location, energy considerations, and environmental setting. Solution to issues of site and context. Complete sketches, drawings, and models at site and building scales required. Prereq: 3100. W.

3314 Structures in Wood and Steel (4) Principles of electricity and its uses in buildings. Literature, essays, and sketch studies. F.


3317 Structural and Mechanical Applications (4) Ana- lysis and selection of structural and mechanical systems for a specific case study to integrate technical infor- mation into a unified design solution. Prereq: 3214 and 3216; coreq: 3300. S.

4000 Service Practicum (0) A non-credit internship for minimum of 3 months duration to be completed prior to fifth year. E.

4100 Advanced Architectural Design I (6) Large- scale building projects creatively executed, exploring architectur- al principles covered in first and second year courses. Completion of all requirements through third year. F.

4101 Community Form (3) Patterns of community devel- opment. Historical and contemporary examples. Examination of basic urban design issues and exemplary design approaches through lectures, readings, essays, and sketch studies. F.


4200 Advanced Architectural Design II (6) Resolution of a functionally complex program. Concept formula- tion in the design of large-scale buildings. Growth, flexibility and energy conservation as issues. Prereq: 4100. W.

4213 Professional Practice I (3) Principles and meth- ods of economics and management for architectural offices: project production, cost analysis, budgeting, office and constructive management. F, W, S.

4300 Advanced Architectural Design II (6) Design of prototypical mixed-use projects in a complex setting. Emphasis on movement systems, economic parame- ters, and constraints. Course sections may be housed in off-campus locations. Prereq: 4200. S.

4313 Professional Practice II (3) Legal responsibili- ties of architects: contract documents, contract administration, codes and zoning regulations, liabil- ity, and insurance. Prereq: 4213 F, W, S.

4400 Special Design Studies (6) Faculty initiated and projects which are approved by the Dean and/or client. May be repeated. Maximum credit 12 hours. E.

4410 Foreign Studies (5) Research and design projects conducted in various locations abroad. F, SU.

4415 Urban Design (6) Appropriate community form and urban design frameworks responding to specific community conditions and aspirations. Off-campus locations.

4420 Architectural Design Innovation (6) Design projects emphasizing experimentation of investigational approach- es to architectural design. Consideration of new building types, innovative design concepts or alternative design methods.

4430 Architecture and Preservation (6) Rehabilita- tion, restoration, and adaptive uses of existing buildings.

4440 Development and Design (6) Design conse- quences of feasibility studies, economics, finance, marketability, environmental impact, and social con- siderations in development of real property.

4445 Design Service in Communities (6) Studies conducted under direction of architect or expert in an allied project field. Projects which are approved by the Dean and/or client, or agencies of government, and public groups. Off-campus locations. Not a Design Course elective.

4500 Working Drawings (6) Preparation of detailed working drawings, including computer generated docu- ments for typical architectural projects. Not a Design Course elective.


4800 Structural Innovations (6) Building design with innovative structural configuration and technology. May be repeated. Maximum credit 12 hours.

4881 Architecture-Engineering Laboratory (6) Archi- tectural projects with emphasis on engineering systems. Directed research applications of new structural con- cepts. Not a Design Course elective.


5401 Architectural Programming (3) Emphasis is placed on learning to ask essential questions and to identify critical basic issues in design. Examination of infor- mation sources and their proper use. Formation of project objectives and requirements. Verbal, written, and diagrammatic presentation illustrating a basic design approach, concept, and method. Preparation for 4600. The course cannot be taken the quarter immediately preced- ing 4600 Comprehensive Architectural Design Project. W.

4600 Comprehensive Architectural Design Project 2nd year. Development of design for complex buildings with attention to clarity of concept. Search for appropriate form and structure, technical requirements and design of details. Fulfill complement of visual and written prepa- rations which support students' arguments for design concept and its development. Required review by fac- ulty representing all areas of the architecture program. This course is taken with last design course taken prior to receiv- ing the B. Arch. Degree. Prereq: 4501 and satisfactory completion of all required hours in design courses.


4801 American Architecture (3) Development of North American architecture from arrival of immi- grants in 1607 until 1860. W.

4802 American Architecture (3) Stylistic periods from the Gothic Revival through the twentieth centu- ry. S.

4803 Oriental Architecture (3) The eastern expansion of the Fertile Crescent to the Indus Valley. Hindu, Buddhist, and Mughul architecture in India. Architec- ture in China and Japan from the earliest beginnings. A.

4804 The International Style (3) Architecture of the International Style 1922-1952 with antecedents and influences. A.

4805 Indigenous Architecture (3) Study of worldwide "anonymous" architecture reliant upon climatic con- ditions, availability of materials, and economic level of the local society. Examination of indigenous structures through twentieth century vernacular. A.

4806 History of Architectural Technology (3) Build- ing materials and construction techniques from antiquity to the present. A.

4807 Tennessee Architecture (3) History of settle- ment patterns and building in Tennessee. E.

4808 History of the City (3) Examination of historical change in urban form and design. Survey. Case studies.

4809 Literature of Architecture (3) Survey of archi- tectural writing. Relationship between literature and design.

4810 Aesthetics in Architecture (3) Philosophies of art underlying the practice of architecture. F, W, S.

4811 Special Topics in History, Theory and Criticism (1-4) Special topics in history-related subjects. May be repeated. Maximum credit 6 hours.

4820 East European Architecture (3) Twentieth cen- tury architecture in Russia, Czechoslovakia, Poland, Hungary, East Germany, Rumania, Bulgaria, Yugo- slavia. S.

4831 Medieval Architecture (3) History of architecture from the decline of Rome to the beginning of the Renaissance. A.

4841 Forms of Utopia (3) Ideas and architectural expres- sions of Utopian movements.

4861 The Development of Architecture (3) Theories, function, and techniques of architectural criticism. S.

4862 Architects in Social Criticism (3) Writings which illustrate technological, political, and anthropological assumptions of some nineteenth and twentieth cen- turies.

4871 Architecture since 1945 (3) Recent architectural developments and views of the future. F.
The College of Business Administration

C. Warren Neel, Dean
Roger L. Jenkins, Associate Dean for Graduate Programs
Clyde R. Keller, Associate Dean for External Affairs
John R. Moore, Associate Dean
Richard C. Reizenstein, Associate Dean for Undergraduate Programs
John E. Riblett, Director, Management Development Programs
David A. Hake, Director, Center for Business and Economic Research

The College of Business Administration seeks to prepare men and women for positions as executives and specialists in business. Seeing the business firm as operating in a dynamic social, political, and economic environment, the college has four functions with respect to its purpose: (a) to offer its students the firm base of liberal education consistent with that possessed by all educated people; (b) to present to its students business-oriented instruction in professional fields so that they may understand the business process as a whole and the function of specific areas of business in particular; (c) to associate closely with other colleges of the University in order to enrich the understanding of its students by offering an opportunity to learn from psychology, sociology, and other areas related to the behavior of people; (d) to develop in its students the ability to see their four years in the college as the initial step to a lifetime commitment to personal growth and intellectual maturity through continuing education.

The college centers its teaching, subject matter, and research activity around two themes: the manager as a planner, decision maker, implementer, and controller of operations in a business firm; and the manager as an analyst of and an adapter to the larger social, economic, and political environment in which the firm exists.

The college has one goal: to have each student leave school with a reasonably articulate and coherent, though flexible and ever-developing, personal philosophy of business; an understanding of the scientific, ever-changing technological world; and a firm awareness of their social responsibility as a future executive and enlightened wielder of power.

The nationally recognized body which accredits programs in business administration is the American Assembly of Collegiate Schools of Business (AACS&B). The college has been a member of AACS&B since 1941, and both its undergraduate and graduate programs are fully accredited. In addition, the AACS&B has accredited the following accounting programs: B.S., M. Acc., M.B.A.

Association and Progression

Students wishing to receive a degree in business administration must seek association with the College. Details of the requirements for association are found on page 15 of this catalog.

Student Advising Center

The College of Business Administration maintains a Student Advising Center. The center is staffed with full-time academic advisors to assist freshman and sophomore students on an individual basis with their programs. Junior and senior students are assigned to advisors from the faculty of the student's selected major. The objective of working with students individually is to assist them with their personal needs for academic information and to prepare them for self-sufficiency in responding to their questions and concerns.

Center for Business and Economic Research

The staff of the Center for Business and Economic Research engages in studies of the business and economic environment in Tennessee, the Southeast, and the nation. The center serves the business community, state government, individuals, and the University through dissemination of various kinds of economic and socioeconomic information and supports the faculty of the College in seeking funding for research projects and, through its Computer Resources Group, provides support for integration of technology in the College of Business Administration. Staff members conduct research in regional economics, public finance, demographics, and related socio-economic problems. The center publishes results of its research and that of others, in monograph form, so that significant developments in the various business disciplines can achieve widespread exposure. In addition, the center staff does contract research on business and economic problems for governmental organizations and private industry. As periodicals, the center publishes the Tennessee Statistical Abstract and the Survey of Business.

The center is a member of the Southeastern Economic Analysis Conference and the Association for University Business and Economic Research.

Management Development Programs

The College's continuing education efforts are coordinated through its Management Development Programs activity. Management Development Programs emphasizes consistent high quality programming, small class size, outstanding faculty, and a highly participatory style of instruction. The programs range from customized 'in plant' programs to the four-week University of Tennessee Executive Development Program (TEDP).

The Tennessee Executive Development Program, tailored to the needs of upper-level managers, has a strategic focus. Its major objectives are to develop executives for increasingly higher levels of management responsibility and to sharpen existing executive skills needed for comprehensive decision-making and leadership. The Management Development Program, designed for mid-level managers, is more operational in scope. It is appropriate for both the experienced manager who has not had advanced management training and the individual being developed for a mid-level position. Other programs include: (1) The Institute for Productivity Through Quality, which teaches the
techniques of statistical process control in an intensive 130-contact-hour program for both managers and executives; (2) the Senior Institute for Productivity Through Quality, a one-week program which provides a strategic overview of statistical management; (3) the Administrative Services Institute for Productivity Through Quality, a two-week program which applies the philosophy and tools of statistical management to non-manufacturing environments; (4) the Executive Development Program for Distribution Managers, which focuses on providing the distribution manager with an intensive exposure to contemporary management approaches; and other programs designed to meet the continuing education needs of business and industry.

Cooperative Program in Business

The College of Business Administration offers qualified students who have completed at least one year of work at the University and whose grades conform to the standards set by the college the opportunity to participate in the Cooperative Program in Business. This program, under the direction of a coordinator, combines classroom study with practical experience. Effort is made to place students in jobs which offer maximum educational and financial advantages. Students alternate quarterly between work in business or industry and study at the University. The Cooperative Program gives the student an opportunity for practical experience, develops a sense of responsibility and cooperation, helps in selecting a vocation, creates greater interests and incentive in studies, enables earning part of expenses, and may lead to permanent employment after graduation.

The student may earn a maximum of nine hours of elective credit for field work but must do a satisfactory job as determined by the employer and coordinator, including reports covering job experiences. Arrangements for credit should be made prior to the quarter in which work is to be done. All students interested in the program are referred to the Cooperative Education Office, Alumni Hall.

Preparation for Teaching

Students desiring to teach business, economics, or distributive subjects in the secondary schools of Tennessee may follow majors in accounting or marketing and also meet the requirements for certification by the State Department of Education.

Students should consult an advisor in distributive education regarding the proper courses.

Master’s and doctoral degree programs leading to teaching in junior and senior colleges or universities are available as well.

Business Minor for Non-Business Majors

Students who are non-business majors, but who wish to attain a minor in business, must successfully complete the following required courses: Accounting 2110-20-30, Economics 2510-20, and Statistics 2100. Additionally, 15 hours of upper-division business electives, which can be chosen from Accounting, Economics, or Statistics may be used for this minor. Students are responsible for meeting prerequisites listed for any upper-division courses taken in a particular concentration. Acceptance of the minor must have approval of the student’s college of enrollment. Minors are unavailable to College of Business Administration students.

Course Load

The normal course load for a quarter is 15-17 hours. The maximum number of hours which may be taken by a freshman is 18. Other students may take 19. In unusual circumstances permission to take a course load in excess of these maximums may be granted by the Associate Dean for Undergraduate Programs in Business Administration.

Requirements for All Curricula

In order to qualify for the Bachelor of Science in Business Administration degree, a student must have been accepted for association with the College at the upper division level and must complete the curriculum outlined by the major department. Where no course number is indicated or where a choice is allowed, the student will fulfill the requirement by selecting from specified courses. Where electives are provided, the courses taken must meet the approval of the advisor. Non-departmental electives are considered as courses outside the student’s major department. No more than 42 hours are permitted in the same one subject area.

A maximum of 30 credit hours of conventionally graded (S/NC, P, etc.) courses may be applied to the total credit hours required for a degree of Bachelor of Science in Business Administration. Such credit hours may be used to meet only the requirements identified in the curriculum as "business electives," "non-departmental electives," "business and/or non-business electives," and "business electives." A Management Science Option is available for students with facility and interests in mathematical applications to business. See page 81.

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

BUSINESS CORE REQUIREMENTS

The following core courses are required in all business curricula: Accounting 2110-20-30 (2110-20, 3210 for accounting and management majors); Business Administration 4430; Business Law 4110 and 4120; Economics 2510-20; Finance 3510 (Political Science 4370 for public administration majors), 3120-30; Management 3010, 3110 (3010, 3111 for management majors); Marketing 3110-20; Business Administration 2750 or Computer Science 1410 (3150 for Management Science Option); and Statistics 2100 and three hours of upper-division statistics elective or as designated by the curriculum (3450-60 for Management Science Option).

ENGLISH REQUIREMENT

The English requirement can be fulfilled by English 1010, 1011 or 1019; 1020, and either 1031, 1032, or 1033, as well as hours selected from English 2510-20, 2531-32-33, 2560-70-80, 2660-70-80. Speech 2311 or 2381, unless specified in the curriculum, may be used to satisfy four of the elective English hours required. English courses beyond the 1000-level may be taken in any order. Students making a B average in freshman English are permitted to substitute for the 2000-level courses listed above any upper-division courses which the Department of English will allow them to take.

NATURAL SCIENCE REQUIREMENT

The natural science requirement can be fulfilled by an eight-hour sequence in any of the following fields: astronomy, biology, botany, chemistry, geography 1810-20, geology, or physics.

SOCIAL SCIENCE REQUIREMENT

The social science requirement can be fulfilled by selecting from the following courses: Anthropology 2510-20-30; Geography 1810-20, 2110-20-30; History 1510-20 (1518-28), 1510-20, 1950-60, 2510-20 (2518-28); Honors 1138; Human Services 2690; Philosophy 1510-20, 2310, 2510-20; Political Science 2020, 2510-20 (2518-28); Psychology 2500 (2518), 2530-40; Religious Studies 2610 (2611), 2620, and Sociology 1510-20. Students who have not completed a year of American history in high school must select American History; History 2510-20 (or 2518-28) and 2511 or 2521 as part of the 16 hours of social sciences.

COMPRESS SCIENCE REQUIREMENT

A computer programming course is mandatory. Computer Science 1410 or Business Administration 2750 satisfy this requirement.

Accounting

The curriculum provides students with a general education, a general business education, and a general exposure to the primary areas of accounting. Students completing the curriculum are eligible to begin careers in public accounting, industry, and government.

Students desiring greater depth or wishing to specialize in certain areas of accounting are encouraged to seek admission to the Master of Accountancy program during their junior or senior years. Together, the undergraduate accounting program and the Master of Accountancy constitute a five-year opportunity that fulfills the current educational recommendations of the American Institute of Certified Public Accountants.

Transfer Students: A minimum of 30 quarter hours of required upper-division College of Business Administration courses must be completed in residence at The University of Tennessee, Knoxville. These must include a minimum of 15 hours of accounting courses numbered 3000 or above and must include Accounting 4110, 4140, 4430, and 4630. Transfer students with nine quarter hours of introductory accounting will receive six hours of credit in Accounting 2110-20 and three hours of lower-division accounting credit. Junior standing is prerequisite to all management courses.
### College of Business Administration/Economics

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>II</td>
</tr>
<tr>
<td>English 1010 or 1011; 1020; 1031 or 1032 or 1033</td>
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<tr>
<td>Mathematics 1540-50-50 or 1540-50-50, 4</td>
<td>4 4 4</td>
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<td>Introductory business courses</td>
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<td>1Social science electives</td>
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<tr>
<td>Non-business electives</td>
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<td>Sophomore</td>
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<tr>
<td>English elective</td>
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<td>Accounting 2110-20-30</td>
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<tr>
<td>1Business and/or non-business electives</td>
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</table>

**Economics**

The Department of Economics offers specialized courses for those who desire to work in economics as analysts and specialists in business, education, government, and various international agencies. The curriculum requirements for an economics major in the College of Business Administration are listed below with an additional explanation given on page 82.

Freshman students may also elect to majors in economics in the College of Liberal Arts or to become certified to teach economics in the College of Education. The College of Education for further details. Transfer Students: A minimum of 30 quarter hours of required upper-division College of Business Administration courses must be completed in residence at The University of Tennessee, Knoxville. These must include a minimum of 15 hours of economics courses.

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>II</td>
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<tr>
<td>English 1010 or 1011; 1020; 1031 or 1032 or 1033</td>
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</tr>
<tr>
<td>Mathematics 1540-50-50 or 1540-50-50, 4</td>
<td>4 4 4</td>
</tr>
</tbody>
</table>

### Finance

This major is for students interested in careers in the broad field of finance. The major allows flexibility for students (aided by their department faculty advisor) to tailor their programs to fit their particular career goals and prepare for one (or more) of the following specialty areas:

#### INVESTMENT MANAGEMENT

This major is for students interested in careers in the broad field of finance. The major allows flexibility for students (aided by their department faculty advisor) to tailor their programs to fit their particular career goals and prepare for one (or more) of the following specialty areas:

The Department of Economics offers specialized courses for those who desire to work in economics as analysts and specialists in business, education, government, and various international agencies. The curriculum requirements for an economics major in the College of Business Administration are listed below with an additional explanation given on page 82.

Freshman students may also elect to majors in economics in the College of Liberal Arts or to become certified to teach economics in the College of Education. The College of Education for further details. Transfer Students: A minimum of 30 quarter hours of required upper-division College of Business Administration courses must be completed in residence at The University of Tennessee, Knoxville. These must include a minimum of 15 hours of economics courses.

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>I</td>
<td>II</td>
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<td>English 1010 or 1011; 1020; 1031 or 1032 or 1033</td>
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<tr>
<td>Mathematics 1540-50-50 or 1540-50-50, 4</td>
<td>4 4 4</td>
</tr>
</tbody>
</table>

### General Business

This major is for those who desire a broad business background without extensive concentration in any single business field. To that end, it includes advanced work beyond the introductory courses in accounting, economics, finance, personnel management, marketing, statistics, and transportation as specified below.

Transfer Students: A minimum of 30 quarter hours of required upper-division College of Business Administration courses must be completed in residence at The University of Tennessee, Knoxville. These must include a minimum of 12 hours of accounting, economics, finance courses. Junior standing is prerequisite to all accounting courses.

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>II</td>
</tr>
<tr>
<td>English 1010 or 1011; 1020; 1031 or 1032 or 1033</td>
<td>3 3 3</td>
</tr>
</tbody>
</table>
Management

This major is designed for students interested in management. All students complete a set of courses designed to provide a basic understanding of management of business organizations and also complete one of the following concentrations:

1. Marketing—designed for students who wish to prepare for careers in operations in manufacturing and service industries, including the specific fields of materials management, scheduling and control, work measurement, quality assurance, and supervision.

2. Personnel Management—designed for students who wish to prepare for careers in personnel management, including the specialized fields of employment, wage and salary administration, job evaluation, training, and human resources management.

3. Office Systems Management—designed for students who wish careers as managers in word processing, information systems, and various administrative support functions.

4. General Management—designed for students who desire careers in management, but who do not wish to specialize in operations, personnel, or office systems. This concentration allows flexibility so that students tailor their programs of study to fit their career goals by selecting from a set of both departmental and non-departmental courses.

Management Information Systems Concentration—designed for students who desire a career in management information, combining a broad business education with a strong technical background in computer information systems. This program prepares students for a role in identifying information requirements of organizations and preparing the technical design of information systems to meet these needs. Transfer students must complete a minimum of 30 quarter hours of required upper-division courses in residence at the University of Tennessee, Knoxville to include Management 4600, 4610, Accounting 4630, and Computer Science 4420.

Transfer Students: A minimum of 30 quarter hours of required upper division College of Business Administration courses must be completed in residence at The University of Tennessee, Knoxville. These must include at least 15 hours of management courses including 4210, 4320, 4460.

<table>
<thead>
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<th>Course Title</th>
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<tr>
<td>Math 1540-50-60 or 1540-60-50</td>
<td>4 4 4</td>
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<td>Genetics</td>
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<td>Statistics</td>
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<tr>
<td>Economics electives</td>
<td>3 3 3</td>
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<tr>
<td>Business Administration 4310 or 4320</td>
<td>3 3 3</td>
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<tr>
<td>Total: 187 hours</td>
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</table>

Business and/or non-business electives 7 7 7
Management 4110-20 3 3
Management Concentration elective 3 3 3

Total: 187 hours

See Requirements for All Curricula.

Marketing

This major is designed to prepare students for careers with companies engaged in the marketing of consumer and industrial goods and their distribution by manufacturers, wholesalers, and retailers. The curriculum trains students for positions in sales, advertising, promotion, research, and marketing management. The integrated sequence of courses enables students to obtain broad training in the analysis of marketing decision problems.

Transfer Students: A minimum of 30 quar-
ter hours of required upper-division College of Business Administration courses must be completed in residence at The University of Tennessee, Knoxville. These must include the following required marketing courses: 3310, 3410, 3510, 4610, 4710.

Economics 2510-20 are prerequisites to all marketing courses. Marketing 3110-20 or the equivalent are prerequisites to all other 3000- and 4000-level marketing courses.

<table>
<thead>
<tr>
<th>Hours Credit</th>
<th>Freshman</th>
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<tbody>
<tr>
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<tr>
<td>Mathematics 1540-50-60 or 1840-50-60</td>
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<td>Natural science electives</td>
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<tr>
<td>Non-business elective</td>
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**Sophomore**

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<tr>
<td>Accounting 2110-20</td>
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<td>Speech 2311</td>
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<td>Statistics 2100</td>
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<td>Non-business elective</td>
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<tr>
<td>Non-departmental elective</td>
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**Junior**

<table>
<thead>
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<tbody>
<tr>
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<td>Economics 3120 or 3210 or 3340 or 3410</td>
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<td>3 3 3</td>
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<tr>
<td>Marketing 3510</td>
<td>3 3 3</td>
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<tr>
<td>Statistics 3110</td>
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<tr>
<td>Transportation 3110</td>
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<tr>
<td>Non-business elective</td>
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**Senior**

<table>
<thead>
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<tbody>
<tr>
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<tr>
<td>Business Law 4110-20</td>
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<tr>
<td>Marketing 4610</td>
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<tr>
<td>Business electives (9 hours from</td>
<td></td>
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<tr>
<td>Marketing 4140, 4150, 4230, 4908, 4818-28, Transportation 4720-30,</td>
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<tr>
<td>Business Administration 4610</td>
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<td>Marketing 4710</td>
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<tr>
<td>Transportation 4115</td>
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<tr>
<td>Non-business elective</td>
<td>- - -</td>
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<tr>
<td>Non-departmental elective</td>
<td>- - -</td>
</tr>
</tbody>
</table>

Total: 187 hours

1. See Requirements for All Curricula.
2. It is strongly recommended that marketing majors select as many of their electives as possible from courses in psychology and sociology.

**Public Administration**

This major is for students who wish to prepare for management positions in public service or government relations. It presents a combination of general education together with studies in governmental affairs and business management. It is designed to give initial preparation for such governmental employment as program management, budgeting and personnel management, and to private sector employment with trade associations and large corporations with substantial interaction with government.

<table>
<thead>
<tr>
<th>Hours Credit</th>
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</tr>
</thead>
<tbody>
<tr>
<td>English 1010 or 1011; 1020; 1031 or 1032 or 1033</td>
<td>3 3 3</td>
</tr>
</tbody>
</table>

**Statistics**

Statistics This major is designed for students interested in the use of statistics in business, government, and industry. All students complete a set of courses designed to provide a general understanding of statistical methodology and also complete one of the following concentrations:

- **Statistics** - designed for students interested in positions involving quantitative research, as well as for those interested in pursuing a graduate degree in statistics.
- **Industrial Statistics** - designed for students interested in positions involving control and quality management in business, government, and industry. Students planning to pursue graduate work in statistics should also take Math 2840-50-60.

<table>
<thead>
<tr>
<th>Hours Credit</th>
<th>Freshman</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics 1540-50-60 or 1840-50-60</td>
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<tr>
<td>Natural science electives</td>
<td>4 4 4</td>
</tr>
<tr>
<td>Social science electives</td>
<td>4 4 4</td>
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<tr>
<td>Political Science 2510-20</td>
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<td>Business and/or non-business electives</td>
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**Sophomore**

<table>
<thead>
<tr>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>Economics 2510-20</td>
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<tr>
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<tr>
<td>Social science elective</td>
<td>4 4 4</td>
</tr>
<tr>
<td>English electives</td>
<td>4 4 4</td>
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</tbody>
</table>

**STANDARDS CONCENTRATION**

- Math 2840-50-60 | 4 4 4 |
- Statistics 3310-20 | 4 4 4 |
- Economics 3400-50-60 | 3 3 3 |
- Non-business elective | 3 3 3 |

**INDUSTRIAL STATISTICS CONCENTRATION**

- Statistics 2100, 3220, 3310 | 3 3 3 |
- Non-business electives | 4 4 4 |

**Junior**

<table>
<thead>
<tr>
<th>Hours Credit</th>
<th>Freshman</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management 3010, 3110</td>
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<tr>
<td>Marketing 3110-20</td>
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Finance 3130-30 | 3 3 3 |
| Finance 4140-40-50 | 3 3 3 |
| Business electives | 3 3 3 |
| Non-business electives | 3 3 3 |

**STATISTICS CONCENTRATION**

- Statistics 3550, 3510 | 3 3 3 |
| Elective | - - - |

**INDUSTRIAL STATISTICS**

- Statistics 3320, 3450-60 | 3 3 3 |
| Senior | - - - |
| Business Law 4110-20 | 3 3 3 |
| Business Administration 4430 | 3 3 3 |
| Economics 4310, 4500, 4600 | 3 3 3 |
| Statistics upper-division elective | 3 3 3 |
| Management Science 4310 | 3 3 3 |
| Elective | 4 4 6 |

**STATISTICS CONCENTRATION**

- Non-business elective | - - - |
- Statistics upper-division elective | - - - |

**INDUSTRIAL STATISTICS CONCENTRATION**

- Non-business electives | - - - |

Total: 187 hours

1. See Requirements for All Curricula.

**Transportation and Logistics**

A major in transportation and logistics is recommended for students who plan careers with: (1) transportation companies that supply freight and/or passenger services; (2) industrial and marketing organizations that coordinate traffic, warehousing, and related distribution activities to achieve optimal business logistics systems; or (3) transport regulatory and planning agencies at all levels of government.

The program eliminates the requirements of formal examinations by the American Society of Logististics and Transportation. A number of scholarships for transportation and logistics majors are available.

To graduate with a major in transportation and logistics, a minimum of 30 quarter hours of required upper-division College of Business Administration courses must be completed in residence at The University of Tennessee, Knoxville. These must include a minimum of 21 hours of transportation and logistics courses in residence.

<table>
<thead>
<tr>
<th>Hours Credit</th>
<th>Freshman</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 1010 or 1011; 1020; 1031 or 1032 or 1033</td>
<td>3 3 3</td>
</tr>
<tr>
<td>Mathematics 1540-50-60 or 1840-50-60</td>
<td>4 4 4</td>
</tr>
<tr>
<td>Natural science electives</td>
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<tr>
<td>Social science electives</td>
<td>4 4 4</td>
</tr>
<tr>
<td>Non-business electives</td>
<td>4 4 4</td>
</tr>
</tbody>
</table>

**Sophomore**

<table>
<thead>
<tr>
<th>Hours Credit</th>
<th>Freshman</th>
</tr>
</thead>
<tbody>
<tr>
<td>English electives</td>
<td>4 4 4</td>
</tr>
<tr>
<td>Social science electives</td>
<td>4 4 4</td>
</tr>
<tr>
<td>Computer science elective</td>
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</tr>
<tr>
<td>Accounting 2110-20-30</td>
<td>3 3 3</td>
</tr>
<tr>
<td>Economics 2520</td>
<td>3 3 3</td>
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<tr>
<td>Statistics 3120</td>
<td>3 3 3</td>
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<tr>
<td>Management 3010, 3110</td>
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<tr>
<td>Marketing 3110-20</td>
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<td>Senior</td>
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<tr>
<td>Business Law 4110-20</td>
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<td>Business Administration 4430</td>
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<td>Business electives</td>
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<tr>
<td>Business and/or non-business electives</td>
<td>3 3 3</td>
</tr>
<tr>
<td>Social science elective</td>
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</tbody>
</table>

Total: 187 hours
Management Science Option

The increasing use of electronic computers and modern management methods by industry and the business community has created a rapidly growing demand for persons capable of using mathematics, statistics, and computer methods for the use of quantitative techniques in solving management problems. In response to this growing demand, the College of Business Administration has established a Management Science Option which is available to qualified students who wish to prepare themselves for careers involving this type of work.

The Management Science Option is designed for students who have demonstrated a high level of ability in mathematics and who are interested in applying this ability toward solving management problems. The Management Science Option is available to students majoring in accounting, finance, general business, management, marketing, statistics, and transportation.

Accounting M.S.O.

The curriculum provides students with a general education, a general business education, and a general exposure to the primary areas of accounting. Students completing the curriculum are eligible to begin careers in public accounting, industry, and government.

Students desiring greater depth or wishing to specialize in certain areas of accounting are encouraged to seek admission to the Master of Accountancy program during their junior or senior years. Together, the undergraduate accounting program and the Master of Accountancy constitute a five-year opportunity that fulfills the current educational recommendations of the American Institute of Certified Public Accountants.

Transfer Students: A minimum of 30 quarter hours of required upper-division College of Business Administration courses must be completed in residence at The University of Tennessee, Knoxville. These must include a minimum of 12 hours of accounting, economics, and finance courses.

General Business M.S.O.

Transfer Students: An option in General Business M.S.O. requires a minimum of 30 quarter hours of required upper-division College of Business Administration courses which must be completed in residence at The University of Tennessee, Knoxville. These must include a minimum of 12 hours of accounting, economics, and finance courses.

<table>
<thead>
<tr>
<th>Hours Credit</th>
<th>English 1010 or 1011; 1020; 1031 or 1032 or 1033</th>
<th>Mathematics 1840-50-60</th>
<th>Natural Science electives</th>
<th>Non-business electives</th>
<th>Economics upper-division electives</th>
<th>Business and/or non-business electives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman</td>
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<td>3</td>
<td>3</td>
<td>3</td>
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<td>3</td>
</tr>
<tr>
<td>Sophomore</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
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<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

Total: 187 hours

1See Requirements for All Curricula.

2Electives to be approved by the faculty advisor; these may include a maximum of 6 hours of transportation and logistics electives.

Graduate Studies

The College of Business Administration offers advanced programs in economics leading to the Master of Arts, and the Doctor of Philosophy degrees. The Master of Business Administration degree program offers concentrations in the fields of controllership, economics, finance, forest industries management, management, management science, marketing, statistics, and transportation and logistics. The Master of Accountancy is offered in accounting. The M.S. degree in statistics is also available. The Doctor of Philosophy in Business Administration degree program is offered in the fields of accounting, finance, management, marketing, and transportation and logistics. Advanced programs in management science lead to the M.S. and the Ph.D. degrees. The M.S. and the Ph.D. degrees are granted in industrial and organizational psychology jointly with the Department of Psychology. This college and the College of Law offer a coordinated dual program lead-

<table>
<thead>
<tr>
<th>Hours Credit</th>
<th>Business Law 4110-20</th>
<th>Business electives</th>
<th>Economics electives</th>
<th>Finance, insurance and real estate electives</th>
<th>Management 4610-20</th>
<th>Business and/or non-business electives</th>
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</thead>
<tbody>
<tr>
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<td>3</td>
<td>3</td>
<td>3</td>
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<td>3</td>
</tr>
<tr>
<td>Sophomore</td>
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<tr>
<td>Junior</td>
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<td>3</td>
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Total: 187 hours

1See Requirements for All Curricula.

Statistics M.S.O.

<table>
<thead>
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<th>Economics upper-division electives</th>
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Total: 187 hours

1See Requirements for All Curricula.

Graduate Studies

The College of Business Administration offers advanced programs in economics leading to the Master of Arts, and the Doctor of Philosophy degrees. The Master of Business Administration degree program offers concentrations in the fields of controllership, economics, finance, forest industries management, management, management science, marketing, statistics, and transportation and logistics. The Master of Accountancy is offered in accounting. The M.S. degree in statistics is also available. The Doctor of Philosophy in Business Administration degree program is offered in the fields of accounting, finance, management, marketing, and transportation and logistics. Advanced programs in management science lead to the M.S. and the Ph.D. degrees. The M.S. and the Ph.D. degrees are granted in industrial and organizational psychology jointly with the Department of Psychology. This college and the College of Law offer a coordinated dual program lead-

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Graduate Studies

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Total: 187 hours

1See Requirements for All Curricula.
Department of Business Administration

Accounting and Business Law

Professors:
J. R. Williams (Head), Ph.D. Arkansas, C.P.A.;
J. S. Costa (Emeritus), S.J.D. George Washington;

Associate Professors:

Assistant Professors:

Distinguished Lecturer:
S. B. Wolfe, B.S. Virginia Polytechnic.

Accounting (009)

2110-20 Fundamentals of Accounting (3,3) introductory courses in financial accounting theory and practice with emphasis on preparation, reporting, and analysis of financial information. Prereq. to all other courses in accounting except for engineering majors. Courses must be passed in sequence. Prereq: For 2110, Math 1500 or equivalent.

2130 Survey of Managerial Cost Accounting (3) User-oriented survey of managerial costing theory and practice. Topics include product costing, cost behavior analysis for decision making, standard costing, and budgeting. Prereq: 2120.

3110-20-30 Intermediate Financial Accounting (3,3,3) In-depth analysis of balance sheet, income statement, and cash flow statements and procedures related to the valuation of assets, liabilities and equities; measurement of periodic income; and preparation of financial statements. Prereq: 2120 for 3110-3110 with a grade of C or better for 3120; and 3120 with a grade of C or better for 3130.

3210-20 Managerial Cost Accounting (3,3) In-depth analysis of costing for products, projects, and management control. Special topics include cost behavior, cost prediction, budgeting, and responsibility accounting. Accounting 2120 and Statistics 2100 are prerequisite for 3210. Credit not given for both 3210 and 3210.


5310 Not-for-Profit Accounting (3) Theory and practice of budgeting, financial and managerial accounting and analysis of not-for-profit entities. Not available to students majoring in accounting. Prereq: 3210 or 3210.

4110 Principles of Auditing (3) Role of auditing in society, professional auditing standards, auditor's legal responsibility, internal control, use of statistical sampling, audit evidence, and reporting. Prereq: 3130 with a grade of C or better; 4350. Prereq or coreq: Stat. 4415.

4120 Advanced Auditing (3) Case-oriented course including audit of specific asset, liability, revenue, and expense accounts, with emphasis on reporting, data processing, analytical procedures, and internal auditing. Prereq: 4110 with grade of C or better and consent of Department Head.

4140 Advanced Financial and Fund Accounting (3) Analysis of issues and alternatives in advanced problem areas including business combinations, consolidated financial statements and accounting for not-for-profit organizations. Prereq: 3130 with a grade of C or better.

4230 Advanced Managerial Accounting (3) Use of accounting data in planning models, incorporating uncertainty into budgets and performance reports, performance measurement of decentralized operations. Prereq: 3220 with a grade of C or better; Mgmt. Science 2120 or equivalent. Consent of department head required. Prereq: 4110 with grade of C or better and consent of Department Head.

4430 Federal Taxation (3) Fundamental problems of federal taxation with emphasis on alternatives available for reporting taxable income. Prereq: 3130 and 3430 with a grade of C or better in both courses.

4630 Analysis and Design of Information Systems (3) General systems concepts, flowcharting, planning, auditing of systems studies, determination of systems objectives, development and evaluation of decision alternatives, implementation, documentation, and control. Prereq: Computer Science 3910.

Graduate

see page 81 for information on graduate programs. Consult the Graduate Catalog for listing of graduate level courses.

Business Law (216)

4110 Environmental Business Law (3) Principles of law comprising legal environment appropriate to common business transactions. Strongly integrated with basic political and economic concepts. Review of U.S. legal system and business-related law.

4120 Law of Business Organizations and Regulation (3) General principles of law as these pertain to business and partnerships and corporations, effect taxation, and treat agencies regulating business. Prereq: 4110.

4130 Administrative Regulation of Business (3) Analyzes nature and extent to which business operations are controlled by administrative agencies operating at federal, state, and local levels. Includes nature of administrative agencies, jurisdiction, administrative procedures and appeals, and judicial review of administrative agencies. Prereq: 4120.

4330 Business Law (3) Fundamentals of business law designed for professional examination required for licensing or certification in fields of public accounting, certified public accounting, chartered property and casualty underwriters, chartered life underwriters, and certified professional secretary.

Graduate

See p. 81 for information on graduate programs. Consult the Graduate Catalog for listing of graduate level courses.

Economics (283)

Professors:
W. E. Cole (Head), Ph.D. Texas; R. A. Bohm, Ph.D. Washington (St. Louis); R. L. Bowby, Ph.D. Texas; S. L. Carroll, Ph.D. Harvard; H. S. Chang, Ph.D. Vanderbilt; G. R. Feiwel, Ph.D. McGill; C. B. Garrison, Ph.D. Kentucky; H. W. Herzig, Jr., Ph.D. Maryland; H. E. Jensen, Ph.D. Texas; F. Y. Lee, Ph.D. Michigan State; A. Mayhew, Ph.D. Texas; M. C. Neale, Ph.D. London School of Economics; K. E. Quinney (Emeritus), Ph.D. Kentucky; A. M. Schottmamer, Ph.D. Washington (St. Louis); A. Spiva, Jr., Ph.D. Texas.

Associate Professors:
D. P. Clark, Ph.D. Michigan State; W. F. Fox, Ph.D. Ohio State; E. Glaustof, Ph.D. Stanford; D. L. Kaseiman, Ph.D. Florida; K. E. Phillips, Ph.D. Washington (Seattle).

Assistant Professors:
J. A. Gauger, Ph.D. Iowa State; R. A. Hoffer, Ph.D. North Carolina (Chapel Hill); J. W. Mayo, Ph.D. Washington (St. Louis); H. L. Thompson, Ph.D. Houston.

*Alumni Distinguished Service Professor.

Requirements for a major in economics consist of: (1) Economics 2510 and 2520 or equivalent honors courses; and (2) a minimum of 33 additional hours in upper-division economics courses. Economics 3110 and 3120 are required as a part of the upper-division work and should be taken as early in the upper-division program as possible.


2118-28-38 Honors: Introductory Economics (3,3,3) Honors course designed for students of superior ability and interest. Selected third-quarter freshmen will be accepted on the basis of high school record, ACT scores, and grade record during first two quarters. Grade of B in 2118 is necessary for entrance into 2118B and grade of B or better in 2120 automatically gives credit for 2138.

2510-20 Introductory Economics (4,4) 2510-Microeconomics: supply and demand, competition, monopoly; 2520-Macroeconomics: national income, money and banking, employment, inflation, international trade. Prereq: 2510 or 2520. 3 hr. and 1 lab.

3110 Intermediate Micro Theory (3) Allocation of resources and price determination; market demand, production, cost, and supply; distribution. Students may not receive credit for both 3110 and 3111. Prereq: 2510.

3120 Intermediate Macro Theory (3) Aggregate demand, output, and level of employment; price level, inflation, and deflation; economic growth. Prereq: 2520.


3211 International Economics II (3) Theory of inter-
national trade, barriers to trade, regional trade associations. Prereq: 2520.

3220 Principles of Economic Development (3) Theory and practice of economic development; assignment areas on local, regional, national, and international levels; technological, locational, and financial aspects of economic growth. Prereq: 2520.

3230 Regional and Urban Economics (3) Overview of regional, urban, agricultural, and residential location; the economic basis for land use patterns and central places; regional structure, growth, and sustainability; policies to promote regional economic development. Prereq: 2520.

3240 Economic History of the United States (3) Historical developments in agriculture, industry, communications, transportation, banking, and trade, and changes in governmental economic policy. Prereq: 2520.

3250 Economic History of Europe (3) Beginnings of capitalism in medieval Europe, expansion of Europe and dominance of mercantilism in early modern times, mechanization of industry, changes in agricultural organization, and growing importance of commerce in the 19th century; two world wars and their economic consequences. Prereq: 2520.

3310 Comparative Economic Systems (3) Description and analysis of economic goals, institutions and policies in different countries with emphasis on alternative organizational and regulatory structures. Systems examined will include soviet-type economies. Prereq: 2520.

3340 Government and Business I (3) Microeconomic objectives and alternative public policies for their achievement; prevention of monopoly and concentration through the antitrust laws; direct regulation of business performance. Prereq: 2510.

3341 Government and Business II (3) Topics in antitrust policy, direct regulation, and other forms of social control; regulating information, product and management problems in public/private business relations; selected cases. Prereq: 3340.

3410 Principles of Labor Economics I (3) Supply of and demand for labor; market wage determination; application of analysis to issues such as minimum wage laws, discrimination, unemployment, inflation, collective bargaining, income distribution and human resources policy. Prereq: 2520.

3420 Principles of Labor Economics II (3) American labor history, structure and philosophy of contemporary collective bargaining, and dispute settlement.

4000 Special Topics (3) Student-generated course offered at convenience of department upon student interest in a subject matter and content determined by students and instructor with approval of department. Prereq: determined by department; each course is offered. Numerical grade is given to law students. May be repeated for credit.

4110 Business Cycles (3) Fluctuations in income, employment, prices, and output in the economic system; subjects discussed are historical facts concerning booms and depressions, statistical methods for analyzing business fluctuations, theoretical explanations of cycles, and policies that have been proposed to combat them. Prereq: 3120 or consent of instructor.

4150 History of Economic Thought I (3) Development of economic thought, tools of analysis, and economic as a social science, together with an analysis of socioeconomic conditions which influenced this development. Period covered: 1776 through 1936. Prereq: 2520.

4261 The Political Economy of Latin America (3) Description, analysis, and comparison of major economic systems in Latin America, including the Latin American countries. (Same as Latin American Studies 4231.)

4231 The Political Economy of Latin America (3) Description, analysis, and comparison of major economic systems in Latin America, including the Latin American countries. (Same as Latin American Studies 4231.)

4232 The Political Economy of Asian Development (3) Description, analysis, and comparison of major economic systems in Asian countries. (Same as Asian Studies 4232.)

3260 Economics of Resources and Environmental Policy (3) Economic analysis of environmental policy and allocation of resources. Benefits and costs of development of natural resources and impacts of growth on environment. Prereq: 2520.

3350 Industrial Organization Analysis (3) Monopoly and competition in the United States economy; market structure, business behavior, and economic performance and their interrelationships. Prereq: 2510.

4240 Economics of Human Resources (3) Analysis and evaluation of human resource development and examination of policies aimed at their solution. Problems discussed may include unemployment, education and training, poverty and income redistribution, discrimination based on sex or ethnicity, or others. Prereq: 2520.

4430 Labor Legislation (3) Economic background and effects of governmental regulation of labor relations, with emphasis on detailed examination of National Labor Relations Act as amended. Prereq: 3420.

4440 Labor Legislation (3) Social insurance, welfare and governmental regulation as remedies for the problem of economic insecurity. Economics of the Social Security Act, unemployment insurance, worker's compensation and related legislation. Prereq: 2520.


4510 Monetary Theory and Policy (3) Role of money in the economy. Emphasis upon factors that affect demand for and supply of money. Evaluation of current policy. May not be taken for credit by students who have completed Finance 4570.

4750 Public Finance (3) Taxation and other revenue systems, problems of collective consumption, external effects and public choice.

4760 Public Expenditure Evaluation (3) Benefit-cost analysis, public sector investment criteria, and the social cost of capital.

4770 State and Local Finance (3) Emphasis on revenue systems and division of tax sources. May not be taken for credit by students who have completed Finance 4370.

4990 Independent Study (1-4) Offers qualified students opportunity to pursue topics or projects of special interest. Prereq: Senior standing; 3.0 GPA in economics courses, and consent of instructor. May be repeated. Maximum total credit 4 hrs.

GRADUATE
See page 81 for information on graduate programs. Consult the Graduate Catalog for listing of graduate level courses.

Finance
Professors:
W. W. Dotterweich (Chairman), Ph.D. Pennsylvania; L. T. Angell, Ph.D. Wisconsin; W. C. Goolsby, Ph.D. Wisconsin; G. C. Philippatos, Ph.D. New York; R. E. Shrieves, Ph.D. California (Los Angeles); C. P. White (Emeritus), Ph.D. Pennsylvania.

Associate Professors:
A. L. Auclair, Ph.D. Iowa; T. P. Boehm, Ph.D. Washington; D. Choi, Ph.D. Pennsylvania State; C. M. Erhardt, Ph.D. Pennsylvania; J. P. Ogden, Ph.D. Purdue; R. A. Freer, Ph.D. North Carolina.

Assistant Professors:
R. J. Clayton, Ph.D. Georgia; C. L. Erhard, Ph.D. Georgia Tech; J. P. Ogden, Ph.D. Purdue; R. A. Freer, Ph.D. North Carolina.

*Wm. Vogt Professor of Insurance.
**Distinguished Chair Professor of Banking and Finance.

Prerequisites:
Accounting 2110-20, Economics 2510-20, and Statistics 2100 for all courses in Finance.

Finance (349)

3510 The U. S. Financial System (3) Examines U. S. financial system as environment which affects business and financial decisions. Coverage includes: overall functions of money and credit, banking system, other financial intermediaries, interest rate theory, money and capital markets, Federal Reserve System, role of monetary policy, and international banking and financial markets.

4110 Investment Analysis (3) Regulations and functions of security markets; mechanics of security trading; roles of investment bankers, dealers, and brokers; and evaluation of marketable securities such as common stock and corporate bonds. Prereq: 3130.

4120 Portfolio Analysis and Management (3) Principles underlying construction and management of investment portfolios. Topics include: measures of investment risk; evaluation of portfolio performance; portfolio revision; and international diversification. Prereq: 3110.

4130 International Financial Management (3) Rigorous analysis of international financial aspects of financial management of a multinational firm. Integrates the relevant topics from corporate finance, international financial markets, international monetary theory, and management of foreign exchange risk. Prereq: 3130, and 3510.

4155 Financial Markets and Institutions (3) Intensive study of financial institutions and markets where they transact analysis and comparison of the market's characteristics and the regulatory environment. Emphasis on the level of interest rates; analysis of differences in rates on different securities; mathematical models; and pricing of international financial markets. Prereq: 3510 and 3120.

4520 Commercial Banking (3) Analyzes key role of banks in economy and management issues involved in running profitable bank in rapidly changing economic competitive, and regulatory environment. Analysis is made of asset, liability, and capital management decisions, bank revenues, cost and profitability, impact of EFTS on costs and profits, current regulatory changes and international banking issues. Prereq: 3120 and 3510.

4650 Theory of Financial Management (3) Analyzes important decision-making topics in financial management. These include valuation, capital budgeting under uncertainty, cost of capital, capital structure theory, and dividend policy. Prereq: 3120-30 and Stat. 3220.

4660 Problems in Financial Management (3) Application of decision-making procedures to realistic problems in financial management, emphasizing case analysis. Topics covered include financial analysis, short-term sources of funds, long-term capital structure, and capital budgeting. Prereq: 4650.

4700 Business and Public Risk Management (3) Identification and management of pure risks facing business or governmental unit associated with property, liability, and personnel exposures. Emphasis is on implementation of most economic methods of dealing with risks at lowest cost consistent with good
Management (625)

Junior standing is prerequisite to all management courses.

3010 Principles of Management (3) Analysis of basic management functions of planning, organization, and controlling. E.

3110 Production Management (3) Analysis of production function. Prereq: Mgmt 2100 or 3450. Not available for management majors with concentrations in operations or personnel. E.

3111 Operations Management (3) Analysis and synthesis of concepts and techniques for decision making in the operations function. Integration of the operations function with other business functions. Prereq: Management Science 2110-20. Cannot be taken for credit by students who have credit for Management 3110. F, W.

3330 Experiences in Organizational Behavior (3) General concepts and personal experience, interpersonal and organizational communication, practice and evaluation. F, W, S.

4600 Personnel and Human Resources Management (3) Processes of effective planning for recruitment, selection, development, and maintenance of human resources. Emphasizes universality of personnel function. Not available for management majors. Cannot be taken for credit by students who have credit for Management 4460.

4640. F, S.

4530 Personnel Problems Seminar (3) Case problems in personnel analyzed, applying experimental methodology and case research as reported in professional journals. Prereq: Statistics 3110 (or Statistics 3310 with consent of instructor). Cannot be taken for credit by students who have credit for Management 4460. (Same as Psychology 4450.)

4700 Job Analysis and Evaluation (3) Job evaluation as basis for control of wages and salaries. Prereq: 4460. F, W, S.

4720 Employee Benefit Financing (3) Analyzes obligations, objectives, and financial impact of employee benefits to business enterprise. Includes methods of providing security from economic and financial problems associated with death, disability, and old age. Credit not given for both 4720 and Insurance 4720.

4810 Real Estate Finance (3) Study of four fundamental areas of real estate finance: 1) legal environment of real estate lending; 2) sources of real estate credit—primary and secondary mortgage market; 3) financing owner occupied housing; and 4) financing income producing properties. Credit not given for both 4810 and Real Estate 3630. Prereq: 3130.

4820 Real Estate Appraisal (3) Theory and practices of determining real estate value. Estimating value by use of comparable sales, cost estimation techniques, and discounting income flows. Basic methods utilized by professional appraisers and analysts. Credit not given for both 4820 and Real Estate 3515. Prereq: 3130.

4830 Problems of Urban Development (3) Study of the special economic problems of urban areas, and their effects on land value. Emphasis placed on discussing difficulties involved in obtaining efficient and equitable solutions to these problems. Credit not given for both 4830 and Real Estate 4120. (Same as Urban Studies 3800.)

4840 Real Estate Investment (3) Principles of investment in real property. Utilizes discounted cash flow models and ratio analysis. Current federal tax law applicable to real property. Limited partnerships and other joint ventures. Credit not given for both 4840 and Real Estate 4540. Prereq: 3130.

4990 Special Topics in Finance (1-3) A directed research course wherein the subject matter and report requirements will be determined by a sponsoring faculty member. Department approval of proposal required before student may complete registration. May be repeated. Maximum 6 hrs.

GRADUATE

See page 81 for information on graduate programs. Consult the Graduate Catalog for listing of graduate level courses.

Management

Professors:

H. D. Dewhirst (Head), Ph.D. Texas; R. W. Boling, Ph.D. Pennsylvania; L. C. Kirby, Ph.D. California; G. W. Donaldson (Emeritus), MBA Pennsylvania; J. M. Larson, Jr., Ph.D. Purdue; S. K. Reed, Ph.D. Minnesota; J. J. Stallard, Ph.D. Ohio; H. A. Smith, Ph.D. Iowa; E. R. Smith, Ph.D. Ohio; N. J. Stallard, Ph.D. Ohio State; S. C. Vance (Emeritus), Ph.D. North Carolina; G. A. Wagner (Emeritus), M.S. Indiana; G. H. Whittlock (Emeritus), Ph.D. Tennessee; M. S. Worman, Ph.D. Minnesota.

Associate Professors:

O. S. Fowler, Ph.D. Georgia; R. C. Maddox, Ph.D. Texas; C. W. Neel (Dean), Ph.D. Alabama; M. C. Rush, Ph.D. Akron

Assistant Professors:

P. G. Campbell, M.S. Austin Peay State; K. C. Gilbert, Ph.D. Tennessee; R. T. Ladd, Ph.D. Georgia; A. J. Smith 4910 and 5320; J. C. Петре, M.S. Tennessee; J. E. A. Russell, Ph.D. Akron.²

²Alumni Distinguished Service Professor.

Management Science (627)

4320 Organization Structure and Behavior (3) Structure and behavior in organization: models, concepts, and problems. F. W, S.

4410 Operations Control (3) Analysis of the operations control function. Techniques of short-term forecasting; material and capacity requirements planning; integration of scheduling and operations flows into the total operations function. Prereq: 3111. W, S.

4420 Advanced Industrial Problems (3) Cases in production management. Prereq: 15 hrs in major including 4410. F, S.

4460 Organizational-Industrial Psychology (3) Analytical and empirical approach to application of psychological tools and techniques in organizations. Prereq: Statistics 3110 (or Statistics 3310 with consent of instructor). Cannot be taken for credit by students who have credit for Management 3460. (Same as Psychology 4450.)

4470 Job Analysis and Evaluation (3) Job evaluation as basis for control of wages and salaries. Prereq: 4460. F, W, S.

4520 Evaluation of Personnel Programs (3) Methodologies for criterion development analyzed in areas of selection, training, job evaluation, safety, and labor relations; performance evaluation emphasized. Prereq: 4460-70; Statistics 3110.

4530 Personnel Problems Seminar (3) Case problems in personnel analyzed, applying experimental methodology and case research as reported in professional journals. Prereq: 4460-70; Statistics 3110.

4600 Database Management in Business (3) Application, logical structure, and implementation of database systems. Management of data resources to effectively support information systems in organizations. Prereq: Computer Science 3150.

4610-20 Management Science (3, 4) Applications of mathematical and statistical techniques to problems of production management. Prereq: 30 hours of mathematics and statistics, and consent of instructor.

4710 Enterprise Planning and Control (3) Concepts and cases on managerial functions of planning and control in business firm or not-for-profit organization. Emphasis on formal long-range strategic planning in changing environment. Team project to develop long-range plan for hypothetical enterprise.

GRADUATE

See page 81 for information on graduate programs. Consult the Graduate Catalog for listing of graduate level courses.

Management Science Programs

Professors:

R. S. Garfinkel (Chairperson), Ph.D. Johns Hopkins, J. K. Ho, Ph.D. Stanford.

Assistant Professor:

D. R. Fox, Ph.D. Purdue.

Management Science (627)

2110 Deterministic Decision Models (3) Introduction to quantitative techniques used to solve deterministic problems. Topics include problem formulation, computer solutions, simplex method, post optimality analysis. Prereq: Mathematics 1560; Computer Science 1410 or Business Administration 2750. E.

2120 Stochastic Decision Models (3) Introduction to quantitative techniques for problems involving probabilistic outcomes. Topics include decision theory, Markov chains, queueing, simulation. Prereq: Statistics 2100 and Mathematics 1560.

GRADUATE

See p. 81 for information on graduate programs. Consult the Graduate Catalog for listing of graduate level courses.
Marketing and Transportation

Professors:
D. J. Barnaby (Chairman), Ph.D.; Purdue; F. W. Davis, Jr., Ph.D.; Michigan State; G. N. Jann, Ph.D.; D.B.A; Indiana; E. D. Dille (Emeritus), Ph.D.; Ohio State; J. L. Frye (Emeritus), Ph.D.; Florida; F. L. Hent- son (Emeritus), Ph.D.; North Carolina (Chapel Hill); C. J. Litten (Emeritus), Ph.D.; Pennsylvania State; W. B. Locander, Ph.D.; Illinois; R. A. Mundy, Ph.D.; Pennsylvania State; E. P. Patton, Ph.D.; North Caro- lina (Chapel Hill); R. B. Woodruff, D.B.A; Indiana.

Associate Professors:
E. R. Cadotte, Ph.D.; Ohio State; J. H. Fogg, Ph.D.; Indiana; R. L. Jenkins (Associate Dean), Ph.D.; Ohio State; J. R. McMillen, Ph.D.; Ohio State; R. C. Reizenstein (Associate Dean), Ph.D.; Cornell.

Assistant Professor:
S. F. Gardini, Ph.D.; Houston; J. O. Rentz, Ph.D.; Georgia; D. W. Schuman, Ph.D.; Missouri (Colum- bia); P. S. Speck, Ph.D.; Auburn.

Marketing (632)

Economics 2510-20 or the equivalent are prerequisite to all courses in Marketing: Marketing 3110-20 or the equivalent are prerequisite to all other 3000 or 4000-level marketing courses.

3110 Introduction to Marketing (3) Marketing in our economy. Influence of environment: social, econom- ic, ethical, legal, and technological forces on marketing activities. Assessment of dimensions of the firm’s marketing program. Prereq: Economics 2510-20. E.

3120 Marketing Management (3) Analysis of marketing management. Identifying market opportunities, plan- ning marketing programs, implementing competitive strategies. Prereq: 3110. E.

3130 Marketing Channels (3) Macromarketing systems approach from viewpoint of decision maker. Examination of inputs, outputs, organizations, and goals of marketing systems. Consideration of compara- tive marketing systems. Prereq: 3110. Prereq: or coreq: 3110-20. E.

3410 Buyer Behavior (3) Industrial and ultimate con- sumer purchasing behavior. Theories underlying buying decision processes. Marketing management and piv- otal concepts in behavioral sciences. E.

3510 Marketing Research (3) Planning and obtaining information for marketing decision making. Informa- tion by process, methods of analysis, and interpretation procedures are integrated to serve the decision maker. Prereq: 3110. Prereq: 3110. E.

4104 Sales Force Management (3) Examination of sales management's role in setting sales force, including personal selling concepts. Particular emphasis on role of sales organization in marketing program. F. W. S.

4150 Advertising Management (3) Mass communica- tions theories and concepts. Advertising and its relationship to marketing program of firm. E.

4230 International Marketing (3) Management of inter- national marketing activities of the firm. Marketing strategies in international business. Prereq or coreq: Business Administration 3110 or consent of instruc- tor. F. W. S.

4610 Market Opportunity Analysis (4) Developing understanding of various approaches available for evaluating market opportunities that may exist within a market. Emphasis on relationship between analysis of mar- kets and marketing decision making. Topics covered will include identification of markets, consumer behavior analysis, interpretation of market infor- mation, and forecasting. Prereq: 3510. F. W. S.

4710 Marketing Decisions and Strategies (4) Pragmatic orientation to application of advanced, analytical con- cepts and skills within marketing environment. Empha- sis on integration of knowledge from the component areas of marketing which are applicable to the total mar- keting program. Prereq: 24 hrs of marketing including 3410, 3510 and 4610 or consent of instructor. Course should be taken as close to graduation as possible. F. W. S.

4808 Honors: Executive-in-Residence Seminar (3) Student interaction with top-level marketing executives is used as a primary vehicle to show how conceptual marketing knowledge may be utilized in a major marketing subject area (e.g., promotion, consumer behavior, marketing strategy, etc.) Prereq: Marketing 3210, 4210, 4510, and consent of instruc- tor. 4650 is a recommended but not required prerequisite. S.

4818-28 Honors: Marketing (3, 3) Marketing trends and developments. Advanced marketing theory and application. Can be substituted by eligible students for other courses in marketing with consent of depart- ment. Prereq: Consent of department. E.

GRADUATE
See page 81 for information on graduate programs. Consult the Graduate Catalog for listing of graduate level courses.

Transportation (981)

Nine quarter hours in general economics are prerequisite to all courses in transportation. Transportation 3110-15 or consent of instructor are prerequisite to all courses numbered above 4000.

3110 Introduction to Transportation (3) The trans- portation and distribution industry as a vital part of the nation's social and economic structure. Prereq: Econ. 2510-20. E.

3115 Introduction to Logistics (3) Business logistics as a functional area within the firm and as a strategic element of the marketing mix. Discussion of logistical system components and their interrelationships. Prereq: Econ. 2510-20, Statistics 2100. E.

3120 Logistics and Traffic Management (3) The pur- chase and use of transportation services as related to the firm's logistical mission. Emphasis on determi- nation of transportation strategy and relationships to purchasing and materials management. Prereq: 3115. E.

4150 Transportation Law and Policy (3) The evolu- tion of government involvement in transportation, evaluation of past and current regulatory and promo- tional policies, responsibilities of major agencies and procedures under governing statutes.

4145 Freight Carrier Operations (3) Analysis of freight operations, including pick-up and delivery, terminal and line-haul functions, considered by each mode individually and in coordination with each other. F. W. S.

4510 Passenger Transportation (3) Analysis of the urban and inter-city air and surface passenger mar- kets, the issue of public versus private ownership of passenger carriers and examination of government policy in passenger transport, significance of future technological developments. (Same as Urban Studies 4510.)

4610 Carrier Cost Analysis and Pricing Strategy (3) Development of freight carrier costs, by individual modes and market sectors, and analysis of pricing strate- gies from both historical and contemporary perspectives, including computerized systems. W.

4620 Carrier Management Seminar (3) Determination and evaluation of current carrier strategy including the establishment of individual carrier mission and goals and development of marketing and cost control strategies. Prereq: Minimum of 16 hours in transpor- tation/logistics/management, or consent of instructor. 4610. E.

4720 Logistics Systems Management Seminar (3) Senior seminar in development of business logistics strategy and the management of logistical systems. Course approach includes case studies, lectures, and logistics management simulation. Prereq: 3115.

4730 Transportation and Logistics Research (3) Identification and analysis of methods of research in transportation and logistics. Application of quantitative techniques, model building, and simula- tion to solution of problems. Prereq: 4720.

4810-15 International Transportation and Logistics (3, 3) Multi-national distribution strategy, import- export traffic management, ocean shipping, interna- tional air and surface operations, comparative transport policy. Prereq or coreq: Bus. Admin. 3110. F. W. S.

4820 Current Topics in Transportation and Logistics (3) Seminar designed to study specific current prob- lem areas in transportation and distribution. Topic announced prior to offering. May be repeated once for credit. Prereq: Consent of instructor.

4988 Honors: Executive-in-Residence Seminar (3) Student interaction with top-level transportation and distribution executives. Focus on the strategic deci- sions making process. Prereq: Senior standing and consent of instructor.

4998 Honors: Independent Study (3) Directed research and study on subject of mutual interest to student and staff member.

GRADUATE
See page 81 for information on graduate programs. Consult the Graduate Catalog for listing of graduate level courses.

Statistics (992)

Professors:
D. L. Sylwester (Chairperson) Ph.D.; Stanford; R. A. MacLean, Ph.D.; Purdue; J. W. Philpot, Ph.D.; Virginia Polytechnic; C. C. Thrippen, Ph.D. Virginia Polytechnic.

Associate Professors:
R. A. O'Brien, Ph.D.; University of North Carolina (Chapel Hill); G. B. Ranney, Ph.D.; North Carolina State (Raleigh); R. D. Sanders, Ph.D.; Texas; M. B. Younger, Ph.D. Virginia Polytechnic.

Assistant Professors:
M. G. Leitnaker, Ph.D.; Kentucky; J. L. Schich- hamer, Ph.D. University of Pittsburgh.

2100 Probability and Statistics (3) Elementary theory of probability; frequency and density functions; expected values and variances; fundamental concepts of sta- tistical inference. Cannot be taken for credit by students who have credit for 3450. Prereq: Mathematics 1550 or 1550. E.

3110 Regression and Correlation Methods (3) Methods of linear and multiple-linear regression and correlation, nonparametric measures of association. Cannot be taken for credit by students who have credit for 4310. Prereq: 2100 or 3450. E.

3220 Analysis of Time Series (3) Some statistical methods applicable to analysis of trends and time series; graphic presentation and analysis, index numbers, curve fitting, correlation, trends, analysis of seasonal and cyclical variation. Prereq: 2100 or 3450. E.

3310 Industrial Statistics I (3) Shewhart Control Charts for means and variation measures, proportion non- conforming, and number of nonconforming per unit process capability analysis. Special applications. Prereq: 2100 or 3450. E.

3320 Industrial Statistics II (3) Acceptance sampling for attributes and variables inspection. Introduction to cost of quality. Elements of life testing and reliabil- ity. Prereq: 3310. S.

3460 Probability and Statistics for Engineers II (3) Hypothesis testing, introduction to analysis of vari- ance: Simple linear regression. Multiple linear regression. Prereq: 3450. E.

3550 Random Processes and Probability Models (3) Functions of random variables, multivariate distributions, conditional expectations, waiting time distributions; Poisson processes, life-testing, queuing. Markov processes, introductory theory with applications. Prereq: 3450; Math 2850. F, S.

4310 Regression Analysis (3) Linear regression and correlation, multiple regression, stepwise methods, polynomial regression, use of dummy variables. Use of standard regression computer programs. Elementary theory and applications. E. Prereq: six hours in statistics.

4415 Sampling Techniques and Theory (3) Procedures used in probability sampling for a variety of arrangements of statistical universes and development of estimators and standard errors associated with sampling schemes. Some properties of estimators. Determination of sample size. Not available for credit to students with credit for 3410. E. Prereq: six hours in statistics.

4500 Statistical Inference (3) Properties and inferential applications of the common probability distributions in statistics. Goodness-of-fit tests; non-parametric statistics including ranking methods for two independent samples. Elementary theory with applications. Prereq: 3460 or equivalent. W.

4600 Analysis of Variance and Experimental Design (3) Analysis of variance techniques for one way and multifactor models. Post hoc procedures. Design considerations for completely randomized, randomized block, factorial, hierarchical and split plot experiments. Prereq: 3460 or equivalent. W.

GRADUATE
See p. 81 for information concerning the graduate programs. Consult the Graduate Catalog for listing of graduate level courses.

Interdepartmental Unit

Business Administration (205)

2750 Electronic Data Processing (3) Development of skill in Fortran programming with special emphasis on business applications. Prereq: Math 1560 or 1860 or equivalent. May not be taken for credit if Comp. Science 1410 or Office Admin. 2750 has been completed. E.

3110 Introduction to International Business (3) A survey of the strategic implications of conducting business operations in an international context. Emphasis on the analysis of relevant cross-national environments including cultural, political, economic and legal character-istics. Prereq: Economics 2520 or consent of instructor.

3300 Business Career Planning and Placement (1) Exploration of career opportunities in business. Process of making the career decision, preparing for and conducting a job campaign. Using the Placement Office. S/NC only. Prereq: satisfactory progression to upper-division level in Business or Liberal Arts Business Minor.

3700 Essentials of Financial Planning (3) Introduction to individual financial planning through study of basic tools, money management, decision making, services of financial institutions, asset protection, assurance applications, and financial planning goals.

3800 Introduction to Real Estate (3) Survey of five fundamental areas of concern to real estate industry and real estate analysts: 1) economics of real estate market; 2) legal environment of real estate; 3) real estate finance and financial institutions; 4) appraisal; and 5) real estate investment. Credit not given for both 3800 and Real Estate 3910. (Same as Urban Studies 4830.)

4310 Business Letter Writing (3) Principles, prac-tices, and mechanics of effective business letters and memoranda; principles applied by solving communication cases; emphasis placed on letters and memos as initial sources of ideas in communications systems of the business firm. May not be taken for credit by students who have completed Office Admin. 4310. F, W, S.

4320 Business Communications: Reports (3) Concept of communications applied to business reports. Process of collecting/analyzing pertinent business information and the appropriate presentation of business reports as a basis for executive decision making. Computer technology utilized. Prereq: Jr. standing. May not be taken for credit by students who have completed Office Admin. 4320. F, W, S.

4430 Business Policy (3) Analysis of business problems and managerial decision making through case studies and written reports. Prereq: Core requirements except Business Law (see page 78) and senior standing. Open only to students who have been admitted to the Upper-Division programs of the College of Business Administration. E.

4608 Honors: Corporate Executive-in-Residence Seminar (3) Interaction with top corporate executives from a wide spectrum of business disciplines, (Ac-counting, Finance, Management, Marketing, Transportation, etc.). Discussion of domestic and international strategic planning as it is applied in major U.S. corporations. The focus of executive presentations and small group discussion will be on goods and services in consumer and industrial settings. Prereq: Senior Standing, Finance 3120-30, Mgmt. 3010, 3110, Marketing 3110-20, and consent of instructor.

4610 Seminar in Small Business Assistance (3) Application of classroom learning to problems of small business in the community. Student is given opportunity to apply business concepts and develop analytical skills. Upon completion of selected readings relevant to small or minority enterprise, students are assigned a project on basis of interest, ability, and experience. Students work in teams under supervision of a participating professor within the College of Business Administration. Approval for enrollment must be secured from instructor. May be repeated. Maximum credit 9 hours.

4810-20-30 Problems in Office Administration (1-3, 1-3, 1-3) Subject and title vary each quarter. May be repeated. Maximum 3 hrs. each course. May not be taken for credit by students who have completed Office Admin. 4810-26-30.

GRADUATE
See page 81 for information on graduate programs. Consult the Graduate Catalog for listing of graduate level courses.

Center for Business and Economic Research

STAFF
D. A. Hake (Director), Research Associate Professor, Ph.D. Tennessee
K. E. Quindry (Emeritus), Research Professor, Ph.D. Kentucky
W. F. Fox, Associate Director, Research Associate Professor, Ph.D. Ohio State
J. W. Mayo, Research Assistant Professor, Ph.D. Washington University (St. Louis)
B. B. Vickers, Research Associate, B.A. Washington B. A. Mary Washington
P. A. Price, Research Associate, B.S. Tennessee
M. J. Cornelius, Research Associate, M.S. Tennessee
C. E. Schmidhammer, Research Associate, B.S. Pittsburgh
Communication has become increasingly significant in today's complex society. The growth of specialization, the widening gaps among segments of society and the inescapable nature of world conflict point up the need for a greater understanding of communication processes and for the education of young men and women capable of perceptive understanding of the communications media.

The College of Communications offers programs designed to acquaint students with the nature of communication and to prepare them for professional work in a variety of communications fields. The college is composed of the School of Journalism and the Departments of Advertising and Broadcasting. The curricula of these three academic divisions have a common base of courses. Once they have completed the core, students may pursue special interests.

The Accrediting Council on Education in Journalism and Mass Communications has accredited the advertising, news-editorial, public relations and master's programs. The college is a member of the Association of Schools of Journalism and Mass Communications and the Broadcast Education Association.

Association and Progression Requirements

Association with the College of Communications may take place when students first enter UTK, or after students have completed freshman and sophomore courses, and the core courses for a specific major. At least 45 quarter hours in residence in the college is required for a degree. Those interested in Communications should obtain a copy of the Program Planning Guidebook available from the College of Communications Advising Center.

Entering freshman are associated with the College of Communications as pre-majors. They may progress to a major in the School of Journalism or the departments of Advertising or Broadcasting after they:

1. Pass a Qualification Test covering proficiencies in spelling, grammar and typing. The test may be taken three times. If a student has not passed the test after three attempts, he or she must wait six months before attempting to pass the test again. Subsequent attempts will not be permitted without the written permission of the dean.

2. Pass, with at least a 2.0 average, the following courses or equivalent honors courses normally taken in the freshman year:
   - English 1010 or 1011; 1020; 1032
   - 12 hours of natural science
   - History 1510-20
   - Communications 1110
   - 8 or 9 hours of foreign language

3. Achieve at least a 2.3 average in all work attempted, including the courses mentioned in (2).

4. Complete the core courses required for each major, with at least a B in one course, and no grade below a C. The core courses for each major are:
   - Advertising — Communications 1110, 2215, Advertising 3000
   - Broadcasting — Journalism 2215, Advertising 3000, Broadcasting 2750
   - Journalism — Journalism 2215, Journalism 2220, Journalism 2230

Journalism students who otherwise meet all requirements may apply for admission as soon as they make a B in one of the core courses.

Students who have not met these standards may remain associated with the College as pre-majors but may not enroll in courses in the College numbered above 3000. Students normally will complete courses required in their program but offered by other colleges while they are completing their core course requirements. In order to make normal progress, pre-majors should progress into a major program by the end of their sophomore year.

Once students progress from pre-major status to a major with a school or department, they must earn at least a C grade in all College of Communications courses and must maintain at least a 2.3 cumulative average to continue with subsequent courses in the College and to fulfill graduate requirements.

Students from other colleges with the University may associate with the College of Communications as pre-majors as soon as they pass the Qualification Test. Students must be associated with the College during their last 45 hours prior to graduation.

Students from other colleges who are not seeking a degree in communications but who wish to take communications courses as electives or in fulfillment of requirements in other colleges may do so, but must file a program in advance with the Communications Advising Center.

Curriculum

The college curriculum offers academic majors in advertising, broadcasting, journalism, and public relations. Through core introductory courses, students receive a basic view of the nature of communications.

The freedom of electives provided within the programs permits students to develop specialized interests in a variety of fields. In consultation with an advisor, they may plan individual programs leading to newspaper, magazine, radio, television, public relations, or advertising careers. They may prepare for careers in agricultural or industrial journalism. They may select related courses to develop a specialty in writing news of science, government, and business. Others may elect courses to prepare themselves as writers on foods, fashions, and home interests.

Students in other divisions of the University may take, with the permission of the instructor and the college advisor, certain courses for training in communications or for an understanding of the social role of the mass media. Such students should bring a
The Edward J. Meeman Distinguished Professorship

As a result of a $200,000 grant to the School of Journalism in 1970 by the Edward J. Meeman Foundation, outstanding journalists and journalism educators are brought to the campus as distinguished professors. The professorship was endowed by the late editor of The Memphis Press-Scimitar and founding editor of The Knoxville News, which later became the News-Sentinel.

Kelly Leiter, former columnist, feature writer, and assistant city editor of The Chicago Daily News and the Indianapolis News, is the first permanent full-time faculty member to hold the position. The late Turner Catledge, former executive editor of The New York Times, John Hohenberg, longtime administrator of the Pulitzer Prizes and outstanding teacher at the Columbia University Graduate School of Journalism, Martin Ochs, former editor of the Chattanooga Times, and William J. Zima, former editor of the Des Moines Register, have held this professorship.

Equipment and Facilities

The Communications and Extension Building provides extensive facilities for communications instruction. The college has laboratories with special equipment for instruction in writing, editing, photography, advertising and broadcasting. In addition, advanced students gain experience through summer internships or through the University's general program of publishing and broadcasting. The Office of Public Relations, campus publications such as the Daily Beacon, and the college radio station WUTK provide practice for communications majors. The Tennessee Press Association and Tennessee High School Press Association, with headquarters at the University, present opportunities for special work and study.

Requirements for Graduation

The Bachelor of Science in Communications is awarded to majors who complete a program of 194 hours prescribed under departmental requirements listed below. At least 140 of these hours must be taken in courses other than the major and related communications fields. At least 27 of the hours in the major must be taken at The University of Tennessee, Knoxville. Normally, no more than 22 transfer credits in the major will be applied to the 194 hours.

HIGH SCHOOL DEFICIENCIES

AMERICAN HISTORY

Students lacking a high school credit of American history must take nine quarter hours of American history in addition to History 1510-20. Those hours may be applied to almost any combination: Astronomy 1510-20; 30; Biology 1210-20; Botany 1110-20; Chemistry 1510-20-20; Geology 1410-20-30; or Physics 1410-20-30 or 1210-20-30.

ENGLISH

This requirement is fulfilled by English 1010; 1020 and 1032 or appropriate honors courses. The eight hours of literature may be selected from English 2510-20-31-32-33 and 2660-70-80 (and Comparative Literature 2010 for journalism majors). Upper-division literature courses may be substituted by students with a B- average in freshman English at UT.

PROFESSIONAL COURSES

The advertising major requires certain professional courses that may be selected from the following: Accounting 2110-20; Advertising 3740, 4510-20-30, 5310, 5350, Art 2515, 3515; Broadcasting 2750, 3360, 3650, 4020-30, 4670-30; Educational Curriculum and Instruction 4750; English 1033; Journalism 2710, 3120, 3410, 3810, 3910, 3990, 4410-20, 4710, 4950; Marketing 3510, 4140, 4230, 4610, 4710; Business Administration 2750, 4310-20; Psychology 3120, 4640; Speech 3011; Statistics 4415.

SOCIAL SCIENCE AND HUMANITIES

Social science electives may be selected from geography, economics, political science, psychology, history, sociology, anthropology, classics (except grammar and composition courses), and upper-division philosophy and religious studies courses. Journalism majors may also take some black studies and women's studies courses as social science electives with consent of their advisor. Humanities electives may be selected from English, speech and theatre (not performance courses), music (except applied music), art (except applied art), classics (except grammar and composition), language culture courses (not grammar and composition), and upper division philosophy and religious studies.

GENERAL ELECTIVES

All electives are subject to the advisor's consent. Students are advised to consult the University's degree requirements as stated in the front section of this catalog as well as the requirements for the college or department.

Undergraduate Curriculum

Advertising

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<th>Freshman</th>
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<td>Art 2516</td>
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**Broadcasting**

**LOWER-DIVISION CURRICULUM**

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*See Requirements for Graduation.*

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**NEWS-EDITORIAL SEQUENCE**

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*See Requirements for Graduation.*

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**JOURNALISM**

**NEWS-EDITORIAL SEQUENCE**

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<td>Journalism 4420</td>
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<tr>
<td></td>
<td>Liberal arts electives</td>
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<td>Social science and/or natural science electives</td>
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<td>General electives</td>
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*See Requirements for Graduation.*

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**PUBLIC RELATIONS SEQUENCE**

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<th>Level</th>
<th>Course Code</th>
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<td>English 1010 or 1011; 1020; 1032</td>
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<td>History 1510-20</td>
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<td>Foreign language</td>
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<td>Mathematics 1540-50</td>
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<td>Sophomore</td>
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<td>English literature electives</td>
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<td>Economics 2510-20</td>
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<td>Political science electives</td>
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<td>General electives</td>
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<td>Total:</td>
<td>194 hours</td>
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*Specialization Area Options:

(a) Governmental Public Relations. Required: Sociology 3030; Economics 3220; Electives: Sociology 3420, 4530, 4535; Political Science 3555, 3556, 4612; Geography 3000, 3610.

(b) Corporate Public Relations. Required: Management 3010, Economics 3240, Marketing 4210. Electives: Speech 2351, 3021; Business Law 4110, 4120; Economics 4525; Geography 3000, 3610.

(c) Other Areas. For students interested in designing their own area of specialization. Advisors will assist students in the following areas: agriculture, recreation, cultural affairs, consumer affairs, international affairs, religion, education or others.

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**DEPARTMENTS OF INSTRUCTION**

**COMMUNICATIONS (259)**

**Professors:**
- P. G. Ashdown, Ph.D. Bowling Green; J. A. Crook, Ph.D. Iowa State; G. A. Everett, Ph.D. Iowa; J. B. Haskins, Ph.D. Minnesota; D. W. Holt, Ph.D. Northwestern; N. H. Howard, Ph.D. Ohio; B. K. Leiter, Ph.D. Southern Illinois; N. R. Swan, Jr., Ph.D. Missouri.

**Associate Professors:**
- M. Miller, Ph.D. Michigan State; M. W. Singletary, Ph.D. Southern Illinois; R. E. Taylor, Ph.D. Illinois.

**1110 Introduction to Communications (3)** Nature, functions, responsibilities of mass communications media and agencies. Survey of newspapers, magazines, radio, television, film, advertising, public relations, press associations and specialized publications. Open to majors who have had no communications courses and to non-majors below junior level. E.

**1118 Honors: Introduction to Communications (3)** Nature, functions and responsibilities of mass communications media and agencies, with in-depth study of special problems. Open only to those majors selected on the basis of placement scores and high school record. W.

**GRADUATE**

Consult the Graduate Catalog for listing of graduate level courses.
Advertising (012)

**Professors:**
J. B. Haskins, Ph.D., Minnesota; R. Joel (Emeritus).

**Associate Professors:**

**Assistant Professor:**

**Graduate (012)**

**Communication Specialist:**
J. H. Carr, M.S. Tennessee.

2750 Introduction to Broadcasting (3) Theory, history, regulation, and economic aspects of broadcasting and its functions in society. Prereq: Communications 1110 or 1118 or consent of department head. F, W, S.

3360 Television and Radio Advertising (3) Principles of successful radio-television advertising; emphasis on media research, role structure, programming, creativity, and television commercials. Prereq: 2750 or consent of department head. F, W, S.

3610 Radio-Television News (3) Theory and techniques of writing news and features for broadcast media. Lecture and writing press association dispatches; gathering local news, recording interviews, and preparing newscasts and feature programs. 2 hrs. and 1 lab. Prereq: Journalism 2220 or consent of department head. F, W, S.

3650 Radio-Television Writing (3) Theory and technique of writing broadcast scripts except news and dramas. Special events, interviews, musical scripts, radio talks, documentaries, and promotion material. F, W, S.

3670 Television News (3) Theory and techniques of portable video tape and film production for television. Ethical standards, professional associations and editing ethics. Emphasis on news and information programs. Prereq: 3610 or consent of department head. 2 hrs. and 1 lab. F, W, S.

4010 Speech for Broadcasting (3) Fundamental broadcast conditions affecting the news announcer; pronunciation and oral interpretation of general American speech. Prereq: 3610 and Speech 2311 or consent of department head. F, W, S.

4020 Radio Production (3) Study of radio production, past and present. Familiarization with production tools and techniques. Group and individual production activities. Prereq: 3650 or 3610 or consent of department head. F, W, S.

4021 Advanced Radio Production (3) Application of the theories, techniques, and tools of radio production to create programming of a professional level of sophistication and quality. Prereq: 4020 or consent of department head. F, W, S.

4030 Television Production (3) Overview of elements of television production: cameras, sound, lighting, film videotape recording, optics, and studio control centers. Presented with the inexperienced and professional broadcast student in mind. Prereq: 4020 or consent of department head. F, W, S.

4040 Advanced Television Production (3) A semi-independent course in program origination, producing, directing, and performing with orientation to the professional broadcast student. Prereq: 4030 or consent of department head. F, W, S.

4510-20-30 Practicum (1, 1, 1) Prereq: Progression into the Department of Advertising as a major. S/NC. F, W, S.

4970 Independent Study (3) May be repeated. Maximum credit 6 hrs. E.

**Graduate**

Consult the Graduate Catalog for listing of graduate level courses.

School of Journalism (594)

**Professors:**
J. A. Crook (Director), Ph.D. Iowa State; P. G. Ashdown, Ph.D. Bowling Green; G. A. Everett, Ph.D. Iowa; J. B. Haskins, Ph.D. Minnesota; B. K. Leiter, Ph.D. Southern Illinois (Meeman Distinguished Professor).

**Adjunct Professor:**
A. Haley

**Associate Professors:**

**Assistant Professor:**
M. L. Kern-Foxworth, Ph.D. Wisconsin.

**Instructor:**
C. E. Caudill, M.A. Ohio State; B. L. Hufford, M.Ed. Bowling Green.

2210 Writing for Mass Media (3) Principles and practices of writing for major types of mass communications media. Not available to majors in the College of Communications. Prereq: English 1010; 1020; 1031 or 1032 or 1033 or consent of instructor. F, S.

2215 Basic News Writing (4) Information gathering and writing under deadline. Observation, interviewing, speech reporting for print and broadcast media. Grammar workshop. Prereq: English 1032, Communications 1110 or 1118 and college association tests (typing, spelling and grammar). E.

2220 Reporting (4) Methods of gathering and writing news for mass media. Emphasis on news and news features. Prereq: 2210 or 2215. F, W, S.

2230 Editing for Mass Media (3) Methods and practices in judging news, editing copy, and writing headlines. Introduction to video display terminals. Emphasis on practise word use. Prereq: 2220. F, W, S.

2710 Public Relations (3) Theories and principles of public relations. Overview of PR as a management tool of business, government, institutions, and organizations. Prereq: 2210 or 2215. E.

3110 Communications History (3) Development of newspapers, magazines, broadcasting, photography, and book publishing in America and their relationship to society. F, W, S.

3120 Writing Feature Articles (3) Selection of topics and writing feature articles for newspapers, magazines, and company publications. Prereq: 2220 or consent of instructor. E.

3210 Advanced Reporting (3) Gathering and writing news in depth on current issues and concerns under deadline. Special emphasis on business news. Use of video display terminals. Prereq: 2230. F, S.

3220 News Editing and Display (3) Principles and practices in making up newspapers and magazines. Advanced work in copyreading, rewriting, and headline-ting. Picture editing, 1 hr. and 2 labs. Prereq: 2230. F, S.

3310 Graphic Arts in Journalism (3) Survey of printing processes and associated technologies. Emphasis on publication design, offset techniques, and computer technology. E.

3410 Communications Law (3) Statutory law and judicial precedents affecting mass communications media. Legal, contempt of court, invasion of privacy, copyright, broadcasting, advertising, and postal regulations. E.

3510 Practicum in Journalism, (1-3) Supervised expe-
4150 Issues in Journalism (3) Topics vary. May be repeated. Maximum credit 6 hrs.

4310 Reporting Public Affairs (3) Reporting news of courts, politics, and government. State, county, and local coverage. Prereq: 2230 and senior standing. W, S.

4410 Mass Media and Society (3) Roles and responsibilities of mass media in society. Critique of mass media performance. Media codes and controls on the media. E.

4420 Newspaper Management (3) Daily and weekly business operations. Developments in newspaper management. S.

4510 Practicum in Journalism (1-3) Supervised experience in news writing and editing. May be repeated for credit. Prereq: Senior standing or consent of instructor. Maximum 3 hours. E.

4560 Investigative Reporting (3) Investigative and interpretive reporting of complex or specialized subjects to place news in perspective or to clarify situations. Emphasis on writing for publication. Prereq: 2220.

4710 Public Relations Cases (3) Case studies and application of public relations principles to problems in business and industry, government, institutions, trades, and professions; solving problems in public relations situations. Prereq: 3720. F, W, S.

4810 Journalism in the High School (3) Functions and methods of publications. Staff organization, writing, and editing techniques, editorial problems, and business management. SU.

4910 News and Feature Photography (3) Advanced principles and methods in black-and-white photography. Emphasis on news and feature photographs and picture stories. Prereq: 3910 or consent of instructor.

4950 International Communications (3) Communication of news and opinion among nations and under varying types of political and economic systems; world news organizations; the press as a factor in international affairs; barriers to the flow of information; comparison of world press systems. W.

4970 Independent Study (3) May be repeated. Maximum credit 6 hrs.

GRADUATE

Consult the Graduate Catalog for listing of graduate level courses.
Division of Continuing Education, Knoxville

Joseph P. Goddard, Dean
William D. Barton, Associate Dean
Judy B. Constantine, Administrative Assistant

The Division of Continuing Education, Knoxville, is the administrative unit of UT that extends academic courses, educational services, and other programs to the non-traditional student. While most people who participate in the programs are adults, persons of all ages and academic levels can be counted among the people who enroll in the credit and non-credit offerings of the Division.

Programs and courses are based upon student needs and desires, whether for self-motivated learning; for leisure and recreational programs; or for professional promotion, certification, licensure, relicensure, or mid-career changes. The Division provides these educational opportunities through program coordination and development of the two departments: Conferences and Non-Credit Programs, and the University Evening School. Specific programs and services of each department are described on the following pages.

Conferences

Director:
W. L. Whelan, Ed.D., Pacific States.

Coordinators:

Administrative Assistant:
I. P. Keith.

Staff Assistant:
M. Barry-Purdy.

It has become evident that learning can take place for an extended period of time in a variety of modes, settings, and circumstances other than in the traditional classroom. To bring this fact to reality, the University of Tennessee, Knoxville, continuing education program has been designed and staffed to bring together under University auspices groups of participants and qualified resource persons to share new learning and ideas; to develop new insights; to address current problems; or to impart new skills and techniques. The program embraces virtually all disciplines, professions, vocations, and avocations.

The Department of Conferences is staffed and equipped to advise, assist, and provide administrative support in the delivery of a successful conference or seminars. Acting in these roles, the department can follow through with an initial tentative budget; secure appropriate setting; devise an attractive format; arrange for auxiliary services such as lodging, meal, and banquet events, extra excursions and tours, and complete registration procedures; design, print, and mail the conference brochure; and handle registration fee collection and payment of honoraria and other conference expenses.

Depending on the time of year, the academic calendar of the University, and the desires of the conference sponsor, the program and participants may be housed in campus facilities or off-campus commercial settings.

Among the unique advantages offered by the Department of Conferences programs are that: programs are designed to meet specific needs of the greatest practical value to the participants; the knowledge and expertise of the UT faculty and staff can be matched with the specific needs of the participants; the programs encourage informal contacts and interaction among colleagues with similar interests with the resource persons; program fees are kept reasonable by using University facilities and services whenever possible; an experienced Conference staff is available to plan, coordinate, and facilitate delivery of programs of virtually any size or duration; by using conference services, the program sponsor is free to concentrate fully on program content; programs can be conducted "inhouse," on the campus, anywhere in the state of Tennessee, or wherever an appropriate meeting site can be arranged; Continuing Education Units (CEU's) may be awarded to program participants if the program is designed to satisfy the criteria necessary for CEU credit. The Division of Continuing Education maintains a permanent record of CEU's earned. A record of CEU's earned may be obtained by written request.

Additional information may be obtained from the Department of Conferences, 2014 Lake Avenue; telephone (615) 974-5261.

English Language Institute

Director:
Dale A. Myers, Ph.D., Florida

Administrative Assistants:

Coordinator:

The English Language Institute (ELI) is a non-credit language-study program of the University of Tennessee, Knoxville. It is designed to assist students in the pursuit of career goals or educational objectives in the United States. The ELI offers intensive courses for the improvement of student skills in the English Language. International students, visitors, and professionals have successfully learned English through study in the ELI.

The courses emphasize the development of communicative ability in listening, speaking, reading, and writing. Faculty members are trained in teaching English to speakers of other languages with differing national backgrounds and varying proficiency in English.

The curriculum consists of six courses:
101 Introductory
102 Elementary
104 High Intermediate
105 Advanced

92
The Department of Non-Credit Programs provides a comprehensive array of courses designed and planned to serve the needs or demands of individuals in Knoxville and surrounding communities, as well as those of area business and industry. Most courses are offered on a quarterly basis, in the evening on the University campus and at selected off-campus locations. The quality of these programs is maintained by utilizing University faculty where possible and citizens of the community who have gained a reputation for certain competencies or technical skills. A number of courses are offered "on-site" for business or industrial clients, and instructional services are tailored to the needs of each individual group. The types of courses offered by the Department range from developing personal skills, such as communications, computer literacy, and management development, to human interest courses, such as plants and gardening, health, exercise and fitness. There are also courses which meet certain requirements of the state or other agencies for certification in given fields, such as real estate and aviation. "In-house" courses delivered to business and industry help provide for professional development for the area workforce. The Department co-sponsors an ongoing program, the Smoky Mountain Field School, with the Great Smoky Mountains National Park. The School consists of intensive weekend and five-day field courses emphasizing outdoor exploration of the Smoky Mountains.

Continuing Education Units (CEU's) are awarded to students satisfactorily completing courses described in the non-credit quarterly class schedule. A CEU is defined by the Southern Association of Colleges and Schools as "ten contact hours of participation in an organized continuing education experience under responsible sponsorship, capable direction, and qualified instruction." A permanent record of CEU's is maintained by the department. A letter of completion for all CEU's earned at The University of Tennessee, Knoxville, may be obtained upon written request.

Recent statewide legislation gives Tennessee citizens who are 60 years of age or older, or those who are totally disabled, the opportunity to audit courses at UTK free of charge according to available space. Legal verification of either of these conditions is required for enrollment. Additional information may be obtained at 907 Mountcastle Avenue; telephone (615) 974-3404.

Non-Credit Programs

Director:
G. D. Cooper, Ed.D., Tennessee.

Coordinator:
D. T. Howard, M.S., Tennessee.

The Department of Non-Credit Programs provides a comprehensive array of courses designed and planned to serve the needs or demands of individuals in Knoxville and surrounding communities, as well as those of area business and industry. Most courses are offered on a quarterly basis, in the evening on the University campus and at selected off-campus locations. The quality of these programs is maintained by utilizing University faculty where possible and citizens of the community who have gained a reputation for certain competencies or technical skills. A number of courses are offered "on-site" for business or industrial clients, and instructional services are tailored to the needs of each individual group. The types of courses offered by the Department range from developing personal skills, such as communications, computer literacy, and management development, to human interest courses, such as plants and gardening, health, exercise and fitness. There are also courses which meet certain requirements of the state or other agencies for certification in given fields, such as real estate and aviation. "In-house" courses delivered to business and industry help provide for professional development for the area workforce. The Department co-sponsors an ongoing program, the Smoky Mountain Field School, with the Great Smoky Mountains National Park. The School consists of intensive weekend and five-day field courses emphasizing outdoor exploration of the Smoky Mountains.

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University Evening School

Director:

Associate Director:
J. C. Sekula, Ph.D., Tennessee.

Assistant Directors:

Coordinator:
M. K. Wardner, M.S. Tennessee

Administrative Assistant:
B. H. Badger

Assistant Professor:

Director, Off-Campus Graduate Program:

Assistant Director, Oak Ridge Graduate Program:
V. Maya, M.S., Tennessee.

The University Evening School, in conjunction with academic colleges and departments, administers credit programs for those students attending classes on- and off-campus in a variety of non-traditional formats. Support services are provided to assist students in their educational pursuits.

On-Campus Evening Program. Classes are offered during late afternoon and evening hours for those students who work or have other commitments during the day. The following undergraduate degrees are available: College of Business Administration — Bachelor of Science in Business with majors in Accounting, General Business, Economics, or Management (General Office Systems concentrate); College of Liberal Arts — Bachelor of Arts with majors in Anthropology, Art, Biology, Computer Science, Economics, Mathematics, Psychology, or Sociology.

Some departments within the Colleges of Business Administration, Education, and Engineering offer all courses required for an advanced degree during the evening. The College of Business Administration also offers all courses required for the MBA degree with a concentration in Management. For other majors, consult the appropriate academic department.

Mini-Term. The University Evening School offers two Mini-Terms a year — one during September and one in December. Students may enroll in one concentrated credit course during the ten-day Mini-Term period. Courses and instructors listed for the Mini-Term are carefully selected to reflect a broad academic base of individualized offerings suited to an intensive program of study. Courses cover traditional material and information included in regular quarterly offerings; however, these courses may be supplemented with films, team teaching, field trips, independent research projects and specialized areas of study, affording students an opportunity to immerse themselves in the discipline selected.

Off-Campus Programs. The Evening School conducts undergraduate and graduate courses in many locations away from the Knoxville campus. The courses are scheduled in response to requests and identifiable needs of adult part-time students who live some distance from the UTK campus and who take part or all of their courses at off-campus locations. All course offerings and instructors are approved by the appropriate academic department heads, and the credit awarded is resident credit.

The College of Education (Off-Campus) offers a Bachelor of Science in Education with a major in Vocational-Technical Education and the following graduate degree programs are available: Doctor of Education with a major in Educational Administration and Supervision (Chattanooga); Specialist in Education with a major in Educational Administration and Supervision (Chattanooga); Doctor of Education with a major in Vocational-Technical Education (Statewide); Master of Science in Education with a major in Curriculum (Cleveland and Morristown). The Evening School administers an off-campus center at Oak Ridge where courses leading to advanced degrees in science and engineering are offered. At Oak Ridge, graduate study programs are offered to students whose concentrations in Management or Statistics, as well as Master's and Doctoral degrees in Engineering, Mathematics, and Physical Sciences.

Workshops. Credit workshops are coordinated through various academic departments of the University and provide students the opportunity to participate in short periods of intensive study. As a result, students may earn college credit within a shorter time frame than the traditional quarter system.

Workshops offer flexibility of timing, location, and content and are particularly popular with teachers and school administrators. Although most workshops are held on the UTK campus, geography is not a limiting factor.

Nursing Education Program. The Nursing Education Program is conducted under a contractual agreement with two Knoxville area hospitals. The University Evening School provides academic foundation courses for the independent Schools of Nursing of each hospital. Evening School also provides academic courses for Radiologic Technology students enrolled through two area hospitals.

Student Services. A comprehensive program of services is provided by the University Evening School for both on- and off-campus students.

REGISTRATION
Quarterly registration by mail is offered as a convenience to former Evening School students. Secondary registration at both on- and off-campus locations are also available.

ADVISING
An advising counseling program is available for the benefit of all evening students who need assistance in selecting or arranging courses.

The Evening School also provides academic courses for Radiologic Technology students enrolled through two area hospitals.
hours (8:30-5:30) and in the evenings by appointment, as well as at various central-
ized off-campus locations. The College of
Liberal Arts also cooperates with the Eve-
ning School by providing extended hours
several times a week to advise students. A
veterans’ advisor assists in academic plan-
ning for Evening School students who
receive educational benefits under the G.I.
Bill.

FINANCIAL AID
Evening School students who encounter
difficulty in pursuing academic goals because
of financial restrictions may be eligible for
assistance through the Evening School
Scholarship Fund. Interested students may
also obtain applications for the Pell Grant
(formerly Basic Educational Opportunity
Grant) in the Evening School Office.

Elderly and Disabled Persons
Legislation gives Tennessee citizens who
are 60 years of age or older, or those who
are totally disabled, the opportunity to attend
courses at the University at no charge on an
audit, space available basis. Legal
verification of either of these conditions is
required for enrollment. Students who are 65
or over, or who are totally disabled, and who
desire to receive UT credit for their courses,
may pay a reduced charge of $5 per credit
hour up to a maximum of $50 for a full-time
load. Registration for day and evening
classes is handled by the Evening School.
The University Evening School office is
located at 451 Communications & University
Extension Building on the UTK campus and
may be reached by calling (615) 974-5361.
All inquiries concerning these programs are
welcome.
Foundation, the Southern Association of Colleges for Teacher Education . All teacher education programs are now coordinated within its six departments and its School of Health, Physical Education, and Recreation. In addition to teacher education programs, the College of Education has several non-teacher education programs. These programs include Dance, Industrial Education, Physical Fitness, Public Health, Recreation, Sports Communication and Sports Management.

The College of Education holds membership in the American Association of Colleges for Teacher Education. All certification and degree programs through the doctoral level are fully accredited by the National Council for Accreditation of Teacher Education, the Southern Association of Colleges and Schools, and the Tennessee State Department of Education.

The faculty of the College of Education is committed to performing three major functions: (1) to provide professional preparation for teachers, administrators, and school service personnel at undergraduate and graduate levels; (2) to collaborate with school personnel, educational agencies, professional groups, and others interested in the evaluation and improvement of educational opportunities, programs, and services; and (3) to promote and conduct experimental and research studies in education.

The teacher preparation programs represent utilization of University-wide resources and cooperation of all appropriate units. Certain requirements are of basic importance: A broad cultural background in the arts and sciences (general education), mastery of professional knowledge and skills, and thorough preparation of specific teaching fields. Through a carefully planned program of combined academic and direct experiences, the prospective teacher acquires a depth and breadth of knowledge and understanding superior to that of the typical college graduate—superior in cultural and citizenship appreciation as well as in professional and scholarly accomplishment.

The Claxton Education Building and Claxton Addition contain many modern and functional facilities for the professional education of teachers including classrooms, laboratories, seminar rooms, faculty and administrative offices, the Instructional Services Center, the Reading Center, the Curriculum Laboratory, the Teaching Simulation Laboratory, and the Bureau of Educational Research and Service.

Teacher Placement Service
The College of Education, cooperating with the University Placement Service, assists qualified students and alumni in securing positions. School and college administrators are cordially invited to make full use of these services in their efforts to employ competent personnel.

General Information
Association with the College

Non-Teacher Education Programs
Association with the College of Education is granted to applicants possessing both of the following:

1. Academic Achievement The applicant will be required to have earned a minimum 2.5 GPA in General Education courses. This classification of courses should not typically include Education courses nor should it include upper division Specific Teaching Field (major) courses. In addition, the applicant will be required to have earned at least a "C" in all Professional Education courses. Professional Education courses in which less than "C" grades were earned must be repeated.

GPA computation will be made at the time of a student's initial enrollment at UTK, whether the student enters as a freshman or undergraduate transfer. Students will not be granted association before the completion of a minimum of 50 semester or 75 quarter hours of academic course work (i.e., transfer hours may be included).

The following requirements apply to students seeking association:

- Academic Achievement

Students desiring information about the College of Education's non-Teacher Education programs (Dance, Sports Management, Sports Communication, Physical Fitness Specialist, Movement Sciences, Public Health, Recreation, Distributive Training Option, and Training/Supervision in Industrial Education) should contact the specific program area coordinator or chairperson for complete details.

Teacher Education Programs
Association with the College's teacher education programs is required of all undergraduate and graduate students enrolled in programs leading to teacher certification.

The process of progression into the College's teacher education programs begins at the time of a student's initial enrollment at UTK, whether the student enters as a freshman or undergraduate transfer. Students will not be granted association before the completion of a minimum of 50 semester or 75 quarter hours of academic course work (i.e., transfer hours may be included).

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Students desiring information about the College of Education's non-Teacher Education programs (Dance, Sports Management, Sports Communication, Physical Fitness Specialist, Movement Sciences, Public Health, Recreation, Distributive Training Option, and Training/Supervision in Industrial Education) should contact the specific program area coordinator or chairperson for complete details.
either repeating previously taken courses or enrolling in additional courses.

2. Standard Results The applicant will attain the minimum scores, as specified by the State Board of Education, on the Pre-Professional Skills Tests:
If this standard is not met: The applicant will not be admitted to the Teacher Education Program.

3. Speech and Hearing Evaluations The applicant will perform within normal limits on speech and hearing evaluations.
If this standard is not met: The applicant will participate in therapy, as specified by and provided through the University’s Speech and Hearing Center.

4. Socio-Emotional Assessment (16PF) The applicant will perform within normal limits on a standardized personality instrument.
If this standard is not met: The applicant will participate in therapy, as specified by and provided through the University’s Counseling Services Center.

5. Conduct Record Each applicant’s name will be submitted to the University’s Conduct Office for review. Candidates who have established records of inappropriate conduct will be reviewed by the College’s Admissions and Retention Committee.
If this standard is not met: The candidate’s disposition will be determined by the Teacher Education Standards Committee.

Upon the successful completion of the previously cited general progression requirements (i.e., 1-5), applicants will be scheduled for an interview with the association board responsible for screening applicants to each of the College’s specific teaching fields. Association boards are composed of, but are not limited to, the following individuals:
(1) The applicant’s advisor and/or faculty member from the specific program to which the applicant is seeking association (e.g., Mathematics Education, Elementary Education),
(2) A currently associated, advanced student in the program,
(3) A school-based professional from the specific field, and
(4) A subject-matter specialist from the larger University, if the applicant is interested in entering a secondary education program (e.g., English Department representative if the applicant is an English Education applicant).

Applicants will be interviewed individually by a board; particular attention will be given to the following:
1. Academic Achievement In addition to applicants’ achievement in General Education courses, applicants will be expected to have earned at least a 2.5 GPA in those courses which are considered predictors of success in specific teaching field courses (e.g., English courses for English Education applicants). Furthermore, the applicant will be expected to have earned a minimum grade of “C” in all Professional Education courses. Professional Education courses in which grades of “D” or “F” were earned must be repeated.
If this standard is not met: The applicant will improve his/her academic record through either repeating previously taken courses or by enrolling in additional courses until this standard is met.

2. Communication Skills
(a) The applicant’s oral grammar and ability to articulate ideas will be assessed throughout the interview.
If this standard is not met: The applicant will participate in remedial activities which are provided through the University’s Writing Lab, Speech and Hearing Center, and/or Speech and Drama Department.
(b) The applicant’s ability to express himself or herself in writing will be assessed through a written (1) autobiography and (2) explanation as to the applicant’s interest in the particular program of his or her choice.
If this standard is not met: The applicant will participate in the University’s Writing Lab.

Applicants who are denied association with the specific teaching field of their choice are eligible to seek association with another College of Education teacher specific teaching fields.
Applicants who become associated, thereby, become eligible to enroll in upper division College of Education courses.

1 Community college students who anticipate transferring to the College should arrange to complete the association process prior to matriculating at UTK. Students should contact the Undergraduate Student Services Office, 212 Claxton Education Building, at the beginning of their sophomore year.

Deaf applicants are not required to submit to the speech and hearing screening if they are pursuing certification to teach deaf students. However, such applicants must inform the Associate Dean for Undergraduate Studies, 212 Claxton Education Building, of their intentions.

Program Progression Teacher Education Programs

Each student’s progress is reviewed quarterly to and following association and a determination is made as to the student’s eligibility to advance to the next level of preparation.

Each student’s functioning is monitored closely on the following variables:
1. Academic Achievement The following GPA minimums functioning as guidelines during the period between association with the Teacher Education Program and enrollment in student teaching:
   (a) 2.5 GPA in General Education and Specific Education (major) programs, and
   (b) 2.8 GPA in Professional Education courses.

   It is important to note that grades of “D” and “F” in Professional Education courses must be repeated.

2. Field Study Anecdotal observations from faculty and school and school-based professionals of the student’s performance. Students whose progress is judged inadequate may be required to either re-cycle through courses, participate in remedial activities, or change to a more appropriate major.

   To facilitate communication and proper guidance, undergraduate College of Education students are required to meet with their advisors at least once each quarter.

Admission to Student Teaching

Students seeking authorization to enroll in student teaching must apply at least one calendar year prior to the term of actual student teaching. For example, students desiring to student teach during the Fall Term, 1986, must register for that experience no later than the beginning of Fall Term, 1985. Students desiring to student teach during the Spring Term, 1987, must register for that experience no later than the beginning of Spring Term, 1986. Effective Fall, 1985, student teaching was extended to fifteen week terms. The Fall term will begin when public schools open and the spring term will begin when winter quarter classes begin.

Student teaching courses are completed in group sessions. Four group sessions are conducted each quarter. Two application sessions are conducted during the summer. Schedules of the application sessions are available from the Office of Field Studies, 212 Claxton Education Building.

Making application to enroll in student teaching is not contingent upon association with the Teacher Education Program. Students should apply for student teaching at least one calendar year prior to the term of actual student teaching regardless of their association with the Teacher Education Program.

The following are the general prerequisites for student teaching. Student teaching prerequisites for specific program areas (e.g., Art Education, Elementary Education) are available in the student teaching office or from academic advisors.
(1) Association with the Teacher Education Program no later than the term preceding student teaching.
(2) Completion of required courses from the Professional Core Curriculum at the University of Tennessee (Curriculum and Instruction 2011, 3021, 3031, 3032; Educational and Counseling Psychology 2001; and Special Education 3333).
(3) Completion of field studies required in the program curriculum.
(4) Completion of the special methods courses at The University of Tennessee.
(5) Completion of at least nine quarter hours of prescribed course work in Professional Education at The University of Tennessee, Knoxville.
(6) Classification (minimal) as a senior-level student (i.e., at least 135 quarter hours passed).
(7) Possession of the following minimum grade point averages: (a) 2.5 GPA in General Education, (b) 2.5 GPA in Specific Teaching Field, and (c) 2.8 GPA in Professional Education courses, (i.e., grades of “D” or “F” must be repeated.
(8) Recommendation to enroll in student teaching by the student’s faculty mentoring team.

In addition, any record established by the student in the Office of Student Conduct will be reviewed by the Admissions and Retention Committee.

The 15-quarter hour student teaching course is designed for students who are pursuing certification in a satisfactorily-credit basis and the hours are included in the University policy requiring a 2.0 in the last 45 hours worked.

Students should note that the most important criterion in placing student teachers in the public schools is the value of the experience for preparing for teaching. The College cannot guarantee the geographic locale desired by the student, although effort will be made to follow the student’s wishes.

Course Load—Permission for more than 19 hours in a quarter must be obtained from the Coordinator of Undergraduate Student Services. A normal course load in the college is 16-19 hours.
Course Substitutions

It is sometimes necessary and advisable for students to substitute other courses for those required in a particular curriculum. The student who is a transfer student who wishes to transfer to The University of Tennessee College of Education from another college or university. The general test of whether a substitution would be appropriate is whether the course the student wishes to substitute meets the spirit of the course requirement.

That is, is the content similar or perhaps more appropriate to that individual's needs? The student may request the advisor to visit with the advisor. If the advisor and student agree that the substitution form should be forwarded to the Office of the Associate Dean for Undergraduate Studies, 212 Claxon Education Building. Approvals for substitution requests are forwarded to the Dean of Admissions for final approval and for filing in Records Office.

Professional Education courses taken at junior or community colleges may be substituted for lower division (1000/2000 level) courses or may be used as electives. These courses may not be used as substitutes for upper division (3000/4000 level) Professional Education courses.

Graduation and Certification

Teacher Education Programs

Students must attain the following minimum requirements to qualify for the College's recommendation to graduated and to receive teacher certification:

(1) Academic Achievement

Only those students who perform satisfactorily in student teaching will be recommended for either graduation and/or certification. Students who perform unsatisfactorily may be provided another opportunity to succeed. Such students may be required to participate in remedial courses or activities prior to re-enrolling in student teaching.

Students will be expected to attain the same minimum required of those seeking initial teacher certification. It is important to note that Tennessee regulations state that the minimum requirements for full certification must be recommended by an approved teacher training institute.

Non-College of Education

Undergraduate Students and Others Seeking the College's Recommendation for Teacher Certification

The following categories of students are subject to the same requirements for admission to Teacher Education, entry into student teaching, and certification as College of Education, baccalaureate students who are seeking teacher certification: (See Association, Progression, Student Teaching, and Certification requirements which are explained elsewhere in this catalog.)

(1) undergraduate students from colleges other than the College of Education;

(2) post-baccalaureate students who are not graduates of the College of Education (UTK) who are seeking the College's recommendation for add-on teaching endorsements; and

(3) post-baccalaureate students who are seeking initial teacher certification.

Graduate Programs

The College of Education, through the Graduate School, offers programs leading to the Master of Science degree, the Master of Education degree, the Master of Arts degree, the Doctor of Education, and the Doctor of Philosophy degrees. For further information, see the Graduate Catalog.

Undergraduate Curricula

The college offers courses of study leading to the Bachelor of Science in Education. Graduates who successfully complete teacher preparation programs are eligible for teacher certification in Tennessee and in those states which grant reciprocity privileges to graduates of institutions accredited by the National Council for Accreditation of Teacher Education (NCATE). A core of studies provides the foundation for specialization in all teacher education curricula. In addition, approved concentrations must be completed in subject fields specifically related to the public school curriculum. A choice is to be made among programs leading to recommendation for certification at one of three levels: elementary, (kindergarten-9), secondary (grades 7-12), or special subjects in grades 1-12. Courses in library science are available to students who are interested in beginning positions in any library or in preparation for further graduate study in professional librarianship. The minimum requirements for full-time librarianship at any state school in Tennessee can be met through completion of the basic library service courses (3510, 3520, 4140, 4150, 4270, 4320, 4330, 4750). Endorsement as a librarian requires 27 quarter hours in library science. A master's degree is required for undergraduate level, only a minor in library science is available. Students in the college will be assigned an appropriate curriculum from those outlined under the (undergraduate curriculum) section. Students interested in this program should consult with a member of the faculty of the Graduate School of Library and Information Science.

Students should work closely with faculty advisors in planning programs of study. The chosen curriculum must be followed as outlined to assure graduation and certification, and any proposed substitution for a required course should be filed for approval before the end of the junior year.

Optional Minors

Education students may earn single or multiple minors either from a unit within the College of Education or from units of other colleges. The minor must be one which is officially approved and described in the General Catalog. Unofficial minors will not be recognized.

Courses taken to satisfy the minor will not necessarily meet certification requirements. Students are encouraged to seek the counsel of their advisors on matters pertaining to minors.

The intention to complete a minor must be declared at the time of application for a degree if the minor is to appear on the final transcript. Degree applications are available in the Registrar's Office.

Satisfactory/No Credit Courses

For the Elementary and Secondary Education curricula only, a student may include a maximum of 30 hours in non-directed electives taken on a Satisfactory/No Credit basis in the total hours required for graduation. S/NC may not be used in required courses or controlled electives, except where the course is offered on an S/NC basis (such as student teaching and field experiences). An area of concentration will be considered as non-directed electives except where specific courses or controlled electives are required.

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

I. Curriculum for Elementary Teachers

(certificate for grades 1-8 with option for kindergarten certification)

GENERAL EDUCATION ........................9-71 hours

Communications (19-20 hours)

English 1010 or 1011; 1020; 1031 or 1032 or 1033 (English 1019 may be required for some students); Speech 2311; Educ. C & I/LIS 3510; Elective from: Speech and Theatre 2031, Speech 1211, Journalism 2210, Communications 1110.

Health and Physical Education (9-10 hours)

School Health 3510; P.E. activities (4 hours), P.E. restricted elective (2-3 hours).

Humanities (18-19 hours)

Literature, (6 hours); Art 1705, 1815 or 1825; Music 1210 or 1220; Elective from the following: Philosophy 1510 or 1511 or 1521

Curriculum for Elementary Teachers/College of Education 97
II. Curricula for Secondary Education (7-12)

GENERAL EDUCATION ......................... 73-74 hours
Communications (13-14 hours) English 1010 or 1011; 1020; 1031 or 1032 or 1033 (0-3 hours may be required of some students); Speech 1211.
Health and Physical Education (9 hours) Physical Education must be represented plus Nutrition 1610 or Public Health 3330 or School Health 1110 or 3210 or 3420 or 3610. Humanities (16 hours) English 2510, 2520, 2351, 2532, 2353, 2560, 2570, 2580 (4 hours); Anthropology 2530; Religious Studies 2110, 2120, 2310, 2320, 3021, 3270, or 3390 (4 hours); Philosophy 2410.
Mathematics (3 or 4 hours)

Natural Science (12 hours) A biological science, a physical science, or a combination of the two.


Social Studies (12 hours) Economics 2110 or 2520; Geography 3490 or Political Science 3390; History 1510, 1520, 1610, 1620, 2015, 2510, 2320, 3050, 3051, 3201, 3202 (any one of these).

CORE PROFESSIONAL EDUCATION ..................... 20 hours Educ. C & I 3201, 3202, 3303, 3302, 4011; Educ. Psych. 3002, 3003; Special Ed. 3333.

SPECIALIZED PROFESSIONAL EDUCATION .................. 34 hours Six hours of appropriate methods courses (see below); Educ. C & I 3521-22-23, 4100, 4710-20; three hours of electives selected from the College of Education; Educ. C & I 4304 (plus Educ. C & I 4300 for those certifying in English).

Professional Specialization Area (20-22 hours)
Options: (1) Early Elementary (K-3)
(2) Middle Elementary (4-8)
(3) Assessment and Teaching of Basic Skills (K-8)
Selection of specialization area is made by student in consultation with faculty mentoring team. Courses are selected with consideration of student interest and faculty assessment of need within area. Hours in specialization are divided between content and methodology. Additional field experience is also possible.
TOTAL MINIMUM REQUIRED: 193-199 hours
2. Subject Majors in Science

a. Biological science (72 hours minimum)

b. Earth and Environmental Sciences (72 hours minimum)

3. Science Education

a. Biological science (72 hours minimum)

b. Earth and Environmental Sciences (72 hours minimum)

4. General Science

a. General Science (72 hours minimum)

5. E. Science Education

Program I

b. 8 quarter hours in each of the following: geography, political science, and sociology.

c. 4 quarter hours in anthropology.

d. 8 quarter hours in economics, including 2510-20 and an elective.

e. 7-8 additional quarter hours in the above-listed or related fields.

Program II

Specific subject major (45 hours plus cognate requirements)

Cognate. A cognate is defined as 27 quarter hours in a single subject area, i.e., biology, history, French, psychology, speech, etc. A cognate does not meet certification requirements in all cases.

Minor. A minor is a subject area represented by a specified set of hours and/or courses. Since minors are defined by the offering departments, interested students are referred to those sections of this catalog for further details.

III. Art and Music Education

A. Art Education

GENERAL EDUCATION

Communications (15-16 hours)

English 1010, 1020 and 1031 or 1032 or 1033 plus any speech course (13 hours)

Social Studies (19-20 hours)

History (4 hours)

Health and Physical Education (9 hours)

School Health 2500-20-30 hours plus Physical Ed. activities courses (6 hours)

Mathematics (3 hours)

Foreign Language (2 years)

Arts (3 hours)

Humanities (3 hours)

Dance (2 hours)

Music Education (19-20 hours)

Organ/Choral (9-11 hours)

Mathematics (3 hours)

Natural Science (12 hours)

Any combination of courses from the biological or physical sciences (Astronomy, Biology, Botany, Chemistry, Geology, Physics, or Zoology).

Psychology (8 hours)


SPECIALIZED PROFESSIONAL EDUCATION (19 hours)

Music Education 1010-20, 2110, 2411-12-13, 2421-22-23, 2431-32-33, 3150, 3410, 4420, 4510, Music 1111-21-31; 1113-23-33; 2111-21-31; 2113-23-33; 2340; Voice (22 hours); Required ensemble (11 hours) plus piano proficiency.

Concentration in Vocal Music (Piano or Organ Principal) (91 hours)

Music Education 1010-20, 2110, 2411, 2421, 2431, 3130, 3150, 4420, 4510, Music 1111-21-31; 1113-23-33; 2111-21-31; 2113-23-33; Piano or Organ (22 hours); Voice (6 hours); Required ensemble 11 hours.

Concentration in Instrumental Music (110-113 hours)

a. 35 Music Education 1010-20, 2110, 2411-12-13, 2421-22-23, 2431-32-33, 3150, 3410, 4420, 4430, 1511 (1.1, 1.1)

Music 1111-21-31; 1113-23-33; 2111-21-31; 2113-23-33; 2340; 3112 or 4124; Principal instrument (22 hours); Secondary instrument (6 hours); Piano proficiency; Required ensemble (11 hours).

b. Music Education 4460 is required for all students whose principal instrument is wind or percussion.

TOTAL MINIMUM REQUIRED: 197-226 hours
GENERAL REGULATIONS FOR ALL MUSIC EDUCATION STUDENTS

A. Required participation, with credit or as a General Education requirement.

1. EDUCATION STUDENTS
   a. General regulations for all Music Education students are:
      - Language 2000 level and above; Asian Studies
      - Major in Physical Education
      - Transfer students must take proficiency exams in applied music, music theory, sight-singing, and dictation prior to registration in music education curricula.

IV. Health, Physical Education, Recreation, and Safety

A. Major in Physical Education
   1. Teaching Track
      a. Elementary Physical Education (K-8)

   2. General Education
      a. English 1010-20, and 1031 or 1032 or 1033; Speech 2311 or 2331.
      c. Nature, Evolution, and Use of Language 3-4 hours
         English 2510, 2520, 2531, 2532, 2533, 2650, 2651, 2652, 2653, 3650, 3651, 3652, 4650; Any Foreign Language 2000 level and above; Asian Studies; 3850, 3855, 3860, 3670; Aud. and Speech Path. 3200; Classics 2510, 2520, 2710, 2720, 2730, or 2740; Medieval Studies 2691 or 2802; Women’s Studies 2901 or 2902; Comparative Literature 2010; Linguistics 2000; Religious Studies 3232.
      d. Mass Communication: The Computer and Technology (3 hours)
         Tech. and Adult Educ. 4345 or 4875.
      e. Groups and Institutions (3-4 hours)
         Afro-American Studies 2010 or 2020; Anthropology 2330; Child and Family Studies 1120, 2110, or 2120; Geography 3000; Political Science 2620, 2621, 2622, 3010, or 3110; Physical Educ. 2650 or 4051; Sociology 3150, 3220, or 3760; Women’s Studies 2902.
      f. Society and Work (3-4 hours)
         Economics 2001, 2510, or 2520; Geography 1910, 2110, 2120, 2130, or 3410; Sociology 1520, 1530, 3015, or 3130.
      g. Nature and the Universe (24 hours)
         Chemistry 1110 and 1120 or 1510 and 1520; Physics 1450; Zoology 2920, 2930, and 4940.
      h. New Technologies and Human Nature (3-4 hours)
         Geography 3480; Political Science 3390; Univ. Studies 3101 or 3120.
      i. Time and Civilization (3-4 hours)
         Afro-American Studies 3630 or 3640; American Studies 3010; Anthropology 4740; Economics 3240; Geography 3000, 3660, or 4240; Asian Studies 2510 or 2520; History 1510, 1520, 1525, 2510, 2520, 3050, 3021, 3022, 3024; Physical Ed. 3210.
      j. Values and Beliefs (3-4 hours)
   *Requires admission to Teacher Education Program.

PROFESSIONAL PHYSICAL EDUCATION

A. Required participation, with credit or as a General Education requirement.

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pology, art, music, philosophy, religious studies, English literature, foreign languages (any level), and history (3000 and 4000-level only); Social Science electives (minimum of four courses and three areas, 12 to 16 hours) selected from the following: anthropology, economics, geography, history, political science, and sociology; Chemistry 1110-20 or 1510-20; Zoology 2920, 2930 and 4940; Math 1840; Psychology 2500; Physics 1310; and any five 1000 and 2000-level Physical Educ. Major activities.

PHYSICAL EDUCATION CORE ....... 22 hours Physical Educ. 1000, 2600, 3210, 3320, 3550, 3720, 4170, and 4220.

PROFESSIONAL EDUCATION ........ 10 hours Psychology 3150, Computer Science 4310; English 4140.

PROFESSIONAL PHYSICAL EDUCATION .. 16 hours

Any five 1000 and 2000-level Physical Educ. Major activities courses; Physical Educ. 3580 and 4330.

PROFESSIONAL PHYSICAL EDUCATION .. 33 hours

Psychology 2520, 2530 and 3319; at least one of the following area courses and lab: Psychology 3120-29, 3210-19, 4230-39, and 4710-19; and a minimum of 16 hours selected from the above and/or the following: Psychology 2540, 3559, 4650, 4670, 4850, 4870, and 4880.

PROFESSIONAL PHYSICAL EDUCATION .. 12 hours

Physical Educ. 3600, 4140, 4340, and 4350.

GENERAL ELECTIVES .............. 20 to 28 hours

Maximum of 6 hours in 1000 and 2000-level Physical Educ. Major activity courses and/or Physical Educ. 2700-level courses (which must be different from the Physical Educ. Major activity courses); also excluded are Physical Educ. 2730, 2734, 2756, 2757, 2792, and 2794.

TOTAL MINIMUM REQUIRED ....... 200 hours

c. Kinesiology/Biomechanics Area of Concentration

GENERAL EDUCATION ............. 79 to 87 hours

English 1010 and 1020 and 1033; Speech 2311 or 2331; Humanities electives (minimum of four courses and three areas, 12 to 16 hours) selected from the following: anthropology, art, music, philosophy, religious studies, English literature, foreign languages (any level), and history (3000 and 4000-level only); Social Science electives (minimum of four courses and three areas, 12 to 16 hours) selected from the following: anthropology, economics, geography, history, political science, and sociology; Chemistry 1110-20 or 1510-20; Zoology 2920, 2930 and 4940; Math 1840; Psychology 2500; Physics 1310; and any five 1000 and 2000-level Physical Educ. Major activities.

PHYSICAL EDUCATION CORE ....... 22 hours Physical Educ. 1000, 2600, 3210, 3320, 3550, 3720, 4170, and 4220.

QPROSSIONAL EDUCATION ...... 10 hours Psychology 3150, Computer Science 4310; English 4140.

PROFESSIONAL PHYSICAL EDUCATION .. 16 hours

Any five 1000 and 2000-level Physical Educ. Major activities courses; Physical Educ. 3580 and 4330.

PROFESSIONAL PHYSICAL EDUCATION .. 35 hours

Physics 1320, 1330; Math 1850-60; Anthropology 3900; Zoology 2980 and 3060; six hours of electives.

PROFESSIONAL PHYSICAL EDUCATION .. 9 hours

Physical Educ. 3290, 4110, 4115, and 3570.

GENERAL ELECTIVES .............. 21 to 29 hours

Maximum of 6 hours in 1000 and 2000-level Physical Educ. Major activity courses and/or Physical Educ. 2700-level courses (which must be different from the Physical Educ. Major activity courses); also excluded are Physical Educ. 2730, 2734, 2756, 2757, 2792, and 2794.

TOTAL MINIMUM REQUIRED ....... 200 hours

d. Sport Philosophy Area of Concentration

GENERAL EDUCATION ............. 79 to 87 hours

English 1010 and 1020 and 1033; Speech 2311 or 2331; Humanities electives (minimum of four courses and three areas, 12 to 16 hours) selected from the following: anthropology, art, music, philosophy, religious studies, English literature, foreign languages (any level), and history (3000 and 4000-level only); Social Science electives (minimum of four courses and three areas, 12 to 16 hours) selected from the following: anthropology, economics, geography, history, political science, and sociology; Chemistry 1110-20 or 1510-20; Zoology 2920, 2930 and 4940; Math 1540 or 1840; Psychology 2500; Physics 1540; and any five 1000 and 2000-level Physical Educ. Major activities.

PHYSICAL EDUCATION CORE ....... 22 hours Physical Educ. 1000, 2600, 3210, 3320, 3550, 3720, 4170, and 4220.

PROFESSIONAL EDUCATION ........ 10 hours Psychology 3150, Computer Science 4310; English 4140.

PROFESSIONAL PHYSICAL EDUCATION .. 16 hours

Any five 1000 and 2000-level Physical Educ. Major activities courses; Physical Educ. 3580 and 4330.

PROFESSIONAL PHYSICAL EDUCATION .. 40 hours

Philosophy 1510, 1520, 2310, 2410, 2510, 2520, 3111, 3121, 3131, and 3141.

PROFESSIONAL PHYSICAL EDUCATION .. 6 hours

Physical Educ. 4330.

GENERAL ELECTIVES .............. 19 to 27 hours

Maximum of 6 hours in 1000 and 2000-level Physical Educ. Major activity courses and/or Physical Educ. 2700-level courses (which must be different from the Physical Educ. Major activity courses); also excluded are Physical Educ. 2730, 2734, 2756, 2757, 2792, and 2794.

TOTAL MINIMUM REQUIRED ....... 200 hours

4. Sports Management Track

GENERAL EDUCATION ............. 81 to 89 hours

English 1010 and 1020 and 1033; Speech elective; Humanities electives (minimum of four courses and three areas, 12 to 16 hours) selected from the following: anthropology, art, music, philosophy, religious studies, English literature, foreign languages (any level), and history (3000 and 4000-level only); Social Science electives (minimum of four courses and three areas, 12 to 16 hours) selected from the following: anthropology, economics, geography, history, political science, and sociology; Natural Science electives (12 hours including Physics...
1450; Math 1540-50-60; and any ten 1000 or 2000-level Physical Educ. Major activity courses or 2700-level courses.

PHYSICAL EDUCATION CORE ... 22 hours Physical Educ. 1000, 2500, 3210, 3320, 3550, 3730, 4170, and 4220.

PROFESSIONAL EDUCATION .......... 38 hours Accounting 2110-20-30; Economics 2510-20; Statistics 2100; Management 3460; and 15 hours selected from the following: Advertising 3000, Communications 1110, Finance 3120, Management 3010, Marketing 4140, 4210, and Business Law 4110, 4120.

PROFESSIONAL PHYSICAL EDUCATION ..................... 13 to 14 hours Physical Educ. 2765, 3000 or 3910, 4260 and six hours from the following: 4260 or 4330.

GENERAL ELECTIVES............. 37 to 46 hours Maximum of 6 hours in 1000 and 2000-level Physical Educ. Major activity courses and/or Physical Educ. 2700-level courses (which must be different from the Physical Educ. Major activity courses); also included are Physical Educ. 2730, 2734, 2756, 2757, 2792, and 2794.

TOTAL MINIMUM REQUIRED....... 200 hours

5. Sports Communications Track

GENERAL EDUCATION ............. 77 to 85 hours
English 1010 and 1020; Speech 2311; Math 1540; Psychology 2500; Humanities electives (minimum of four courses and three areas, 12 to 16 hours) selected from the following: anthropology, art, music, philosophy, religious studies, English literature, foreign languages (any level), and history (3000 and 4000-level only); Social Science electives (minimum of four courses and three areas, 12 to 16 hours) selected from the following: anthropology, economics, geography, history, political science, and sociology; Natural Science electives (12 hours including Physics 1450); and any ten 1000 and 2000-level Physical Educ. Major activity courses or 2700-level courses.

PHYSICAL EDUCATION CORE ... 22 hours Physical Educ. 1000, 2500, 3210, 3320, 3550, 3730, 4170, and 4220.

PROFESSIONAL EDUCATION .......... 41 hours Advertising 3000, Broadcasting 4010, Communications 1110, Journalism 2215, 2220, 3410, 3710, and 4410; and a minimum of 15 hours selected from the following: Broadcasting 2750, 3810, 3650, 3670, 4020, Journalism 2230, 3310, 3910.

PROFESSIONAL PHYSICAL EDUCATION ............. 27 hours Any two Physical Educ. 1000, 2000 or 2700-level activity courses; Physical Educ. 2765, 3000, 3910, 4140, 4280; and six hours from the following: 4260 or 4330, and any two from the following: 3110, 3120, 3130, 3190, or 3200.

GENERAL ELECTIVES ............ 25 to 33 hours Maximum of 6 hours in 1000 and 2000-level Physical Educ. Major activity courses and/or Physical Educ. 2700-level courses (which must be different from the Physical Educ. Major activity courses); also included are Physical Educ. 2730, 2734, 2756, 2757, 2792, and 2794.

TOTAL MINIMUM REQUIRED....... 200 hours

B. Minor in Coaching (29-32 hours)

Zoology 2920 and 2930 or 3080, and 4940; Physical Educ. 3000, 3250, 3320, 3910, 4220, 4160, and any two of the following: 3110, 3120, 3130, 3190, and/or 3200.

C. Major in Dance

GENERAL EDUCATION ............ 31 hours
English 1010 or 1011; 1020 and 1031 or 1032 or 1033; Speech 2311.

Humanities (15 hours)

Art 1815-25; English literature 2000 and above; one elective from philosophy, foreign language, upper-division history, or religious studies.

Mathematics (4 hours)

Natural Science (8 hours)

Any electives selected from biological and/ or physical sciences.

Psychology (8 hours)

Psychology 2260 plus 4 hours of electives.

Social Sciences (8 hours)

Sociology 1510 or 1520 plus 4 hours of electives.

Health and Safety (3 hours)

School Health 3210.

Cultural Arts (32 hours)

Theatre 1320-30-40, 2111, 2221 or 2231; Music 1000, 1210, 2320, 2330, 2340 or 2310.

DANCE ......... 77 hours

Physical Education 1052, 2040-50-60, 2070, 3010-20, 3040-41, 3060-61-62, 3070-75, 3300 or 4330, 3320, 4020, 4050, 4060, 4080-90, 4550, 4560.

CONCENTRATION AREAS ........... 12 hours

Ballet; Physical Education 4000, 4005, or Modern; Physical Education 3030, 4010.

ELECTIVES ........... 20 hours

TOTAL MINIMUM REQUIRED...... 200 hours

Students are not permitted to audit any dance class. All classes must be taken on letter grade or S/NC basis.

D. Minor in Dance (25-31 hours)

Option I. Physical Education 2070, 3040, 3070, 4080, 4090, 2040-50-60 or 3060-61-62; 4 hours selected from 3010 and/or 3020; 6 hours selected from 3075 or 4000 or 4005.

Option II. Physical Education 2070, 3040, 3070, 4080, 4090, 2040-50-60 or 3060-61-62; 4 hours selected from 3070 and/or 3075; 6 hours selected from 3020 or 3030 or 4010.

Option III. Physical Education 1052, 2070, 3010, 3070, 4080, 4090, 4150, 4550, 3060-61-62; 4 hours selected from 3075-4000-4005 or 4 hours selected from 3020-3030-4010.

Students are not permitted to audit any dance class. All classes must be taken on letter grade or S/NC basis.

E. Major in Recreation

GENERAL EDUCATION ............ 98 hours
Selection of specific courses in each area below dependent on career goals in recreation. Consult advisor.

Natural Sciences (16 hours minimum)
FREEL ELECTIVES: to be added to above requirements to total minimum of 192 hours for the degree.

TOTAL MINIMUM REQUIRED.........192 hours

F. Major in Public Health Education

1. Teacher Certification

GENERAL EDUCATION............104-105 hours
Communications (13 hours)
English 1010, 1020, 1033; Speech 2311 or 2361.
Health and Physical Education (11 hours)
Health 3000, 3210; Physical education electives.

Humanities (15-16 hours)
Anthropology 2530; Art or Music elective (3-4 hours); English (any 4 hours from literature); Philosophy or religious studies elective.

Mathematics (4 hours)

Natural Science (26 hours)
Chemistry or physics sequence (12 hours); Biology 1210-20-30 or Zoology 2920-30 and Biology 3110; Microbiology 2910-19.

Human Growth and Development (4 hours)

Social Studies (28 hours)
Economics 2510; Political Science 2510 or 2520; History 1510-20 or 2510-20; Sociology 1510-20, 3130.

CORE PROFESSIONAL EDUCATION

EDUCATION..........................20 hours
Ed. C & I 2011, 3021, 3031, 3032, 3033, 4011; Educ. Psych. 3002, 3003; Special Ed. 3333.

SPECIALIZED PROFESSIONAL EDUCATION

SPECIALIZED PROFESSIONAL EDUCATION..........................28 hours
Education C & I 3400, 4720, and 4750; Health 3650, 4100, 4500-10-20 (3,3,3); Public Health 4220.

TEACHING AREAS AND ELECTIVES...........................................42 hours
Public Health required courses 3310, 3320, 3330; Health required courses 3410, 3420, 3620; Health electives (9); Nutrition 1130 or 3120; Safety 3520; General electives (9).

TOTAL MINIMUM REQUIRED.194-195 hours

2. Non-Teacher Certification

GENERAL EDUCATION.............111-112 hours
Communications (17 hours)
English 1010-20; 1033; Speech 2311 or 2361; Sociology 3320.

Humanities (15-16 hours)
Anthropology 2530; Art or Music elective (3-4 hours); English Literature elective; Philosophy 3440 or 3611.

Mathematics (4 hours)

Natural Science (26 hours)
Chemistry (12 hours); Zoology 2020-30; Biology 3110; Microbiology 2910-19.

Psychology (10 hours)
Psychology 2500, 3210, and 3650 or 3140.

Social Studies (36 hours)
Economics (4 hours); Political Science 2510; History (8 hours); Sociology 1510-20, 3910, 3920, 4560.

PROFESSIONAL HEALTH EDUCATION..........................28 hours

Mathematics elective (4 hours).

Natural Science electives.

Humanities electives.

Social Studies electives.

Health and Physical Education electives.

English Literature elective.

Philosophy or religious studies elective.

TOTAL MINIMUM REQUIRED........191-192 hours

H. Minor in Driver and Traffic Safety Education (28 hours)

REQUERED COURSES..............................................17 hours
Safety 3620, 4410, 4420; School Health 3210.

ELECTIVES...........................................11 hours
At least nine hours selected from: School Health 4120; Educ. C & I 4750; Educ. Psychology and Guidance 2520; School Health 3650.

I. Minor in School Health Education (30 hours)

School Health 3000, 3210, 3410, 3650, 3420; Safety 3620; Public Health 3310, 3320, 4410; Nutrition 1320 or School Health 4420 or School Health 3620.

V. Special Education*

CONCENTRATION IN SPEECH AND HEARING
NOTE: Only grades of C and above in the major area of study will be credited for certification and graduation.

GENERAL EDUCATION.............64 hours
Communications (12 hours)
English 1510-20; Speech 2311.

Health and Physical Education (6 hours)
Activities courses recommended plus health and physical education electives (both areas must be represented).

Humanities (16 hours)
English (4 hours from 2000-level literature); electives from two of the following areas: anthropology, art, English (literature), foreign language (above introductory level), history (upper division), library and Information Science 3510-20-30, music, philosophy, and religious studies.

Mathematics elective (4 hours).

Natural Sciences (16 hours)

8 hours biological sequence; 8 hours physical science.

Psychology (4 hours)
Psychology 2500.

Social Studies (20 hours)
History electives (8 hours); 12 hours from three of the following areas: anthropology, economics, geography, political science, sociology.

General Electives (6 hours).

CORE PROFESSIONAL EDUCATION..............................9 hours
Ed. CAl 3010, 3020, Special Ed. 4030.

SPECIALIZED PROFESSIONAL EDUCATION..........................19 hours
Psychology 2502 or 2530; Psychology 3560 or 2540 or Ed. Psych. 2430 or 3810, 11-12 hours upper-division psychology or educational psychology including Psychology 3150. (Ed. Psych. 3110, 4800, 4640 recommended.)

TEACHING AREAS AND ELECTIVES...................................69 hours
Special Education 3333, three-hour elective (4110 or 4130 recommended); Audiology and Speech Pathology (or Special Education) 3310, 3710, 4040, 4310, 4400, 4720, 4930. Audiology and Speech Pathology 3010, 3050, 3065, 3290, 4610, 4650; Clinical Practicum Courses (12-15 hours)*; Audiology and Speech Pathology (or Special Education) 4320-30-40: Special Education 4341, 4342.

TOTAL MINIMUM REQUIRED........181 hours

Total 200 clock hours necessary for State Certification.

Total hours required for endorsement in the above Special Education program appear on curriculum sheets available from the faculty advisors. NOTE: Effective September 1, 1987 the College of Education requires all persons seeking Tennessee Certification in Speech and Hearing to complete the M.A. degree in speech pathology. Students may obtain further information about this require-

*Requires admission to Teacher Education Program.

See Speech and Hearing Center staff for assignment each quarter.
VI. Vocational-Technical Education

A. Business Education

GENERAL EDUCATION ..................... 97-98 hours

Communications (22 hours)

English 1010-20, and 1031 or 1032 or 1033; Speech 2311; Bus. Admin. 4310; Tech. & Adult Ed. 4342, 4345; Marketing 3110, 4150; Computer Science 1410 or Bus. Admin. 2750.

Health and Physical Education (9 hours)

Physical Ed. (4 hours); Health 3216, 3420, 3510 (3-4 hours).

Humanities (20 hours)

English 2510-20-31-32-33-60-70-80 (4 hours); Fatigulous Studies, Anthropology, Political Science, upper division Economics, University Studies, Geography, History, Music, Philosophy, Human Services, and Art (16 hours). Courses must be selected from list approved by program area, which is available from program area advisor.

Mathematics (12 hours)

Mathematics 1540-50-60.

Natural Science (12 hours)


Psychology (8 hours)


Social Studies (14 hours)

Economics 2510-20, Child & Family Studies 3420, 4310, 4830 or Political Science, or upper-division Economics or History (6 hours).

BUSINESS CONTENT COURSES .............................. 43-63 hours

Specialized courses must be selected from business and economics to meet a minimum of five endorsement areas approved by the program area advisor and to bring total hours in business and economics to a minimum of 63 quarter hours. A statement of requirements and alternative programs may be obtained from the coordinator of business education.

CORE PROFESSIONAL EDUCATION ..................... 20 hours

Elec. C & I 2011, 3021, 3031, 3032, 3033, 4110; Educ. Psych. 3002, 3003; Special Ed. 3333.

SPECIALIZED PROFESSIONAL EDUCATION .............. 34-35 hours


ELECTIVES .............................................. 6 hours

TOTAL MINIMUM REQUIRED 200-222 hours

B. Distributive Education

Option 1.

GENERAL EDUCATION ..................... 96-98 hours

Communications (12-13 hours)

English 1010 or 1011, 1020, 1051 or 1032 or 1033; speech elective.

Health and Physical Education (9 hours)

Physical education or health elective.

Mathematics (3-4 hours)

Mathematics elective.

Humanities (15 hours)

Literature elective (4 hours); humanities elective (12 hours).

Natural Science (12 hours)

Natural science electives.

Psychology (9 hours)


Social Studies Electives (12 hours)

Economics 2510-20; 4 hours in any social studies other than economics.

Related Specialized Courses (24 hours)

Bus. Admin. 4310 or 20; Marketing 3110, 4150; Tech. & Adult Ed. 4300, 4450; Textiles and/or Advertising electives (6 hours); Bus. Law 4110.

CORE PROFESSIONAL EDUCATION .............................. 20 hours

Elec. C & I 4301, 4310, 4320, 4330, 4340, 4350, 4360, 4370; select one from Tech. & Adult Ed. 4304, 4310, 4320, 4330, 4350; Educ. Psych. 3002, 3003; Special Education 3333.

SPECIALIZED COURSES .............................. 30 hours

Marketing 3120, 4140; Finance 3120; Management 3110; Tech. & Adult Ed. 4440.

ELECTIVES .............................................. 20 hours

TOTAL MINIMUM REQUIRED .187-189 hours

Option 2. Distribution Training Option (Non-Certification)

GENERAL EDUCATION ..................... 67 hours

Communications (12 hours)

English 1010-20 and 1031 or 1033; speech elective.

Health and Physical Education (3 hours)

Physical or Health elective.

Mathematics (3-4 hours)

Mathematics elective.

Humanities (16 hours)

Literature elective (4); 12 hours humanities electives.

Natural Science (12 hours)

Natural science electives.

Psychology (7-8 hours)

Psychology 2500, 2520, or Educ. Psych. 3100 or 3111.

Social Studies Electives (12 hours)

Economics 2110-20-30; 3 hour elective.

TRAINING SPECIALIST .............................. 45 hours


SPECIALIZED COURSES .............................. 48 hours

Bus. Admin. 1110; Office Admin. 4310-20, Accounting 2110; Marketing 3110-20, 4140, 4310, 4150; Finance 3120; Industrial Management 3010; Business Law 4110; Textiles and/or Advertising elective (6 hours); VTE 4440 (9 hours).

ELECTIVES .............................................. 23 hours

TOTAL MINIMUM REQUIRED .......... 183 hours

C. Industrial Education

Option 1. Concentration in Trades and Industries

GENERAL EDUCATION ..................... 67 hours

Communications (12 hours)

English (9 hours); speech elective (3 hours).

Health and Physical Education (9 hours)

Health and P.E. electives. (Both areas must be represented.)

Humanities (15 hours)

Literature elective (4 hours); 11 hours from two of the following areas: philosophy, anthropology, art or art education, literature, foreign language, music or religious studies.

Mathematics (3 hours)

Natural Science (12 hours)

Psychology 4 hours

Psychology 2500.

Social Studies (12 hours)

Two of the following areas must be represented: history, anthropology, economics, geography, political science, sociology.

PROFESSIONAL EDUCATION ..................... 12 hours

Elec. C & I 3010, 3020, 3030, 3033; select any two; Special Education 3333, Ed. Psych. 3810.

PROFESSIONAL INDUSTRIAL EDUCATION ..................... 42 hours

Tech. & Adult Ed. 3830, 3850, 3860, 3870.

Elec. C & I 4810, 4830, 4840, 4850, 4870, 4795.

OCCUPATIONAL COMPETENCY ........... 45 hours

Vo. Tech. Ed. 3810, 3811, 3812.

ELECTIVES .............................................. 20 hours

TOTAL MINIMUM REQUIRED .......... 186 hours

Option 2. Concentration in Industrial Arts

GENERAL EDUCATION ..................... 94 hours

Communications (12 hours)

English (6 hours); Speech (3 hours).

Health and Physical Education (9 hours)

Health 3510; Health and Physical Educ. electives.

Humanities (15 hours)

English Literature elective (4 hours); Art and/or Art Education electives (6 hours); Philosophy and/or Anthropology (5 hours).

Mathematics (3 hours)

Natural Science (12 hours)

Psychology (4 hours)

Educational Psychology 2001

Social Studies (12 hours)

Economics or Sociology elective (4 hours); History or Geography elective (4 hours); Political Science or Sociology elective (4 hours).

Related Content Courses (27 hours)

Tech. & Adult Ed. 1620, 1630, 2630, 3630, 3672, 3892, 3830, 4662, 4670.

*Requires admission to Teacher Education Program.
DEPARTMENTS OF INSTRUCTION

ART AND MUSIC EDUCATION

Art and Music Education

Professors:
- C. H. Ball (Head), Ph.D. Peabody, H. N. Hull, Ed.S.
- George Peabody; A. W. Humphreys (Emeritus), Ed.D. Illinois;
- J. Jones (Emerita), Ed.D. Columbia;
- W. J. Julian, Ph.D. Northwestern, J. W. Robertson (Emeritus);
- Ed.D. Columbia;

Associate Professors:
- H. L. Gill (Emerita), B.S. Milwaukee State Teachers;
- W. H. McDaniel, M.S. Tennessee;
- J. O. Mintz, Ed.D. Columbia;
- M. G. Moore, Ph.D. Michigan;

Assistant Professor:
- J. R. Sparks, M.S. Tennessee.

Art Education (141)

1511 Field Experiences in Teaching Art (1) Field experiences in which students perform tasks related to teaching and to teacher roles. S/NC. May be repeated for credit. F, W, S.

3100 Introduction to Art in Education (3) Philosophy, developmental theory, goals, and media in relation to art education; directed experiences with selected media; field experience optional; prerequisite to all art education courses; for both majors and non-art education majors. E.

3110 Crafts in the Elementary School (3) Prereq: Art. Ed. 3100 and at least one course in sculpture or crafts. S.

3120 Learning Through Studio Experiences: Sculpture and Craft Design (3) Selected sculpture and craft design experiences; consideration of (1) subject matter, ideas, and concepts; (2) media and processes; (3) development and sequencing of appropriate learning activities for art program. Prereq: Art. Ed. 3100 and at least one course in sculpture or crafts. S.

3150 Drawing, Painting, and Design Activities in Elementary School (3) Program planning and teaching strategies in elementary art; directed classroom activities with media; lesson planning and field experience. F, W, S.

3220 Learning Through Studio Experiences: Sculpture and Craft Design (3) Selected sculpture and craft design experiences; consideration of (1) subject matter, themes, and concepts (2) media and processes (3) development and sequencing of appropriate learning activities for art program. Prereq: Art. Ed. 3100 and at least one course in sculpture or crafts. W.

3320 Learning Through Studio Experiences: Graphic Design and Lettering (3) Selected graphic design and lettering experiences; consideration of (1) subject matter, themes, and concepts (2) media and processes (3) development and sequencing of appropriate learning activities for art programs. Prereq: Art Ed. 3100 and at least one course in lettering or graphics. F.

3500 Art and Music Appreciation in the Elementary and Secondary School (4) For majors in Elementary Education. Media, techniques, and styles of arts and music; methods and materials of teaching art appreciation in the elementary classroom. F, W, S.

3511 Field Experiences in Teaching Art (1) Field experiences in which students perform tasks related to teaching and to teacher roles. S/NC. May be repeated for credit. F, W, S.

4100 Pre-Student Teaching Seminar (1) Orients student teachers to the standards and certification of the student teaching program; describes the objectives and policies of the student teaching program; meets special needs of student teachers; raises awareness of professional liability. Pre-requisite to student teaching seminars. Must be completed the quarter immediately preceding student teaching. Fall quarter student teachers complete pre-student teaching seminars spring quarter. Prereq: Full admission to the Teacher Education Program. Undergraduates - credit only. May not be repeated for credit. S/NC only. F, W, S.

4110 Program Development in Art (3) Foundation readings for philosophy; writing program units; analysis of curriculum guides; field experience required (credit optional). Prereq: Art Ed. 3100 and 9 hours art education. W.

4200 Designing Teaching Aids for Art (3) Resources for art teaching—identifying, locating, and using; development of slide-tape presentation and other teaching aids for art teaching. Prereq: Art. Ed. 3100 and 9 hours art education. S.

4300 Learning through Appreciation and History of Art (3) Review of historical periods; criticism and discussion in teaching art. Prereq: Art. Ed. 3100. F.

4350-50-70 Problems in Art Teaching (3, 3, 3) Prereq Consent of instructor. E.

4400 Strategies for Teaching Art (3) Readings on teaching art and planning for teaching; development of lessons; field experience in classrooms. Prereq: Art Ed. 3100 and 9 hours in Art Education. S.

4410 The Administration and Organization of Recreational and Arts Programs (3) Purpose of art activity in recreation; scope of activities; organizational procedures, recreation, and coordination required in community arts and crafts programs. A.

GRADUATE

Consult the Graduate Catalog for listing of graduate level courses.

MUSIC EDUCATION

The curricula in music education provide for three areas of concentration: vocal music (voice principal), vocal music (piano or organ principal), and instrumental music.

1010-20 Choral Laboratory (1, 1) Choral conducting: methods and materials required of all music education majors. Prereq: Consent of instructor. W.

1511 Field Experience in Teaching Music (1) Field experiences in which students perform tasks related to teaching and to teacher roles. S/NC. May be repeated for credit. F, W, S.

2100 Basic Experiences in Classroom Music (3) Vocal, instrumental, rhythm, and general music reading, and creative activities. Prereq: Major in elementary or special education. 5 hours. E.

2110 Experiences in Classroom Music (3) Vocal, instrumental, rhythm, and general music reading, and creative activities. For music education majors. Prereq: Approval of instructor, one year of music theory. 2 hours and 1 lab. F.

2411-12-13 Methods, Materials, and Techniques of String Class Instruction (2, 2, 2) Structure, use, techniques of playing, and repair of principal instruments in school instrumental organizations. Emphasis on techniques necessary for basic understanding and effective teaching of the instruments. Practical use of current instructional materials. 2 hours per week. 2411- F, 2412-W; 2413-S.

2421-22-23 Methods, Materials, and Techniques of Woodwind Class Instruction (2, 2, 2) Structure, use, techniques of playing; care and repair of principal instruments in school instrumental organizations. Emphasis on techniques necessary for basic understanding and effective teaching of the instruments. Practical use of current instructional materials. 2 hours per week. 2421- F; 2422-W; 2423-S.

2431-32 Methods, Materials, and Techniques of Brass Class Instruction (2, 2) Structure, use, techniques of playing; care and repair of principal instruments in school instrumental organizations. Emphasis on techniques necessary for basic understanding and effective teaching of the instruments. Practical use of current instructional materials. 2 hours per week. 2431-W; 2432-S.

2433 Methods, Materials, and Techniques of Per-

*Requires admission to Teacher Education Program.
Curriculum and Instruction

Professors:
T. W. Hippe (Head), Ph.D. Illinois; C. B. Allison, Ph.D. Oklahoma; J. Alexander, Ed.D. Kentucky


Associate Professors:

Assistant Professors:
R. A. Austin, Ph.D. Florida; D. A. Hendricks, Ph.D. Alabama; A. M. Rutherford, M.Ed. Virginia.

Instructors:
M. A. Blank, M.S. Tennessee; F. L. Hagan, M.S. Tennessee.

Educational Curriculum and Instruction (301)

Undergraduate programs in the Department of Curriculum and Instruction provide the general professional courses for the pre-service education of teachers in elementary and secondary schools.

1410 Efficient Reading and Study Skills (2.1) Improve reading rate, comprehensive vocabulary, and study skills as they relate to content area subjects. May be repeated for a maximum of 1 hour credit for individual laboratory attendance. S/NC. F, W, S.

1500 Introduction to Early Education (3) (Same as Child and Family Studies 1500) Undergraduate credit only. Should precede or be taken concurrently with Child and Family Studies 1500.

2010 Field Experience in Teaching: Elementary (2) Field experiences in which students perform tasks related to teaching at primary or intermediate grade levels in elementary school. S/NC.

2011 American Public School: Structure and Governance (3) Field experiences in which students perform tasks related to the roles of local, state, and national government, including examination of school finance. SP.

2020 Field Experience in Teaching: Secondary (2) Field experiences in which students perform tasks related to teaching in the secondary school. S/NC.

2030 Field Study in Education (3) Problems of teachers in the professional instruction, curriculum materials, school-community relationships, and school organizations.

3010 History and Philosophy of Education (3) Role of history in education; realism, Neo-Thomism, pragmatism, and other contemporary movements; major ideas, historical roots, and modern applications. Undergraduate credit only. E.

3020 Principles and Organization of Education (3) Role of active service in the fields of methods of teaching, curriculum materials, school-community relationships, and school organizations.

3021 School in the American Society (3) Social issues in American education, including class, race, sex, and religion. Will include a supervised field experience. Prereq: 2011 and admission to Teacher Education. F.

3030 Social Foundations and Curriculum (3) Culture and society and their influences on curriculum: principles, processes, and procedures of subject matter selection, sequence, grade placement, and time allotment; curriculum issues; state curriculum policies and practices. Undergraduate credit only. E.

3031 Curriculum I: Microcomputers in Curriculum and Instruction (3) Introduction to the basic operations and applications of the microcomputers it relates to curriculum development and implementation. Prereq: Admission to Teacher Education. F.

3032 Curriculum II: Research on Effective Teaching (1) Introduction to the basic concepts, principles, and processes of curriculum design and evaluation. Prereq: 3031 and admission to Teacher Education. W.

3033 Curriculum III: Curriculum Design and Evaluation (1) Introduction to the basic concepts, principles, and processes of curriculum design and evaluation. Prereq: 3032 and admission to Teacher Education. F, S.

3180 Microteaching (3) Emphasis upon the development of instructional skills. Students teach a series of lessons to small groups of students in elementary or secondary schools. Lessons are videotaped, and the students and instructor evaluate the teaching behaviors recorded on the tape. Prereq: Consent of instructor. F.

3260 Teaching Language Arts in the Elementary School (3) Methods and materials in teaching writing, spelling, and language. Undergraduate credit only. Should be taken for credit prior to or concurrently with Child and Family Studies 3020. Prereq: Educ. Psych. 3430 or equivalent, admission to Teacher Education. E.

3268 Developing Social Studies Content Concepts for Elementary School (3) Study of content of Social Studies and development of concepts relevant to elementary school social studies. Prereq: Admission to Teacher Education.

3270 Teaching Social Studies in the Elementary School (3) Methods and materials. Undergraduate credit only. Prereq: Educ. Psych. 3430 or equivalent, admission to Teacher Education. E.

3280 Teaching Developmental Reading in the Elementary School (3) Beginning course in sequence designed to enable preservice teachers to develop skills and understandings necessary for operation of successful developmental reading program in the elementary school. Prereq: Educ. Psych. 3430 or equivalent and admission to Teacher Education. E.

3281 Teaching Developmental Reading in the Elementary School (3) Second course in sequence designed to teach content and skills of teaching reading in the elementary school. Prereq: 3280 and admission to Teacher Education. E.

3282 Teaching Elementary School Developmental Reading (4) This is a beginning course in sequence designed to enable preservice teachers to develop the skills and understandings necessary for the operations of a successful developmental reading program in the elementary school, including word recognition, phonics, comprehension, and evaluation. Prereq: admission to Teacher Education.

3290-91 Basic Principles and Practices of Elementary School Instruction (1.1) Fundamental considerations of planning, organization, management, and evaluation in elementary school classrooms. Scheduled with professional methods blocks. Prereq: admission to Teacher Education.

3320 History of Education in the United States (3)

3350 Teaching Elementary School Mathematics (3) Enables preservice teachers to develop skills and understandings necessary for teaching mathematics program in the elementary school. Prereq: Educ. Psych. 3430 or equivalent, Mathematics 2110-20-20, or admission to Teacher Education. Must be taken prior to student teaching. E.

3351 Teaching Elementary School Mathematics (3) Methods of teaching elementary school mathematics. Prereq: 3350 or equivalent. E.

3510 Books and Related Materials for Children (3) (Same as Library and Information Science 3510). E.
3511 Field Experience in Teaching Elementary (Pri-
mature 3-9) (2) Field experience in which students perform tasks related to teaching and teacher roles. Must be taken prior to 3512 and student teaching. Prereq: Admission to teacher education. F, W, S.

3512 Field Experience in Teaching Elementary (In-
termediate) (5) Field experience in which students perform tasks related to teaching and teacher roles. Must be taken prior to 3513 and student teaching. Prereq: 3511, 3512; if of the following: C&I 3260, 3270, 3280, 3281, 3350, 3351, 3720: 3512 and Admission to Teacher Education. S/NC, F, W.

3520 Books and Related Materials for Young People (3) (Same as Library and Information Science 3260.)

3521-22-23 Field Experiences in Teaching: Secondary (2, 2, 2) Field experiences in which students perform tasks related to teaching and to teacher roles. Must be taken before student teaching and may be taken in sequence. Prereq: 3522 and 3523 required Admission to Teacher Education. S/NC. F, W, S.

3561 Teaching of Speech and Drama, Grades 7-12 (3) For description, see 3653. Prereq: Admission to Teacher Education. W.

3562 The Teaching of Foreign Languages: Grades 7-12 (1) (3) First course in sequence; methods, lesson planning, peer-teaching, and teacher-made materials for teaching the foreign language linguistic skills. This course and Ed. C&I 3563 are required for certification in modern foreign languages and Latin. Prereq: Completion or near completion of foreign language hours for certification required. Admission to Teacher Education. F.

3563 The Teaching of Foreign Languages: Grades 7-12, Part II (3) Second course in sequence; implementation of foreign language evaluation techniques, advanced methods and teacher-made materials in peer-teaching and field settings. This course and Ed. C&I 3562 are required for certification in modern foreign languages and Latin. Prereq: 3562 and admission to Teacher Education. W.

3630 History and Philosophy of Afro-American Education (4) (Same as Afro-American Studies 3630.)

3640 Contemporary Issues in Afro-American Education (4) (Same as Afro-American Studies 3640.)

3653 The Teaching of Social Studies, Grades 7-12 (3) Purposes, techniques, materials, and evaluation; directed observation in public schools; preparation of teaching plans and materials. Undergraduate credit only. Prereq: Educ. Psych. 3300 or equivalent, admission to Teacher Education. F, W.

3654 The Teaching of Science, Grades 7-12 (3) For description, see 3653. Prereq: Admission to Teacher Education. F, S.

3657 Teaching Language, Composition, and Speaking, Grades 7-12 (3) For description, see 3653. Both this course and Educ. C&I 3657 are required for certification in English. Prereq: Admission to Teacher Education. W.

3658 Teaching Reading, Literature, and Listening, Grades 7-12 (3) For description, see 3653. Both this course and Educ. C&I 3657 are required for certification in English. Prereq: Admission to Teacher Education. W.

3719 Developing Science Content Concepts for Ele-

3720 Teaching Science in the Elementary School (2) Methods and materials, undergraduate credit only. Prereq: Educ. Psych. 3430 or equivalent, admission to Teacher Education. E.

3751 Teaching of Mathematics: Numerical and Alge-

3752 Teaching of Mathematics: Geometry and Anal-

3753 Teaching of Mathematics: Algebra, Data, and Cau-

3757 Teaching of Mathematics: Algebra, Data, and Cau-

3758 Teaching Strategies and Issues in Social Studies Education (Grades 7-12) (3) Problems and issues with practical teaching-learning activities in Social Studies Education. Both this course and Education 3653 are required for certification in Social Studies. Prereq: 3563 and admission to Teacher Education. F, W.

4011 Educational Thought in America (3) A post-

4090 Special Topics (1-6) Topics to be assigned. May be repeated. Will be offered for letter grade or S/NC.

4091 Independent Study (1-6) Topics to be assigned. May be repeated. Will be offered for letter grade or S/NC.

4092 Supervised Readings (1-6) Topics to be assigned. May be repeated. Will be offered for letter grade or S/NC.

4100 Pre-Student Teaching Seminar (1) Orientates stu-
dents to the off-campus centers and the student teaching program. The objectives of this course and C&I 3563 are required for certification in social studies and languages. Prereq: Completion of the seminar immediately preceding student teaching. Fall quarter student teacher must be assigned the fall quarter. Prereq: full admission to the Teacher Education Program. Undergraduate credit only. May be repeated for credit. S/NC. F, W.

4111 Non-Western Education: Anthropological Approaches (3) (Same as Anthropology 4150.)

4150 School Library Administration (3) (Same as Library and Information Science 4150.)

4280 Orientation to Corrective Practices for Class-

4282 History and Philosophy of Afro-American Education (4) (Same as Cultural Studies and History 4292.)

4300 Developmental Reading in Secondary School and Community College (3) An introductory course covering approaches to the teaching of basic reading skills and organizing reading classrooms and/or laboratories at the middle school, secondary school, and community college level. F, S.

4303 Language Development of Children: Birth-

4304 Developing Reading Skills in Content Fields (4) Approaches to the teaching of reading in content areas of the school program. Emphasis on middle school and secondary school programs. F, S.

4400 Problems in Improvement of Instruction (1-3) Special conferences, workshops, or inservice programs designed for improvement of instruction. May be repeated. Maximum credit 9 hours. S/NC.

4410 Educational Sociology (3) (Same as Sociology 4410.)

4450 Teaching in Kindergarten: Overview (3) Relation-
ship of kindergarten to elementary program; basic; historical settings and current developments.

4451 Teaching in Kindergarten: Program Develop-
ment (3) Curriculum planning and organization; classroom management. Prereq: Admission to Teacher Education.

4452 Elementary School Teaching: Minicourse (1-3) Minicourse focusing on various aspects of teaching in elementary school. Topics vary. Prereq: Student teaching. May be repeated.

4453 Early Childhood Education: Program Develop-
ment and Teaching in Kindergarten (3) Curriculum planning, classroom organization and management practices for teaching young children. Relationship of Kindergarten to total elementary school. Prereq: admission to Teacher Education.

4554 Methods, and Materials in Environmental and Science Education (3) Instructional methods, materials, curricular programs and current issues in environmental and science education for classroom teachers. Prereq: Admission to Teacher Education. W.

4710 Student Teaching, Grades 7-12 (9) Application for student teaching must be filed not later than third quarter of junior year. Students should hold themselves available to do this work in off-campus center. Must be taken with 4720. Prereq: 3010-20 or higher. Undergraduate credit only. Minimum grade point average of 2.0. Undergraduate credit only. S/NC. F, W, S.

4720 Student Teaching, Grades 7-12 (6) Cooperate-

4750 Utilization of Instructional Media (3) Introduces the basic communications process, need for instructional media, instructional development, production and utilization of media and basic software production techniques. (Same as Library and Information Science 4750 and Vocational-Technical Education 4750.)

4751 Using Instructional Media in the Elementary Class-

4810 Student Teaching in the Elementary School (9) Application for student teaching must be filed not later than third quarter of junior year. Students should hold themselves available to do this work. Must be taken with 4820. Prereq: 3010-20 or higher. Undergraduate credit only. Minimum grade point average of 2.0. Undergraduate credit only. S/NC. F, W, S.
4820 Student Teaching in the Elementary School (8)
Must be taken with 4810. Undergraduate credit only.
S/NC. F. W., S.

4850 Student Teaching in Early Elementary School
(K-3) (9) Application filed no later than second quarter of junior year with placement one quarter prior to quarter of teaching. Prereq: Educ. C&I 3360, 3370 or 3720, 3280, 3350, 4451; CFS 3120, 3210. S/NC. F. W., S.

4851 Student Teaching in Early Elementary School
(K-3) (9) Application filed no later than second quarter of junior year with placement at least one quarter prior to quarter of graduation. Prereq: Educ. C&I 3360, 3370, 3280, 3350, 4451; CFS 3120, 3210. S/NC. F. W., S.

4852 Programmed Learning (3) Theories of learning as related to technology of programmed instruction: techniques and applications of programming. 2 lectures and 1 lab. Prereq. Psychology 3210, Educ. Psych. 3730, or consent of instructor. (Same as Psychology 4860.)

4870 Applications of Computers for Instructional Purposes (3) Computer concepts for teachers at all grade levels; computer operation, applications of computers for teachers; and current classroom uses of computers. Letter grade only. Prereq. 3200 or consent of instructor.

GRADUATE Graduate instruction in the Department of Curriculum and Instruction provides opportunities to improve the effectiveness of educational service in a number of areas. Consult the Graduate Catalog for listing of graduate level courses.

Education (289)
GRADUATE Consult the Graduate Catalog for listing of graduate level courses.

Educational Leadership

Educational Administration and Supervision (292)
Professors:

Associate Professors:

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

Higher Education (267)
Professors:

Assistant Professor:

4554-55-56 Student Leadership Workshops (1,1,1) Small group and individualized experiences to develop knowledge and skills in leadership roles. Sections are designed for resident assistants, student government leaders, student teachers to the off-campus centers and the student teaching program; describes the objectives and policies of the student teaching program, meets special needs of student teachers; and raises awareness of professional liability. The pre-student teaching seminars must be completed the quarter immediately preceding student teaching. Fall quarter student teachers complete pre-student teaching seminars spring quarter. Prereq: full admission to the Teacher Education Program. Undergraduate credit only. May not be repeated for credit.

4110 Psychology of Sex Role Development (3) Examination, from both a theoretical and research base, of factors which contribute to sex role development with attention to changes in sex role definition in society and role of education in these changes. Aimed at the undergraduate or graduate student with minimal background in behavioral sciences. (Same as Psychology 4115). F., S., SU.

4120 Mental Health (3) Studies and exploration of positive mental health. Application of mental health criteria to study of one’s self based on a battery of personality assessment instruments. F., S., SU.

4320 Self-Management for Personal and Professional Development (3) Self-management applications in career, social, emotional and physical development. Includes both theoretical and experiential activities. Prereq: An introductory course in psychology or the consent of the instructor. W., SU.

4500-50-70 Special Topics and Problems (1-6, 1-6) May be offered for letter grade or S/NC and may be repeated.

4591-52-53 Student Leadership Workshops (1, 1, 1) Small group and individualized experiences to develop knowledge and skills required of students in leadership roles. Sections are designed for resident assistants, student government leaders, student teachers, and other student organizations. Prereq: Consent of instructor. S/NC. E.

4640 Standardized Testing (3) Use and interpretation of standardized group instruments in assessment of intelligence, aptitude, achievement, vocational interests and personality adjustment. F., W., S.

4650 The Construction of Classroom Tests (3) Concerned with teacher-made classroom tests: Instruc- tional objectives, principles of test construction, item analysis, evaluating a test’s reliability and validity, interpretation of test scores, relationship between testing and grading. SU.

4789 Advanced Child Study (3) Prereq: 3430 or 3820 or consent of instructor. F., W., S.

4800 Psychology of the Disadvantaged Child (3) Significant behavioral differences and causes; appropriate intervention approaches. E.

4820 Psychology of the Inner-City School Child (3) Exploration of psychological, educational, and social factors affecting children in inner-city schools. W. GRADUATE Consult the Graduate Catalog for listing of graduate level courses.
School of Health, Physical Education, and Recreation
Charles B. Hamilton, Acting Director

At the undergraduate level, professional preparation programs are offered in health, physical education, dance, and recreation. For information on graduate programs leading to the Master of Science, the Master of Public Health, Educational Specialist, the Doctor of Education, or the Doctor of Philosophy degrees, see the Graduate Catalog.

The School of Health, Physical Education, and Recreation also provides activities programs for all students in physical education and service courses in health and safety.

Health and Safety


Associate Professors: M. A. Milliken (Emeritus), M. A. Yale; J. N. Neutens, Ph.D. Illinois; R. J. Pursley, Ph.D. Iowa; A. F. Thompson, Ph.D. Michigan State.


Safety (890)

3520 Principles of General Safety (3) Deals with principles, practices and procedures in general safety; covers safety problems in school traffic, recreation, industry, home, and other public areas. E.

4000 Directed Independent Study (1-3) Individual identification and study of a safety or safety education problem/issue. Specific proposal must be made to instructor before registration. May be repeated. Maximum 15 hours.

4410 Driver and Traffic Safety Education (5) Preparation of teachers of driver education in schools and colleges. Students are required to teach at least one non-driver. Valid driver’s license required. 3 hours and 2 labs. E.

4412 Cardiopulmonary Resuscitation (2) (Same as School Health 4412) F, W, S.


4430 Sports Safety (5) Accident prevention and injury control in sports activities; philosophy of sports safety; human environmental factors and their relationships in sports injury and their control; risk-taking and decision solving strategies; and contributions of sports medicine to safety. 3 hours of lecture and 2 hours of lab. S.

4700 Special Topics (1-6) Study in selected disciplinary or professional areas of safety. May be repeated. Maximum 15 hours.

GRADUATE

Consult the Graduate Catalog for listing of graduate level courses.

Health Education (449)

1110 Principles of Personal Health and Wellness (3) To develop the ability to approach health scientifically and to develop critical judgments affecting personal health and wellness. E.

2040 Seminar in Human Sexuality (2) Problems and responsibilities of being male and female. S/NC. E.

2050 Alcohol/Drugs and the College Student (2) Study of problems related to use and abuse of substances potentially harmful to health and safety. Covers alcohol, drugs, tobacco and other substances. S/NC. E.

3000 Foundation of Health Science (3) In-depth study of content areas relating to personal health/wellness and contemporary health problems, i.e., mood modifying products; consumer health; international health; personal health practices, reciprocal relationships involving man, disease, and environment. F, S, SU.

3210 First Aid and Emergency Care (4) Theory and practice of first aid and emergency care. Instruction in medical self-help; Course leads to Red Cross Certification in Advanced First Aid and Emergency Care. (Applicant must be at least 18 years of age for certification.) E.

3410 Health Curriculum Construction and Instruction (3) Principles of health curriculum construction and study of innovative K-12 health curricula. F, S.

3420 School Health Services (3) Development, maintenance, and protection of health of students including examination, laboratory, diagnostic, treatment, advisory, and community disease control, emergency care, and school health records. S.

3510 The School in Community Health (3) Role of teacher in community health education; school’s responsibility in promoting healthful living and the place of existing media and agencies in program. Not open to health and physical education majors. E.

3610 Methods in Elementary Health Instruction (3) Preparation and presentation of health topics. Teaching method is emphasized and student participation stresses. Required for elementary teachers. Prereq: 1110 or 3510 or Nutrition and Food Science 1130. E.

3620 Sex Education as It Relates to Human Sexuality (3) Exploration of the science of human sexuality. Emphasis on the trends, content, methodology and materials in sex education. F, S.

3650 Methods in Secondary Health Instruction (3) Preparation and presentation of health topics. Teaching method is emphasized and student participation is stressed. Prereq: 3410. W.

4100 Pre-Student Teaching Seminar (1) Orients student teachers to the off-campus centers and the student teaching program; describes the objectives and policies of the student teaching program, meets special needs of student teachers; and raises awareness of professional liability. The pre-student teaching seminars must be completed the quarter immediately preceding student teaching. Fall quarter student teachers complete pre-student teaching seminars spring quarter. Prereq: full admission to the Teacher Education Program. Undergraduate credit only. May not be repeated for credit. S/NC only. E.

4120 Alchoholism and Alcohol Education (3) Explores problems of alcoholism. Emphasis on factors which make alcoholism a serious health and safety problem. Various types of instructional/educational and intervention programs. F, W, S.

4130 Suicide and Suicide Intervention (3) Explores problems of suicide. Emphasis on factors which make suicide a serious health problem. Various types of instructional/educational and intervention programs. S.

4140 Death, Dying and Bereavement (3) Exploration of the effect of death and dying. Education and other programs to mitigate the trauma of death and dying. F, W, S.

4410 Consumer Health and Safety Education (3) Survey of major consumer health and safety problems; selecting, purchasing and financing of safety and medical services. (Same as Public Health 4410) F, W, S.

4411 Instructor’s Advanced First Aid and Emergency Care (3) Designed to teach First Aid. Satisfactory completion qualifies one for American National Red Cross Certification as an Advanced First Aid Instructor. Applicants must be at least 21 years of age for certification. Prereq: 3210 or valid Advanced First Aid and Emergency Care Certification.

4412 Cardiopulmonary Resuscitation (2) Theory and Skills to implement basic cardiac life support follow- ing cardiac arrest due to such conditions as heart attack, drowning, electrocution, suffocation, poisoning, drug intoxication, and vehicular and other accidents. Educational and preventive aspects of controlling cardiovascul ar disease. (Same as Safety 4412) F, W, S.

4420 Drug Abuse Education (3) Drug abuse problem and suspected causes; pharmacology of drugs and effects on society and methods of drug abuse education.

4430 Women’s Health (3) Study of factors influencing women’s health and women as consumers of the nation’s health service delivery systems. (Same as Women’s Studies 4430) E.

4500-10-20 Field Practice in Health Education (3-5, 3-5) Off-campus health education internship or field practice in educational or other agency with qualified professional. E.

4710 Special Topics (1-6) For advanced students, teachers, school administrators, nurses, and other paramedical school personnel. Lectures, demonstrations, films, field trips, and supervised research in special health problems. May be repeated for credit.

4810 Directed Independent Studies (1-3) Individual student study. May be repeated. May not be repeated for credit. E.

GRADUATE

Consult the Graduate Catalog for listing of graduate level courses.

Physical Education (764)


Associate Professors: P. A. Beital, Ed.D. North Carolina; R. J. Croskey, M.F.A. SMU; R. E. Jones (Chairperson), Ph.D. Toledo; B. J. Mead, Ph.D. Purdue; W. J. Morgan, Ph.D. Minnesota.


1000 Orientation to Physical Education (1) Special emphasis on theoretical and practical aspects of physical education. Letter grade. F, W.

1022 Physical Education Major: Basketball (2) The introduction and development of basic fundamental skills, general rules, and strategy related to the game of basketball with particular emphasis on acquisition of skill. A.

1032 Physical Education Major: Tennis (2) The introduction and development of skills, general rules, and strategy related to the game of tennis with particular emphasis on acquisition of skill. S.
1042 Physical Education Major: Gymnastics I (2) Development of skills in tumbling and on selected men's and women's gymnastics apparatus. Tumbling skills will include forward, backward, and balance skills. Apparatus will include balance beam and pommel horse. Special emphasis will be placed on safety and progression. F, W.

1052 Physical Education Major: Folk and Square Dance (2) The introduction to basic folk and square dance steps, patterns, and designs. Emphasis on skill acquisition, principles, terminology, and etiquette. W.

1062 Physical Education Major: Track & Field (2) The introduction and development of basic fundamental and academic skills, general rules, and strategy, related to the game of volleyball with particular emphasis on acquisition of skill. S.

1500 Field Experience I (1) Student observation in selected elementary, middle and secondary public school physical education programs. 2012 Physical Education Major: Soccer (2) The introduction and development of basic fundamental skills, general rules, and strategy, related to the game of soccer with particular emphasis on acquisition of skills. F.

2022 Physical Education Major: Volleyball (2) The introduction and development of basic fundamental skills, general rules, and strategy, related to the game of volleyball with particular emphasis on acquisition of skill. A.

2032 Physical Education Major: Golf (2) The introduction and development of basic fundamental skills, general rules, and strategy, related to the game of golf with particular emphasis on acquisition of skill. F, S.

2040 New Repertory Dance Company (2) Preparation and presentation of public performances. May be repeated. Maximum credit 4 hours. Prereq: Consent of instructor. F, W.

2042 Physical Education Major: Gymnastics II (2) Development of skills in tumbling and on selected men's and women's gymnastics apparatus. Tumbling skills will include twisting skills, kips, and combinations of previous skills. Apparatus will include uneven bars, horizontal bar, parallel bars, and still rings. Prereq: 1042. W, S.

2050 New Repertory Dance Company (2) Preparation and presentation of public performances. May be repeated. Maximum credit 4 hours. Prereq: 2040 or consent of instructor. F, W.

2052 Physical Education Major: Ballroom Dance (2) The introduction to basic ballroom dance steps, patterns, and designs. Emphasis on skill acquisition, principles, terminology, and etiquette. W.

2060 New Repertory Dance Company (2) Preparation and presentation of public performances. May be repeated. Maximum credit 4 hours. Prereq: 2050 or consent of instructor. F, W.

2062 Physical Education Major: Football (2) The introduction and development of basic fundamental skills, general rules, and strategy, related to the game of football with particular emphasis on acquisition of skill. A.

2070 Orientation in Dance—Appreciation (3) Histo- ry, aesthetic principles, and current trends in dance. A.

2072 Physical Education Major: Softball (2) The introduction and development of basic fundamental skills, general rules, and strategy, related to the game of softball with particular emphasis on acquisition of skill. S.

2500 Secondary Field Experience II (2) Observation, teaching and leadership experience in physical education classes. Emphasis will be placed on individual and small group teaching experiences. Prereq: At least sophomore standing. F, W.

2600 Human Motor Behavior (2-3) Current theories and principles explaining motor behavior; psychological factors related to and/or affecting motor skill acquisition and performance. Prereq: At least sophomore standing. F, W.

2800 Sport in American Society (3) Introductory course for undergraduates on the study of sport in American society from a sociological perspective. (Same as Sociology 2850.) W.

3000 Administration of Athletics (2) Conduct of program of athletic sports in high schools and colleges. W.

3010 Elementary Modern Technique (2) Analytical and practical study of modern dance techniques. May be repeated. Maximum credit 6 hours. F, W.

3020 Intermediate Modern Technique (2) Theoretical, technical, and improvisational study of modern dance. May be repeated. Maximum credit 6 hours. Prereq: 3010. Available to dance majors and minors or with consent of instructor. F, W.

3030 Intermediate/Advanced Modern Technique (2) Emphasis on various styles and techniques. May be repeated. Maximum credit 6 hrs. Prereq: 2030. Available to dance majors and minors or with consent of instructor. F, W.

3040 Elementary Jazz Techniques (2) Instruction and practice in styles and techniques of jazz. May be repeated. Maximum credit 6 hrs. F, W.

3041 Intermediate Jazz Dance Technique (2) Intermediate instruction in Jazz Dance Technique with emphasis on lyrical and percussive styles. Prereq: 3040. Available to dance majors and minors or with consent of instructor. F.

3060 Beginning Dance Composition (2) Experience in creative forms of dance. Prereq: 3010. F.

3061 Dance Composition II (2) Further development of solo and duo compositional skills with particular emphasis on form; content and use of music. Prereq: 3060. W.

3062 Dance Composition III (2) Study of choreography for small groups. Exploration of costumes, props, stage space, and alternative environments. Prereq: 3061. S.

3070 Elementary Ballet Techniques (2) Practical and analytical study of classical ballet technique. May be repeated. Maximum credit 6 hrs. F, W.

3075 Intermediate Ballet Technique (2) Emphasis on styles and methods of intermediate classical ballet technique, basic pointe work and use of petit and grand allegro combinations. Prereq: 3070. Available to dance majors and minors or with consent of instructor. May be repeated. Maximum credit 6 hrs. F, W.

3110 Coaching of Football (2) The theoretical and practical application of various coaching techniques in football for prospective secondary/college coach. Topics will include the analysis and selection of appropriate game plans, specific conditioning and training programs, player evaluation, scouting, individual and team offensive and defensive strategies. Prereq: 2062 or consent of instructor. A.

3120 Coaching of Basketball (2) Individual and team fundamentals for the high school coach; attention given to conditioning, scheduling making, and other business arrangements. Prereq: Consent of instructor. A.

3130 Coaching of Track and Field (2) Examination of current coaching methods and training techniques for various track and field events, including observing and working at track and field meets and practices. Prereq: 1062 or consent of instructor. S.

3190 Coaching of Gymnastics (2) Techniques used in the coaching and judging of men's and women's gymnastics. Additional emphasis will be placed on safety and spotting of selected gymnast's skills. Prereq: Consent of instructor. A.

3200 Coaching of Baseball/Softball (2) The theoretical and practical application of various coaching techniques in baseball/softball for the prospective secondary/college coach. Topics will include the analysis and selection of appropriate game plans, specific conditioning and training programs, practice organization, player evaluation, scouting, individuals and team offensive and defensive strategies. Prereq: 2072 or consent of instructor. A.

3210 World History of Sport and Physical Education (3) An introductory survey of the influence to past socio-cultural events on the development of sport and physical education from ancient primitive to twentieth century civilization. Prereq: At least junior standing. F.

3250 Athletic Training Techniques (3) Theory and practice in the prevention and care of basic athletic injuries. S.

3265 Practicum in Pre-School Aquatics (2) Planning and teaching aquatic experiences to 3-to-5-year-old children. Prereq: Intermediate level swimming ability. A/F or S/N/C, W.

3300 Tap Dance (2) Instructions, practice, and studio teaching. F.

3320 Applied Anatomy (3) Bones, joints, ligaments and muscles involved in human movement. Prereq: At least junior standing. F, W.

3350 Introduction to Movement Education (3) Planning and teaching by themes with application to dance, gymnastics, and games for children. Prereq: Admission to Teacher Education.

3450 Physical Education in the Elementary School (3) Movement experiences appropriate for elementary school children; planning and teaching a developmental program. E.

3460 Educational Dance for Children (3) The theme approach to dance forms for children. Prereq: 3350 or consent of instructor. A.

3470 Educational Games for Children (3) The theme approach to game forms for children. Prereq: 3350 or consent of instructor. A.

3480 Educational Gymnastics for Children (3) The theme approach to gymnastics for children. Prereq: 3350 or consent of instructor. A.

3500 Secondary Field Experience II (3) The design and implementation of lesson plans and units in the teaching of secondary physical education. Prereq: 2500 and all P.E. Major activity courses, and admission to Teacher Education.

3590 Social-Psychological Aspects of Sport and Physical Education (3) An overview of major topics dealing with social psychological influences which affect behavior in a physical education and/or sport environment. Prereq: At least junior standing. W.

3560 Human Growth and Motor Development (3) Structural and functional changes in man from birth to old age, and relationship of changes to physical performance and skill development. F.

3570 Developmental Trends in Movement Perform- ance of Children (2) Motion characteristics and movement patterns involving in children with an emphasis upon understanding movement performance as a product of interaction of biophysical, perceptual, cognitive, and psycho-social variables. Prereq: Admission to Teacher Education or consent of instructor. A.

3600 Developmental Aspects of Human Motor Behav- ior (2) Developmental trends related to and/or affecting motor performance/learning, with emphasis upon critical developmental periods. Prereq: 2500.

3720 Philosophy of Sport and Physical Education (3) Introduction to form and content of philosophy of physical education from ancient primitive to twentieth century civilization on examination of metaphysical, epistemological and axiological status of physical education and sport. Prereq: At least junior standing. S.

3800 Special Topics (1-3) Study in selected discipli- nary or professional areas of physical education. May be repeated.

3910 Psychology of Coaching (3) An analysis of the non-physical influences upon athletic performance. Emphasis on coaching techniques and applications to context of coaching. Prereq: 3550 or consent of instructor. F.

4000 Intermediate Advanced Ballet Technique (2) Emphasis on styles and methods of intermediate advanced ballet techniques, intermediate/advanced postural work, balance, elegance. Prereq: 3075. Available to dance majors and minors or with consent of instructor. A.

4070 Developmenntal Trends in Movement Perform- ance of Children (3) Motion characteristics and movement patterns involving in children with an emphasis upon understanding movement performance as a product of interaction of biophysical, perceptual, cognitive, and psycho-social variables. Prereq: Admission to Teacher Education or consent of instructor. A.

4230 Developmental Aspects of Human Motor Behav- ior (2) Developmental trends related to and/or affecting motor performance/learning, with emphasis upon critical developmental periods. Prereq: 2500.
4170 Physical Activity and Fitness (3) Theoretical knowledge and practical experience in principles and methods of activities relating to health related aspects of physical fitness. 2 hrs. and 1 lab. Prereq: At least junior standing. F, W.

4200 Motor Behavior Teaching Methods (2) Application of various styles of teaching of the techniques of muscle movement and learning environment; planning, presenting, and evaluating lessons concerning knowledge, strategies, and skills for advanced dance, gymnastics, and sport. Prereq: 3600, minimum of 16 hrs. P.E. Major activity courses and admission to Teacher Education.

4220 Applied Kinesiology (3) Analysis of movement and muscle group involvement; application of the laws of physics to human movement exercise programs for specific muscle group involvement. Prereq: 3520, Physics 1450, 1310 or consent of instructor. W, S.

4230 Program Planning in Physical Education (2) Curriculum building, course construction, and lesson planning for public schools and colleges. Prereq: 4200.

4240 Designing and Implementing Movement Programs for Children (3) Approaches to the design and implementation of preschool, elementary, and middle school movement programs. Prereq: Admission to teacher education and consent of instructor. A.

4260 Practicum for Physical Education Majors (1-10) Experiences in the community to support and clarify course content. Prereq: Consent of instructor. A.

4300 Intermediate Tap Technique (2) Instruction and practice in intermediate level tap skills and techniques. S/NC only. Prereq: P.E. 3300 or consent of instructor. W.

4330 Directed Independent Studies (1-3) Independent study in a specialized area within physical education. Prereq: Consent of advisor. May be repeated. E.

4360 Techniques of Games Forms (2) Study of non-traditional games which includes personal skill development with application to teaching techniques. Prereq: At least junior standing or consent of instructor. A.

4365 Techniques of Folk, Square, and Ballroom Dance (2) Development of intermediate to advanced level of skill in folk, square, and ballroom dance with application to techniques of teaching. Prereq: 1052 and 2052 or consent of instructor. A.

4370 Techniques of Gymnastics (2) Development of skills beyond the beginning level on men's and women's apparatus and tumbling. Emphasis will be placed on spotting and teaching techniques. Prereq: 1042 and 2042 or consent of instructor. A.

4375 Techniques of Track and Field (2) Development of intermediate to advanced level of skill in track and field with application to techniques of teaching. Prereq: 1062 or consent of instructor. A.

4380 Techniques of Tennis (2) Development of intermediate to advanced level of skill in tennis with application to techniques of teaching. Prereq: 1032 or consent of instructor. A.

4385 Techniques of Golf (2) Development of intermediate level skills in golf with application to teaching techniques. Prereq: 2002 or consent of instructor. A.

4390 Techniques of Basketball (2) Development of intermediate level skills in basketball with application to techniques of teaching. Prereq: 1022 or consent of instructor. A.

4395 Techniques of Volleyball (2) Development of intermediate to advanced level of skill in volleyball with application to techniques of teaching. Prereq: 2022 or consent of instructor. A.

4420 Administration of Physical Education (3) Selected topics in organization and administration problems related to physical education programs in schools; emphasis placed on human relations approach to solving problems in administration. Prereq: 4230. W.

4500 Elementary Field Experience II (2) A micro-student teaching experience at the elementary or middle school level. Prereq: Admission to Teacher Education and consent of instructor. S/NC.

4550 Methods of Teaching Dance (3) Principles and methods for teaching of dance with practical application in a mini-teaching experience. Prereq: Upperdass and graduate standing and approval of instructor. Senior standing or graduate status required for graduate credit. There is a different level of performance expected of those registered for graduate credit.

4560 Movement Notation (3) Fundamentals of movement notation with emphasis on the notation and reading of notation. May be repeated for credit. S/NC only. (Same as Art Ed. 4100, Music Ed. 4100, Ed. & Counseling Psych. 4100, School Health 4100, Public Health 4100, and Sociology 2850.) (Sociology is primary department.)

4580 History of Dance I (3) A survey of the dance of various societies and cultures from pre-history through the nineteenth century. Senior standing or graduate status required for graduate credit. There is a different level of performance expected of those registered for graduate credit.

4650 History of Dance II (3) A survey of the development of dance in the theatre, recreation, and education during the 20th century. Senior standing or graduate status required for graduate credit. There is a different level of performance expected of those registered for graduate credit.

4710 The Teaching of Creative Dance (3) Theory, methods, materials, and practical experience in the presentation and integration of creative dance in grades K-6. A.

4760 Physical Activity and Fitness (3) Theoretical and practical experience in principles and methods of activities relating to health related aspects of physical fitness. 2 hrs. and 1 lab. Prereq: At least junior standing. F, W.

4770 Practicum in Pre-School Motor Development (4) Study/review of selected motor development and movement education concepts, and application through assessing performance and designing and presenting developmental movement tasks to pre-school children. Prereq: 3350 and 3570 or consent of instructor. W, S.

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

Service Program in Physical Education

The service program in physical education provides all students a program of physical education planned in accordance with their present and future needs and interests.

4700 Special Topics (2) Special Topics (2)
4100 Pre-Student Teaching Seminar (1) Orients stu-
dent teachers to the off-campus centers and the student
teaching program; describes the objectives and policy-
cies of the student teaching program, meets special needs
of student teachers; and raises awareness of professional
liability. The pre-student teaching sem-
inars must be completed the quarter immediately
preceding student teaching. Fall quarter student teach-
ers complete pre-student teaching seminars spring
quarter. Prereq: full admission to the Teacher Educa-
tion Program. Un tentatively credited only. May not
be repeated for credit. S/NC only.

4210 Introduction to Industrial Health (3) Introduc-
tion to the fundamental activities involved in the field
of industrial health. Emphasis on the industrial health
hazards and problems of concern to nurses, medical
staff, management, engineers, and others involved in
the industrial health and safety fields. Prereq: Con-
sent of instructor. Not available to Occupational Health
majors (M.P.H.) for graduate credit.

4220 Communications for Better Health (3) Selective
study of communications in health enterprise. Con-
sideration in logical progression of the problems of
transmitting current and new information to practi-
tioners; communications among members of modern
health teams, among health agencies, and use of
mass media for transmitting health information. W.

4410 Consumer Health and Safety Education (3) Survey
of major consumer health and safety problems; select-
ing, purchasing, and financing of safety and medical
services. (Same as School Health 4410.)

700-10-20 Field Practice in Public Health (3, 3, 3)
Field practice in public health under supervision of public
health profession. S/NC. E.

7430 Workshop in Public Health Education (3-8)
For teachers, nurses, case-workers, sanitarians, and other
voluntary and public health agency personnel; empha-
sizes the problem-solving approach through small group
interaction, case method, and critical incident tech-
nique. May be repeated for credit.

7470 Public Health Fieldwork (6) Field practice in
public health under the supervision of public health
profession. S/NC. E.

4840-50-60 Problems in Public Health Education (1,
1, 1) Individual identification and study of current prob-
lems in public health education. Extensive reading of
literature required.

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

Recreation (853)
Professor: G. A. Hayes (Chairperson), Ph.D. North Texas State
University.

Associate Professor: K. L. Krick, Re.D. Indiana.

Assistant Professor: M. D. Blanton, Re.D. Indiana.

1000-2000-3000 Field Practice (2-3, 2-3, 2-3) Super-
vised practice in an approved agency offering leisure
services. Each hour's credit requires 25 hours of work
in field agency. For recreation students only. Must be
taken in sequence. E.

1100 Orientation to Recreation Profession (3) Over-
view of types, functions, and interpersonal relations of delivery
systems for recreation and park services. W.

3100 Recreation Leadership Procedures (3) Princi-
ples and procedures of leadership, supervision, and
dynamics of working with individuals and groups in leisure
activity. Two one-hour lectures and one

4310 Camp Administration (3) Program planning and
management, personnel management, camp site develop-
ment and maintenance and camp operation for
administrators and supervisors of organized camps.
W.

4500 Specialized Study in a Selected Area of Rec-
reation (1-3) Comprehensive study in a selected
specialized area within the broad field of recreation.
For recreation students only. May be taken for vari-
able credit up to 9 hours. May be repeated for a maximum
credit of 9 hours with consent of the division. Prereq:
Consent of instructor. E.

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

Special Education and
Rehabilitation (933)
Consult the Graduate Catalog for listing of
graduate level courses.

Special Education and
Rehabilitation (933)

Professors:
L. J. Coleman (Head), Ph.D., Pent State; E. E. Dill (Emeritus), Ph.D., Pennysylvania; R. M. Frey, Ed.D.,
Illinois; T. W. George, Ed.D., Tennessee;
H. Hargis, Ed.D., Northern Colorado; J. H. Miller, Ed.D., Utah;
J. M. Nadollosky, Ed.D., Auburn;
W. J. Schindler, Ph.D., Kent State; W. E. Woodrick, Ed.S., Mississip State.

Associate Professors:
S. M. Benner, Ed.D., Columbia; L. J. Cassell, Ph.D.;
K. W. Colvin, Ed.D., Virginia; M. C. Hannum, Ed.D.,
Northern Colorado; C. D. Malve (Emerita), Ed.D., Texas;
and techniques of speech development and improve-
m ent for hearing impaired children. Prereq: 4190 and consent of instructor. (Same as Audiology and Speech Pathology 4200.) W.

4210 Language Development of Hearing Impaired (3) Systems by which formal language is presented. Prereq: 4210 and consent of instructor. (Same as Audiology and Speech Pathology 4210.) F.

4220 Language Development for the Hearing Impaired (2) Techniques; various systems by which formal language is presented. Prereq: 4220 or consent of instructor. (Same as Audiology and Speech Pathology 4220.) W.

4230 Communication Processes for the Hearing Impaired (3) Various communicative skills required by hearing impaired person; speech and language development; auditory training; speech reading; manual language, and its relation to other forms of communica-
tion. Observation practicum. (Student must acquire a degree of proficiency in use of manual language.) Prereq: Consent of instructor. E.

4231 Communication Processes for the Hearing Impaired II (3) Intermediate courses in manual communic-
ations skills and techniques with emphasis on vocabulary development with receptive and expressive fluency. Prereq: Spec. Ed. 4230 or consent of instruc-
tor. F.

4240 Nature of Hearing Impairments (3) Basic principles of audiology and audiological disorders. Teach-
ing and learning of deaf; causes and characteristics of hearing loss; methods and instrumen-
tation for assessment of hearing level; interpretation of audiograms; an introduction to the hearing aids and their application. Prereq: Consent of instructor. S/NC. F, W, S.

4280 Curriculum Development in Elementary and Secondary Schools for the Hearing Impaired (3) Adapt-
tation of curriculum development and methods in public school education to meet needs of deaf and hard-of-
 hearing students in residential and integrated set-
tings. Prereq: Admission to Teacher Education. S.

4290 The Teaching of Reading to Hearing Impaired Children (3) Readiness activities, developmental reading approaches, theories, and specialized materials for curricula in teaching reading. Prereq: Admission to Teacher Education. W.

4310 Stuttering (3) (Same as Audiology and Speech Pathology 4310.)

4320 Introduction to Clinical Practice in Speech Pathol-
ygy (3) Prereq: 3340, 3060, 3310 and consent of instructor. S/NC. (Same as Audiology and Speech Pathology 4320.)

4330 Clinical Practice in Speech Pathology (1-6) Prereq: 3340 and consent of instructor. (Same as Audiology and Speech Pathology 4330.) (Audiology and Speech Path. is primary department.) For letter grade only.

4340 Clinical Practice in Speech Pathology (1-6) Prereq: 3340, 4040, and consent of instructor. (Same as Audiology and Speech Pathology 4340.) (Speech Path. is primary department.) For letter grade only.

4341 Clinical Practice in Communication Disorders in Schools (3) Prereq: Audiology and Speech Pathology 4350-30-40, Special Ed. 4300, and consent of instructor. S/NC. F, S.

4342 Seminar in Communication Disorders in Schools (3) Prereq: Audiology and Speech Pathology 4320-

4350-30-40, Special Ed. 4300, and consent of instructor. F, S.

4350-60-70 Problems in the Education of Excep-
tional Children (3, 3, 3) Prereq: Consent of instructor.
than January 1 of the academic year preceding the actual experience. Prereq: 4110, 4120, 4130, 4150, 4310, 4311, 4740. S/NC. F, W, S.


4924 Student Teaching of the Emotionally Disturbed (3-9) Individual tutoring and classroom observation and teaching. Prereq. or coreq.: Educ. C&I 4720 or 4820. S/NC.

4930 Aural Rehabilitation: Speechreading and Auditory Training (3) (Same as Audiology and Speech Pathology 4930.)

4940 Introduction to the Verbo-Tonal System (4) (Same as Audiology and Speech Pathology 4940.)

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

Technological and Adult Education

Technological and Adult Education (1988)


Assistant Professors: R. H. Pierce, Ph.D. Ohio State; T. L. Powell, M.S. Oklahoma.

Instructor: C. W. Wright, M.S. Arizona State.

GENERAL

2010-20-30 Field Experience in Vocational Education (1,1,1) Field experience in public school programs in agriculture, business, distributive, trades and industries, and industrial arts education. S/NC only.

3000 Introduction to Vocational Education (1) Introductory and exploratory experiences concerned with teaching careers in all areas of vocational education. Includes visitation within a vocational setting.

3960 Introduction to Adult Education (3) Adult Education as profession including diversity and scope of clientele and programs.

4010 Development and Utilization of Advisory Committees (3) Philosophy and rationale for use of craft advisory committees. Their selection, organization, implementation and utilization.

4130 Special Topics (1-3) Topics to be assigned. May be repeated for a maximum of 9 hours.

4140 Individual Study in Vocational-Technical Education (1) Individual study may be approved by supervising instructor and the service area coordinator or department head. Approval form must be filed in the Office of the Department Head. May be repeated.

4310 Office Machines/Technology (3) An introductory course to prepare preservice teachers for teaching office machines. Emphasis is on knowledge of office machines for classroom use and the development of instructional skills on these machines.

4322 Word Processing Applications (3) Orientation to word processing and applications; methodology for teaching word processing; hands-on experience with dictation equipment and microcomputers/word processors. Prereq. Advanced typewriting coursework and permission of instructor.

4730 Design and Management of Instruction for Adults (3) Training designs, instructional techniques in workshops, seminars, and conferences for adults. S.

4740 Adult Education Program Design and Management (3) Processes of program development, with special application to adult training programs. W.

4750 Utilization of Instructional Media (3) (Same as Educ. C&I 4750 and Information Science 4750.)

4760 Adult Development and Training (3) Application of concepts of adult development to training programs for adults. F, S.

4770 Practicum in Employee Training and Staff Development (3) Assignment of duties and responsibilities of trainers in sponsored training programs for adults. May be repeated up to nine hours. Prereq: 3960 and consent of instructor. S/NC only. F, W, S.

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

Agricultural Education (056)

3450 Agricultural Experience and Future Farmers of America Programs (3) Prereq. Consent of instructor.

3460 Methods in Teaching Agriculture (3) Prereq. Consent of instructor.

3470 Program Development and Adult Education in Agriculture (3) Prereq. Consent of instructor.

4110 Organizing and Teaching Agricultural Mechanic (3) Methods of teaching agricultural mechanics to vocational agricultural students. Emphasis on special competencies needed for planning, conducting, and evaluating agricultural mechanics programs. Prereq.: Agriculture 1120, Agricultural Mechanization 3110, and/ or consent of instructor. 2 hours and 2 labs.

4230-31-32 Problems in Ag-Business Education (1-6, 1-6, 1-6) Total not more than 9 hours.

4240-41-42 Seminar in Agricultural Education (1, 1, 1) Prereq. 4350 or consent of department head.

4350-56 Student Teaching in Agricultural Education (9-6) Offered in off-campus centers. Application must be filed not later than final quarter of junior year. Courses must be taken concurrently. Prereq.: 4350, 3460, 3470, consent of instructor. Undergraduate credit only. S/NC.

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

Business Education (207)

2300 Advanced Typewriting - Proficiency (3) Proficiency credit for students planning to certify in office technolgy who have typewriting experience equivalent to an advanced typewriting course. Prereq. Must have completed coursework in advanced typewriting or consent of department.

3400 Principles of Business Education (3) Historical background and present status; principles of vocational education applied to business education; guidance activities of business teachers.

3410 Pre-Student Teaching Seminar (1) Orients student teachers to the off-campus centers and the student teaching program; discusses the objectives and activities of the student teaching program, meets special needs of student teachers; and raises awareness of professional liability. The pre-student teaching seminars must be completed the quarter immediately preceding student teaching. Fall quarter student teachers complete pre-student teaching seminars spring quarter.

4320 Teaching Basic Business Subjects (2) Materials, evaluation procedures, and recent research in subject fields.

4330 Teaching Typewriting and Word Processing (2) Materials, evaluation procedures, and recent research in subject fields.

4340 Teaching Shorthand (2) Materials, evaluation procedures, and recent research in subject fields.

4345 Microcomputer Business Programming Applications (3) An introductory course in operating and programming microcomputers. BASIC languages is used, and programming examples are oriented to business applications. Data processing and word processing applications are included. Open lab available for required hands-on experience. Letter grade only.

4350 Teaching Accounting and Data Processing (2) Materials, methods, evaluation procedures, and recent research in subject fields.

4370 Seminar in Business Education (3) Current business and education problems, viewpoints of leaders in field, special attention to problems of those enrolled. S/NC only.

4390 Special Topics (1-9) Topics to be assigned. May be repeated for maximum of 9 hours total. May be offered for letter grade or S/NC only.

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

Distribution Education (278)

4410 Student Teaching in Distributive Education (9) Full-time, supervised experience in classroom teaching, preparation, classroom supervision, counseling, and training. Prereq.: 4400, 4470; Ed. C&I 3016-20 or 30 or VTE 4300; Educ. Psych. 3810; 4140 or equivalent. Undergraduate credit only. S/NC.

4420 School and Community Relationships for the Teacher Coordinator (6) Content dependent upon teaching assignment; human relations evolving from school, parent, business, and other community contacts. Must be taken with 4410. Undergraduate credit only. S/NC.

4430-31-32 Problems in Distributive Education (1-3, 1-3, 1-3) Selected research problems in teaching and coordinating distributive education programs. May be repeated. Maximum credit 6 hours each.

4440 Supervised Distributive Experience (3-9) Minimum 200 hours experience for each 3 credit hours in approved distributive education coordinated analytic project. May be repeated for a maximum of 9 hours.

4450 Areas of Distribution (3) Marketing, product or service technology, social skills, basis skills, and distribution as these areas affect the distributive education curriculum in secondary and post secondary programs.

4460 Organization and Operation of Distributive Education Programs (3) Background and development of selected career fields; federal and state legislation; curriculum and briefing the training supervisors; advisory committees; adult education and other community services. Prereq.: 4460 and 4470.

GRADUATE
Consult the Graduate Catalog for listing of graduate level courses.
Home Economics Education (490)

2240 Introduction to Home Economics Educational Programs (4) Introductory and exploratory experiences designed to acquaint the student with activities and interests in home economics. Prereq: 2240 F.

2420 Curriculum Development in Vocational Home Economics (4) Planning of curriculum and design of instruction for the classroom. Prereq: 2240, 3420. To be scheduled one of the two quarters immediately preceding student teaching. W.

4400 Teaching in Community-Based Home Economics Programs (4) Planning and implementing community-based home economics education programs-methods, curriculum, delivery systems, evaluation. Includes a field experience. Senior standing required. W.

4500 Field Experience in Home Economics Community-Based Programs (6) Supervised field experience in appropriate related community-based programs. Includes seminar. S, N/C. S.

4509 Field Experience in Home Economics Related Occupations (4) Supervised field experience and seminar in occupations which utilize home economics skills and knowledge. Prereq: Consent of instructor. S, N/C. May be repeated.

4510 Teaching Occupational Home Economics (2) Methods, organization and curriculum development for Home Economics Related Occupational programs. Prereq. or coreq: 4240 and 4509.

4610 Student Teaching in Vocational Home Economics (9) Off-campus teaching centers. Prereq: 4610. Prereq. or coreq: 4240 and 4240. S, N/C.

4611 Student Teaching in Vocational Home Economics (6) Taken with 4610. Prereq: 2240, 3420, 4240. Coreq: 4610. S, N/C.

4718-28-38 Honors: Home Economics Education (3, 3, 3) For juniors and seniors showing special ability and interest in home economics education. Prereq: Consent of department head.

GrADUATE

Consult the Graduate Catalog for listing of graduate level courses.

Industrial Education

1610 Engine Analysis (3) Designed to give experimental and theoretical approach to Automotive Technology. Engine tune-up and engine overhaul techniques and procedures are studied and practiced.

1620 Graphic Communications (3) Drafting as a means of communication in technology. Orthographic and mechanical drawing, blueprinting, drafting, technical, and applications of photography.

1630 Basic and Applied Electricity (3) Operation and characteristics of electrical systems and devices. Construction of demonstration apparatus and various electrical projects involving function of different types of circuits.

1640 General Metals (3) An introductory course dealing with processes, equipment, materials, products, and organization of metal-working industries. Includes processes in basic machining, foundry, sheetmetal, forging, heat treatment, arc and gas welding, fabrication and the use and care of common metalworking tools.

1642 Welding and Cutting Practices (3) Prereq: 1640.

1681 General Woodworking (3) Basic course dealing with processes, tools, equipment, products, organization of woodworking industry. Stresses importance in safety and using hand tools and basic machinery.

2611 Power Mechanics (3) Includes various prime movers, methods of utilization, distribution and transmission of power with internal combustion engines. Maintenance and repair of small engines is stressed.

2620 Industrial Graphics (3) Auxiliary views, sections, commercial practice, fasteners, dimensioning, working drawings, and machine drafting. Prereq: 1620.

2630 Fundamentals of Applied Electronics (3) Electrical circuit analysis and introduction to semiconductor and IC applications, including amplifiers, switching and timing circuits, and oscillators. Prereq: 1630.

2632 Electronics Technology (3) Basic principles and application of electronics. Undergraduate credit only.

2641 Machine Tool Processes (3) Introductory course of the function, care, set-up, operation, and theory of basic machine tools. Prereq: 1640.

2652 General Plastics (3) Characteristics of thermoplastics and thermal setting materials, methods of determination, and resin conversion to finished product.

2660 Furniture and Cabinet Construction (3) Comprehensive study of cases and carcass construction with emphasis placed upon furniture and built-ins. Prereq: 1661.

2800-01-02 Basic Experiences in Trade and Industrial Education (3, 3, 3) Methods and materials of instruction.

3080-81 Machining of Metals (3, 3) Introduction to machine shop theory and practice in using basic machine tools. Undergraduate credit only.

3612 Automotive Mechanics (3) Advanced laboratory experience in tune-up, overhaul, transmission, and the suspension system. Prereq: 1610.

3620 Architectural Graphics (3) Introduction to fundamentals of graphic representation and architectural architecture. Light construction principles are stressed and working drawings for a residential building are developed. Prereq: 1620.

3630 Digital Electronics Technology (3) Basic principles and application of digital electronics. Prereq: 2630 or permission of instructor.

3640 Advanced General Metals (3) Provides experiences in areas of hot and cold forming of metals, molding and metal finishing, tool grinding, heat treatment, fabrication, and precision measurement. Prereq: 2641.

3650 Welding, Brazing, Cutting, and Related Processes (3) Various types of welding equipment and fundamental techniques of welding. Undergraduate credit only.

3651 Plastic Processing (3) Plastics production equipment and related problems in fabrication and processing of plastics. Prereq: 2652 and 1661.

3662 Construction Methods and Materials (3) Materials, methods, and equipment used in residential construction, including location and excavation, foundation, framing, roof, interior and exterior finishes, installation, and assembly practices. Prereq: 1661.

3672 Graphic Arts Reproduction Processes (3) Graphic arts skills in printing and duplicating techniques and other modes of graphic communication.


3810 Related Science, Mathematics, and Technology in Occupations (15) Prior department approval for registration. Applicants must show evidence of bonafide occupational experience compatible with State Plan requirements. Occupational experience must be in a recognized trade area. S, N/C.

3811 Manipulative Skills in Occupations (15) Prior department approval for registration. Applicants must show evidence of bonafide occupational experience compatible with State Plan requirements. Occupational experience must be in a recognized trade area. S, N/C.

3812 Knowledge of Related Subjects in Occupations and Personal Qualifications (15) Prior department approval for registration. Applicants must show evidence of bonafide occupational experience compatible with State Plan requirements. Occupational experience must be in a recognized trade area. S, N/C.

3820-21-22 Part-time Programs in Cooperative Industrial Training (3, 3, 3) Principles of organization, methods, and materials.

3850 Shop Organization and Management (3)

3860-61 Materials and Methods for Teachers of Shop and Related Subjects (3, 3)

3870 School Shop Safety (3)

4620 Special Topics in Drafting (3) Industrial practices in specialized areas of drafting selected for the individual student. Prereq. 6 hours of drafting.

4630 Industrial Electronics and Digital Equipment Controls (3) Applications of digital and analog electronics in industrial and control circuitry. Emphasis is placed on circuit analysis, trouble-shooting, and synthesis of controlled automation, including microprocessor applications. Prereq: 3830.

4660 Vocational Technical Laboratory Equipment Maintenance (3) Understanding of preventive maintenance, maintenance, and calibration of instruments and electrical power equipment used in industrial education shops.


4670 Manufacturing Processes (3) The manufacturing processes of industry and their relationship to careers. Prereq: 2621, 2641, 2660, 3651, or consent of instructor.

4671 Materials and Processes (3) Organic and inorganic materials and processes used to produce finished products. Content, curriculum, and techniques of laboratory operation. Prereq. Consent of instructor.

4682 Power and Energy (3) Development, control, transmission, conversion, interrelationship of power sources; content, curriculum, and techniques of laboratory operation. Prereq. Consent of instructor.

4690 Visual Communications in Industrial Arts (3) Methods of developing and transmitting ideas and information as related to industry and society. Content, curriculum, and techniques of laboratory operation. Prereq. Consent of instructor.

4691 Course Construction in Industrial Arts (3) Advanced work in the selection and arrangement of course content. Emphasis upon instructional objectives, project selection and informational assignments and evaluation. Prereq. Consent of instructor.

4801-02-03 Tools and Machine Design (3, 3, 3) Tool and machine design, calculations, design systems, dimensions, electro-mechanical, metal finishing, and related topics. Prereq. 3651.

4810 Directed Teaching (9) Guided observation and teaching in trade, industrial, and/or technical programs in secondary, adult and post secondary, and non-baccalaureate programs. Emphasis upon instructional objectives, project selection, and instructional assignments and evaluation. Prereq. Consent of instructor.

4815 Industrial Training & Supervision (3) Principles and techniques of handling and understanding the relationship between trainers, supervisors and employees. Covering such topics as effective communication, human relations, leadership, health and safety, and administrative and technical skills for trainers and supervisors. Prereq. Senior standing.
4620 Foremanship Training by the Conference Method (3)

4630-31 Job Analysis (3, 3) Principles, practices, instructional methods.

4840 Methods of Teaching Shop and Related Subjects (3) Undergraduate credit only.

4850-51 Curriculum Building in Trade and Industrial Subjects (3, 3) Arranging course material in trade subjects, following up results of job analyses, preparing checking sheets and individual job sheets in both trade and related subjects. Prereq. or coreq: 4120.

4860-61-62 Problems in Industrial Education (3, 3, 3)

4870 Numerical Control (3) Tooling, manual programming, automatic programming, automatic programming language, and use of automatic programmer as a computer. Undergraduate credit only.

4875 Microcomputer Programming for Education and Industry (3) This course is an introduction to the application of microcomputers for education and industry and the implications and impact of microcomputers on industrial education. Open lab available for required hands-on experience in operations and programming. Letter grade only.

4880-81-82 Seminar in Industrial Education (3, 3, 3) Educational innovations, current events, problems, and other topics associated with the field of industrial education.

4885 Organization and Development of Vocational Industrial Clubs of America (VICA) (3) Designed to give the industrial education teacher experiences and an understanding of the organization and operation of VICA. Prereq: Undergraduate degree and 3 year teaching experience when taken for graduate credit.

4890 New Developments in Industrial Education (3) Developments, pressing problems and recent trends in field of industrial education as presented by a coordinating instructor in conjunction with knowledgeable resource personnel.

4891 New Developments in Industrial Education (3) Developments, pressing problems and recent trends in field of industrial education as presented by a coordinating instructor in conjunction with knowledgeable resource personnel.

4895 New Developments in Industrial Education (3) Developments, pressing problems and recent trends in field of industrial education as presented by a coordinating instructor in conjunction with knowledgeable resource personnel.

4896 Internship in Training and Supervision (6, 9, 15) Cooperative work experience as a trainer or supervisor in an industry, business or health institution. Supervision of the experience is conducted by a person in management and the university coordinator. Seminar required. Prereq: Senior standing and VTE 4815. S/NC only.

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

William T. Snyder, Dean
William A. Miller, Associate Dean
Andrew W. Spickard, Associate Dean

The engineer applies mathematical and scientific knowledge in planning economical ways of providing materials and energy in forms that are useful to humankind. In today's technology-based society, everyone feels the effects of the engineer's plans and decisions. Hence, there is a continuing and urgent need for engineering graduates who possess a thorough understanding of mathematical and scientific principles, who can apply these principles to the solution of practical problems, and who can view the solutions in their overall social perspective so that the actions that they recommend will be truly beneficial. It is the purpose of the College of Engineering to educate men and women to the high levels of technical competence and social understanding that will enable them to fulfill their responsibilities as professional engineers.

Graduates of the B.S. curricula offered by the college may enter directly a position in industry, government, or private practice, or may pursue advanced study in graduate school. Their professional activities include research, development, design, operations analysis, construction, production supervision, and technical sales. Many practice their profession in Tennessee; but engineering knows no geographical bounds, and graduates of the college serve throughout the nation and in other countries as well.

The college had its beginnings early in the history of the University when surveying was introduced into the curriculum in 1838. In 1877 civil engineering was first recognized as a curriculum. The first mechanical course appeared in about 1847; other mechanical courses followed, and in 1877 this body of studies was designated as mechanical engineering. The first mechanical course introduced into the curriculum in 1838. In 1888, the program was dormant until it was revived in the Department of Chemical Engineering shortly after 1940. A separate degree in metallurgical engineering was authorized in 1957. Although the rudiments of chemical engineering appeared in the form of industrial chemistry shortly after 1900, a full chemical engineering program and a department were not established until 1936. Industrial engineering was introduced in 1940, was dropped for a time during the war years, and was reinstated in 1947.

Nuclear engineering was established as a separate curriculum in 1957 in response to the rapidly increasing demand for engineers with a knowledge of nuclear phenomena. Engineering physics, a program operated jointly with the physics department, first appeared as an engineering curriculum around 1942. Curricula in engineering mechanics and aerospace engineering were added in 1963 and 1966, respectively, and a curriculum in engineering science was added in 1967.

The first dean of the college, Professor Charles E. Ferris, was appointed in 1912. Prior to that time the engineering programs were organized as a school, with a chairman of the faculty. Other former deans are Nathan W. Dougherty, who served from 1940 to 1956, Armour T. Granger, who served from 1956 to 1965, Charles H. Weaver, who served from 1965 to 1968, Fred N. Peebles, who served from 1968 to 1980, and Robert E. C. Weaver, who served from 1981 to 1983.

The Cooperative Engineering Program was established in 1926. The University of Tennessee was one of the early pioneers in this valuable type of education, which originated at the University of Cincinnati in 1905. The cooperative program is open to all students in good standing in the college.

The college, in cooperation with industrial sponsors, established the Minority Engineering Scholarship Program in 1973. The program goal is to increase significantly the number of qualified black engineering graduates.

The Engineering Experiment Station was established in 1922.

The college has ten major undergraduate curricula in which a student may specialize: aerospace, chemical, civil, electrical, industrial, mechanical, metallurgical, and nuclear engineering; engineering physics, and engineering science.

Agricultural engineering is based in the College of Agriculture with facilities located on the Agricultural Campus. The agricultural engineering curriculum is offered cooperatively by the College of Agriculture and the College of Engineering. Details of the curriculum may be found in the College of Agriculture section of this catalog.

Facilities

The College of Engineering is housed in Ferris, Estabrook, Perkins, Dougherty, and Berry Halls, and in the Nuclear Engineering Building and East Stadium, all located on the southeastern end of the campus, and in the Alumni Memorial Auditorium-Gymnasium.

Ferris Hall. This building houses the offices, classrooms, laboratories, and shops of the electrical engineering department, and the Water Resources Laboratory. There is also a remote input/output terminal and computer graphics facility connected with the University of Tennessee Computing Center.

Estabrook Hall. Some operations of the Departments of Civil Engineering and Engineering Science and Mechanics are carried out in Estabrook Hall. A basic engineering lecture room, four engineering drawing laboratories, and engineering drawing staff offices are located on the second floor.

Offices of the Co-Op and Minority Engineering Programs are located on the first floor where there is also a personal computer laboratory.

Perkins Hall. This building houses the Offices of the Co-Op and Minority Engineering Programs are located on the first floor where there is also a personal computer laboratory.

Nuclear Engineering Building. This build-
ing houses operations of the nuclear engineering department and contains laboratories and equipment for monitoring, computing, and investigating various nuclear phenomena. It also houses subcritical reactors.

Nathan W. Dougherty Engineering Building. This building, the most recent and largest of the engineering buildings, houses the Departments of Chemical, Materials Science and Engineering, and Mechanical and Aerospace Engineering. In addition to class-rooms and instructional laboratories, it provides modern facilities for various types of research.

Alumni Memorial Auditorium-Gymnasium A portion of this building houses offices, classrooms, and laboratories of the Department of Industrial Engineering.

Berry Hall. This building is used by the Department of Civil Engineering for maintenance and research work.

East Stadium. This facility, recently decommissioned as a dormitory, provides space for graduate student offices.

Tau Beta Pi National Headquarters

The college is honored to have the National Headquarters of Tau Beta Pi, the National Engineering Honor Society, housed on our campus. This honor was earned in part through the untiring efforts of R.C. "Red" Matthews, who served as secretary-treasurer for the organization from 1905 to 1947. The suite of offices, located in Dougherty Hall, is occupied by Mr. J. D. Froula, secretary-treasurer, and his staff.

Cooperative Engineering Program

The five-year Cooperative Engineering Program is offered to students in the college in order to provide an engineering education that affords the opportunity to combine significant experience in industry with academic preparation.

Cooperative work assignments differ from part-time or summer employment in that they involve regularly scheduled cycles of full-time academic quarters alternated with full-time work quarters—usually six, a minimum of five work periods alternating with academic quarters prior to beginning their senior year, in order to qualify for co-op placement. With very few exceptions, transfer students must complete a minimum of two academic quarters in the College of Engineering at UTK before beginning co-op participation.

Students in the Cooperative Engineering Program are classified as follows in terms of quarter hours credit completed in the standard undergraduate program for their anticipated degree in engineering:

- Freshman: 0-52.9
- Sophomore: 53-100.9
- Junior: 101-149.9
- Senior: 150- up

Second course and transfer students will be assigned "equivalent quarters completed" (not dependent upon hours completed) which will indicate progress toward the engineering degree. Total hours completed are not an applicable measure of the progress of such students.

Such students who wish to co-op must plan very carefully in order to fit into the established schedule of courses offered for co-ops. Students planning to transfer should begin working as soon as possible with an advisor from the department they plan to enter in order to meld into the co-op schedule at an optimum time. A brochure with further details may be obtained from the Cooperative Engineering Program Office, University of Tennessee, Knoxville, Tennessee 37996-2350.

Graduate Program

Graduate programs leading to the degree of Master of Science are offered in all areas of study, and the degree of Doctor of Philosophy is offered in eight major subjects: aerospace engineering, chemical engineering, electrical engineering, engineering science, mechanical engineering, metallurgical engineering, nuclear engineering, and polymer engineering. A Master of Engineering degree focusing on engineering design professional practice is offered in aerospace, civil, electrical, industrial, mechanical, and nuclear engineering. Information concerning graduate programs is given in the Graduate Catalog.

Graduate Program at the UT Space Institute

At The University of Tennessee Space Institute near Tullahoma, graduate-level courses are offered in engineering fields such as aerospace, electrical, and mechanical engineering, and in mathematics and physics. Current programs lead to the M.S. and Ph.D. degrees. Information may be obtained from the Registrar, The University of Tennessee Space Institute, Tullahoma, TN 37388.

Engineering Experiment Station

William T. Snyder, Director

The management of the Engineering Experiment Station is vested in the president of the University, the dean of engineering and the director.

An advisory committee consisting of the heads of the departments of the college and the heads of departments in allied scientific fields may assist in determining policy and procedures. Members of the faculty of the college are available for consultation and advice in technical matters.

The station is organized to conduct research underlying engineering practice and to aid in the development of the state's resources and industries insofar as funds available will permit. Inquiries from industries concerning technical questions which interest them are welcomed.

Bulletins are published from time to time giving the results of various investigations. Upon request, unpublished results of current studies are made available to interested parties.

Curricula in Engineering

NATIONAL ACCREDITATION

Since 1938 engineering programs at institutions of higher learning have been accredited by an organization formed by many engineering societies and known as the Accreditation Board for Engineering and Technology (ABET). Currently accredited engineering curricula at UTK include aerospace, agricultural, chemical, civil, electrical, engineering science, industrial, mechanical, metallurgical, and nuclear.

DESIGNATION OF A MINOR

An engineering undergraduate may declare a minor in a non-engineering subject area and have the minor listed on the permanent record under the following conditions:

1. Only one minor may be declared and officially designated.

2. The minor must be one officially approved and described in the UTK catalog. No unofficial minors will be recognized.

Minors exist in Architecture and Business Administration, and in numerous departments in Agriculture and Liberal Arts. Presently no engineering student can minor in another engineering discipline, nor can a non-engineering student declare an engineering minor.

3. Courses taken to satisfy the minor may also be used to satisfy engineering degree requirements, provided that the courses would be a part of engineering degree requirements even if no minor was declared. Completion of a minor often involves the taking of some courses which cannot be used to satisfy the minimum requirement for an engineering degree.

4. A student should notify his or her advisor and major department office when beginning work on a minor. The intention to complete a minor must be declared at the time of application for a degree if the...
Broadly stated, these electives serve a three-fold need: to provide an expanded sensitivity to the human aspects of the practice of engineering; to enrich the student's knowledge of the world in which he or she lives—its culture, behavior patterns, history, and governance; and to provide a basis for the appreciation of the ability to deal with complex interactions between technology and society in the contemporary world. Engineers are now working with new constraints that demand a consciousness of the social and political implications of their work. They are interacting with the public in explaining their work as the public demands greater participation in the decision-making process concerning the utilization of technology. Because of the significance of this technology-society interaction, engineering students are encouraged to seriously consider their selection of required electives in this area.

Students are urged to plan a non-technical electives program which will enhance their own interests and objectives. It is recognized that, just as engineers show individual preference for concentration in one of the areas of engineering, so do their interests in the many areas of the humanities and social sciences. However, these subjects should be pursued with sufficient depth in terms of courses to permit a reasonable level of comprehension of the selected areas. In order to increase the effectiveness of this interest and to meet ABET accreditation guidelines, the Humanities and Social Studies Committee of the college provides a list of approved courses in the form of 13 coherent groups of courses identified in three broad areas as follows:

Area I. Human, Economic, and Political Relationships to Engineering
A. Governance and Political Science
B. Economics
C. Sociology and Psychology

Area II. Society—Its Culture, History, and Literature
A. Fine Arts
B. American Culture
C. History
D. Literature
E. Anthropology

Area III. Technology and Society
A. Human Habitat
B. Technology Assessment
C. Communication
D. Resources

Courses in the list which follows are selected by the committee with revisions as course offerings and needs change. They are recommended as satisfying the non-technical (humanities-social sciences) electives requirement in the various curricula of the college. However, the structure and permissible courses of the non-technical elective content of each engineering curriculum are established by the respective departments. Therefore, individual departments may delete courses from this list, require certain courses, or require selection of courses from specific subgroups. Students should consult their departments for any restrictions.

This list is intended to eliminate paperwork for the most common, but it is not all inclusive, and it is recognized that individual students may desire to pursue courses not on the approved list. Those students should discuss their interests and desires with their academic advisor prior to registering for elective courses if such courses are to be used to satisfy degree requirements. Also, the catalog may state prerequisites for upper-division courses in the list. In such cases, students are encouraged to consult the instructor in the particular course. With respect to student records these lists are handled by means of a substitution sheet which originates with the advisor. Courses which are primarily skill development courses, involve mathematics or science, are intended for specialists in another field (such as education), or which are very elementary in nature are usually not approved as humanities-social science electives in an engineering curriculum. A minimum of 24 quarter hours of acceptable humanities-social science electives are required in all programs.

ELECTIVE COURSES IN HUMANITIES AND SOCIAL SCIENCES

Area I. Human, Economic, and Political Relationships to Engineering

IA. Governance and Political Science
Economics 3340
Geography 3610
History 3785, 4310-20, 4370, 4380
Political Science 2510-20, 3545-46, 3555, 3566, 3710-20, 3750-60, 3801-02-03-04, 3880, 4060, 4535-36, 4540-50, 4545, 4665-66
Sociology 3030, 4530, 4560

IB. Economics
Economics 2510-20, 3210-11, 3220, 3230, 3240, 3210, 3310, 3410-20
Geography 2410-20-30

IC. Sociology and Psychology
Geography 3000, 3600, 3860
Psychology 2500, 2520, 2540, 3120, 3220, 3240
Rural Sociology 3420
Sociology 1510-20, 3010, 3030, 3150, 3220, 3320, 3330-40-50, 3410-20, 3610, 4330, 4560

ID. Human Values
Geography 3610
History 3000-60, 2370
Philosophy 1510-20, 2310, 2510, 3111-21-31-41-51, 3440, 3460
Religious Studies 2610, 3610-10-20, 3611, 3740
Zoology 3410 (Bioethics)

Area II. Society—Its Culture, History, and Literature

IIA. Fine Arts (Note: No more than 8 quarter hours may be taken in the performing arts—band, chorus, etc. Individual performance courses are not acceptable.)
Art 1705, 1815-25, 3704-05, 3716-17, 3725-26, 3735-36, 3745-46, 3750, 3756-58
English 2660, 3411-12-20-30-40
Music 1210-20, 2310-20-30-40, 3350
Philosophy 2410, 3910
Theatre 3252-53-54

IIB. Culture
American Studies 3010
Anthropology 3410
Afro-American Studies 2010-20, 3550-60
French 2610-20
Geography 3430, 3450, 3660, 3910-20-30-40

II. History
Art 3735-36, 3745-46, Geography 4240.

III. Literature

III.A. Anthropology
2510-20-30, 3410, 3450, 4420, 4210, 3100-30, 3190, 3400, 4330, 4210.

III.B. Communication
Comparative Literature 2010, Philosophy 3720, 4720, Sociology 4450, 3610, 4330.

III.C. Language
Comparative Literature 2010, Philosophy 3720, 4720, Sociology 4450, 3610, 4330.

III.D. Economics
2620, 2650.

III.E. Forestry
2500, 2650, 2750.

III.F. Geography
2210, 2490, 3490.

III.G. History
University Studies 3110-20.

American History Requirement. Engineering students, regardless of national origin, must fulfill the American history requirement described on page 14 of this catalog. Those students who have not had the required year of American history in high school may choose the required nine quarter hours from American History 2510, 2520, 2511, and 2521, or other courses deemed suitable by the Department of History. These hours can be counted as part of the required block of humanities and social science electives.

Technical Electives. Technical electives are to be selected with the advice and approval of the student’s major department. In some of the curricula tabulation a choice of such electives is indicated, and regulations in regard to their selection are stated.

The Voluntary ROTC Program. Engineering students may participate in the ROTC Program. Advanced ROTC courses (3000 and 4000 series) may be counted as technical elective credit toward an engineering degree up to a total of nine (9) quarter hours. Normally, Military Science courses cannot be used as humanities—social science electives. Individual departments determine the appropriate substitutions.

Approval of Electives and Substitutions. Not later than the beginning of the third quarter prior to anticipated graduation, each student shall discuss with an advisor the status of the program of study. Any necessary additions to or substitutions in the program, or electives requiring special approval, shall be cleared in written form at that time, and it is the student’s responsibility to see that all necessary approvals are secured. Inattention to such matters may delay graduation.

ADVISORY CONFERENCE. The relationship between an engineering student and an advisor is an important one, and a student should go to the advisor for assistance or information at any time. All students are required to see their advisor during the Fall Quarter (or during one other quarter if they are not in school during the fall). Engineering students normally are asked to see their advisors during the two-week period immediately preceding the advance registration period. A record of the advising conference is needed in order to advance register. During other quarters of the year, the student’s department determines whether or not an advisor must be consulted prior to advance registration. An advising conference record card must be presented in order to advance register for these quarters also, though an actual conference is required only once a year for most students.

CURRICULA, TABULAR VIEW
Following are the course requirements for the various engineering curricula. The numbers in the columns indicate the number of credit hours required for each course. Columns represent the three principal quarters of the academic year—fall, winter, and spring. This is not a schedule, and courses are available in quarters other than those presented. Refer to the course catalog for the schedule. This is not a schedule, and courses are available in quarters other than those presented. This is not a schedule, and courses are available in quarters other than those presented.

Aerospace Engineering

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<td>I</td>
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<tr>
<td>Math 1840-50-60</td>
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<tr>
<td>Chemistry 1110-20-30</td>
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<tr>
<td>English 1016-20-30</td>
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<tr>
<td>Physics 1410-20</td>
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<td>Basic Engineering 1310-20-30</td>
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<td>Basic Engineering 1410</td>
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Sophomore

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<td>Math 2840-50-60</td>
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<tr>
<td>Physics 2310-20-30</td>
<td>3 3 3</td>
</tr>
<tr>
<td>Met. Engr. 2110</td>
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<tr>
<td>Computer Science 3150</td>
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<td>Humanities/social science electives</td>
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Junior

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<td>Elec. Engr. 3110-20-30</td>
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<td>Basic Engineering 4420</td>
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Senior

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<td>Aero. Engr. 4471-91</td>
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Total: 204 hours

Agricultural Engineering

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<td>Mathematics 1840-50-60</td>
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<tr>
<td>Aerospace Engineering</td>
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<td>Mathematics 2840-50-60</td>
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*Technical electives: upper-division courses in engineering, mathematics, or physics as approved by the department.
**Biomedical Engineering**

Available in Engineering Science Degree Program

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<th>Junior</th>
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<tr>
<td>Chem. Engr. 3221-19</td>
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</table>

Total: 203 hours

1. Minimum of one-half (12 quarter hours) of the humanities/social science electives must be taken from a single subgroup under one of the three areas of the humanities and social science electives.

**Civil Engineering**

Available in the College of Engineering

<table>
<thead>
<tr>
<th>Hours Credit</th>
<th>Freshman</th>
<th>Sophomore</th>
<th>Junior</th>
<th>Senior</th>
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<tbody>
<tr>
<td>Math 1840-50-60</td>
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<td>English 1010-1020-1030</td>
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<td>Chemistry 1110-20-30</td>
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<td>Basic Engineering 1310-20-30</td>
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<td>Basic Engineering 1410</td>
<td>4</td>
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Total: 206 hours

1. Required for pre-medical, pre-dental, and pre-veterinary medicine programs. Students in other biomedical engineering options should consult their advisor to replace the senior year Chemistry 2230 and technical electives.

2. Humanities/social science courses approved by the department.

3. Appropriate courses in the College of Engineering approved by the department.

4. Upper-division courses in mathematics, computer science, statistics, natural science, or engineering approved by the department. Zoology 3050 or 3080 recommended for pre-med.

**Chemical Engineering**

<table>
<thead>
<tr>
<th>Hours Credit</th>
<th>Freshman</th>
<th>Sophomore</th>
<th>Junior</th>
<th>Senior</th>
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<tbody>
<tr>
<td>Math 1140-50-60</td>
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<td>4 4</td>
<td>3</td>
<td>3</td>
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</table>

Total: 204 hours

1. Humanities/social science courses must be approved in advance by the department.

2. Technical Electives must be approved by the student's advisor and the primary must come from the departmental list of approved courses.

3. Mechanical Engineering 3311 may be substituted.

4. Mechanical Engineering 3311 may be substituted.
<table>
<thead>
<tr>
<th>Systems and Networks</th>
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<td>Elect. Engr. 4370...</td>
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<tr>
<td>Economics 2510...</td>
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<td>Humanities/social science electives</td>
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**Computer Engineering**

<table>
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<td>*Elect. Engr. 4740</td>
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<tr>
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<tr>
<td>Elect. Engr. 4640</td>
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<td>Elect. Engr. 4100</td>
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**Electronics and Instrumentation**

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<td>Humanities/social science electives</td>
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**Bioelectric Option**

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**Engineering Science**

**Hours Credit**

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<td>Mathematics 1840-50-60</td>
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<tr>
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<td>English 1010 or 1011, 1020-33</td>
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<tr>
<td>Graphics 1410-20</td>
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**Sophomore**

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<tbody>
<tr>
<td>Mathematics 2840-50-60</td>
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<td>Physics 2310-20-30...</td>
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<tr>
<td>Vehicle and Aerospace Engineering</td>
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<tr>
<td>Computer Science 3150</td>
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**Junior**

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**Mechanical Engineering**

**Hours Credit**

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<tbody>
<tr>
<td>Math 1840-50-60</td>
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**Sophomore**

<table>
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<tbody>
<tr>
<td>Math 2840-50-60</td>
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<tr>
<td>Physics 2310-20-30</td>
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<tr>
<td>Eng. Sci. &amp; Mech. 3311, 3700</td>
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<td>Met. Engr. 2110</td>
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**Industrial Engineering**

**Hours Credit**

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<tbody>
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<td>Math 1840-50-60</td>
<td>4 4 4</td>
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<tr>
<td>Chemistry 1110-20-30</td>
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<tr>
<td>English 1010-11-20-33</td>
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<tr>
<td>Graphics 1410-20</td>
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**Sophomore**

<table>
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<tbody>
<tr>
<td>Math 2840-50-60</td>
<td>4 4 4</td>
</tr>
<tr>
<td>Physics 2310-20-30</td>
<td>3 3 3</td>
</tr>
<tr>
<td>Eng. Sci. &amp; Mech. 3311, 3700</td>
<td>3 3 3</td>
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<tr>
<td>Met. Engr. 2110</td>
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<td><strong>Total: 206 hours</strong></td>
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**Junior**

<table>
<thead>
<tr>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>Civil Engr. 4230</td>
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<td><strong>Total: 207 hours</strong></td>
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</table>

*Course will usually be required; however, a student’s major advisor may substitute another 4000-level engineering course without filing a substitution form.

*A student must either take all of the first nine courses (two three lines), and the remaining three courses of the first nine may be any 4000-level or higher course in Electrical Engineering. If, with the consent of one of the faculty advisors in this option, a student may take any three of the first nine courses (two three lines) and the remaining six of the nine may be any 4000-level or higher course in Electrical Engineering.
Agricultural Engineering

(Basic Engineering and Graphics)

Basic Engineering (179)

Coordinator: J. E. Stoneking for Basic Engineering 1310-20, Graphics 1410-20; P. F. Pasqua for Basic Engineering 1330, 1410

1310 Statics (4) Vectors, forces and moments, equivalent force systems, free body diagrams and equilibrium, frames and trusses, friction; three dimensional equilibrium. Coreq: Math 1840. 4 hrs. lab.

1320 Particle Dynamics (4) Kinematics, simple harmonic motion; particle kinetics using Newton's laws: work and energy; impulse and momentum, impact. Prereq: 1310; coreq: Math 1850. 4 hrs. lab.

1330 Basic Thermodynamics (4) Introduction to thermodynamics: fluid statics and mechanics. Buoyancy, forces on submerged surfaces; Bernoulli's equation; first law of thermodynamics: discussing work, heat, and other forms of energy. Required of all engineering students except engineering physics majors. Prereq: 1310; coreq: Math 1850. 3 hrs. and one 3-hr. lab.

1410 Engineering Computations (2) Familiarization and introduction to the university computing systems for problems. BASIC language. Prereq: Math 1840. 2 hrs. and open computation lab.

Languages (443)

Coordinator: E. K. Boyce

Basic Faculty:

Professors C. A. Newton (Emeritus), M.S. Syracuse; W. W. Thomas, Jr. (Emeritus), B.S. Tennessee; Associate Professors G. H. Parham, Jr. (Emeritus), B.S. Cincinnati; E. K. Boyce, M.S. Tennessee; W. A. Lyday, Jr., M.S. Tennessee.

1410 Fundamentals of Engineering Graphics I (3) Graphical representation of three dimensional objects, shape and size. Technical sketching, geometric construction with emphasis on plane surface analysis. Presentation of engineering drawing. Two 3-hr., or three 2-hr. periods to include one hour of lecture per week.

1420 Fundamentals of Engineering graphics II (3) Graphical solution of three dimensional space problems; primary and secondary auxiliary views, basic concepts of tolerancing, fits; comprehensive graphics design problem. Two 3-hr. or three 2-hr. periods to include one hour of lecture per week. Prereq: 1410.

Engineering Studies

(Non-Departmental Unit)

Coordinator: E. E. Santsbury

Chemical Engineering

Professors:

J. J. Parona (Head), Ph.D. Northwestern, P.E.; D. C. Bogue, Ph.D. Delaware; E. S. Clark, Ph.D. California (Berkeley); D. W. Crawford, Ph.D. Cincinnati; O. L. Culberson (Emeritus), Ph.D. Texas; J. F. Fellows, Ph.D. Akron; G. C. Frazier, Jr., D. Eng. Johns Hopkins; J. M. Holmes, Ph.D. Tennessee; H. W. Heu, Ph.D. Wisconsin; H. F. Johnson (Emeritus), Ph.D. Yale; C. F. Moore, Ph.D. Louisiana

State: J. W. Prados (Vice President for Academic Affairs), Ph.D. Tennessee; C. D. Scott, Ph.D. Tennessee; C. O. Thomas, Ph.D. Tennessee; J. S. Watson, Ph.D. Tennessee.

Associate Professors:

P. H. Binkowski, Ph.D. Purdue; D. B. Bruus, Ph.D. Houston; C. H. Byers, Ph.D. California (Berkeley); R. M. Counce, Ph.D. Tennessee; T. L. Donaldson, Ph.D. Pennsylvania; A. C. Sheth, Ph.D. Northwestern.

Assistant Professor:

F. E. Weber, Ph.D. Minnesota.

Lecturer:

D. W. Lane, Ph.D. Tennessee.

Space Institute, Tulishoma

Adjunct Status

Part-time

BACHELOR OF SCIENCE PROGRAM

Chemical engineering is a discipline dedicated to the development, design, operation and management of plants and processes for the economical conversion of chemical raw materials to useful products. It is a broadly based discipline, with heavy emphasis on chemistry and mathematics, and also including physics, materials and the humanities. Graduates of the program are quite versatile, with careers in such fields as food and pharmaceutical processing, biochemical engineering, fuels production and conversion, polymers and plastics, process control and instrumentation, and many others.

The curriculum provides a central core of required courses with flexibility in the upper-division years to permit emphasis on preparation for graduate school or professional employment. A minimum grade point average of 2.0 for all departmental courses is required for graduation.

Elective Courses in Humanities and Social Studies. A minimum of 24 quarter-hours of humanistic-social science courses are required, which are to be selected from the list under "Curricula in Engineering". A minimum of 12 hours must be taken from a single sub-group under one of the three major heading.

PROGRESSION TO UPPER-DIVISION PROGRAMS

Progression of chemical engineering students to departmental Upper-Division courses is competitive and is based on capacity. Factors considered include overall grade point average, performance in selected lower-division courses and evidence of satisfactory and orderly progress through the prescribed curriculum.

Upper-Division Status: A Lower-Division student may apply for progression to Upper-Division Status after completing 80 quarter hours of Lower-Division engineering curriculum course work with an overall GPA of at least 2.4. This must include Chemical Eng. 2020 and 2020.

Provisional Status: Students who have completed 60 quarter hours of Lower-Division engineering curriculum course work with an overall GPA between 2.0 and 2.4 may apply for provisional status. The granting of PROVISIONAL UPPER-DIVISION STATUS is based on the availability of space in the departmental programs after UPPER-
DIVISION STATUS students have been accommodated. Provisional students are required to demonstrate their abilities to perform satisfactorily in upper-division courses before being admitted to the University's Graduate School. The University's Graduate School operates a Resident Graduate Program at Oak Ridge, Kingsport, and Chattanooga.

See the Graduate Catalog for detailed information.

Chemical Engineering (225)


3050 Thermophysical Properties (4) Estimation of equilibrium properties of gases, liquids, and solutions from macro- and microscopic approaches: enthality of vaporization, pressure, surface tension, heat capacity, latent heat, fugacity; relationships among properties. Prereq: Chem 3410, W, S.

3230 Special Problems (3) Investigation of chemical engineering problems.

3410 Flow of Fluids (3) Differential and overall momentum balances, mechanical energy balances; flow in tubes, piping systems, and packed beds; metering devices; pumps. 3 hrs. and 1 lab. Prereq: Math 2800, 3 hrs. and 1 lab. W. S.

3420 Heat Transfer (3) Differential and overall energy balances; steady and unsteady state heat conduction in simple geometries; heat transfer in tubes and heat exchangers; condensation and boiling radiation. 3 hrs. and 1 lab. Prereq: 3410. F, SU.

3440 Stagewise Operations (3) Analytical and graphical methods for stagewise separatory operations. Prereq: Chem 3420. S, SU.

3450 Diffusional Operations (3) Diffusion, simultaneous heat and mass transfer, applications including humidification, gas absorption, extraction. Prereq: 3420. Chem 3420, F, W.

3610 Introduction to Process Dynamics and Control (4) Process modeling and introduction to control system design. Mathematical models for several industrial processes are developed from a mass, component and energy balance basis. The models are compared to both industrial and laboratory data. Model linearization, transfer function and block diagram analysis, transfer function models, industrial sensors and values. Lab. Prereq: Math 2840, F, E. T. 2010, S, SU.

3620 Industrial Process Control (3) Design theory and practice for industrial process control. Experimental process modeling (process identification), feedback control, controller design. Advanced control, degrees of freedom, stability analysis, controller tuning. Control systems are designed for a number of typical industrial unit operations. Lab. Prereq: 3610. F, W.

4110 Chemical Engineering Data Analysis (3) Random and stochastic processes; statistical properties of samples and some systems; elements of probability; discrete and continuous distributions; statistical characterization of products and processes; empirical modeling of processes; statistical process control. Prereq: 3420, Math 3150. F, W, SU.

4150 Introduction to Optimization (3) Principles and applications of optimization techniques to chemical process design; unconstrained optimization, equality constrained optimization, inequality constrained optimization, and dynamic programming. Prereq: Math 2840.

4150 Computational Chemical Engineering (3) Introduction to computer-aided approaches in chemical engineering problems. Primary focus is on the application of existing computer programs. The applications studied include: Process design, material and energy balances, mathematical models, computer graphics, and personal computing. The programs studied are: ASPEN, SAS, CSMP, NAG/IMSL and various routines on the use of computer programs on the personal computer. Coreq: 4110. Prereq: Math 3150. Limited enrollment.

4210 Chemical Engineering Laboratory I (3) Laboratory investigations of thermodynamics, fluid flow, and heat transfer in chemical engineering operations. Prereq: 3410, 3420. Chem 3410, CH. 4210.

4220 Chemical Engineering Laboratory II (3) Laboratory investigations of mass transfer and reaction in chemical engineering operations. Prereq: 3440-50, 4210, 4520. F, W, S.

4230 Project Laboratory (3) Laboratory investigation of chemical engineering problem, stressing techniques of group effort. May be repeated.

4250 Introduction to Process Chemical Economics (3) Methods of cost estimating; analysis of product pricing based upon debt and equity financing methods; use of sensitivity analyses to deal with uncertainties; a detailed case study. Prereq: 4110. %K 4310-20 Seminar [1,1] Presentation and discussion of professional topics in A.I. Ch. 4310. 4310. Prereq: Consent of instructor.

4410 Design of Separation Processes (4) Design of multicomponent distillation systems, including layout of separation train, choice of operating variables; heat and mass balances; specification of major and peripheral equipment, including control systems. Selected problems emphasizing other separation methods, heat economy in complex systems, low-temperature processes, equipment selection and optimization. Prereq: 4440-50, 3600, 3610. W, S.

4420 Process Design and Economic Analysis (4) Development of process information into an integrated plant design. Product specifications, equipment characteristics, capital investment, operating costs, and economic merit. Prereq: 4410, 4530. S, F.

4430 Special Problems in Design and Economics (3) Extended senior design problems for engineering seniors in A.I. Ch. E. annual contest problem; other advanced design projects. Prereq: 4420.

4450 Hydrocarbon Processing (3) Study of specialized characterization of physical properties of fossil fuel raw materials, and of processes for conversion of fossil fuel raw materials into products needed in industry, such as industrial raw material and consumer markets. Prereq: 4420. F.

4480 Coal Processing to Liquid Fuels (3) Characterization of various coals with respect to current liquidation methods; modeling of conversion processes and estimation of maximum yields; water and oxygen requirements; pyrolysis; catalytic hydrogenation; reactor design considerations; review of selected articles from both the current literature and patents. Prereq: Consent of instructor.

4510 Transport Phenomena (3) Momentum, heat and mass transfer with emphasis on similarities in mathematical formulation and solution; applications in chemical engineering systems. Prereq: 3450.

4530 Chemical Reactor Fundamentals (3) Brief review of homogeneous and heterogeneous reaction kinetics; idealized homogeneous reactor models, both for closed and flow systems; corrections for non-ideal reactor behavior; some distributed parameter systems; reactor effectiveness factors and conversion in fixed bed catalytic reactors. Prereq: 3420, Chem 3430. W, S.

4540 Fluid-Solid Operations (3) Heat and mass transfer in fixed and fluidized beds: applications include adsorption, ion exchange, crystallization, Prereq: 3440-50.


4730 Mass and Energy Flow in Biological Systems (3) Basic physicochemical and organizational principles applicable to biological systems. Derivations of general relationships of biomass and energy transfer. Thermodynamics of transport and equilibrium in biological systems. Discussion of Voitterra's equation and biological clocks, etc. Prereq: Consent of instructor.

4740 Introduction to Transport Phenomena in Biological Systems (3) Application of principles of transport phenomena to biological systems. Transfer of chemical species across various cellular active transports, structure and rheology of physiological fluids, membrane and interfacial phenomena; analysis and design of artificial organs. Prereq: 3440 and 3450, or consent of instructor.

4750 Microbiological Process Engineering (3) Application of chemical engineering principles and design concept to microbiological processes; continuous culture of microorganisms; food processing and pharmaceutical processes. Prereq: 3440, 3450, or consent of instructor.

4780 Principles of Biochemical Separation (3) Fundamental aspects and similarities of modern bio-chemical operations in a separate course. Classroom demonstrations, design of production and analytical systems. Prereq: Consent of instructor.

4900 Special Problems in Chemical Engineering (3) Chemical engineering problems related to recent developments in industrial process or off-campus research. Prereq: Consent of instructor. May be repeated. Maximum credit 9 hours.

4910-20 Engineering Internship in Industrial Problems (6) Selected students work in small groups on real industrial problems. Work will be directed by a faculty instructor and by engineers from a host company. Internship will require two quarters of participation. Coreq: 4810 S/N. Prereq: 3610-20 and consent of instructor.

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

Civil Engineering

Including Environmental Engineering

Professors:
W. L. Grecco (Head), Ph.D. Michigan State, P.E.
E. G. Burdette1, Ph.D. Illinois, P.E.; M. S. Bronzini (Director, Transportation Center), Ph.D. Illinois, P.E.
Civil Engineering (254)

2260 Engineering Surveys (4) Mensuration through the application of surveying techniques; the theory of errors and their analysis; fundamental concepts of horizontal, vertical, and traverse surveying; basic surveying operations and computations. 3 hrs. lectures and one 3 hr. lab. Prereq: Math 1850.

2310 Seminar (1) Presentation and discussion of topics related to civil engineering.

2360 Route Surveying (3) Emphasis on the application of surveying techniques; the theory of alignment of transportation routes, specifically covering simple, compound, reverse and parabolic curves and spirals. Earthwork computations. Prereq: 2260.


3230 Design of Framed Structures (3) Selection of rolled beams; design of compression and tension members to resist applied and bending stresses. Prereq: 3210, coreq: 4410.


3320 Computer Applications in Civil Engineering (1) Use of digital computers to solve civil engineering problems. Prereq: Basic Engr. 1410.

3360 Surveying Practice (3) Route surveying procedures. Two 3-hr. labs. Coreq: 2360.

3600 Transportation Planning (3) Emphasis on transportation problems and perspectives, both rural and urban; use of the planning process to establish existing travel patterns, deciding of demand, proposing alternatives and their evaluation, and plan implementation. Prereq: Junior standing.

3610 Transportation Engineering (3) Introductory course on design, construction, maintenance, and operation of various transportation modes, their guideways and terminals. Prereq: Junior standing.


4110 Concrete Design (3) Reinforced concrete beams and columns; use of standard specifications. Prereq: 3210 and 3710.

4120 Concrete Design (3) Reinforced concrete continuous beams, floor slabs and column footings and retaining walls. Prereq: 4110 and 4410.


4230 Legal and Ethical Aspects of Engineering (3) Legal principles underlying engineering work; laws of contracts, torts, agency, real property; problems of professional registration and ethics.

4240 Structural Design (3) Plate girders, composite steel and concrete beams, connections and details, and design of small industrial building. Two 3-hr. periods. Prereq: 3230 and 4410.

4260 Photogrammetry (3) Methods of plotting maps from aerial photographs; stereoscopic plotting instruments; applications. Prereq: 2360, or Forestry Summer Camp for forestry majors.

4310 Soil Mechanics II (3) The compressibility of fine grain soils and the theory of time rate of consolidating. Shear strength of soils. Failure theories. 2 hrs. lecture and 1 lab.

4320-30 Seminar (2,1) Selected topics dealing with historical and modern civil engineering achievements and professional and ethical responsibilities. Prereq: Senior standing and completion of all junior level non-elective engineering courses.

4410 Deformations and Statically Indeterminate Structures (3) Flexural and shear deformations; theory of indeterminate beams, trusses, bents, and frames. Prereq: 3210.

4420 Analysis of Framed Structures II (2) Maximum forces due to moving loads; influence lines of influence lines; lateral forces due to earthquake and wind; analysis of portals, building frames, and space frames. Coreq: 4410.

4430 Construction Methods and Equipment (3) Fundamental operations in construction and selection of equipment; production rates, balancing of equipment, and cost estimates. Prereq: 3710.

4460 Land Surveying (3) Procedures of locating properties; evaluating evidence; procedures to describe property, to create land divisions, and to prepare plots; laws of land surveying. Prereq: 2260 or equivalent.

4510-20 Advanced Structural Design (3,3) Plastic design in steel in 4510; design of typical short span steel highway bridges in 4520. Prereq: 3260 for 4510; 3210 and 4110 for 4520.


4560 Stabilization of Soils (3) Mechanical stabilization of soils by compaction, drainage, and blending; chemical stabilization of soils with admixtures; water-proofing and modifying soils and additives. 2 hrs. of lecture and 1 lab. Prereq: 4310.

4570 Geotechnical Aspects of Construction (3) Unbraced and braced excavations, in situ densification by vibration and deep dynamic compaction methods; applications of well point systems, sand drains, water wells, filter design and geotechnics. Prereq: 4310. Coreq: 4220.

4600 Highway Engineering I (3) Design, construction, operation, and maintenance of highway facilities; includes integration of system planning and project planning to design and construction procedures. Prereq: 3600 and 3610.

4620 Airport Planning and Design I (3) Emphasis on airport master planning. Included for consideration on the airside are runway configuration, capacity, geometrics, and lighting; and on the land side are included terminal layout, loading area layout, and ground access systems and parking. Prereq: 3600, 3610.

4640 Traffic Engineering (3) Characteristics of driver, vehicle, and roadway and their interrelationship; traffic studies; basic considerations of traffic circulation and control; elements of future transportation planning studies. Prereq: Senior Standing.

4650 Highway Engineering II (3) Integration and application of various engineering principles and techniques to process of planning, locating, and design of highway facility through comprehensive team project. 1 lecture and 2 labs. Prereq: 4600.

4660 Airport Planning and Design II (3) Integration and application of principles of airport master planning for the master site selection and design of an airport facility through comprehensive team project; includes environmental evaluation of design. 1 lecture and 2 labs. Prereq: 4620.

4710 Portland Cement Concrete Mix Design (3) Properties and tests of portland cement concrete, methods of concrete mix design, non-destructive concrete evaluation testing, use of concrete admixtures. 2 lectures and 1 lab. Prereq: 3710.

4720 Asphalt and Bituminous Concrete (3) Properties and tests of asphalts and asphaltic mixes, mix design and bituminous concrete. Emphasis on use of asphalt in transportation construction projects. 2 lectures and 1 lab. Prereq: 3710.

4731-32 Earthquake Resistant Structure I, II (4,4) (Same as Architecture 4731-32.)
4800 Introduction to Civil Engineering Systems (3)
Meeting the needs of civil engineering systems and their specific application to problems of transportation, environment, water resources, and materials. Prereq: Senior standing or consent of instructor. 4850 Elementary Structural Matrix Methods (4) (Same as Asst. 5850 and Engineering Science and Mechanics 4850.)
4860 Structural Wood Design (3) The application of structural design principles to structural members of various combinations of wood products. Beams, columns, and trusses in diagonal compression and in compression with plywood are covered in some detail. Attention is given to various types of fastenings and connections. Prereq: 3230.
4880 Civil Engineering Systems Design and Management (3) Introduction to basic systems engineering concepts concerns within the field of engineering; context; discussion of the role of decision maker and use of optimal principles of engineering planning. Prereq: 2510 or Computer Science 3120.
4900 Senior Design Project (6) Open-ended design projects including problem formulation, specifications, feasibility and various design components. Topics will vary but will generally be real world problems designed by Civil Engineering consulting firms. Prereq: Completion of all technical courses through junior year.
4910 Special Topics (1-3) Topics relating to recent developments and current practice in civil engineering through supervised self-study. Prereq: Consent of individual instructor and approved by department head. May be repeated.
GRADUATE Consult the Graduate Catalog for listing of graduate level courses.
Environmental Engineering (344)
3120 Hydraulics (3) Application of basic and developed hydrologic and hydraulic principles. Flow measurement, flow in closed conduits; uniform and nonuniform open channel flow; pumps and turbines; basic hydrodynamics; flow, stream and flood protections. Passing of structures and one 3-hr. lab. Prereq: Engr. Mech. 3110.
3520 Engineering Aspects of Air Pollution and Solid Waste Systems (3) Engineering aspects of solid waste and air pollution systems. Specifically, quantitative capabilities will be developed related to management, generation, collection, treatment and disposal of solid wastes and air pollutants. Prereq: Math 2360.
4000 Environmental Protection (3) A rationale is developed for managing water resources, bodily wastes and wastewaters, air environment, solid wastes commercial insects and rodents, food and exacerbation of physical energy to prevent the impairment of health, to promote efficiency and comfort, and to safeguard the balances in natural ecological systems. The principles of environmental protection are emphasized. Includes objectives of design and practice without detailing design or practice methods. Prereq: Senior standing.
4030 Environmental Engineering Chemistry (3) Fundamentals of chemistry which relate to generation, design or practice methods. Prereq: Senior standing. 4150 Urban Water Management (3) Introduction to urban water management. Topics include: design and operation of water systems, evaluation of individual instructor and approved by department head. May be repeated.
GRADUATE Consult the Graduate Catalog for listing of graduate level courses.
quarter hours in departmental courses before evaluation if EE 2030 transfer credit is given. Those who are not accepted into the upper-division program of the department will not be permitted to register for any upper-division courses in the department. Students will also be counseled and advised of certain educational alternatives.

MASTER OF SCIENCE PROGRAM
Graduate work leading to the Master of Science degree is offered in all fields. The department also participates in the engineering science doctoral program.

General policies of the Graduate School, registration, examinations, and admission to candidacy requirements are explained in the Graduate Catalog.


2030 Circuits III (4) Polyphase networks considered as networks with more than one source. magnetically coupled circuits. Transient analysis of circuits containing distributed parameters and using operational methods. Steady-state analysis of networks containing sinusoidal sources of more than one frequency. Prereq: 2020. Coreq: Math 3230, Math 2860. 3 hrs. lecture, 1 hr. lab/recitation. E.

3010 Transient Analysis (3) Analysis of transient response of networks and systems; Laplace transform method and classical differential equation methods for system analysis; complex frequency concept and pole-zero concepts; application to engineering problems. Prereq: 2030. E.


3050 Basic Field Theory (3) Forces between charges, electromagnetic fields, laws of Gauss, Maxwell's, and diver- gence, potential and line integrals, material bodies, polarization, magnetic circuits, Maxwell's equations, dynamic potentials. Prereq: Math 2860. E.

3060 Propagation I (3) Propagation of waves in transmission lines, guided systems, microwave, and optical waveguide systems. Wave analysis and reflectance analysis of waves, standing wave and travelling wave measurements. Introductions to imped- ance methods. 1-Channel, 1-Transistor, circulators, waveguides, phase shifters, loading and interconnection of systems. Power generation and amplification by vacuum devices. Microwave tubes and detectors. Microwave switching, filtering and multiplexing. Prereq: 3060. 3 hrs. including biweekly lab. E.

3080 AC Power (3) Magnetic circuits, iron core coils, transformers, construction, calculation of performance from the equivalent circuit, parameters for the equivalent circuit, magnetic quantities, reluctance and inductance terms, the "per unit" notation; induction motors, structural features, analysis of performance using equivalent circuits. 1-phase and 3-phase applications. Prereq: 3050. Includes bi-weekly lab. E.

3090 Energy System Operation (3) Power system component modeling and system structure. Basic analysis techniques for power systems in terms of transient stability, faults, and system protection. Prereq: 3080. E.

3100 Random Signals and Noise in Engineering (3) Theory of random signals and spectral analysis of noise as applied to communication systems. Random signal response of linear networks. Transformation of random signals by non-linear networks. Prereq: Math 3200 or Math 3205, 3 labs., 3 hrs. including biweekly lab. E.

3110 Basic Electrical Engineering—Circuits and Fields (3) For non-electrical engineering majors. Prereq: Math 2850, Physics 2310-20. 3 hrs. including biweekly lab. E.

3120 Basic Electrical Engineering—Electronics (3) For non-electrical engineering majors. Prereq: 3110. 3 hrs. including biweekly lab. E.

3130 Basic Electrical Engineering—Machinery (3) For non-electrical engineering majors. Prereq: 3110. 3 hrs. including biweekly lab. E.

3180 Logic Design of Digital Systems (3) Introduction to boolean algebra and design of combinational and sequential circuits. Presents gate and flip-flop characteristics. Design of clocked sequential circuits and other systems containing memories. Introduction to computer architecture and system components to include basic structure and function of Arithmetic, Storage, Input, Output, and Control Systems. Instruction set capabilities and machine language programming. Prereq: 3030. (Same as Computer Science 3180). E.

3190 Plasma I (3) Engineering applications of physical electronics; quantum properties of atoms and solids. Topics include electrostatic precipitators and plasma light sources, laser operation and applications (electro-optical), and semiconductor devices. Prereq: Math 2860. 3 hrs. including biweekly lab. Prereq: Physics 2330 and EE 3000. E.

3720 Linear Systems Analysis (3) Steady-state and transient response; log-frequency, gain-phase, and pole plots; block diagram transformation; signal flow graphs; analogous systems, properties of second order system; introduction to feedback theory; stability criteria. Prereq: 3010 and Math 3150; coreq: 3180. 3 hrs. including occasional labs. E.

3810 Basic Electronics I (3) Band theory fundamentals; theory and applications of p-n junctions; simple power supplies; theory of operation of field-effect transistors and applications in simple circuits. Prereq: 2030. 3 hrs. including project laboratory. E.

3820 Basic Electronics II (3) Physical operation of bipolar transistors and vacuum tubes with applications in basic amplifiers. Integrated circuit fundamentals. Prereq: 3810. 3 hrs. including project laboratory. E.

3830 Basic Electronics III (3) Frequency and transient response of openloop transistor amplifiers. Fundamentals of integrated circuit operational amplifiers and applications in basic feedback configurations. Basic digital switching circuits. Prereq: 3820. 3 hrs. including project laboratory. E.

4020 Direct Energy Conversion (3) Background physics; conversion devices including photovoltaic power sources, thermoelectric generators and heat pumps, magnetic dynamos, fuel cells; and related aspects of dc-ac inversion and energy storage. Prereq: 3810, 3090.

4080 Microwave Circuits and Electronics (3) Scattered wave description of circuits, to include isolators and amplifiers, couplers, detectors, mixing devices. Microwave power, gain and losses. Microwave switch, filtering and multiplexing. Prereq: 3060. 3 hrs. including biweekly lab. E.

4090 Propagation II (3) Metal tube, dielectric rod, and stripline waveguides. Waveguide resonators and other loading components. Design of structures utilized for microwave power, gain and losses. Applications to microwave integrated circuits. Prereq: 3060. 4 labs.


4210 Introduction to Artificial Intelligence (3) (Same as Computer Science 4210.)


4370 Introduction to Feedback System Design (3) Mathematical formulation of control systems; steady-state error and error constants; root-locus methods; optimum gain adjustment; compensation networks; introduction to compensation. Prereq: 3720. Lab optional.

4381 Introduction to Applied Modern Control Theory (3) Project-oriented course stressing applications of optimal control theory. Topics include state-space representation of systems, controllability and observability, Pontryagin's maximum principle, dynamic programming and the Ham-ilton-Jacobi equation for deterministic systems, optimal linear systems design with quadratic criteria, pole placement and observers for linear systems, stability theory. Prereq: Math 2860. 3 hrs. including lab. E.


4410 Power System Components and Control (3) Modeling of transmission lines and cables; R-L-C calculations and power flow limitations. Control of real and reactive power flows in interconnected power systems; the PF and GV control problems. Prereq: 3090.


4445 Introduction to High Temperature Plasmas (3) Basic concepts of plasma physics relevant to fusion plasmas. Electrodymanics, kinetic theory, plasma transport, plasma waves, equilibrium and stability, plasma heating, and radiation processes. Prereq: consent of instructor. (Same as Nuclear Engr. 4445.)

4455 Principles of Fusion Reactors (3) Energy balance of magnetic fusion reactors. Fundamental limits on the performance of fusion reactors, Lawson's crit- erion, and principles of mainline and alternate magnetic confinement concepts. Prereq: 4445 or consent of instructor. (Same as Nuclear Engr. 4455.)


4465 Introduction to Fusion Technology (3) Those aspects of fusion technology characteristic of fusion power plants and powerplants. Plasma heating, reactor ignition, control, and power balance. Superconducting magnet technology, diver-
4470 Magneto-hydrodynamics (3) This course involves the study of flow and transport of fluids through a magnetic field. Industrial applications to be studied include explosive-driven pulsed-power supplies, levitating reaction vessels, and large-scale electromagnetic guns. Plasma applications concern plasma injectors for thermonuclear fusion machines and the study of plasma containment in a magnetic field. Prereq: Senior standing.

4480 Kinetic Theory (3) This course involves the study of electron beams in a reactive medium. Topics include the study of microwave travelling-wave tubes, and the noise in power amplifiers and semiconductor lasers. Plasma applications include the production of microwaves by the beam–plasma interaction, and instability theory applied to electromagnetic isolators and thermonuclear fusion machines. Prereq: Senior standing.


4500 Electro-Optic Detection and Instrumentation (3) Sensitivity, resolution (frequency response) and noise concepts of and practical engineering data for both spatial and temporal recording media (e.g., photographic emulsions) and temporal detectors (e.g., photodiodes) will be given. Last third of the course will be devoted to signal processing and instrumentation systems (e.g., laser light scattering, optical data processing, holo-

graphic interferometry).


4570 Electro-Acoustics (3) Wave equation for sound, radiation from pistons, impedance of a piston, loudspeaker, horns, speaker systems, phonograph recording and reproduction, tape recording and repro-
duction, noise reducing systems. Prereq: senior standing.

4600 Analog Signal Processing Circuits for Elec-

tronic Instrumentation (3) Use of operational amplifiers, instrumentation amplifiers, and other integrated cir-

cuits in signal processing. Design examples such as active filters, amplifiers, attenuators, function genera-

tors, comparators, and analog multiplexers. Some very fast circuits for data acquisition and computer input.

4610 Analog-Digital Systems (3) Principles of analog computing components. Applied to analog comput-

ing to include problem set-up and scaling. Characteristics of analog multipliers, dividers, and function genera-

tors. Presenters comparators, digital-to-analog conversion, and analog to digital conversion techniques. Prereq: 3830 and 3830. 3 hrs. including project laboratory.

4620 Sequential Machine and Digital System Theory (3) Design aspects of pulse-mode, clock-mode, and level-mode sequential circuits. Theory and charac-
teristics of one- and two-dimensional iterative networks. Design of large scale digital systems using VLSI and LSI techniques. Principles of reliability and error
detection in digital systems. Prereq: 3160. 3 hrs. includ-
ing weekly lab.

4630 Digital System Organization and Design (3) System organization of digital systems including micro-

computer and microprocessor architectures and comparisons. Characteristics of ALU and CPU struc-
tures, storage device structures (e.g., RAM, ROM, and PROM building blocks), and Input/Output systems. Control Unit orga-
nization to include serial-parallel modes of operation, system structure, and some timing and sequencing. Programming of control functions. Prereq: 3160. 3 hrs. includ-
ing weekly lab.

4660 Bioelectric Instrumentation (3) Nature and origin of biological currents, transducers, amplifier require-
ments, recording systems, and noise problems. Prereq: Senior Standing.

4680 Electric Amplifiers (3) Feedback amplifier prin-

ciples. Transistor and linear amplifiers. Audio and radio-

frequency power amplifiers. Prereq: 3830, 3720. 3 hrs. including project laboratory.

4690 Communications Electronics (3) Receiver and

transmitter circuits for communications. Prereq: 3040, 3830. 3 hrs. including project laboratory.

4700 Digital Integrated Electronics (3) Comparators, logic gates, flipflops, registers, counters, memories, analog switches, A/D and D/A conversion, clipping, clamping, and sweep circuits. Prereq: 3830, 3180. 3 hrs. including project laboratory.

4740 Integrated Circuits (3) Processing and fabrica-
tion of active and passive components for monolithic and hybrid circuits. Design techniques for linear and digital circuits. Prereq: 3830. 3 hrs. including project laboratory.

4750 Interactive Computer Graphics (3) (Same as

Computer Science 4750 and Geography 4750.)

4780 Synchronous Machines (3) Construction and

application of synchronous machines, analysis of per-
formance from equivalent circuit models for round rotor and salient pole machines; Park's transforma-
tion to the 2-axis model, use of this model in transient state analysis, and comparison of 2-axis conduction to the gener-
alized theory of electrical machines. Prereq: 3090.

4790 Controllable Motor Drives (3) Constructional features and design parameters for the usual varia-
tions of the d.c. motor; A.C. servo-motor; stepping motor; machine tool interpolation systems; computer control of robots. Prereq: 3830. 3 hrs. including project laboratory.

4800 Hardware-Software Interface in Minicomputer

and Microcomputer Systems (3) Minicomputer and microprocessor interface design. Hardware-
software interaction and trade-off. Priority interrupt systems. Telecommunications. Project oriented, con-
tact course. Completion of two projects, one utilizing a minicomputer and the other a microcomputer, are
minimal course requirements. Prereq: 3160.

4810 Discrete-Data Systems (3) Introduction to anal-
ysis and design of discrete data control systems using frequency domain techniques. Realtime digital filter-
ting techniques; application of digital computers in closed-
loop feedback systems. Prereq: 3720.

4820 Introduction to Pattern Recognition (3) Role of

pattern recognition within framework of artificial intelli-
gence. Design of learning and adaptive machines. Typical applications of pattern recognition to prob-
lems in classification and machine learning. Design and evaluation of elementary pattern recognition problems. Prereq: Either 3100 and Computer Science 3150, or Statistics 3450 and Computer Science 1510. (Same as Computer Science 4820.)

4830 Digital Image Processing (3) Principal methods of coding, storing, and processing images by means

of digital computers. Computational algorithms for

image operations. Prereq: Basic Eng. 1410, Computer Sci-
ence 1510 or 3150, or consent of instructor. (Same as Computer Science 4850.)

4850 Small Computer Systems (3) Basic structure of

small computer systems, input-output techniques, inter-
rupt structures, peripheral devices, system software, and
assembly language programming. Course is project ori-
nented. Prereq: Basic Eng. 1410, Computer Sci-
ence 1510 or 3150, or consent of instructor. (Same as Computer Science 4850.)

4910-20-30 Special Electrical Engineering Prob-

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4750 Interactive Computer Graphics (3) (Same as

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4780 Synchronous Machines (3) Construction and

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assembly language programming. Course is project ori-
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ence 1510 or 3150, or consent of instructor. (Same as Computer Science 4850.)

4910-20-30 Special Electrical Engineering Prob-

um problems of practical significance. Computer simulation of

pattern recognition within framework of artificial intel-

ligence. Typical applications of pattern recognition to

problems in classification and machine learning. Design and evaluation of elementary pattern recognition problems. Prereq: Either 3100 and Computer Science 3150, or Statistics 3450 and Computer Science 1510. (Same as Computer Science 4820.)
blocks of the engineering science areas recognized by the American Society for Engineering Education. (1) fluids, integral forms, heat, work, differential forms, viscosity, turbulence, Moody diagram, Prereq: 2720 or 3700, Math 2840.

3120 Fluid Mechanics (3) Compressible flow, isentropic flow, shocks, duct flows with heat transfer and friction; open channel flow, best cross-section, energy methods; pumps and turbines, similarity, performance analysis. Prereq: 3110; Coreq: 3129.

3129 Fluid Mechanics Laboratory (1) Experiments to amplify and support 3120. To be taken concurrently with 3120.


3311 Mechanics of Materials (4) Concepts of stress and strain; stress-strain relations and Mohr's circle; static analysis of members; area moment of inertia; stress and displacement analysis of axially-loaded members; torsion; bending. Not for departmental graduate credit. Prereq: Basic Engr. 1310; coreq: Math 2840.

3410 Introduction to Biomedical Engineering (4) Introduces the facets and opportunities of biomedical engineering and provides the background knowledge for further courses in the field. Subjects include anatomy, physiology, biomechanics, medical imaging, cellular and molecular biology, etc. Prereq: Math 1610 or consent of instructor.

3420 Introduction to Clinical Engineering (3) Engineering applications in the clinical/hospital setting; description of health care delivery systems; hospital organization and structure; clinical use of biomedical equipment; equipment acquisition, principles of safety engineering in the hospital and applicable codes, standards and regulations. Prereq: 3410, Physics 2320, or consent of instructor.

3700 Dynamics (4) Kinematics of rigid bodies; mass moments of inertia; coulomb friction; kinetics of rigid bodies using force, mass, acceleration; work-energy; impulse-momentum. Not for departmental graduate credit. Prereq: Basic Engr. 1320, Math 2840.

3710 Intermediate Dynamics (3) Three-dimensional dynamics of particles and rigid bodies; dynamics of bodies with varying force; but varying body shape. Prereq: Basic Engr. 1320. Coreq: Math 2840 or consent of instructor.

4010 Project in Design and Development (4) Investigation, design, and report of an engineering science project. Prereq: Senior, and a grade of C or better in 3311, 3700, and 3110.

4020 Computer-Aided Design (3) Use of computer graphics and analysis programs for design of selected systems, structures, and components. Evaluation of design alternatives. Prereq: 4810 or consent of instructor.

4011 Project in Design and Development (3) Investigation, design, and report of an engineering science project. Prereq: Senior, and a grade of C or better in 3311, 3700, and 3110.

4510 Materials of Engineering (3) Obtaining and processing data on mechanical properties of engineering materials for use in design; emphasis on time dependent and cyclic creep and component stress. Prereq: 3110; 2 hrs. and 1 lab. Prereq: 3311 and Materials Science and Engineering 2110.

4520 Biomedical Fluid Mechanics (3) Discusses objectives, review foundations, and present current developments in biomedical fluid mechanics. Properties of human blood and blood vessels, analysis and measurement of flow and pressure in arteries, non-invasive blood pressure, measurement of deflections. Physical properties of blood. Applications to areas of hemolysis,
Industrial Engineering (556)

Professors:


Associate Professors:

D. H. Hutchinson, Ph.D. Georgia Institute of Technology; K. E. Kirby, Ph.D. Tennessee.

Graduate Students:

J. A. Bontadelli2, Ph.D. Ohio State; S. Douglass2, Ph.D. Tennessee; J. C. Mitchell3, Ph.D. Vanderbilt.

1IBM Professor.
2On leave.
3Space Institute, Tullahoma.

UNDERGRADUATE

The undergraduate curriculum in industrial engineering provides a strong background in both fundamental engineering principles and the analytic methods necessary for solving the multi-faceted problems associated with the production, maintenance, and delivery of goods and services. In particular, this curriculum emphasizes the knowledge and skills necessary to design integrated systems of people, materials, equipment, and energy wherever they are found, such that the overall system functions at an optimal level and such that the needs of the human components of the system are adequately met.

This curriculum, which is built upon a strong background in mathematics and statistics, includes fundamental course work in all of the engineering sciences, introductory economics and accounting, training in fundamental human factors which influence engineering design, the economic analysis of alternative design choices, quality control techniques, manufacturing processes and materials, production design and control, material handling systems and facilities design, the mathematical modeling and simulation of complex systems, and the design and installation of information acquisition and control systems. The technical and non-technical electives further allow the students to specialize in an area(s) which meets particular needs.

The solid, broad base in engineering, combined with training in applying engineering methodology to traditionally non-engineering problem areas as provided through the industrial engineering curriculum, leads to participation by industrial engineers in an unlimited range of fields including, among others, retail distribution, banking, health care delivery, corporate management, municipal management, aerospace systems, research institutions, and government as well as in the traditional field of manufacturing.

MASTER OF SCIENCE PROGRAM

A graduate program leading to the degree of Master of Science is open to graduates of A.B.E.T.-accredited undergraduate curricula in Industrial Engineering or to graduates of other technical curricula who take an approved list of prerequisite course work. A non-thesis option with 45 hours of course work plus a 3-hour project is available. A non-thesis option with 45 hours of course work plus a 3-hour project is available. Graduate work in Industrial Engineering provides for concentrations in operations research, engineering management, manufacturing and production systems, human factors engineering, information systems, reliability and quality control and traditional industrial engineering. Either one or two minors can be elected in Engineering, Mathematics, Psychology, Business, Computer Science, Statistics or Economics.

MASTER OF ENGINEERING PROGRAM

This professional degree program is intended as a culmination year in a five-year baccalaureate—master program which emphasizes engineering design and professional practice. Admission requirements include those presented above plus the requirement of a Bachelor's degree from an A.B.E.T.-accredited Industrial Engineering program. This 45—quarter hour program requires 18 hours of course work in an industrial engineering core, 9 hours of technical electives, and 9 hours of industrial engineering design electives and 9—hour thesis or design project.

2310 Seminar (1) Introduction to the industrial engineering profession, its history, and current trends. Plant trips and lectures by the faculty. Prereq: Sophomore standing.


3440 Quality Control (3) Application of statistical methods to control quality of manufactured parts and techniques of inspection. Prereq: 3430 and Math 1860.

3510 Introduction to Operations Research I (3) Introduction to methodology of operations research and the application of operations research to industrial problems. Topics covered include statistical inference, decision theory, and queuing theory. Prereq: Math 1860.

3510 Introduction to Operations Research I (3) Introduction to operations research and the application of operations research to industrial problems. Topics covered include statistical inference, decision theory, and queuing theory. Prereq: Math 1860.

3530 Introduction to Operations Research II (3) Introduction to operations research and the application of operations research to industrial problems. Topics covered include statistical inference, decision theory, and queuing theory. Prereq: Math 1860.

3550 Introduction to Operations Research III (3) Introduction to operations research and the application of operations research to industrial problems. Topics covered include statistical inference, decision theory, and queuing theory. Prereq: Math 1860.

3600 Motion and Time Study (3) Design of work methods, including analysis, improvement, timing of work, and determining standards. Laboratory work included. Prereq: Non-industrial engineering students. Prereq: Junior standing.

3610 Human Factors in Work Design I (3) Human capabilities and limitations which must be reflected
in work place layout; working environment specifications; and design of industrial communication-control systems. Prereq: Junior standing in College of Engineering consent of instructor.

3620 Work Methods and Design (3) Design of workplace layout, flow charts, activity chart analysis, method improvements, micromotion study, job analysis, job evaluation, and design of wage structures and work assignment. Prereq: 2310.

3630 Work Measurement (3) Use of work measurement tools such as time study, predetermined time systems, work sampling, and historical data analysis. Development of standards and data design of large incentive systems. Prereq: 3620, and Statistics 3450.


4060 Production Systems Planning and Control I (3) Theory and application of forecasting, capacity and materials planning, production systems design and inventory control. Prereq: 3510-20.

4070 Production Systems Planning and Control II (3) Theory and application of master scheduling, materials requirements planning systems, lot sizing and safety stocks, and distribution requirements planning. Prereq: 4060.

4080 Forecasting Methods in Industrial Engineering (3) Application of technological forecasting techniques to industrial engineering problems. Includes moving averages and exponential smoothing, linear and polynomial regression models, autoregressive time series analysis, Delphi methods, and other selected industrial forecasting methods. Prereq: 4060.

4150 Project Control with CPM and PERT (3) A study of project planning and control based primarily on "critical path" techniques, including resource allocation, time-cost trade-off algorithms, multi-project control, and computer programs. Prereq: 3430.


4200 Production Facilities Design (4) Design of production facilities including materials handling, plant layout, service areas, inventory control applications, and operating procedures design. Prereq: 3630, 3510-20, 4060, 4520.

4230 Scheduling Systems (3) Performance measures for job shop and flow shop scheduling, including both static and dynamic conditions, as well as techniques for generating production schedules. Deterministic and probabilistic dispatching conditions. Prereq: 3520.

4250 Work Measurement Applications (3) Application of learning curves, queuing theory, standard data methods, and incentive systems to the design of industrial work situations. Prereq: 3630.

4310 Seminar (1) Discussions, lectures, and trips to unite student's educational experience. Prereq: Senior standing in industrial engineering.

4520 Engineering Economy (3) Methods and problems in selection or replacement of equipment. Decisions among engineering alternatives involving capital recovery, economic life of equipment, and rate of return on investment. Prereq: 3520.

4530 Case Studies in Engineering Economy (3) Extension of basic engineering economy principles to actual problems faced by competitive firms and regulated industries. Case studies taken from literature form basis of classroom discussion. Out-of-class assignments between working engineers and companies to evaluate make or buy options, leasing versus cash purchases, equipment replacement studies, energy source economies, etc. Prereq: 4520.

4540 Industrial Development (3) Factors other than mathematics which enter into successful establishment of manufacturing enterprise. Cost and location studies and market analysis to determine the commercial acceptability of new plants or projects.

4590 Simulation (3) Generation of outcome of complex random process by computer. Models of complex systems using available simulation languages. Simulation as design tool in industrial systems. Prereq: 3430 and Computer Science 3150.

4600 Determined Time Systems (3) Work design and measurement using a predetermined time system such as Methods Time Measurement, Basic Motion Time-Study, or Work Factor. Theory and application. Prereq: 3630.

4610 Human Factors in Work Design II (3) Human capabilities and limitations affecting work place layouts, working environments, design of tools and equipment, and communication and response in man-machine systems. Prereq: 3630, 3630, or consent of instructor.

4830 Health Systems Engineering (3) Hospital management systems and means by which they may be improved through application of modern industrial engineering principles and techniques. Prereq: 3620.

4840 Industrial Plant Problems Analysis (3) Industrial problems, application of industrial engineering, field assignment in local industry, problem definition, analysis, and presentation. Prereq: 3630, 3430, 3510, 3520, 4520, 4650.

4870 Mini-Computer Applications in Industrial Engineering (3) Introduction to computer hardware and man-computer interfaces; emphasis on small computers as design and control systems; applications and limitations of small computers in solving industrial engineering problems. Prereq: Senior standing.

4910-20-30 Special Industrial Engineering Topics (3,3,3) May be repeated for credit. Prereq: Consent of instructor.

4950 Industrial Safety (3) Development of organization and programs for prevention and control of accidents with emphasis on OSHA Rules and Regulations. Prereq: Senior standing.

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

Materials Science and Engineering

Professors:
J. E. Spruiel (Head), Ph.D. Tennessee; D. C. Bogue, Ph.D. Delaware; B. S. Borie, Ph.D. Massachusetts Institute of Technology; C.R. R. Brooks, Ph.D. Tennessee; R. A. Buchanan, Ph.D. Vanderbilt; E. F. Clark, Ph.D. California (Berkeley); D. A. Cronin, Ph.D. Lehigh; J. F. Fellers, Ph.D. Akron; J. S. Lin, Ph.D. Kansas; C. D. Lundin, Ph.D. Rensselaer Polytechnical Institute; C. J. McHargue, Ph.D. Kentucky; K. J. Mackenzie, Ph.D. Cornell; B. F. Oliver, Ph.D. Pennsylvania State; P. J. Phillips, Ph.D. Liverpool (England); E. E. Stansbury (emeritus), Ph.D. Cincinnati.

Associate Professors:
W. T. Becker, Ph.D. Illinois; J. Bentley, Ph.D. Univ. of Salford (England); C. L. Brown, Ph.D. Virginia; D. M. Kroeger, Ph.D. Vanderbilt; W. J. Lackey, Ph.D. North Carolina State; C. T. Liu, Ph.D. Brown University; A. J. Pedraza, Ph.D. National University (Argentina); C. L. White, Ph.D. Michigan Tech. University.

Lecturers:
George D. Wignall, Ph.D. Sheffield (England).

BACHELOR OF SCIENCE PROGRAM
The department currently offers an undergraduate curriculum in Metallurgical Engineering. This curriculum is designed to provide education and training in the fundamental and engineering sciences with special attention given to the production, development, and utilization of engineering materials. Emphasis is placed on developing the expertise needed to participate in selection and development of materials for the major engineering systems of the future. The first two years of the curriculum is similar to that of the other engineering disciplines and, hence, students in other engineering curricula may transfer into the program during the sophomore year. The curriculum is arranged to provide a central core of courses with flexibility in the upper-division years to permit emphasis on preparation for graduate study or technical employment. By judicious choice of technical electives, a student can develop a broader materials perspective (e.g., polymer engineering, ceramic materials) or a specialty area (e.g., materials processing, mechanical behavior of materials, corrosion behavior).

A minimum of 24 quarter-hours of humanities-social studies courses must be taken. These courses are selected from the list provided in a prior section of this catalog entitled Curricula in Engineering (p.). A minimum of 12 hours must be taken from a single subgroup under one of the three major headings.

Graduation in metallurgical engineering requires a minimum grade point average of 2.00 for all departmental courses.

PROGRESSION TO UPPER-DIVISION PROGRAMS
Progression of metallurgical engineering students to departmental Upper-Division courses is competitive. Factors considered include overall grade point average, performance in selected lower-division courses and evidence of satisfactory and orderly progress through the prescribed curriculum.

UPPER-DIVISION STATUS: A Lower-Division student formally applies for Upper-Division Status after completing 80 quarter hours of Lower-Division course work with an overall GPA of at least 2.4. This must include Materials Science and Engineering 2010 and 2030.

PROVISIONAL STATUS: Students who have completed 80 quarter hours of Lower-Division engineering curriculum course work with an overall GPA between 2.0 and 2.4 may apply for provisional status. The granting of PROVISIONAL UPPER-DIVISION STATUS is based on the availability of space in the departmental programs after UPPER-DIVISION STATUS students have been accommodated. Provisional students are required to demonstrate that they are performing satisfactorily in upper-division courses by attaining a minimum GPA of 2.0 in at least 12 hours of 3000-level required courses specified by the department. Further progression to upper-division courses is dependent upon this minimum level of performance.

Any metallurgical student with an overall GPA below 2.0 will not be admitted to upper-division Metallurgical Engineering courses. Students who have not been admitted to an Upper-Division Status will be dropped from departmental class rolls.
TRANSFER STUDENTS at the Upper-Division level are admitted on a Provisional Status basis only. Any student presenting more than 42 hours of Lower-Division engi- neering curriculum course work by transfer credit is considered to be a Transfer student.

GRADUATE STUDY PROGRAMS
Graduate programs leading to the degrees of Master of Science and Doctor of Philosophy with a major in metallurgical engineering or polymer engineering are offered. Programs leading to the M.S. and Ph.D. degrees with specialization in polymer science and engineering are conducted jointly with the Department of Chemistry and the Department of Chemical Engineering.

Detailed information about graduate pro- grams in materials science and engineering and the requirements for either M.S. or Ph.D. degrees are given in the Graduate Catalog.

Materials Science and Engineering (538)

2100 Elementary Process Principles I (4) (Same as Chemical Engineering 2100.)

2100 Elementary Process Principles II (4) (Same as Chemical Engineering 2100.)

2050 Process Principles and Materials (4) Materials structure-property relationships for metals, inorganic and organic compounds, with emphasis on mechanisms of control of properties by chemical composition, thermal and mechanical treatment; crystallography, imperfections, mechanical properties, heat treat- ment, molecular weight, and particle size distributions. Prereq: Chemistry 1109. 3 hrs. and 1 lab. F, S, SU.

2040 Experimental Methods in Materials (4) Lectures provide subject bases for laboratory experiments. Experiments include thermocouple calibrations, use of potentiometers, x-y-plotter, computer experimen- tal data acquisition and readout, dilatometer study, electrical resistivity measurements, microscope cali- bration and metallographic preparation and photomicrography. 2 hrs. and 2 labs. Prereq: 2030. S.

2110 Engineering Materials I (3) Introductory course correlating the atomic, crystal, and microstructure of solids and mechanical, physical, and chemical prop- erties of engineering significance. 3 hrs. or 2 hrs. and 1 lab. Prereq: 2030. 3-3-10, S, SU.

2110 Electron Microscopy (1) Presents to science and engineering students a brief introduction to the operation of the electron microscope and its applica- tion to industrial and physical problems. Prereq: Physics 2310-20. 3-3-10, 3-3-10, S, SU.

3120 Engineering Materials II (3) Extension of 2110 with emphasis on control of mechanical properties of materials by specification of composition, thermal, and mechanical treatment; correlation of resultant prop- erties with service performance. Suggested for mechanical, civil, and industrial engineering students.

3130 Engineering Materials III (3) Extension of 2110 with emphasis on control of electrical and magnetic properties of materials by specification of composi- tion, thermal, and mechanical treatment; correlation of resultant properties with service performance. Suggested for electrical engineering students.


3170 Engineering Materials VII (3) Extension of 2110 or 2030 to biomedical applications of materials. Engi- neering materials in biomedical applications; metals, polymers, and ceramics; prosthetic devices; dental applications; corrosion problems; failure analysis; fab- rication. Prereq: 2110 or equivalent.

4510 X-Ray Diffraction and Its Application (4) Lectures and laboratory work on the basic principles and appli- cations of x-ray diffraction from materials. Diffraction theory, powder technique, precision lattice con- stants, and phase identification, preferred orientation. 3 hrs. and 1 lab.

Metallurgical Engineering (679)

3010 Industrial Inspection Trips (1) Technology of metallurgical industries, emphasizing Tennessee indus- try; plant trips. S, NJC.

3040 Metallurgical Thermodynamics (4) Applications of laws of thermodynamics to problems of metallurgi- cal interest. Second law and entropy; auxiliary functions; relationship between free energies and phase dia- grams; reaction paths in mixing of two immiscible metals and condensed phases. Use of heat capacity and free energy data in calculations. Concepts of activity and activity coefficient with T, P, and composition. Prereq: Materials Science and Engr. 2020; Chemistry 1130; coreq: Math 2840. 3 hrs. and 1 lab period. F.


2220 Diffusion and Annealing (3) Introduction to solid state kinetics, phase transitions, defects, solutions, diffusion equations and mechanisms, annealing of cold worked structures. Prereq: 3040. W.

2230 Phase Transformations (4) Thermodynamic and structural factors governing binary equilibrium. Ter- nary systems, diagramming of binary and ternary phase diagrams and phase transformations in simple and complex systems. Prereq: 3230. 3 hrs. and 1 lab. S, SU.

3520 Materials Behavior and Chemical Process Equip- ment (3) Chemical Reaction Engineering, and chemical considera- tions in design of chemical processing equip- ment. Prereq: Materials Science and Engr. 2030 or equivalent; 3150; Chem. Engr. 3420.

3710 Metallurgical Applications in Manufacturing Tech- nology (3) Fabrication methods and principles of mechanical/thermal processing for finished and semi- finished articles; casting, powder metallurgy, plastic forming, joining, heat treatment. Prereq: 2110.


4230 Project Laboratory (3) Laboratory investigation of polymer engineering problem. Written report required for each quarter.

4910 Applied Polymer Science (3) First course in physical properties of polymers. Polymer structure, crystalline and glass transitions, physical properties of amorphous and crystalline polymers, crystalliza- tion kinetics, and mechanical properties are discussed. Prereq: Senior standing in engineering or science. Not for graduate credit by polymer engineering majors.

4920 Polymer Processing (3) Rheological properties of polymer melts and solutions, viscometry; unit oper- ations of fiber, plastics, and rubber industries: dimensional analysis and scale-up, flow through dies and pipes, screw extrusion, spinning of fibers, injection molding. Prereq: Senior standing in engi- neering or science. Not for graduate credit by polymer engineering majors.

4930 Principles of Fiber and Textile Engineering (3) Chemical and crystalline structure of important fibers, melt, wet and dry spinning of man-made fibers; draw- ing and texturizing; preparation of yarn, dyeing, weaving, and knitting. Emphasis on quantitative aspects. Prereq: Senior standing in engineering or science.

4940 Plastics Fabrication Operations (3) Lecture and laboratory course treating unit operations of plastics industry. Types and mechanisms of operation of machin- ery used and structure and properties of fabricated parts. Operations to include extrusion, co-extrusion, injection molding, blow molding, rotational molding, forming, blow molding, rotational molding, etc. Prereq: Senior standing in engineering or science.

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

Polymer Engineering (805)

410-20 Thesis (3-6, 3-5) Investigation and report on problem in polymer science and engineering. By prior approval of professor.

4230 Project Laboratory (3) Laboratory investigation of polymer engineering problem. Written report required for each quarter.

4910 Applied Polymer Science (3) First course in physical properties of polymers. Polymer structure, crystalline and glass transitions, physical properties of amorphous and crystalline polymers, crystalliza- tion kinetics, and mechanical properties are discussed. Prereq: Senior standing in engineering or science. Not for graduate credit by polymer engineering majors.

4920 Polymer Processing (3) Rheological properties of polymer melts and solutions, viscometry; unit oper- ations of fiber, plastics, and rubber industries: dimensional analysis and scale-up, flow through dies and pipes, screw extrusion, spinning of fibers, injection molding. Prereq: Senior standing in engi- neering or science. Not for graduate credit by polymer engineering majors.

4930 Principles of Fiber and Textile Engineering (3) Chemical and crystalline structure of important fibers, melt, wet and dry spinning of man-made fibers; draw- ing and texturizing; preparation of yarn, dyeing, weaving, and knitting. Emphasis on quantitative aspects. Prereq: Senior standing in engineering or science. SU.

4940 Plastics Fabrication Operations (3) Lecture and laboratory course treating unit operations of plastics industry. Types and mechanisms of operation of machin- ery used and structure and properties of fabricated parts. Operations to include extrusion, co-extrusion, injection molding, blow molding, rotational molding, etc. Prereq: Senior standing in engineering or science.

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

Mechanical and Aerospace Engineering

Professors:
D. R. Pitts (Head), Ph.D. Georgia Institute of Tech- nology; J. F. Bailey (Emeritus), Ph.D., D. Lathegh, P.E.; G. W. Braun, (Emeritus), Ph.D. D. Gottingen;
solid and fluid mechanics, thermodynamics, heat transfer, structures, vibrations, mechanical design, production processes, and instrumentation in order to resolve the complex engineering problems of the real world.

PROGRESSION TO UPPER-DIVISION PROGRAMS

Progression to Upper Division Programs is competitive and requires demonstrating sufficient background and aptitude for advanced study. Students are expected to have completed at least 2 hours of 3000-level mechanical or aerospace engineering courses with the highest GPA of at least 2.4. Full Status: Students who have completed 81 quarter hours of Lower Division engineering curriculum course work with an overall GPA of at least 2.4 may apply for full status. Provisional Status: Students who have completed 42 hours of Lower Division engineering curriculum course work with an overall GPA below 2.0 will not be admitted to mechanical or aerospace engineering courses with the exception of ME and Aero Eng. 2040. Students who have not been progressed to an Upper Division Program will be dropped from departmental class rolls. TRANSFER STUDENTS at the Upper Division level are admitted on a Provisional Status basis only. Any student presenting more than 2 hours of 3000-level engineering curriculum course work by Transfer Credit is considered a Transfer Student. LOSS OF FULL STATUS: Students who progress to Upper Division Programs are expected to maintain an overall GPA of at least 2.0 and a concurrent GPA of at least 2.0 in departmental courses. Failure to maintain these minimum levels of performance will result in a review of the overall progress of the student through the prescribed curriculum and probable loss of Full Status.

GRADUATE STUDY PROGRAMS

Graduate programs leading to the degrees of Master of Science, Master of Engineering, and Doctor of Philosophy with specialization in mechanical engineering and aerospace engineering are available to graduates of recognized undergraduate curricula in mechanical or aerospace engineering and to graduates of other curricula who satisfy the necessary prerequisites. The general requirements for advanced degrees are summarized in the Graduate Catalog.

Mechanical Engineering (650)

2040 Introduction to Mechanical Engineering (1)

Presents the fundamentals of mechanics related to mechanical engineering. S/JNC. F, W, S.

3040 Seminar (1) Presentation and discussion of topics related to mechanical engineering. Prereq: Junior standing. S/JNC.


3321-30 Engineering Thermodynamics (2) Proper-
ties of gases and gas mixtures; chemical reactions; equilibrium; applications to mechanical engineering problems. Prereq: 3311 and 3321 respectively. E.

3410 Fluid Flow (3) Development of continuity, moment-
um and energy principles for fluid systems; applications to mechanical and aerospace engineering problems. Prereq: Math 2850, coreq: 3311. F, W.

440 Heat Transfer (3) Heat transfer processes, heat conduc-
tion, thermal radiation. Prereq: 3910, Math 2860; coreq: 3311. E.

5260-40 Thermal Sciences (3,3,3) Fundamental principles of thermodynamics and transport phenomena as applied to engineering design. Prereq: Non-
departmental majors. To be taken in sequence. Prereq: Math 2850 and Basic Engr. 1330. E.

5610 Mechanics of Machinery—Kinematics (3) Machine motions, graphical and analytical methods; instanta-

5620 Mechanics of Machinery—Dynamics (3) Appli-
cation of Newton's laws to machines and machines related to machinery. Force analysis of mechanisms, balanc-
ing, gyroscopic effects, fly-wheels. Prereq: 3610. E.


5650 Introduction to Machine Design (3) Ductile-
brittle behavior of materials under static and cyclic loading. Stress concentration factors, and the-


5650 Energy Conversion Systems (3) Operating and design characteristics of energy conversion systems related to mechanical engineering. Prereq: Computer Science 3150. E.

5650 Engineering Analysis (3) Advanced analysis tech-
niques for problems of aerospace and mechanical engineering. Emphasis on approximate methods. Prereq: Computer Science 3150. E.

4010 Thesis (3) Problem investigation and report. Prereq: Senior standing. E.

4140 Energy Conversion Systems (3) Operating and design characteristics of energy conversion systems including new technology development; selected direct conversion techniques. Prereq: 3330; coreq: 4420.

4150 Energy Conversion Systems (3) Fossil fuel energy conversion systems with emphasis on coal technolo-

3440 Heat Transfer (3) Heat transfer processes, heat conduc-
tion, thermal radiation. Prereq: 3910, Math 2860; coreq: 3311. E.

4160 Design of Energy Conversion Systems (3) Stress con-
straints on energy sources and concepts; energy conversion schemes. Prereq: Senior standing in engineering. A.

4170 Turbo-Machinery (3) Basic principles of turbo-
machinery; systematic methods of analysis, design, performance evaluation. Prereq: Aerospace Engr. 3511.

4180 Energy Production and Utilization (3) Thermo-
dynamic constraints on energy sources and concepts; energy conversion schemes. Prereq: Senior standing in engineering. A.

4220 Environmental Noise (3) Basic principles of acous-
tics—measurement and control of noise in indus-
trial and community environments. Prereq: Senior standing in engineering or consent of instructor. A.
### BACHELOR OF SCIENCE PROGRAM

The curriculum in nuclear engineering is designed to provide basic training in many of the fields encountered in the applications of nuclear and radioactive materials. The first two years are concerned with the fundamental courses in engineering, physics, mathematics, chemistry, and English. The last two years encompass scientific and engineering courses equipping the student for entry into a variety of work in industry, research, or graduate studies.

### MASTER OF SCIENCE AND MASTER OF ENGINEERING PROGRAMS

A graduate program leading to a degree of Master of Science and Master of Engineering is available to graduates of recognized undergraduate curricula in engineering and physics. Each applicant will be advised as to the necessary prerequisite courses before entering the program.

The general requirements of the masters' degrees are summarized in the Graduate Catalog.

### DOCTORAL PROGRAM

A program leading to the Ph.D. degree is available in nuclear engineering. For details, see the Graduate Catalog.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>3010-20-30</td>
<td>Seminar</td>
<td>(1,1,1)</td>
<td>Presentation and discussion of topics related to nuclear engineering. S/NC.</td>
</tr>
<tr>
<td>3150</td>
<td>Dynamics and Controls</td>
<td>(3)</td>
<td>Systems differential equations; solution by classical methods; Laplace transform method; frequency response, stability, and control. Coreq: 4110.</td>
</tr>
<tr>
<td>3210-20</td>
<td>Thermodynamics</td>
<td>(4,4)</td>
<td>Properties and laws of thermodynamic systems. First and second laws used to analyze power plant systems—both fossil and fusion. Prereq: Math 2860 and Basic Engr. 1330.</td>
</tr>
<tr>
<td>4110-20-30</td>
<td>Introduction to Nuclear Reactor Theory</td>
<td>(3,3,3)</td>
<td>Nuclear structure; radioactive decay laws; neutron interaction; fusion process; chain-reaction systems; diffusion equation including multigroup diffusion theory; neutron moderation; reactivity coefficients; perturbation theory. Prereq: Physics 3730 or consent of instructor.</td>
</tr>
<tr>
<td>4210-20-30</td>
<td>Nuclear Engineering Laboratory</td>
<td>(3,3,3)</td>
<td>Nuclear structure; radioactive decay laws; neutron interaction; fusion process; chain-reaction systems; diffusion equation including multigroup diffusion theory; neutron moderation; reactivity coefficients; perturbation theory. Coreq: 4110.</td>
</tr>
<tr>
<td>4445</td>
<td>Introduction to High Temperature Plasmas</td>
<td>(3)</td>
<td>Prereq: Elect. Engr. 4445.</td>
</tr>
<tr>
<td>4465</td>
<td>Introduction to Fusion Technology</td>
<td>(3)</td>
<td>Prereq: Elect. Engr. 4465.</td>
</tr>
<tr>
<td>4610-20-30</td>
<td>Reactor Power Systems</td>
<td>(3,3,3)</td>
<td>Nuclear structure, decay laws, neutron diffusion, time behavior of reactors, heat removal, analysis of reactor power plants; economic, safety, and environmental aspects of nuclear power. Prereq: Math 4610; non-nuclear engineering students only.</td>
</tr>
<tr>
<td>4710</td>
<td>Energy Transport</td>
<td>(4)</td>
<td>Development of differential and integral energy conservation equations; conduction, convection, and radiation heat transfer; application of nuclear reactor fuel elements and heat exchangers. Prereq: 3010.</td>
</tr>
<tr>
<td>4720</td>
<td>Reactor Thermal Design</td>
<td>(4)</td>
<td>Hydrodynamics and heat transfer in boiling systems; boiling crises; fuel element thermal design, steam generator design. Prereq: 4710.</td>
</tr>
<tr>
<td>4730</td>
<td>Nuclear Reactor Design</td>
<td>(3)</td>
<td>First order reactor design, integration with non-nuclear heat transfer and power conversion system, economic evaluation; optimization procedures, description of typical systems. Coreq: 4130.</td>
</tr>
<tr>
<td>4820</td>
<td>Reactor Kinetics and Controls</td>
<td>(3)</td>
<td>Derivation of kinetic equations; basic kinetic parameters; transient response with feedback; control and protective systems. Prereq: 4110.</td>
</tr>
<tr>
<td>4840</td>
<td>Nuclear Reactor Safety</td>
<td>(3)</td>
<td>Presentation of nuclear reactor safety concepts and criteria; credible accidents; fissile product release and transport; containment systems; accident analysis; engineered safeguards. Prereq: 4120.</td>
</tr>
<tr>
<td>4930</td>
<td>Nuclear Fuel Management</td>
<td>(3)</td>
<td>Discussion of problems associated with processing of nuclear materials; fuel cycle analysis; burn-up calculation. Prereq: 4120.</td>
</tr>
</tbody>
</table>

### GRADUATE

Consult the Graduate Catalog for listing of graduate level courses.
College of Human Ecology

Nancy H. Beick, Dean
Jay Stauss, Associate Dean
Jane R. Savage, Associate Dean
Karl G. Weddle, Assistant Dean

The College of Human Ecology is an integral part of The University of Tennessee's academic program in its three major functions of teaching, research, and public services. The college ranks among the top two colleges of its kind in the nation in enrollment and first in the number of master's and doctoral degrees granted. All undergraduate programs of the college are accredited by The American Home Economics Association. Much of the growth of the college is due to its highly qualified faculty and staff who are aware of the current community problems and needs and make the college's programs relevant to the goals and aspirations of today's students.

Today's students seek professional positions in which they better can serve people—individuals, families, consumers—by helping predict and solve problems arising from the rapidly increasing changes occurring in the society in which we live. The basis of the college's professional programs is to prepare men and women to serve the needs of people in their many, varied environments and different stages of life.

The philosophy of the college is stated best as follows: human ecology seeks knowledge that describes and analyzes, but is not content with studying only "what is," in order to enhance the quality of life and well-being of people and society, the college is concerned also with promoting "what can and should be."

The college's mission is twofold: in the undergraduate programs students prepare to work as professionals with people, to enhance their capacity to develop and grow; its graduate programs are geared toward applied and preventative research, producing alternative solutions to technical and social problems that are and will be encountered by the people who are to be served.

The University of Tennessee was one of the first institutions of higher education in the South to offer home economics and has continued to hold a position of regional and national leadership. The first class was taught in 1897.

The faculty of the college numbers 60 full-time teaching and research staff. There are three departments with curricula leading to the Bachelor of Science degree: Child and Family Studies; Nutrition and Food Sciences; and Textiles, Merchandising and Design. The undergraduate program in Home Economics Education is also housed in the College of Human Ecology. Approximately 350 courses are offered in the three departments. The graduate programs leading to the Master of Science degree were begun in the summer of 1925. Programs for the Doctor of Philosophy degree were initiated in 1960. The Doctor of Philosophy program in the College now includes five concentrations: Child Development, Family Studies, Food Science, Nutrition Science, and Textiles and Apparel.

Special Resources

Several special programs enhance the offerings of the college: Selected students have the opportunity to study for one quarter at the Child Development Center of the Center for Health Sciences in Memphis or at the Fashion Institute of Technology in New York. Credits earned may be applied toward a Bachelor of Science degree in appropriate curricula of the college.

Model daycare programs for infants, toddlers, and preschool children provide students the opportunity to train for careers as directors of, and teachers in, child care facilities. The need for appropriate child day care facilities staffed with well-trained, competent staff is recognized as one of the most urgent problems of today's urban society. Opportunities for human ecology graduates with special interest in preschool programs are numerous and continue to increase in the public, private, and corporate sectors.

International study tours in several areas of human ecology are offered as demanded. The course "Human Ecology 4910 International Study Tour" is offered for 6 credit hours at the undergraduate level. The length of the tours may vary from 6 to 8 weeks and the program is under the direction of a member of the faculty.

The Department of Nutrition and Food Sciences has a cooperative arrangement in which food service systems, such as those of the university, hospitals, schools, hotels, and restaurants are available for laboratory experience for Tourism, Food and Lodging Administration students and in food industries for those in the Nutrition and Food Sciences curriculum. During the junior and senior years, students in the Coordinated Undergraduate Program in Dietetics receive clinical experience integrated with courses in hospitals and other health care facilities. The Tourism, Food, and Lodging Administration program combines classroom instruction, laboratory work, and in experience in industry to prepare students for careers in the hospitality field. It also provides a field of experience for students during their junior and senior years. Graduates of the Coordinated Undergraduate Program in Dietetics will be eligible for membership in the American Dietetics Association (ADA) and to apply for the ADA Registration Examination. The Nutrition and Food Sciences department maintains liaison with the Knox County Health Department to provide concurrent field experience for students in Nutrition and Food Sciences options. The Nutrition and Food Sciences option can be used to meet academic requirements for membership in the American Dietetic Association.

All departments of the college conduct basic and applied research that may be supported in part by the university, college, federal, foundation and state grants and contracts, and by the Agricultural Experiment Station. The instructional and research facilities of the college are diverse, including, for example, closed-circuit television for observing children, a newly renovated small animal laboratory, and the only non-woven textile processing laboratory on a college campus in the world.

Summer Workshops on special topics of current importance are offered by the departments in human ecology. These will be of
special interest to those desiring to work for advanced degrees. Announcements are sent upon request. The Continuing Education Program provides advanced courses in all areas of human ecology at centers across the state for updating and retraining as faculty resources permit. The program includes short courses, workshops, evening courses, and special videotape and telecourse courses.

Facilities
The Jessie W. Harris Building, in which the College of Human Ecology is housed, was dedicated in 1926. Since that time two wings have been added, one in 1937 and another in 1959. The Child Development Center is a separate building especially planned as a laboratory for teaching and research with preschool children. It houses infant and preschool day care centers, a preschool curriculum laboratory, and rooms for observation and research.

A separate Child Development facility housed in the UT Golf Range Apartments is staffed by the college and provides a laboratory for teaching and research, as well as a model center for all group care of toddlers. Nutrition and Food Sciences facilities include well-equipped laboratories for basic food science, experimental food science, experimental nutrition (animal), and chemistry for undergraduate and graduate students.

Laboratories include instruments for the evaluation of the chemical, physical, histological, and sensory properties of food, in addition to facilities for metabolic and survey studies of human nutrition.

Home Economics Education offices and curriculum laboratory is located in the Jessie W. Harris Building.

The Department of Textiles, Merchandising and Design facilities include provisions for laboratory and studio experiences. Laboratories for interior design include computer-aided design facilities as well as drafting equipment.

Textile research facilities are available to undergraduate and graduate students and to research personnel interested in textile studies that benefit fiber producers, fabric and clothing manufacturers, and consumers. Laboratories are well equipped for the physical and chemical analyses of fabrics, yarns, and fibers.

Certification in Vocational Home Economics Education

The University of Tennessee, Knoxville, is approved for teacher training in home economics. The professional curriculum in Home Economics Education is listed on page 139.

Educational Programs for Home Economics Extension Education

Students interested in careers as home economics extension agents have opportunities throughout the nation for employment in service to rural and urban families. The Extension and Community Services option in Home Economics Education is designed for individuals interested in working in community-based home economics programs such as Extensions. This course of study includes comprehensive study in all areas of home economics as well as in educational principles.

Students interested in this program should contact their advisor or the Dean, College of Human Ecology.

Undergraduate Study in Human Ecology

Curricula in the following areas lead to the bachelor's degree:

- **Child and Family Studies**
- **Option 1—Early Childhood Development**
- **Option 2—Human Development and Family Studies**

**Home Economics Education**

- **Option 1—Vocational Home Economics Education**
- **Option 2—Extension, Business and Community Services**

**Nutrition and Food Sciences**

- **Option 1—Nutrition and Food Sciences**
- **Option 2—Coordinated Undergraduate Program in Dietetics**

**Textiles, Merchandising and Design**

- **Option 1—Merchandising**
- **Option 2—Textile Science**
- **Option 3—Textiles and Apparel**

**Interior Design**

Tourism, Food and Lodging Administration

NOTE: Students are advised to consult the University's degree requirements as stated in the front section of this catalog as well as the requirements for educational princi-
with the majority of credit hours the 3000- and 4000-level. At least 12 of the credit hours required for the minor must be completed at UT-K. Specific requirements are listed by each department offering a minor and it is assumed that prerequisites to these courses will not count toward the minor.

Minors in the College of Human Ecology are offered to study in 8 college and students in other colleges who have approval of their advisor and their college or school. Minors are recorded on students' transcripts without regard to course overlap among majors and minors.

All courses taken for a minor as offered in the College of Human Ecology must be taken for a grade unless the course is offered on a satisfactory/no credit basis. A student seeking a minor in the College of Human Ecology must declare such intention to the Dean of the college by completion of a Declaration of a Minor in the College of Human Ecology form prior to completing more than one-half of the total hours required for the minor. A student seeking a minor as offered in the College of Human Ecology must indicate this intention upon the application for graduation.

**Family Studies**

A minor in Family Studies consists of 28 credit hours as follows:


A minor in Child Development consists of 27 credit hours as follows:


A minor in Child and Family Studies consists of 28 credit hours as follows:

2110 Human Socialization (3), 2410 Human Sexuality (3), 3515 Family Relationships (3), 4440 Management in Family Systems (4), 4610 Child in the Community (3); 6-12 credit hours selected from: 2200 Development in Infancy (3), 2210 Development in Early Childhood (3), 2220 Development in Middle Childhood (3), 3520 The Family and the Adolescent (3); and 6-8 credit hours selected from: 1500 Introduction to Early Education (3), 2120 Sex Roles and Marriage (3), 3510 Intimacy: Marriage and Alternatives (3), 4260 Adult Development and Aging (3), 4350 Advanced Child Development (3), 4420 Learning Experience with Parents (3), 4430 Family Interaction (3).

**Nutrition and Food Sciences**

A minor in Nutrition and Food Sciences consists of 24 credit hours as follows:

3005 Nature of Food I (4), 3015 Nature of Food II (4), 3120 Fundamentals of Nutrition (3) or 3160 Science of Nutrition (5), and 14 credit hours selected from: 4000 Origin of Food and Agriculture (3), 4010 Introduction to Experimental Food Science (3), 4040 Food in Contemporary Society (3), 4130 Nutrition in Disease I (4), 4150 Community Nutrition (3), 4180 Environmental Effects on Nutrition (3), 4190 Diet and Healthy Thermal (3), 4330 Readings in Nutrition and Food Science (3).

**Textiles, Merchandising and Design**

A minor in Textile Science consists of 26 credit hours as follows:


A minor in Merchandising consists of 25 credit hours as follows:


**Professional Curricula in Child and Family Studies**

The Department of Child and Family Studies is concerned with early education, human development and family interaction throughout the life course. Departmental goals and objectives are designed to contribute to the interpersonal and professional competence of students and to provide preparation for careers in the helping professions related to children, adolescents, adults, and families, depending on the option the student selects.

The curriculum is appropriate for persons oriented toward teaching and/or administrative positions in child care centers and educational preschool programs in public schools, with family services, child welfare agencies, Cooperative Extension, banks, religious organizations, hospitals, and consumer agencies. Other opportunities exist that require study beyond the bachelor's level (for example: administration, research, and clinical services). All options provide necessary background for graduate study in child development, family relationships, early childhood education, and social work.

**Admission to Student Teaching**

Application for all student teaching programs must be filed no later than one year prior to the quarter of the student's teaching experience. Applications are filed with the secretary in Child and Family Studies Office, Jessie W. Harris Building, Room 115. Students may request the quarter in which they wish to student teach, but there is no guarantee that their preference can be accommodated. Before admission to Child and Family Studies 4110-11, students must have senior standing with an overall grade point average of 2.5, and GPA in the major of 2.5.

**OPTION 1. EARLY CHILDHOOD DEVELOPMENT**

This option is appropriate for persons interested in the following types of positions: day care teacher, nursery school teacher, worked in day care center for socially disadvantaged and/or handicapped children, child life specialists, entry level positions in social work, or preparation for graduate school.

**Freshman**

<table>
<thead>
<tr>
<th>Hours Credit</th>
<th>Home Economics 1510</th>
<th>4</th>
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<tbody>
<tr>
<td>Home Economics 1520</td>
<td>4</td>
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<tr>
<td>Child &amp; Family Studies 1500</td>
<td>3</td>
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<td>Natural Science</td>
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<td>English 1010 or 1011, 1020</td>
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<tr>
<td>English 1031 or 1032 or 1033</td>
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<tr>
<td>Mathematics 1540</td>
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<td>Philosophy 1710 or 1810 or 2510 or 2540 or 3100 or upper division Foreign Language</td>
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<td>Music 1210 or Art 1815 or 1825</td>
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**Sophomore**

<table>
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<tr>
<td>Child &amp; Family Studies 2350</td>
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<tr>
<td>Home Economics 2510</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Nutrition &amp; Food Sciences 1130</td>
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<td>Physical Education electives</td>
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<td></td>
</tr>
<tr>
<td>Speech 1221 or 2351</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Social Sciences</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>History 1510 or 1520</td>
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**Junior**

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<td>Economics 3510</td>
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<td>Literature elective</td>
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<td>Physical or Biological Science elective</td>
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<td>Philosophy or Religious Studies elective</td>
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<td>Special Education 3333</td>
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<td>Physical Education 3560 or 3570</td>
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<td>School Health 3210</td>
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<td>Curriculum &amp; Instruction 4390</td>
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**Senior**

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<th>Hours Credit</th>
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<tr>
<td>Child &amp; Family Studies 4810 or Human Services 3200 or Educ. Psych. 4810</td>
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<td>Child &amp; Family Studies 4350</td>
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<tr>
<td>Child &amp; Family Studies 4810</td>
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<tr>
<td>Child &amp; Family Studies 4420</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Child &amp; Family Studies 4820</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Child &amp; Family Studies 4210 or Interior Design 4320</td>
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<td></td>
</tr>
<tr>
<td>Electives</td>
<td>12-14</td>
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</tr>
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</table>

**OPTION 2. HUMAN DEVELOPMENT AND FAMILY STUDIES**

This option is for undergraduate CFS majors who want a broad background in individual and family studies. This option does not prepare for a career in preschool education. Students interested in the Cooperative Extension Service, community agencies, general family counseling, social work, and graduate work would choose this undergraduate option.

**Freshman**

<table>
<thead>
<tr>
<th>Hours Credit</th>
<th>Home Economics 1510</th>
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<tbody>
<tr>
<td>Home Economics 1520</td>
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<td></td>
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<tr>
<td>Child &amp; Family Studies 1500</td>
<td>3</td>
<td></td>
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<tr>
<td>Natural Science</td>
<td>12</td>
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</table>
Endorsement in one or more of the occupational areas is optional. Course requirements for an endorsement are in addition to those of the basic consumer and homemaking education requirements.

**Freshman**

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
<td>Chemistry 1510-20-30</td>
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<tr>
<td>English 1010 or 1011; 1020</td>
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<tr>
<td>English 1031 or 1032 or 1033</td>
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</tr>
<tr>
<td>*Mathematics 1440</td>
<td>4</td>
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<tr>
<td>Philosophy 1510 or 2510 or 2520 or 2530 or upper division Foreign Language</td>
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<tr>
<td>Music 1210 or Art 1815 or 1825</td>
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**Sophomore**

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
<td>Child &amp; Family Studies 2120</td>
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<tr>
<td>Literate elective</td>
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<tr>
<td>*Nutrition &amp; Food Sciences 1130</td>
<td>3</td>
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<tr>
<td>Home Economics 2510</td>
<td>4</td>
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<tr>
<td>Physical Education elective</td>
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<tr>
<td>Speech 1221 or 2311 or 2351</td>
<td>3</td>
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<tr>
<td>Physical or Biological Science elective</td>
<td>4</td>
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<tr>
<td>*Social Sciences</td>
<td>16</td>
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<tr>
<td>History 1510 or 1520</td>
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<tr>
<td>Elective</td>
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**Junior**

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
<td>Child &amp; Family Studies 2410 or Sociology 3150</td>
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<tr>
<td>Child &amp; Family Studies 3510</td>
<td>3</td>
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<tr>
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<td>3</td>
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<tr>
<td>Child &amp; Family Studies 3520</td>
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<td>Home Economics 3810</td>
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<tr>
<td>Economics 2510</td>
<td>4</td>
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<tr>
<td>History or Political Science elective</td>
<td>4</td>
</tr>
<tr>
<td>Philosophy or Religious Studies elective</td>
<td>4</td>
</tr>
<tr>
<td>Electives</td>
<td>13-14</td>
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**Senior**

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
<td>Child &amp; Family Studies 3200 or 4350</td>
<td>3</td>
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<tr>
<td>Child &amp; Family Studies 4290</td>
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<td>Child &amp; Family Studies 4420 or 4610</td>
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<td>Child &amp; Family Studies 4430</td>
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<td>Child &amp; Family Studies 4810 or Educational Psychology 4890</td>
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<td>Sociology elective</td>
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<td>Electives</td>
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Total: 192 hours

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1. Twelve hours selected to include one of the following sequences: Biology 1210-20-30, Chemistry 1810-20-30, Physics 1410-20-30, Zoology 2510-20-30, Zoology 2920-30.
2. Requirement may be satisfied by Mathematics 3000 or Psychology 3180 to be taken senior year.
3. Requirement may be satisfied by Educational Psychology 4110 to be taken senior year.
4. Requirement may be satisfied by Nutrition & Food Sciences 3120 to be taken junior year.
5. Elective hours may be used for additional endorsement in one or more of the occupational areas.
7. Requires admission to Teacher Education Program.

### Occupational Endorsement Areas

**1. FOOD MANAGEMENT**

<table>
<thead>
<tr>
<th>ENDORSEMENT</th>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
<td>Nutrition &amp; Food Sciences 3210</td>
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<tr>
<td>Nutrition &amp; Food Sciences 3230</td>
<td>5</td>
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<tr>
<td>Nutrition &amp; Food Sciences 3330</td>
<td>5</td>
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<tr>
<td>Home Economics Education 4509</td>
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<td>Home Economics Education 4510</td>
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**CARE AND GUIDANCE OF CHILD ENDORSEMENT**

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<td>Child &amp; Family Studies 3360</td>
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<td>Child &amp; Family Studies 4420 or 4610</td>
<td>3</td>
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<tr>
<td>Child &amp; Family Studies 4520</td>
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<tr>
<td>Home Economics Education 4509</td>
<td>4</td>
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<tr>
<td>Home Economics Education 4510</td>
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**3. CLOTHING MANAGEMENT ENDORSEMENT**

<table>
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<th>Hours</th>
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<tbody>
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<td>Textiles &amp; Apparel 2170</td>
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<td>Textiles &amp; Apparel 2110 or 3350</td>
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<td>Textiles &amp; Apparel 4010 or 4120</td>
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<td>Home Economics Education 4590</td>
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</tr>
<tr>
<td>Home Economics Education 4510</td>
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</table>

**OPTION 2. EXTENSION AND COMMUNITY SERVICE**

This option is designed to prepare graduates to work in community based home economics education programs. Due to social forces and effects of legislation, home economics increasingly are entering the field of community service as teachers and specialists in home economics subject matter in non-traditional educational settings. This option provides the same general education components as in Option 1, a comprehensive home economics background encompassing all of the subject matter areas within the field, as well as educational principles and skills needed to participate effectively in community based programs. There is provision in the curriculum for students to select coursework in supporting areas such as Communications, Psychology, Political Science, Sociology, Human Services, and Education. Early exposure to community based programs and an extensive field experience are important components of this curriculum.

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
<td>Chemistry 1510-20-30</td>
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<tr>
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<td>*Mathematics 1440</td>
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<tr>
<td>Philosophy 1510 or 2510 or 2520 or 2530 or upper division Foreign Language</td>
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<tr>
<td>Music 1210 or Art 1815 or 1825</td>
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**Sophomore**

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<tbody>
<tr>
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<td>Psychology 2500</td>
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<td>Zoology 2920-30</td>
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**Junior**

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<th>Hours</th>
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<tbody>
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<td>Child &amp; Family Studies 2210, 3510</td>
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<tr>
<td>Educ. Curriculum and Instruction 6200, 6300</td>
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<td>Special Education 3333</td>
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<td>Educational Psychology 3810</td>
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<td>Nutrition &amp; Food Science 3020</td>
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<td>Home Economics Education 3240</td>
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<td>Child &amp; Family Studies 4210</td>
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<td>Nutrition &amp; Food Sciences 3120</td>
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<td>Interior Design 3110</td>
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<td>Textiles &amp; Apparel 3420</td>
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<tr>
<td>Textiles &amp; Apparel 3429</td>
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**Senior**

<table>
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<tr>
<td>Electives</td>
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<tr>
<td>Textiles &amp; Apparel 3170</td>
<td>3</td>
</tr>
</tbody>
</table>

Total: 190 hours

---

*Elective hours may be used for additional endorsement in one or more of the occupational areas.

*See College of Education Curriculum for Secondary Education.

*Requires admission to Teacher Education Program.

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
<td>Child &amp; Family Studies 3515</td>
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<tr>
<td>Child &amp; Family Studies 2210, 3510</td>
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<tr>
<td>Educational Psychology 3810 or Child &amp; Family Studies 3520</td>
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</tr>
<tr>
<td>Nutrition &amp; Food Sciences 3020</td>
<td>3</td>
</tr>
<tr>
<td>Child &amp; Family Studies 3420 or 4300</td>
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<tr>
<td>Nutrition &amp; Food Sciences 3020</td>
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<tr>
<td>Interior Design 3110</td>
<td>3</td>
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<tr>
<td>Rural Soc. 3420</td>
<td>3</td>
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<tr>
<td>Sociology 3420</td>
<td>3</td>
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<tr>
<td>Textiles &amp; Apparel 3420</td>
<td>3</td>
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<tr>
<td>Textiles &amp; Apparel 3429</td>
<td>1</td>
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<tr>
<td>*Electives and/or supporting courses</td>
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**Junior**

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
<td>Child &amp; Family Studies 4210</td>
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<tr>
<td>Child &amp; Family Studies 4250 or Sociology 3590</td>
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<tr>
<td>Child &amp; Family Studies 4440</td>
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</tr>
<tr>
<td>Home Economics Education 4400</td>
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<tr>
<td>Home Economics Education 4500</td>
<td>4</td>
</tr>
<tr>
<td>Nutrition &amp; Food Sciences 4150</td>
<td>3</td>
</tr>
<tr>
<td>Nutrition &amp; Food Sciences 4160</td>
<td>4</td>
</tr>
<tr>
<td>Textiles &amp; Apparel 3170</td>
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</tr>
</tbody>
</table>

Total: 190 hours

* A minimum of five supporting courses are to be chosen from an approved list (available in Child and Family Studies Office, Room 115, Jesse Harris Building).
Professional Curricula in the Department of Nutrition and Food Sciences

**Nutrition and Food Sciences Major**

Entering freshmen in Options 1 and 2 will be assigned as NFS majors and a departmental advisor will be assigned. Freshmen interested in Option 2 should progress into that option by their third quarter in residence. Transfer students must apply to the Director of Admissions, be admitted to the University of Tennessee, Knoxville, and associate with the College of Human Ecology prior to the declaration of a major within the department.

**OPTION 1. NUTRITION AND FOOD SCIENCES**

This professional curriculum provides a mathematical approach to the study of nutrition and food sciences. It includes in-depth study in nutrition and food sciences and application of this knowledge to individuals, families, and groups. Career opportunities of graduates include positions in food product development and evaluation and/or consumer services in industry, government, a dietetic internship, and graduate study.

Students may elect to meet academic requirements (Plan IV - Clinical Nutrition) for membership in The American Dietetic Association by selection of appropriate electives noted below. An internship or a graduate degree with experience complete the clinical requirements. Upon completion of academic and clinical requirements, students are eligible to apply for membership in The American Dietetic Association and to apply to take the registration examination to qualify as a Registered Dietitian.

**Freshman**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>Chemistry 1110-120-30 or 1510-20-30</td>
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<tr>
<td>Mathematics 1400-1420</td>
<td>5</td>
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<tr>
<td>English 1010 or 1020</td>
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<tr>
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<td>4</td>
<td></td>
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<tr>
<td>Sociology 1510</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Microbiology 2910-2919</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Natural Science elective</td>
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<tr>
<td>Electives</td>
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**Sophomore**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nutrition &amp; Food Sciences 3130-40-50</td>
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<tr>
<td>Nutrition &amp; Food Sciences 3200-3210</td>
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<td></td>
</tr>
<tr>
<td>Economics 2520</td>
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<td>Microbiology 2910-2919</td>
<td>5</td>
<td></td>
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<td>Literature elective</td>
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<tr>
<td>Statistics 2100 or Plant Soil Sciences 3610</td>
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<td></td>
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<tr>
<td>Zoology 2920-30-30</td>
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**Junior**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
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<tbody>
<tr>
<td>Nutrition &amp; Food Sciences 3015-20-20</td>
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<tr>
<td>Nutrition &amp; Food Sciences 3160</td>
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<tr>
<td>Nutrition &amp; Food Sciences 4130</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Sociology 1610</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Nutrition &amp; Food Sciences electives</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Anthropology 4250 or Philosophy 3610</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Communication Sciences elective</td>
<td>3</td>
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</tr>
<tr>
<td>Elective</td>
<td>3</td>
<td>12</td>
</tr>
</tbody>
</table>

**Senior**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nutrition &amp; Food Sciences 4010</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Nutrition &amp; Food Sciences 4150</td>
<td>3</td>
<td></td>
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<tr>
<td>Nutrition &amp; Food Sciences 4330</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Nutrition &amp; Food Sciences electives</td>
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<tr>
<td>Humanities elective</td>
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</tbody>
</table>

**Total: 190 hours**

1. Requires Mathematics 1560 as a prerequisite.
2. Program must include at least 72 hours of 3000-4000 level courses.

**OPTION 2. COORDINATED UNDERGRADUATE PROGRAM IN DIETETICS**

The Coordinated Undergraduate Program in Dietetics is a general program, educating entry-level dietitians in administrative and clinical dietetics, and is accredited by the American Dietetic Association (ADA). The program incorporates the equivalent of a fifth year dietetic internship into a four-year academic curriculum. The curriculum includes a two-year pre-professional sequence that meets general education requirements and prerequisites for professional courses, and a professional phase in the junior and senior years. The junior year provides an introduction to dietetics, and advanced courses in food science, nutrition, and food systems administration. The senior or fourth year consists of advanced application of knowledge acquired in the junior year to increasingly complex administrative and clinical experiences. During the professional phase, academic courses are coordinated with planned experiences in selected hospitals and community facilities. The assignment of students to each clinical site is made by the program director.

**Progression Policies**

A student may progress into the professional phase of the program provided all requirements or equivalents of the program up to that time, as well as University of Tennessee and College of Human Ecology standards, have been met satisfactorily. Pre-professional courses may be taken at The University of Tennessee, Knoxville, or any accredited college. The program has been planned to permit transfer students to apply prior to the beginning of the junior year. Applications should be made to the program director by March 15.

Criteria for selection include (1) evidence that the student will successfully complete the two-year pre-professional phase, (2) an overall GPA of 2.5 or higher, (3) personal interview, and (4) recommendations from faculty of selected pre-professional courses. The number of qualified students accepted into the Coordinated Undergraduate Program in Dietetics is contingent on the number of clinical sites available. Criteria for progression to the professional phase must be maintained throughout the pre-professional phase.

Criteria for progression within the junior and senior professional phase years will include (1) satisfactory completion of each required professional course as scheduled with a minimum grade of C, (2) periodic evaluation of competency level by academic and clinical faculty, and (3) maintenance of an overall GPA of 2.5 or higher. The maximum credit hours carried per quarter should not exceed 18 hours without special permission from the program director.

Upon satisfactory completion of the program, students receive the Bachelor of Science Degree in Human Ecology and are eligible to apply for membership in the American Dietetic Association and to apply to take the registration examination to qualify as a Registered Dietitian. As of July 1, 1987, this program will be phased out.

**Freshman**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry 1510-1520-1530</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Math 1540-1550</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>English 1010 or 1011; 1020</td>
<td>6</td>
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</tr>
<tr>
<td>Economics 1031 or 1032 or 1033</td>
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<td></td>
</tr>
<tr>
<td>Microbiology 2910-2919</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Economics 2920-2930</td>
<td>4</td>
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</table>

**Sophomore**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>Nutrition &amp; Food Sciences 3130-3140-3150</td>
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<tr>
<td>Nutrition &amp; Food Sciences 3210</td>
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<td></td>
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<tr>
<td>Nutrition &amp; Food Sciences 3005</td>
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<tr>
<td>Nutrition &amp; Food Sciences 3220</td>
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</tr>
<tr>
<td>Nutrition &amp; Food Sciences 3130-3140-3150</td>
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<tr>
<td>Nutrition &amp; Food Sciences 4100-4101</td>
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<td>Nutrition &amp; Food Sciences 4120-4121</td>
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<td>Nutrition &amp; Food Sciences 4130-4131</td>
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<tr>
<td>Nutrition &amp; Food Sciences 3230-3231</td>
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**Junior**

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Psychology 2500</td>
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<tr>
<td>Nutrition &amp; Food Sciences 4150-4151</td>
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<tr>
<td>Nutrition &amp; Food Sciences 4000-4001</td>
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</tr>
<tr>
<td>Psychology 2500</td>
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<tr>
<td>Sociology 1610</td>
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<td>Humanities elective</td>
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</tr>
<tr>
<td>Elective</td>
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<td>12</td>
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**Senior**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
<td>Nutrition &amp; Food Sciences 4010</td>
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<tr>
<td>Nutrition &amp; Food Sciences 4150</td>
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<tr>
<td>Nutrition &amp; Food Sciences 4330</td>
<td>3</td>
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</tr>
<tr>
<td>Nutrition &amp; Food Sciences electives</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Humanities elective</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

**Total: 190 hours**

1. Select from Plant & Soil Science 3610, Psychology 3150, or Statistics 2110 (requires Mathematics 1560 as a prerequisite).
2. Program must include at least 72 hours of 3000-4000 level courses.

**Tourism, Food, and Lodging Administration Major**

The professional curriculum is concerned with meeting the middle and upper level management needs of the tourism, food, and lodging industry of today. It provides a program that will assist students in gaining breadth of knowledge, perspective, flexibility, and creativity to meet the changing environment of complex management problems in the industry.

A business minor is available to students who successfully complete at least 21 hours of the following required courses: Accounting 2110-20-30, Economics 2510-20, and Statistics 2100. In addition, 15 hours of upper-division business electives must be taken at UTK. Not more than six upper-division hours of Accounting, Economics, or Statistics may be
<table>
<thead>
<tr>
<th>Year</th>
<th>Courses</th>
<th>Hours</th>
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<tr>
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<td>Nutrition &amp; Food Sciences 4230</td>
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<td>Nutrition &amp; Food Sciences 4240-4250-4260</td>
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<td></td>
<td>Nutrition &amp; Food Sciences 4000</td>
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<td></td>
<td>Home Economics 3510</td>
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<td></td>
<td>Business Law 4110</td>
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<td></td>
<td>Electives</td>
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<tr>
<td>Senior</td>
<td>Computer Science 1410</td>
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<td>Electives</td>
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<td></td>
<td>Nutrition &amp; Food Sciences 4230</td>
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<td>Nutrition &amp; Food Sciences 4240-4250-4260</td>
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<td>Nutrition &amp; Food Sciences 4000</td>
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<td></td>
<td>Home Economics 3510</td>
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<td></td>
<td>Business Law 4110</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Electives</td>
<td>3</td>
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</tbody>
</table>

**Total: 190 hours**

*Natural science electives (12 hr. sequence) from one of the following areas: Biology 1210-20-30, Chemistry 1510-20-30, or Physics 1410-20-30.

*Statistics 2100 requires Mathematics 2100 as a prerequisite; for the business minor Statistics 2100 is required.

### Professional Curriculum in Interior Design

#### Acquisition and Exhibition

The department reserves the right of acquisition and exhibition of work completed in its studios under the guidance of the faculty.

### Interior Design Major*

The Interior Design major is for students who primarily are interested in becoming professional interior designers. This program has received accreditation by FIDER.

### Association and Progression Policies

Interior Design is a professional program that requires a controlled faculty-student ratio for a high quality educational experience. Application of entering freshmen should be received by April 15 for admission to the subsequent fall quarter. An ACT score of at least 18 and a high school GPA of at least 2.25 are required for admission. Transfer students will be evaluated by an admissions committee.

Progression to junior level interior design studio requires (1) satisfactory completion of the sophomore level interior design series (2450-2451) with a cumulative grade point average of at least 2.3; exceptions are made by petition only; (2) application to the Department of Textiles, Merchandising and Design no later than the eighth week of the quarter in which the student is enrolled in 2451; and (3) a personal interview and evaluation of the applicant’s portfolio by designated members of the interior design faculty.

Students whose competencies do not meet the program standards will be assisted in entering other departmental curricula or transferring to other college or university programs.

Students must maintain an overall 2.3 grade point average to maintain "full status" in the program. Prior to acquiring 96 quarter hours, academically deficient students will be put on "temporary status" during which the students must raise their overall GPA to 2.3 and have a minimum of 2.3 for each quarter's work until the overall average is raised to 2.3. If the overall GPA is not raised to 2.3 by completion of 96 hours the students will be dropped from the interior design program. Students must earn a C or better in each required upper-division interior design course to graduate from the program.

### Textiles and Apparel Major

**OPTION 1. MERCHANDISING**

This major is designed to prepare students for a variety of careers associated with the design, manufacture, promotion, and distribution of textile and apparel products. Students who have a strong interest in retailing should pursue this major.

A business minor is available to students who successfully complete 21 hours of the following required courses: Accounting 2110, 2120, 2130; Economics 2510, 2520; and Statistics 2100. In addition, 15 hours of upper-division hours of Accounting, Economics, or Statistics may be used for this minor. Students are responsible for meeting prerequisites listed for any upper division courses taken.

#### Freshman

<table>
<thead>
<tr>
<th>Hours Credit</th>
<th>Course</th>
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<td>English 1010 or 1101, 1020, 1033</td>
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<tr>
<td>Architecture 1101, 1201, 1202</td>
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<tr>
<td>Interior Design 1430, 1440, 1450, 2000</td>
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<tr>
<td>Textiles &amp; Apparel 1420, 1429</td>
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<tr>
<td>Home Economics 1510, 1520</td>
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<tr>
<td>Art 1815, 1825, 2117</td>
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<td>Interior Design 2450, 2451, 2452, 2453, 2791</td>
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</tr>
<tr>
<td>Electives</td>
<td>15</td>
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</tbody>
</table>

**Total: 192 hours**

*Select eight hours from one of the following areas: Biology 1210-1220, Chemistry 1510-1520, Physics 1410-1420, Botany 1110-1120.

*Select eight hours from: Economics 2350, 3110, 3111; Anthropology 2530, 3410, 3450; Psychology 2530, 2550, 2540, 3120, 3150; Sociology 1510, 3010, 3130, 3350.

*Select from: Art, Literature, Philosophy, Foreign Language or Music.

*Select four hours from: Art 2105, 2115, 2205, 2215, 2260, 2265, 2275, 2280, 2285, 2305, 2315, 2405, 2407, 2408, 2409, 2415, 2450, 2505, 2515, 2590.

*A minimum of 72 hours of upper-division courses is required for graduation.
<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textiles &amp; Apparel 2510, 2520</td>
<td>8</td>
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<tr>
<td>Sociology 1510</td>
<td>4</td>
</tr>
<tr>
<td>Journalism 2210</td>
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<td>Psychology 2500</td>
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<td><strong>Junior</strong></td>
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<tr>
<td>Accounting 2200</td>
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<td>Textiles &amp; Apparel 3420, 4010</td>
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<tr>
<td>Textiles &amp; Apparel 3480</td>
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</tr>
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<td>Textiles &amp; Apparel 3510</td>
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</tr>
<tr>
<td>Textiles &amp; Apparel 4110</td>
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</tr>
<tr>
<td>Textiles &amp; Apparel 4460</td>
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<tr>
<td>Textiles &amp; Apparel 4520</td>
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<tr>
<td>Textiles &amp; Apparel 4630</td>
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</tr>
<tr>
<td>Textiles &amp; Apparel 4640</td>
<td>6</td>
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<td>Home Economics 2510</td>
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<tr>
<td>Marketing 3161</td>
<td>4</td>
</tr>
<tr>
<td>History, Art History, Music, Religious Studies, or Political Science</td>
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<tr>
<td><strong>Winter quarter only.</strong></td>
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</tr>
<tr>
<td><strong>Spring quarter only.</strong></td>
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</tr>
<tr>
<td><strong>Fall quarter only.</strong></td>
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</tbody>
</table>

**OPTION 1. TEXTILE SCIENCE**

This curriculum is appropriate for students wishing to prepare for positions in textile processing, research, product development and quality assurance and for graduate studies leading to college teaching and research in textiles.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Textiles &amp; Apparel 2510, 2520</td>
<td>8</td>
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<tr>
<td>Sociology 1510</td>
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<td>Journalism 2210</td>
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<td>Psychology 2500</td>
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**Sophomore**

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<td>Home Economics 2610</td>
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<tr>
<td>Textiles &amp; Apparel 4460</td>
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**Upper division electives**

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<td>Interior Design 3130</td>
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<td>Textiles &amp; Apparel 4310</td>
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**OPTION 3. APPAREL AND TEXTILES**

This curriculum is designed to prepare students for graduate study to become college teachers and researchers. Students also may use electives in Management or Industrial Engineering to prepare for careers in apparel production management. Continuation in the program after completion of 89.9 credit hours requires the achievement and maintenance of an overall grade point average of at least 2.5.

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<tr>
<th>Course</th>
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<tr>
<td>Textiles &amp; Apparel 3410, 4010, 4120, 4140, 4210</td>
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<td>Humanities electives</td>
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**Total: 192 hours**

**Graduate Study Programs in the College of Human Ecology**

The College offers a full range of graduate studies leading to the M.S. and Ph.D. degrees. Any person interested in graduate studies should request information, application and a Graduate Catalog from: Jay Stauss, Associate Dean, College of Human Ecology, The University of Tennessee, Knoxville, TN 37990-1900.

**Departments of Instruction**

**Child and Family Studies (245)**

Professors:
- N. H. Balcik (Dean), Ph.D. Michigan State;
- M. L. Bishop (Emerita), Ph.D. Cornell;
- J. L. Cunningham, Ph.D., Michigan State; G. L. Fox (Head);
- Ph.D. Michigan; C. E. Gilbert (Emerita), Ed.D. Cornell;
- R. L. Highberger (Emerita), Ph.D. Iowa;
- N. P. Logan (Emerita), Ed.D. Tennessee;
- V. M. Nordquist, Ph.D. Tennessee; L. E. Speer (Emerita), M.A. Columbia; P. N. White, Ed.D. Tennessee.

Associate Professors:
- J. H. McInerney, Ph.D. Florida State; G. W. Peterson,

Assistant Professors:
- J. E. Allen, Ph.D. Purdue; L. Blinn, Ph.D. Ohio State;
- C. A. Buehler, Ph.D. University of Minnesota;

1120 Management and Its Contribution to Family Living (3) Decision making processes, relationships among decisions; principles of organization for implementing decisions; evaluation procedures; factors affecting management process; application of management principles to problems.

1500 Introduction to Early Education (3) Introduction and overview of early childhood education; conceptions of children, teachers, and teaching. Includes field observation.

2110 Human-Socialization (3) Human development with emphasis on socialization process from infancy through adulthood in family, school, and peer group settings. For non-majors only.

2120 Sex Roles and Marriage (3) Examination of impact of gender roles on marital relationships. Issues such as power and decision-making, communication, and combining careers and families are included. (Same as Women's Studies 2120.)

2200 Development in Infancy (3) Development during prenatal, infancy and toddlerhood period of life. Interaction between infant and environment. Review of research relating to childbearing practices and prediction of later behavior. Prereq: 2110 and Zoology 2590 or equivalent.

2210 Development in Early Childhood (3) Comprehensive view of the child during the early childhood years. Analysis of interrelationships among various aspects of development: physical, cognitive, emotional, and social. Includes one hour of observation per week. Prereq: 2200 or consent of instructor.

2220 Development in Middle Childhood (3) Growth and development during the middle childhood years with emphasis on influence of family and community. Special attention to different social and cultural settings. Includes one hour of observation per week. Prereq: 2210 or consent of instructor.

2300 Observational Methods in Child Development (3) Overview of methods of observing teacher and child behavior and development of individual skills in observational assessment. Prereq: 2210 or consent of instructor.

2410 Human Sexuality (3) Dimensions of human sexuality examined through cultural, social, and psychological influences.

3125 Day Care and Children (3) Examination of different types of day care and influence of day care on infants.
scheduling, and financing for day care of infants and community agencies meeting these needs; visits to practices. Prereq: Senior standing.

4380 Aesthetic Experiences (3) Examination of subject matter areas—quantity and logic, art, music, literature, and science. Two hours participation in child development laboratories per week. Prereq: 3350 recommended.

4320 Family Economics (3) Management of family income and resources. Private and public measures to improve income position and reduce income insecurity. Prereq or coreq: Economics 2520.

4310 Intimacy: Marriage and Alternatives (3) Examination of primary relationships from perspectives of both individual development and relationship development. Emphasizes are on dating, marriage, and variant family forms.

4315 Family Relationships (3) Focus on emerging and declining family roles and changing relationships among family members across the family life cycle from a systems-based theoretical approach. Prereq: 3510 or 3520.

4320 The Family and the Adolescent (3) Problems of growth and development during teen years; role of parents and other adults in fostering adolescent development. Upper-division students only. Prereq: 2110 or 2210 or 4 hrs. psychology.

4110 Student Teaching in Preschool Settings (6) Increasing responsibility for planning and guiding groups of young children under the supervision of a head teacher, includes 2- to 4 hrs. weekly seminar. Prereq: 1500, 2200, 2110, 3125, 3350, 3360; 2300 recommended; coreq: 4111, S/NC.

4115 Student Teaching of Preschool Children (3) Increasing responsibility for planning and guiding groups of young children under the supervision of a head teacher, includes 2 to 4 hrs. weekly seminar. Prereq: 2110 or 2210 or 4 hrs. psychology.

4120 Family Finance (3) Analysis of alternative ways of meeting financial problems encountered during life cycle of family.

4280 Adult Development and Aging (3) Adult life in our society. Adjustment to internal and environmental changes through middle and aged years. Prereq: 2110 or Home Economics 1510 or equivalent background in adult development or consent of instructor.

4350 Advanced Child Development (3) Survey of some recent developments in child development with emphasis on research literature and research methodology. Prereq: 4 hrs. of psychology and 6 hrs. of child development or equivalent.

4420 Learning Experience with Parents (3) Dynamics of parent-child interaction. Emphasis on a variety of techniques for developing communication and working relationships between parents and teachers through experiences in a variety of settings. Prereq: 2210 or Home Economics 1510 or consent of instructor.

4430 Family Interaction (3) Dynamics of family interaction at different points in the life cycle. Includes dynamics of parent-child relationships and the marital dyad, both with the family and as the family interacts with the community; formal and informal support systems within the community. Prereq: 3515.


4610 Child in the Community (3) Needs of children; community agencies meeting these needs; visits to agencies contributing to welfare of children. Prereq: 2110 or Home Economics 1510 or equivalent.

4620 Administration of Programs for Young Children (3) Planning for staffing, housing, feeding, scheduling, and financing for day care of infants and young children, nursery school programs, and specialized programs for deprived preschool children. Prereq: 4110 or consent of instructor.

4630 Field Work in Child, Family, and Consumer Studies (3-15) Opportunity for student to work in nursery schools or community agencies; focus on children, families, and/or consumer concerns. Hrs. arranged. May be repeated. Maximum credit 15 hrs. S/NC.

4710 Contemporary Developments (1-3) Student or staff initiated course for study of special topics pertinent to the field; topics to be determined by students and instructor with departmental approval. Elective credit only. Prereq: Consent of instructor. May be repeated with departmental approval for credit up to 9 hrs.

4810 Afro-American Families (3) Historical background, contemporary family structure and relationships; emerging needs and programs. Prereq: 4 hrs. in social sciences and upper division standing. (Same as Black Studies 4810.)

4820 The Changing American Family (3) Introduction to demographic analysis of family change. Topics covered include the decline in family size; dual-working/dual-career families; separation; divorce and remarriage; altering patterns of retirement. Prereq: 3515 or equivalent, or consent of instructor.

4978 Honors: Child, Family, and Consumer Studies (3) Individual special problems for juniors and seniors showing special ability and interests. May be repeated. Maximum credit 9 hrs.

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

**Nutrition and Food Sciences (725)**

Professors: R. E. Beauchene, Ph.D. Kansas State; M. R. Buckley (Emerita), M.A. Columbia; A. M. Campbell (Emerita), Ph.D. Cornell; B. R. Carruth (Head), Ph.D. Missouri; G. E. Goertz (Emerita), Ph.D. Kansas State; J. M. Hitchcock (Emerita), Ph.D. Wisconsin; F. L. MacLeod (Emerita), Ph.D. Columbia; M. P. Penfield, Ph.D. Tennessee; J. R. Savage, Ph.D. Wisconsin; J. T. Smith, Ph.D. Missouri; M. A. Smith*, Ph.D. Tennessee.

Associate Professors: F. E. Andrews, Ph.D. Ohio State; D. E. Lyon (Emerita), M.S. Cornell; N. L. Marable, Ph.D. Massachusetts; D. S. Sachan, Ph.D. Illinois; J. D. Skipp, Ph.D. Oregon State; M. N. Taylor, M.S. Georgia; M. P. Penfield, Ph.D. Cornell; B. R. Carruth (Head), Ph.D. Kansas State; M. R. Buckley (Emerita), M.A. Columbia; A. M. Campbell (Emerita), Ph.D. Cornell; B. R. Carruth (Head), Ph.D. Missouri; G. E. Goertz (Emerita), Ph.D. Kansas State; J. M. Hitchcock (Emerita), Ph.D. Wisconsin; F. L. MacLeod (Emerita), Ph.D. Columbia; M. P. Penfield, Ph.D. Tennessee; J. R. Savage, Ph.D. Wisconsin; J. T. Smith, Ph.D. Missouri; M. A. Smith*, Ph.D. Tennessee.


**Nutrition and Food Sciences (725)**

1010 Food Principles (3) Principles of food selection, preparation, and service. 2 hrs. and 1 lab. F, W, S.

1130 Elementary Nutrition (3) Principles and applications to elderly living. A student who has received credit for NFS 3120 may not receive credit for this course. F, W, S.

2210 Introduction to Tourism, Food and Lodging Administration (2) Overview of tourism including food and lodging industries; analysis of basic operating systems and problem areas in the hospitality complex. F.

2220 Dimensions of Tourism (3) Economic and cultural impact of tourism on society; examination of forces influencing the domestic and international tourism industry. S, SU.

3005-15 Nature of Food (4, 4) Chemical and physical characteristics of food in relation to its functional and nutritional properties. Prereq: 3130 or equivalent. 3hrs. and 1 lab. F, S.

3202 Food and the Consumer (3) Economic considerations in food management, including food legislation, quality, consumer acceptability, and convenience. Prereq: 1510. 3hrs. and 1 lab. W, S.

3120 Fundamentals of Nutrition (3) Basic human nutrition, not open to graduate or undergraduate majors in the department. Prereq: Chemistry 1510-20-30 or equivalent; Zoology 2560-30 or equivalent. A student who has received credit for NFS 1310 may not receive credit for this course. E.

3130 Applied Organic Chemistry (4) Basic nutrients as organic chemicals. Prereq: Chemistry 1510-20-30. Not for graduate credit for departmental majors. F, S.

3140 Physiological Chemistry (4) Metabolism of carbohydrates, lipids, and proteins; role of vitamins and minerals in metabolism. Prereq: 3130 or equivalent. Not for graduate credit for departmental majors. W, SU.

3150 Food and Clinical Analyses (4) Elementary quantitative analyses; methods of food and clinical analyses. Prereq: 3130 or equivalent and 3140 or equivalent. 2 hrs. and 2 labs. Not for graduate credit for departmental majors. S, F.


3161 Clinical Experience in Dietetics (2) Planned experiences for application of principles of normal nutrition in selected health care and community facilities. Coreq: 3160. Open only to students in the Coordinated Undergraduate Program in Dietetics. F.

3210 Foodservice Systems Management (3) Effective and efficient use of management resources in foodservice systems; fundamental management processes, concepts and principles to improve competence in decision-making and problem solving. F, S.

3220 Quantity Food Procurement and Production (5) Application of principles necessary for determining needs, procuring, storing and preparing foods in volume. Prereq: 1010 or 3015 and 1130 or 3160 and 3210. 3 hrs. and 2 labs. F, W, S.

3230 Tourism, Food and Lodging Administration Internship (5) Planned educational experiences in selected food and lodging operations or other tourism related facilities. Prereq: 3220. S/NC only. F.

3320 Survey of Dietetics (1) Overview of dietetics and career opportunities. Prereq: Junior standing. F.

3330 Survey of Dietetics II (1) The role of the dietitian in health delivery systems. Prereq: Junior standing. W.

4000 Origin of Food and Foodways (3) Food origin and development of individual and group foodways. Prereq: 8 hrs. of social science or humanities. S.

4001 Clinical Experience in Dietetics (2) Planned experiences for application of economic and sociocultural food principles and consumer acceptability in community facilities. Coreq: 4000, 3020. Open only to students in the Coordinated Undergraduate Program in Dietetics. 2 hrs. and 1 lab. F, S.

4010 Introductory Experimental Food Science (3) Physical and sensory evaluation in experimentation with fats, high protein foods, and bitter and dough systems. Prereq: 3015 or 9 hrs. Food Technology and Science; a statistics course. 2 hrs. and 1 lab. F, S.

4011 Clinical Experience in Dietetics (1) Planned
experiences applying food science principles to the development of training programs and personnel management practices for food systems personnel. Prereq: 3210. W.

421 Clinical Experience in Dietetics (3) Development of technical, human, and conceptual skills through planned educational experiences at increasing levels of administrative responsibility in selected food systems. Prereq: 3220 Coreq: 4240. Open only to students in the Coordinated Undergraduate Program in Dietetics. W.

4250 Food Systems Managerial Cost Control (3) Cost analysis for food and beverages; use of financial statements for decision making in foodservice systems. Prereq: 3220, a statistics course, Acct. 2110, Econ. 2520. W.

4251 Clinical Experience in Dietetics (3) Development of technical, human, and conceptual skills through planned educational experiences at increasing levels of administrative responsibility in selected food systems. Prereq: 3220, Coreq: 4250. Open only to students in the Coordinated Undergraduate Program in Dietetics. W.

4260 Food and Lodging Physical Plant Planning and Maintenance (4) Fundamentals of mechanical systems and building components of the food and lodging physical plant; organization and principles of properties management. Prereq: 3220, Acct. 2130, Comp. Sci. 1410, Marketing 3120, and a statistics course. 3 hrs. and 1 lab. W.

4270 Tourism and Lodging Administration (3) Marketing management principles for the tourism and lodging industries; current problems in the marketing of hospitality services. Prereq: 3220, Acct. 2130, Comp. Sci. 1410, Marketing 3120. W.

4280 Clinical Experience in Dietetics (4) Planned educational experiences at increasing levels of administrative responsibility in selected food systems. Prereq: 3220. Open only to students in the Coordinated Undergraduate Program in Dietetics. S.

4300 Readings in Nutrition and Food Sciences (3) Reports and discussions of current literature. Prereq: 3160. S.

4340 Field Experience (1-15) Planned educational experience in selected food, food service, nutrition related industries or laboratories or community facilities. Prereq: Consent of instructor. Hrs. and credit arranged. E.

4710 Contemporary Developments (1-3) Student or off-campus course of field training together with 4120. Prereq: 3110 and consent of instructor.

4730 Methods and Procedures for Community Services Work (3) Individual, group, mass and indirect methods for community services work. Prereq: 3110. 2 hrs. and 1 lab.

4978 Honors: Nutrition and Food Sciences (1-3) Projects for honors students; credit only. Prereq: Consent of instructor. May be repeated with departmental approval for credit up to 9 hrs.

4978 Honors: Community Services Programs (3) Projects and techniques in community programs. May be repeated with departmental approval for credit up to 9 hrs.

4979 International Study Tour (6) See page 135. Prereq: Consent of instructor.

Graduate Students

Graduate students must register for a minimum of 2 hours per semester. Prereq: Consent of department. Maximum credit 9 hrs. Prereq: Consent of department.

Graduate Courses

Consult the Graduate Catalog for listings of graduate level courses.

Home Economics (481)

4101 Home Economics as a Profession (1) Scope of the profession of home economics; educational and professional education and preparation required and satisfaction to be gained from various careers within the profession. F/S/N.

1510 Family Systems: Human Development (4) Description, definition, and utilization of basic systems concepts as applied to development of individuals as part of family and family emphasis on professional development and contribution. F, W, S.

1520 Family Systems: Aesthetic Environment (4) Examination of near and far environments from an aesthetic perspective with implications for quality of life of individuals and families. F, W, S.

2000 Microcomputer Applications in Home Economics (3) Introduction to microcomputer operating procedures, computer hardware and computer software. Overview of word processing and spread sheet software with application in Home Economics. Indepth coverage of data base software. May be repeated with departmental approval for credit up to 3 hrs.

3100 Methods of Community Services Development (3) Organizations, educational responsibility, objectives, methods and evaluation of community services programs. Prereq: Psychology 2500 or equivalent.

3510 Family Systems: Consumer Resources (4) Appraisal and application of effective management of resources with implications for role of professional in the interaction of individuals and families with society. Prereq: 3 hrs. of economics, junior standing. F, W, S.

4000 Senior Seminar (2-15) Personal application of integrated knowledge and professional competencies through experience in community service training to serve society in a professional capacity; gaining experience related to the requirements of a home economist. May be repeated with departmental approval for credit up to 2 hrs. F/SNC.

4110 Community Services Programs with Adults (3) Procedures and techniques in working with adults; individual, group, and mass methods. Taken as an off-campus course of field training together with 4120. Prereq: 3110 and consent of instructor.

4120 Community Services Programs with Youth (3) Procedures and techniques in working with youth. Taken as an off-campus course of field training together with 4110. Prereq: 3110 and consent of instructor.

4130 Community Services Programs with Children (3) Procedures and techniques in working with children. May be repeated with departmental approval for credit beyond 3 hrs. F/SNC.

4141 Clinical Experience in Dietetics (3) Advanced educational experiences applying principles of nutrition in disease in selected health care facilities. Coreq: 4140. Open only to students in the Coordinated Undergraduate Program in Dietetics. F.

4150 Community Nutrition (3) Nutrition problems and services in the community; supervised field experiences. Prereq: 3120 or 3160. F.

4170 Nutrition Throughout the Life Cycle (4) Application of nutrition principles throughout the life cycle with emphasis on communication of nutrition information. Prereq: 3120 or 3160 or consent of instructor. W.

4180 Environmental Effects on Nutrition (3) Effect of natural and synthetic food toxins, social and therapeutic drugs, and extreme environmental conditions upon the nutrient availability, utilization, and requirements of humans. Prereq: 6 hrs. natural science. A.

4190 Diet and Drug Therapy (3) Application of nutrition principles to the absorption of drugs, dosage, and toxicity of drugs. Prereq: 3160 or consent of instructor. W.

4210 Design and Layout of Food Systems (3) Design of spaces and equipment for food service systems. Prereq: 3220. S.

4220 Food and Lodging Information Systems (3) Design of information systems for decision making in selected food systems and lodging systems or related facilities. To be taken at the beginning of the senior year with consent of instructor. Prereq: 3120, Coreq: Comp. Sci. 1410, Marketing 3120; and a statistics course. S.

4230 Tourism, Food, and Lodging Managerial Field Experience (5-15) Planned educational managerial experiences in selected food service or food and lodging systems or tourist related facilities. To be taken at the beginning of the senior year with consent of instructor. Prereq: 3120, Coreq: Comp. Sci. 1410, Marketing 3120-20; and a statistics course. S.

4240 Food Systems Personnel Development (3) Development of training programs and personnel management practices for food systems personnel. Prereq: 3210. W.

4241 Clinical Experience in Dietetics (3) Development of technical, human, and conceptual skills through planned educational experiences at increasing levels of administrative responsibility in selected food systems. Prereq: 3220 Coreq: 4240. Open only to students in the Coordinated Undergraduate Program in Dietetics. W.

4250 Food Systems Managerial Cost Control (3) Cost analysis for food and beverages; use of financial statements for decision making in foodservice systems. Prereq: 3220, a statistics course, Acct. 2110, Econ. 2520. W.

4251 Clinical Experience in Dietetics (3) Development of technical, human, and conceptual skills through planned educational experiences at increasing levels of administrative responsibility in selected food systems. Prereq: 3220 Coreq: 4250. Open only to students in the Coordinated Undergraduate Program in Dietetics. W.

4260 Food and Lodging Physical Plant Planning and Maintenance (4) Fundamentals of mechanical systems and building components of the food and lodging physical plant; organization and principles of properties management. Prereq: 3220, Acct. 2130, Comp. Sci. 1410, Marketing 3120, and a statistics course. 3 hrs. and 1 lab. W.

4270 Tourism and Lodging Administration (3) Marketing management principles for the tourism and lodging industries; current problems in the marketing of hospitality services. Prereq: 3220, Acct. 2130, Comp. Sci. 1410, Marketing 3120. W.

4280 Clinical Experience in Dietetics (4) Planned educational experiences at increasing levels of administrative responsibility in selected food systems. Prereq: 3220. Open only to students in the Coordinated Undergraduate Program in Dietetics. S.

4300 Readings in Nutrition and Food Sciences (3) Reports and discussions of current literature. Prereq: 3160. S.

4340 Field Experience (1-15) Planned educational experience in selected food, food service, nutrition related industries or laboratories or community facilities. Prereq: Consent of instructor. Hrs. and credit arranged. E.

4710 Contemporary Developments (1-3) Student or off-campus course of field training together with 4120. Prereq: 3110 and consent of instructor.

4730 Methods and Procedures for Community Services Work (3) Individual, group, mass and indirect methods for community services work. Prereq: 3110. 2 hrs. and 1 lab.

4740 International Study Tour (6) See page 135. Prereq: Consent of instructor.

Graduate Courses

Consult the Graduate Catalog for listings of graduate level courses.

Home Economics Education (490)

Professors: L. Brown (Emerita), Ph.D. Ohio State; N. P. Logan (Emerita), Ed.D. Tennessee.

Associate Professor: J. H. McInnis, Ph.D. Florida State.

Assistant Professor: L. Blinn, Ph.D. Ohio State.

Home Economics Education is included as an instructional unit in the Department of Child and Family Studies (see page 142 for course offerings).
munication of total design solutions using a variety of graphic, linguistic, and photographic techniques as presentation methods. Prereq: 2451 or consent of instructor. S.

2791 History of Interior Architecture I (4) History of interior architecture, furniture, and other design forms within the cultural context: Greece, Rome, the Italian Renaissance, and France during the seventeenth, eighteenth, and early nineteenth centuries. (Same as Art 2791.) W, S.

3110 Beginning Interior Design (3) Individual and design factors influencing selection, arrangement, and combination of furnishings to derive the greatest satisfaction from homes and places of work. Prereq: 1410 or equivalent. 1 hr. and 2 labs. F, W, S.

3139 Color (4) Experimentation based on an understanding of systematic theories of color. Color communication as related to light, perception, and cultural meaning. Application of color to enhance and define the interior environment. W.

3280 Professional Procedures (4) Preparation of interior design majors for practice experience. Emphasis on interprofessional relationships and business practices related to interior design. F.

3450-51-52 Interior Design I, II, III (4,4,4) Studio problems of intermediate complexity that integrate and extend previous knowledge of working drawings, materials and sources, design methods, spatial organization and planning of micro- and macro-environments. Prereq: 2452 and 2454 taken in sequence or have consent of instructor. 3450-F; 3451-W; 3452-S.

3791 History of Interior Architecture II (4) History of interior architecture, furniture, and other design forms within the cultural context for England from the sixteenth through the nineteenth centuries. (Same as Art 3791.) S.

4110 Lighting for Interior Designers (4) The application of elements and principles of lighting and wiring to the design of the visual environment. Prereq: Junior standing. W.

4200 Interior Design Practicum (8-18) Supervised practical experience in engaged businesses established in practice of interior design. Prereq: senior standing in interior design major, 3265, and consent of instructor. E.

4300 Field Experience (3-15) Supervised field experience; subject to departmental approval. Prereq: Senior standing and consent of faculty. SU.

4320 Family Housing Problems (3) Housing requirements of families. Reading and judging house plans; effective housing concepts; housing regulation and restrictions; site selection and neighborhood development; financing procedures. Prereq: 6 hrs. from Economics 2110-20-30. F, W.

4440 Furniture Design (4) Analysis of human factors affecting data in the selection of furniture and storage furniture pieces and systems; production of construction drawings and scale models. Prereq: Senior standing. F.

4450-61 Advanced Interior Design I, II (6,6) Intensive interior design experiences to include complex design problems utilizing systematic design methodology. Project types to include multi-family housing, commercial and institutional environments, or complex working environments, assistance and critiques from area professionals. Prereq: 3452 for 4450. Courses should be taken in sequence or have consent of instructor. 4450-F; 4451-W.

4610 Studio Problems in Interior Design (3) Problems for seniors with special ability and interest in interior design. May be repeated to a maximum of 9 hrs. Prereq: Senior standing and consent of department. S.

4710 Contemporary Developments (1-4) Student or staff initiated course for study of special topic(s) pertinent to the field. Topics selected to be determined by students and instructor with departmental approval. Elective credit only. May be repeated with consent of department. Maximum credit 12 hrs. Prereq: Consent of instructor. S.

4791 History of Contemporary Interior Architecture (4) History of interior architecture, furniture, and other design forms of the modern world. Furniture design and design philosophies of Europe and America are discussed in relation to the forces that shaped them: movements in the visual arts, technological advances, and the culture milieu. (Same as Art 4791.) F.

4792 History of American Interior Architecture (4) A study of patterns in historical development as revealed in interior architecture, cultural context and the decorative arts of America, Colonial through Federal periods. Design forms analyzed within the cultural context. (Same as Art 4792.) W.

4940 Proxemics (4) Definition of proxemic variables. Recording and analysis of proxemic behavior using unobtrusive methods of observation, still photographs, scale-model environments and interview techniques. Observer bias and methods of bias reduction. Members of seminar required to design, conduct, and present original proxemic research. Prereq: 2000 or consent of instructor. (Same as Architecture 4940.)

4950 Environment as Code (4) Theoretical issues involved in considering environment as a medium of human communication. Codes and nature of coding behavior and the organization of the central nervous system. Coding and social behavior. Communication process as a generic model of human-environment relationships. Hierarchical concepts of environment and environments. Prereq: 2000 or consent of instructor. (Same as Architecture 4950.)

4978 Honors: Interior Design (1-3) Problems for juniors and seniors with special ability and interest in interior design. Hours arranged. May be repeated. Maximum credit 9 hrs. Prereq: Consent of department head. E.

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

Textiles Merchandising and Apparel (971)

1160 Introduction to Textile Design Analysis (3) Identification of the elements and principles of design, and application to contemporary apparel design and production. Analysis of the relationships of design to figure type, personality, color and fabrication. F, W, S.

1165 Apparel Construction (3) Fundamentals of pattern alteration, fitting, and construction with emphasis on design quality and construction compatibility. Prereq: 1160. 1 hr. and 2 labs. F, W, S.

1170 Design Analysis: Pattern Making (4) Apparel design analysis based on flat pattern, drafting and design approaches that provide the student with the skills and techniques for style variation and costing of garments. Prereq: 1160, proficiency or 1165 or equivalent. 2 hrs. and 2 labs. F, W, S.


1429 Textiles Laboratory (1) Laboratory examination of fibers, yarns, fabrics and finishes. Coreq: 1420. Required of departmental majors. F, W, S.

2110 Fashion (3) How fashion works, from designer to consumer; fashion trends and cycles. F, W, S.


3170 Advanced Apparel Production (3) Advanced apparel techniques and an experimental approach for contemporary fabrics and variations in garment style. Prereq: 1170. 1 hr. and 2 labs. W.

3410 Cultural and Functional Aspects of Textiles and Apparel (3) Cultural, socio-psychological, functional and technological developments in textiles and apparel. Prereq: 3 hrs. each of the following: child development and family relationships, economics; 4 credits in sociology or anthropology or psychology. F, S.

3450 Consumer Issues: Apparel for Contemporary Families (3) Problems of clothing consumption encountered during various stages of family life cycle. Prereq: Junior standing. F.

3460 Historic Costume (3) Development of costume from ancient to modern times with consideration of historic, social, and economic settings. W.

3510 Fashion Merchandising: Planning and Control (3) Analysis of fashion merchandising practices and problems focusing on application of decision mechanisms. Prereq or coreq: 2110 and Accounting 2110. W.


4110 Fashion Buying (3) Analysis of buying practices, procedures, activities, techniques and underlying concepts fundamental to fashion merchandising. Prereq: 3510. S.

4120 Textile Economics (3) Economic background of textile and apparel industry with emphasis on production and distribution. Current national and international problems. Prereq: Economics 2510-20. W, S.

4130 Research Experiences (3-15) Individual juniors and seniors showing special abilities may be assigned to ongoing research within department or work in research and development laboratory or quality control department of fiber, chemical, or textile company. Prereq: Recommendation of department head and research advisor. 4010, 4140, and 3 hrs. of statistics. May be repeated. Maximum credit 15 hrs. E.

4140 Introduction to Textile Testing Methods (3) Methods and equipment used in physical testing and approved by recognized textile groups. Prereq: 3420, 3429. 1 hr. and 2 labs. S.

4210 Elementary Textile Microscopy (3) Microscopic techniques as applied to study of textile fibers and fabrics. Prereq: 4010. 1 hr. and 2 labs. W.

4220 Textile Fiber Chemistry (4) Chemistry of textile fibers with emphasis on structure, preparation, and reactions. Implications relating to dyeing and finishing of fabrics. Prereq: One quarter of organic chemistry. 3 hrs. and 1 lab. W.

4280 Design Analysis: Functional Apparel (3) A systematic approach to apparel design integrating aesthetic, psychological, social and physiological aspects of apparel problems for special reference groups. Garment specifications are translated for production. Prereq: 1170, 2170 and 3170. 2 hrs and 1 lab. W.

4410 Apparel Production Management (3) A management perspective of the apparel production industry. Emphasis on production planning, process, and management of human resources. Course work supplemented by plant tours and case studies on production problems. Field trips required. F.


4510 Teaching Materials (3) Investigation, preparation, and evaluation of teaching materials. For students planning to teach or do home demonstration work. Prereq: 3440, senior standing. 1 hr. and 2 labs.

4520 Principles of Retail Management (3) In-depth analysis of retail sector of economy from management perspective. Emphasis on approaches to decision-making in retail operations: promotion, pricing, financial planning and control, product mix strategy. Prereq: Marketing 3110, 3120 or equivalent. F, W, S.

4620 Introduction to Field Experience in Merchandising (3) Interviews with store personnel, placement and planning for field experience. Prereq: Economics 2510-20, junior standing, concentration in merchandising option, approval of program coordinator, and a minimum grade point average of 2.2. Open only to students who intend to enroll in 4630-40. May not be repeated. S.

4630 Field Experience in Merchandising (9) Off-campus supervised experience in a cooperative program with business establishments which merchandise textiles and/or apparel. Prereq: 3510, 4110, 4620, 9 hrs. of marketing, senior standing, major in merchandising, and a minimum grade point average of 2.2; coreq: 4640. Offered fall quarter only. F.

4640 Methods in Field Experience (6) Investigation of training systems and store organization, analyses of jobs, and evaluation of field experience. Prereq: 4620, senior standing, major in merchandising, and a minimum grade point average of 2.2; coreq: 4630. Offered fall quarter only. F.

4650 Problems in Fashion Merchandising (3) Investigation of methods affecting consumer response. Prereq: 4110, 4230, Marketing 3110-20. F.

4710 Contemporary Developments (1-3) Student or staff initiated course for study of special topic(s) pertinent to the field; topics to be determined by students and instructor with departmental approval. Elective credit only. Prereq: Consent of instructor. May be repeated with departmental approval for credit up to 9 hrs. W.

4978-88-98 Honors: Textiles and Apparel (3,3,3) Individual problems for juniors and seniors showing special ability and interest in textiles and apparel. Prereq: consent of department head. E.

GRADUATE

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

The central purposes of a liberal education include the encouragement of intellectual tolerance, a dedication to the quest for knowledge as a worthwhile goal in and of itself, and the cultivation of a responsible, creative individual mind. These qualities should enable one to develop through life an ability to reason and to express oneself clearly, an incentive to absorb emerging knowledge, and a competence to confront the uncertainties of human experience. For the student whose interests and talent lead into research, scholarship, and teaching, a liberal education provides an invaluable foundation. For the individual who enters business, industry, the professions, or government service, it furnishes a broadly useful and well-rounded educational background.

For all, it offers the opportunity to share in a rich intellectual heritage, in the adventures of the mind, and in the life of the educated imagination. A liberally educated person is identified not so much by specific knowledge as by quality of mind and by creative response to the challenges of the times.

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

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

(a) Basic Program—The program appropriate for most B.A. students is developed around the basic skills and distribution requirements plus intensive study in one or more of the specified departmental or interdepartmental major fields described below.

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

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

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

(2) BACHELOR OF SCIENCE

The Bachelor of Science degree, offered in selected departments and programs, is designed for those students who wish to pursue a more scientifically or professionally oriented program of study. Three programs leading to this degree are open to the student:
(a) Basic Program—The Basic Program for the B.S. degree contains basic skills and distribution requirements similar to the Basic Program for the B.A. degree, as well as a unique set of requirements for the major including additional study in mathematics, statistics, or laboratory sciences.

(b) Bachelor of Science in Chemistry—The Bachelor of Science in Chemistry is a professional degree designed in accordance with standards set by the American Chemical Society to train students to go directly into positions in the chemical industry or to enter graduate study. Students may elect either the four year resident program or a five year cooperative program in which they alternate a quarter of study with a quarter of work in a chemical industry, and thus gain seven quarters of on the job experience while earning the degree.

(c) Bachelor of Science in Social Work—The program leading to the Bachelor of Science in Social Work is designed to prepare students for graduate study and professional social workers. The program conforms to Council on Social Work Education Accreditation Standards.

(3) BACHELOR OF FINE ARTS
The Bachelor of Fine Arts degree represents intensive study preparing students for graduate study and professional positions in art. The degree is offered with a major in studio art. Recommended course combinations for those who desire to concentrate in ceramics, graphic design/illustration, drawing, fiber-fabrics, inter-area, painting, printmaking, sculpture, or watercolor are available in the art department office.

(4) BACHELOR OF MUSIC
The program leading to the Bachelor of Music degree prepares students for graduate study and professional positions in music. The degree is offered 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, organ; literature—multiple keyboard instruments, strings, woodwind, brass, and percussion instruments; multiple woodwind instruments; studio music and jazz; Suzuki string pedagogy).

Program Planning
Each student's academic program is highly individualistic, reflecting that person's special interests, goals, and aspirations. Usually it will reveal a growing intellectual sophistication and the development of particular motivations.

The importance of program planning can hardly be overstressed. A few students enter the college with firm educational objectives in mind and their programs develop quite readily around these predetermined goals. Many, however, do not reach that stage of certainty until their academic careers are relatively far advanced. For these persons the exploration of directions and programs, in consultation with faculty advisors, is an important part of the educational process. It is essential for these students to develop their programs carefully and create, in order that maximum flexibility in their ultimate decision making may be assured.

A basic decision, of course, is the degree to be sought. If it is one of the four professional degrees (Bachelor of Fine Arts, Bachelor of Music, or Bachelor of Science in Chemistry, Bachelor of Science in Social Work), the student's program will be somewhat circumscribed, for these degrees are necessarily different from the general liberal arts degree. If the student chooses to work for the Bachelor of Arts degree or the Bachelor of Science degree, all the elements which make up the curricula leading to that degree will need to be kept in balance: the broad requirements in the Basic Skills and Distribution requirements, the major area, and the elective courses which support and supplement the work in the first two categories. Most students find it desirable to lay a broad foundation by taking courses which will satisfy the Basic Skills and Distribution requirements in the first two years, thus reserving most of the final years for in-depth study in the area of concentration. Elective courses may be taken at any time.

Advisors in the Liberal Arts Advising Center (220 Ayres Hall), in the various major departments, in the University Counseling Center, and elsewhere on campus are available to assist students with their program planning. In the final analysis, however, only the student can determine the program which will best satisfy particular needs.

Requirements for Degrees

GENERAL REQUIREMENTS: Bachelor of Arts and Bachelor of Science Basic Programs
Each student seeking a Bachelor of Arts or Bachelor of Science (excluding the Bachelor of Science in Chemistry) must develop a program which includes the following:

1. All University degree requirements as stated in the front section of this catalog.
2. A minimum of 190 credit hours; (3) At least 60 credit hours in courses numbered 3000 or above; (4) Appropriate work to satisfy the basic skills requirements and the distribution requirements, counting no course in more than one area (not required in the College Scholars Program); (5) Completion of at least one major concentration (see below). Up to 8 hours in the major may also be used, where listed, to satisfy basic skills or distribution area requirements; (6) Students may take up to 30 hours of courses Satisfactory/No Credit in any area outside the major and minor, basic skills and distribution requirements; (7) Beginning in fall 1987, no credits earned for removal of association deficiencies may be used to satisfy requirements for graduation.

I. PROGRAMS LEADING TO BACHELOR OF ARTS AND BACHELOR OF SCIENCE DEGREES (excluding the Bachelor of Science in Chemistry).
The B.A. and B.S. degrees share the same program of Basic Skills and Distribution requirements, except where noted on pages 147 and 148.

Basic Skills

(1) English Composition
Purpose:
1. To gain and improve the skills necessary to write English expository prose coherently and correctly.
2. To improve reading skills.
3. To enhance critical and analytical abilities as applied to key issues and texts.

Requirement: Students may meet this requirement in one of the following ways:

1. By completing nine credit hours in English writing courses in one of the following series: (a) English 1010 or 1011, 1020, and three additional credits drawn from 1031, 1032, or 1033 (English Composition). Students who complete 1020 with a grade of A have the additional option to satisfy the remaining three credits in any 3000-level or 4000-level writing course offered by the department. (b) English 1018-28-38 (Honors: English Composition). Students who obtain a grade of A or B in 1028 have the additional option, with permission, to satisfy the remaining three credits in any 3000-level or 4000-level writing course offered by the department. (c) English 1431-41-51 (English Composition for Foreign Students).
2. By earning a score of 4 or 5 on the College Board Advanced Placement Test in English; or, with special permission, by earning a score of 3 on that examination and completing one 2000-level course in English at The University of Tennessee, Knoxville with a grade of B or better.
3. By earning a score of 25 or above on the English ACT exam and a composite ACT score of 25 or above and by passing a proficiency examination in writing administered by the Department of English in cooperation with the Committee on Writing Standards.
4. By obtaining CLEP credit for English composition (as described on page 22 of this catalog).

(2) Foreign Language
Purpose:
1. To learn the basic grammar, syntax, and vocabulary of a foreign language;
2. To be able to use a foreign language independently as a tool for oral communication and reading;
3. To acquire techniques of language learning;
4. To develop insight into the phenomenon of language;
5. To complement the study of certain aspects of a foreign culture or civilization.

Requirement: Completion of the intermediate level (for most languages, the 2000-level) sequence of a foreign language, or demonstration of competence on a waiver or proficiency examination. A student who has taken two or more years of a foreign language in high school and takes the introductory level sequence in the same language (usually the 1000-level sequence) may not use such credit to satisfy requirements for graduation. However, if students elect to take a foreign language in which they have had no previous training, both the elementary and intermediate level sequence may be counted for graduation. Students whose
native language is not English may meet this requirement by passing English 1431-41-51 and by passing two English language literature courses at the 2000-level. These literature courses may also be counted toward the Humanities distribution requirement. (Beginning Fall 1987, no credit for coursework completed in order to remove an assessment of proficiency in a foreign language may be used to satisfy graduation requirements.)

Under the conditions stated above, the following courses may be used to satisfy the foreign language requirement:


- Classics 1210-20-30 Elementary Latin; Classics 2111-51-21 Intermediate Latin; Classics 1210-20-30 Elementary Greek; Classics 2210-20-30 Intermediate Greek.


- German 1110-20-30 Elementary German; German 2110-20-30 Intermediate German; German 1518-2518-28 Honors: Elementary & Intermediate German.

- Italian 1510-20 Elementary Italian; Italian 1110-20-30 Elementary Italian; Italian 2110-20-30 Intermediate Italian; Italian 2510-20 Intermediate Italian.

- Portuguese 1510-20 Elementary Portuguese; Portuguese 2510-20 Intermediate Portuguese.

- Russian 1110-20-30 Elementary Russian; Russian 2110-20-30 Intermediate Russian; Russian 1630-40-50 Elementary Serbo-Croatian; Russian 2631-41-51 Intermediate Serbo-Croatian.

- Spanish 1110-20-30 Elementary Spanish; Spanish 1210-20 Elementary Spanish; Spanish 2110-20-30 Intermediate Spanish; Spanish 2510-20 (2518-28) Intermediate Spanish (Honors).

(3) Mathematics, Computer Science, or Logic

Purpose:
1. To develop the basic calculation skills necessary to fully appreciate the course of study at the university;
2. To understand the logical processes involved in the 2000-level. These are inductive or deductive reasoning, or computing;
3. To acquire the skills that will aid in the process of critical analysis, problem solving, and decision making.

Requirements: One course chosen from those listed below (total: 3 to 4 hours). Students with a Math ACT score of 24 or above, or those who pass a waiver or proficiency examination on material equivalent to any of these courses may be exempted from this requirement. Standards for waiver or proficiency examination will be set by the appropriate department. Exemption from this requirement will also be granted to students who complete a three-course mathematics package under Divisional Distribution.

Under the conditions stated above the following courses fulfill this requirement:

- Philosophy 1810 Introduction to Symbolic Logic;
- Mathematics 1140 Basic Mathematical Skills; 1700 Pre-calculus Mathematics. (Currently there are no Computer Science courses that fulfill this requirement.)

Distribution

(1) Divisional Distribution

Non-U.S. History

Purpose:
1. To acquire an appreciation for the richness of the past as a statement on human capability, aspiration, and achievement;
2. To develop a historical perspective on a civilization that differs from or serves as a foundation for studying one's own;
3. To develop the ability to explore continuity and change among historical events and movements, and to be able to assess them critically;
4. To learn to keep one's own place and time in proper perspective, and to appreciate it more fully because of an awareness of human creativity as revealed through a study of the past of a civilization;
5. To further develop writing skills.

Requirement: Completion of a two-course, writing emphasis, lower-division sequence in Non-U.S. History (total: 8 hours).

The following sequences satisfy this requirement:

- Asian Studies 2510-20-30 Rise of Classical Civilizations - Traditional Culture and Their Modern Developments.
- History 1510-20 Western Civilization, History 1518-28 Honors Western Civilization, History 1610-20 World Civilization.
- Latin American Studies 2510-20 Introduction to Latin American Studies.

Natural Science

- To know and understand the basic vocabulary of at least one scientific discipline;
- To learn the basic discoveries and their importance in one scientific discipline;
- To be able to use the tools (i.e., mathematics, laboratory equipment, computers, etc.) of one scientific discipline;
- To understand how to devise hypotheses and how to devise and perform experiments to test them;
- To learn to apply the methods of at least one scientific discipline in a "hands on" laboratory experience;
- To be able to analyze a situation on a college level from one particular scientific perspective.

NOTE: All Bachelor of Arts and Bachelor of Science students must satisfy Part I and Part II of the Natural Science requirement. All Bachelor of Science Programs incorporate an additional requirement of a three-quarter mathematics or statistics package that includes at least two calculus courses.

Also required in the B.S. major description is an additional three quarter lab science sequence. Courses taken to satisfy the additional B.S. specifications may not be used also to meet Natural Science distribution requirements. See major requirements in this catalog.

Requirements:
- Part I: A three-course physical or biological sciences sequence that includes at least two quarters of laboratory experience (total: 12 hours). The following sequences satisfy Part I of this requirement:
  - Astronomy 1610-1620-30 Introductory Astronomy with Lab (Honors);
  - Biology 1210-20-30 General Biology;
  - Botany 1110-20-30 (1118-28-38) General Chemistry (Honors);
  - Chemistry 1310-20-30 General Chemistry;
  - Chemistry 1510-20-30 Introductory General, Organic and Biochemistry.
- Geography 1810-20-30 Geography of the Natural Environment.
- Geology 1010-20 General Geology I, II, III;
- Physics 1310-20-30 (1318-28-38) Fundamentals of Physics: Mechanics and Heat (Honors); Physics 2210-20-30 Elements of Physics.
- Zoology 1118-28-38 Honors: Fundamentals of Zoology;
- Part II: A three-course package in science, mathematics, and/or computer science (total 9 to 12 hours). The following course packages or any sequence listed in Part I will satisfy this requirement:
  - Anthropology 2510-2530-3070 Human Origins – Bio. of Human Races – Genetics and Society (Same as Botany 3070);
  - Anthropology 2510-2910-2920 Human Origins – Human Paleontology – Human Archaeology;
  - Astronomy 1510-20-30 Introductory Astronomy.
- Zoology 2920-30-Biochemistry 3110 Human Physiology – Introduction to Biochemistry;
- Zoology 2560-30-Microbiology 2910 Human Physiology – General Microbiology;
- Botany 3011-30-Zoology 3090 (Same as Botany 3090) Zoology 3410 Plants and People – Biology and Human Affairs – Bototics.
- Botany 3010-20-30 Plants in Evolution – Field Botany; Botany 3010-20-31 Plants in Evolution Field Botany; Botany 3010-20-32 Plants in Evolution – Field Botany.
- Geography 3510-20-30 Meteorology – Climatology – Land Surface Systems.
- Mathematics 1840-50-60 (1848-58-68) Single Variable Calculus (Honors);
- Mathematics 1841-51-3861 Calculus for Biological Sciences – Math Models in the Life Sciences;
- Physics 1210-20-30 Introductory Physics;
- Physics 1410-20-30 Nature of the Physical World.
- Zoology 2510-20-30 Human Biology.

Social Science

Purpose:
1. To promote understanding of society and individual relationships;
2. To develop a critical understanding of one or more approaches, perspectives, or methodologies used in the social sciences;
3. To develop analytical skills relevant to
current social, economic, or political problems, their origins in society and individuals, and possible perspectives for their resolution.

Requirement: Four or five courses (total: 15-16 hours) selected from at least two departments or programmatic areas. The following courses satisfy this requirement:

- Afro-American Studies 2010 Introduction to Afro-American Studies
- Anthropology 2520 Prehistoric Archaeology; Anthropology 2530 Human Cultures; Anthropology 3420 Linguistic Anthropology (Same as Linguistics 3420); Anthropology 3970 Principles of Archaeology
- Botany 3909 Socio-economic Impact of Plants
- Economics 2510 Principles of Economics; Economics 2520 Principles of Economics; Geography 1610 Introduction to Geography; Geography 1620 Introduction to Geography; Geography 3000 Man, Location, and Behavior; Geography 3660 Cultural Geography
- Human Services 2690 Introduction to Human Services
- Linguistics 2000 Language, Linguistics and Society
- Music 3361 Introduction to Ethnomusicology; Music 3371 Introduction to Ethnomusicology
- Political Science 2020 Introduction to Political Science; Political Science 2510 U.S. Government and Politics; Political Science 2520 U.S. Government and Politics; Political Science 3110 Political Community
- Psychology 2500 (2518, 2528) General Psychology (Honors); Psychology 2520 Biological Foundations of Behavior; Psychology 2530 Psychology as a Social Science; Psychology 2540 Psychology of the Individual
- Religious Studies 3021 Religious Myth, Symbol and Ritual
- Sociology 1510 (1518) General Sociology (Honors); Sociology 1520 (1528) Sociology of Social Problems (Honors); Sociology 1530 Contemporary Social Change; Sociology 3110 Social Policy; construct arguments, to think creatively, to analyze objectively, to assess evidence, to perceive assumptions, and to respond to and appreciate various perspectives.

Requirement: Part I: Literature or Philosophical Perspectives. A two- or three-course package in either literature or a philosophical perspective (total: 8-9 hours).
- Part II: Arts, Literature or Philosophical Perspectives. Either two courses in the study of the arts or two courses in the practice of the arts; or a two-course package in literature if a philosophical perspectives package is chosen to meet Part I; or a two-course package in philosophical perspectives if a literature package is chosen for Part I (total: 8-9 hours).

The following course packages are designated as literature packages:

- English 2510-20 English Masterpieces; English 2531 and either 2532 or 2533 American Masterpieces; English 2560-70-80 (2 out of 3 in chronological order) Literature of the Western World; English 2660-70-80 (2 out of 3) Introduction to Literary Genres.
- French 2910-20-30 French Literature in English Translation.
- German 2210-20-30 German Literature in English Translation.
- Medieval Studies 2601-02 Literature of the Dark Ages (5th-10th centuries) — Literature of the Later Middle Ages (11th-15th centuries).
- Religious Studies 3292-33 Themes in Classic Works; Religion and Literature: 20th Century.
- Russian 2210-20-30 Russian Literature in English Translation.
- Spanish 2910-20-30 Spanish and Spanish American Literature in English Translation.

The following course packages are designated philosophical perspectives packages:

1. Classics 2210-20-30 Greek and Roman Mythology
2. Philosophy 1511-21 Value and Reality-Consciousness and Reality; 1611-21 Philosophy Antiquity to 1500-1500 to Early 20th Century.

Political Science 3801-02 Studies in Ancient Political Thought-Studies in Medieval Political Thought; Political Science 3803-04 Studies in Early Modern Political Thought-Studies in 19th and 20th Century Political Thought.

Religious Studies 2110-20 Founders of Religion; Religious Studies 2310-20 Criticism of Religion; Religious Studies 3370-80 The Christian Tradition; Religious Studies 3605-06 Professional Responsibility-Responsible Professionalism (Same as Phil. 3605-06).

Women's Studies 3430-35 The Concept of Women: Philosophy of Feminism (Same as Phil. 3430-35).

The following are designated practice of the arts courses:

- Art 1105 Introduction to Studio Art.
- English 2410 Creative Writing: Fiction and Poetry.
- Music 1416 Music Performance. Speech & Theater 2031 Introduction to Oral Interpretation; Speech & Theater 3651 Oratory/Interpretation of Prose; Speech & Theater 3661 Literature and Oral Interpretation of Poetry.

The following courses are designated study of the arts courses:

- Art 1815 Western Art I; Art 1825 Western Art II.
- Classics 2320 Art and Archaeology of Ancient Greece; Classics 2330 Art and Archaeology of Etruria and Rome.
- English 1000 Fundamentals of Music Theory; Music 1210 Orientation in Music Appreciation; Music 1220 Orientation in Music Appreciation; Music 1230 History of Rock.
- Theater 1320 Introduction to Theatre; Theater 1330 Introduction to Theatre; Theater 1340 Introduction to Theatre.

(2) Upper Level Distribution

Bachelor of Arts students must satisfy two of the following three options. Bachelor of Science students must satisfy one of the following three options. It is recommended that these requirements be fulfilled after the student has achieved upper-division standing (completion of 90 hours).

U.S. Studies Option

Purpose:

1. To develop an appreciation and knowledge of U.S. culture and civilization;
2. To provide a basis from which to expand international perspectives;
3. To develop a critical understanding of the sources of values and traditions that constitute contemporary U.S. civilization;
4. To develop an understanding of the relations between individual and societal behavior;
5. To further develop writing skills.

Requirement: This option will be satisfied by taking any two of the following courses (total: 6-8 hours).

- Afro-American Studies 4292 History and Philosophy of Afro-American Education (Same as History 4252 and Ed. C&I 4292);
- Afro-American Studies 3803-04 Studies in Early Modern African History;
- Anthropology 4740 Historical Archaeology of the U.S. and Canada II; Anthropology 4740 Southern Appalachian Folk Culture;
- English 3311 Women in American Literature; English 3320 Regional Identities in American Literature; English 3445 Film and American Culture; English 4840 Black American Literature and Aesthetics;
- Geography 3790 Geography of the U.S. and Canada; Geography 3920 Geography of the American South; Geography 3940 Geography of Appalachia; Geography 4240 Historical Geography of the U.S. History 3261 American Issues: Individualism & Community; History 3202 American Issues: War and the Peaceful Ideas; History 4841 America: Mind, Mood & Society (Colonial Period-1865); History 4851 America: Mind, Mood & Society (1865-Prent).
Music 3950 Evolution of Jazz; Music 4241 Music of the United States.
Philosophy 3311 American Philosophy (Colonial Period-19th Century); Philosophy 3312 American Philosophy (19th-20th Century);
Philosophy 3440 Ethics and American Society;
Philosophy 3570 Philosophical Foundations of Democratic Societies.

Political Science 3560 African Culture & American Politics; Political Science 3390 Contemporary Issues in American Public Policy; Political Science 3415 Law in American Society; Political Science 3880 American Political Thought;
Religious Studies 3510 Religion in America (Colonial Period-19th Century); Religious Studies 3520 Religion in America (20th Century); Religious Studies 3550 Religion and Racism in America (Same as Afro-American Studies 3550); Religious Studies 3560 Religion in the United States (Same as Afro-American Studies 3560).

Sociology 3420 Urban Problems; Sociology 3780 American Society; Sociology 4030 Society and Law; Sociology 4820 American Minority Groups.
Speech 4930 Studies in American Public Address;
Theater 3262 History of American Theater; Theater 3263 History of American Theater.
Women's Studies 3010 Emergence of the Modern American Woman; Women's Studies 4290 Women in American History (Same as History 4290); Women's Studies 4560 Rhetoric of the Women's Rights Movement (Same as Speech 4560).

Foreign Studies Option
Purpose:
1. To develop an appreciation and knowledge of a foreign culture and civilization;
2. To provide a basis from which a student can analyze his or her own culture;
3. To develop a critical understanding of the sources of values and traditions that constitute a foreign culture and civilization;
4. To develop an understanding of the relationship between individual and societal behavior in a highly interdependent world system;
5. To further develop writing skills.

Requirement: This option will be satisfied by taking two upper-division courses in one of the following areas: Africa, Asia, Europe, Latin America, the Middle East, or Critical Issues in Foreign Studies (total: 6-8 hours). If Western Civilization is taken to satisfy the history requirement, the European concentration may not be elected here. This option may also be satisfied by Literature courses in Arabic, Chinese, French, German, Greek, Hebrew, Italian, Japanese, Latin, Portuguese, Russian, Sanskrit, or Spanish. (Literature courses in English translation will not meet this requirement.)

Africa
Anthropology 3530 Peoples and Cultures of Africa; Anthropology 4610 African Prehistory;
Geography 3530 Geography of Africa. Political Science 3615 Dynamics of Black African Politics; Political Science 3616 Dynamics of Black African Politics.

Asia
Art 3775 Art of India; Art 3776 Art of China; Art 3777 Art of Japan.

History 3810 East Asia: History & Culture to 1600; History 3820 East Asia Since 1600.
Political Science 3621 Government & Politics of the People's Republic of China. Religious Studies 3650 Philosophy and Religion in India (Same as Phil. 3650); Religious Studies 3660 Buddhist Philosophy and Religion (Same as Phil. 3660); Religious Studies 3671 Religion and Philosophy in China (Same as Phil. 3671); Religious Studies 3672 Religion in Japan (Same as Sociology 3672).

Europe
Classics 3310 Art and Archaeology of the Aegean Bronze Age & Early Greece (Europe and the Middle East); Classics 3340 Cities of the Greek and Roman World (Europe-Asia-Africa); Classics 3810 Greek Civilization; Classics 3820 Roman Civilization.
English 3050 English Culture (Up to 1660); English 3051 English Culture (1660-Prepresent); English 3920 Comparative European Literature; English 3930 Comparative European Literature.

Geography 3880 Geography and the Soviet Union.

German 3810 Culture of the German-Speaking Peoples; German 3820 Culture of the German-Speaking Peoples; German 3830 Culture of the German-Speaking Peoples. History 3124 Modern Germany 1750-1900; History 3125 Contemporary Europe 1900-1990.

Medieval Studies 4010 Seminar in Medieval Studies.

Philosophy 3111 Ancient Western Philosophy; Philosophy 3121 Medieval Western Philosophy; Philosophy 3131 17th & 18th Century Philosophy; Philosophy 3141 19th Century Philosophy.

Political Science 3631 Government & Politics in the Soviet Union; Political Science 3632 Government & Politics in the Soviet Union; Political Science 3635 Politics of Western Democracies; Political Science 3636 Politics of Eastern Europe.

Russian 3710 Background and Main Currents of Russian Culture; Russian 3720 Background and Main Currents of Russian Culture.

Women's Studies 3240 Women in French Culture (Same as French 3240); Women's Studies 3830 Women in the Greek and Roman World (Same as Classics 3830).

Latin America
Anthropology 3580 Peoples and Cultures of Mesoamerica (Same as Latin American Studies 3580).

Economics 4231 The Political Economy of Latin America (Same as Latin American Studies 4231).

Geography 3790 Geography of Middle America (Same as Latin American Studies 3790); Geography 3800 Geography of South America (Same as Latin American Studies 3800).

History 3870 History of Latin America (to 1825) (Same as Latin American Studies 3870); History 3880 History of Latin America (1825-Prepresent) (Same as Latin American Studies 3880).

Latin American Studies 4001 Cultural Plurality in Latin America; Latin American Studies 4002 Institutional Changes in Latin America.

Political Science 3625 Latin American Government; Political Science 3626 Latin American Government.

Middle East
Asian Studies 3340 Islamic Culture; Asian Studies 3670 Islamic Literature in Translation.

History 3780 The Traditional Middle East; History 3790 The Modern Middle East; Religious Studies 3110 Ancient Israel's Historical & Religious Traditions; Religious Studies 3120 The Rise of Judaism; Religious Studies 3680 Islam.

Critical Issues in Foreign Studies

Economics 3310 Comparative Economic Systems; Economics 3320 Principles of Economic Development.

History 3050 The West and the Third World Since 1870; History 3051 Revolutions in Historical Perspective.

Political Science 3635 Political Change in the Developing Areas; Political Science 3701 Introduction to International Relations; Political Science 3796 Contemporary Problems of Soviet Foreign Policy.

Sociology 3340 Comparative Poverty and Inequality (Same as Afro-American Studies 3340); Sociology 4540 Development and Underdevelopment (Same as Religious Studies 4540).

Capstone Experience Option
Purpose:
1. To offer an intensive integrative experience which will substantially broaden the student's comprehension of the major;
2. To significantly increase an understanding of the ways in which the ideas, methods, and achievements in a major area of study have affected modern society;
3. To examine a major field of study from a value-oriented perspective;
4. To enhance student's mastery of prose communication within the professional context of their major.

Requirement: This option will be satisfied by taking six to eight upper-division hours chosen from the courses listed below. Consult with major department for additional approved courses. Course credits should be taken in the major area unless otherwise approved by the department. It is recommended that this option be satisfied during the senior year (within 45 credit hours of graduation).

Chemistry 4000 Topics in the Development of Chemistry; Chemistry 4811 Senior Seminar; Chemistry 4821 Senior Seminar; Chemistry 4831 Senior Seminar; Classics 4220 Seminar in Classical Studies.
History 4000 Reflections on History; History 4010 Colloquium in History.

Human Services 4500 Working within the System.

Mathematics 4910 Senior Topics; Mathematics 4940 Mathematical Modelling.
Physics 4010 Background of Physics; Physics 4020 Forefront of Physics.
Psychology 4910 Senior Seminar: Great Ideas in Psychology.

Areas of Concentration

(1) Required Major:
In many ways the most important part of
each student's program is the major, for it is in this intensive study of one more or less limited field of knowledge that the individual begins to find a niche in the world of intellectual endeavor. The major may be drawn from the offerings of a single department or it may bring together related concerns of two or more departments. In either case the student should work out a program of study which has a definite design and aims at some overall goal. Guidelines are published by each major department or inter-departmental committee to assist the student in ascertaining goals and to provide a framework within which to develop his or her academic 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. Requirement specifications 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. Courses chosen as upper-division electives in the major may also be used to satisfy basic skills or distribution requirements where listed. A minimum grade of C must be earned in every course counted as part of a major. Students transferring from other institutions must complete at least 12 credit hours at UTK in each major awarded on this transcript without regard to course overlap among majors or, among the additional majors or minors officially recognized. Majors available in the Basic Program for a B.A. or B.S. include: Anthropology, Art History, Audio/Visual Communication, Botany, Chemistry, Classics, Computer Science, Cultural Studies, Economics, English, French, Geography, Geology, German, History, Human Services, Italian, Mathematics, Microbiology, Music, Philosophy, Physics, Political Science, Psychology, Religious Studies, Russian, Sociology, Spanish, Speech Pathology, Speech and Theatre, Statistics, and Zoology.

(2) A related minor;
(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 as specified by the department or program. 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 are 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 2510-20; 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 individual's interests 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 adjusting 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. However, the greatest degree of individualization takes place, however, 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 appropriate 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 maintenance of a satisfactory record (normally 3.25 or above) and evidence of ongoing motivation and interest.

The College Scholars Program affords the highest degree of freedom to the student in developing a meaningful curriculum. Each program is worked out individually with a special 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-Cytotechnology
Pre-Dental
Pre-Dental Hygiene
Pre-Medical
Pre-Medical Record Administration
Pre-Medical Technology
Pre-Nursing
Pre-Optometry
Pre-Pharmacy
Pre-Physical Therapy
Pre-Veterinary Medicine
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 Center, Memphis, as well as those
required for the Bachelor of Arts or Science degree in the College of Liberal Arts at The
University of Tennessee, Knoxville. 1The two-year pre-medical program prepares students to undertake professional training during the third year of study at UT-Memphis. The Science Medical Technology Program prepares students to undertake professional training during the fourth year of study at the University of Tennessee Memorial Research Center and Hospital. Other pre-health professional programs—
dental hygiene, medical record administration, cytology, nursing, and physical therapy—are offered for those students who are planning to pursue professional training in health professional areas which lead to an undergraduate degree from UT-Memphis but not to a degree from UTK.

Admission to any program at UT-Memphis or Knoxville is at the discretion of that program’s admissions committee. Admission to The University of Tennessee and completion of requirements may be obtained from the College of Liberal Arts does not assure admission to any professional training program.

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

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

PRE-DENTAL PROGRAM

The college offers both a three-year program leading to a Bachelor of Arts degree and a four-year program leading to a Bachelor of Arts Degree for students preparing for the study of dentistry. Both programs are based upon the curriculum of the College of Liberal Arts administered by the Health Professions Office, 220 Ayres Hall.

PRE-DENTAL PROGRAM

Students interested in the pre-dental hygiene program are encouraged to consult with a health professionals advisor in the Liberal Arts Advising Center for more information. Bulletins describing the pre-dental hygiene program and requirements in detail may be obtained from the Health Professions Office, 220 Ayres Hall.

PRE-DENTAL PROGRAM

A Bachelor of Science in Dental Hygiene is granted by UT-Memphis upon completion of a program which includes 96 hours of prescribed courses in the College of Liberal Arts and six quarters of study at UT-Memphis. Students interested in the pre-dental hygiene program are encouraged to consult with a health professions advisor in the Liberal Arts Advising Center for more information. Bulletins describing the pre-dental hygiene program and requirements in detail may be obtained from the Health Professions Office, 220 Ayres Hall.
PRE-MEDICAL RECORD ADMINISTRATION PROGRAM

Admission to the medical record administration program at UT-Memphis, 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 for more information. Bulletins describing the medical records administration requirements and program in detail may be obtained from the Health Professions Office, 220 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 degree of Bachelor of Science in medical technology from UT-Memphis.

SCIENCE-MEDICAL TECHNOLOGY CURRICULUM

The Science-Medical Technology Curriculum is a three-year program consisting of a minimum of 140 credit hours in college. Students who complete this curriculum satisfactorily may apply for admission to the course of study in medical technology at The University of Tennessee Memorial Research Center and Hospital in Knoxville (UTMRC). Successful completion of this course, which results in the granting of 50 credit hours, enables the student to begin a Bachelor of Arts degree with a major in medical technology from The University of Tennessee, Knoxville. In addition, a Certificate of Laboratory Training will be awarded by UTMRC. Students who are eligible for examination by the Board of Registry of the American Society of Clinical Pathologists in order to be certified as registered medical technologists.

Freshman Hours Credit

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Biology 1210-20-30</td>
<td>Zoology 1118-28-38</td>
<td>12</td>
</tr>
<tr>
<td>Chemistry 1110-20-30</td>
<td>English 1010 or 1011</td>
<td>12</td>
</tr>
<tr>
<td>Basic Skills (B) Foreign Language (Intermediate Level Sequence)</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Mathematics Elective</td>
<td>4</td>
<td></td>
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Sophomore Hours Credit

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<tr>
<td>Chemistry 2230</td>
<td>Biostatistics 3310</td>
<td>4</td>
</tr>
<tr>
<td>Microbiology 3110</td>
<td>Biochemistry 3211-21-31 &amp; 3219-29-39</td>
<td>12</td>
</tr>
<tr>
<td>Divisional Distribution (C) Social Science</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Microbiology 3200 and 3519</td>
<td>8</td>
<td></td>
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<tr>
<td>Divisional Distribution (D) Humanities Part 1</td>
<td>8-9</td>
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<tr>
<td>Divisional Distribution (A) Non-U.S. History</td>
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Junior Hours Credit

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Microbiology 4320-29</td>
<td>Chemistry 3140-49 and 4910-20-30, Zoology 3050 and 3060, and Microbiology 3110</td>
<td>5</td>
</tr>
<tr>
<td>Biochemistry 3110</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Microbiology 4270</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Divisional Distribution (C) Social Science</td>
<td>7-8</td>
<td></td>
</tr>
<tr>
<td>Divisional Distribution (D) Humanities Part 2</td>
<td>6-8</td>
<td></td>
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<tr>
<td>Upper Level Distribution (A) U.S. Studies, (B) Foreign Studies or (C) Capstone</td>
<td>12-16</td>
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<tr>
<td>Total: Minimum 140-148 hours</td>
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Senior Hours Credit

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical technology course at UT-Memphis</td>
<td>Total: Minimum Required: 190 hours</td>
<td></td>
</tr>
</tbody>
</table>

PRE-MEDICAL TECHNOLOGY PROGRAM

Students planning to seek admission to the medical technology course of study at UT-Memphis must complete 90 credit hours of prescribed courses while enrolled in the College of Liberal Arts. The program at Memphis is 7 quarters in length and leads to the degree of Bachelor of Science in Medical Technology from UT-Memphis. Classes are admitted in September and application must be made one year in advance.

Students interested in the medical technology program of study at UT-Memphis are encouraged to consult with a health professions advisor in the Liberal Arts Advising Center 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, 220 Ayres Hall.

PRE-NURSING PROGRAM

The minimum requirements for admission to the College of Nursing at UT-Memphis 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 UT-Memphis, 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 to the advanced standing.

Students interested in the pre-nursing program are encouraged to consult with a health professions advisor in the Liberal Arts Advising Center for more information. Bulletins describing the pre-nursing program may be obtained in the Health Professions Office, 220 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 UT-Memphis. The Doctor of Pharmacy (Pharm.D.) degree is conferred by UT-Memphis upon completion of four 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, 220 Ayres Hall.

The two-year program prepares students to be admitted to the College of Pharmacy upon completion of 90 hours of a prescribed course of study in the College of Liberal Arts. Further information may be obtained from the Health Professions Office, 220 Ayres Hall.

The three-year program leading to a B.A. degree and the four-year program leading to either a B.A. or B.S. degree from The University of Tennessee, Knoxville, as well as to the professional degree of pharmacy from UT-Memphis, 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, and the B.A. degree is granted upon satisfactory completion of the first year of study at Memphis. In the four-year program the B.A. or B.S. 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 requirement for advanced placement depends on high school courses and grades, Calculus I and II, good one-year course) and have completed general chemistry. Calculus is required if graduate work is planned. Math placement depends on high school courses and grades, ACT scores, and B.A./B.S. requirements. A math placement handout is available in the Liberal Arts Advising Center, 220 Ayres Hall.

Total: Minimum 142 hours

Senior Hours Credit

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Accounting</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Physics 2210-20-30</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>Divisional Distribution (C) Social Sciences</td>
<td></td>
<td>5-6</td>
</tr>
<tr>
<td>Divisional Distribution (D) Humanities Part 2</td>
<td></td>
<td>5-6</td>
</tr>
<tr>
<td>Upper Level Distribution (A) U.S. Studies, (B) Foreign Studies or (C) Capstone</td>
<td></td>
<td>12-16</td>
</tr>
<tr>
<td>Electives</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Total: Minimum 142 hours</td>
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Senior Hours Credit

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Physics 2210-20-30</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>Divisional Distribution (C) Social Sciences</td>
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<td>5-6</td>
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<tr>
<td>Divisional Distribution (D) Humanities Part 2</td>
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<td>5-6</td>
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<td>Upper Level Distribution (A) U.S. Studies, (B) Foreign Studies or (C) Capstone</td>
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<td>12-16</td>
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<td>Electives</td>
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<td>6</td>
</tr>
<tr>
<td>Total: Minimum 142 hours</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
PRE-PHYSICAL THERAPY PROGRAM

Admission to the physical therapy program at UT-Memphis, leading to the degree of Bachelor of Science in Physical Therapy from UT-Memphis, requires completion of 90 hours of prescribed courses while enrolled in the College of Liberal Arts. The program in Memphis is 2 years in length.

Students interested in the pre-physical therapy program are encouraged to consult with a health professions advisor in the Liberal Arts Advising Center for more information. Bulletins describing the physical therapy program in detail may be obtained from the Health Professions Office, 220 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, must satisfy the Basic Skills and Distribution requirements, and must complete the last 45 hours of prescribed courses while enrolled in the College of Veterinary Medicine. A 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.

PRE-ART PROGRAM

STUDIO ART MAJOR

Two majors in the B.F.A. degree are available for B.F.A., Studio Arts and B.F.A., in Graphic Design/ Illustration. Both majors require a similar prerequisite introductory art core. Majors must pass a portfolio review, usually at the end of the sophomore year, in order to be admitted into upper-division courses and concentrations. All studio courses require 3 hours per week attendance for each credit hour earned. Completing the Graphic Design/Illustration core may take more than 12 quarters. Students are urged to seek departmental advisement each quarter to ensure proper scheduling.

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 UTK. No grade below C in art courses may be applied to the B.F.A. major. A minimum of 60 credit hours, 3000-level and above, must be earned prior to graduation.

STUDIO ART MAJOR

The B.F.A. in Studio Art is a professionally oriented degree especially intended for those students planning careers or graduate study in the visual arts.

Students may be accepted into advanced media concentration in (1) Ceramics, (2) Drawing, (5) Painting, (4) Printmaking, (5) Sculpture, (6) Wood, and (7) approved Inter-Area combinations, after passing the appropriate portfolio course.

CORE CURRICULUM

The Studio Art core is required of all B.F. 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>Course</th>
<th>Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>A 1000</td>
<td>Art History 1</td>
<td>1</td>
</tr>
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</table>

II. CONCENTRATION

Subtotal: 59 hours

III. STUDIO ELECTIVES

Additional hours in studio course electives to be completed in the Art Department or at our affiliated facility, Arrowmont School of Arts and Crafts. Students may also apply a maximum of 12 credit hours of approved studio courses from Architecture, Art Education, Broadcast Journalism, Computer Science, Vocational-Technical Education, Interior Design or Theatre.

Subtotal: 27 hours

IV. GENERAL CURRICULUM

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credit</th>
</tr>
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<tbody>
<tr>
<td>A 2000</td>
<td>English Composition</td>
<td>9</td>
</tr>
</tbody>
</table>

V. APPROVED ELECTIVES


GRAPHIC DESIGN/ILLUSTRATION MAJOR

The Graphic Design/Illustration major is specifically designed to provide the basic
visual education for those who wish to pursue careers in the commercial application of art in fields such as advertising, art direction, package design, publications, television, etc. A minimum of 190 credit hours are required for graduation. Two options are available: graphic design or illustration. Students are advised that courses in Graphic Design/Illustration must be taken in sequence, and that successful completion of Art 3500 (Portfolio Review, S/NC) is required for admittance to all upper-division courses.

**GRAPHIC DESIGN OPTION**

**I. Art Core**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>A. Art 1000</td>
<td>2</td>
</tr>
<tr>
<td>B. Art History</td>
<td>12</td>
</tr>
<tr>
<td>1. Art 1815, 1825, 1850</td>
<td>12</td>
</tr>
<tr>
<td>2. Electives</td>
<td>8</td>
</tr>
<tr>
<td>C. Studio</td>
<td>6</td>
</tr>
<tr>
<td>1. Art 1115, 1125, 1135</td>
<td>6</td>
</tr>
<tr>
<td>2. Art 2105, 2117, 2205 (or 2305)</td>
<td>9</td>
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<tr>
<td>Subtotal:</td>
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**II. Graphic Design**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
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<tbody>
<tr>
<td>A. Art 3500 (S/NC)</td>
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<tr>
<td>B. Drawing: Art 2115 (6 hrs.), 4 hrs. electives</td>
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<tr>
<td>C. Photography: Art 2305</td>
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<tr>
<td>D. Art 1501, 2565, 2515, 2525, 3515, 3535, 3455, 4505, 4515, 4516 in sequence</td>
<td>38</td>
</tr>
<tr>
<td>E. Art 3555</td>
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<td>F. Art 4502</td>
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**III. Design Electives**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art 2506, 3516, 3517, 3525, 4506</td>
<td>12</td>
</tr>
<tr>
<td>Subtotal:</td>
<td>12 hours</td>
</tr>
</tbody>
</table>

**IV. Studio Electives**

(3 hours from each category)

<table>
<thead>
<tr>
<th>Category</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Fiber-Fabric</td>
<td>3</td>
</tr>
<tr>
<td>B. Printmaking</td>
<td>3</td>
</tr>
<tr>
<td>C. Sculpture</td>
<td>3</td>
</tr>
<tr>
<td>Subtotal:</td>
<td>9 hours</td>
</tr>
</tbody>
</table>

**V. Professional Electives**

Advertising 3000, 3530, 4000; Broadcasting 4000; Marketing 3110 | 7-8 hours

**VI. General Curriculum**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. English Composition</td>
<td>9</td>
</tr>
<tr>
<td>B. Non-U.S. History/Social Sciences</td>
<td>8</td>
</tr>
<tr>
<td>C. Natural Science/Mathematics</td>
<td>8</td>
</tr>
<tr>
<td>D. Philosophy 3910</td>
<td>4</td>
</tr>
<tr>
<td>E. Liberal Arts Non-art electives</td>
<td>20</td>
</tr>
<tr>
<td>Subtotal:</td>
<td>49 hours</td>
</tr>
</tbody>
</table>

**VII. General Electives**

<table>
<thead>
<tr>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-5</td>
</tr>
</tbody>
</table>

**ILLUSTRATION OPTION**

**I. Art Core**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Art 1000</td>
<td>2</td>
</tr>
<tr>
<td>B. Art History</td>
<td>12</td>
</tr>
<tr>
<td>1. Art 1815, 1825, 1850</td>
<td>12</td>
</tr>
<tr>
<td>2. Electives</td>
<td>8</td>
</tr>
<tr>
<td>C. Studio</td>
<td>6</td>
</tr>
<tr>
<td>1. Art 1115, 1125, 1135</td>
<td>6</td>
</tr>
<tr>
<td>2. Art 2105, 2117, 2205 (or 2305)</td>
<td>9</td>
</tr>
<tr>
<td>Subtotal:</td>
<td>37 hours</td>
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</tbody>
</table>

**II. Illustration**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Art 3500 (S/NC)</td>
<td>1</td>
</tr>
<tr>
<td>B. Drawing: Art 2115 (6 hrs.), 12 hrs. electives</td>
<td>18</td>
</tr>
<tr>
<td>C. Photography: Art 2305</td>
<td>3</td>
</tr>
<tr>
<td>D. Graphic Design: Art 1501, 2505, 2515, 2525, 3515, 3525, 4516 in sequence</td>
<td>26</td>
</tr>
<tr>
<td>E. Art 3555</td>
<td>2</td>
</tr>
<tr>
<td>F. Art 3509, 3519, 3529, 4509, 4519 in sequence</td>
<td>20</td>
</tr>
<tr>
<td>Subtotal:</td>
<td>70 hours</td>
</tr>
</tbody>
</table>

**III. Studio Electives**

A minimum of 34 hours divided evenly from two of the following areas:

A. Fiber-Fabric

B. Painting
C. Printmaking
D. Sculpture
E. Watercolor

**IV. General Curriculum**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. English Composition</td>
<td>9</td>
</tr>
<tr>
<td>B. Non-U.S. History/Social Sciences</td>
<td>8</td>
</tr>
<tr>
<td>C. Natural Science/Mathematics</td>
<td>8</td>
</tr>
<tr>
<td>D. Philosophy 3910</td>
<td>4</td>
</tr>
<tr>
<td>E. Liberal Arts Non-art electives</td>
<td>20</td>
</tr>
<tr>
<td>Subtotal:</td>
<td>34 hours</td>
</tr>
</tbody>
</table>

**COLLEGE ARTISTS PROGRAM**

A program of 185 hours is to be determined by the student and approved by the Department of Art honors committee. This program allows the gifted 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 normally will not be considered after the completion of 90 hours. Admittance to the College Artists Program is based on the following criteria: (1) an overall grade-point average of at least 3.6, (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 to remain in the program. Each College Artist will normally enroll in one or more general or departmental honors courses 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 2000, juniors in 3000, seniors in 4000. 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; 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.

**Core Enrichment Courses**

25 hours in the following Liberal Arts areas are required for all students enrolled in the B.M. degree program.

1. 8 hours from:
   - Non-U.S. History
   - Social Science

2. 8 hours from:
   - Humanities-Arts (non-music)
   - Literature
   - Philosophical Perspectives (can be sequential)

3. 9 hours Foreign Language

Distribution of Core Enrichment credit hours are designated in the course listing for each concentration.

**NOTE:** The Core Enrichment III (9 hours Foreign Language) requirement is in addition to the Liberal Arts College Association requirements.

Students may continue at the 2000-level a language begun in high school or elect to begin a new language at the 1000-level.

Students majoring in vocal performance must complete one year of each of two languages chosen from French, German and Italian.

Students majoring in music history and literature must complete two years of either French or German.

**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 194.)

**MUSIC THEORY**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>Freshman</td>
<td>156</td>
</tr>
<tr>
<td>English 1010 or 1011, 1020, 1031 or 32 or 33</td>
<td>9</td>
</tr>
<tr>
<td>Music 1111-21-31</td>
<td>9</td>
</tr>
<tr>
<td>Music 1113-23-33</td>
<td>3</td>
</tr>
<tr>
<td>Music 2300</td>
<td>3</td>
</tr>
<tr>
<td>Applied music</td>
<td>3</td>
</tr>
<tr>
<td>Ensemble</td>
<td>3</td>
</tr>
<tr>
<td>Core Enrichment I and II</td>
<td>16</td>
</tr>
<tr>
<td>Music 2000</td>
<td>0</td>
</tr>
<tr>
<td>Sophomore</td>
<td>8</td>
</tr>
<tr>
<td>Music 2111-21-31</td>
<td>9</td>
</tr>
<tr>
<td>Music 2308-33-33</td>
<td>3</td>
</tr>
<tr>
<td>Music 2320-30-40</td>
<td>9</td>
</tr>
<tr>
<td>Music 2529</td>
<td>6</td>
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<tr>
<td>Applied music</td>
<td>3</td>
</tr>
<tr>
<td>Ensemble</td>
<td>3</td>
</tr>
<tr>
<td>Liberal arts electives (not in music)</td>
<td>3</td>
</tr>
<tr>
<td>Music 2000</td>
<td>0</td>
</tr>
<tr>
<td>Core Enrichment III</td>
<td>9</td>
</tr>
<tr>
<td>Junior</td>
<td>6</td>
</tr>
<tr>
<td>Music 2310</td>
<td>3</td>
</tr>
<tr>
<td>Music 3111-21-31</td>
<td>6</td>
</tr>
<tr>
<td>Music 3112-22</td>
<td>6</td>
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<tr>
<td>Music 3113-33</td>
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</tr>
<tr>
<td>Applied music</td>
<td>3</td>
</tr>
<tr>
<td>Ensemble</td>
<td>3</td>
</tr>
<tr>
<td>Music electives</td>
<td>3</td>
</tr>
<tr>
<td>Music history/literature (3000 level or above)</td>
<td>6</td>
</tr>
<tr>
<td>Enrollment</td>
<td>6</td>
</tr>
<tr>
<td>Music 2000</td>
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</tbody>
</table>

**Senior**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music 4100</td>
<td>3</td>
</tr>
<tr>
<td>Music 3199</td>
<td>3</td>
</tr>
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<td>Applied music</td>
<td>3</td>
</tr>
<tr>
<td>Ensemble</td>
<td>3</td>
</tr>
<tr>
<td>Music electives</td>
<td>6</td>
</tr>
</tbody>
</table>
**Liberal arts electives (not in music)**
- Junior: 12 hours
- Senior: 15 hours

**Music 2000**
- Junior: 0 hours
- Senior: 0 hours

**Total: 181 hours**

### COMPOSITION

<table>
<thead>
<tr>
<th>Grade</th>
<th>Course Description</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman</td>
<td>Enhanced Theory</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Sophomore</td>
<td>Applied music</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Junior</td>
<td>Core Enrichment I</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Senior</td>
<td>Applied music</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Music 2000</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Core Enrichment II</td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

### Applied music
- Junior: 3 hours
- Senior: 6 hours

### Music electives
- Sophomore: 6 hours
- Junior: 3 hours

### Core Enrichment III
- Sophomore: 9 hours
- Junior: 9 hours
- Senior: 9 hours

### Core Enrichment I
- Sophomore: 8 hours
- Junior: 8 hours
- Senior: 8 hours

### Core Enrichment II (Art 1815-25)
- Sophomore: 3 hours
- Junior: 3 hours
- Senior: 3 hours

### Core Enrichment III (French or German)
- Sophomore: 3 hours
- Junior: 3 hours
- Senior: 3 hours

### Core Enrichment II (French, German or Italian)
- Sophomore: 3 hours
- Junior: 3 hours
- Senior: 3 hours

### Foreign language (French or German)
- Sophomore: 3 hours
- Senior: 3 hours

### Music 2000
- Sophomore: 0 hours
- Junior: 0 hours
- Senior: 0 hours

### Total: 180 hours

### MUSIC HISTORY AND LITERATURE

<table>
<thead>
<tr>
<th>Grade</th>
<th>Course Description</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman</td>
<td>Enhanced Theory</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Sophomore</td>
<td>Music 2000</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Junior</td>
<td>Core Enrichment I</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Senior</td>
<td>Music 2000</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Music History/Literature/Theory Electives</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Music 2000</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Core Enrichment I</td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

### Music History/Literature or Theory Electives
- Sophomore: 6 hours
- Junior: 6 hours
- Senior: 6 hours

### Core Enrichment II (Art 1815-25)
- Sophomore: 3 hours
- Junior: 3 hours
- Senior: 3 hours

### Core Enrichment III (French or German)
- Sophomore: 3 hours
- Junior: 3 hours
- Senior: 3 hours

### Core Enrichment II (French, German or Italian)
- Sophomore: 3 hours
- Junior: 3 hours
- Senior: 3 hours

### Core Enrichment III (French, German or Italian)
- Sophomore: 3 hours
- Junior: 3 hours
- Senior: 3 hours

### Foreign language (French or German)
- Sophomore: 3 hours
- Senior: 3 hours

### Music 2000
- Sophomore: 0 hours
- Junior: 0 hours
- Senior: 0 hours

### Total: 180 hours

### PIANO PEDAGOGY AND LITERATURE

<table>
<thead>
<tr>
<th>Grade</th>
<th>Course Description</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman</td>
<td>Enhanced Theory</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Sophomore</td>
<td>Junior Recital 3000</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Senior</td>
<td>Music 2000</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Music History/Literature/Theory Electives</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Music 2000</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Core Enrichment I</td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

### Music History/Literature or Theory Electives
- Sophomore: 6 hours
- Junior: 6 hours
- Senior: 6 hours

### Core Enrichment II (Art 1815-25)
- Sophomore: 3 hours
- Junior: 3 hours
- Senior: 3 hours

### Core Enrichment III (French or German)
- Sophomore: 3 hours
- Junior: 3 hours
- Senior: 3 hours

### Core Enrichment II (French, German or Italian)
- Sophomore: 3 hours
- Junior: 3 hours
- Senior: 3 hours

### Foreign language (French or German)
- Sophomore: 3 hours
- Senior: 3 hours

### Music 2000
- Sophomore: 0 hours
- Junior: 0 hours
- Senior: 0 hours

### Total: 180 hours

### MULTIPLE KEYBOARD INSTRUMENTS

<table>
<thead>
<tr>
<th>Grade</th>
<th>Course Description</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman</td>
<td>Enhanced Theory</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Sophomore</td>
<td>Applied Music</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Senior</td>
<td>Music 2000</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Music History/Literature or Theory Electives</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Music 2000</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Core Enrichment I</td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

### Music History/Literature or Theory Electives
- Sophomore: 6 hours
- Junior: 6 hours
- Senior: 6 hours

### Core Enrichment II (Art 1815-25)
- Sophomore: 3 hours
- Junior: 3 hours
- Senior: 3 hours

### Core Enrichment III (French or German)
- Sophomore: 3 hours
- Junior: 3 hours
- Senior: 3 hours

### Core Enrichment II (French, German or Italian)
- Sophomore: 3 hours
- Junior: 3 hours
- Senior: 3 hours

### Foreign language (French or German)
- Sophomore: 3 hours
- Senior: 3 hours

### Music 2000
- Sophomore: 0 hours
- Junior: 0 hours
- Senior: 0 hours

### Total: 180 hours

### KEYBOARD LITERATURE

<table>
<thead>
<tr>
<th>Grade</th>
<th>Course Description</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman</td>
<td>Enhanced Theory</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Sophomore</td>
<td>Music 2000</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Senior</td>
<td>Music History/Theory (3000 and above)</td>
<td>6</td>
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</tr>
<tr>
<td></td>
<td>Music History/Theory (3000 and above)</td>
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</tr>
<tr>
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<tr>
<td></td>
<td>*Keyboard Literature</td>
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<td></td>
<td>Music 2000</td>
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<td></td>
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<tr>
<td></td>
<td>Music History/Theory (3000 and above)</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>

### Music History/Theory (3000 and above)
- Sophomore: 6 hours
- Junior: 6 hours
- Senior: 6 hours

### Music 2000
- Sophomore: 0 hours
- Junior: 0 hours
- Senior: 0 hours

### Total: 180 hours

### VOICE

<table>
<thead>
<tr>
<th>Grade</th>
<th>Course Description</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman</td>
<td>Enhanced Theory</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Sophomore</td>
<td>Junior Recital 3000</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Senior</td>
<td>Music 2000</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>Music History/Literature or Theory Electives</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Music 2000</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Core Enrichment I</td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

### Music History/Literature or Theory Electives
- Sophomore: 6 hours
- Junior: 6 hours
- Senior: 6 hours

### Core Enrichment II (Art 1815-25)
- Sophomore: 3 hours
- Junior: 3 hours
- Senior: 3 hours

### Core Enrichment III (French or German)
- Sophomore: 3 hours
- Junior: 3 hours
- Senior: 3 hours

### Core Enrichment II (French, German or Italian)
- Sophomore: 3 hours
- Junior: 3 hours
- Senior: 3 hours

### Foreign language (French or German)
- Sophomore: 3 hours
- Senior: 3 hours

### Music 2000
- Sophomore: 0 hours
- Junior: 0 hours
- Senior: 0 hours

### Total: 180 hours

### Senior recital 4000
- Sophomore: 0 hours
- Junior: 0 hours
- Senior: 0 hours

### Electives
- Sophomore: 12 hours
- Junior: 12 hours
- Senior: 12 hours

### Music 2000
- Sophomore: 0 hours
- Junior: 0 hours
- Senior: 0 hours

### Total: 180 hours
<table>
<thead>
<tr>
<th>College of Liberal Arts/Music Concentrations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Junior</strong></td>
</tr>
<tr>
<td>Music 2010 .............................................. 3</td>
</tr>
<tr>
<td>Music 3111-23 ........................................... 6</td>
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<tr>
<td>Principal applied study ................................ 12</td>
</tr>
<tr>
<td>Ensemble ................................................. 5</td>
</tr>
<tr>
<td>Junior recital 3000 .................................. 0</td>
</tr>
<tr>
<td>Foreign language (French, Italian, or German) .......... 9</td>
</tr>
<tr>
<td>Theatre 2121 ............................................. 4</td>
</tr>
<tr>
<td>Core Enrichment I ....................................... 4</td>
</tr>
<tr>
<td>Music 2000 ................................................ 0</td>
</tr>
<tr>
<td>Senior</td>
</tr>
<tr>
<td>Music 4046-47-48 ....................................... 6</td>
</tr>
<tr>
<td>Music 4012-22-32 ........................................ 3</td>
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<tr>
<td>Principal applied study ................................ 12</td>
</tr>
<tr>
<td>Ensemble ................................................ 3</td>
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<tr>
<td>Senior recital 4000 .................................. 0</td>
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<tr>
<td>Core Enrichment II ...................................... 8</td>
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<tr>
<td>Liberal arts electives .................................. 5</td>
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<td>Music 2000 ................................................ 0</td>
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<tr>
<td>Theatre 2121 ............................................. 4</td>
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<td><strong>Sophomore</strong></td>
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<td>Music 2000 ................................................ 0</td>
</tr>
<tr>
<td>Core Enrichment III ...................................... 9</td>
</tr>
<tr>
<td>Music 1010-20-30 ....................................... 3</td>
</tr>
<tr>
<td>Music 1011-21-31 ....................................... 9</td>
</tr>
<tr>
<td>English 1010 or 1011; 1020; 1031 or 32 or 33 ........ 9</td>
</tr>
<tr>
<td><strong>Freshman</strong></td>
</tr>
<tr>
<td>Music 2000 ................................................ 0</td>
</tr>
<tr>
<td>Core Enrichment I ....................................... 8</td>
</tr>
<tr>
<td>Music 2055-65-75 ....................................... 6</td>
</tr>
<tr>
<td>Music Educ. 2110 ....................................... 3</td>
</tr>
<tr>
<td>Music 2040-50-60 ......................................... 3</td>
</tr>
<tr>
<td>Principal applied study ................................ 12</td>
</tr>
<tr>
<td>Music 2111-21-31 ....................................... 9</td>
</tr>
<tr>
<td>Music 2113-23-33 ....................................... 3</td>
</tr>
<tr>
<td>Music 2111-21-31 ....................................... 9</td>
</tr>
<tr>
<td>Music 2000 ................................................ 0</td>
</tr>
<tr>
<td>Junior</td>
</tr>
<tr>
<td>Music 2300 ................................................ 3</td>
</tr>
<tr>
<td>Music 2113-23-33 ....................................... 3</td>
</tr>
<tr>
<td>Music 2111-21-31 ....................................... 9</td>
</tr>
<tr>
<td><strong>Senior</strong></td>
</tr>
<tr>
<td>Music 2000 ................................................ 0</td>
</tr>
<tr>
<td>Core Enrichment I ....................................... 8</td>
</tr>
<tr>
<td>Music 1010-20-30 ....................................... 3</td>
</tr>
<tr>
<td>Music 1011-21-31 ....................................... 9</td>
</tr>
<tr>
<td>English 1010 or 1011; 1020; 1031 or 32 or 33 ........ 9</td>
</tr>
<tr>
<td><strong>Senior</strong></td>
</tr>
<tr>
<td>Music 2000 ................................................ 0</td>
</tr>
<tr>
<td>Core Enrichment I ....................................... 8</td>
</tr>
<tr>
<td>Music 2000 ................................................ 0</td>
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</tbody>
</table>

**Total: 182 hours**

**CHURCH MUSIC (Voice)**

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Freshman</td>
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<td>English 1010 or 1011; 1020; 1031 or 32 or 33 ........ 9</td>
</tr>
<tr>
<td>Music 1111-21-31 ....................................... 9</td>
</tr>
<tr>
<td>Music 3113-23 ........................................... 6</td>
</tr>
<tr>
<td>Music 2231-81-91 ........................................ 3</td>
</tr>
<tr>
<td>Music 3112 ................................................ 3</td>
</tr>
<tr>
<td>Principal applied study ................................ 12</td>
</tr>
<tr>
<td>Music 2000 ................................................ 0</td>
</tr>
<tr>
<td>Winter recital 3000 .................................... 0</td>
</tr>
<tr>
<td>Ensemble ................................................ 3</td>
</tr>
<tr>
<td>Core Enrichment III ...................................... 9</td>
</tr>
<tr>
<td>Liberal arts electives (not in music) .................. 3</td>
</tr>
<tr>
<td>Music 2000 ................................................ 0</td>
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</tbody>
</table>

**Total: 181 hours**

**WINDWINDS, BRASS, AND PERCUSSION INSTRUMENTS**

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Freshman</td>
</tr>
<tr>
<td>English 1010 or 1011; 1020; 1031 or 32 or 33 ........ 9</td>
</tr>
<tr>
<td>Music 1011-21-31 ....................................... 9</td>
</tr>
<tr>
<td>Music 1113-23-33 ....................................... 3</td>
</tr>
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<td>Music 2300 ................................................ 3</td>
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<tr>
<td>Music 2300 ................................................ 3</td>
</tr>
<tr>
<td>Principal applied study ................................ 12</td>
</tr>
<tr>
<td>Music 6000 ................................................ 0</td>
</tr>
<tr>
<td>Senior</td>
</tr>
<tr>
<td>Music 2000 ................................................ 0</td>
</tr>
<tr>
<td>Core Enrichment II ...................................... 8</td>
</tr>
<tr>
<td>Music 2000 ................................................ 0</td>
</tr>
<tr>
<td>Senior recital 4000 .................................... 0</td>
</tr>
<tr>
<td>Liberal arts electives (not in music) .................. 3</td>
</tr>
<tr>
<td>Music 2000 ................................................ 0</td>
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</tbody>
</table>

**Total: 180 hours**

**MULTIPLE WINDWIND INSTRUMENTS**

<table>
<thead>
<tr>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>Freshman</td>
</tr>
<tr>
<td>English 1010 or 1011; 1020; 1031 or 32 or 33 ........ 9</td>
</tr>
<tr>
<td>Music 1111-21-31 ....................................... 9</td>
</tr>
<tr>
<td>Music 1113-23-33 ....................................... 3</td>
</tr>
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<td>Music 2300 ................................................ 3</td>
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<tr>
<td>Music 2300 ................................................ 3</td>
</tr>
<tr>
<td>Principal applied study ................................ 12</td>
</tr>
<tr>
<td>Music 3000 ................................................ 0</td>
</tr>
<tr>
<td>Core Enrichment II ...................................... 8</td>
</tr>
<tr>
<td>Music 3113-23 ........................................... 6</td>
</tr>
<tr>
<td>Music 2111-21-31 ....................................... 9</td>
</tr>
<tr>
<td>Music 2113-23-33 ....................................... 3</td>
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<tr>
<td>Music 2111-21-31 ....................................... 9</td>
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<tr>
<td>Music 2000 ................................................ 0</td>
</tr>
<tr>
<td>Senior</td>
</tr>
<tr>
<td>Music 2000 ................................................ 0</td>
</tr>
<tr>
<td>Core Enrichment I ....................................... 8</td>
</tr>
<tr>
<td>Music 2000 ................................................ 0</td>
</tr>
<tr>
<td>Senior recital 4000 .................................... 0</td>
</tr>
<tr>
<td>Liberal arts electives (not in music) .................. 3</td>
</tr>
<tr>
<td>Music 2000 ................................................ 0</td>
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</table>

**Total: 181 hours**
**Bachelor of Science in Chemistry/College of Liberal Arts**

**STUDIO MUSIC AND JAZZ**

<table>
<thead>
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<th>Credit</th>
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<tr>
<td>Music 1111-21-31</td>
<td>3</td>
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<tr>
<td>Music 1113-23-33</td>
<td>3</td>
</tr>
<tr>
<td>Music 2500</td>
<td>3</td>
</tr>
<tr>
<td>Music 3590</td>
<td>2</td>
</tr>
<tr>
<td>Music 4199</td>
<td>3</td>
</tr>
<tr>
<td>Music 2000</td>
<td>0</td>
</tr>
<tr>
<td>Sophomore</td>
<td>Music 2130</td>
</tr>
<tr>
<td>Music 3112</td>
<td>3</td>
</tr>
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<td>Music 3113-23-33</td>
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<td>12</td>
</tr>
<tr>
<td>Jazz Ensemble</td>
<td>3</td>
</tr>
<tr>
<td>Senior recital 4000</td>
<td>0</td>
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<tr>
<td>Core Enrichment I or II</td>
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<tr>
<td>Liberal arts electives (not in music)</td>
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<tr>
<td>Electives</td>
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<tr>
<td>Music 2000</td>
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</table>

**Senior**

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music Education 4430</td>
<td>3</td>
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<tr>
<td>Principal applied study</td>
<td>6</td>
</tr>
<tr>
<td>Core Enrichment I</td>
<td>4</td>
</tr>
<tr>
<td>Principal applied study</td>
<td>12</td>
</tr>
<tr>
<td>Ensemble</td>
<td>3</td>
</tr>
<tr>
<td>Junior recital 3000</td>
<td>0</td>
</tr>
<tr>
<td>Core Enrichment III</td>
<td>9</td>
</tr>
<tr>
<td>Electives</td>
<td>6</td>
</tr>
<tr>
<td>Music 2000</td>
<td>0</td>
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</tbody>
</table>

**Total: 181 hours**

**ELECTRONIC MUSIC**

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>Freshman</td>
<td>English 1010 or 1011; 1020; 1031 or 1032 or 1033</td>
</tr>
<tr>
<td>Music 1111-21-31</td>
<td>3</td>
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<tr>
<td>Music 1113-23-33</td>
<td>3</td>
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<tr>
<td>Music 2500</td>
<td>3</td>
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<tr>
<td>Music 3590</td>
<td>2</td>
</tr>
<tr>
<td>Music 4199</td>
<td>3</td>
</tr>
<tr>
<td>Music 2000</td>
<td>0</td>
</tr>
<tr>
<td>Sophomore</td>
<td>Core Enrichment I (Physics 1810)</td>
</tr>
<tr>
<td>Core Enrichment I</td>
<td>4</td>
</tr>
<tr>
<td>Core Enrichment III</td>
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</tr>
<tr>
<td>Electives</td>
<td>12</td>
</tr>
<tr>
<td>Music 2000</td>
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</tbody>
</table>

**Total: 180 hours**

**Suzuki String Pedagogy**

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>Freshman</td>
<td>English 1010 or 1011; 1020; 1031 or 32 or 33</td>
</tr>
<tr>
<td>Music 1111-21-31</td>
<td>3</td>
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<tr>
<td>Music 1113-23-33</td>
<td>3</td>
</tr>
<tr>
<td>Music 2000</td>
<td>0</td>
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</tbody>
</table>

**Total: 181 hours**

**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 assignment of a faculty 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 quarters and twelve school quarters. Students are required to have at least a 2.5 average to enter and remain in the program. Some opportunity exists for students to enter the program later than the end of the freshman year. Students interested should make application to the head of the department at least one quarter in advance of the beginning of the first work period. Further information will be supplied on request.

**Curriculum Requirements**

**Freshman**

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
<td>Chemistry 1310-20-30 (or 1110-20-30) or 1118-28-38</td>
<td>12</td>
</tr>
<tr>
<td>Chemistry 1325-35</td>
<td>2</td>
</tr>
<tr>
<td>Mathematics 1840-50-60 or 1848-58-68</td>
<td>12</td>
</tr>
<tr>
<td>Foreign Language (Intermediate level sequence)</td>
<td>9</td>
</tr>
<tr>
<td>English Composition (3 course sequence)</td>
<td>9</td>
</tr>
<tr>
<td>Divisional Distribution A, C, or D</td>
<td>4</td>
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**Sophomore**

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
<td>Chemistry 3211-21-31, 3219-39-39</td>
<td>12</td>
</tr>
<tr>
<td>Chemistry 2140-49</td>
<td>4</td>
</tr>
<tr>
<td>Mathematics 2840-50-60 or 2848-58-68</td>
<td>12</td>
</tr>
<tr>
<td>Physics 2510, 2310-20</td>
<td>11</td>
</tr>
<tr>
<td>Divisional Distribution A, C, or D</td>
<td>11</td>
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</table>

**Junior**

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry 3410-20-30, 3429-39</td>
<td>13</td>
</tr>
<tr>
<td>Chemistry 4210-19, 4220-29</td>
<td>10</td>
</tr>
<tr>
<td>Computer Science 3150</td>
<td>3</td>
</tr>
<tr>
<td>Divisional Distribution A, C, or D</td>
<td>22</td>
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</table>

**Senior**

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>Chemistry 4110-19</td>
<td>5</td>
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<tr>
<td>Chemistry 4610 and 4710</td>
<td>3</td>
</tr>
<tr>
<td>Chemistry 4420</td>
<td>3</td>
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<tr>
<td>Chemistry 4811-21-31</td>
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</tr>
<tr>
<td>Electives</td>
<td>29</td>
</tr>
</tbody>
</table>

*Must be chosen from German, French, or Russian; a stu-
Further information may be obtained in the Department of Political Science.

Social Work

Students who wish to prepare for graduate professional training in social work will find a brief description of the program of the College of Social Work on page 214. Detailed information about courses and curricula, as well as requirements for admission, will be found in the catalog of the College 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 the 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 1996-97 academic year must apply by January 1, 1996.

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 16.

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 (220 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 specified. 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 corequisites.

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

(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 Basic Skills 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.

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

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

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

Independent Study
Certain educational goals may best be met through independent study done by an individual under the direction of a faculty member. Students who wish to do such independent work should obtain the approval of the faculty members and the departments concerned prior to 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, may apply toward the degree in the college. Departments may in any of the above forms, however, limit the hours of credit which can be applied toward a given major.

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

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 residence, sex, age, race, or citizenship.

University Theatres
The Department of Speech and Theatre offers a full schedule of dramatic presentations in three different theatres. The Clarence Brown Theatre has outstanding facilities for 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), Hasler (botany), Walters Life Science (biochemistry, biology, microbiology, and zoology). The Nielson Physics Building (physics and astronomy), Geology-Geography (geology and geography), Danby 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) and 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 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; C. H. Faulkner, Ph.D. Indiana; R. L. Jantz, Ph.D. Kansas; P. W. Parmalee, Ph.D. Texas A & M; M. C. Wheeler, Ph.D. Yale.

Associate Professors:

Assistant Professors:
B. J. Howell, Ph.D. Kentucky; J. F. Simek, Ph.D. SUNY-Binghamton; P. S. Willey, Ph.D. Tennessee.

Research Assistant Professor:
J. Chapman, Ph.D. North Carolina

4Alumni Distinguished Service Professor.
and cultural systems. Recommended.

2530 African Religions (4) (Same as Religious Studies 3420 and Afro-American Studies 3490.)

2530 Peoples and Cultures of Africa (3) Ethnographic survey of aboriginal cultures of sub-Saharan Africa. Cultural diversity and human ecology in a real perspective. 2530 recommended. (Same as Afro-American Studies 3530.)

2540 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.


2555 Cherokee Ethnology (3) Survey of sociocultural aspects and external influences from first European contact to present. Emphasis on 18th and 19th centuries.

2575 Afro-American Anthropology (3) Anthropological perspectives on the African black in New World: examination of Afro-American via anthropological theories and methodology. (Same as Afro-American Studies 3575.)

2580 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.)

2610 Archaeology of United States and Canada I (3) Survey of prehistoric peoples of the Americas from initial occupation to European contact. 2520 recommended.

2611 Archaeology of United States and Canada II (3) Historic archaeology of Euro-American, Afro-American, and Asian American cultures in the United States and Canada from the 15th to the 20th centuries.

2630 European Prehistory I (3) Cultural developments during Paleolithic, Mesolithic, and Neolithic periods. 2520 recommended.

2630 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.

2660 Prehistory of Tennessee (3) History of archaeological research in Tennessee and survey of prehistoric Indian cultures identified through research.

2670 Principles of Archaeology (3) Research strategies in archaeological excavation, interpretation, and explanation. Prereq: 2520 or consent of instructor.

2700 Forms of Folklore (3) Introduction to anthropological study of folklore.

2811 Introduction to Mesoology (3) (Same as Art 3611.)

2900 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 161.

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

4103 Independent Study (1-16) See page 161.

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 cultures. (Same as Education C & 14111.)

4240 Applied Cultural Anthropology (3) Applications of anthropological theory, method, and findings in programs of community and national development, public health, international aid, and military assistance. Examination of roles of anthropologists and their ethics and interventions in development programs, 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 and its role in the study of the relationship between societies and their environments. Topics include: ecological theory, methods of analysis, and application from selected case studies. Prereqs: 2520 or 3410, or consent of instructor.

4400 Principles of Anthropology (3) Analytical review of current trends and debates in anthropology. Prereq: 2520 or 3410, or consent of instructor.

4440 Urban Anthropology (3) Survey of the theoretical and methodological issues that anthropologists encounter in cross-cultural urban environments. Focus is on anthropological perspective and urban problems and planning. Prereq: 3405 or consent of instructor. (Same as Urban Studies 4440.)

4480 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: 2520, 3410, or consent of instructor.

4480 Urban Anthropology (3) Survey of theoretical and methodological issues anthropologists encounter in cross-cultural urban environments. Focus is on anthropological perspective and urban problems and planning. Prereq: 3405 or consent of instructor. (Same as Urban Studies 4440.)

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.

4580 Cherokee Ethnology (3) Intensive survey of the material and cultural aspects of southeastern Cherokee culture existing at time of first European contact.

4600 Method and Theory in Archaeology (3) Historical development of New World archaeology with emphasis on theory and field techniques. Prereq: 2530 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. (Same as Afro-American Studies 4610.)

4640 Zoarchaeology (3) Basic osteological studies of vertebrate classes; emphasis on aboriginal man’s utilization of native animals in his subsistence and cultural behavior; identification of edible parts, and interpretation of archaeologically derived molluscan and vertebrate remains.

4650 Archaeology of Southeastern United States (3) Intensive study of prehistoric American Indian. Special emphasis on Tennessee prehistory. Prereq: 3610 or 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: technology and economics, social organization, beliefs and values, oral traditions, and customs. Consent of instructor.

473 Research in Southern Appalachian Folk Culture (3) Research-oriented course dealing with a wide range of traditional culture in southern Appalachia: settlement patterns, folk housing, economy, clothing, beliefs, speech, art, song, dance, and oral traditions and customs. Prereq: 4740. May be repeated. Maximum 5 hrs.

4750 Italian Folklore (3) (Same as Romance Languages 4750).

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

4940 Biology of Native Americans (3) American Indian origins and evolution from standpoint of 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; origin and evolution of major primate lineages, emphasizing the earliest Hominid and related forms. Prereq: 2510. Recommended: Zoology 4380.

4990 Seminar in Prehistory (2) The general requirements for the master's and doctoral degrees, as well as the course description, are given in the Graduate Catalog. See Cultural Studies.

Art (140)

Professors:

Associate Professors:

Assistant Professors:

Instructor:
D. Wilson, M.F.A. California (San Diego).

The Department of Art serves the University both generally and specifically: exhibitions are initiated within the Art and Architecture Building and in other spaces; students from the various colleges enroll in art courses for personal enrichment and to fulfill requirements; and the Department offers undergraduate and graduate majors in the visual arts.

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

Studio courses within the Department of Art require 3 hours of class time for each credit hour earned.

The Department reserves the right to acquire student studio work.

UNDERGRADUATE

B.F.A. Majors: see page 155.

B.A. Major: Art History: Prerequisites Art 1815, 1825, and 1835 (12 hrs.); art history courses 2000 and above, which may include Greek and Roman art and archaeology (25 hrs.); studio courses 2000 and above (9 hrs.); Philosophy 3910 (4 hrs.); Museumology 3611 and 3621 (8 hrs.). 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, French, and any other language appropriate to an area of specialization.

Students anticipating possible careers in the museum or gallery field are advised that elective hours in Art 4811 Museum Internship should be considered.

B.A. Minor: Art History—Consists of 24 hours in art history: courses numbered 2000 and above. Art 1815 and 1825 are prerequisites to the minor.

B.A. Major: Art (Concentration in Studio)—Art 1000, 1115, 1125, 1135, 1825, and eight additional hours of art history are prerequisites to a major of 36 hours of courses numbered 2000 and above, including a minimum of 21 hours in upper-division courses.

B. A. Minor: Art (Concentration in Studio)—Art 1115, 1125, 1135, and 1815, 1825, 1825 are prerequisite to a minor of 24 hours which includes a minimum of 8 additional upper-division hours. Course work may be in Ceramics, Drawing, Fiber-Fabric, Painting-Watercolor, Printmaking, Sculpture or a combination from these areas.

1000 The Visual Artist (2) 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, graphic, craft, photography, and architecture). Major issues and concerns in visual arts and career opportunities. Must be taken freshman year.

1015 An Introduction to Studio Art: Various Media (3) Introduction to studio media. Individual sections for various artistic disciplines. For non-majors only. Course may be repeated, medium may not be repeated. Maximum 12 hrs.

1115 Studio Fundamentals (2) Development of observational skills and perception of reality. Fundamental aspects of drawing—line, tone, space, form, and composition. Primarily for art, architecture, interior design, and art education majors.

1125 Studio Fundamentals (2) Surface composition and color. Primarily for art, architecture, interior design, and art education majors.

1135 Studio Fundamentals (2) Real space and volume. Primarily of art, architecture, art education, and interior design and housing majors.

1501 Orientation to Graphic Design/Illustration (2) Lecture/discussion of the field, history, social impact and economics. Prereq: 1115, 1125.

1705 Experiencing Art (4) Form and meaning in visual arts. Lecture/discussion. Especially for non-majors.

1815 Western Art I (4) Survey of major monuments in Western art with an emphasis on the art of Europe from prehistory through the Middle Ages.

1825 Western Art II (4) Survey of major monuments in Western art with an emphasis on Europe and American from 1400 to the early 20th century.

1835 Asian Art (4) Art of Central and Southeast Asia, India, China, Korea and Japan from prehistory through contemporary times, and Buddhist forms, and into modern media.


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.

2105 Survey of Drawing (3) Further exploration and refinement of fundamental aspects of drawing with more emphasis on composition and techniques. Prereq: 1115.

2160 Special Topics in Drawing (3) Student or instructor initiated course offered at convenience of department. Prereq: Determined by department. May be repeated. Maximum credit 12 hours.

2115 Life Drawing (3) Further development of drawing and observational skills with special emphasis on structure and dynamics of human figure and the figure in environment. Prereq: 2105. May be repeated. Maximum 6 credit hours.


2205 Introduction to Painting (3) Capacities of oil and acrylic painting on canvas. Prereq: 1115, 1125, 1135 for art majors; none for non-art majors.

2260 Special Topics in Painting (3) Student or instructor initiated course offered at convenience of department to enhance and expand the painting curriculum. Does not substitute for basic program. Hours to be determined by department. May be repeated. Maximum 12 credit hours.

2215 Painting II (3) Techniques of expression in oil and/or acrylic. May be repeated. Maximum credit 8 hours. Prereq: 2205 for art majors, none for non-art majors.

2256 Special Topics in Fiber and Fabrics (3) Student or instructor initiated course to be offered at convenience of department. Prereq: Determined by department. May be repeated. Maximum 12 credit hours.

2260 Fabric: Painting and Dyeing (3) Survey of painting and dyeing processes in the development of surface design on fabric. Includes basic color, direct drawing, and/or other related approaches.

2265 Fiber: Three-Dimensional Non-woven Structures (3) Development of three-dimensional structures through non-woven fiber techniques. Crochet, half-stitch knotting, and/or coiling.


2275 Fiber: Woven Structures (3) The woven structure as a two-dimensional pictorial surface. Tapestry, knotted pile, wrapped weave techniques in the development of imagery, color structures and textural surface.


2285 Fiber: Woven Wall Works (3) Fabrication of woven forms on vertical looms with emphasis on experimental use of fiber media in the development of architecturally scaled wall works.

2305 Introduction to Watercolor (3) Capacities of transparent watercolor, Prereq: 1115, 1125, 1135 for art majors, none for non-art majors.

2315 Survey of Ceramics (3) The history of ceramics from prehistory through the contemporary period. Prereq: Determined by department. May be repeated. Maximum credit 6 hours.
6 credit hours.

2616 Lithography (3) Exploration of stone and aluminum plate lithography applying traditional and contemporary printmaking techniques; may be repeated. Maximum 6 credit hours.

2617 Screen Printing (3) Creative explorations of a variety of screen printing techniques. May be repeated. Maximum 6 credit hours.

2640 Papermaking Workshop (3) Exploration of papermaking as a medium for two and three-dimensional art; includes steampunk techniques, embossing, pulp dyeing, inlaying, casting and other related techniques. Emphasis upon development of a personal creative process. Prereq: Determined by department. S/NC only.

2655 Introduction to Metal Design (3) Basic techniques of jewelry and metalsworking. Prereq: 1115, 1125, 1135 for art majors, none for non-art majors. May be repeated. Maximum 6 credit hours.

2665 Metal Design II: Jewelry (3) Additional jewelry and metalsworking techniques including casting, stone-setting, and forming. Prereq: 2655. May be repeated. Maximum 6 credit hours.

2675 Metal Design II: Enameling (3) Exploration of vitreous enamel as individual art form and in combination with other materials. Prereq: 2655. May be repeated. Maximum 6 credit hours.

2706 Special Topics in Art History (4) Student or instructor initiated course offered at convenience of department. Prereq: Determined by department. May be repeated. Maximum 16 credit hours.

2725 Black Art (4) Black art history in America. 15th century to contemporary trends. (Same as Afro-American Studies 2725.)

2905 Introduction to Photography (3) Introduction to the art of black and white photography. Field and studio shooting, darkroom processing, basic developing and enlarging techniques.

2906 Special Topics in Photography (3) Student or instructor initiated course offered at convenience of department. Prereq: determined by department. May be repeated. Maximum 12 credit hours.

2935 Film Design (3) Introductory theory and practice of film making. Emphasis on graphic elements through use of motion picture camera.

2950 Introduction to Ceramics (3) Exploration of ceramics, designing and constructing pottery forms using pinch, coil, slab, and wheel techniques. Prereq: 1115-25-35 for art majors, none for non-art majors.

2956 Special Topics in Ceramics (3) Student or instructor initiated course to be offered at convenience of department. Prereq: Determined by department. May be repeated. Maximum 12 credit hours.

2960 Ceramics II: Handbuilding Techniques (3) Prereq: 2950.

2970 Ceramics II: Wheel Techniques (3) Prereq: 2960.

3000 Inter-Area Portfolio Review (1) A review of prior studio work. Successful completion required prior to registration for junior and senior courses. Prereq: consent of department. S/NC only.

3100 Drawing Portfolio Review (1) A review of prior work in drawing. Successful completion required prior to registration for junior and senior courses. Prereq: consent of department. S/NC only.

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

3200 Painting Portfolio Review (1) A review of prior work in painting. Successful completion required prior to registration for junior and senior courses. Prereq: consent of department. S/NC only.

3215 Painting III (4) Individual expression 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 2215 or consent of instructor. May be repeated. Maximum 12 hrs.

3300 Watercolor Portfolio Review (1) A review of prior work in watercolor. Successful completion required prior to registration for junior and senior courses. Prereq: consent of department. S/NC only.

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

3400 Sculpture Portfolio Review (1) A review of prior work in sculpture. Successful completion required prior to registration for junior and senior courses. Prereq: consent of department. S/NC only.

3405 Sculpture: Intermediate Clay Modeling (4) Further problems in clay and wax modeling construction and casting. Prereq: 2405 or consent of instructor.

3407 Sculpture: Intermediate Mixed Media (4) Further problems in the sculptural use of two or more distinctive materials. Prereq: 2407 or consent of instructor.

3409 Sculpture: Intermediate Welding and Metal Fabrication (4) Further exploration of casting methods for bronze and aluminum. Prereq: 2409 or consent of instructor.

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

3416 Sculpture: Advanced Life Modeling (3-4) Advanced modeling techniques in clay and wax, working from figure. Four credit hours includes casting a minimum of one piece. Prereq: 2416 or consent of instructor. May be repeated. Maximum 8 credit hours.

3500 Graphic Design/Illustration Portfolio Review (1) A review of prior work in graphic design illustration. Successful completion required prior to registration for junior and senior courses. Prereq: 2526 or consent of instructor. S/NC only.

3505 Line Illustration (4) Study of black and white media and techniques as applied to product and editorial illustration. Prereq: 2525.


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

3519 Half-tone Illustration (4) Continuous tone and limited-color media and techniques as applied to product and editorial illustration. Prereq: 3515.

3525 Visual Communications Concepts (4) Advanced pictorial perception; a broad range of concepts, methods, and techniques for designer/illustrator. Prereq: 3500.

3529 Full Color Illustration (4) Process color media and techniques as applied to product and editorial illustration. Prereq: 3519.

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

3545 Corporate Design (4) Concepts of corporate graphics. Problems include all areas of graphic design and illustration. Prereq: 3535.

3555 Visual Communications Seminar (2) Political, social, economic, and ethical problems of contemporary design. Sessions with outside guest speakers and field trips are employed. For Graphics/Design Illustration majors only. S/NC only.

3600 Printmaking Portfolio Review (1) A review of prior work in printmaking. Successful completion required prior to registration for junior and senior courses. Prereq: consent of department. S/NC only.

3615 Intaglio III (4) Color intaglio printing from zinc or cardboard plates. Extra techniques—mezzotint, sandpaper, etc. May be repeated. Maximum credit 12 hours.

3616 Lithography III (4) Color lithography from stone or plates. Extra techniques—stone engraving, acid
3811.48 Museology I (4) Concepts, practices, and histori-  
ical development of museums of art, archaeology,  
anthropology, and science. (Same as Anthropology  
3811.)

3812.48 Museology II (4) Museum legal procedures, grant  
writing. Exhibition concept development. Prereq: 3811  
or consent of instructor. May be repeated. Maximum  
credit 12 hours.

3821.48 Exhibition Design and Gallery Techniques (4)  
Practical exhibition preparation and installation, pub-  
llicity production, shipping and storage procedures.  
Prereq: 3821 or consent of instructor.

3905.48 Intermedi ate Photography (4) Individual expres-  
sion in the photographic medium. May be repeated.  
Maximum 12 hours. Prereq: 3905 or consent of instruc-  
tor.

3915.48 History of Photography (4) Study of photography  
as a fine art. Emphasis on the work of Steiglitz, Strand,  
Weston and White. Prereq: 3905.

3922.48 Studio Photography (4) Introduction to Photogra-  
phy in the studio: lighting, view cameras, background  
setups, Polaroid materials. Prereq: 3905.

3925.48 History of Photography II (4) Study of photogra-  
phy as a fine art. Emphasis on the work of Alteg,  
O'Sullivan and Frank. Prereq: 3925, 3915.

3933.48 Photographic Portrait (4) Problems and possi-  
bilities of portraits with a camera. Assigned photo-  
graphic projects and study of the works of August Sander,  
Diane Arbus and others. Prereq: 3905.

3935.48 Film Design (4) Theory and practice of film making.  
Prereq: 3935.

3941.48 Photographic Technical Workshop I (4) Investi-  
gation of darkroom techniques: processes, equipment,  
painting papers, chemistry, enlarging systems. Prereq:  
3905.

3942.48 Photographic Technical Workshop II (4) Investi-  
gation of darkroom techniques: processes, equipment,  
painting papers, chemistry, enlarging systems. Prereq:  
3905.

3949.48 Ceramics Portfolio Review II (1) A review of prior  
work in ceramics. For students wishing to enroll in  
Honors Ceramics S/NC.

3950.48 Glazes (4) Prereq: 2970.

3960.48 Ceramics III: Individual Class Projects (4) Prereq:  
3950. May be repeated. Maximum 8 credit hours.

3968.48 Honors Ceramics III: Individual Class Projects  
(4) Prereq: 3960 and consent of instructor. May  
be repeated. Maximum 8 credit hours.

4004.48 Special Topics (1-4) Student or instructor initi-  
ated course offered at convenience of Department.  
May be repeated.

4006.48 Special Topics (2-4) Student or instructor initi-  
at ed course offered at convenience of department.  
Prereq: Determined by department. May be repeated.  
Maximum credit 16 hours.

4008.48 Honors Advanced Art (4-6) Intensified study  
for the exceptional student. May be repeated for  
a maximum of 24 credit hours.

4015.48 Individual Problems (4) May be repeated for a  
maximum credit of 12 hours. Prereq: Consent of instruc-  
tor.

4011.48 Foreign Study (1-16) See page 161.

4012.48 Off-Campus Study (1-16) See page 161.

4013.48 Independent Study (1-16) See page 161.

4106.48 Special Topics in Drawing (3) Student or instruc-  
tor initiated course offered at convenience of depart-  
ment. Prereq: Determined by department. May be  
repeated. Maximum credit 16 hours.

4115.48 Drawing IV (6) 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 18  
credit hours. Prereq: 12 hours of 3115.

4206.48 Special Topics in Painting (3) Student or instruc-  
tor initiated course offered at convenience of depart-  
ment. Prereq: Determined by department. May be  
repeated. Maximum 12 credit hours.

4215.48 Painting IV (6) Advanced painting stressing indi-  
vidual concepts and personal expression with varied  
media. Prereq: 12 hours in 3215. May be repeated.  
Maximum 18 credit hours.

4256.48 Special Topics in Fiber and Fabrics (3) Student  
or instructor initiated course to be offered at conve-  
nience of department. Prereq: Determined by  
department. May be repeated. Maximum 12 credit  
hours.

4270.48 Fabric: Advanced Projects (4-8) Prereq: 8  
hours of 3275 or consent of instructor. May be  
repeated. Maximum 12 hrs.

4275.48 Fiber: Advanced Projects (4-8) Prereq: 8  
hours of 3275 or consent of instructor. May be  
repeated. Maximum 12 hours.

4315.48 Watercolor IV (6) Advanced painting with water-  
based media on paper stressing individual concepts  
and personal approaches. Prereq: 12 hours in 3315.  
May be repeated. Maximum 18 credit hours.

4408.48 Special Topics in Sculpture (3) Student or instruc-  
tor initiated course offered at convenience of department.  
Prereq: Determined by department. May be repeated.  
Maximum 12 credit hours.

4415.48 Advanced Sculpture IV (4-8) Individual develop-  
ment of sculptural problems and techniques. May  
be repeated. Maximum 18 credit hours. Prereq:  
Permission of instructor.

4470.48 Advanced Wood Sculpture (4-6) Application of  
laminations, carving, and joining techniques in design  
and construction of contemporary furniture. Prereq:  
12 hours in 3275 or consent of instructor. May  
be repeated. Maximum 18 credit hours.

4502.48 Graphic Design/Illustration Practicum (1-16)  
Practical work experience in the design or illustration  
field only by prearrangement with the department. Prereq:  
Senior standing and consent of instructor. May  
be repeated. Maximum 16 credit hours.

4505.48 Advanced Graphic Design (4) Advanced projects  
in conceptual and applied design for printed materi-  
als; publications, posters, advertisements. Prereq:  
3545.

4506.48 Special Topics in Graphic Design/ Illustration  
(3) Student or instructor initiated course offered at  
convenience of department. Prereq: Determined by  
department. May be repeated. Maximum 12 credit  
hours.

4509.48 Product Illustration (4) Advanced media, tech-  
niques, styles and concepts as applied to the illustra-  
tion of products for printed reproduction. Prereq:  
3529 or consent of instructor. May be repeated.  
Maximum 12 credit hours.

4515.48 Corporate Design (4) Concepts of corporate  
graphics. Problems include all areas of graphic design  
and illustration. Prereq: 3535. May be repeated.  
Maximum credit 12 hours.

4516.48 Portfolio and Exhibition Techniques (4) Applica-  
tion 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.

4519.48 Editorial Illustration (4) Advanced study of  
conceptual approaches in Editorial Illustration for  
printed reproduction. Prereq: 4509 or consent of  
 instructor.

4506.48 Special Topics in Printing (3) Student or instruc-  
tor initiated course offered at convenience of depart-  
ment. Prereq: Determined by department. May be  
repeated. Maximum credit 16 hours.

4515.48 Intaglio IV (4-6) Photographic, collage tech-  
niques; combine printing with other print media.  
May be repeated. Maximum 18 credit hours.

4516.48 Lithography IV (4-6) Extensive use of aluminum  
plates, color combine printing, photographic tech-  
niques. May be repeated. Maximum 18 credit hours.

4517.48 Screen Printing IV (4-6) Traditional hand cut  
and photographic stencils; combine printing on paper  
and other surfaces. May be repeated. Maximum 18  
credit hours.

4665.48 Metal Design IV: Advanced Projects (4-6) Prereq:  
3665. May be repeated. Maximum 16 credit hours.
4705 Special Topics in Art History (4) Student or instructor initiated course offered at convenience of department. Prereq: determined by department. May be repeated. Maximum 16 credit hours.

4730 History of Printmaking (4) Survey of prints from the fifteenth century to the present. Emphasis on the twentieth century in Europe and the U. S. Prereq: Art 1815, 1825.

4811 Museum Internship (1-16) Prereq: 8 hours from 3811-21-31 and consent of instructor. May be repeated. Maximum 16 credit hours.

4855 Studies in Art History (2) Concentration in selected areas. Prereq: 16 hours of art history and consent of instructor. May be repeated. Maximum credit 6 hours.

4905 Advanced ceramics (4) Individual development of photographic problems and techniques. Prereq: 3905, 3915, 3925. May be repeated. Maximum 12 credit hours.

4906 Special Topics in Photography (3) Student or instructor initiated course offered at convenience of department. Prereq: determined by department. May be repeated. Maximum 16 credit hours.

4956 Special Topics in Ceramics (3) Student of instructor initiated course offered at convenience of department. Prereq: Determined by department. May be repeated. Maximum 12 credit hours.

4960 Ceramics IV: Advanced Projects (4-6) Prereq: 3960. May be repeated. Maximum 18 credit hours.

4968 Honors Ceramics IV: Advanced Projects (4-6) Prereq: 3900, 3960, and consent of instructor. May be repeated. Maximum 18 credit hours.

4975 History of Ceramics Seminar (4) A survey of historical and contemporary ceramics, dealing with clay sculpture, architecture, and pottery. Oriental, Ancient Greek, Pre-Columbian, and American ceramics. Will not apply to art history requirements. Prereq: 2950, 2960, and 2970.

PI BETA PHI ARROWMONT SCHOOL OF ARTS AND CRAFTS

Director: S. J. Blain, M.F.A. Wisconsin.

Lecturers, spring/summer 1984:
R. Adams; D. Bailey; P. Baldwin; J. Bassier; W. Bates; L. Bjorklund; B. Bobick; K. Borgeson; T. Carson; N. Crow; R. Daehnert; P. Dufour; E. Eagle; H. Easterwood; D. Ellsworth; C. Evans; F. Fenster; W. Florini; M. Ford; J. Francis; R. George; M. Goldenstein; L. Goldsmith; P. Grayson; J. Hall; S. Hobgin; W. Hylec; E. Iverson; F. Jacobs; E. Kalle; E. Kochansky; L. Koscianski; M. Kodani; G. Kraft; S. Kristoferson; C. Kumata; E. Lambert; T. Lang; R. Laskin; R. Nash Law; M. Kodani; G. Kraft; S. Kristoferson; C. Kumata; T. Carson; N. Crow; R. Daehnert; P. Dufour; S. J. Blain, M.F.A. Wisconsin.

I. G. Marsh; R. Mawdsley; T. & C. McColley; W. Nottingham; J. Osgood; R. Osolnik; J. Otis; N. Putnam; N. Quagliata, Sr.; R. Revor; T. Riesing; B. Lee; M. Lenderman; J. & D. Liles; M. Lloyd; R. Lockhart; S. J. Blain, M.F.A. Wisconsin.

S. J. Blain, M.F.A. Wisconsin.

II. Faculty positions. Information about 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.

2004 Special Topics (1-4) Student or instructor initiated course offered at convenience of Department. May be repeated.

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

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

2494 Fiber Processes (1-4) Beginning to intermediate. May be repeated.

2495 Fiber Constructions (1-4) Beginning to intermediate. May be repeated.

2494 Fabric Surface Design (1-4) Beginning to intermediate. May be repeated.

2494 Fabric Construction (1-4) Beginning to intermediate. May be repeated.

2504 Watercolor (1-4) Beginning to intermediate. May be repeated.

2494 Sculpture (1-4) Beginning to intermediate. May be repeated.

2504 Graphic Design/Illustration (1-4) Beginning to intermediate. May be repeated.

2504 Printmaking (1-4) Beginning to intermediate. May be repeated.

2504 Metal Design (1-4) Beginning to intermediate. May be repeated.

2504 Enameling (1-4) Beginning to intermediate. May be repeated.

2494 Photography (1-4) Beginning to intermediate. May be repeated.

2604 Special Topics in Photography (1-4) Individual development of photographic techniques. Prereq: 2950, 2960, and 2970. May be repeated. Maximum 12 credit hours.

2654 Metal Design (1-4) Beginning to intermediate. May be repeated.

2664 Enameling (1-4) Beginning to intermediate. May be repeated.

2664 Special Topics in Enameling (1-4) Individual development of enameling problems and techniques. Prereq: 2654, 2664. May be repeated. Maximum 12 credit hours.

2754 Surface Design (1-4) Beginning to intermediate. May be repeated.

2764 Enameling (1-4) Beginning to intermediate. May be repeated.

2764 Special Topics in Enameling (1-4) Individual development of enameling problems and techniques. Prereq: 2754, 2764. May be repeated. Maximum 12 credit hours.

2804 Printmaking (1-4) Beginning to intermediate. May be repeated.

2804 Special Topics (1-4) Student or instructor initiated course offered at convenience of Department. May be repeated.

2904 Drawing (1-4) Beginning to intermediate. May be repeated.

2904 Painting (1-4) Beginning to intermediate. May be repeated.

2904 Fiber Processes (1-4) Beginning to intermediate. May be repeated.

2904 Fiber Constructions (1-4) Beginning to intermediate. May be repeated.

2904 Fabric Surface Design (1-4) Beginning to intermediate. May be repeated.

2904 Fabric Construction (1-4) Beginning to intermediate. May be repeated.

2904 Watercolor (1-4) Beginning to intermediate. May be repeated.

2904 Sculpture (1-4) Beginning to intermediate. May be repeated.

2904 Graphic Design/Illustration (1-4) Beginning to intermediate. May be repeated.

2904 Printmaking (1-4) Beginning to intermediate. May be repeated.

2904 Metal Design (1-4) Beginning to intermediate. May be repeated.

2904 Enameling (1-4) Beginning to intermediate. May be repeated.

Consult the Graduate Catalog for listing of graduate level courses.

Asian Studies
See Cultural Studies.

Astronomy
See Physics and Astronomy.

Audiology and Speech Pathology (160)

Professors:
H. L. Luper (Head), Ph.D., Ohio State; S. Adler, Ph.D., Ohio State; C. W. Asp, Ph.D., Ohio State; P. J. Carney, Ph.D., Iowa; D. M. Lipscomb, 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. Burchfield, Ph.D., Michigan State; C. G. Maisel, M.Ed., Texas.

Assistant Professors:
A. D. Dieffendorf, 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, and students are strongly encouraged to consult with the undergraduate advisors in the department as early as possible in their programs. Suggested electives for non-departmental majors include 3010, 3040, 3050, 3200, 3710, 4070, and 4720.

A B.A. major in speech pathology consists of...
of Audiology and Speech Pathology 3010, 3040, 3050, 3065, 3200, 3310, 3710, 4040, 4320, 4330, 4450, 4720 plus not less than 9 nor more than 15 hours from the following: 4070, 4310, 4340, 4400, 4610, 4930, 4940.

Additional recommended courses for speech pathology majors are: Audiology and Speech Pathology 4520, 4450, 4460, 4470, Audiology and Speech Pathology 3410; Curriculum and Instruction 3010; Educational Psychology 3100; Psychology 2500, 2520, 2530, 3150, 3550, Special Education 3333, 4030, 4341, 4342, 4610 and Child and Family Studies 4310.

A B.A. major in audiology consists of: Audiology and Speech Pathology 3010, 3040, 3050, 3065, 3200, 3310, 3710, 4040, 4320, 4330, 4450, 4720, 4930 plus not less than 6 nor more than 12 hours from the following: 4340, 4460, 4470, 4610, 4650, 4940.

Additional recommended courses for audiology majors are: Psychology 2500, 2220, 2540, 3150 and Special Education 3333, 4320, 4231, 4259.

3200 Speech and Language Development of the Hearing Impaired (3) Nature, etiology, and incidence of speech, hearing, and language disorders. Prereq: Consent of instructor. W, S.

3210 Stuttering (3) Nature and treatment. Review and integration of various theories. Prereq: 3040 or consent of instructor. (Same as Special Education 4310.) F, SU.

4320 Introduction to Clinical Practice in Speech Pathology (3) Prereq: 3040, 3050, 3130, and consent of instructor. S/NC. (Same as Special Education 4320.) E.

4330 Clinical Practice in Speech Pathology (1-6) Prereq: 3430 and consent of instructor. For letter grade only. (Same as Special Education 4330.) E.

4340 Clinical Practice in Speech Pathology (1-6) Prereq: 3430 and consent of instructor. May be repeated for credit. For letter grade only. (Same as Special Education 4340.) E.

1 ADMISSION TO CLINICAL TRAINING IN SPEECH PATHOLOGY AND AUDIOLOGY Students who wish to enroll in clinical practice courses in audiology and speech pathology must apply for admission at the Hearing and Speech Center prior to the initial practicum enrollment. Clinical admissions may be limited due to available supervisory staff, clinical facilities and caseloads. A grade of C or better in each prerequisite course is required for clinical practice enrollment. Once admitted to clinical training, students will be continued in the program so long as they show academic and academically successful. Academic success is defined as a grade of C or better in each course taken in the Department of Audiology and Speech Pathology. 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 clinical or academic success criteria for two successive quarters automatically removes the student from clinical practice enrollments.

4400 Voice Disorders (4) Etiology, diagnosis, and treatment of organic and functional voice disorders. Prereq: 3040, 3050, or consent of instructor. (Same as Special Education 4400.) W, S.

4450 Clinical Practice in Audiology (1-6) Prereq: 4720 and 4930. (Same as Special Education 4450.) E.

4460 Clinical Practice in Audiology (1-6) Prereq: 4450, 4470, and 4930. (Same as Special Education 4460.) E.

4470 Clinical Practice in Audiology (1-6) Prereq: 4460, 4475, and 4930. May be repeated. Maximum credit 9 hours. (Same as Special Education 4470.) E.

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

4550 Problems in Speech Pathology (1-6) Prereq: Consent of instructor. E.

4610 Introduction to Language Pathology in Children (4) Nature, etiology, and treatment of language retardation. Observation in language clinic is available. Prereq: 3040, 3200, or consent of instructor. F.

4620 Birth Defect Syndromes and Language Retardation (3) Examination of research literature relevant to birth defects and language retardation including genetic, educational, and socio-emotional implications of such disorders. Prereq: 4610 or consent of instructor. S.

4630 Practical Applications of Language Habilitation Techniques (3) Discussion and demonstration of various methods and procedures used in treating language retarded children. Prereq: 4610 or consent of instructor. F.

4640 Parent Participation in Language Habilitation Programs (3) Nature of counseling and educational relationships with parents of exceptional children including emotional support for families, behavior management strategies, home training methods. Prereq: 4610 or consent of instructor. S.

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

4660 Topics in Language Retardation and Its Habilitation (3) Lectures on selected topics by representatives of graduate education, early childhood education, educational psychology, genetics, and psychology. Prereq: 4610 or consent of instructor. SU.

4720 Audiology II (4) Basic principles of clinical audiology, pure-tone, speech, masking, and overview of special auditory tests. Prereq 3710. (Same as Special Education 4720.) F, W, SU.

4930 Aural Rehabilitation: Speechreading and Auditory Training (3) Discussion of rehabilitation of acoustically impaired by maximizing use of residual hearing and utilization of speechreading as a receptive communicative process. Prereq: 4720. (Same as Special Education 4930.) F, W, SU.

4940 Introduction to the Verbal-Toral System (4) Prereq: 3710, 4930 and 3050 recommended. (Same as Special Education 4940.) F, W, SU.

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

Bacteriology
See Microbiology.

Biochemistry (188)

Professors:
W. D. Wicks, Ph.D. Harvard (Head); J. E. Churchich, Ph.D. Sheffield (England); J. G. Joshi, Ph.D. Poona (India); K. J. Monty, Ph.D. Rochester.

Associate Professors:
L. Huang, Chancellor's Research Scholar, Ph.D. Michigan State.

Assistant Professors:
F. Fairfield, Ph.D. Stony Brook; R. H. Feinberg, Ph.D. California (Berkeley); E. Freire, Ph.D. Virginia; J. Koonitz, Ph.D. Kentucky.

UNDERGRADUATE
A B.S. major in biochemistry consists of Biology 3110-20, Chemistry 3211-21-31, 3219-29-39, Physics 2210-20-30, Biochemistry 4110-20-30, 4119-29, 4210-20-30, and four hours chosen from: Biochemistry 4500; Botany 3210; Microbiology 3519, 3700, 4140, 4270, 4279; Zoology 3050, 3060, 3080, 4210, 4279. Prerequisites to this major are Biochemistry 1210-20-30, Chemistry 1110-20-30, Math 1840-50-60, and Computer Science 1510.

For the Bachelor of Arts degree with a minor in biochemistry, the following courses are required: Chemistry 2140-49, 3211-21-31, 3219-29-39, and Biochemistry 4110-20 and 4119. Additional credits from Biochemistry 4210-20-30 and/or 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 1110-20-30, 1510-20-30 and least 2 quarters of introductory biological sciences. Not available for credit if credit has been previously received for 4110, 4120 or 4130.

4110-20 Cellular and Comparative Biochemistry (4,4) Electrolyte 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. Three lectures and discussion.

4119 Cellular and Comparative Biochemistry Laboratory

225-35 General Biology (5,5) A special version of 1220-30 augmented by guest lecturers, field trips, etc. Enrollment by invitation based on superior performance in The General Biology sequence. In all situations calling for study in General Biology, 1225 may be substituted for 1220 and 1225 for 1230.

3110 General Genetics (4) Classical and modern principles of heredity. Prereq: 1220-20-30 or Botany 1110-20-20 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 3110 and 3120. 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 3120. 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.

**Botany (198)**

Professors:

Associate Professors:

Assistant Professors:
E. B. Wofford (Curator), Ph.D. Tennessee.

**Instructor:**
K. D. McFarland, M.S. Ohio University.

*Alumni Distinguished Service Professor.*

**UNDERGRADUATE**

The undergraduate program offers a basic liberal arts degree with optional concentrations in cellular and molecular, and organismal botany. The curriculum design ensures strong grounding in the sciences with primary emphasis in Botany. A minimum of 22 credit hours may be taken to fulfill the major, 26 credit hours for a minor. The undergraduate degree in Botany is designed to encourage inquiring about access to those invitational courses.

**1210-20-30 General Biology (4,4,4) 1210—Biology of cells: chemical basis of life, cell structure and function, energy metabolism, cell division, DNA, RNA, and protein synthesis, monera, protista, and fungi. 1220—Biology of plants and animals; survey of plant kingdom and function of plant tissues, plant growth and reproduction, survey of the animal kingdom, reproduction and development in animals, animal tissue and organ systems. 1225—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. 1120-F, W; SU; 1220-W, S, SU; 1230-S, S.
to furnish necessary experience in academic and practical skills to prepare graduates for immediate employment in the job market or for continuing graduate education in pure or applied biological sciences.

A B.A. major consists of Biology 3110-20-30; Botany 3010-20-30, 3210, 1 hour from Biology 1110-20-30 or Botany 4000 or 4410-20-30, 4 additional hours of upper-division Botany (not more than 3 hours allowed from Botany 3050-70-90) and 4 hours of upper-division courses from related biological sciences (zoology, microbiology, biochemistry, entomology and plant pathology, forestry, ornamental horticulture and landscape design, plant and soil science, or other with approval of undergraduate coordinator and department head).

Prerequisite: Prerequisites to this major are Botany 1110-20-30 or 1118-28-38 or Biology 1210-20-30 and Chemistry 1120-20-30.

Corequisites: Math 1550-60, 1840-50 or 1841-51; Chemistry 3211-21-31, 3219-29-39; and Physics 1210-20 (or 2210-20), or Geology 1410-20. (See Note).

Options for Concentrations consists of Organismic or Cellular Molecular Botany. Concentration requirements will be individualized and must be approved in writing by the undergraduate coordinator.

Consult the departmental lists of recommended courses for concentration.

A. Organismal Botany—At least 8 hours beyond the major of 3000-level or above from Botany or related Biological Sciences.

B. Cellular and Molecular Botany—At least 8 hours beyond the major of 3000-level or above from Botany or related Biological Sciences. (Biochemistry 4110-20 is recommended to complete this requirement.)

A minor consists of Biology 3110-20-30, 10 hours of upper-division in Botany (not more than 3 hours from 3050, 3070, 3090) and 4 hours of upper-division courses in related biological sciences (as described under the major). Prerequisites to the minor are Botany 1110-20-30 or 1118-28-38 or Biology 1210-20-30.

Note: Students who anticipate continuing beyond the Bachelor's level into graduate studies in Botany or related sciences should consult a Botany advisor for direction and design of coursework.

1110-20-30 Fundamentals of Botany (4,4,4) Nature and development of plants, including processes, structure, life histories, inheritance, ecology, and importance to man. Enrolment in sequence is desirable. Two 1-hour discussions and approximately 3 hours audio-tutorial laboratory per week. Students may not receive credit for both Botany 1110-20-30 and Biology 1210-20-30. 1110-F, SU; 1120-W, SU. 1130-S.

1118-28-38 Honors: Fundamentals of Botany (4,4,4) Honors course designed for superior students in beginning college. Open for areas of a score of 27 or better on natural science section of ACT; and sophomores who have a cumulative GPA of 3.25 (or 3.5 in the sciences) or who are approved through interview with a member of botany faculty. Students receiving a grade of C or D in 1118 must transfer to 1120. Three 2-hour lecture-lab-discussion periods and 2 hours of Mobi be taken in sequence. Students may not receive credit for both Botany 1118-28-38 and Biology 1210-20-30. F, W, S.

1119-29 Laboratory in Fundamentals of Botany (0,0) Laboratory in Selected Topics in General Botany (0) Students must also register for 1130.

3010-20 Plants in Evolution (4,4) Monera to angio-

4030 Mechanisms of Plant Speciation (3) Processes of plant speciation emphasizing population genetics, isolation, drift, hybridization, variation in populations, establishment of population barriers, and other aspects of plant speciation. Prereq: 3010-20 and Biology 3110-20.

4045 Aquatic Vascular Plants (3) Field experience on identification of aquatic vascular plants. Frequent field trips emphasizing field recognition of species and habitats. Laboratory sessions for discussion and practice with techniques and literature for accurate identification. Prereq: 6 hours of botany. Recommended: Botany 3010-20.

4505 Synanthropology (3) Field experience on identification of composite. Frequent field trips emphasizing field recognition of species and habitats. Laboratory sessions for discussion and practice with techniques and literature for accurate identification. Prereq: 6 hours of botany. Recommended: Botany 3010-20.


4561 Field Phycology (3) Field experience on identification of fresh water algae. Frequent field trips emphasizing field recognition of species and habitats. Laboratory sessions for discussion and practice with techniques and literature for accurate identification. Prereq: 6 hours of botany. Recommended: Botany 3010-20.

4751 Botanical Photography (3) Emphasis on photos of botanical subjects and achievement of technical and aesthetic skills. Students are encouraged to use equipment. Film and processing costs paid by student. Photos processed and critiqued in class. Prereq: 6 hours of botany. Recommended: Botany 3010-20.

1210 Plant Anatomy (4) Comparative structure of vascular plants. Prereq: 3110-20. S.

1240 Paleobotany (4) (Same as Geology 4240.)

310 Plant Ecology (4) Interactions between individuals, species, communities and their environments. Circulating costs paid by student. Frequent field trips or laboratory periods, and at least two week-end field trips. Prereq: 3030 or equivalent. S.

4110-20-30 Undergraduate Research Participation (2,2,2) Experience in active research projects under supervision of staff members. Prereq: junior or senior standing, minimum grade average 3.0, consent of instructor. E.

4150 Plant Tissue Culture (4) Methods for the culture of cells, tissues, and organs. Techniques and media preparation and maintenance of cultures. Lecture and lab. Prereq: Botany 1110-20 or Biology 1210-20-30 or equivalent. Recommended: Botany 3010-30, 3210, and 4120; Microbiology 3250 or 3700 and 3519; Ornamental Hort; and Landscape Design 3030, and Plant and Soil Science 3120.

4580 Field Measurements in Plant Ecology (3) Practice in the use of field and laboratory instruments for the measurement of environmental factors, plant functions, and plant communities. Data collection will be followed by analysis and interpretation of data. Visits to historically significant field sites will be included. Prereq: Botany 3030 or equivalent. 1 year of physics and chemistry recommended. F.
Chemistry (235)

Professors:
G. Mamanott (Head), Ph.D. Louisiana State; J. E. Bloor, Ph.D. Manchester (England); N. S. Bowman (Emeritus), Ph.D. Princeton; C. A. Buehler, Ph.D. Ohio State; W. E. Bult, Ph.D. Illinois; J. Q. Chambers, Ph.D. Kansas; J. A. Dean (Emeritus), Ph.D. Michigan; J. F. J. Easton, Ph.D. California (Berkeley); W. H. Fletcher (Emeritus), Ph.D. Minnesota; G. W. Kabalka, Ph.D. Purdue; D. C. Kleinleifer, Ph.D. Princeton; M. J. Listzka, Ph.D. Wisconsin; R. Magid, Ph.D. Yale; R. M. Pagi, Ph.D. Wisconsin; J. R. Peterson, Ph.D. California (Berkeley); G. K. Schwebel*; Ph.D. Illinois; D. A. Shirley (Emeritus), Ph.D. Iowa State; W. T. Smith (Emeritus), Ph.D. Olin 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. Adock, Ph.D. Texas; F. A. Grimm, Ph.D. Cornell; J. M. Harris, Ph.D. Texas (Austin); J. D. Kovac, Ph.D. Yale; C. A. Lane, Ph.D. California (Berkeley); L. J. Magid, Ph.D. Tennessee; F. M. Schell, Ph.D. Indiana; C. Woods, III, Ph.D. North Carolina State.

Assistant Professors:
S. D. Alexandratos, Ph.D. California (Berkeley); C. E. Barnes, Ph.D. Stanford; J. E. Bartmess, Ph.D. Northwestern; K. D. Cook, Ph.D. Wisconsin; C. S. Feigerle, Ph.D. Colorado; M. J. Sepanlaik, 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 159.

For students wishing to major in chemistry and desiring a more flexible course of study than the B.S. in Chemistry, there are two programs: the B.S./Concentration A and the B.S./Concentration B. Because these two concentrations are designed for students with different career goals, the following paragraphs should be carefully considered before selecting courses.

A student who decides to major in chemistry shall consist of the following courses: Mathematics 1118-28-38 is an honors course intended for students who have had high school chemistry and who have had additional experience (e.g. summer institute study, special research projects, home laboratory) and are invited to apply during the summer to the head of the department for permission to take a proficiency examination in one or more quarters of freshman chemistry. If a satisfactory grade is made on the examination, credit will be allowed for the course (or course) for which the exam was taken.

1110-20 General Chemistry (4,4,4), General courses of theoretical and descriptive chemistry. 1110—Modern atomic theory, chemical bonding, stoichiometry, and quantitative treatment of gas laws. 1120—Quantitative aspects of solution chemistry, kinetics, chemical equilibria, and thermochemistry. 1300—Descriptive chemistry of inorganic, organic, and biological chemistry. 1340—Electrochemistry, and introduction to organic and biochemical chemistry. Must be taken in sequence. 3 hours and 1 lab. F.

1118-28-38 Honors: General Chemistry (4,4,4) (See Honors above) 3 hours and 1 lab. 1118-F; 1128-W; 1138-S.

1310-20-30 General Chemistry (4,4,4) A general chemistry course for chemistry majors. Subject matter similar to Chemistry 1110-20-30. Must be taken in sequence. 3 hours and 1 lab. 1310-F; 1320-W; 1330-S.

1325-35 Chemical Programming (1,1) A course in which the computer is utilized in solving problems encountered in general chemistry. Required of and limited to chemistry majors. 1 credit is given for 0-3 or 2-8, or 1320 for 1325; 1130, 1136, or 1330 or 1335.

1410 Chemistry for Nurses (4) Inorganic, organic, and biochemical. 3 hours and 1 lab. F.

1420 Chemistry for Nurses (4) Aromatic compounds and biochemical. Prereq: 1410; 3 hours and 1 lab. W.

1510-20-30 Introductory General, Organic and Biochemistry (4,4,4) Introductory course with emphasis on topics relating to living systems. 1510—Bonding and molecular structure, gas laws, liquid and solid state, solutions, colligative properties, gases, oxidation and reduction, kinetics and equilibria. Introduction to organic chemistry, alkanes, unsaturated and aromatic hydrocarbons, 1340-28-30 sequences and reactions of various organic functional groups. Introductory bio-
chemistry—amino acids and proteins, carbohydrate, lipids, nucleic acids. Must be taken in sequence. 3 hours and 1 lab. F, W, S.

2140 Analytical Chemistry (3) Principles and practice of quantitative measurements in chemical systems. Acid-base equilibria, oxidation reduction systems, complexometric titration, photometry, spectrophotometry, potentiometric methods, application of titrimetric analysis. Prereq: 1110-20-30. E.

2149 Analytical Chemistry Laboratory (1) Experiments on topics discussed in 2140. Coreq: 2149. E.

2230 Elements of Organic Chemistry (4) Brief treatment of the major classes of organic compounds of biological interest. Prereq: One year of general chemistry. Not open to chemistry majors or minors. Credit may not be received for both Chemistry 2230 and 3211, toward graduation or otherwise. F, S.

2510 Introduction to Chemical Research (1) Participation in an active research program in analytical, inorganic, organic, physical, or polymer chemistry. Students work with researchers to acquire expertise in planning experiments, interpreting results, and formulating hypotheses. Credits may not be applied toward a major or minor in chemistry. Not a substitute or prerequisite for 4710. Coreq or prereq: 2000 or higher level laboratory course in chemistry and permission of the instructor. May be repeated. Maximum credit 8 hours.

3211-21-31 Organic Chemistry (3,3,3) Compounds of carbon and their reactions, reaction mechanisms, spectroscopic and other physical properties. Must be taken in sequence. 3211-29-30-31. Corresponding laboratory (3219-29-39) is coreq for students not having credit for the laboratory. 3211-21-24, W, S. 3321- E.

3219-29-39 Organic Chemistry Laboratory (1,1,1) Experiments in organic chemistry. Prereq: 3211-29-30. Corresponding lecture (3219-21-31) is coreq for students not having credit for the lecture. 3219-29, W, S. 3329- 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 or minors. Prereq: 3221-29. A.


3429-39 Physical Chemistry Laboratory (2,2) Gases, liquids, chemical equilibria, solutions, phase equilibria, reaction kinetics, and electrochemistry. Prereq or coreq: corresponding courses (3420 and 3430). 1 lab. 3429-W, S. 3429-F, S.

3511-21-31 Principles of Organic Chemistry (3,3,3) Structure and reactivity of aliphatic and aromatic compounds emphasizing reactions of synthetic utility. Use of spectroscopic and physical techniques to elucidate reaction mechanisms. Recommended for chemistry majors and students planning careers in physical or biological sciences. Must be taken in sequence. Prereq: 1110-20-30. Corresponding laboratory: 3219-29-39 or 3219, 3259-39 is a coreq; latter is recommended. 3511- F, 3521-W; 3531-S.

3529-39 Organic Chemistry Laboratory (1,1) Experiments on topics discussed in 3211-31. Similar to 3229-39 except designed for students who have need for operating knowledge of various spectroscopic and chromatographic techniques. Corresponding lecture (3521-31 or 3221-31) is coreq for students not having credit for the lecture. 3529-W; 3539-S.

3810 Radioactivity and its Applications (3) Radioactive materials in tracer and therapeutic applications. Radioactive decay, detection apparatus and techniques, tracer procedures, and safety precautions in applications, radiation protection, and fees for credit by chemistry or physics majors or minors. Prereq: Math 1550 or equivalent, 1 year of general chemistry. S.

4000 Topics in the Development of Chemistry (3) The historical development of topics such as: the atomic theory; the chemical industry; the interrelationship of population, energy, and food. Subject matter may vary from year to year. Application of historical concepts to readings from the older original literature (Dalton, Faraday, Kekule) as well as from current journals. No prerequisite is required. This course will include the usual batch and misuse of evidence, the impact of chemistry on society, how scientists reach conclusions, and the nature of scientific controversy. Written reports will be required. Prereq: senior standing in chemistry.

4110 Physical Chemistry (3) Theoretical aspects of chemical kinetics. Quantum mechanics of atomic and molecular systems. Molecular symmetry, crystal structure, and solid state. Statistical thermodynamics. 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 molecular structure to bulk properties of polymers. Prereq: One year of thermodynamics, chemical equilibria, and kinetic theory. Coreq: 4160-70 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 analyses (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) Fundamentals of polymer science. Structure and properties of polymers. Interaction of polymers with fluids. Correlation of polymer structure and properties. Prereq: 3231; Prereq or Coreq: 4220 or 3420. S.

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 instrumentation. Prereq: 3321-39 or 3231-39 or 3420-49 or 3430-49. 4220. Students who receive credit for 4510 may also receive credit for 4510. W.

4840 Chemical Instrumentation (4) Principles of chemical instrumentation; practice in the design and construction of chemical instruments. 2 hours and 2 labs. Prereq: 2140-49.

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 Senior Seminar (1,1) Discussion by faculty and students of current research and topics from the recent literature which illustrate the role of chemists and the impact of chemistry in confronting present and future challenges (e.g., enviro- and energy, medicine and health, warfare, etc.) Oral and written reports required. All chemistry majors are encouraged to attend. Prereq: Senior standing in chemistry.

4910-30-35 Biophysical Chemistry (3,3,3) Physicochemical principles with applications to biological systems. Must be taken in sequence. Not open to students having 3410-20-30. 4910—Gas laws; first, second, and third laws of thermodynamics; equilibrium. 4920—Solution chemistry; electrochemistry; kinetics; nuclear chemistry. 4930—Elementary quantum chemistry; optical and magnetic spectroscopy; light scattering; macromolecular properties. Prereq: 3231-39, Math 1560-60 or equivalent. 4910-F; 4920-W; 4930- S.

4929 Biophysical Chemistry Laboratory (2) Experiments in the physical chemistry of biologically important 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; G. C. Gesell, Ph.D. North Carolina (Chapel Hill).

Associate Professor: J. E. Shelton, Ph.D. Vanderbilt.

Assistant Professors: C. P. Craig, Ph.D. North Carolina (Chapel Hill); S. D. Martin, Ph.D. Michigan; D. W. Tandy, Ph.D. Yale.

The Classics major consists of two tracks: Greek and Latin. The Classics major concentrating in Greek may take a minor concentration in Latin. The Classics major concentrating in Latin may take a minor concentration in Greek.

Greek

UNDERGRADUATE

A B.A. major concentration in Greek consists of 39 hours as distributed follows: 30 hours of Greek language courses numbered above 2000, and including 6 hours of Classics 4220 (senior seminar): 9 hours
eligible for credit toward graduation. A student who only earns one grade in a sequence may receive credit for it by passing the appropriate proficiency examination.

Certification for Teaching Latin in Tennes-
see. Consult Certification Clerk, Room 212,
Claxton Education Building.

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

2511 Intermediate Latin: Grammar Review and Prose
Reading I. For students who have had at least two
years of high school Latin, or equivalent. F.

2515 Intermediate Latin: Prose Readings (3) Prereq:
Classics 2511 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 Plutus and Terence (3) Prereq: 3 or 4 years of
high school Latin or 2521. S.

3160 Catulus and Horace (3)

1120 Horace, Satires and Epistles (3) A.

1410 Cicero and Techniques of Latin Prose Com-
position (4) Recommended for Latin majors and minors,
especially those intending to teach or pursue gradu-
ate work. Works of Cicero studied as models for prose
composition. A.

4510 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. Origin of Greek mythology 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, philos-
ophy 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. Contributions of Rome 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 empha-
sis 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 atten-
tion to the minor arts and urban planning. Classics
2330 is recommended for background. Illustrated lec-
tures.

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. 2530-Roman Literature. A survey of major
literary works of the Romans from Plautus to Tacitus.
How the Romans defined the Greek and then
achieved their own artistic identity by the time of Vergil’s Aeneid.

2730 Medical Terminology (3) Prepares the student
to make sense of, and so more easily remember,
thousands of complex medical words through a knowl-
edge of the simple classical roots which come to
form most medical vocabulary. E.

2740 Word Power: Basic Vocabulary from Greek and
Latin (3) Vocabulary building from Greek and Latin.
General, non-technical vocabulary. Exercises in English
eytymology. F, W, S.

3310 Art and Archaeology of the Aegean Bronze Age
and Early Greece (3) Troy, the Cyclades Islands, Greece, mainland, and Crete. Emphasis on palaces
of Crete and Mycenae, Tiryns, and Pylos, their fall,
the following Dark Age, and rebirth of Greek civilization.
Illustrated lectures. W.

3340 Cities of the Greek and Roman World (3)
Archaeological survey of Greek and Roman cities from
3000 B.C. to 500 A.D. with emphasis on development
of city planning and quality of life. Such cities as Myc-
nae, Athens, Priene, Paestum, Alexandria, Rome, and Lepcis
Magna will be studied. F.

3500 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, Epidaurus, Paestum, Cumaes, Praeneste, and Baal-
bek will be considered. Readings in selected classical
authors add to understanding of place of great shrines
and sanctuaries in Greek and Roman life. A.

3810 Greek Civilization (3) A survey of major aspects
of ancient Greek civilization: religion, fine arts, politi-
cal life, and Roman-Greek relations, emphasizing
the sixth and fifth centuries B.C.

3820 Roman Civilization (3) A survey of major aspects
of ancient Roman civilization: political institutions, reli-
gion, art, and architecture, daily life revealed by Pompeii,
Herculaneum, and Rome.

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 Clas-
sical Rome. The evidence from literature, vase paintings,
and other arts 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 3630.)

4101 Foreign Study (1-12) 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 under-
standings 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.

4410 Special Topics in Classical Civilization (1-3)
Topics in Greek, Roman, and Ancient Near Eastern
history and culture.

4510 Selected Readings in Latin Literature in Trans-
lation (3) Content varies; may be repeated for credit
with consent of department.

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 course material and usually granted up to a maximum of 9 hours.
Prerequisites according to topic.

4620 Roman Law (3) Development of Roman law by
the jurists; relationship of Roman law to Roman econ-
omy and society; relationship of Roman law to American
jurisprudence. Case-book format.
GRADUATE
Consult the Graduate Catalog for listing of graduate level courses.

Comparative Literature
See Cultural Studies.

Computer Science (266)

Professors:
J. H. Poore (Head), Ph.D. Georgia Tech;
K. C. O'Kane, Ph.D. Pennsylvania State; G. R. Sherman, Ph.D. Purdue; M. G. Thomas, Ph.D. Duke.

Associate Professors:

Assistant Professors:
J. R. B. Cockett, Ph.D. Leeds, UK; D. W. Straight, Ph.D. Texas; M. Zemankova, Ph.D. Florida State.

Instructors:
J. W. Mayo, M.S. Tennessee.

UNDERGRADUATE
Computer Science offers an undergraduate major and minor as well as a Master of Science degree (for details, see Graduate Catalog). Information about computer science programs may be obtained from the departmental office, 8 Ayres Hall, or from the Liberal Arts Advising Center, 220 Ayres Hall.

A B.S. major: Computer Science 1610 and 1620 are prerequisites to a major in computer science which consists of 2215, 2610, 2710, 3155, 3215, 3520, 4510, 4550, and an additional 15 hours selected from computer science intermediate and advanced courses. Also required are Math 2840-50-60.

Minor: A minor in computer science consists of 2610 (and its prerequisites 1610 and 1620), 2710, and an additional 18 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 department. Factors considered in the decision are both subjective and objective. Subjective factors include consideration of overall grade point average, grades earned in computer science courses required in the 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 may progress to the major or minor program only after completing the lower-division courses specified by the department. Students who have completed the specified 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 not accepted into the 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.

A student must have a Computer Science grade point average (as described above) of 2.50 or better to graduate with a major in Computer Science. If a student's Computer Science average as described above falls below 2.5, the major will be given 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 attain an average in 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 act as a 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) Instruction in the use of computers as tools in the business environment with emphasis on learning FORTRAN programming. Not for Computer Science majors; students may not receive credit for both 1410 and 1510. Intended primarily for students in College of Business Administration.

1510 Introduction to Programming—FORTRAN (3) The 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 computers in various disciplines. Students may not receive credit for both 1410 and 1510.


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

2510 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.

3025 Computers and Society (3) History of computing and computer systems; capabilities of a computer; applications in artificial intelligence, humanities, social sciences, sciences and engineering; computing in foreign countries; assist in instruction; future advances in computing; careers in computing. Prereq: Consent of instructor. (Same as Sociology 3025.)

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. Cons: 3160 and 3165 may not both be taken for credit; students with a knowledge of FORTRAN should take 3155. Prereq or coreq: Math 2980. (Same as Math 3150.)

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

3910 Commercial Computer Concepts and Control (3) Elements, operation and control of computers in a business environment. Topics include input, storage, data manipulation, output, flowcharting, and error control. Prereq: 3410 and Accounting 3210.

4310 Statistical Data Processing (3) FORTRAN language for organization and analysis of scientific data. Special emphasis on statistical analyses such as frequency distributions, percentiles, data reduction correlation and regression, analysis of variance. 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 be directed by computer science faculty, perhaps jointly with an instructor. Prereq: Consent of instructor. May be repeated. Maximum credit 9 hours.

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 3150. Prereq: 1510 or 1610 or consent of instructor. Prereq or coreq: Math 2980. (Same as Math 3155.)

3180 Logic Design of Digital Systems (3) Introduction to Boolean algebra and design of combinational circuits. Presents gate and flipflop characteristics. Design of clocked sequential circuits and other systems containing memory. Introduction to minicomputer architecture and system components to include basic structure and functions of arithmetic, statistical analysis, output, and control systems. Instruction set capabilities and machine language programming. Prereq: EE 2030. (Same as Elec. Eng. 3180.)


4210 Introduction to Artificial Intelligence (3) Intelligent systems and their performance by a computer. Computer representation of knowledge, problem solving and search, game playing, automated deductive systems, natural language understanding, computer vision and learning. Computer implementation of AI problems. Prereq: 4510. (Same as Electrical Engineering 4145.)

4235 Numerical Solution to Equations and Numerical Approximations (3) (Same as Math 4225.)

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

4254 Numerical Linear Algebra (3) (Same as Math 4245.)

4470 Programming Languages (4) Comparison and analysis of programming languages, design, fea-
Cultural Studies

Director: Dr. Charles O. Jackson

Basic Faculty:
P. Barrette, Ph.D. Romance Languages
L. J. Champion, Ph.D. Special Programs; R. Cope,
land, Ph.D. Special Programs; B. K. Dumas, Ph.D.;
English; D. M. Flene, Ph.D. Russian; C. Fleming,
Ph.D. Special Programs; R. W. Gwynne, Ph.D. Spe-
cial Programs; Y. Hsu, Ph.D. History;
M. H. Handelman, Ph.D. Romance Languages;
M. Hartsell, Ph.D. Special Programs; J. D. Hodges,
Ph.D. Special Programs; W. L. Humphreys, Ph.D.
Religious Studies; C. J. O. Jackson, Ph.D. History;
I. Lexi, Ph.D. Special Programs; C. J. Maland, Ph.D.
English; D. M. Morrow, M.A. Special Programs;
M. L. Osborne, Ph.D. Philosophy; M. E. Peek, M.A.
Special Programs; H. C. Rutledge, Ph.D. Classics;
S. E. Wallace, Ph.D. Sociology.

The ideal curriculum encourages not only proficiency in a given field of knowledge but also the comprehension of similarity and complementarity between areas of intellectual endeavor. One answer to the need for fusion and integration of knowledge is the interdisciplinary program. The college has joined the resources of several departments to offer a cultural studies major with concentra-
tions in Afro—American Studies, American studies, African Prehistory, 1954 to the present. (Same as Educ. C&l 3640.)

3730 The Black Male in America (4) This course will look at the Black male with regards to historical images, myths and stereotypes; and the impact of Black femi-
nism, violence, crime, masculinity, the family, the white male and female, homosexuality, nationalism, and ath-
etics will be discussed.

3760 Studies in Afro-American Art (4) See Art 3760.

3830 Geography of Africa (4) (Same as Geography
3830.)

3950 African History Since 1940 (3) See History 3950.

3951 African History Since 1940 (3) (Same as History
3951.)

4101 Foreign Study (1-16) See page 161.

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

4103 Independent Study (1-16) See page 161.

4210 Pan-Africanism: An Afro-American Perspec-
tive (4) A study of American Pan-African movements and theoreti-
cians such as W.E.B. DuBois, Alexander Crummel, Marcus Garvey, Paul Cuffe, Edward Blyden, Col-
Sam, John Rainboth, Stokely Carmichael.

4292 History and Philosophy of Afro-American Edu-
cation (4) Examines the attempt by African-Americans to secure an education for themselves and their child-
ren from the era of slavery to the Supreme Court decision of 1954. Focuses on Black perceptions of the
importance of education and the special obstacles confronting blacks who tried to get an education.

4310 Research in Afro-American Studies (4) Deals with Black experience and research process.

4500 Current Issues and Topics in Afro-American Studies (4-6) Problems, topics, and issues in area of Black Studies. Consent and credit determined by instruc-
tor. May be repeated. Maximum credit 12 hours.

4610 African Prehistory (3) (Same as Anthropology
4610.)

4810 Afro-American Families (3) (Same as Child and
Family Studies 4810)

4820 Afro-American Women in American Society (4) Historical and contemporary socio-economic-factors in American society as they relate to the Black
woman. History 1950-60 recommended. Prereq: Con-
sent of instructor. (Same as Women’s Studies 4830.)

4880 Afro-American Psychology (3) (Same as Psychol-
y. 
American Studies Committee.

Elective courses is published annually by the College of Liberal Arts. A list of acceptable American experience. Nine hours of the elective courses (4) are prerequisite to a concentration (c) Those with a concentration and a minor (b) Students should seek academic advising through a careful selection of courses, e.g. Afro-American Families 4810 and/or Analyzing their implicit or explicit cultural values, students explore the relationship between the medium of film and American culture in the twentieth century. (Same as English 3445.)

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 geographical-cultural area.

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 credit 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. 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).

3445 Film and American Culture (3) Examines American film as both works of art and social documents. By placing a range of films in their historical context and analyzing their explicit or implicit cultural values, students explore the relationship between the medium of film and American culture in the twentieth century. (Same as English 3445.)

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

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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 geographical-cultural area. 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 credit 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. Charles Jackson.

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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 geographical-cultural area. 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 credit 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. Charles Jackson.

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

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3445 Film and American Culture (3) Examines American film as both works of art and social documents. By placing a range of films in their historical context and analyzing their explicit or implicit cultural values, students explore the relationship between the medium of film and American culture in the twentieth century. (Same as English 3445.)

4010 Topics in American Culture (3) Content varies. May be repeated once.
Asian Studies 2531-32-33 Elementary Chinese I, II, III (5,5,5) Must be taken in sequence.
Asian Studies 3531-32-33 Intermediate Chinese I, II, III (5,5,5) Prereq: 2531-32-33 or equivalent or consent of instructor. Must be taken in sequence.
Asian Studies 4531-32-33 Advanced Chinese I, II, III (4,4,4) Prereq: 3531-32 or equivalent or consent of instructor. Must be taken in sequence.

JAPANESE (589)
Asian Studies 3631-32-33 Intermediate Japanese I, II, III (5,5,5) Prereq: 2631-32-33 or equivalent or consent of instructor. Must be taken in sequence.
Asian Studies 4631-32-33 Advanced Japanese I, II, III (4,4,4) Class will include conversation, drill, and composition practice with native speaker. Must be taken in sequence. Prereq: Asian Studies 3631-32-33 or equivalent.

PERSIAN (744)
Asian Studies 2731-32-33 Elementary Persian I, II, III (4,4,4) Taped language program. Must be taken in sequence.
Asian Studies 3731-32-33 Intermediate Persian I, II, III (4,4,4) Prereq: 2731-32-33 or equivalent or consent of instructor. Must be taken in sequence.

SANSKRIT (865)
4740-50-60 Elementary Sanskrit (4,4,4) (Same as Religious Studies 4940-50-60).
4770-80-90 Intermediate Sanskrit (4,4,4) (Same as Religious Studies 4770-80-90).

Approved Area Courses
(a) Art, Asian Cultures, Literature, and Music
Art 3775 Art of Indian Asia (4)
Art 3776 Chinese Art (4)
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 3550-55-60 Chinese Literature in Translation (4,4,4)
Asian Studies 3610 The Literature of India in English Translation (4)
Asian Studies 3650-55-60 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 4260 Introduction to Ethnomusicology (3)
(e) Economics, Geography, History, and Political Science
Economics 4222 The Political Economy of Asian Development (3)
Geography 3870 Geography of Asia (4)
History 3780-90 History of the Middle East (3,3)
History 3796 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)
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 3650 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 3750 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 2690 and Art 2935 be taken before selection of electives provided for in the minor.
For further information consult the chairperson of the Cinema Studies Committee.

Dr. Charles Maland, English Department. Other related courses in such departments as history, philosophy, or sociology may be approved through consultation with Dr. Maland and petition.

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 3440 Literature and Film (3)
English 3445 Film and American Culture (3)

Comparative Literature (260)
A concentration in comparative literature consists of 39 hours including Comparative Literature 4010, 4012-22-32, 9 hours of literature in a foreign language in courses numbered 3000 and above, and Classics 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 (4510), English, Germanic and Slavic Languages, Religious Studies, and Romance Languages (certain courses in Philosophy or 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 chairperson 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 will study the specific kinds of literary study for which a computer is a useful tool. Projects include the following: indexing and bibliography, concordances, syntactic analysis, content analysis, authorship attribution, textual editing, and stylistic analysis. No previous computer knowledge or background is assumed or required.
3226-37 Special Themes in Literature (3,3) (Same as English 3236-37.)
Classics 2210-20-30 Greek and Roman Mythology

Approved Area Courses

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

Minor: Consists of 24 quarter hours selected from the following:

Classics 3820, Religious Studies 2611, and

a Civilizations consists of Classics 3810,

Drama in English Translation (3)

German 4030 German Drama in English Translation (3)

German 4047 Balzac in English Translation (3)

German 4050 The Faust Legend (3)

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

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

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

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

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

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

Ancient Mediterranean Civilizations

The concentration in Ancient Mediterranean Civilizations consists of Classics 3810, Classics 3820, 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 2210, 2220, 3310, 2320, 3340, 3350, 4010, 4220 (where applicable), 4230 (where applicable); History 3760; Philosophy 3111, 4410, 4420; Political Science 3801.

(c) Roman Culture: Classics 2230, 2330, 3340, 4220 (where applicable), 4510; History 3770; Religious Studies 3311-12, 3330, 4310, 4640. Courses of variable content, topics courses, reading and research, off-campus, or foreign study in the Department 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 Spanish 3110-20-30 or Portuguese 3510-20, History 3870-80, Political Science 3625-28, and Geography 3980 or 3790 and 9-10 hours of acceptable elective courses in any of the participating departments or in the Latin American studies sequence 2510-20 (4,4) or Independent Research 4010, or Senior Seminar 4970.

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

Minor: Consists of 24 quarter hours selected, (Same as Classics 3860 or 3790, History 3870-80-90, Political Science 3625-28, Spanish 3310-20-30 or Portuguese 3510-20, and the Latin American studies sequence 2510-20 or Independent Research 4010. For further information consult the chairperson of the Latin American Studies Committee.

2510-20 Introduction to Latin American Studies (4,4) Introduction to societies of Latin America with special emphasis on dominant culture patterns, social changes, and impact of nationalism. 2510—Pre-Colonial and Colonial periods through independence era; 2520—Latter 19th century and the Modern period.

2510-20 Spanish and Spanish American Literature in English Translation (3,4,4,3-4) 2510—Masterpieces of classical Spanish literature: Cervantes, realism and the picaresque novel, religious mystics, Golden Age Theatre; 2520—Masterpieces of 19th century Spanish literature: Unamuno, Lorca, Baroja, Ortega, 2930—Contemporary Spanish American fiction: Marquez, Borges, Fuentes, Asturias. No change in credit hours after add deadline. Option of 4 hrs. credit must present an appropriate amount of extra work above that required for 3 hrs. (Same as Romance Language Literature 2510-20-30.)

3310-20-30 Aspects of Spanish American Literature (3,3,3) Study (not usually chronological) of various periods of the literature; emphasis upon the genres (poetry, novel, drama) varies. May be taken in place of 3110-20-30 or 3110-30. Prerequisite: 2310, 2520 or equivalent (Same as Romance Languages 3310-20-30.)

3510-20 Aspects of Portuguese Literature (4,4) Prerequisite: 2320 or equivalent. Required for literature majors. (Same as Romance Languages Portuguese 3510-20.)

3580 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 materials. Recommended prerequisite: 2530. (Same as Anthropology 3580.)

3625-28 Latin American Government and Politics (4,4) (Same as Political Science 3625-28.)

3790 Geography of Middle America (4) Covers Mexico, Central America, and the West Indies. Not open to students who have taken 3740, 3770, or 3780. (Same as Geography 3790.)

3800 Geography of South America (4) Not open to students who have taken 3730, 3770, or 3780. (Same as Geography 3800.)

3870-80 History of Latin America (3,3,3) 3870—Exploration, conquest, settlement, and colonial life to 1880. 3880—Major countries of South America, 1800—present. (Same as Geography 3870-80.)

4001 Cultural Plurality in Latin America (3) Introduc-
language to be selected from the following:
Arabic 2431-32 (2433 is recommended);
Asian Studies 2531-32 (Chinese, 2533 is recommended);
Asian Studies 2631-32 (Japanese, 2633 is recommended);
Religious Studies 3140-50-60 (Hebrew); other non-
Indo-European languages offered in a sequence of at least two four hour courses and approved by the Linguistics Committee.

Concentration
The concentration shall consist of 38 credit hours distributed as follows:
(a) 32 hours composed of Audiology and Speech Pathology 3050; English 3330, 3332, 4440; French, German, Russian, or Spanish 4250-60-70; Speech 4811; Linguistics 4120-30.
(b) 6 hours of the following, selected in consultation with the Linguistics Committee:
Anthropology 3420; Audiology and Speech Pathology 3600, 4650, 5651, 5790; Education (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; Philosophy 4630; Psychology 4650, 4660, 5360-70; Spanish 4210-20-30, 5110-20-30.
(c) Other hours may be substituted in (b) by approval of the Linguistics Committee.

Minor
A minor in linguistics shall consist of 27 credit hours composed of 9 from section (b) of the major, selected in consultation with the Linguistics Committee, and 18 hours as follows: Audiology and Speech Pathology 3050; Linguistics 4120-30; English 3332; French, German, Russian, Spanish 4250-60.

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 chairperson of the department, Dr. Bethany Dumas, or the program advisor, Dr. Chauncey Mellor.

2000 Language, Linguistics and Society (3) Introduction to linguistics with focus on language development and use of language by individuals and groups.

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.)

3420 Linguistic Anthropology (3) (Same as Anthropology 3420.)

4000 Topics in Linguistics (3) Content varies. May be repeated. Maximum credit 9 hours.

4120-30 Foundations of Linguistics Science, Development of Methodology, Contemporary Theory (3,3) Intellectual and methodological foundations of linguistics science. Changes in linguistic interest brought about by Saussure's Cours and the growing impact of other disciplines on linguistics science. (Same as English 4120-30.)

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 Socio-Linguistics (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.)

4471-81 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 diverse—its conditions of life, social and political institutions, values and ideals, and modes of perception and expression.
A concentration in Medieval Studies consists of Medieval Studies 2010 and 4010 and 26 hours of upper-division courses concerned primarily with the Medieval experience, divided among the following three categories: (1) history, philosophy, political science, and religious studies; (2) language and literature; (3) the arts—history of art, architecture, music, and speech and theatre. Courses should not be selected at random but should either form a related pattern (for example, courses in the literature and history of Medieval England or Italy, etc.), or should revolve around a particular discipline, or two closely related disciplines (for example, courses in the history of art and architecture). A minor in Medieval Studies consists of Medieval Studies 2010 and 4010 and 16 additional hours distributed among the categories listed above for the major. Each student's program, major or minor, must be approved in advance by the Medieval Studies Coordinating Committee, chairperson Dr. Paul Barrette.
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 interdisciplinary points of view and including philosophy and religion, art and architecture, language and literature, social and political history.

2601 Literature of the Dark Ages (5th-10th Centuries) (3-4) Critical analysis and interpretation of selected classical works from the medieval period. Focuses on texts representing the major genres of the early Middle Ages (e.g., religious, monastic, lyric—epical, biographical). Readings include St. Gregory's Life of St. Benedict, Augustine's Confessions, the life of Charlemagne, etc. Students registering for four credit hour will be assigned additional work to satisfy the fourth credit hour.

2602 Literature of the Later Middle Ages (3-4) 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 Romances of the Rose, St. Bernard's Commentary on the Song of Songs, Peter Abelard's History of My Calamity, 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) Interdisciplinary treatment of selected topics.
Upper-division courses for the concentration in Medieval Studies may be chosen from the list of courses below.

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

History 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 4500 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 Religious Thought and Institutions (4) (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 4012-22-32 Special Topics in Comparative Literature (3,3,3) (when subject is part of medieval culture and society)

Comparative Literature 4050-60-70 Dante and Medieval Culture (3,3,3)

English 3331 Cultural History of the English Language (3) (Same as English 3331.)

English 4410 Introduction to Study of English Language (3) (no language requirement)

English 4420 History of English Language (3) (no prerequisites)

English 4930-40 Chaucer (3,3) 4930—The Canterbury Tales. 4940—Troilus and Criseyde and early poems. (Same as English 4930-40.)

French 3210 French Literature in English Translation (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 4230 The Mass to 1600 (3)

Music 4230 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 3710-20. The major consists of 42 hours distributed as follows: Geography 3880; six hours from History 3470-80-90; Philosophy 3550; Political Science 3531 and four additional hours from Political Science 3632, 3796, 4815, and 5370; Russian 3110-20-30; Russian 4010 (Selected Topics in Russian and East European Studies); and any eight additional hours in courses numbered 3000 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 Fien.

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 3000 plus 16 hours from the urban studies curriculum provided below. The urban studies minor consists of 24 quarter hours, including Urban Studies 2500 and 3000 plus 16 hours from the urban studies curriculum provided below. For further information consult the chairperson of the Urban Studies Committee, Dr. Samuel E. Wallace.

2000 Human-Environment Systems (4) (Same as Interior Design 2000)

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. Stresses 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.

3420 Urban Problems (4) (Same as Sociology 3420)

3750 The Urban Polity (4) (Same as Political Science 3750)

3760 Urban Policy Process (4) (Same as Political Science 3760)

3800 Introduction to Real Estate (3) (Same as Business Administration 3800)

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 18 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)

4510 Passenger Transportation (3) (Same as Transportation 4510)

4670 Cities and Urbanization in American History (4) (Same as History 4670)

4830 Problems of Urban Development (3) (Same as Finance 4830)

Urban Studies Curriculum:

For the concentration and minor, courses may be selected to fill the respective requirements from the following:

Anthropology:

3450 Community Studies in Complex Culture (3)

4440 Urban Anthropology (3)(Same as Anthropology 4440).

Geography:

3000 Man, Location, and Behavior (4)

4330 Urban Ecology (4)(Same as Sociology 4330).

3410 Urban Environment (4)

3450 Community Studies in Complex Culture (3)

3750 The Urban Polity (4)

3760 Urban Policy Process (4)

Sociology:

3410 Urban Environment (4)

3420 Urban Problems (4)

4330 Urban Ecology (4)

4530 Community Organization (4)

Women's Studies (944)

The Cultural Studies major with a concentration in Women's Studies has eight hours of prerequisites: one of the Images of Women in Literature courses (either 2010 or 2015) and Women in Society in (2020), and an additional 16 hours of upper-division Women's Studies courses. For further information contact the chairperson of the Women's Studies Committee, Dr. Marthe Lee Osborne, at the Women's Studies Office, 2012 Lake Avenue, 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 from diverse historical periods and cultures.

2020 Women in Society (4) An examination of the role played by women in various societies during different historical periods, a study of the factors which have limited women's participation in society, and an assessment of social scientists' assumptions about women.

2120 Sex Roles and Marriages (3) (Same as Child and Family Studies 2120)

3010 Emergence of the Modern American Woman (3) An examination of the role of women in the development of American civilization and values. Major topics include women's legal and political status, the emergence and development of feminism, women and the creative arts, and women's roles in industrial and post-industrial American society.

3095 Women in Music (3) (Same as Music 3095)

3150 Gender in Society (4) (Same as Sociology 3150)

3240 Women in French Culture (4) (Same as French 3240)

3310 Women Writers in England and America (3) (Same as English 3310)

3311 Women in American Literature (3) (Same as English 3311)

3430 The Concept of Woman (4) (Same as Philosophy 3430)

3435 Philosophy of Feminism (4) (Same as Philosophy 3435)

3830 Women in the Greek and Roman World (3) (Same as Classics 3830)

4000 Topics in Women's Studies (4) Content varies. May be repeated.

4103 Independent Study (1-16) Registration by consent of the Women's Studies Committee Chair.

4110 Psychology of Sex Role Development (3) (Same as Psychology 4110 and Educational Counseling and Psychology 4110)

4280 Women in European History (4) (Same as History 4280)

4290 Women in American History (4) (Same as History 4290)

4430 Women's Health (3) (Same as Health 4430)

4560 Rhetoric of the Women's Rights Movement (4) (Same as Speech 4560)

4830 Afro-American Women in American Society (4) (Same as Afro-American Studies 4830)

4870 Contemporary Research in the Behavior of Women (4) (Same as Psychology 4870)

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 course

GRADUATE
cultural studies and the respective chairperson. See Black studies. Registration by consent of director of any cultural studies concentration or minor except Black studies. Registration by consent of director of cultural studies and the respective chairperson. See pages 161 and 174.

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

Economics (283) See faculty list, page 82.

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 82 for description of the courses available.

Requirements for a B.A. major in economics consists of: (1) Economics 2510, 2520, or equivalent honors courses; and (2) minimum of 33 additional hours in upper-division economics courses. Economics 3110 (or 3111 and 3112) and 3120 are required as 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 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 Clerk, Room 212, Claxton Education Building as early in their program as possible to determine the appropriate requirements.

GRADUATE See page 81 in the College of Business Administration. The department offers the following degrees: B.A. and Ph.D. Also, the MBA degree with a concentration in economics is offered.

English (339) Professors: J. B. Trahem (Head), Ph.D. Princeton; P. G. Adams' (Emeritus), Ph.D. Texas; J. N. Armitage, Ph.D. Duke; E. W. Bratten (Associate Head), Ph.D. Illinois; D. R. Cox, Ph.D. Missouri; K. Curry (Emeritus), Ph.D. Yale; R. V. D. W., Ph.D. Yale; Fisheri; Ph.D. Pennsylvania; J. A. Hansen (Emeritus), Ph.D. Yale; R. M. Kelly, Ph.D. Duke; K. L. Knickerbrocker (Emeritus), Ph.D. Duke; B. G. L. Feig, Ph.D. Florida; F. D. Miller (Emeritus), Ph.D. Virginia; R. B. Miller, Ph.D. Brown; R. E. Parker (Emeritus), Ph.D. California (Berkeley); A. R. P. Perren, Ph.D. Colorado; J. E. Reese (Chancellor), Ph.D. Kentucky; N. J. Sanders', Ph.D. Shakespeare Institute, Stratford-on-Avon; D. J. Schneider, Ph.D. Northwestern; W. R. Shurr, Ph.D. North Carolina; P. L. Soper (Emeritus), Ph.D. Cornell; B. T. Stewart (Emeritus), Ph.D. Northwestern; E. W. Stockton (Emeritus), Ph.D. Harvard; W. D. Stokely (Adjunct), B.A. Northwestern; R. H. Walker, M.A. Texas; T. V. Wheeler, Ph.D. North Carolina; Cambridge; N. Wright (Emerita), Ph.D. Yale.

Associate Professors: L. S. Burghardt, Ph.D. Chicago; D. A. Carroll, Ph.D. North Dakota; B. K. Dumas, Ph.D. Arkansas; J. E. Gill, Ph.D. North Carolina; D. F. Goslee, Ph.D. Yale; H. M. Goslee, Ph.D. Yale; T. J. A. Heffeman, Ph.D. Cambridge; M. W. H. Kitchen, Ph.D. Illinois; M. L. Keene, Ph.D. Texas; I. Leki, Ph.D. Illinois; M. A. Lofaro, Ph.D. Maryland; C. J. Maldan, Ph.D. Michigan; N. Ly, Ph.D. California; C. B. Cruz; M. P. Richards, Ph.D. Wisconsin; F. K. Robinson, Ph.D. Texas.


Instructors: K. Benson, M.A. Tennessee; W. J. Curtis, M.A. Tennessee; M. Emery, M.A. New York; C. M. Hoffman, M.A. Iowa; M. S. Lewis, Ph.D. Pennsylvania; E. D. Overbay, M.A. Virginia; K. Pobo, Ph.D. Wisconsin (Milwaukee); M. H. Simpson, M.A. Oregon; P. A. Tschantz, M.A. New Mexico State; M. Waldvogel, M.A. Michigan.

*Young Professor
John C. Hodges Professor
*Distincted Service Professor

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 English. Two courses in English at the 2000 level are prerequisites 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. In college-level courses presented to fulfill this corequisite, the student must have compiled grades averaging C (2.0).

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 is an area of study that includes a distinctive subject field known as "special themes" in literature (3236-37), Forms of Popular Literature and Culture (3233-34), Literature and Other Fields (3230-31), and Technical Writing (4140-50).

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

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

Concentration in Literature: Thirteen English courses at the 3000-4000 level including:
(1) English 3043;
(2) at least five courses in periods or major figures before 1900, including at least three before 1800;
(3) at least two courses concerned with approaches other than literary, such as literary forms or modes, theories of criticism, or other unifying approaches or ideas;
(4) a total of three courses in writing or the English language may be counted towards the literature concentration but may not be substituted for requirements 1, 2, or 3 above.

Concentration in Creative Writing: Thirteen English courses at the 3000-4000 level including
(1) a two-course sequence in expository, creative, or technical writing;
(2) two other courses in creative writing at either the 3000 or 4000 level;
(3) four courses in literature;
(4) three additional English courses selected in consultation with the advisor.

Concentration in the English Language:
Twelve English courses at the 3000-4000 level including:
(1) English 3330, English 3331;
(2) four courses in linguistics and the English language selected from among those offered by the English department and, with English advisor approval, 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 Program: 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 based on the MA Reading List. 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.

Internship in Technical Writing and Editing: A limited number of part-time positions in University offices may be available on a competitive basis for senior English majors who have completed the appropriate writing courses. Details are available through the Director of Undergraduate Studies.

Minor: An English minor consists of 24 hours at the 3000-4000 level, 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, Clayton 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 cutoff point set by the English Department. Emphasis on invention, organization, style, and revision; intensive study of essays for meaning and ways of expressing meaning; conferences on individual writing problems. A, B, C, I, NC, W grading. Students may not receive credit for both 1010 and 1011. F, W, S.

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 plus additional work on skill 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 remediated to it at the beginning of the quarter by their English Composition teachers. Individual instruction in grammar, mechanics, sentence patterns, reading comprehension, summary writing, 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. A, B, C, I, NC, W grading. Concurrently with 1011. S/N grading. F, W, S.

1020 English Composition (3) Analytical writing based on study of great themes in literature; practice in document; individual conferences. Prereq: 1010. Students receiving an A in 1010 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.

1031-32-33 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 1010-level course completes a year's work in English composition; no more than one may be taken for credit. 1031—Writing about modern literature; study of 20th-century novels, short stories, plays, and poetry. 1032—Writing and language: how we are influenced by verbal manipulation in education, politics, and society. 1033—Business and technical writing. A, B, C, I, NC, W grading. F, W, S.

1018-28-38 Honors: English Composition (3,3,3) Open only to those students selected on the basis of placement scores and high school record. Grading scale and work the same as regular sequence. 1018—Expository writing based on study of non-fiction prose. Introduction to research writing. 1028—Analytical and research courses on any other subject offered in 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 1033; 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. 1018-F; 1036-W.

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 residence for foreign students who wish to complete the English Proficiency Examination demonstrating readiness for work in English structure, but not at the intensive level of English 1211. Required also of foreign students who complete 1211. A, B, C, I, F, W grading. Students receiving only 1211 by the course are permitted to register for only two other courses. E.

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/N grading. (Note: English 11: Articulation and Speech Pathology 121.) F.


1441 English Composition for Foreign Students (3) For students whose native language is not English, writing based on reading and discussion with attention to focus in library on basic skills of documentation. Practice and typical writing assignments encountered by college students. English 1441 replaces English 1024 for undergraduate foreign students. Prereq: 1431. A, B, C, I, NC, W grading. F, W, S.


2410 Creative Writing: Fiction and Poetry (4) Practice in writing poetry and fiction combined with study of models and techniques.

2510-20 British Masterpieces (4,4) To the mid-18th century. 2520—Since the mid-18th century. F, W, S.

2531-32-33 American Masterpieces (4,4,4) Focusing on major texts. 2531 covers the development of American literature from the beginnings to 1865; 2532 covers the literature from 1865 to the present; 2533 examines Black American literature exclusively, as a distinct literary movement.

2560-70-80 Literature of the Western World (4,4,4) 2560—Ancient and medieval. 2570—Renaissance through the 18th century. 2580—19th and 20th centuries. 2560-F, W, S; 2570-W; 2580-S.

2620 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 feature films are studied to provide critical techniques necessary for analysis of narrative cinema. Emphasizes basic elements of film expression and contours of film history. Writing assignments.

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—Beijing through 1860. 3051—From 1860 to present.

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

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

3110-20-30 Romantic Poetry and Prose (3,3,3) 3110—Emphasis on Wordsworth and Coleridge. 3120—Em—
3135 Tennyson and His Successors (3) includes such poetry as that by "PraRaphaeles, humorists, and Decadents.
3136 Browning, Arnold, and Hopkins (3)
3150 Melville (3)
3160 The Short Story (3) British and Continental Europeans, with emphasis on 20th century.
3170 The American Short Story (3) From 19th century beginnings to present; emphasis on 20th century.
3172 Colonial, Federal and Early National American Literature (3) American Literature: beginnings through Irving.
3173 American Romanticism and Transcendentalism (3) Cooper through early Whitman.
3174 American Realism and Naturalism (3) Later Whitman through World War I.
3175 Modern American Literature (3) World War I to the present.
3210-20 English Literature and Culture of the Nineteenth Century (3) Survey of literature dealing with leading writers in philosophy, science, religion, and the arts, 3210—1800 to 1835; 3220—1835 to 1900.
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 credit 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 credit 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. (Same as Women's Studies 3311.)
3320 Regional Identities in American Literature (3) Literature featuring region as an element of plot, characterization, style, language, or point of view. Supplementary readings in the nature and history of the regions chosen.
3330 Introduction to Study of English Language (4) (Same as Linguistics 3330.)
3331 Cultural History of the English Language (3) Emphasizes influence of social and political forces in development of English pronunciation, vocabulary, and syntax. (Same as Linguistics 3331.)
3332 Modern English Grammar (3) Traditional, prescriptive approaches to English grammar, followed by intensive study of descriptive approaches of American structuralism and introduction to generative-transformational theory. (Same as Linguistics 3332.)
3360 Old and Middle English Literature in Translation (3) Major texts and genres of English literature from beginnings to 1500.
3411-12-20-30 Modern Drama (3,3,3,3) 3411—Contemporary to 1915, 3412—Continental since 1930. 3420—British. 3430—American.
3440 Literature and Film (4) Aesthetic relationships, emphasis upon media comparison.
3445 Film and American Culture (3) Examines American film as both works of art and social documents. By placing a range of films in their historical context and analyzing them through the use of cultural values, students explore the relationship between the medium of film and American culture in the twentieth century. (Same as American Studies 3445.)
3460 Writing Fiction (3) Introduction to writing novels and short stories.
3470 Writing Poetry (3) Introduction to writing poetry.
3480 Writing Drama (3) Introduction to writing both one-act and full length plays.
3510 Sixteenth-Century Prose and Poetry (3) More and Wyatt to Spenser.
3520 Elizabethan Drama (3) Marlowe, Jonson, and others.
3610 Restoration and Eighteenth-Century Poetry (3) Emphasis upon Dryden and Pope.
3620 Restoration and Eighteenth-Century Drama (3) Dryden through Sheridan.
3630 Restoration and Eighteenth-Century Prose (3) Defoe, Addison, Steele, Swift, and others.
3670 Age of Johnson (3)
3710 Literature of the English Bible (3) Types of Old Testament Literature, excluding Wisdom literature. (Same as Religious Studies 3710.)
3711 Literature of the English Bible (3) Old Testament Wisdom Literature and types of New Testament Literature. (Same as Religious Studies 3711.)
3721 Introduction to Folklore (3) Essential concepts in modern folklore-folklife studies. Emphasis on North American materials: folklore, folk songs, myth, legend, proverbs, riddles, superstitions, dances, games, and architecture.
3840 Advanced Writing (3) Strategies of writing on personal and academic subjects. Discussion of student and professional writing. Conferences on individual student's goals and problems. Open to sophomores with instructor's consent. F, W, S.
3850 Persuasive Writing (3) Exploration of persuasive techniques through essays written by students and professionals. Examination of strategic rhetorical stances and effective logical and emotional appeals. Conferences on individual student's goals and problems. Open to sophomores with consent of instructor.
3860 Special Topics in Writing (3) Original writing integrated with reading, usually taught by professional author or critics. Topics vary. May be repeated. Maximum credit 9 hours.
3870 Writing the Screenplay and the Television Play (3) Advanced, specialized course in dramatic writing. Completion of English 3450-60-70 is desirable, but students with active interest in the medium are invited to seek consent to enroll.
3910 Comparative Literature (3) 3910—Ancient. 3920—Medieval and Renaissance. 3930—Modern.
3920 Comparative European Literature (3) Selected Medieval and Renaissance Masterpieces, in translation, by such authors as Dante, Machiavelli, and their influence on English literature. English 3910 is not a prerequisite.
3930 Comparative European Literature (3) Selected masterpieces of Continental literature, in translation, and British literature from the Enlightenment to the present, with emphasis on the interdependence of national literatures and ideas. English 3910, 3920 are not prerequisites.
3940 Novel of the Contemporary Western World (3) Proust, Joyce, Mann, and others.
4010-20 Shakespeare (3,3) 4010—Early plays, c. 1590-1601, including 1 Henry IV, Twelfth Night, and Hamlet; 4020—Later plays, 1601-1613, with emphasis upon tragedies and dramatic romances.
4042-43 Topics in Mode and Genre (3,3) Content varies. Special topics in principal forms and modes of British and American literature, e.g., comedy, tragedy, epic, lyric, satire, etc. May be repeated with consent of department. Maximum credit 6 hours each.
4045 Topics in Literary Theory and Criticism (3) Content varies. Special topics in theoretical approaches to British and American literature. May be repeated with consent of department. Maximum credit 6 hours.
4047 Special Topics in Literature: Major Authors (3) Content varies. Studies in major British and American Writers. May be repeated once with consent of department.
4050-60-70 American Novel (3,3,3) 4050—From earliest sentimental novelists through Cooper, and Kennedy, and major figures to 1875. 4060—Henry James and Mark Twain through early works of Faulkner and Hemingway. 4070—Early twists to present. (Same as American Studies 4050-60-70.)
4100 Foreign Study (1-16) See page 161.
4102 Off-Campus Study (3-12) See page 161.
4103 Independent Study (1-12) See page 161.
4118-28-38 Honors: Senior (3,3,3) Admission by consent of department.
4120-30 Foundations of Linguistics Science, Environment, Methodology, Contemporary Theory (3,3) Intellectual and methodological foundations of linguistics science. Changes about by Saussure's Cours and the growing impact of other disciplines on linguistics science. (Same as Linguistics 4120-30.)
4140 Advanced Technical Writing (3) For students planning careers in business, industry, education, and government who will need technical writing skills after they graduate. The writing of definitions, process descriptions, sets of instructions, descriptions of mechanisms, recommendation reports, abstracts, proposals, and technical reports. Early twists to present in student's major or consent of instructor. F, W, S.
4150 Professional Writing (3) The writing of articles, theses, and dissertations in which data are marshalled and analyzed. The writing of abstracts, varieties of documentation styles, proper use of visuals, guidelines and procedures for manuscript submission, and the process of editorial review. Prereq: 4140 or consent of instructor.
4160 Technical Editing (3) Primary emphasis is on the techniques and language skills necessary for technical editing. This focuses, graphics, layout methods, and means of preparing technical reports are also discussed. Prereq: Successful completion of either 4140 or 4150, or permission of instructor.
4250 Advanced Fiction-Writing (3) Further development of skills acquired in basic writing fiction course. Prereq: 3450 and consent of instructor.
4254 Writing the Detective and Mystery Story (3) Instruction and writing cover entire crime field—spies, police procedural, private eye, spy, and adventure fiction. Prereq: 3450-60-70 or consent of instructor.
4256 Writing Science Fiction and Fantasy (3) Survey of general development and basic texts of science fiction, speculative fiction, and fantasy. Exercises in writing and working notes, in accordance with techniques learned in basic fiction writing course.
4270 Advanced Poetry Writing (3) Further development of skills acquired in basic poetry writing course. Prereq. English 3470 or consent of instructor.
4440 Sociolinguistics (3) The study of language in relation to society. Empirical and theoretical study. Emphasis on linguistic interest of lingual units such as tribes, nations, and social classes. Prereq: 3330 or Linguistics 2000 or consent of instructor. (Same as Linguistics 4440.)
4450 Dialectology (3) Theories and methodologies of dialect research, fieldwork, and analysis. Prereq: 3340 or consent of instructor. (Same as Linguistics 4450.)

4455 American Dialects (3) Characteristics of the major social and regional dialects of American English. Their origins and functions. Implications for cultural pluralism and the study of American English and its North American variants; 4731 Study of Native American languages; 4830 American Humor through Mark Twain (3)

4652 Southern Literature through the Nineteenth Century (3) Theories and methodologies of textual analysis and performance, with emphasis on the construction of texts. Team teaching with an experienced member of the staff. Prereq: 4471. (Same as Linguistics 4471.)

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

4640 Black American Literature and Aesthetics (3) Evaluation of major texts in Black American Literature and Aesthetics since 1899, with emphasis on the major artist's work.

4651 Southern Literature through the Nineteenth Century (3) Southern writing from colonial period to end of 19th century, including frontier humorists and local color writers.

4652 Southern Literature in the Twentieth Century (3) Modern Southern literary renaissance, Fugitives and Agrarians, Faulkner, and more recent writers such as Welty, O'Connor, and Porter.

4660 Emerson and Thoreau (3)

4680 American Humor through Mark Twain (3) 4721-31-41 Ballad and Folktales (3,3,3) 4721—Study of traditional English and Scottish popular ballads and their North American variants; 4731 Study of Native American literatures; 4741—The folk narrative: functions, categories, and patterns of storytelling. Prereq: English 3271 or consent of instructor.

4850 Milton (3) Emphasis on major poems.

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

4930-40 Chaucer (3,3) 4940—The Canterbury Tales and Donne to Marvell.

Assistants: T. J. Blasing (Adjunct), Ph.D. Wisconsin; R. A. Foresta, Ph.D. Rutgers; L. M. Pulipher, Ph.D. Southern Illinois.

4741-81 English as a Second or Foreign Language (3,3) 4741—Applied linguistics in teaching and learning of English as second or foreign language. Phonological and grammatical structure of present-day English. Analysis of differences (phonological, grammatical, and lexical) between English and another language. Prereq: Second year of a foreign language. 4742 Quantitative Analysis of Language (3) Introductory techniques of the study of variation in language both in spoken language and in written texts, including literature. Emphasis on identifying questions, collecting, analyzing, and interpreting data. Implications for linguistic and/or literary theory. Prereq: English/Linguistics 3330 or Linguistics 2000 or consent of instructor. (Same as Linguistics 4461.)

4930-40 Chaucer (3,3) 4930-The Canterbury Tales and Donne to Marvell.

4461 Quantitative Analysis of Language (3) 4680 American Humor through Mark Twain (3)

4462 Southern Literature in the Twentieth Century (3) 4660 Emerson and Thoreau (3)

b. Economic Geography: 3410, 3450, 4550;

c. Cultural Geography: 3400, 3450, 3490, 4075;

d. Regional Geography of the United States: 3610, 3630, 3630, 3640;

e. Regional Geography of Foreign Areas: 3790, 3800, 3830, 3840, 3870. Study 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/ is 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.

Students wishing to major or minor in geography are strongly urged to consult with a departmental undergraduate advisor. Through choices available within the structure of the major and by appropriate selection of electives outside the department, each student may develop a coherent program in accordance with specific interests and needs. Such programs might emphasize economic geography, physical geography, or development geography itself or might develop interdisciplinary themes such as natural environment and resources, urban and regional planning, or the culture, history, or economy of a particular area. A useful technical or vocational specialty program is available which emphasizes cartography and remote sensing.

1610-20 Introduction to Geography (4,4) Selected problems or situations of contemporary interest are studied in depth, illustrating geographical points of view and techniques. Need not be taken in sequence. 1610-E; 1620-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 world pattern of distinctive 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 cultural geography 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. Emphases: 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, residential choice, trade, and other aspects of geographical consciousness, as they relate to distance, natural environment, and culture. Order and regularity in pattern of human use of earth's surface.

3410 Intermediate Economic Geography (4) Concepts, theories, and applications to different aspects of economic geography and regional growth. Theoretical principles of regional science and their applications to the study of world regions.

3430 Urban Geography (4) Concepts and theories concerning development and significance 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.

4490 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 on energy and metallic resources.

5130 Meteorology (4) Introduction to dynamic atmosphere and resulting weather events. Nature of interaction between weather and society, their measurement, and analysis over time and space.

5250 Climatology (4) Overview of general circulation system leading to world pattern of climates. Climatic change and modification, and interrelationship of climate and human activity.

5350 The Land-Surface System and Man (4) Nature and regional variations in relationships among surface form, water, vegetation, and surface materials. Man as evaluater and agent of change.

6000 Geography of Population (4) World population patterns; regional socio-economic characteristics and demographic trends; relationship to resource base.

6510 Political Geography (4) Importance of geographic factors for understanding political relationships within and among nations; spatial implications of political decision-making processes; geography of administrative units.

6500 Cultural Geography (4) Basic concepts of culture; methods and background of cultural geography; world patterns of cultural phenomena.

7300 Maps and Aerial Photographs (4) Introduction to several sources, interpretation of maps, and pictorial forms of spatial images.

7900 Geography of Latin America (4) Covers Mexico, Central America, and the Western Indies. (Same as Latin American Studies 3790.)

8000 Geography of South America (4) (Same as Latin American Studies 3800.)

8300 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.)

8400 Geography of Australia and Oceania (4) Survey of major physical, economic, and social characteristics of Australia, New Zealand, and of impact of western civilization on selected island groups of Southwest Pacific.

8750 Geography of Asia (4) A survey of the physical, cultural, and economic characteristics of the countries of Asia, excluding the Soviet Union.

8880 Geography of the Soviet Union (4)

3010 Regional Geography of United States and Canada (4) Physical, economic, and social distributions as they interrelate to give distinctive character to regions of United States and Canada.

3290 Geography of the American South (4) Geographical appraisal in solidarity, terms of the United States, including physical environment and human resources.
Geological Sciences

Professors:
K. R. Walker (Head), Ph.D. Yale; H. J. Kipler (Emeritus), Ph.D. Ohio State; O. C. Kopp, Ph.D. Columbia; K. C. Misra, Ph.D. Western Ontario; R. E. McLauglin, Ph.D. Tennessee; L. A. Taylor, Ph.D. Lehig; J. G. Walls (Emeritus), Ph.D. North Carolina.

Associate Professors:
D. W. Byerly, Ph.D. Tennessee; T. W. Broadhead, Ph.D. Iowa; M. Clark, Ph.D. Pennsylvania State; H. Y. McSween, Ph.D. Harvard.

The Department of Geological Sciences provides training for (1) those who plan careers as professional geologists in industry, federal and state surveys, education, or other fields which utilize earth scientists; and (2) those who seek a general knowledge of geology and its 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 is available in the departmental office.

Undergraduate
B.S. Major: Prerequisites: Geology 1010, 1020, 1030. Students who have less than one year of high school biology must take Biology 1210, 1220; it is recommended that a student who has had one or more years of high school biology should take any two of the following courses: Biology 1230, Botany 1110, 1120; Zoology 1118, 1128; Biology 3130. 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 Chemistry 1118, 1128, 1230 taken by a student. Math 1840-50 or 1842-52, and one of the following: Math 1860, 1862 or 3000.

Geology Courses
The core: Geology 3180, 3190, 3260, 3310, 3360, 3370 (21 hours). For breadth: Geology 4110, 4115, 4230, 4320, 4520, 4540, 4550, and 4610. In addition, all senior majors must take at least one quarter of 5350.

Student's Choice: 12 additional hours in any geology courses numbered 3000 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 4310 and 4440.

1 Math 1840-50 has prerequisites of 2 years high school algebra and one year of trigonometry or equivalent. Students who are deficient in these subjects may need to take Math 0910-10, 1000-10, 1010-10, or 1015-20 before enrolling in Math 1840-50. Consult mathematics section of this catalog or the Department of Mathematics for details.

Minor: Geology 1010, 1020, 1030 are prerequisite to a minor which consists of at least 24 hours in courses numbered 2000 or above.

Geology (424)

1010 General Geology I (4) Introduction to materials of the earth; processes active within the earth and changes they produce. 3 hrs. and one 2 hr. lab or field period.

1020 General Geology II (4) The surface of the earth, including physical processes which shape it; the development of the oceans and sedimentary rocks; fossils and their relationship to geologic time. Prereq: 1010. 3 hrs. and one 2 hr. lab or field period.

1030 General Geology III (4) Reconstructing the history of the earth using both physical, geologic and fossil evidence; a review of important stages in earth history. Prereq: 1020. 3 hrs. and one 2 hr. lab or field period.

2110 History of Life on Earth (4) Chronological account of origin and evolution of life, its environment, and societal patterns. Not intended for geography majors. 3 hours and 1 lab or field period.

2130 Resources Crises—Minerals and Energy (4) Evaluation and exploitation of reserves and resources. Distinctive features, present status, and future trends of minerals industry. Appraisal of conventional and alternative energy resources. Resource crisis and possible choices. National policies on minerals and energy. Not for geography majors. May be taken by geography majors, but credits will not count toward major requirements.


2150 Geochronological and the Global Environment (4) Introduction to the use of geochronological cycles for identifying potential, general environmental problems on a global scale. High school chemistry recommended. 3 lecs. and 1 problem session.

2160 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.

2170 Introductory Oceanography (4) Introduction to study of oceans including origin and development of ocean basins and physical and biological processes within ocean basins and their contained water and sediment masses. 1010 recommended.

3180 Mineralogy (4) Introduction to crystallography and study of minerals. Laboratory includes hand specimen, chemical, and X-ray methods of identification. Pre req: 1010. Chemistry 1110-20 or equivalent. 3 lecs. 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, 5/NC grading only.

3210-20 Invertebrate Paleontology (4,4) Systematic review of important metazoan invertebrate fossil groups. 3210—Porifera to Annelida, including cnidarians, ecdysozoa, brachiopods, and conodonts. 3220—Mollusca through lesser Chordata, including arthropods and echinoderms. May be taken separately or in sequence. Pre req: 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. Pre req: 1420. 3 lectures and 1 lab or field period.

3270 Geological History of Land Organisms (4) Geologic history and development of terrestrial biota as a component of Earth's ecosystem with special emphasis on fossil record of land plants and vertebrates. Pre req: 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 meta-
3330 Regional Geology of the United States (3) Evolution of various geologic provinces within the U.S. with emphasis on the integration of several types of geologic data. Prereq: completion of core courses in the major or equivalent.

3331 Quaternary Geology of North America (4) Quaternary geology, stratigraphy, sedimentology, and geochronology of glaciated and unglaciated North America and oceans. Prereq: 1010 or consent of instructor. Two 2-hour lectures.

3332 Quaternary Paleoclimatology (4) Study of pollen and plant macrofossils of character 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 reconstructions, including pollen and plant macrofossil identification, description of site stratigraphy, and sedimentology. Prereq: 1010 or consent of instructor. Two 2 lectures and 2 labs.

3350 Advanced Geology (4) Principles of geology and interpretation of geologic data. Prereq: 1010 or consent of instructor. Two 2-hour lectures.

3360 Principles of Economic Geology (4) Ore-forming processes, classification of mineral deposits, survey of different types of mineral deposits with examples. 3 hrs. and 1 lab. Prereq: 3180, 3190, 3310 or equivalents. Recommended: 4610.

3370 Petrology (4) An introduction to igneous and metamorphic rocks, with emphasis on the classification of igneous rocks and the processes of metamorphism. Prereq: 3360 or consent of instructor. Two 2-hour lectures.

3380 Micropaleontology (3) Application of paleontologic data to stratigraphic study, codification of stratigraphic nomenclature, and recommended prac- tice. Prereq: 3350 and 3360. 1 lecture plus one 2-hour seminar.

3390 Palynology (3) Survey of fossil record of plants and other land plants, with emphasis on the classification and correlation of fossil pollen, spores, and microfossils. Prereq: 3380 or consent of instructor. Two 2-hour lectures.

3400 Geologic Mapping (4) Interpretation of maps and methods of geologic mapping. 3 lectures and 1 lab or field period. Prereq: 12 hours of geology.

3410 Introductory Environmental Geology (4) Application of the geological sciences toward a comprehension of the effects of geologic processes on humans and the effects of human activities on the earth's environment. Prereq: 1010-20-30. 3 lectures and 1 hr. or field period.

3420 Geomorphic Processes (3) Developmental processes and interpretation of depositional environments. Prereq: 1310 and 3190. 3 hours and 1 lab or field period.

3430 Structural Geology (4) Introductory discussion of structural geology, with emphasis on the mechanics of fold formation, deformation, and primary structures. Laboratory work includes field studies and experiments. Prereq: 1020 and 3180. 3 hours and 1 lab or field period.

3450 General Geology (4) Introduction to physical geology, with emphasis on the geology of the earth's surface and landforms. 3 hours and 1 lab. Prereq: 1020. Math 1640-50 or equivalent.

3460 Geologic Photography (4) Techniques of photographic principles and practice, geometry of terrestrial photography, and principles of nonphotographic remote sensing systems. Prereq: 12 or equivalent.

3470 Regional Geology of the United States (3) Evolution of various geologic provinces within the U.S. with emphasis on the integration of several types of geologic data. Prereq: completion of core courses in the major or equivalent.

3480 Economic Geology (4) Ore deposition with emphasis on economic geology and exploration. Prereq: 1030 and 4510. Three 2-hour lectures and 1 lab.

3490 Optical Mineralogy (4) Identification of minerals and determination of crystal-chemical parameters using petrographic microscope.

4000 Advanced Geology (4) Advanced geology, with emphasis on structure sections, stress-strain behavior of rock as a function of temperature and pressure. Three 2-hour lectures per week. Prereq: 4315, Math 1830, Physics 1330. Recommended: Math 2610 and 2820.

4100 Principles of Economic Geology (4) Ore-forming processes, classification of mineral deposits, survey of different types of mineral deposits with examples. Three 3-hour periods. Prereq: 1020 or 2610 or 2820. Three 3-hour lectures and 1 lab or field period. Prereq: 1020.

4110 Elementary Applied Geophysics (4) Basic principles of electrical, seismic, gravity, and magnetic surveys. Recommended: 1020, Physics 2220 or 2220. Three 3-hour lectures and 1 lab.


4200 Paleobotany (4) Principles of environmental analysis as applied to fossil assemblages and associated lithologies. Prereq: 3260 or consent of instructor. Three 3-hour periods and 1 lab.


4220 Paleoclimatology (4) Principles of environmental analysis as applied to fossil assemblages and associated lithologies. Prereq: 3260 or consent of instructor. Three 3-hour periods and 1 lab.

4230 Paleogeography (4) Principles of environmental analysis as applied to fossil assemblages and associated lithologies. Prereq: 3260 or consent of instructor. Three 3-hour periods and 1 lab.

4240 Paleobotany (4) Survey of fossil record of plants and particular emphasis on (1) comparative morphol- ogy and evolutionary trends in major plant groups and (2) chronological succession and geographic distribution of past floras on earth. Prereq: 1420 or 2521; Botany 3010-20 or consent of instructor. Three 3-hour periods and 1 lab or field period. (Same as Botany 4240.)

4250 Evolution of Higher Taxa (4) Discussion of current concepts in evolutionary theory in context of paleontological patterns of evolution in fossil organisms at family level or higher. Prereq: 3260. 3210-20 also recommended. Two 2-hour lectures.

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

4270 Micropaleontology (4) Survey of geologically stratigraphically important microfossils and their bio- logical association if known. Special emphasis is given fossil foraminifers, protists, and palynomorphs. Prereq: 3260 or consent of instructor.

4301 Introduction to X-Ray Methods (1) An introduction to the generation and nature of X-Ray as applied to X-Ray Diffraction, X-Ray Fluorescence and Electron Probe Analysis. 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.

4320 Introductory Environmental Geology (4) Application of the geological sciences toward a comprehension of the effects of geologic processes on humans and the effects of human activities on the earth's environment. Prereq: 1010-20-30. 3 lectures and one 2 hr. or field period.

4330 Regional Geology of the United States (3) Evolution of various geologic provinces within the U.S. with emphasis on the integration of several types of geologic data. Prereq: completion of core courses in the major or equivalent.

4331 Quaternary Geology of North America (4) Quaternary geology, stratigraphy, sedimentology, and geochronology of glaciated and unglaciated North America and oceans. Prereq: 1010 or consent of instructor. Two 2-hour lectures.

4332 Quaternary Paleoclimatology (4) Study of pollen and plant macrofossils of character vegetation and climate change during Quaternary. Prereq: Consent of instructor. Two 2-hour lectures.

4333 Quaternary Field and Lab Techniques (4) Techniques for environmental characterization and reconstructions, including pollen and plant macrofossil identification, description of site stratigraphy, and sedimentology. Prereq: 1010 or consent of instructor. Two 2 lectures and 2 labs.

4370 Tectonic Styles (4) The tectonic evolution of structures and their associations with metamorphism, plate motions, and structural assemblages as determined through case study examination of different orogenic belts. 3 lectures and 1 seminar or lab. Prereq: 3370 or consent of instructor.

4440 Field Geology (5) Five weeks' field course, first term summer quarter. Advanced undergraduates or first-year graduates in geology. Emphasis is given during entire time of students. Field techniques are demonstrated, prac- ticed and applied to the solution of geologic problems. Prereq: 12 or equivalent.

4600 Geologic Photography, Photogrammetry and Remote Sensing (4) Principles of terrestrial, air- borne, and aerial photography, including photographic principles and practice, geometry of terrestrial and aerial photography, and principles of nonphotographic remote sensing systems.

4610 Principles of Geomorphology (4) Gradational processes acting at earth's surface and landforms produced. Prereq: 1010-20-30. 3 hours and 1 lab.

4620 Process Geomorphology (4) Gradational processes operating on and near the earth's surface, applied geomorphology, and field work in geomorphology. Prereq: 1930 and 4510. Three 3-hour periods and 1 lab or field period.

4650 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 crystal chemistry and relation between basic atomic structure and distribution and behavior of elements in the earth's crust. Graduate Consent 1110-20 or equivalent required. Recommended: 3310.


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.
major in Russian shall consist of at least 45 hours of Russian courses, including Russian 3110-20-30: 2110-20-30: 9 hours from Russian 2210-20-30, 2270, 3220, 3221, 3240, 3250, 3260, 3280, 3281, or 3710-20; and 9 hours of courses numbered above 4000. It is recommended that majors also take History 3470 (if not taken in high school) or the equivalent. Majors are urged to consider a minor in some other area of the humanities.

Minor: Russian 2110-20-30 is a prerequisite to the minor. The minor itself consists of 21 hours of Russian courses, including 7 hours from Russian 3710-20 and/or 2210-20-30, 2270, 3220, 3240, 3250, 3260, 3280 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 Clerk, Room 212
Claxton Education Building.

German (433)

110-20-30 Elementary German (3,3,3) 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 and performance on the American College Testing Program. Upperclass students must have a B average. A grade of C or above must be secured at all times in order to continue with German 2518. A student obtaining a grade of D or better in 1518 may continue with German 1520. This sequence is equivalent to 1510-20 or 1110-20-30 and 2110-20-30 and it completion allows the student to enter all 3000-level German courses.
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-package course fulfills Divisional Distribution Requirement in the Humanities, Part 1 or (any two quarters fulfills the two-package requirement of Part 2 for students who choose philosophical perspectives for Part 1.)
3010-20-30 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.
3110-20-30 Introduction to German Literature (3,3,3) Prereq: 2130 or equivalent. Need not be taken in sequence.
3150 Readings in German (3) Selected topics in both literary and non-literary fields. Students or student groups are encouraged to suggest topics for future courses. May be repeated with approval of department. Maximum 6 credit hours.
3610-20-30 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 the third quarter, credit is to be determined by the history requirement with western civilization.
3620-30 Conversation and Composition (3,3,3) Prereq: 2130 or equivalent.

ADVANCED UNDERGRADUATE AND GRADUATE

4101 Foreign Study (1-16) See page 161.
4102 Off-Campus Study (1-16) See page 161.
4103 Independent Study (1-16) See page 161.
4110-20-30 Studies in Classical and Modern Writers (3,3,3) May be repeated for credit with consent of department. Prereq: 9 hours of 3000 courses (exclusive of 3010-20-30, or courses in English translation) or equivalent.
4140-50 Selected Topics in German Literature from 1750 to the Present (3,3,3) Prereq: 9 hours of 3000 courses (exclusive of 3010-20-30, or courses in English translation) or equivalent.
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.
4210-20-30 Studies in German Literary Types (3,3,3) 4210—Lyric poetry. 4220—Drama. 4230—Narrative prose. Prereq: 9 hours of 3000 courses (exclusive of 3010-20-30, 3210-20-30, 3310) or equivalent.
4250 Introduction to Descriptive Linguistics (3) (Same as Russian, French, Spanish, and Linguistics 4250.)
4260 Introduction to Historical and Comparative Linguistics (3) Linguistic change, proto-languages, phonological and morphological change, Cultural, historical, sociological influences upon the development of language. Semantic change. Lexicography. All 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, courses in literature in translation, and 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. An introduction to the study of the other Germanic languages.
4310-20 History of the German Language (3,3)
4810-20-30 Advanced Conversation and Composition (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 majoring 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, Frisch, Boll, Grass. No foreign language credit.
3310 Dramas of Bertolt Brecht (3-4) Chronological survey of Brecht's dramatic works and theoretical writings in English translation. No foreign language credit.
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 two advanced degrees. They are Master of Arts (M.A.) in German and Doctor of Philosophy (Ph.D.) in German Languages and Literatures. May be repeated for credit. Requirements for these degrees as well as course descriptions are in the Graduate Catalog.

Russian (886)

1110-20-30 Elementary Russian (4,4,4) Must be taken in sequence.
2110-20-30 Intermediate Russian (4,4,4) Must be taken in sequence.
2270 Russian Philosophical and Theological Thought (3) Survey of the development of philosophical and theological thought in Russia from the Middle Ages to the Revolution. Special emphasis on the expression of this thought in Russian literature and literary criticism. 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—Russian poetry. 3620—Russian short stories. 3630—Russian short novels. Prereq: 2130 or equivalent. Need not be taken in sequence.

ADVANCED UNDERGRADUATE AND GRADUATE

4010 Selected Topics in Russian and East Europe

See Classics.

Russian (886)

4101 Foreign Study (1-16) See page 161.
4103 Independent Study (1-16) See page 161.
4110-20-30 Studies in Major Russian Writers (3,3,3) Content varies. Puškin, Lermontov, Gogol, Turganov, Tolstoy. Doubtful in Russia 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.
4270 Introduction to Germanic Linguistics (3) The phonetics and phonemics of German. German grammar and the German vocabulary from a descriptive point of view. An introduction to the study of the other Germanic languages.
4310-20 History of the German Language (3,3)
4810-20-30 Advanced Conversation and Composition (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 majoring 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, Frisch, Boll, Grass. No foreign language credit.
3310 Dramas of Bertolt Brecht (3-4) Chronological survey of Brecht's dramatic works and theoretical writings in English translation. No foreign language credit.
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 two advanced degrees. They are Master of Arts (M.A.) in German and Doctor of Philosophy (Ph.D.) in German Languages and Literatures. May be repeated for credit. Requirements for these degrees as well as course descriptions are in the Graduate Catalog.
Honors Program: The Department of History offers honors sections of the Western Civilization and United States history survey course. Some entering transfers are invited to participate; other interested students may apply. These survey courses are open to non-majors. An honors major requires successful completion of three special courses and the junior-senior honors thesis (4018-4028). The honors major consists of 50 hours, including 41 hours as outlined above, plus 3008-38-45. All rising juniors may apply. Senior thesis writers 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.

American Studies. See Cultural Studies.
Asian Studies. See Cultural Studies.
Latin American Studies. See Cultural Studies.
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 1890. 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 Afro-American struggle for political, civil, and social equality; leaders of the struggle; their philosophies and programs, responses of Black community institutions to the challenges of the 20th century; the rise of the urban ghetto; the Civil Rights and Black Power movements.

2020 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, and political forces 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 the 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 international crises confronting the United States today in historical perspective. Emphasis varies to reflect recent developments in world affairs. Intended for non-history majors and may not be used to satisfy history major requirements. Consent of department required. 2510-20 History of the United States (4,4) Settlement to 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 Legislature requirements in American history, or for transfers who enter liberal arts with credits, but fewer than eight, in an American history sequence. 2511—Settlement to 1865. 2521—1865 to present. Prereq: Consent of department; prereq or coreq: 2510 or 2520. May not be taken as 1 hour elective. Will not be offered during summer sessions. F, W, S.

2515-25 United States History for International Students (4,5) 2515-Settlement to 1865. 2525—1865 to present. F, W.

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

3008 Honors: Introduction to Historical Analysis and Interpretation (3) Required of students working for honors in history.

3038 Honors: Philosophy and Methods (3) Principles and techniques of research and study of criticism and speculative philosophy of 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 underdevelopment, ideologies in conflict with non-Western world views, and the search for individual identity in circumstances of cultural disruption.

3051 Revolutions in Historical Perspective (3) Comparative study 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 development 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 the barbarian migrations, feudalism, state-making in England and France, the social and spiritual power of the church, the rise of cities, theBlack Death and the end of the Middle Ages.

3123 Early Modern Europe, 1450-1750 (3) The transition from medieval to modern society. Considers such topics as the Renaissance, Reformation, religious wars, and conflicts over the religious and cultural identity of the non-European world, population fluctuation, preindustrial economic growth, the rise of modern states, the Scientific Revolution, and the Enlightenment.

3124 Modern Europe, 1750-1900 (3) The political, industrial and intellectual revolutions against traditional society. Considers such topics as the modern European nation-state, the invention of the modern nation-state, the rise of the modern nation-state, the Scientific Revolution, and the Enlightenment.

3125 Contemporary Europe, 1900- Present (3) The transformation from industrial to post-industrial society and the decline of the European nation-state. Considers such topics as war and depression and consequent political and social instability; the Russian Revolution; Nazism, decolonization; the impact of Freud and Einstein; welfare states; European modernization.

3140-59-60 History of England (3,3,3) 3140—To 1688. 3150—1689 through Reform Bill of 1832. 3160—1832 to present. Medieval state, church, and society; origins of Anglo-American law, the monarchy and parliaments, the Reformation, 17th Century revolutions, commercial, agricultural and industrial revolutions; class conflict, empire, the welfare state, world wars, economic crisis.
Emphasis on such topics as Puritanism, the English Civil War, the Restoration, the Glorious Revolution, and on such figures as the Stuart kings, Oliver Cromwell, Milton, Hobbes, and Locke.

4551 Great Britain from Burke to Bright (1780-1849) (3)

4570 Twentieth-Century Britain (3) The emergence of the Welfare State, the political impact of the Labour movement, World War and Depression, chronic economic crisis, the persistence of class.

4610-20-30 The American Frontier and Westward Movement I, II, III (3.3.3) Settlement and development of the "frontier" throughout American history. 4910—From the Atlantic to the Mississippi. 4620-30—The Trans-Mississippi West.

4641-51 America: Mind, Mood and Society (3.3) Surveys social and cultural history and thought from mythology behind colonization to the major beliefs and values which form the foundation of present-day life in the United States. 4641—Colonial period to 1655. 4651—1855 to present.

4661 Studies in American Social and Cultural History and Thought (3) An intensive examination of specific themes, problems, or ideas.

4670 Cities and Urbanization in American History (4) Origins, growth, and influence of American cities in development of the nation, from colonial era to present. (Same as Urban Studies 4670).

4680 History of Knoxville (3) Knoxville, Tennessee as a historical case study to analyze the interplay of tradition and change in urban America in general and urban South in particular. Economic growth and development, population changes, and political, social, and cultural conflicts over issues connected with change and modernization.

4710-20 Medieval History (3,3) 4710—Age of Heroes, 500-1000. The pattern of early medieval heroism, its social and intellectual assumptions, the individuals who exemplify it, and the continuing harsh environment of the early Middle Ages. 4720—Age of Chivalry: 1000-1300. The emergence of chivalry—from the heroes of the feudal epics of the 11th century to the questing knight of the Crusades.

4741 Italian City-States, 1250-1500 (3) Evolution of urban civilization in northern and central Italy in medieval and Renaissance periods. Architectural and townscape forms studied in socioeconomic as well as cultural contexts. Florence is primary focus, but other major city-states are also included.

4770 Austria to 1850: Habsburgs and the Heartland (3) German and Catholic Austria's growth from a frontier land to a major European power, including its imperial mission, its relation to the Holy Roman Empire, and its neighbors and assertive nationalities. Also includes Maria Theresa, Metternich, unity versus diversity, and Vienna's cultural contributions.

4780 Austria Since 1848: Trials and Transformations (3) The search for identity during the drastic changes from a great multinational empire to a truncated republic, to an exploited Third Reich province, to an Allied occupation zone, and finally, to a free neutral nation at the crossroads of Europe.

4811-21 History of Japan (4,4)

4840 History of Mexico (3) (Same as Latin American Studies 4840).

4850 History of the Caribbean (3) Caribbean region from discovery and colonization to contemporary times. (Part IV of Latin American Studies 4850.)


4940 Local and Regional History (3) Investigates the history of the concept of regionalism, the applicability of regionalism, and an analysis and study of United States regional models. May not be taken for graduation credit. May not receive credit for both 4940 and 5940.

4950 The Afro-American Experience to 1865 (3) Examines the acculturation of blacks in early America, the legal, social, and cultural implications of slavery before the Civil War, and the related plight of free blacks in the context of the slave trade, the American Revolution, westward migration, and the genesis of sectionalism. (Same as Afro-American Studies 4950).

4960 The Afro-American Experience Since 1865 (3) Black attempts to realize the freedom and equality promised to them at the end of the Civil War are examined in the context of Reconstruction, the Harlem Renaissance, the Great Depression, two world wars, and the Civil Rights Movement. (Same as Afro-American Studies 4960.)

GRADUATE

A student who enrolls in the Graduate School with intention of obtaining an advanced degree in history shall have completed an undergraduate major in history or its equivalent.

General requirements for the Master of Arts and doctoral degrees as well as course descriptions are found in the Graduate Catalog.

Non-Departmental

Director: Dr. Harry Jacobson

The following courses are restricted to students who have been selected to participate. 1118-28-38 are for first-year students invited on the basis of test scores, high school averages, and where appropriate, on University of Tennessee entrance examination in the 2000-, 3000-, and 4000-level courses based on cumulative averages. At present students with an average of 3.25 or greater are eligible.

Honors (509)

3018-28-38 College Scholars Seminar (1,1,1) Sequence (in any order) limited to and required of all College Scholars each year. 3018—humanities, 3028—science and technology, 3038—society and history, 3048—arts, 3058—law and public policy. May be repeated. Maximum 12 hrs. S/JNC grading only.

4101 Honors: Foreign Study (1-16) See page 54 and Director of Special Programs. Primarily for College Scholar Students.

4102 Honors: Off-Campus Study (1-16) See page 54 and Director of Special Programs, Primarily for College Scholar Students.

4103 Honors: Independent Study (1-16) See page 54 and Director of Special Programs, Primarily for College Scholar Students.

4998 Honors: College Scholars Studies (2-16) Designed for College Scholars whose course load includes senior thesis, project, or performance. May be repeated for a total of 24 credit hours.

Human Services

Professor: R. F. Kronick (Head), Ph.D. Tennessee.

Associate Professor: P. A. McClain, Ph.D. South Carolina: M. R. Woodside, Ed.D. V.P.I. & S.U.

Assistant Professors: T. McIlwaine, Ph.D. South Carolina; J. D. McLean, Ph.D. Chicago.

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 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 or professional programs.

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, 3190, 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 and E.

3200 Peoples and Problems of Appalachia (4) Course designed to provide better understanding of Appalachian peoples, by exploring their life style and institutions from contemporary human services point of view. Special emphasis placed on political and economic structures of region. Recommended: Anthropology 4740.

3300 Thinking about People (4) Intended to facilitate development of logical, informed, and empathetic attitudes toward human beings—those providing services 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 filed no later than the first week of the quarter of enrollment. For additional information, see page 161.

4102 Off-Campus Study (1-16) Application filed no later than the first week of the quarter of enrollment. For additional information, see page 161.
later than the first week of the quarter prior to the quarter of enrollment. For additional information, see page 161.

4103 Independent 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 161.

4220 Human Services Methodologies (4) Introduction to some specific helping techniques essential to administration and delivery of human services. F, W, S. 1. Entrance deficiencies must be removed before attempting Math 1840. Students who do not meet the prerequisites must be taken for 8 hours Fall and Spring Quarters. Prereq: 4220, 4221. F, S.

4221 Human Service Methodologies II (4) A continuation of HS 4220 with emphasis on general helping skills essential to the administration and delivery of human services. Prereq: 4220. F, W, S.

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 instructor. 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 services settings. Designed to offer the student the opportunity to learn and develop specific helping skills and to become exposed and involved in the roles and 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, 4400. W, SU.

4401 Human Services Field Work II (8) Practical field experiences in appropriately organized and directed human services settings. Designed to offer the student the opportunity to learn and develop specific helping skills and to become exposed and involved in the roles and function 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.


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; C. E. Clark, Ph.D. Louisiana; R. E. Cline, Ph.D. Purdue; R. J. Daverman, Ph.D. Wisconsin; D. J. Desart, Ph.D. Maryland; D. E. Dobbs, Ph.D. Cornell; E. D. Hines (Emeritus), Ph.D. Texas; H. Frandsen, Ph.D. Illinois; J. A. George, Ph.D. Stanford; T. G. Hallam, Ph.D. Mississippi; B. G. Hinton, Ph.D. Tennessee; A. S. Householder (Emeritus), Ph.D. Chicago; L. A. Hsueh, Ph.D. Florida State; G. S. Jordan, Ph.D. Human Services; H. Brown; R. M. McConnell, Ph.D. Delta State; G. D. Miller (Emeritus), Ph.D. Michigan; B. Rajput, Ph.D. Illinois; K. C. Reddy, Ph.D. Technology; P. W. Schafer, Ph.D. Maryland; S. M. Serbin, Ph.D. Cornell; K. Soni, Ph.D. Oregon State; F. W. Stallman, Ph.D. General Motors; E. Wachsmuth, Ph.D. Rochester; D. P. Rensselaer Polytechnic Institute; W. R. Wade, Ph.D. California (Riverside); C. G. Wagner, Ph.D. Duke; J. J. Walsh, Ph.D. S. P. H. (Binghamton). Associate Professors: V. Alexides, Ph.D. Delaware; N. Alkisakos, Ph.D. Brown; D. F. Anderson, Ph.D. Chicago; V. A. Dogh, Ph.D. Harvard; J. Dyvik, Ph.D. Warsaw (Poland); S. I. Haranahal, Ph.D. Carnegie-Mellon; K. R. Kimble, Ph.D. Ohio State; Y. Kuo, Ph.D. Cincinnati; B. A. Kupersmith, Ph.D. Massachusetts Institute of Technology; J. Rosinski, Ph.D. Wroclaw University; W. H. Row Jr., Ph.D. Wisconsin; R. J. Rowlett, Ph.D. Virginia; J. Smith, Ph.D. California (Berkeley); G. A. Sod, Ph.D. California (Berkeley); R. P. Soni, Ph.D. Oregon State; H. Simpson, Ph.D. California Institute of Technology; K. R. Stephenson, Ph.D. Wisconsin; C. Sundberg, Ph.D. Wisconsin.

Assistant Professors: L. Beals, Ph.D. Cornell; L. Barker, Ph.D. Florida State; S. Eliner, Ph.D. Cornell; L. J. Gross, Ph.D. Cornell; O. Karakashian, Ph.D. Harvard; S. Lenhart, Ph.D. Kent, Ph.D. Michigan State; S. Mullay, Ph.D. Purdue; B. K. Soni, Ph.D. Texas; R. Sivrsky, Ph.D. Hopkins.

Instructors: C. G. Doss, M.A. Tennessee.

Mathematics Courses Offered for Freshman Students: In selecting their first mathematics courses, students should bear the following points in mind:

1. Entrance deficiencies must be removed before any of the courses carrying college credit can be taken. (It is acceptable to take 0150 at the same time a 1700 or 1840, but it is preferable to take trigonometry in high school.)

2. The department reserves the right to exclude or remove from its courses students who do not meet the prerequisites listed.

3. Fewer than half of the students presenting mathematics ACT scores below 16 are able to complete Math 1540 successfully. Such students should take 0120 (in the Evening School) before attempting 1540. Fewer than half of the students presenting mathematics ACT scores below 22 are able to complete Math 1700 successfully. Such students should complete 1540 before attempting 1700. Fewer than half of the students presenting mathematics ACT scores below 26 are able to complete Math 1840 successfully, such students should take 1700 before attempting 1840.

4. Due to course conditions in most freshman-level courses, it is usually not possible to change courses after the start of the quarter. Therefore, courses should be chosen carefully, with attention to degree requirements, prerequisites, and ACT scores.

5. Math 1550-60 does not substitute for 1840-50-60 in curricula requiring the latter, nor is 1550 an appropriate preparation for 1840. Students who need to take a course preparatory to 1840 should take 1700 (preceded by 1540 if necessary). Placement of Well-Prepared Students: Students in curricula requiring 1540-50-60 should skip 1540 and begin with 1550 if they have a mathematics ACT score of 24 or above and grades of A or B in high school Algebra II.

Students in curricula requiring 1840-50-60 are urged to consider taking the Honors sequence 1848-58-68 if they have mathematics ACT scores of 32 or higher, and a high school average of 3.0 or above.

Students who took calculus in high school may qualify for advanced placement in the 1840 sequence, and should consult an advisor in the Mathematics Department. Basic Skill Requirement for Liberal Arts Students: Many students are exempt from this requirement; see page 161 for a complete description. Either 1140 or 1700 can be taken to satisfy the requirement. Students who plan to take 1840 (or 1841 or 1842), and who must satisfy the requirement, need to take 1700, not 1140. Note that 1540 does not satisfy the requirement.

Credit Restrictions: No student who has earned a grade of C or better in any course numbered 1550 or higher may subsequently receive credit for 1140. No student who has earned a grade of C or better in 1550 may subsequently receive credit for 1540. No student who has earned a grade of C or better in 1550 may subsequently receive credit for 1540. No student who has earned a grade of C or better in 1550 may subsequently receive credit for 1540. No student who has earned a grade of C or better in 1550 may subsequently receive credit for 1540.

Honor Courses: The current practice of the department is to schedule 1848-58-68 and 2848-58-68 of 1840-50-60 and 2840-50-60 in sequence, fall-winter-spring, each year. In addition to these regularly offered honors courses, an honors version of any course in the department whose number has zero as the last digit may be offered in any quarter. In this case, the last digit will be changed to eight and the title will be preceded by the word "Honor," 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 121, about the possibility of taking a proficiency examination or CLEP examination for one or more courses from the calculus sequence 1840-50-60. If a satisfactory grade is made on the examination(s), credit will be awarded for the appropriate course(s).

The Mathematics Department also awards
credit on the basis of the Advanced Placement (AP) exams offered in some high schools. Further, students scoring 3 or 4 are awarded credit for Math 1840-50; those scoring 4 are awarded credit for Math 1848-58. For the calculus BC exam, students scoring 3 or 4 are awarded credit for Math 1841-51. Students scoring 5 are awarded credit for Math 1848-58-68.

**Advanced Mathematics Courses:** Include 3090 and all courses numbered 3140 or above, except 3220, 3510, and 3861.

- B.S. Major: Before beginning a mathematics major, a B.S. candidate must complete 1840-50-60 (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.
  4. Four additional hours of advanced mathematics courses as defined above.
  5. 4910 and 4940. (These two courses constitute a capstone experience for mathematics majors.)

**Honors Program:** Mathematics majors who fulfill the preceding five requirements may qualify for an honors degree if their program includes at least 27 hours of 4000-level mathematics courses (except 4710), at least 6 hours of which are honors courses (course numbers with final digit is 8). The grade point average, computed on the aforementioned 27 hours, will determine the honors category as follows: G.P.A. at least 3.4—Honors; G.P.A. at least 3.6—High Honors; G.P.A. at least 3.8—High Honors. Honors in Mathematics, respectively.

In exceptional cases, other courses of similar level may replace the six hours of honors courses.

Honors for an honors degree must apply to the Chair of the Departmental Honors Committee the quarter before they expect to graduate (in the spring, if graduation is to be in December). Their applications should list the courses comprising the required 27 hours, including the required honors courses, or proposed substitutions. Students with credit for more than 27 hours of qualifying courses may select 27 hours to be used in completing the B.S. Major in Mathematics. A G.P.A. which determines the honors category for which they qualify. A note of successful completion of honors program will be entered on the transcript.

**Minor:** Consists of 2840-50-60 (or 2848-58-68) and at least 12 hours of advanced mathematics courses, as defined under the heading, Advanced Mathematics Courses: Program Planning for Majors.

Mathematics majors have considerable freedom in determining how they will meet the requirements of the major. It 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. Programs are available to prepare students for:

a. for employment in business or industry, whether in numerical mathematics and computer science, operations research, probability and statistics, business and applied mathematics, actuarial science, or management science.

b. for graduate work, in pure mathematics, applied mathematics, computer science, operations research, or statistics;

c. for teaching, at the school or college level;

d. for careers in business, law, medicine, or any other areas requiring training in mathematics.

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.

0150 Trigonometry (0) Plane trigonometry with emphasis on identities and other analytic aspects used in calculus. The student who has been successful 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. Satisfies the Basic Skills Requirement in Mathematics for B.A./B.S. candidates in the College of Liberal Arts. No student who enters the University with a grade of C or better in any Mathematics course numbered 1550 or higher, may receive credit for 1140. Association requirements in mathematics must be removed before taking 1140.

1540 College Algebra (4) Sets, real and complex number systems, exponents and radicals, fundamental algebraic operations, theory of equations, polynomial inequalities, relations, functions, graphs. No student who has earned a grade of C or better in either 1550 or 1840 may subsequently receive credit for Math 1540. Prereq: Two years of high school algebra or one year of algebra and one year of geometry.

1550-60 Introductory Calculus—General Mathematics (4.4) 1550—Equations of straight lines, conics, derivatives of algebraic functions, applications of derivatives, maxima and minima, related rates, integration of algebraic functions, applications of integration. Prereq: 1540 or equivalent. 1560—Determinants, differentiation of linear equations and inequalities, Cramer’s Rule, linear programming, trigonometric functions, applications, arithmetic and geometric sequences, simple and compound interest, annuities, exponential and logarithmic functions, law of growth, applications. Prereq: 1550 or equivalent.

Note: No student who has received a grade of C or better in Mathematics 1550 may subsequently receive credit for Mathematics 1550.

Note: Students with an 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. Polynomial, 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 1700. Prereq: Two years of high school algebra and the equivalent of one-half year of trigonometry or taking Mathematics 0150 concurrently.

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, related rates, linear approximations, applications of derivatives, maxima and minima. Indeterminate infinite
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.

Medical Studies
See Cultural Studies.

Microbiology

Professors:
A. Brown (Head), Ph.D. Chicago; R. W. Beck, Ph.D. Wisconsin; J. M. Becker, Ph.D. Cincinnati; A. Brown (Head), Ph.D. Chicago; R. W. Beck, Ph.D. Wisconsin; J. M. Woodward (Emeritus), Ph.D. Kansas; D. B. Bemis, Ph.D. Cornell; D. A. Brian, Ph.D., D.V.M. Yale; B. T. Rouse, Ph.D. Guelph (Canada), B.V.Sc.

Associate Professors:
T. C. Montie, Ph.D. Maryland; W. S. Riggsby, Ph.D. Wisconsin; J. M. Becker, Ph.D. Cincinnati; A. Brown (Head), Ph.D. Chicago; R. W. Beck, Ph.D. Wisconsin.

Assistant Professors:
R. N. Moore, Ph.D. Texas-Austin; K. M. Sirotkin, Ph.D. Michigan State; G. Stacey, Ph.D. Texas-Austin.

Undergraduate
B.A. Major: Consists of Biology 3110, 3120, Biochemistry 4110, 4120, Microbiology 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 1540-50-60. Students intending to do postgraduate work should take a calculus sequence and Physics 2210-20-30.

Microbiology (684)

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 need for a preclinical science course in microbiology. Coreq: 2911 or 2919.

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, premedical and pre-veterinary medicine, food technology, food science, nutrition, or food systems administration. Others by consent of instructor. Students do not receive credit for 2919 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.


4101 Biology of Soil Microorganisms (4) (Same as Entomology and Plant Pathology 4010.)

4102 Off-Campus Study (1-16) See page 161. No more than 3 hours may be applied toward a major or minor in microbiology. May be repeated. Maximum credit 16 hours.

4102 Off-Campus Study (1-16) See page 161. No more than 3 hours may be applied toward a major or minor in microbiology. May be repeated. Maximum credit 16 hours.

4110 Physiology of Bacteria (3) Modern concepts of bacterial physiology and metabolism including cell structure and function. Prereq: 3700 and 12 hours of organic chemistry.

4112 Bacterial Physiology Laboratory (2) Prereq: 3519; coreq: 4110.

4120 Bacterial Diversity (3) An exploration of bacterial groups and the alternative strategies they have evolved with respect to physiology and metabolism. Prereq: One year of Organic Chemistry and Microbiology 3700, or consent of the instructor. Microbiology 4110 recommended.

4140 Molecular Genetics (3) Transmission and expression of genetic information at the molecular level. Emphasis is on bacterial and viral systems, but unique features of eukaryotic systems are included. Prereq: 3700 or consent of instructor.

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: 3700, one year organic chemistry, Biology 3130, or consent of instructor.

4159 Experimental Microbiological Ecology (3) Survey of techniques for assessment of microbial communities and their normal and abnormal functions. Prereq: 3700, 1 year of organic chemistry, Biology 3130, or consent of instructor.

4270 Immunology (3) Principles of inflammation and immunity, immune unobstructed structure and theories of formation, complement, hypersensitivities, cell cooperation in immune mechanisms, abnormalities of the immune system. Prereq: Biology 3120. (Same as Zoology 4270.)

4279 Advanced Immunology Laboratory (2) Laboratory exercises designed to accompany 4270. Prereq or coreq: 4270.

4320 Pathogenic Bacteriology (3) Disease producing microorganisms, including bacteria, rickettsias, 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, virology, 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 bacteriophage. Prereq: 3700.

4430 Medical Virology (3) General virology with emphasis on medical aspects. Prereq: 3700.

4439 Medical Virology Laboratory (2) Laboratory procedures for isolation, handling and culturing of animal viruses. Prereq: 3519; coreq: 4430.

4909 Laboratory Problems in Microbiology (2-6) Involvement in research program of a faculty member through independent study projects. Consent of individual faculty member required. May not be used as credit toward the major in microbiology. S/H/NC only. May be repeated. Maximum 12 credit hours.

4910 Seminar in Microbiology (1) May not be applied toward a major in microbiology. Prereq: Senior standing, consent of instructor. S/NC.

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

Medical Technology (669)

Courses in this major are open only to qualified students who have completed the first three years of the Science-Medical Technology Curriculum, described on page 154, and who have been approved by the Pre-Medical Advisory Committee.

4011-12 Microbiology (6,6) Laboratory work in bacteriology, mycology, and parasitology. Emphasis on pathogenic bacteria and fungi, their sources, methods of culture, techniques of identification, and evaluation of antibiotic sensitivity. Gross and qualitative chemical examination of feces and methods of identification of protozoa and helminths parasites of man.

4021-22 Clinical Chemistry (5,6) Clinical aspects of biochemistry, including overview of principles and instrumentation with emphasis on practical laboratory application of analytical procedures, specimen collection and handling, significance of results, and quality assurance. Includes blood gas analysis, including radioimmunossay, and analysis of blood and other body fluids for enzymes, hormones, and other substances of clinical interest, utilizing both automated and manual techniques.

4031-32 Hematology and Clinical Microscopy (5,6) Principles, theories, and instrumentation related to the qualitative and quantitative evaluation of cellular elements of blood and other body fluids; factors of hemostasis, quantitative chemical analysis of urine, and renal function studies. Emphasis is placed on microscopic identification of cells and the significance and correlation of laboratory data.


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

4050 Nuclear Medicine (1) Physical characteristics, detection and use of short half-life radioactive material. Emphasis placed on in vivo diagnostic medical uses and radiation safety.
Music (698)

Professors:
J. J. Meacham (Head), M.M. Northwestern; G. C. Blatz, M.M. Convers; J. P. Brock, M.M. Alabama; W. J. Carter (Emeritus), D.M.A. Eastman; J. Coker, M.A. San Houston; F. M. Combs, M.A. Missouri; G. F. DeVine (Emeritus), Diploma, Schurz (Chicago); W. J. Dorn, M.A. Columbia; H. W. Fred, Ph.D. (Card (Emeritus), M.M. Northwestern; C. R. Huber, Ph.D. North Carolina; D. M. Pederson, Ph.D. Iowa; W. J. Starr (Emeritus), M.M. Eastman; D. Van Vector (Emeritus), M.M. Northwestern.

Associate Professors:

Assistant Professors:

Instructors:
T. Guilt, M.M. Yale; C. F. Leach, M.M. New Mexico.

The Department of Music offers curricula leading to the Bachelor of Music degree, which is designed to prepare students for graduate study and for professional positions, and the Bachelor of Arts degree with a major and minor in Music, designed for those students 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 156.

B.A. Degree/Music Requirements:

<table>
<thead>
<tr>
<th>Prerequisites:</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music Theory 1111-21-31</td>
<td>9</td>
</tr>
<tr>
<td>Music Ear Training 1113-23-33</td>
<td>3</td>
</tr>
<tr>
<td>Applied Study (1060 level)</td>
<td>3</td>
</tr>
<tr>
<td>Courses toward the major</td>
<td>9</td>
</tr>
<tr>
<td>Music Theory 2111-21-31</td>
<td>9</td>
</tr>
<tr>
<td>Music History 2300-10-20-30-40</td>
<td>15</td>
</tr>
<tr>
<td>Applied Study (5400 level, above, maximum 2 hrs. per quarter)</td>
<td>9-12</td>
</tr>
<tr>
<td>Ensemble</td>
<td>3</td>
</tr>
<tr>
<td>Courses selected from Aesthetics of Music, 5400; Recital 3000; Independent Study 4100; 4200: Lecture recital 5054.</td>
<td>3-6</td>
</tr>
<tr>
<td>Electives</td>
<td>0-6</td>
</tr>
<tr>
<td>Solo class (required when taking 2 lessons per week)</td>
<td>0</td>
</tr>
</tbody>
</table>

(Prerequisites) +15
Total Hours: 50-66

Minor:

(a) Concentration in Applied Music—consists of 24 hours in courses numbered 2000 and above, distributed as follows: Music 2300, 12 hours in Music and 9 hours 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 hours in courses numbered 2000 and above, distributed as follows: Music 2300, 12 hours in Music History and Literature courses and 9 hours 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.

1010-30-30 Class Piano (1,1,1) Must be taken in sequence. Course may be waived by successful completion of Piano Competency Examination. Waived courses must be substituted with an equivalent number of quarters of study in Music 1580 or above.

1015 Class Voice (1) Development of basic vocal skills. May be repeated for credit.

1025 Class Voice (1) Prereq: Consent of instructor. May be repeated for credit.

1080 Studio Guitar Style (2) Introductory survey of guitar styles in jazz, rock, country, and blues idioms.

(Prerequisites) +15

Copyright Consent of instructor.

1085-55 Class Guitar (1,1,1) Must be taken in sequence. Prereq: Consent of instructor.

1416 Music Performance (3) An individualized course of study combining participation in a University musical ensemble with collaborative study of an instrument or voice. One hour of applied study (Music 1500-1950) and ensemble rehearsals as scheduled. (Music 3600-3699). May be repeated once for credit. Requires payment of Applied Music fee. For non-majors only.

1418 Performance (1) Prereq: Performance ability on an instrument or voice.

2000 Solo Class (0)

2010 Introduction to Musical Theatre Technology (3) Stage technology unique to lyrical stage.


2199 Techniques of Sound Recording (3) Theory and applications of tape recording. Topics include room acoustics, microphones, processing, noise reduction, editing, mixing, editing, and electronic maintenance.

2410-10-30 Jazz Piano (1,1,1) Harmonic language of jazz: interpretation of chord symbols, formule for voice chords, chord progressions, and fundamen- tal study of playing and improvisation for right hand. Must be taken in sequence. Prereq: 1010-20.

3000 Junior Recital (0)

3014-24 Woodwind Literature (2,2) Prereq: Consent of instructor.

3015 Percussion Literature (1) Prereq: Consent of instructor.

3016 String Literature (2) May be repeated. Maximum credit 6 hrs. Prereq: Consent of instructor.

3018 Introduction to Styles in Jazz Drumming (2) Examination and study of major composers and performers who have contributed significantly to creation of principal styles of jazz drumming.

302-53 Jazz Improvisation (3,3) Study and application of principles of improvisation, including nomenclature, chord progressions, chord-scales, patterns, melodic development, and free form devices. Prereq: 1141.

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

3070 Opera Production (1-3) Supervised work on opera productions. May be repeated for credit. Prereq: Consent of instructor.

3071-81-91 Church Service Playing II (1,1,1) Continuation of Music 2071-81-91, which is prereq.

3095 Women in Music (3) The history of women in music from the Middle Ages to present as composers, performers, educators and patrons. (Same as Women’s Studies 3095).


4000 Senior Recital (0)

4002 Suzuki Piano Method (2) Study of the psycholo- gy, procedures, and literature of the Suzuki piano method. Prereq: Consent of instructor.

4009-19-29 Talent Education Program of S. Suzuki (2,2,2) May be repeated. Maximum credit 12 hours. Prereq: Consent of instructor.

4100-20-30 Piano Techniques (1,1,1) Problems of piano playing: development of piano technique, style and interpretation; program building. Prereq: Consent of instructor.

4102-22-32 Principles of Vocal Pedagogy (1,1,1) Examination and evaluation of concepts and approach- es to teaching singing (past and present) and related teaching materials. Colleague laboratory experiences accompany the study. Prereq: Consent of instructor.

4036-37-38 Advanced Piano Literature (2,2,2) Piano music from preclassical period to present. Prereq: Consent of instructor.

4040 Special Topics in Pedagogy (1-3) Prereq: Consent of department head. May be repeated. Maximum 6 credit hours.

4041 Styles in Opera Acting (3) Study and practice of styles in opera acting based on historical and nation- al characteristics. Prereq: 3015 or consent of instructor.

4045 Projects in Opera Theatre (1-3) May be repeated for credit. Prereq: Consent of instructor.

4046-47-48 Song Literature (2,2,2) Study of literature from 1750 to present including performance. Prereq: Consent of instructor.

4050 Advanced Instrumental Conducting (3) Devel- opment of knowledge and skills in instrumental conducting; study of various periods and composers and relationship of different styles to the conductor’s
art; musical analysis and practice in conducting. Prereq: Music Ed. 4430 or equivalent.
4056-56-57 Elementary and Intermediate Piano Pedagogy (2,2,2) Examination and study of piano methods and materials designed for teaching precollege level students. Prereq: Consent of instructor.
4060 Advanced Choral Conducting I (3) Development of refinement of conducting techniques; including chant and changing meters. Prereq: Music Ed. 4510 or equivalent.
4074 Music in Christian Worship (3) History and philosophy of church music; liturgies and liturgical music; music in non-liturgical worship. Prereq: Consent of instructor.
4084 Church Music Methods and Administration (3) Prereq: Consent of instructor.
4085 Harpsichord Techniques (1) Technique, literature, performance practice, continuo playing, and supervised laboratory experience in rehearsing university ensembles: special conducting techniques, repertoire, and music systems. Prereq: Consent of instructor.
4091 Special Topics in Performance (1-3) Prereq: Consent of department head. May be repeated. Maximum credit 6 hours.
4174 Hymnology (3) A survey of Christian hymns from Biblical times to the present.
4200 Independent Study in Music History and Literature (1-3) May be repeated for credit. Prereq: Consent of department head.
4201 Foreign Study (1-16) See page 161.
4113 Pedagogy of Music Theory (3) Techniques, methods and materials involved in college-level theory programs. Prereq: Consent of instructor.
4117 Choral Arranging (3) Analysis of scores and writing of arrangements for men's, women's and mixed choruses. Prereq: 3112 or consent of instructor.
4124 Marching Band Arranging (3) Study and application of techniques employed in scoring for marching band. Prereq: 3112 or equivalent.
4134 Concert Band Arranging (3) Study and application of techniques employed in scoring for concert band. Prereq: 3112 or equivalent.
4150 Survey of Music Theory (3) Theory of music with emphasis on harmonic practice of Baroque, Classic, and Romantic periods. Exercises in writing and analysis. Recommended as a review course for graduate students. Prereq: Consent of instructor.
4542 Composition for Media (1-3) May be repeated for credit. Maximum 6 credit hours. Prereq: Consent of instructor.
4800 Advanced Improvisation (2) Emphasis on further development of individual skills and solving individual problems in jazz improvisation. Prereq: Music 3052-53.
4850 Jazz Composition (2) Prereq: Consent of instructor.
4870-75 StageBand Arranging (2,2) Analysis of scores and scoring for the stage band. Prereq: 3112 and 4850 and consent of instructor. Must be taken in sequence.
4214 Marching Band Arranging (3) Study and application of techniques employed in scoring for marching band. Prereq: 3112 or equivalent.
4215 History of Rock (3) Study and appreciation of rock, its origins in blues and rock and roll, and its relationship with other popular musics-country, gospel, jazz, and folk.
4230 Introduction to Music Literature (3) Acquaintance with the development of music and masterworks through chronological approach. For non-music majors. Prereq: 1210 for 1220 or consent of instructor.
4231 History of Rock (3) Study and appreciation of rock, its origins in blues and rock and roll, and its relationship with other popular musics-country, gospel, jazz, and folk.
4230-40 History of Music (3,3,3) 2310—1600. 2320—1600-1800. 2330—1800-1900. 2340—1900 to present. Requires musical background. Prereq: Consent of instructor.
4232 Orientation in Music: Music for the Theatre (3) Study of selected, representative music composed for Broadway stage, films, operaettas, and opera. Prereq: 1210 or consent of instructor.
4240 The Symphony (2) Survey of symphonic literature from precursors of classical symphony to present.
3112 Instrumentation (3) Basic techniques in scoring for voices, brass, woodwind, and string choirs; and percussion. Prereq: 2131.
3113 Analysis I (3) Study and practice in analysis of structures of music from smallest structural units to large compound forms. Emphasis on macroanalytic techniques. Prereq: 2131.
3121 Tonal Counterpoint (3) Contrapuntal techniques of 18th century with emphasis on works of J. S. Bach. Prereq: 2131.
3122 Orchestration (3) Advanced techniques in instrumental writing with emphasis on scoring for the concert orchestra. Prereq: 3112 or consent of instructor.
3123 Analysis II (3) Continuation of Analysis I with emphasis on micro and linear analytic techniques. Prereq: 3113.
3131 Fugue (3) Contrapuntal techniques of 18th century with emphasis on the fugal works of J. S. Bach. Prereq: 3121.
400 Independent Study in Music Theory (1-3) May be repeated for credit. Prereq: Consent of department head.
4101 Foreign Study (1-16) See page 161.
4113 Pedagogy of Music Theory (3) Techniques, methods and materials involved in college-level theory programs. Prereq: Consent of instructor.
4117 Choral Arranging (3) Analysis of scores and writing of arrangements for men's, women's and mixed choruses. Prereq: 3112 or consent of instructor.
4124 Marching Band Arranging (3) Study and application of techniques employed in scoring for marching band. Prereq: 3112 or equivalent.
4134 Concert Band Arranging (3) Study and application of techniques employed in scoring for concert band. Prereq: 3112 or equivalent.
4150 Survey of Music Theory (3) Theory of music with emphasis on harmonic practice of Baroque, Classic, and Romantic periods. Exercises in writing and analysis. 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.
4280 The Mass to 1600 (3) Brief consideration of development and development of liturgy of the Mass and its equivalent in class instruction . Applied credit. May not be received for both 3361-71 and 5361-71.
4281-85 World Music (3,3) Attitudes and techniques of world music. Study of music cultures throughout the world: Africa, Asia, Middle East, Near East, and Latin America. Credit may not be received for both 3361-71 and 5361-71.
3950 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 music for harpsichord and other keyboard instruments from the Elizabethan period through J. S. Bach.
4200 Independent Study in Music History and Literature (1-3) May be repeated for credit. Prereq: Consent of department head.
4205 Survey of Music History (3) History of music with emphasis on genres, style changes, and cultural forces. Covers the Western European tradition from 400 to 1900. Recommended as a review course for graduate students. Prereq: Consent of instructor.
4214 Marching Band Arranging (3) Study and application of techniques employed in scoring for marching band. Prereq: 3112 or equivalent.
4215 History of Rock (3) Study and appreciation of rock, its origins in blues and rock and roll, and its relationship with other popular musics-country, gospel, jazz, and folk.
4230 Introduction to Music Literature (3) Acquaintance with the development of music and masterworks through chronological approach. For non-music majors. Prereq: 1210 for 1220 or consent of instructor.
4231 History of Rock (3) Study and appreciation of rock, its origins in blues and rock and roll, and its relationship with other popular musics-country, gospel, jazz, and folk.
4230-40 History of Music (3,3,3) 2310—1600. 2320—1600-1800. 2330—1800-1900. 2340—1900 to present. Requires musical background. Prereq: Consent of instructor.
4232 Orientation in Music: Music for the Theatre (3) Study of selected, representative music composed for Broadway stage, films, operaettas, and opera. Prereq: 1210 or consent of instructor.
4240 The Symphony (2) Survey of symphonic literature from precursors of classical symphony to present.
3271-81 History of Opera (3,3) Dramatic, vocal, and orchestral elements in opera of Italian, French, and German School. 3271—1600-1800. 3281—1800-present.
3340 Oratorio (3) Choral works other than those appropriate for use in church.
3350 Introduction to Afro-American Music (3) History of African music, blues, gospel music, and jazz with emphasis on Black artists and their contributions.
3361-71 Ethnomusicology (3,3) Attitudes and techniques of ethnomusicology. Survey of music cultures throughout the world: Africa, Asia, Middle East, Near East, and Latin America. Credit may not be received for both 3361-71 and 3361-71.

Music/College of Liberal Arts 195
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: $30 per quarter for half-hour lesson (1 credit hour) $60 per quarter for hour lesson (2-4 credit hours)

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

Applied music 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.
1560-2560-3560-4560-5560 Violin (1-4) May be repeated for credit.
1565-2565-3565-4565-5565 Viola (1-4) May be repeated for credit.
1570-2570-3570-4570-5570 Cello (1-4) May be repeated for credit.
1575-2575-3575-4575-5575 String Bass (1-4) May be repeated for credit.
1577-2577-3577-4577-5577 Electric Bass (1-4) May be repeated for credit.

1580-2580-3580-4580-5580 Piano (1-4) May be repeated for credit.
1585-2585-3585-4585-5585 Harpsichord (1-4) May be repeated for credit.
1590-2590-3590-4590-5590 Organ (1-4) May be repeated for credit.
1595-2595-3595-4595-5595 Guitar (1-4) May be repeated for credit.
2599-3599-4599-5599 Composition (1-3,1-3,1-3,1-3) May be repeated for credit. Prereq: Consent of instructor.
3597-4597-5597 Composition with Electronic Media (1-3,1-3,1-3,1-3) 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 Choir, Chamber Singers, University Chorus, Women's Chorale. 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 Chamber Music Ensemble (1,1) May be repeated for credit. Maximum 12 credit hours.
3601-5601 Woodwind Choir (1,1) May be repeated for credit.
3602-5602 Brass Choir (1,1) May be repeated for credit.
3603-5603 Small Jazz Ensembles (1,1) May be repeated for credit. Maximum 12 credit hours.
3604-5604 Jazz Ensemble (1,1) May be repeated for credit.
3605-5605 Studio Orchestra (1) May be repeated. Maximum 12 credit hours.
3606-5606 Trombone Choir (1,1) May be repeated for credit.
3607-5607 Tube 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.
3612-5612 Baroque Ensemble (1,1) May be repeated for credit.
3620-5620 UT Singers (1,1) May be repeated for credit.
3630-5630 Chamber Singers (1,1) May be repeated for credit.
3632-5632 Collegium (1,1) May be repeated for credit.
3634-5634 Saxophone Choir (1,1) May be repeated for credit.
3640-5640 Opera Theatre (1,1) May be repeated for credit.
3642-5642 Opera Workshop (1,1) May be repeated for credit.
3650-5650 Concert Band (1,1) May be repeated for credit.
3652-5652 Campus Band (1,1) May be repeated for credit.
3654-5654 Varsity Band (1,1) May be repeated for credit.
3656-5656 Laboratory Band (1,1) May be repeated for credit.
3657-5657 Marching Band (1,1) May be repeated for credit.
3670-5670 Symphony Orchestra (1,1) May be repeated for credit.
3672 Chamber Orchestra (1) Coreq: Registration in University Symphony. May be repeated.
3680-5680 Concert Choir (1,1) May be repeated for credit.
3682-5682 University Chorus (1,1) May be repeated for credit.
3687-5687 Women's Chorale (1,1) May be repeated for credit.
3699-5699 Accompanying (1,1) May be repeated for credit.

GRADUATE

The Department of Music offers the Master of Music degree in performance, composition, music theory, choral conducting, instrumental conducting, string pedagogy, and the Master of Arts degree in musicology and music theory. See the Graduate Catalog for admission and degree requirements, and for graduate course listings.

Organizational Psychology Program
See Graduate School.

Philosophy (745)

Professors:
J. W. Davis (Head), Ph.D. Emory; R. E. Aquila, Ph.D. Northwestern; G. G. Brenchert, Ph.D. Michigan; L. B. Gebiel, Ph.D. Nebraska; B. B. Edwards, Ph.D. Emory; G. C. Graber, Ph.D. Michigan; B. C. Postow, Ph.D. Yale; D. Van de Vate, Ph.D. Yale.

Associate Professors:
J. O. Bennett, Ph.D. Tuane; S. M. Cohen, Ph.D. Northwestern; K. A. Emmert, Ph.D. Ohio State; J. E. Nott, Ph.D. Ohio State; M. L. Osborne, Ph.D. Tennessee

Assistant Professors:
D. R. Cumminskey, Ph.D. Michigan; H. P. Harlin, Ph.D. Georgie; E. R. Jones III, Ph.D. Chicago; M. Lavin, Ph.D. Stanford.

Philosophy seeks to understand humans, the world, their relations. It involves (1) use of logical and scientific methods, (2) appreciation of all values, (3) history of ideas, (4) philosophical systems.

Philosophy is an appropriate major for students wishing a broad education and 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: Majors' programs must include: 1. at least one prerequisite course in logic, normally 1710 or 1810; 2. at least one course in ethical theory, either 2310 or 4310; 3. at least three courses in the history of philosophy, including at least one course in ancient philosophy, normally 3111, and at least one course in modern philosophy, normally 3131. Majors' programs must include 36 hours in courses numbered 2000 and above. Majors should discuss their programs with a member of the Philosophy faculty.

1510 Introduction to Philosophy: Human Nature and Values (4) E.

1511 The Human Condition: Value and Reality (4) The meaning of life, the existence of God, freedom of the will, human nature and value.

1520 Introduction to Philosophy: Consciousness and Reality (4) May be taken before 1510.

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 Empiricist thought, Nineteenth Century and early Twentieth Century philosophy. May be taken before 1611.

1710 Informal Reasoning (4) Arguments, informal fallacies, uses 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.

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.

2520 Elementary Logic (4) Inductive reasoning, elements of scientific method, and statistical inference.

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) E.

3131 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.

3320 Philosophy of Law (4) Nature, sources, function of law.

3330 Philosophy of History (4) Speculative and critical aspects of philosophy of history.

3410 Philosophical ideas in Literature (4) Philosophic 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 woman 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.)

3440 Ethics and Society (4) Moral issues of U.S. social policy; abortion, euthanasia, death penalty, reverse discrimination.

3510 Existentialism (4)

3550 Marxism as Philosophy (4)

3570 Philosophical Foundations of Democratic Society (4) Problems of political theory relating to nature and justice, and justification of the central values, principles, and concepts of democratic society.

3580 War and Morality (4) The moral justification for war; legal and moral constraints in war.

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) 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. 3605—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 experiment, 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, 3750—the development and decline of Newtonianism: 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, the nature of laws and theories, problem of induction, explanation, measurement. No background in logic is presupposed.

3810 Symbolic Logic (4) Techniques for formal analysis of deductive reasoning (propositional logic and quantification theory). Prereq: 1810 or 2510 or consent of instructor.

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 161.

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

4103 Independent Study (1-16) See page 161.

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.)

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

4370 Theoretical Issues in Medical Ethics (4) 4370—Prereq: 2310 or 3611 or consent of instructor. (Same as Religious Studies 4370.)

4410 Plato (4) Prereq: 8 hours of philosophy or consent of instructor.

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

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

4460 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.

4620 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.

4630 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: 2310 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 Contemporary Metaphysics and Epistemology (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,

*Math 2840 is a prerequisite for these courses.
Astronomy (150)

1510-20-30 Introductory Astronomy (4,4,4)  An introductory survey of composition, structure and dynamics of the universe. Members and components of solar system are introduced and discussed, incorporating results from space exploration. Stellar evolution is treated as a chain of events. Characteristics of galaxies are examined and evolution of universe is viewed in light of modern astrophysics. May be taken in sequence unless instructor consents otherwise. 4 hrs. lecture/demonstration. Only one of three sequences Astronomy 1510-20-30, 1610-20-30, 2118-28-38 may be taken for credit.

1610-20-30 Introductory Astronomy with Laboratory (4,4,4)  An introductory course, with accompanying laboratory, covering structure and dynamics of the universe. Problems and components of the solar system are introduced and discussed, incorporating results from interplanetary exploration. Stellar evolution is treated as a chain of events. Characteristics of galaxies and evolution of the universe are examined. Prerequisites for this course are introductory study of physics. 3 hrs. lecture/demonstration, 3 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 and astrophysics. Components of solar system are described from viewpoints of interplanetary exploration. Evolution and properties of stars are studied. Galactic structure is examined and models of universe are discussed. Observational techniques and modern astrophysical 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.

4110-20-30 Astrophysics (3,3,3)  Physics of stars and interstellar matter, planets and interplanetary matter; atmospheres, interiors, and evolution; nebulae, quasars, pulsars, etc. Observational data and their determination. Current developments. Approach will be interdisciplinary. Acceptable for major credit in physics. Prereq: Physics 2330 and consent of instructor.

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 physics 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 page 122 and described on page 128, 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 2840-50-60, Physics 2318-28-38, 3110-20 (Mechanics), 3230 (Thermodynamics), 4310-20 (Electricity and Magnetism), 4110-20-30 (Quantum Mechanics), at least six hours of physics electives from 3130, 4340, 4140, 4160, 4250, 4650, 4660-70, and at least six hours of physics lab electives from 3610-20, 4230-40, 4510-20, 4540-50. Physics 4010-20 may be taken to satisfy the upper-level distribution requirement for a capstone experience.

Physics 1310-20-30 and Basic Engineering 1310-20-30 may be substituted for 1318-28-38. Transfer students from other schools and departments with equivalent courses 2510 Intro 1310-20 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 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 who have no particular physics background or for students majoring in one of the biological sciences or medicine. Concepts of physics are developed by observation of phenomena and logic, using a minimum of complex mathematics. Topics include: the nature of matter and motion, effect of forces on mechanical systems, use of conservation laws to solve physical problems, applications of quantum mechanics to life in modern society, 1220—Electricity and magnetism, wave phenomena including sound and light, with applications to current technologies, 1232—The Physics of the Twentieth Century: microscopic systems including atoms, molecules, nuclei and applications such as lasers and energy technologies; also physics of particles moving at extremely high speeds. Should be taken in sequence. 4 hrs. lecture and demonstration.

1310-20-30 Fundamentals of Physics: Mechanics and Heat (4,4,4)  First course in physics for engineers and liberal arts majors in mathematics and the physical sciences. Basic Engineering 1310-20-30 is equivalent for graduation purposes. Must be taken in sequence. Coreq: Math 1549-50-60. 3 hours of lecture, 2 hours of lab.

1318-28-38 Honors: Fundamentals of Physics: Mechanics and Heat (4,4,4)  Honors course designed for physics and engineering physics majors and for qualified students from other disciplines. Coreq: Math 1640-50-60. 3 hours of lecture, 2 hours of lab.

1410-30-30 Nature of the Physical World (4,4,4)  An 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 treated and applied to such varied fields as solar systems, atomic and molecular behavior, radiation, dynamic changes in the atmosphere and in the earth's crust, and to stellar and galactic phenomena. In the third term these principles are applied in more detail to such topics as nuclear energy, cosmology, atmospheric and oceanic phenomena, drilling concepts, and science and society. May be taken out of sequence only with consent of instructor. 4 hours including demonstration lab.

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, particularly sports-related. Course topics include statics, equilibrium, linear and angular momentum, force, work, and energy. 4 hours lecture and demonstration.

1610 Physics of Music (4)  Production, transmission, and reception of sound. Interrelationships of frequency, intensity, time, and amplitude. 4 hours lecture and demonstration.

2210-30-30 Elements of Physics (4,4,4) 2210—Mechanics, properties of matter, heat, 2220—Electricity and magnetism, sound waves. 2230—Optics, atomic and nuclear physics, radiation protection. Basic physical principles and applications required in pre-medical, pre-dental, pre-pharmacy, and pre-veterinary programs. Must be taken in sequence. Coreq: Math 1550-60 or Math 1840-50 (or equivalent honors courses). 3 hours of lecture and 3 hours of lab.

2240-50-50 Elements of Physics for Architects (4,4,4)  Basic physical principles with emphasis on architectural applications. 2240—Statics, dynamics, principles of mechanics; coreq: Math 1840 or 1550, 2250—Properties of fluids, heat and thermodynamics, wave and acoustic phenomena, optics; coreq: Math 1850 or 1660. 2270—Physics of the twentieth century: electricity, magnetism, alternative energy topics. Should be taken in sequence. 3 hrs. lecture, 3 hrs. lab.

properties of nuclei, two-nucleon systems, nuclear forces, or equivalent, Math 4550.

Introduction to fundamental principles of quantum mechanics. Prereq: 3710-20-30 Introduction to Quantum Mechanics (3,3,3) grade of C or better in Physics 4010-20 may subse-
cquent study. Prereq: Math 2860. 3 hrs. of lecture-discussion, 2 hrs. lab.

2510 Mechanics (5) Statics, kinematics, Newton's laws, momentum, energy, rotation. 4 hour of lecture-

or 4-hour laboratory-problem sessions. Prereq: Math 1840-50 or equivalent. 2510 satisfies prereq for Physics 2310, although physics major should also take Physics 1330 as a prereq to the major.


3230 Heat and Thermodynamics (3) Concepts of tempera-
ture and heat; laws of thermodynamics; applications of laws to simple physical and chemical problems. Prereq: 2320 or 2330 and calculus; 3110-20 or instruc-
tor's consent.

3610 Electronics (3,3) Electronic components and circuits of interest to physicists. Prereq: 2310-20-30 or 2210-20-30 and calculus. 3 labs.

3630 Nuclear Electronics Laboratory (3) Elementary circuits of interest to nuclear instrumentation are designed and built, and their characteristics are tested as a function of various parameters. Prereq: 3610-20.

3710-20-30 Introduction to Atomic and Nuclear Physics (3,3,3) 3710—Special relativity and early quantum theory; 3720—Atomic nuclear physics; 3730—Nuclear physics. Prereq: Math 2860 and Physics 2320 for 3710; Math 2330 or 3710 for 3720-30.

3990 Junior Seminar (1-3) Topic of current interest. May be repeated for credit with consent of depart-

4010 Background of Physics (2) Survey of historical development and philosophical foundations of natu-

ral science. Classical theories of gravitation, electromagnetism, and relativity. Unifying mathemati-
cal principles underlying physical applications. Assignments will include readings from important origi-
nal papers. Thought—provoking problems and order-
of-magnitude calculations combining different fields of classical physics, and written report on some inde-
pendent study. Prereq: Senior standing in physics or consent of instructor.

4020 Forefront of Physics (3) Survey of modern develop-
ments in physics, including various forms of quantum mechanics and relativity, recent research and recent the-
tories of particles, fields and their interactions. Discussions of unsolved questions in physics, experiments of cur-
rent interest, recent literature, and applications in other fields, with final oral report and term paper. Prereq: 4010 or consent of instructor.

4050 Foundations of Physics (3) Selected topics from history and philosophy of classical and modern phys-
ics. Prereq: One year of general physics and consent of instructor. NOTE: No student who has received a grade of C or better in Physics 4010-20 may subse-
quently receive credit for Physics 4050.


4140 Elementary Nuclear Physics (3) General prop-
erties of nuclei, two-nucleon systems, nuclear forces, nuclear models, nuclear reactions, nuclear disinte-
grations and beta-decay, nuclear spin and magnetism. Prereq: 3730 or 4120.

4160 Physical Acoustics (4) Considerations funda-
mentally detailed investigation of any branch of acoustics; propagation of acoustic waves in the intra-
sonic, the audible, the ultrasonic, and the hyperasonic ranges of frequencies. 3 hours and 1 lab. Prereq: 3110-20, 3230.

4250-4 Modern Optics (4,4) 4250-1-Optical geometrics: reflection and transmission of light at a dielectric inter-
face; paraxial theory of interfaces, lenses, and mirrors; thick lenses, lens systems, ray tracing; polarization; imagery; lateral magnification. 4250-2—Physical optics: mating of wave motion, superposition of waves; interference; Fraunhofer and Fresnel diffraction; Fou-
rier optics, holography. Prereq: 3310 or consent of instructor. 3 hours of lecture and 3 hours of lab.

4310-20-30 Electricity and Magnetism (3,3,3) 4310— Electrostatics in vacuum and material media. 4320— Magneticst, coupled electric and magnetic fields. 4330— Maxwell's equations, electromagnetic waves. Must be taken in sequence. Prereq: 2320 and Math 2860.

4510-30-30 Atomic Physics Laboratory (3,3,3) Exper-
inments in fundamental particle properties, photoelectricity, conduction of electricity through gases, atomic and molecular spectroscopy, X-ray. Prereq or coreq: 3710-20-
30. 3 labs.

4540-50 Experimental Nuclear and Radiation Phys-
ics (4,4) Interaction of charged particles and electromagnetic radiation with matter; theory and char-
acteristics of various detectors; statistics of counting, nuclear properties. Experiments illustrate recent tech-
niques for investigating the nucleus and nuclear radiation. 1 lab of lecture, 6 hours of lab. Prereq: 2330.

4580 Principles of Non-Destructive Testing (3) Detec-
tion and characterization of discontinuities in materials by non-destructive physical measurements. Ultrason-
ic, electromagnetic, holographic, and penetrating radiation techniques. Prereq: 3120-20-30 or consent of instructor. (Same as Engineering Science and Mechan-
sics 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. Prereq: 3320 or equiv-
alent. (Same as Eng. Sci. and Mech. 4590.)

4640 Kinetic Theory (3) Emphasis is placed on transport properties. Includes discussion of scattering theory and the classical distribution functions. Prereq: 3230 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. Prereq: 3230.

4660-70 Solid State Physics (3,3) 4660—Symmetry and crystal structure, lattice dynamical specific heat. 4670— Electron band theory, transport properties, optical prop-
erties. Must be taken in sequence. Prereq: 3230 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, neu-
ton activation, interaction of charged particles with matter, stopping power, range-energy relations, count-

4810-28-38-58-68-78-88-98 Honors: Research and Independent Study (1 hour each) Designed for excel-
lent undergraduate majors. Provides opportunity for research and independent study with faculty guid-
ance. Special consent of department required. Maximum credit 5 hours.

4990 Senior Seminar (1-3) Topic of current interest. May be repeated for credit with consent of depart-
ment.

GRADUATE General requirements for the master's degree and doctoral program as well as course descriptions are found in the Graduate Catalog.
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 160.

American Studies. See Cultural Studies.

Asian Studies. See Cultural Studies.

Latin American Studies. See Cultural Studies.

Russian and East European Studies. See Cultural Studies.

2020 Introduction to Political Science (4) A variety of the basic substantive concepts and concerns of political science.

2510-20 United States Government and Politics (4,4) 
2510—Foundations: the Constitution, federalism, separation of powers, campaigns and elections, parties, interest groups, the media, public opinion. 2520—Institutions: executive, legislative, judiciary, and bureaucracy at national, state, and local levels.

2518-28 Honors United States Government and Politics (4,4) Honors course designed for students of superior scholarship and interest. Entrance into 2518 requires a B average; selected entering freshmen will be accepted on the basis of placement scores and high school record. A grade of B in 2518 is necessary for entrance into 2528.

2530 Tennessee Government and Politics (4)

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.

3130 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.

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.

3545 United States Constitutional Law: Sources of Power and Restraint (4) Analysis of judicial review, constitutional powers of President and Congress, federalism, sources of regulatory authority, and constitutional protection of political rights. 2510-20 desirable as preceding courses.

4101 Foreign Study (1-16) See page 161.

4918-28-38 Senior Honors Thesis and Seminar (0-6) Required of honors majors; admission with consent of Department. Maximum credit 12 hours.

4927-4928-4938 Honors Senior Thesis and Seminar (4-6) Same as preceding courses.

4975 Special Topics in Comparative Government and Politics (4) May be repeated for a maximum credit of 8 hours with consent of department.

4976 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.

4730 Contemporary Diplomatic and Military Problems (4) Analysis of current international events.

4736 Contemporary Problems of Soviet Foreign Policy (4)

4711 International Law (4)

4727 Politics of Inter-American Relations (4) Analysis of selected theoretical and political issues concerning international relations in the Americas with emphasis upon imperialism, intervention, and the Cuban revolution, nationalism, foreign assistance, trade, and economic integration.

4729 International Relations (4) Focused on interaction within federal bureaucracy and roles of the President, Congress, the press, and public opinion.

Political Theory and Methodology

3890 Introduction to Political Analysis (4) Introduction to nature, character, and functions of research design, data collection, and statistical techniques used in study of politics.

3801 Studies in Ancient Political Thought (4) Classical Greek and Roman political thought.

3802 Studies in Medieval Political Thought (4) From Augustine to Luther: Emphasis on problems and theories of religion and politics.

3803 Studies in Early Modern Political Thought (4) Machiavelli through the Enlightenment.

3804 Studies in 19th- and 20th-Century Political Thought (4) Political theories of industrial and technological societies; 19th and 20th century.

4831-32 The Systematic Study of Politics (4,4) Scope, methods, and procedures of analysis in political science; intended primarily for seniors intending to pursue graduate work and entering graduate students who have not had such a course.

Other

3918-28-38 Junior Honors Seminar (4,4,4) Required of honors majors; admission with consent of Department.

4101 Foreign Study (1-16) See page 161.

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

4103 Independent Study (1-16) See page 161.

4928-38 Senior Honors Thesis and Seminar (0-12) Required of honors majors; admission with consent of Department. Maximum credit 12 hours.

GRADUATE

General requirements for the master's degree and doctoral degree as well as
2520 Biological Foundations of Behavior (3) Survey of theories and research pertaining to the biological foundations of behavior. Psychology 2500 recommended. E.

2530 Psychology as a Social Science (3) Introduction to individual behavior in a social context. Psychology 2500 recommended.

2540 Psychology of the Individual (3) Study of individuals, their behavior, and the progressive changes in behavior that occur in natural environments; introduction to psychological and abnormal psychology. Psychology 2500 recommended. E.

3120 Social Psychology (3) General survey of theories, methods, and research findings on individual behavior in a social context. Prereq: 2520. E.

3129 Social Psychology Laboratory (2) Prereq: 3120; recommended prereq: 3319.

3140 Environmental Psychology (3) Influence of physical surroundings on individual experience, interpersonal relations, and social systems. Includes such topics as noise, temperature, crowding, air pollution, urban settings. Prereq: 2500 or equivalent recommended.

3150 Psychological Statistics (4) Introduction to basic statistical methods used in behavioral sciences. Not open to students with credit in Statistics 2100, Mathematics 3000, Sociology 3920, or equivalent. Prereq: 2 years of high school algebra or one course in college algebra. E.

3210 Learning and Thinking (3) Study of theoretical and empirical basis of learning and thinking. Prereq: 2500. E.

3218 Laboratory in Learning and Thinking (2) Prereq: 3210; recommended prereq: 3319.

3220 Motivation and Emotion (3) Current theories, approaches, and their development. Prereq: 2520. E.

3240 Psychology of Music (3) Introduction to psychological study of musical sounds and instruments; theories of rhythm, melody, and their relation to the psychology of spoken language. Prereq: 2520.

3319 Introduction to Research in Psychology (3) Basic techniques of research in behavioral science, including experimentation and naturalistic observation.

3550 Child Psychology (3) Origin and principles of behavior in infancy and childhood; physical, intellectual, social, emotional, and language behavior of the normal child. Prereq: 2500 or equivalent; 2520 recommended. E.

3559 Laboratory in Child Psychology (2) Field and laboratory studies of child development. Prereq: 3550 and recommended prereq: 3319.

3570 Psychological Problems in Childhood (3) Functional and developmental psychopathologies occurring in infancy and childhood, e.g., infantile autism, fears and phobias, and learning problems. Major contemporary theories and empirical research. Prereq: 3550.

3616-26 Human Relations (3,3) The study of interpersonal relations and communication through structured small group experience.

3650 Abnormal Psychology (3) Constitutional and environmental factors in abnormal behavior; neuropsychotic reactions and delusions; non-technical discussion of diagnostic and therapeutic methods. Prereq: 2500; 2540 recommended. E.

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.

4101 Foreign Study (1-16) See page 161.

4102 Off-Campus Study (1-16) See page 161. Psychology 4103, 4107, 4109, and 4110 are courses of independent study and research taken by consent of instructor only. Course requirements, meeting times, and grading procedures are established by agreement between the student and a member of the psychology faculty. For each credit hour, a student may expect to spend from two to three hours per week for the quarter. No more than 24 credit hours may be earned in courses 4103, 4107, 4109, 4110 combined.

4103 Independent Study (1-12) May be repeated. Maximum 12 credit hours. See note above. Prereq: Consent of instructor.

4107 Experience in Individual Instruction (1-4) Experience as a private tutor in individualized instruction. Prereq: Consent of instructor. May be repeated. Maximum 6 hrs.

4109 Undergraduate Research (1-12) May be repeated. Maximum 12 credit hours. See note above. Prereq: Consent of instructor.

4110 Undergraduate Participation in Community Research (1-12) May be repeated. Maximum 12 credit hours. See note above. Prereq: Consent of instructor.

4115 Psychology of Sex Role Development (3) (Same as Educational and Counseling Psychology 4110).

4120 Topics in Social Psychology (3) Intensive analysis of selected research topics. Prereq: 3120 or Sociology 3130. (Same as Sociology 4120.)

4200 Topics in Health Psychology (4) May be repeated. Maximum 8 hrs.

4230 Sensory Processes and Perception (3) Survey of sensory and perceptual processes with emphasis on audition and vision. Prereq: 3150; 2520 recommended.

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

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 (3) Survey of major approaches to understanding human personality and its development. Prereq: 2540; 3550 or 3650.

4510 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.

4520-30 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 (3) Theory and construction of individual and group measures; survey of various methods of assessment of intelligence, personality, special abilities, and educational achievement. Prereq: 3510.

4650 Symbolic Processes (3) 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 (3) Theories and descriptions of phonology, syntax, and semantics as applied to psychology and related disciplines. 4650 or linguistics background recommended.

4670 Cognitive Development (3) Theory and research on development of language and thinking in children and adolescents. Prereq: 3210 or 3550.

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

4719 Physiological Psychology Laboratory (4) Laboratory studies of nervous system and physiological correlates of behavior. Coreq: 4710.

4720 Comparative Animal Behavior (4) Methods and principles. (Same as Zoology 4720.)

4729 Comparative Animal Behavior Laboratory (4) Laboratory and field studies. Coreq: 4720. (Same as Zoology 4725.)
4770 Psychology and the Law (4) Psychological aspects of the legal system. Prereq.: Junior Standing.

4780 Psychology and Current Issues (3) Research and theory related to selected contemporary issues. 4 class hours per week. Prereq.: Consent of instructor. May be repeated. Maximum 6 credit hours.

4830 History and Systems of Psychology (3) Evolution of the field of psychology, focusing on classical schools of thought and recent developments. Prereq.: 9 hours of upper-division psychology.


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

4870 Contemporary Research in Behavior of Women (3) Study of interaction of cultural and biological factors in determining the behavior of women, with emphasis on physiological mechanisms involved. (Same as Women's Studies 4870.)

4880 Afro-American Psychology (3) Review and analysis 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 understanding of behavior and the brain in basic ways. Contemporary definition of each idea will be explored with the background of the idea's historical development, with an attempt to understand the various conceptions of each as a product of larger social and scientific pressures. Recommended for Seniors. May be repeated. Maximum 8 hours.

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)

Professors:
C. H. Reynolds (Head), Ph.D. Harvard; F. S. Lusby, B.D. Colgate (Rochester); D. L. Dungan, Th.D. Harvard; W. L. Humphreys, Th.D. Union; D. E. Linge, Ph.D. Vanderbilt; R. V. Norman, Jr. (Vice Provost), Ph.D. Yale.
Associate Professors:
J. L. Fitzgerald, Ph.D. Chicago; M. L. Levering, Ph.D. Harvard.

Assistant Professors:
M. W. Harris, Ph.D. Harvard. Adjunct, J. O. Hodges, Ph.D. Chicago; L. M. Tober, Ph.D. Vanderbilt.

UNDERGRADUATE

B.A. Major: Two options are available in religious studies. First, second, and third-year 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 religious studies 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, 3060, 3890, 3720, 3720, 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 who have 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 who wish 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 must be submitted to the faculty in religious studies for review.

Further details on the major and on department courses are available in the department office, located in 501 McClung Tower, or from any member of the religious studies faculty.

Minor: Twenty-four hours of courses at the 3000 level and above. It is suggested that students 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 writings dealing with great religious founders. 2110—Religious figures such as: Moses, Confucius, Socrates, Joseph Smith and Buddha. 2120—Religious figures such as: Lao Tzu, 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, Durrheim, Freud, Sartre, Russell). 2320—Contemporary issues involving critical perspectives on religion such as feminist, environmental; ethnic (Afro-American, American) liberation movements.

2610 Introduction to Religion (4) Introduction to the study of religion through selected historical traditions, East and West.

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 (4,4) Examination of recurrent forms, themes, and patterns in history of religion, such as high gods, cultural heroes, initiation, and ascension.

3021 Religious Myth, Symbol, and Ritual (4) Study of interrelation of myths, symbols, and rituals among preliterate peoples through a specific motif, such as solar, lunar, and communal.

3060-70-80 History of Western Religious Thought and Institutions (3,3,3) 3060—First century to 8th century. 3070—6th century to 15th century. 3080—16th century to 1900. (Same as History 3060-70-80.)

3110 Ancient Israel's Historical and Religious Traditions (4) Historical and religious 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 B.C.D. Later literature of Old Testament, Apocrypha, and Dead Sea Scrolls.

3121 Religious Traditions of Ancient Egypt (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, Shakespeare, Milton, Blake, Goethe, Tolstoy. 3233—Religion and Literature: 20th Century. Religious themes in western writing such as Yeats, Eliot, Mann, Kafka, Faulkner, Lawrence, Shaw, Camus, Dostoevsky. Prereq. for 3233: 3332.

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 forms of 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—Renaissance. 3412—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 myth, rites, and symbols and an inquiry into how certain political movements in Africa have been and are informed by religious sensibilities. (Same as Anthropology 3490 and Black Studies 3490.)

3510-30 Religion in America (4,4) Not a survey but a representative profile of religion in America, past and present. Organized each quarter around theme or problem. May be taken independently.

3550 Religion and Racism in America (4) Historical and critical survey of role played by religion in supporting and criticizing American racial injustice. (Same as Religious Studies 3550.)

3560 Afro-American Religion in the United States (4) Historical and critical examination of how American religious thought and institutions in the United States. (Same as Afro-American Studies 3560.)

3600-10 Religious Ethics (4,4) Historical and critical survey of religious ethics; basic theories and their application in social problems.

3605-06 Professional Responsibility (4,4) (Same as Philosophy 3605-06.)

3611 Medical Ethics (4) (Same as Philosophy 3611.)

3620 Topics in Religious Ethics (4) Examination of particular theoretical issues and social problems from perspectives of religious ethics. May be repeated once for credit.

3650 Philosophy and Religion in India (4) (Same as Philosophy 3650.)

3660 Buddhist 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 3890.)

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

3711 Literature of the English Bible (3) (Same as English 3711.)
Minor: Consists of 24 hours in courses numbered 3110 or above, including the following: 3110-20-30 or 3810-20-30 (Aspects of upper-division English or 9 hours of upper-division literature); 3210 (Introduction to transformational grammar). Prereq: 9 hours of upper-division literature or equivalent.

1110-20-30 Elementary French (3,3,3) This sequence strongly recommended for students intending to take upper-division courses in French. Must be taken in sequence. 3 hours and 2 labs.

1118-28-38 Honors: Elementary French (3) Honors course for eligible students. May not be taken in sequence. Students who have taken French in high school. Must be taken in sequence. 3 hours and 2 labs.

1151-20 Elementary French (4,4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.

2110-20-30 Intermediate French (3,3,3) This sequence strongly recommended for students intending to take intermediate or advanced courses in French. Must be taken in sequence. 3 hours and 2 labs.

2118-28-38 Honors: Intermediate French (3,3,3) Honors course for students of superior ability in French. Must be taken in sequence. 3 hours and 2 labs.

2510-20 Intermediate French (4,4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.

2610-20 Panorama of Italian Culture (4,4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.

3110-20-30 Aspects of French Literature (3,3,3) Study of classicism; and the culture. Students pursuing a minor are strongly advised to consult with a department 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.

3240 Women in French Culture (4) Role of women in shaping French history and culture. Feminists (George Sand); royal mistresses (Mme. de Maintenon); intellectuals (Mme. de Stael); actresses (Sarah Bernhardt); scientists (Marie Curie). Same as Women's Studies 3240.

3250 Masterpieces of French Fiction in English Translation (3) Among works studied: the romance of Tristan and Isolde, Eugenie Grandet, Swann's Way, the Wanderer, and short stories of Maupassant and Merimee.

3410-20 Intermediate Composition and Conversation (3,3,3) Grammatical analysis of modern French prose; review of grammatical principles and their application in translation from English to French, both written and oral; exercises in free composition. Prereq: 2130 or 2520.

3450 Composition and Conversation for Business (3) For students who seek to improve business language skills. Training of students with intermediate or advanced knowledge of French for consecutive and simultaneous oral translation from French into English; and vice versa, on a variety of practical subjects such as business, economics, politics, and science. Course will be given mainly in the language lab with additional classroom supervision by the instructor. Prereq: 3430 or equivalent. Must be taken in sequence.

4010-03-03 Introduction to Consecutive and Simultaneous French Translation (3,3,3) 4001—Oral Translation into English; 4002—Consecutive Translation (4) Among works studied: Romance of Tristan and Isolde, Eugenie Grandet, Swann's Way, the Wanderer, and short stories of Maupassant and Merimee.

4001-02-03 Introduction to Consecutive and Simultaneous French Translation (3,3,3) 4001—Oral Translation into English; 4002—Consecutive Translation (4) Among works studied: Romance of Tristan and Isolde, Eugenie Grandet, Swann's Way, the Wanderer, and short stories of Maupassant and Merimee.

4100-03-03 Introduction to Consecutive and Simultaneous French Translation (3,3,3) 4001—Oral Translation into English; 4002—Consecutive Translation (4) Among works studied: Romance of Tristan and Isolde, Eugenie Grandet, Swann's Way, the Wanderer, and short stories of Maupassant and Merimee.

4250 Introduction to Descriptive Linguistics (3) Phonetics and phonemics, morphology and syntax. Types of languages; from travel and current events, into language and phonetics and phonemics, morphology and syntax. Application of descriptive linguistics—field linguistics, dialect study, its practical use in learning languages, linguistics of language teaching, introduction to transformational grammar. Prereq: 9 hours of upper-division French or 9 hours of upper-division courses in a modern or ancient language (exclusive of German and French 3010-2030, courses in literature in translation, and general courses in Latin and Greek requiring no knowledge of those languages). For students of department (Same as German, Russian, Spanish, and Linguistics 4250.)

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

4270 Romance Linguistics (3) Development of classical thru vulgar Latin into major Romance languages. (Same as Spanish and Linguistics 4270.)

4320-30 French Literature of Eighteenth Century (3,3) Prereq: 2130, 2520, or equivalent.

4350-60-70 Medieval French Literature (3,3,3) Medieval works in modern French texts. Prereq: 2130, 2520, or equivalent.

4410-26-30 French Civilization (3,3,3) Prereq: 2130, 2520, or equivalent.

4419-26-30 French Literature of Nineteenth Century (3,3,3) Prereq: 2130, 2520, or equivalent.

4610 Readings in French Literature (3)

4710-26-30 French Literature of Twentieth Century (3,3,3) Prereq: 2130, 2520, or equivalent.

4800 Survey of Non-European Francophone Literature (3) Explores the French writers outside of France by reading literature from the Caribbean, Quebec, Africa and other areas. Students will learn how these writers adapt the French language to express their outlook in such genres as poetry, the novel, and drama. Prereq: 2130, 2520 or equivalent.

GRADUATE

General requirements for the master's program as well as course descriptions are given in the Graduate Catalog.

Italian (584)

UNDERGRADUATE

B.A. Major: Consists of 36 hours of courses numbered 3110 or above, including the following (or equivalents, with consent of the department): 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. Students may substitute Foreign Language 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 (or equivalents, with consent of the department): 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 Intermediate Italian (4,4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.

2610-20 Panorama of Italian Culture (4,4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.

3110-20-30 Aspects of Italian Literature (3,3,3) 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 Language 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 (or equivalents, with consent of the department): 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 Intermediate Italian (4,4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.

2610-20 Panorama of Italian Culture (4,4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.

3110-20-30 Aspects of Italian Literature (3,3,3) 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 Language 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 (or equivalents, with consent of the department): 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 Intermediate Italian (4,4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.

2610-20 Panorama of Italian Culture (4,4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.

3110-20-30 Aspects of Italian Literature (3,3,3) 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. Courses in Italian literature in English translation may not be counted toward either a major or a minor.
Survey of Italian culture from Roman era through the 17th century. 2620—Survey of Italian culture in the 18th, 19th, 20th centuries.

3110-30-30 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 required for that 3 hours.

3410-20-20 Advanced Grammar, Composition, and Conversation (3,3,3) Laboratory work, drills, and tapes. Prereq: 2130, 2520, or equivalent.

4050 Dante and Medieval Culture (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.)

4101 Foreign Study (1-16) See page 161.

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.

4530 The Modern Novel (3) Prereq: 2130, 2520, or equivalent.

4760 Italian Folklore (3) Folk arts, music, traditions, rituals, and tone 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 4310-20-30 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.

3000-01 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 161.

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, 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. Students whose primary interest is language 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, 9 hours); 3410 (Composition and Conversation, 3 hours); 4210 (Phonetics, 3 hours); 9 hours selected from courses 3420-30 (Composition and Conversation), 4220-30 (Advanced Grammar), or 4250-60-70 (Linguistics); 3 hours of literature at the 4000 level; 3 hours of civilization; sufficient hours selected from courses in literature, language, or civilization to fulfill the major requirement. 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 9 hours chosen from 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 major requirement. Students pursuing a minor are strongly advised to consult with a departmental advisor.

Courses which are the equivalents of the foregoing may be counted toward 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.

2518-28 Honors: Intermediate Spanish (4,4) Honors course for students of superior ability in Spanish. Incoming freshmen are admitted on the basis of a diagnostic test, high school average, and performance upon the ACT. Class held to a maximum of 15 so that each student may receive more attention. Students follow a recommended 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 will automatically receive credit for Spanish 3000. Prereq: Spanish 1110-20-30, 1510-20, 1518-28, or equivalent.

2910-20-30 Spanish and Spanish American Literature in English Translation (4,4,4) 2910—Masterpieces of classical Spanish literature: Cervantes, realism and the picarones novel, religious mystics, Golden Age Theatre. 2920-30—Spanish literature in English Translation: Unamuno, Lorca, Baraja, Ortega, 2930—Contemporary Spanish American fiction: Marquez, Camus, 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 3010-20-30-30.)

3000 Spanish Transition (3) Development of linguistic skills necessary for satisfactory work in courses 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 American 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 the Golden Age: Lope de Vega, Unamuno, Ortega y Gasset, and Garcia Lorca. Prereq: 2130, 2520 or equivalent. Recommended for literature majors. Not offered for graduate credit.

3310-20-30 Aspects of Spanish American Literature (3,3,3) Study (not usually chronological) of various periods of the literature; emphasis upon the genres (poetry, novel, drama) varies. May be taken in place of 3110-20-30. Prereq: Foreign Study (4101) or equivalent. (Same as Latin American Studies 3310-20-30.)

3410-20-30 Intermediate Composition and Conversation (3,3,3) Not offered for graduate credit.

4055-65-75 Survey of Spanish Literature (3,3,3) 4055—The Medieval Period: Cantar de mio Cid, Libro de buen amor, La Celestina. 4056—The Golden Age: Lope de Vega, the picaresque novel, the Mystics, Calderon, Cervantes. 4075—The Modern Period: Becquer, the Generation of '98, Lorca, Ortega y Gasset, Cela. Prereq: Third-year literature sequence in Spanish or consent of instructor.

4101 Foreign Study (1-16) See page 161.

4115 Cervantes (3) Life and works of Cervantes, focusing on Don Quijote, but including other works; includes an introduction to Cervantes criticism and bibliography across the centuries. Prereq: Third-year literature course in Spanish or consent of instructor.

4125 The Comedia (3) Study of Golden Age dramas with emphasis on works by Lope de Vega, Tirso de Molina, Alarcón, and Calderón de la Barca. Prereq: Third-year literature course in Spanish or consent of instructor.

4135 Generation of '68 (3) Study of the books of Granja and Lain Entralgo on the Generation: readings from Unamuno, Gasset, Baroja, Azorin, Valle-Inclán, Antonio Machado, Jiménez, Benavente and Ortega y Gasset. Prereq: Third-year literature course in Spanish or consent of instructor.

4140 Theatrical Spanish (1-3) Performance in one or more plays. Prereq: Intermediate Spanish or equivalent and consent of instructor. May be repeated with consent of department. Maximum 6 hrs.

4160-70-90 Advanced Conversation (2,2,2) Intensive training in prepared and spontaneous conversations. Subjects range from travel and current events to literature and aspects of national culture. Prereq: Completion of 9 hours of courses at 3000 level.

4210 Phonetics (3) Prereq: 2130, 2520, or equivalent.

4220-30 Advanced Grammar (3,3) Prereq: 2130, 2520, or equivalent.

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

4250 Introduction to Historical and Comparative Linguistics (3) (Same as French, German, Russian, and Linguistics 4250.)

4270 Romance Linguistics (3) (Same as French and Linguistics 4270.)

(3) The Pre-professional program assists in preparation for graduate study in law, urban studies, planning, ecology, and sociology. Courses include: Political Sociology 3030, Social Psychology 3130, Urban Environment 3410, Occupations as Organizations 3620, Sociological Theory 3810, Social Research 3910, Elementary Social Statistics 3920, Social Change 4540, and Formal Organization 4560.

(4) 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 4180, and selected courses outside of the department. Students should consult with the Undergraduate Coordinator.

(5) The Human Management program is preparation for those who manage people as part of their work. Courses include: Social Psychology 3130, Gender in Society 3150, Communicative Processes 3230, Prejudice and Racism 3330, Occupations 3610, Occupations as Organizations 3620, Social Research 3910, and Formal Organizations 4560.

(6) 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 Criminology 4310. A Minor consists of 24 upper-division hours. Eight lower-division hours in sociology are prerequisite to a minor.

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 freshmen.

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.

2351 Interpersonal Communication (4) Same as Speech 2351.

2510 Introduction to Sociology Through Literature (4) Social processes such as social control and socialization, sociological concepts such as status and role, and the other elements of a basic introduction to sociology are examined in this specialized introduction to sociology.

2520 Social Problems: Crime and Justice (4) Specialized introduction to social problems confined primarily to an analysis of American experiences in areas such as the causes of crime, the administration of the police and courts, and the correctional process.

2850 Sport in American Society (3) Same as Physical Education 2850.

3010 Collective Behavior (4) Analysis of collective phenomena emphasizing crowd behavior, responses to disaster, popular crazes, mass movements, and social protests.

3015 Resource Scarcity and Social Change (4) The relationship between scarcity of natural resources and changes in societal beliefs and social structure. Topics include social and physical limits to growth and collective action problems.

3025 Computers and Society (3) Same as Computer Science 3025.

3030 Political Sociology (3) Sociological analysis of American political systems. Attention given to consideration of concept of power, elitist-pluralist controversy, end-of-ideology debate, and related topics.

3130 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 relationships 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 Interpersonal Communication Processes (4) Sociological dimensions of communication and of communication processes at the organizational and interactional levels. (Same as Speech 3320.)

3330 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 conscience; urban problems and interventions; housing, urban renewal, and neighborhood conservation; the urban poor, the discontent, and alienated; planning for urban youth; the urban elderly; the social and physical planning process; new towns. (Same as Urban Studies 3420.)

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

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

3672 Religion and Society in Japan (4) Same as Religious Studies 3672.

3710 Corporate and Organizational Deviance (4) An introduction to analysis and understanding of crime and deviance committed by organizations. Intended for students from diverse cultures, the course examines case studies of corporate and organizational
deviance. A principal focus is a critical examination of organized responses to this type of deviance, especially the operation of regulatory agencies.

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 development of sociological theory from time of Comte to present.

3910 Introduction to Social Research (4) Scientific method applied to social phenomena; formulating test-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 students and instructor with consent of department. Elective credit only. Prereq: Determined by department.

4030 Society and Law (4) General treatment of social origins and consequences of law and legal process. Papers on 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 institutional (e.g., taboos and taboos) are emphasized.

4051 Sociology of Sport (4) The social meaning, organization and process of sport. Social organization and meaning of sport. The difference between sport and play, and games, social stratification and sport, sport as an occupation, place of sport in mass culture, sport sub-cultures, and reciprocal influences of sport and cultural milieu. Prereq: P.E. 2850 or sociology 2850, or permission of instructor. (Same as Physical Education 4051.)

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

4103 Independent Study (1-16) See page 161.

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.

4160 Theory of Attitudes and Values (4) Study of organization, functions 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 processes through which people acquire skills and abilities and undergo identity transformations and types of adult socialization (e.g., occupational, institutional) are emphasized.

4330 Urban Ecology (4) Examination of public, private, collective, and individual space. Classical school ecology, its neoclassical revisers, social area analysis, and cognitive symbolic ecology emphasized. (Same as Urban Studies 4330.)

4410 Educational Sociology (3) Same as Educ. C & 4410.

4500 Criminology (4) A systematic inquiry into the causes and control of crime and criminals. Emphasis is on causation.


4520 Criminal Justice II: Corrections (4) The historical development of institutions and programs such as juvenile delinquency programs, prisons, probation and parole. Analysis of their operation and impact is special focus. Discusses evaluation research and its application to correctional programs. Recommended: Sociology 4500.

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 the roles and statuses change with age in relation to the major social institutions and 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 broader 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) Interrelationships of society, culture, and religion. (Same as Religious Studies 4940.)

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:


Associate Professors:

M. L. Ambrester, Ph.D. Ohio; J. E. Buckley, Ph.D. Northwestern; R. T. Church, Ph.D. Temple; N. C. Cook, M.A. Alabama; M. Custer, M.F.A. Wisconsin; R. W. Glenn, Ph.D. Northwestern.

Assistant Professors:


Instructor:


UNDERGRADUATE

B.A. Major: The Department of Speech and Theatre offers a single undergraduate degree, the Bachelor of Arts in Speech and Theatre. Majors must declare a concentration in either (a) Speech or (b) Theatre.

(a) Major in Speech and Theatre (Speech concentration)¹

Speech 1211 and 1221 are prerequisite to the concentration which consists of Speech 2311, 2351, 2331, and either 3905 or 4550, and 24 additional hours in Speech courses numbered 2000 and above, of which 20 hours must be in courses numbered 3000 and above. No more than 8 hours from Speech 2410-20-30, 3410-20, Speech and Theatre 4101, 4102, and 4103 may be counted toward the concentration. Advisories are available in: (1) Interpersonal Communication, (2) Organizational Communication, and (3) Public Communication. Consult the Departmental office for information and recommended advisors.

(b) Major in Speech and Theatre (Theatre Concentration)²

Theatre 1320-30-40 is prerequisite to a concentration which consists of: (a) Theatre 2111, 2211-21, 2252-53, 2252-53, 3410; (b) 19 additional hours of Theatre courses numbered 2000 or above¹, 12 hours of which may be cognate areas approved by the department; (c) at least one half of the hours in the concentration must be earned at the 3000-level and above. Speech and Theatre 4101-02-03 may be repeated for major credit to a maximum total of 8 hours.

Minors: Two minors are offered: (a) Speech and (b) Theatre.

(a) Minor in Speech:

i. Prerequisites: Speech 1211, 1221.

ii. Requirements: 24 hours in Speech courses numbered above 3000.

(b) Minor in Theatre:

i. Prerequisites: Theatre 1320-30-40.

ii. Requirements: 24 hours in Theatre courses numbered above 3000, 6 of which must be in history and criticism. Certification for Teaching Speech and English. Consult Certification Clerk, Room 212, Claxton Education Building.

GRADUATE

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

Speech (943)

1211 Communication and Society (4) Study of communication (oral presentations, speeches, oral presentations, plays, demonstrations, film) and social change.

1221 Introduction to Speech Communication (3) Fundamental theories and practices with particular reference to interpersonal, intergroup and public communication.

2311 Public Speaking (4) Basic principles of speech preparation and delivery. Students may not receive credit for both 2311 and 2312.

2312 Public Speaking (4) Includes the material of Speech 2311 with additional work on methods for coping with speech anxiety. Permission of instructor required. Students may not receive credit for both 2311 and 2312.

2331 Argumentation and Debate (4) Reasoned decision-making with emphasis on analysis, evidence, reasoning, constructing and refuting arguments.

2351 Interpersonal Communication (4) Study of the process by which thoughts, feelings, and actions affect and are affected by the face-to-face communication situation. (Same as Sociology 2351.)

2361 Business and Professional Speaking (4) Basic principles of oral communication within organizations, including such topics as organizational/communication theory, group problem solving, formal presentations, and interviewing.

2410-20-30 Intercollegiate Forensics (1,1,1) Supervised work in tournament debate and individual events. Prereq: Consent of instructor.

¹ Students majoring in Speech and Theatre with a Speech Concentration may choose an emphasis in Oral Interpretation.

² Students choosing a Theatre Concentration must emphasize one of the following areas: history and criticism, playwriting, performance, production or oral interpretation.
2900 Introduction to Research Methods in Communication Studies (3) Introduction to the development and application of empirical research methods appropriate to interpersonal, group, and public communication. Basic concepts in sampling, surveys, reliability and validity of design in communication research.

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; communication barriers, non-verbal communication, business communication.

3031 Nonverbal Communication (4) Exploration of nonverbal communication from human communication perspective; origins and research, usage and coding of nonverbal behavior, research strategies and theoretical approaches.

3320 Interpersonal Communication Processes (4) (Same as Sociology 3320.)

3361 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 Intercollege Forensics (1,1,1) Continuation of 2410-20-30. Prereq: Consent of instructor.

3890 Theories of Communication (4) Survey of contemporary communication theories and their applications in society.

3990 Evidence and Argumentation (3) The concept of evidence in public controversies, uses and sources of evidence, and conditions affecting credibility.

4000 Topics in Speech Communication (3) Variable content course offering opportunity to offer subject matter not covered in an existing course. Topics, scope of subject matter, and prerequisites to be determined by department. May be repeated. Maximum 6 credit hours. Major credit is limited to 3 credit hours.

4222 Advanced Argumentation and Debate (4) Prereq: 2231 or consent of instructor.

4351 Communication and Conflict (3) Communication as a significant factor in the development, management, and resolution of conflict at the interpersonal, small group, organizational, or societal level.

4550 History of Rhetorical Theory (4) Survey of Western rhetorical theory from Plato to the present.

4660 Rhetoric of the Women's Rights Movement (4) Historical and critical study of public address in campaign for women's rights from the 1830s to present. (Same as Women's Studies 4650.)

4671 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, poems.

4930 Studies in American Public Address (4) May be repeated. Maximum credit 12 hours.

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

Theatre (976)

1230-30-40 Introduction to Theatre (3,3,3) 1230—Lecture; concepts of theatre; thought, philosophy and aesthetics. 1330—Historical perspectives on the making of the modern theatre. 1340—Practice of theatre; collaboration of artists and craftsmen.

2111-21 Acting (4,4) 2111—Realism; readings, improvisations and scene study. 2121—Extended Realism: voice and movement for the stage, basic rehearsal techniques. Prereq: Consent of instructor for 2121; Production participation required.

2211-21 Stagecraft (4,4) 2211—Techniques of scenery construction. 2221—Fundamental methods of stage lighting. Production participation required.

2231 Basic Stage Costuming (4) Costume design and construction: basic theory and technique. Production participation required.

2252-53-54 Survey of World Dramas (3,3,3) 2252 includes Greek, Roman, Medieval and Eastern forms of drama; 2253 covers Elizabethan through twentieth century drama; and 2254 deals with the study of realism through contemporary drama.

3121-32 Advanced Acting (4,4) Historical styles of acting. 3121-32—18th and 19th centuries. Prereq: Consent of instructor. Production participation required.

3181 Theatre Practicum: Performance (1-4) Supervised work on departmental productions. Available for credit only to theatre majors or with consent of department. Prereq: Consent of instructor. May be repeated. Maximum credit 4 hours.

3182 Theatre Practicum: Production (1-4) Supervised work on departmental productions. Available for credit only to theatre majors or with consent of department. Prereq: Consent of instructor. May be repeated. Maximum credit 4 hours.

3153 Summer Repertory Productions (1-4) Supervised work on summer repertory productions. Available only to members of summer company by consent of instructor. May be repeated. Maximum 4 credit hours.

3221-22 Introduction to Scene Design (4,4) 3221—Problems of stage design, with reference to space, form, movement, scale, and style; rudiments of rendering and ground-plan preparation. 3222—Play interpretation through scenic design; setting as environment for dramatic action; rudiments of model making. Must be taken in sequence.

3292-53-54 History of the Theatre (4,4,4) Drama in performance with particular emphasis in theatre architecture, scene design, and acting styles. 3292—Antiquity to the Renaissance. 3293—The European theatre, 1580-1850. 3294—Modern theatre.

3282-83 History of the American Theatre (3,3) Development of the theatre as social institution in American life. 3282—From its beginnings to 1800. 3283—From 1900 to present.

3362-63 Scenery Painting (3,3) Practice of advanced stage lighting technology for students in the theatre design disciplines. Work available to Theatre MFA students only.

3364-65 Drawing for the Theatre (3,3) A drawing course for students in the theatre design disciplines. Work available to Theatre MFA students only.

3431-32 Introduction to Costume Design (3,3) 3431—Cosplay as expression of character on stage; the application of costume history to specific design projects. Prereq: 2211-22 or consent of instructor.

4133-34 Special Problems in Acting (3,3) Advanced exercises in voice and movement; preparation of major concentration.

4151 Theatre Practicum: Performance (1-4) Continuation of 3152. Available for credit only to theatre majors. Prereq: Consent of instructor. May be repeated. Maximum credit 4 hours.

4152 Theatre Practicum: Production (1-4) Continuation of 3152. Available for credit only to theatre majors. Prereq: Consent of instructor. May be repeated. Maximum credit 4 hours.

4153 Summer Repertory Productions (1-4) Continuation of 3153. Available only to members of summer company by consent of instructor. May be repeated. Maximum credit 4 hours.

4211 Technical Theatre I (4) Study and practice of theatre woodworking; production participation will be required. Prereq: 2211. Graduate credit available to Theatre MFA students only.

4212 Technical Theatre II (4) Study and practice of metalworking and plastics for theatrical productions; production participation will be required. Prereq: 2211. Graduate credit available to Theatre MFA students only.

4213 Technical Theatre III (4) Study and practice of stage rigging for theatrical productions; production participation will be required. Prereq: 2221. Graduate credit available to Theatre MFA students only.

4214-15 Advanced Technical Theatre (4,4) Advanced techniques in theatre management; advanced techniques and property execution; special problems in technical theatre.

4216 Advanced Lighting Technology (4) Study and practice of advanced stage lighting technology for theatrical productions. Prereq: 2221. Graduate credit available to Theatre MFA students only.

4217 Theatre Sound (4) Study and practice of theatrical and radio technology. Prereq: 2221. Graduate credit available to Theatre MFA students only.

4241-42 Advanced Scene Design (4,4) 4241—Descriptive drawing as an approach to three-dimensional design; theatrical graphic standards and preparation of drawing design. 4242—Perspective of surface color; construction of spatial illusion through color with reference to rendering, scene painting, and preparation of painter’s elevations. Must be taken in sequence. Prereq: 2211-22, 3221-22, 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. Prereq: 3521-22 or consent of instructor.

4441 Advanced Play Directing (4,4) Problems of play interpretation; directing period plays; preparation of material for effective performance in sequence. Prereq: 3451-52 and consent of instructor.


4611 Principles of Design for the Theatre (4) The relationship of the elements of design to the design of stage scenery, lights, costumes and stage direction.

4641 Drawing for the Theatre (3) A drawing course for students in the theatre design disciplines. Work toward development of individual styles in perspective and graphic interpretation. Prereq: Consent of instructor.

4642 Scenery Painting (3) Materials, techniques and principles of the craft. Emphasis on gaining skill and understanding through studio experience. Prereq: Consent of instructor. Graduate credit available for students in Theatre MFA program only.

4751-52-53 Dramatic Theory and Criticism (3,3,3)

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

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

Speech and Theatre (945)

2021 Voice and Diction (4) Voice production; attention to individual speech problems.

2031 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) Prereq: 2031 or consent of instructor.

3651 Oral Interpretation of Poetry (4) Prereq: 2031 or consent of instructor.

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

4101 Foreign Study (1-16) See page 185 and description of major concentration.

4102 Off-Campus Study (1-16) May be repeated for major credit to maximum of 8 hours. See page 185 and description of major concentration.

4103 Independent Study (1-16) May be repeated for major credit to maximum of 9 hours. See page 185 and description of major concentration.
Currently, faculty and students in the Pro-
temporary issues which are sufficiently
taught.

1) faculty colloquies, to provide a mechanism for integration and
evelopment of faculty and students. To
3) to nurture the personal and intellectu-
al development of faculty and students. To
synthesis within the university community;

2) Land, People, and the
Common Good; and 3) Aging, Society, and
the Common Good. Further information is available through the Dean’s Office, The Col-
llege of Liberal Arts, 226 Ayres Hall.

1000 The First Course (3) An introduction to university
education as an adventure in personal growth and professional development. S/NC.

1001 Learning, Thinking, and Creation (3) An intro-
duction to strategies which promote excellence in
learning, critical thinking, and creativity.

2110-20-30 Topics in University Studies (4,4,4)
variable content course using case studies and problem-
solving approaches to explore interdisciplinary
issues. Course includes a one-hour learning laboratory. Only for
students enrolled in a University Learning Com-
munity.

3110-20 Technology, Society and the Common Good
(3,3) Introduction to the interlocking relationships
between population, food production and distribu-
tion, environmental pollution, depletion of non-
renewable natural resources, global arms race, etc.
Two-quarter sequence designed for students of all
ages, 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:
A. C. Echternacht (Acting Head), Ph.D. Kansas;
R. M. Bagby, Ph.D. Illinois; D. L. Bunting, II, Ph.D.
Oklahoma State (Emeritus); Ph.D. Pennsylvania;
A. C. Cole (Emeritus), Ph.D. Ohio State;
A. C. Echternacht, Ph.D. Kansas; D. A. Ehni,
Ph.D. Minnesota; R. C. Fraser (Emeritus), Ph.D.
Minnesota; B. Hochman, Ph.D. California (Berke-
ley); J. C. 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; J. N. Liles,
Ph.D. Ohio State; J. A. MacCabe, Ph.D. California
(Davis); E. E. Riechert, Ph.D. Wisconsin; L. E. Roth,
Ph.D. Chicago; C. A. Shivers, Ph.D. Michigan State;
J. T. Tanner (Emeritus), Ph.D. Cornell; H. G. Waltz,
Ph.D. Florida; G. L. Whitson, Ph.D. Iowa.

associate Professors:
R. Ganguly, Ph.D. Nebraska; L. Rome, Ph.D. Har-
vard.

Research Associate Professors:
T. Ashley, Ph.D. Florida State; R. Tindall, Ph.D.
Penn, State.

Research Assistant Professor:
J. L. Gittelman, Ph.D. Sussex (England).

undergraduate prerequisites:
Biology 1210-20-30 or Zoology 1118-28 are prerequisites for all upper-division courses,
with the exception of 3080 and 4940. Addi-
tional prerequisites are included with course
descriptions.

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 3990 and 3 hours of Zoology 4990
Perspectives in Zoology must also be includ-
ed. Prerequisites to this major are: Biology
1210-20-30 or Zoology 1118-28 (Zoology
2920-30 may be used, in addition to one of
1118 or Biology 1220) and Chemistry 1110-
20-30. Corequisites are: (1) A Mathematics
and Statistics/Computer Science package
consisting of Mathematics 1550-60, 1640-50
or 1841-51 (Mathematics 1640-50 is the rec-
commended choice) plus one of the following:
Mathematics 1860, 3050, 3060, 3861, Psy-
chology 3150, Computer Science 1510, 1610,
Plant and Soil Science 3610; (2) a year
sequence in Physics (except 1410-20-30).

Note: Students majoring in zoology are
advised to advise 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 Zo-
ology 1118-28-38, 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 3110-30-30. Honors
zoology is open to all students with a minimum ACT compos-
ite 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
satify this requirement must complete the sequence
with appropriate quarters of Biology 1210-20-30. Must
be taken in sequence. 1118 (Fall-Processes; Struc-
ture and development, 1128 (Winter)-Genetics and
phylogeny, 1138 (Spring)-Ecology, independent projects.
Each quarter consists of six hours of combined lec-
ture and lab. Students who receive credit for this
sequence may not receive additional credit for Bio-
logy 1210-20-30 or Botany 1116-20 or 1118-28.

2460-70-80 Human Anatomy and Physiology (3,3,3)
Fundamentals of human anatomy and physiology for
nurses. Cannot be taken for credit by zoology or biolo-
ogy majors. 2 hours and 1 lab.

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

2510-20-30 Human Biology (3,3,3) For non-majors.
Not available for major credit in zoology and biology.
2510—What we are; diversity of life forms, unique-
ness of man, cell biology, genetics, development, principles of genetics. 2520—How we live; physiolo-
gy of movements, utilization of food, respiration,
dissipation of excess heat, development and immu-
ity, aging, vascular disorders, genetic disor-
ders, cancer, nutritional inadequacies, human ecology, genetic engineering. May be taken in any sequence.
2 hrs. and 1 lab.

2920-30 Human Physiology (4,4) Fundamentals of

University Studies (964)

The University Studies Program has three
objectives: 1) to foster interdisciplinary
teaching and scholarship in the promotion of superior intercollegiate, general education; 2) to provide a mechanism for integration and synthesis within the university community; and 3) to nurture the personal and intellectu-
al development of faculty and students. To
these ends, the Program sponsors three
types of activities: 1) faculty colloquies, which are on-going structured conversations on
a particular topic or nexus of topics; 2) learning communities, which are year-long residential educational environments focused on
a common theme; and 3) interdisciplinary
courses, which are intercollegiate and team-
taught.

University Studies explores important con-
temporary issues which are sufficiently
fundamental to involve the study and atten-
tion of faculty and students from all colleges. Currently, faculty and students in the Pro-
gram are investigating three broad areas of
interest: 1) Technology, Society, and the
Common Good; 2) Land, People, and the
biological principles of human physiology. Must be taken in sequence. Prereq: one year of college chemistry. 3 hrs. and 1 lab.

2060 Human Anatomy (4) Gross and Microanatomy of the Human. Prereq: 1 year of introductory Biology course or Zoology 2920-30 or equivalent. 2 hrs. and 2 labs. (Does not carry credit for Biology or Zoology Majors).

3059 Comparative Vertebrate Embryology (5) Developmental morphology of selected vertebrates. 2 hrs. and 3 labs.

3060 Comparative Vertebrate Anatomy (5) Phylogeny and anatomy of organ systems. Dogfish shark and cat primarily used in laboratory. Three hrs. and 2 labs.


3080 Biology and Human Affairs (3) (Same as Botany 3080.)

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.)

3230 Histology (4) 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.)

3880 Junior Seminar (1-3) Topic of current interest. May be repeated for credit with consent of department. Maximum 6 credit hours.

3910 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.

4008-9-10-11-12-13-14-16-17 Minicourse in Zoology (2,2,2,2,2,2,2,2,3) 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.

4059 Developmental Biology (4) Experimental morphogenesis, fertilization, cellular interactions, hormonal effects, and related topics with examples drawn primarily from invertebrates and vertebrates. Prereq: 3500. 2 hours and 2 labs.

4102 Off-Campus Study (1-16) See page 185 and description of major concentration.

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.

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: 4260.


4269 Comparative Animal Physiology Laboratory II (1) Prereq: 3080 and consent of instructor; coreq: 4260.

4270 Immunology (3) (Same as Microbiology 4270.)

4280 Comparative Endocrinology (5) Comparative analysis of the physiology and morphology of endocrine glands in vertebrates and invertebrates. Their role and interaction in maintenance of the organism and species. Prereq: 3080 or equivalent. 3 hours and one 3-hour lab.

4290 Herpetology (4) Classification, distribution, life histories, collection, and identification of amphibians and reptiles, primarily of local species. 2 hours and 2 lab or field periods.

4300 Ornithology (4) Morphology, physiology, behavior, reproduction, populations, evolution, field identification. 2 hours and 2 labs or field periods.

4320 Microtechnique (4) Recommended. 2 hrs. and 2 labs.
College of Nursing

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 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 prerequisites 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, students are required to successfully complete 12 quarters of full-time study or their equivalent. 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 for the student 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. 17 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 awarded the D or F. Clinical Nursing courses are: 2800, 2810, 3010, 3210-20-40-60-80, 4110, 4230, 4260, 4280, 4510-20, 4760.

If a student receives an Incomplete (I) for any nursing course, the incomplete must be removed before the student may enroll in any other nursing course unless the I is awarded exclusively because of a reported writing deficiency. A student’s clinical laboratory performance for any nursing course is deemed unsatisfactory, the grade for that course will be an F regardless of any grades related to the theoretical component of the course. If the unsatisfactory clinical performance is characterized by dangerous, inappropriate, or irresponsible behavior, behavior which actually or potentially places the patient’s or family’s welfare in jeopardy, the student will be required to withdraw from the program.

ASSOCIATION AND PROGRESSION POLICIES AND PROCEDURES

1. High School applicants will automatically be associated with the college if they have a GPA of 3.00 or higher and an ACT composite of 22 or higher.
2. Other high school applicants who are otherwise admissible to the University will be granted university student status with "nursing interest". All university students with a nursing interest will be assigned a faculty advisor from the College of Nursing.
(5) If the number of applicants exceeds the number of students qualified to complete all lower-division and nursing courses, qualified students will be utilized to select those students who may enroll in upper-division courses. The following nursing courses must be successfully completed by all RN's: 2810, 3230-40-60, 4440-4860, 4760, 4860. Nursing 3110, 4110 and 4230 may be challenged.

**Course Load**

The maximum credit hours per quarter allowed for any student without special permission is 18.

### Bachelor of Science in Nursing Curriculum

The following curriculum leads to the Bachelor of Science in Nursing degree. A minimum of 189 quarter hours of credit is required.

#### FOR NON NURSES

<table>
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<th>Course</th>
<th>Credit</th>
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<td>Lower Division</td>
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<td>General Chemistry</td>
<td>12</td>
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<td>English Composition</td>
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<td>Mathematics</td>
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<td>General Biology</td>
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<td>Anatomy and Physiology</td>
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<td>Child Psychology or Child Development</td>
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<td>Psychology</td>
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<td>Sociology and/or Anthropology</td>
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<td>Nutrition</td>
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<td>Microbiology (laboratory required)</td>
<td>4-5</td>
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<td>Genetics</td>
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<td>Nursing 2800</td>
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<td>Electives</td>
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#### Upper-Division

Nursing 3010 (8), 3110 (4), 3410 (4), 3510-20 (18), 4110 (10), 4220 (10), 4440 (3), 4510-20 (6), 4660 (3), 4760 (6), 4860 (3) ...

#### FOR REGISTERED NURSES

<table>
<thead>
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<th>Course</th>
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<tr>
<td>Lower-Division</td>
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</table>

#### Upper-Division

Nursing 2810 (4), 3230-40-60 (14) or 4230-20 (18), 4310 (4), 3770 (4), 4410 (10), 44230 (10), 44403 (4), 4510-20 (6), 4660 (3) ...

Electives including 14 hours in humanities courses 67-71 courses, to total 189 quarter hours.

### Nursing (720)

**Professors:**

S. E. Hart, Ph.D., New York; D. H. Goodfellow, Ph.D., Peabody; M. E. Groer, Ph.D., Illinois; J. N. Mozingo, Ph.D., Walden.

**Associate Professors:**

P. G. Droppelman, Ph.D., Tennessee; J. A. Greene, Ph.D., Vanderbilt; B. M. Reid, Ph.D., Texas.

**Assistant Professors:**

M. T. Boynton, M.S.N. Emory; K. P. Conlon, M.S.N. SUNY (Buffalo); M. M. Davis, Ph.D., Tennessee; M. M. Donnellan, M.S.N. SUNY (Buffalo); G. A. Evans, M.S.N. Tennessee; C. Golorth, M.S.N. Vanderbilt; M. M. Fenske, M.N. Florida; L. L. Harrison, Ph.D., Tennessee; S. M. Hodson-Fitzgerald, M.S. Tennessee; M. L. Jolly, Ed.D., Kentucky; L. G. Lindsay, M.S.N. Tennessee; S. L. McGuire, M.P.H., Michigan; K. B. Nelson, Ph.D., Peabody; H. E. Overton, M.S.N. Tennessee; R. R. Patton, M.S.N., Utah; M. A. Pierce, M.S.N. Tennessee; V. M. Radford, M.S., Colorado; J. H. Rice, M.N., Emory; M. T. Sharp, Ed.D., Tennessee; D. H. Shoffner, M.S.N. Tennessee; P. L. Smith, M.S.N., Medical College of Georgia; M. S. Theodoropoulos, M.S.N. Boston; S. P. Thomas, Ph.D., Tennessee.

**Instructors:**

S. M. Bowen, M.S., Tennessee; S. M. Helton, M.S.N., Texas Woman's; E. R. White, M.S.N., Oklahoma.

**Lecturer:**

D. B. Stephens, M.S., Tennessee.

### Graduate

General requirements for the Master of Science in Nursing degree are given in the Graduate Catalog. The following courses are open only to MSN degree candidates who have not completed an undergraduate major in nursing: 2410, 4240-10, 4260, 4280 and 4450.

#### 2410 Integrated Biomedical and Health Science (1-5)

Examination and application of selected theories from physics, cellular biochemistry, genetics, microbiology and nutrition to the nursing process. Five modules each carry one credit. Prerequisite: One year of biology or chemistry or consent of instructor.

#### 2800 Introduction to Clinical Nursing (4)

Theory and laboratory activities for development of cognitive and psychomotor nursing skills: emphasis on determinants of health, nurse-client interactions, and nursing assessment in non-acute health care settings. 3 hours and 1 lab. Prerequisite: All lower-division requirements and selection for progression to upper division; coreq: Biology 3110, Nutrition 3020, and Microbiology 2910-19 S. St.

### 2810 Transition to Professional Nursing (4)

Review of current status of profession; analysis of nursing process as applied to a shifting health care delivery system; exploration of UTK's philosophy of professional nursing and of the conceptual framework of the baccalaureate program. 3 lectures, 1 lab. Prerequisite: RN status and completion of all lower-division requirements, or consent of instructor.
3010 Nursing Process (3) Emphasis upon the nursing process as it applies to hospitalized adults with uncomplicated health problems; continued development of psychomotor skills; introduction of concepts of family health nursing. 3 hrs. and 1 lab. Prereq.: All 3000-level nursing courses or consent of instructor.

4010 Physiological Principles Applied to Health Science (4) An introduction to the physiological sciences including application to varying stages of health and illness. Prereq.: RN status or consent of instructor. Not for credit for students who have taken 3210 and/or 3220.

4110 Family Health Nursing (10) Nursing needs of families in health and crisis. Emphasis on provision of comprehensive care to families in the child bearing and child rearing phases of family development. Application of principles of human growth and development, family dynamics, and crisis intervention. Laboratory experience to develop skills necessary to provide quality nursing care to families in health and crisis. Emphasis on provision of continuity of care for those patients and their families. 5 hours, 3 labs. Prereq.: 3010, 3110, 3410 or 4200. W.

4230 Psychosocial and Long-Term Nursing (10) Nursing needs of clients whose primary health problems are of a developmental, behavioral, or long-term nature. Developmental and psychological theories and concepts related to the care of clients and families whose primary health problems are of a developmental, behavioral, or long-term nature. Prereq.: 2810. For RN's only. F, W.

4260 Community Health Nursing (6) Theories and principles of mental health and illness, chronicity, aging, and rehabilitation. Laboratory experiences in a variety of settings related to nursing practice in a variety of settings. Prereq.: All required 3000-level nursing courses. For MSN candidates without a BSN degree. F, W.

4260 Community Mental Health Nursing (6) Principles, theories, and concepts required to provide nursing care to clients and families whose problems are of a developmental, behavioral, or long-term nature. Prereq.: 4260 or 4230. For nursing majors only. 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 community and clinical settings. 2 lectures, 2 labs. Prereq.: All required 3000-level nursing courses. For MSN candidates without a BSN degree. F, W.

4500 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. F, W.

4440 Scientific Inquiry in Nursing (3) Introduction to the language of research, types of research designs, methodological approaches, sampling, data analysis, and significance of findings. Evaluation of existing and ongoing research studies. Prereq.: Senior standing or MSN candidate. F, W.

4460 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. F, W.

4615 Family Health Nursing Theory (5) Principles, theories, and concepts required to provide nursing care to childbearing and child rearing families in varying stages of health and illness; emphasis on growth and development, family dynamics, and crisis intervention. Laboratory experience to develop skills necessary to provide quality nursing care to childbearing and child rearing families in hospital and community settings. Prereq.: All required 3000-level nursing courses. For MSN candidates without a BSN degree. F, W.

4626 Nursing the Child-Bearing Family (6) 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.

4628 Child and Family Nursing Theory (3) Principles, theories, and concepts required to provide nursing care to childbearing and child rearing families in hospital and community settings. Prereq.: 2810. For RN's in MSN program with a BSN degree. SU, F.

4730 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 student. May be repeated with consent of instructor. Maximum credit 9 hours. Prereq. Consent of instructor.

4750 Nursing Management (6) Theory and practice of management principles with application to nursing organizations of appropriate leadership styles, delegation, decision making and leadership are emphasized; nursing staff qualifications, staff utilization and nursing service delivery patterns are analyzed and evaluated. E. For nursing majors only. S.

Course Descriptions/College of Nursing 213

Graduate Consult the Graduate Catalog
The College of Social Work

Ben P. Granger, Dean
Roger M. Nooe, Associate Dean and Acting Chair of the BSSW Program

Social Work is a helping profession which has developed in response to people's changing needs. It has been identified as one of the growth professions through the year 2000. The purpose of social work is to provide skilled intervention in the prevention and amelioration of individual and societal problems. It is a challenging and rewarding career involving the application of knowledge, skills, and professional values to assist individuals, families, groups, and communities in reaching their potentials. The primary objective of the undergraduate social work program is to prepare students for beginning social work practice. It is the purpose of the College to provide an education which fosters growth in both individual and career development.

The program prepares students for social work careers in such diverse areas as schools, youth programs, family service agencies, nursing homes, courts, mental health centers, and welfare agencies. The degree provides graduates a competitive advantage in many jobs, the possibility of upward mobility to one year's standing in some master's degree programs in social work, and the potential to be licensed in a number of states throughout the nation.

The social work curriculum builds on a strong liberal arts base. The humanities and the social and behavioral sciences are emphasized to help students understand human diversity and the transactions between people and their environment. The curriculum combines classroom experience and agency-based field placements. Courses provide a knowledge base in social work practice, theory, human behavior, social welfare policy, and research. 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. The program is accredited by the Council on Social Work Education.

The College of Social Work had its beginning as the Nashville School of Social Work in 1942, offering the master's degree. Vanderbilt University provided administration for the program, appointed the faculty, and awarded the first two master of science in Social Work degrees in June 1944. The school was accredited in 1945. It was transferred to the University July 1, 1951, becoming the University of Tennessee School of Social Work. The school continued to offer only the MSSW degree, but by the 1960s had established branches in Knoxville and Memphis. In 1973, the headquarters of the school was moved from Nashville to the main campus at Knoxville. A Ph.D. program was added in September 1983.

The undergraduate social work program (BSSW) started in 1982 in the College of Liberal Arts. In that year the Tennessee Higher Education Commission approved the program and in June 1983, ten students graduated with a BSSW degree. It was granted initial accreditation by the Council on Social Work Education in January 1984. The program was transferred to the School of Social Work in September 1985; shortly thereafter the school became the College of Social Work. The three programs represent the full continuum of social work education.

FACILITIES

The College of Social Work is housed in Henson Hall, located on the corner of Cumberland Avenue and Volunteer Boulevard. This building houses the administrative and faculty offices, along with classrooms for the BSSW, MSSW and Ph.D. programs. Video and computer resources are available to facilitate instruction.

GRADUATE PROGRAM

The College of Social Work offers a fully accredited two year graduate professional degree at the master's level (MSSW). The College also offers a graduate program leading to a Doctor of Philosophy in Social Work (Ph.D.). Information concerning graduate programs is given in the College of Social Work Bulletin and also in the Graduate Catalog.

ADVISING

Students who express an interest in the social work major are assigned an advisor by the Chair of the BSSW program. The advisor assists students in course selection.

MAJOR REQUIREMENTS

B.S. Major. Consists of 61 hours in professional foundation courses: Social Work 2000 (4), 2500 (3), 3400-10 (4,4), 4103 (3,3), 3110-4120-30 (4,4,4), 4200 (4), 3500-10 (4,4), 4520-30 (8,8) 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 2010 (4).

BACHELOR OF SCIENCE IN SOCIAL WORK CURRICULUM

Freshman

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<tr>
<th>Grade</th>
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<tr>
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<td>Intermediate Foreign Language</td>
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<td></td>
<td>History (non U.S.)</td>
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<tr>
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<td>Physical Science Sequence (lab)</td>
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<td>Sophomore</td>
<td>Computer Science 1510</td>
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<td>Zoology 2510-20-30</td>
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<tr>
<td></td>
<td>Social Work 2000</td>
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<tr>
<td></td>
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<tr>
<td></td>
<td>Philosophical Perspective Package (Humanities)</td>
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<td></td>
<td>Anthropology 2530 (Social Science)</td>
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<td></td>
<td>Economics (2510)</td>
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<td>Junior</td>
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<td>Child and Family Studies 3515</td>
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### Social Work (906)

#### Administration:

- **Ben P. Granger, Dean and Professor of Social Work, Ph.D., Brandeis University, The Florence Heller School for Advanced Studies in Social Welfare**

#### Professors:

- Gideon W. Fryer, Ed.D., Columbia University;
- Ben P. Granger, Ph.D., Brandeis University;
- Roger M. Nooe, D.S.W., Tulane University

#### Associate Professors:

- Thomas Cruthirds, D.S.W., Tulane University;
- Catherine A. Faver, Ph.D., University of Michigan;
- Ellie Moses, D.S.W., University of California, Berkeley;
- Frank J. Spicuzza, M.S.W., University of Tennessee;
- Ann R. Wachter, M.S.W., Howard University;
- Vicki G. Williams, M.S.W., Howard University;
- Margaret P. Strong, M.S.W., Tulane University;
- Paul G. Zarbock, M.S.W., M.S.W., University of Wisconsin;

#### Assistant Professors:

- Jannette Jennings, Ph.D., University of Michigan;
- Denzel C. Johnston, M.S.W., University of California, Berkeley;
- Ellie Moses, D.S.W., University of California;
- Thomas Cruthirds, D.S.W., Tulane University;
- Catherine A. Faver, Ph.D., University of Michigan;
- Ellie Moses, D.S.W., University of California, Berkeley;
- Frank J. Spicuzza, M.S.W., University of Tennessee;
- Ann R. Wachter, M.S.W., Howard University;
- Vicki G. Williams, M.S.W., Howard University;
- Margaret P. Strong, M.S.W., Tulane University;
- Paul G. Zarbock, M.S.W., M.S.W., University of Wisconsin;

### Course Load

The maximum credit hours per quarter allowed for any student without special permission is 19. The Associate Dean of the College must give permission to take 20 hours or more.

#### SOCIAL WORK (906)

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Hours</th>
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<tr>
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<td>Social Work Practice I (4)</td>
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<td>Social Work 4120-30</td>
<td>Social Work Practice II (4)</td>
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<td>Social Work 4130</td>
<td>Social Work Practice III (4)</td>
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</tr>
<tr>
<td>Social Work 4200</td>
<td>Social Welfare Policies and Issues (4)</td>
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<td>Social Work 4520-30</td>
<td>Social Work Practice IV (8)</td>
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<tr>
<td>Electives</td>
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<td>7-14</td>
</tr>
</tbody>
</table>

**TOTAL: 190 Hours**

### Social Work/College of Social Work 215

- 4010 Foreign Study (1-16) See page 161.
- 4010 Off-Campus Study (1-16) See page 161.
- 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 which the student has an interest. Ongoing faculty guidance, supervision, and evaluation is required. Prereq: Full association with the major.

- 4100 Social Work Practice I (4) This course is the second offering in a sequence of three courses which examines the knowledge, 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 the major.

- 4130 Social Work Practice III (4) Essential theory, values, and skills of professional social work in the human welfare system developed and presently functions. Emphasis on changing human needs and the organized societal response. Focus on how and why our present social welfare system developed and presently functions. Prereq: Full association with the major.

### Social Work/College of Social Work 215

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Independent Departments

Department of Air Force Aerospace Studies

Air Force ROTC Program

Professor of Air Force Aerospace Studies:
Colonel Arthur W. Ahl (Head), M.S. Troy State.

Assistant Professors:
Captain Robert J. Dowd, M.S., University of Southern California; Captain Richard E. Lee, M.S., University of Southern California; Captain M. K. Chaney, M.A., Webster College.

PURPOSE

The Air Force Reserve Officers Training Corps (AFROTC) 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 person 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, including pilot and navigator positions.

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 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 experiences such as preparing the cadre 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 cadre 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 for cadets training as pilot candidates who are AFROTC cadets. The cadet receives 13 hours of flight instruction.

UNIVERSITY CREDITS

The following credits are granted for Air Force Aerospace Studies work and are creditable toward a degree in some colleges. Aerospace Studies 1200 series (Freshman)—6 quarter hours per year Aerospace Studies 2200 series (Sophomore)—6 quarter hours per year Field Training Academics (Sophomore)—6 quarter hours Aerospace Studies 3200 series (Junior)—9 quarter hours per year Field 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. Each scholarship provides full tuition, laboratory and incidental fees, and book fee. 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 contained in the "Air Force ROTC Four-Year College Scholarship Program Application Booklet." Booklets may be obtained directly from Air Force ROTC Public Affairs, Maxwell, AFB, 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 Aerospace Studies.

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. Enrolees are required to deposit $75 as security to the University against loss or damage to the uniform.

forms. The 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. Emphasis on the Air Force Commands, the environment in which the Air Force 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 before the Wright Brothers and continuing into the 1980s. 1 hr and 1 lab (Leadership Laboratory).

2240 Field Training (Academic Program) (1-6) Role of United States military forces in contemporary world, with particular attention to United States Air Force, its organization and mission, various component forces of U.S. military power, organization of America’s defense structure, policies of major powers, and elements and processes in making of defense policy. Conducted at Field Training bases throughout 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).

4210-20-30 Air Force Aerospace Studies (3,3,3) Role and function of professional officer in a democratic society; socialization process, public attitudes, and value orientations associated with professional military service; rules for maintaining national security forces; decision-making processes of Department of Defense; political, economic, and social constraints affecting formulation of U.S. defense policy; impact of technological and international developments upon strategic preparedness; emphasis on developing communicative skills. 3 hours and 1 lab (Leadership Laboratory).

Department of Military Science

Army ROTC Program

Professor of Military Science:
Colonel G. N. Fredrick (Head), M.A. Central Michigan University
Assistant Professors of Military Science:
MAJ. K. Buckner, M.Ed., Mississippi State University
CPT. C. E. Cochrane, M.S. University of Southern California
CPT. R. G. Head, MPA, Indiana University-Bloomington
MAJ. K. W. Johnson, M.Ed., West Georgia College, Ed.D. Mississippi State University
CPT. F. A. Martin, C. Central Michigan University
MAJ. R. M. Pierce, M.A. Central Michigan University
MAJ. D. E. Price, M.S., Central Washington State, CPT (F) R. G. Robertson, M.S., American Technical University.

UNIVERSITY ROTC PROGRAM

The University of Tennessee offers a voluntary ROTC program leading to appointment as an officer in the United States Army.

PURPOSE AND OBJECTIVE

The purpose is to provide professional education which will prepare students for appointment as commissioned officers in the Regular Army or the United States Army Reserve components.

Objectives of the program are to provide students with an understanding of the fundamental concepts and principles of military art and science; to develop in them a basic understanding of associated professional knowledge, a strong sense of personal integrity, honor, and individual responsibility, and an appreciation of the requirements for national security. It is to establish a sound basis for the students’ future professional development.

ROTC draws young men and women for training from all geographical, economic, and social strata of our society as well as from the many educational disciplines required for the modern Army. The program insures that men and women educated in a liberal and broad spectrum of American institutions of higher learning are commissioned annually into the officer corps.

BASIC ACADEMIC REQUIREMENTS FOR APPOINTMENT AS SECOND LIEUTENANT

Academic prerequisites for appointment as Second Lieutenant in the United States Army through the ROTC Program at The University of Tennessee, Knoxville, include the following requirements. The sequence and selection of courses not specified will be determined by the advisor in concert with the head of the Department of Military Science. In cases where a student is pursuing a discipline which is narrowly restricted (excluding Military Science Core Curriculum) with few elective options, any conflict in scheduling or course selection will be resolved in favor of academic degree requirements.

MILITARY SCIENCE CORE CURRICULUM

Basic Military Studies

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<th>Course Code</th>
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<td>Fundamentals of Military Organization</td>
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<tr>
<td>MS 1120</td>
<td>Historical Evolution of the US Army</td>
<td>1775—1865</td>
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<td>MS 1130</td>
<td>Historical Evolution of the US Army, 1865—Present</td>
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<td>MS 2110</td>
<td>Leadership Development Techniques</td>
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<tr>
<td>MS 2120</td>
<td>Basic Officer Skills</td>
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<tr>
<td>MS 2130</td>
<td>The Art of War</td>
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<td>MS 3110-20-30</td>
<td>Advanced Leadership and Management</td>
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<tr>
<td>MS 4000</td>
<td>Army ROTC Advanced Summer Studies</td>
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<td>MS 4100</td>
<td>Military Professional Ethics and Leadership, LAB</td>
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<td>MS 4120</td>
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<tr>
<td>MS 4130</td>
<td>Officership, LAB</td>
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Substitution

All substitutions must receive the prior approval of the Student Academic Advisor and the PMS. If the credit is not available in AFROTC Basic Summer Studies it may be taken for 6 credits in lieu of MS 1110, 2110.
and 2120. (b) History 4370, 4380 may be taken in lieu of MS 1120, 1130 and 2130.

ENROLLMENT AND CONTINUANCE REQUIREMENT

The general requirements for enrollment and continuance in the Army ROTC program are:

1. **Basic Military Studies**
   - Be a citizen of the United States.
   - Be physically qualified.
   - Freshman or Sophomore standing. Student with higher standing requires consent of instructor.

2. **Advanced Military Studies**
   - Cadets applying for enrollment in the Advanced ROTC program who seek a Commission must:
     - Have successfully completed MS 1110, 2110, 2120 or have accomplished one of the following: Prior Military Service, ROTC Basic Summer Studies, 3 Year High School ROTC Basic Course.
     - Have two academic years of college remaining (either graduate or undergraduate).
     - Be enrolled as a full-time student, either at The University of Tennessee or at a nearby institution in a cooperative program.
     - Meet military screening and physical requirements.
     - Maintain a 2.0 G.P.A.
     - Maintain B average in Military Science Courses as a scholarship student.

NOTE: Regularly enrolled students who meet the academic prerequisites and do not desire a commission may take individual courses as electives with the permission of the department head and academic advisor.

PLACEMENT CREDIT FOR MILITARY TRAINING

On the basis of previous honorable active military service in any branch of the Armed Services, or participation in a Junior ROTC Program at a Secondary School, a student may request exemption from portions of the Basic Course. Exemption allowed will be determined by the Professor of Military Science.

SPECIAL PROGRAMS

1. **ARMY ROTC SCHOLARSHIP PROGRAM**
   - The Army ROTC scholarship program offers financial assistance to outstanding young men and women in the Army ROTC program who are interested in the Army as a career. Each scholarship provides for free tuition, textbooks subsidy, and laboratory fees in addition to a subsistence allowance of $100 per month for the period that the scholarship is in effect. Scholarships may be awarded for either 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.

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 service 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 ($100/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 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 Advanced ROTC Program 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 $650 for Advanced Summer Studies, $490 for Basic Summer Studies, plus meals and clothing are provided.

BRANCH SELECTION

The curriculum of the Army ROTC Program is designed to qualify the cadet for appointment as an officer. Selection for assignment to the various branches of the Army is based upon:

1. The personal interests of the cadet.
2. The major course of study.
3. Leadership potential.
4. The needs of the Service.

Under this system a cadet may be commissioned in any branch for which he or she is qualified and in which a need for officers exists. After graduation and commissioning, the officer will attend a service school for further specialized military training which will qualify him or her for the branch to which he or she is assigned.

EXTRA CURRICULAR ACTIVITIES

Numerous military-related activities are available to cadets throughout the school year. These include the Tennessee Rangers, Rifle Company, UT Color Guard and Sponsor Corps. These organizations provide both leadership/management positions and opportunities for cadets, and the management of organizations and factors affecting human behavior. (44 hours of instruction are presented each week).

2110 Leadership and Development Techniques (3)
   - A survey of leadership theories and principles with particular attention to communications skills and factors affecting human behavior. Development of leadership qualities through practical exercises requiring both individual and group participation. Prerequisite: 1110. Freshman or sophomore standing. Student with higher standing requires consent of instructor.

2120 Basic Officer Skills (3)
   - Emphasis on small unit operating techniques to include familiarization with military equipment, land navigation and first aid. Prerequisite: 1110. Freshman or sophomore standing. Student with higher standing requires consent of instructor.

2130 The Art of War (1)
   - A survey of military strategy and principles of war based upon the works of Clausewitz, Sun Tzu, Hart, and Summers. Prerequisite: 1110. F, W, S.

3110-20-30 Advanced Leadership and Management (4,4,4)
   - Applied leadership to include organization and operation of military electronics communication 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 application. Prerequisite: 1110. F, W, S.

4000 Army ROTC Advanced Summer Studies (6)
   - A six-week field study program conducted at an Army installation in the continental United States. Rotation and time of instruction are scheduled each week. A prerequisite to commissioning. Normally scheduled upon completion of 3110. Instruction presented by ROTC faculty from colleges and universities nation wide. Program of study is an extension of leadership and management concepts with emphasis on practical application. Prerequisite: 3110. SU.

4110 Military Professional Ethics and Leadership (4)
   - Analysis of the military professions characteris-
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 exercise. Prereq: 4120 or consent of instructor. S.
Public Service and Continuing Education

R. S. Hutchison, Vice President for Public Service and Continuing Education

Institute for Public Service

Executive Director:
T. B. Ballard, B.S. Tennessee.

Assistant Director:
J. Muscatello, Jr., M.P.A. West Virginia.

Business Manager:
G. W. Baskette

Executive Assistant:
C. E. Shoopman, Jr., B.A. Vanderbilt

Assistant Director:

Computer Programmer Analyst:
L. D. Brothers, B.S. Tennessee

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. Wormsley, B.S. Cumberland.

Assistant Director for Financial Administration:
T. D. McAnulty, M.A. Austin Peay State.

Legal Specialists:
P. C. Davis, J.D. YMCA Law School; R. E. Fults, J.D. Tennessee; M. A. Murphy, J.D. Tennessee; B. M. Thompson, J.D. Tennessee.

Financial Specialists:
R. L. Adkins, B.S. Bethel; M. D. Patterson, B.S. Tennessee; C. R. Phebus, M.E. Vanderbilt.

Intergovernmental Consultant:
G. A. Fouts, B.S. Georgia.

Senior Field Advisors:

County Field Advisors:
W. M. Malone, B.S. Lambuth; F. D. McKee, B.S. Tennessee.

Special Projects Coordinator:
M. J. Frank, B.A. Tennessee

Management Systems Specialist:
R. H. Villier, B.S. East Tennessee State.

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 88th 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 through the Tennessee County Services Association and its Board of Directors, which is recognized as their official agency or instrumentality."

The Service is headquartered in Nashville, with regional offices in Cookeville, Jackson, Johnson City, Martin and Knoxville.

Municipal Technical Advisory Service

Executive Director:
C. L. Overman, M.C.M. East Tennessee State.

Assistant Director:
W. K. Jones, B.S. Tennessee Technological.

Assistant to the Executive Director:
W. J. Walsh, M.P.A. Tennessee.

Specialist Consultants:
R. M. Ellis, M.C.M. East Tennessee State (Public Safety); S. D. Hemsley, J.D. Tennessee (Municipal Law); D. W. Huffer, J.D. Tennessee (Intergovernmental Relations); P. S. Jones, M.A. Bowling Green; J. Kerch, B.S. Tennessee (Municipal Information); F. E. Kirk, B.S. in C.E. Southern Methodist (Public Works); J. H. Leuty, B.S. Tennessee Polytechnic (Finance and Accounting); A. C. Lock, Jr., B.S.C.E. Oklahoma State (Public Works); D. W. Ovady, J.D. Tennessee (Ordinance Codification); M. T. Pentecost, B.S. Murray State (Finance and Accounting); E. Puett, J.D. Tennessee (Municipal Law).
The Center for Industrial Services is headquartered in Nashville. Regional offices are maintained in Cockeville, Jackson, Johnson City, Martin and Knoxville.

Center for Government Training
Executive Director: G. M. Mabrey, III, M.C.M. East Tennessee State.
Assistant Director: M. H. Lewis, M.B.A. Tennessee.
Regional Director: D. R. Waynick, B.S. Lambuth.
Senior Regional Manager: J. W. Fort, M.A. Austin Peay State.
Coordinator: M. S. Riggsbee, B.S. Christian Brothers.

The Center for Government Training has responsibility for providing professional assistance and establishing training and career development programs for state and local government officials and employees throughout the state. Headquarters is located in Nashville, but regional offices are also maintained in Jackson and Knoxville. The Center is charged with identifying and analyzing needs for public service education and training at the state and local levels in Tennessee, and with developing and conducting programs for training of public agency employees, working with institutions of higher education in the state and other educational facilities. The Center acts as a clearing house for information relative to public service personnel education and training programs.

Critical Care Education Center
Director: N. J. Shepard, B.S. Middle Tennessee.
Assistant Director: P. P. Vaughan, M.S.N. Vanderbilt.
Coordinator: V. S. Rice, Ph.D. Vanderbilt.

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 1979, the Center was moved to the Institute of Public Affairs.

The Center provides: (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 92 of this catalog.

Center for Extended Learning

The UT Center for Extended Learning is a department which supports the extension of existing courses and new learning opportunities beyond the primary campuses of The University of Tennessee. The Center utilizes various communication and teaching media - correspondence courses, videotape, broadcast and closed-circuit television, audiotape, radio, and conferences - to provide learning opportunities to individuals and groups.

CEL extends college credit courses, non-credit courses, and high school courses for qualified people in the most accessible locations: their homes, local schools, and job sites. Through the Center for Extended Learning, the University of Tennessee is able to overcome geographic limitations in performing its services as Tennessee's land-grant institution of higher education.

For information on enrollment, costs, books, and credit, write: Center for Extended Learning, 420 Communications and University Extension Building, The University of Tennessee, Knoxville, Tennessee 37999-0300. Telephone: (615) 974-5135.
Radio Services

Director:
R. A. Shirley, M.A. Tennessee.

Managing Director:
S. D. Williamson, Jr., M.S. Tennessee.

Associate Directors:
J. A. Chasteen; N. L. Dryer, B.M. Indiana.

Assistant Director:
J. C. Adkins, M.S. Tennessee.

Production Manager:
P. K. Doyle, M.S. Tennessee.

Staff:

Radio Services provides local, regional, 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 assists with 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 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.

Center for Educational Video and Photography

Director: E. B. Matthews, M.A. Ohio State.

Associate Director:
E. B. Robertson

Assistant Directors:
D. L. Bower; N. W. Myers.

Production Manager:

Chief Engineer:
M. L. Battershell.

Assistant Chief Engineer:
T. W. Owens, E.S. Indiana.

Media Production Assistant:
S. C. Moore

Senior Communications and Electronics Technician:
D. J. Hamilton, B.S. Tennessee (Martin)
The University Library

Donald R. Hunt, Director
Betty G. Bengtson, Associate Director/Technical Services; Marcia J. Myers, Associate Director/Administrative Services; Aubrey H. Mitchell, Associate Director for Public Services.

Professors:
Donald R. Hunt (Director), M.A.L.S. Michigan; G. M. Abel (Emeritus), M.S. Chicago; R. J. Bassett, A.M.L.S. Michigan; P. S. Bayne, M.S.L.S. North Carolina; O. H. Branch (Emerita), B.A.L.S., Emory; M. F. Crawford, M.S.L.S., Kentucky; R. J. Dobson, M.S. Columbia; J. E. Goehring (Emerita), B.S.L.S. Columbus; M. J. Meyers, Ph.D. Florida State; L. B. Vandiver, (Emerita), M.A. Florida State.

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 of Tennessee'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 1,524,127 books, 1,828,597 microforms, 7,280 audio tapes, 134,038 slides, 1,950 video tapes, more than 2.7 million manuscripts, and various historical ephemera, maps, and oral history tapes. More than 18,000 periodical and serial titles are received annually.

The library in its five locations is open to all students and faculty, regardless of their fields of study. The James D. Hoskins Library at I40 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, newspapers, microforms, computerized information services, and Special Collections, the last a repository of local and regional source materials. The John C. Hodges Undergraduate Library, now under extensive alteration and expansion, will become the central library when an addition of 250,000 square feet is completed, perhaps by 1987. Library services for the undergraduate are continuing in the heart of campus: Reserve, non-print, and the film office are located in Dunford Hall; UGL administration, circulation, periodicals, reference and systems are in the Humanities and Social Sciences Building.

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 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.
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.

Located at SMC are an IBM 3081-D, an IBM 4341/3, two DEC VAX 11/785s and a VAX 8600 in a VAXcluster, a DECsystem-10, and a DEC PDP 11/4455 which supports the Computer Access for Education (CAFE) system.

The IBM 3081-D and the IBM 4381/G each have 16 million bytes of memory. Each VAX 785 has 8 million bytes of memory and the VAX 8600 has 20 million bytes of memory. The DECsystem-10 has 1 million words of memory.

The IBM 3081-D runs under MVS/SP with JES2. The IBM 4381/3 runs VM/SP with CMS. The DECsystem-10 runs under TOPS-10 and the VAXcluster runs VMS. A Cal-Comp 1061 plotter is used to produce graphics output from raw data read directly to the VAXcluster.

Located in Andy Holt Tower is an IBM 386/40, operating under DOS with POWER II, which is used exclusively for administrative work. Data entry services are provided with two Nixdorf 800/55 key-to-disk systems and a 6670 laser printer is used to produce high quality printed output.

A graphics center with 10 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.

UTCC maintains eight remote job entry stations for batch work and 15 sites for interactive computing work on the Knoxville campus and supplies computing services to the other campuses in the UT System through remote job entry facilities.

Timesharing services are offered on the DECsystem-10, the VAXcluster, and the IBM 4381/3 (VM/CMS). Coursewriter III, an online Computer Assisted Instruction system, is offered on the IBM 3081-D.

UTCC timesharing can be accessed through a terminal or microcomputer attached to one of more than 700 directly connected lines or approximately 80 dial-up lines. UTCC timesharing supports two classes of interactive terminals: ASCII start/stop and IBM 3270. All ASCII terminals access timesharing through a terminal port selection and multiplexing network called the DCA (Digital Communications Associates) system. In addition, DECnet links the VAXcluster at UTCC with VAX computers located in the computer science and electrical engineering departments on the Knoxville campus and at the UT Space Institute at Tullahoma.

Software includes most of the commonly used compilers and interpreters, as well as a large number of programs for statistical, mathematical, engineering, operations research, and graphics applications.

Through the UTCC computers, the University of Tennessee is affiliated with EDUNET and BITNET, two communication networks of colleges and universities. EDUNET is an international computing network, primarily for researchers in higher education, which permits users to open accounts and use computing facilities at any of 19 universities which supply software to the network. Available resources include a number of computer assisted instruction (CAI) packages, electronic mail services, and special purpose programs in many fields of study. BITNET, a network of over 800 computers located at educational and research institutions throughout the United States, Canada, Europe, and the Far East, allows the rapid exchange of messages and files associated with university work.

Throughout the year, UTCC consultants teach non-credit short courses on topics including programming languages, job control language, the use of graphics, plotting, and the statistical and mathematical programs available at UTCC. Some short courses are also available on videotape at the Undergraduate Library.

UTC provides more than 100 online and printed documents which describe the availability and use of system hardware and software. These include the IBM User's Guide, which describes the use of the IBM computers; the DECsystem-10 User's Guide, which describes the use of the DECsystem-10; and the UTCC Graphics Guide, which describes the use of graphics facilities.

These guides are available at the UT Book & Supply Store. A free monthly UTCC Newsletter announces systems, equipment, and procedural changes and contains other items of interest to users.

All users of UTCC facilities are assigned a consultant who is available to answer questions about UTCC resources and to assist in accessing the UTCC library of computer programs.
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