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/AA/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.

UT Knoxville 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 Educational Amendments of 1972, Public Law 92-318; and Section 504 of the Rehabilitation Act of 1973, Public Law 93-112, respectively. This policy extends both to employment by and admission to the University.

In accordance with the Tennessee College and University Security Information Act of 1989, the University of Tennessee, Knoxville has prepared a report containing campus security policies and procedures, data on campus crimes, and other related information. A free copy of this report may be obtained by any student, employee, or applicant for admission or employment from the Office of the Dean of Students; 413 Student Services Building; UT Knoxville; Knoxville, TN 37996-0248.

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Publication Authorization Number: ED-0425-009-90
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THE UNIVERSITY OF TENNESSEE BOARD OF TRUSTEES

Legal Title: The University of Tennessee
His Excellency, THE GOVERNOR OF TENNESSEE Ex-Officio
The Commissioner of Education Ex-Officio
The Commissioner of Agriculture Ex-Officio
The President of The University Ex-Officio
The Executive Director of Tennessee Higher Education Commission Ex-Officio

<table>
<thead>
<tr>
<th>From Congressional Districts</th>
<th>District</th>
<th>Service Begins</th>
<th>Term Expires</th>
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</thead>
<tbody>
<tr>
<td>R.B. Hailey, Sevierville</td>
<td>First</td>
<td>1984</td>
<td>June 1, 1993</td>
</tr>
<tr>
<td>William B. Sansom, Knoxville</td>
<td>Second</td>
<td>1986</td>
<td>June 1, 1995</td>
</tr>
<tr>
<td>James L. Moore, Jr., Chattanooga</td>
<td>Third</td>
<td>1988</td>
<td>June 1, 1994</td>
</tr>
<tr>
<td>William M. Johnson, Sparta</td>
<td>Fourth</td>
<td>1975</td>
<td>June 1, 1996</td>
</tr>
<tr>
<td>Marcia Austin Echols, Nashville</td>
<td>Fifth</td>
<td>1979</td>
<td>June 1, 1991</td>
</tr>
<tr>
<td>Amon Carter Evans, Columbia</td>
<td>Sixth</td>
<td>1984</td>
<td>June 1, 1993</td>
</tr>
<tr>
<td>Jack V. Dalton, Parsons</td>
<td>Seventh</td>
<td>1988</td>
<td>June 1, 1994</td>
</tr>
<tr>
<td>Ben S. Kimbrough, Clarksville</td>
<td>Seventh</td>
<td>1980</td>
<td>June 1, 1990</td>
</tr>
<tr>
<td>Tom Elam, Union City</td>
<td>Eighth</td>
<td>1956</td>
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</tr>
<tr>
<td>Ronald Terry, Memphis</td>
<td>Ninth</td>
<td>1986</td>
<td>June 1, 1995</td>
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| From Anderson, Bedford, Coffee, Franklin, Lincoln, Moore, and Warren Counties |
| J. Steven Ennis | 1988 | June 1, 1994 |

| From Davidson County |
| Michael Graves | 1984 | June 1, 1993 |

| From Hamilton County |
| Paul J. Kinser | 1969 | June 1, 1996 |

| From Knox County |
| Donelson M. Leake | 1989 | June 1, 1995 |
| James A. Haslam, II | 1980 | June 1, 1989 |

| From Shelby County |
| Sam Cooper | 1981 | June 1, 1990 |
| Jack J. Craddock | 1981 | June 1, 1990 |

| From Weakley County |
| James F. Harrison | 1981 | June 1, 1990 |

| Student Member |
| Christopher C. Bridges | 1989 | July 1, 1990 |

Officers of the Board
Ned McWherter, Chairman
William M. Johnson, Vice Chairman
Lamar Alexander, President
Charles M. Peccolo, Jr., Treasurer
Beauchamp E. Brogan, Secretary
Linda Logan, Assistant Secretary

THE UNIVERSITY OF TENNESSEE
Administration and Service
President, Lamar Alexander, B.A., J.D.
Executive Vice President and Vice President for Development, Joseph E. Johnson, A.B., A.M., Ed.D.
Senior Vice President, Homer S. Fisher, B.S., M.B.A.
Vice President for Assessment, Michael T. Nettles, B.A., M.S., M.A., Ph.D.
Vice President for Agriculture, D.M. Gossett, B.S., M.S., Ph.D.
Vice President for Business and Finance, Emerson H. Fly, B.S., CPA
Vice President for Health Affairs, James C. Hunt, A.B., M.S., M.D.
Vice President for Public Service and University Relations, Sammie Lynn Puett, B.S., M.S., APR

General Counsel, Beauchamp E. Brogan, B.S., LL.B., J.D.
Treasurer, Charles M. Peccolo, Jr., B.S., MAcc, CPA, CCM

Emeriti Administrators:
Emeritus President, Edward J. Boling, B.S., M.S., LL.D., Ed. D.
Emeritus Vice Presidents for Academic Affairs, Kenneth L. Knickerbocker, A.B., A.M., Ph.D.; John W. Prados, B.S., M.S., Ph.D.
Emeritus Vice President for Business and Finance, W. Harold Read, B.S., M.B.A., CPA
Emeritus Treasurer, Brodie Baynes, B.S., CPA
### ACADEMIC CALENDAR FOR 1990-91

#### FALL SEMESTER, 1990

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 22</td>
<td>Classes Begin</td>
</tr>
<tr>
<td>September 3</td>
<td>LABOR DAY HOLIDAY</td>
</tr>
<tr>
<td>October 5</td>
<td>Fall Break</td>
</tr>
<tr>
<td>November 22-23</td>
<td>THANKSGIVING HOLIDAYS</td>
</tr>
<tr>
<td>December 5</td>
<td>Classes End</td>
</tr>
<tr>
<td>December 6-7</td>
<td>Study Period</td>
</tr>
<tr>
<td>December 8-13</td>
<td>Final Examinations</td>
</tr>
<tr>
<td>December 15</td>
<td>Commencement</td>
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</tbody>
</table>

#### SPRING SEMESTER, 1991

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 9</td>
<td>Classes Begin</td>
</tr>
<tr>
<td>January 21</td>
<td>MARTIN LUTHER KING, JR. HOLIDAY</td>
</tr>
<tr>
<td>March 18-22</td>
<td>SPRING BREAK</td>
</tr>
<tr>
<td>March 29</td>
<td>HOLIDAY</td>
</tr>
<tr>
<td>April 29</td>
<td>Classes End</td>
</tr>
<tr>
<td>April 30-May 1</td>
<td>Study Period</td>
</tr>
<tr>
<td>May 2-7</td>
<td>Final Examinations</td>
</tr>
<tr>
<td>May 10</td>
<td>Commencement</td>
</tr>
</tbody>
</table>

#### SUMMER TERM 1991

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 30</td>
<td>Classes Begin</td>
</tr>
<tr>
<td>July 3</td>
<td>First Session Ends</td>
</tr>
<tr>
<td>July 4</td>
<td>INDEPENDENCE DAY HOLIDAY</td>
</tr>
<tr>
<td>July 5</td>
<td>Second Session Begins</td>
</tr>
<tr>
<td>August 7</td>
<td>Second Session Ends</td>
</tr>
<tr>
<td>August 9</td>
<td>Commencement</td>
</tr>
</tbody>
</table>
THE UNIVERSITY OF TENNESSEE, KNOXVILLE

Administrative Officers

Chancellor, John J. Quinn, B.S., Ph.D.
Executive Assistant to the Chancellor, Joseph B. Trahern, Jr., B.A., M.A., M.A., Ph.D.
Vice Provost, Hardy Liston, Jr., B.S., M.E.A.
Vice Provost, Ralph V. Norman, Jr., A.B., B.D., M.A., Ph.D.
Vice Provost and Dean of the Graduate School, C.W. Minkel, B.A., M.A., Ph.D.
Vice Provost for Research, Thomas C. Collins, B.S., M.S., Ph.D.
Vice Chancellor for Student Affairs, Philip A. Scheurer, B.A., M.S.
Associate Vice Chancellor for Student Affairs, Bert E. Sams, B.S., M.S.

General Administrative Officers

Athletics, Director, Doug Dickey
Finance, Director, Harold B. Whitehead, B.S., C.P.A.
Physical Plant, Director, John C. Parker, B.S.
Student Affairs:
Admissions and Records, Dean, Gerald Bowker, B.A., M.A.
Career Planning and Placement Service, Director, Robert Greenberg, B.A., M.S., Ed.D.
International Student Affairs, Acting Director, James N. Gehilar, B.A., Ph.D.
Intercollegiate Athletics for Women, Director, Joan Cronan, B.S., M.S.
Registrar, Bob Cochran, B.S.
Student Conduct, Dean, Charles R. Burchett, B.S., M.A.
Student Counseling Center and Special Services, Director, Richard L. Nash, B.A., M.S., Ed.D.
Student Health Service, Administrator, Fred E. Young, Jr., A.B., M.C.

Other Educational and Public Service Units

Libraries
Dean, Paula Kaufman, A.B., M.S., M.B.A.

Colleges and Schools

AT KNOXVILLE

Institute of Agriculture
Dean, College of Agriculture, O. Glen Hall, B.S., M.S., Ph.D.
Dean, College of Veterinary Medicine, Acting Dean, Michael Shires, B.V.S.C.; M.S., M.R.C.V.S.
School of Architecture
Dean, John William Rudd, B.A., M.A.
College of Business Administration
Dean, C. Warren Neel, B.S., M.B.A., Ph.D.
College of Communications
Dean, Untitled
Division of Continuing Education
Dean, Untitled
College of Education
Dean, Richard Wisniewski, B.S., M.E.D., Ed.D.
College of Engineering
Dean, William T. Snyder, B.S., M.S., Ph.D.
College of Human Ecology
Dean, Jacqueline DeJonge, B.S., M.A., Ph.D.
College of Law
Dean, Marilyn Yarbrough, B.A., J.D.
College of Liberal Arts
Dean, Lorman Ratner, A.B., M.A., Ph.D.
Graduate School of Library and Information Science
Acting Director, Gary Purcell, A.B., M.A., M.L.S.
College of Nursing
Dean, Sylvia E. Hart, B.S.N., M.S.N., Ph.D.
School of Planning
Director, James A. Spencer, B.S., M.C.P.
College of Social Work
Dean, Eunice Shatz, B.A., M.S.S.A., Ph.D.
Independent Departments
Air Force Reserve Officers’ Training Corps Professor of Air Science, Lt. Colonel Rex Jones, USAF
Army Reserve Officers’ Training Corps Professor of Military Science, Lt. Colonel, Hugh E. Howard, USA

AT OAK RIDGE

Oak Ridge Graduate School of Biomedical Sciences
Acting Director, Raymond A. Popp, B.S., A.M., Ph.D.

AT TULLAHOMA

Space Institute
Dean, Wesley L. Harris
programs, offered in more than 40 locations across Tennessee, respond to the needs of working adults who are seeking college degrees or preparing for career advancement.

HISTORICAL BACKGROUND

The University of Tennessee, one of the nation’s oldest institutions of higher education, traces its origins back to 1794—when George Washington was President of the United States. Two years before statehood was achieved, the Legislature of the Federal Territory which later became Tennessee granted a charter to Blount College, named in honor of William Blount, territorial governor.

Located near the center of Knoxville’s present business district, Blount College was non-sectarian in character, which was unusual for an institution of higher education in that day. The University has remained non-denominational and is said to be the oldest such institution west of the Appalachian Divide. From 1800 to 1804, Blount College admitted women as students, thus becoming the first coeducational college in the United States. The institution later restricted enrollment to men, but reestablished its coeducational status in 1892.

In 1807 the state legislature changed the name to East Tennessee College, and in 1826 the present site at Knoxville, the 40-acre tract known as “The Hill,” was acquired. The college’s name changed again in 1840—to East Tennessee University. The Civil War forced the institution to close, and its buildings were used as a hospital for Confederate troops and later occupied by Union troops.

East Tennessee University reopened after the war, and in 1869 the state legislature selected the University as the state’s Federal Land-Grant Institution, under terms of the Morrill Act passed by Congress in 1862. This enabled the University to broaden its offerings by establishing an Agricultural and Mechanical College.

Ten years later, East Tennessee University was chosen by the state legislature as Tennessee’s State University, and its name was changed to the University of Tennessee. The University pledged itself to the service and interest of the entire state, and the state pledged its name and reputation to the University, promising the institution a vital role in the progress of the state.

Today, the University is a statewide institution in terms of its physical locations as well as its services. The medical campus, founded in Nashville and acquired by the University in 1879, was moved to Memphis in 1911. The Martin campus, established in 1900 as a private institution, became part of the University of Tennessee in 1927. A fourth primary campus was established in Chattanooga in 1969 when the University of Chattanooga merged with the University of Tennessee. The University’s Nashville Center, established in 1947, became the fifth primary campus in 1971, but eight years later merged with Tennessee State University.

The Agricultural Extension Service, with district offices in Chattanooga, Cookeville, Jackson, Knoxville, and Nashville, has agricultural extension leaders and agents in each of Tennessee’s 95 counties. There are 15 Agriculture Experiment Stations located across the state.

In 1968, the University’s Board of Trustees reorganized the five-campus 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, particularly those of the past half century, have shown an active interest in the development of the University of Tennessee. Their 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.
There are women's teams in basketball, swimming, tennis, volleyball, cross country, and indoor and outdoor track and field. Intramural and extramural sports are directed by the Office of Recreation and are under the Division of Student Affairs. The Center for International Education, the Office of Career Services, and the Office of Student Affairs provide career-related books, job opportunities, and other career-related information.

Career Services provides help to students through individual and group assistance to choose a major, assess career alternatives, find employment, and complete a successful transition from the University to the world of work. The Service is especially well-known for its effective placement help which includes on-campus recruitment, job referrals, and other sources of job contact.

Included in the services offered at Career Services are two computer-aided career guidance programs, DISCOVER and the Strong Interest Inventory, which are offered to all students. Also available is a CREDENTIAL SERVICE for the issuance of credentials that may be required for admission to professional schools such as schools of medicine and law. The Service also provides assistance in obtaining visas and other foreign government documents.

There is also a CREDENTIAL SERVICE for the issuance of credentials that may be required for admission to professional schools such as schools of medicine and law. The Service also provides assistance in obtaining visas and other foreign government documents.

The goal of the Center for International Education is to promote and facilitate the internationalization of the University. The Center provides various programs and services to aid in the internationalization of the University.
The Center serves as a liaison with international students and scholars and the faculty and other University units. It assists with adjustment through orientation programs required of all new international students at the beginning of each term, and through individual advising and counseling on personal and academic matters.

The Center’s International House, 1515 Cumberland Avenue, provides a rich array of programs intended to bring together members of the international and the U.S. communities to share their cultures and customs and to learn of those of others. At the I-House English language classes are available for spouses, seminars of international interest are taught, and area volunteers work for intercultural communication and mutual understanding.

The Center also serves students and faculty interested in travel, work or study abroad. Staff are available to advise, to assist in the preparation of fellowship/scholarship applications, and to provide information on a broad range of international topics. A reference library oversees study and travel materials, scholarship and other special programs intended to serve those with international interests at the Center. International exchange programs through which enrollment at more than 50 universities throughout the world becomes possible and affordable for UT, Knoxville students are available. The phone number of the Center is: (615) 974-3177. Telex: 6503340787 via WUI.

COMPUTING CENTER
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 Stokely Management Center (SMC) and on the third floor of Dunford Hall.

Student accounts for use in coursework are requested by the department through which the course is offered. Faculty and staff members request UTCC accounts by completing a request for computing services. Each UTCC account is assigned a consultant who is available to assist about UTCC resources and to assist in accessing the UTCC library of computer programs. The Computer Access for Education (CAFE) program provides every UT, Knoxville student the opportunity to gain a computing experience through an individual UTCC account.

Noncredit short courses covering levels of computing from personal computing to super computing are taught throughout the year. Topics include programming languages, job control language, vector processing, the use of graphics, and the statistical and mathematical programs available at UTCC. Many courses are available on videotapes in Audiovisual Services in the John C. Hodges Library. Short courses are announced in the UTCC Newsletter and other UT, Knoxville publications, including the “Campus Capsule” section of the UT Daily Beacon, and Context.

UTCC maintains online and printed documents describing the availability and use of system hardware and software. The IBM User’s Guide, the VAXcluster User’s Guide, and the Graphics User’s Guide, are available at the UT Book and Supply Store. The monthly UTCC Newsletter announces systems, equipment, and procedural changes and contains other items of interest to users.

UTCC maintains 20 user work areas on the Knoxville campus, including locations in five residence halls, for interactive computing and submission of batch processing. Seven of the areas provide high speed line printing; four also provide laser printing. Computing services for the other UT campuses are supplied through remote links. UTCC maintains more than 100 microcomputers, including several models of both Apple Macintosh and IBM, in remote user work areas and microcomputer laboratories.

The UTCC network is connected to the Internet which provides access to other Internet sites such as those on ARPANET and MILIEND via the southeastern University Research Association Network (SURAnet). SURAnet connects to the National Science Foundation Network (NSFNET) which joins other state and regional networks as well as directly connecting four NSF supercomputing centers: the Cornell National Supercomputing Facility, The Center for Supercomputing Applications at the University of Illinois, the Pittsburgh Supercomputing Center, and the Texas Advanced Computing Center in San Diego Supercomputer Center. UTCC is also a member of BITNET, a network of more than 2100 computers located at educational and research institutions throughout North and South America, Europe, and Asia.

CULTURAL OPPORTUNITIES
THEATRE
The University of Tennessee Theatres consists of the Clarence Brown Theatre Company and the University Company.

The Clarence Brown Theatre Company is the professional theatre company in residence at the University of Tennessee, Knoxville. Founded in 1974 by Anthony Quayle and Ralph G. Allen, the Clarence Brown Theatre Company is a member of the League of Resident Theatres (LORT) and Theatre Communications Group, Inc.

The University Company has, under various titles, been staging productions since the late 1930s, using UT students and faculty as well as talent from the Knoxville Community.

In addition to these companies, the Department of Theater sponsors ACT (All Campus Theatre), a student organization whose aims are to provide educational opportunities in theatre, to assist in UT Theatres’ productions, to provide students with a forum, social activities and assistance, and to sponsor their own productions as time, man power, interest, and space permit.

The professional and university companies perform in the Clarence Brown Theatre and the Carousel Theatre. The Clarence Brown Theatre was built in 1970, and includes the 600-seat main auditorium with a proscenium stage, and the Studio Theatre, a 125-seat proscenium thrust theatre. The Clarence Brown Theatres are also home to the costume, electrics and scene shops and box office.

The Carousel Theatre is an arena theatre constructed in the early 1950s. Originally a tent theatre, the Carousel Theatre provides intimate surroundings for smaller and contemporaneous works. The seating is flexible, accommodating 350 to 500 patrons.

The season runs from September through June, and features a combination of student/faculty and professional productions. A primary series of six shows is complemented by a series of two to three contemporary productions. The Department of Theatre also hosts an annual residency of an international theatre company and several international artists.

All University students are welcome to join the University of Tennessee Theatres and participate in the productions.

FRANK H. MCCLUNG MUSEUM
Closely dedicated in 1963, the McClung Museum is actively involved in the collecting, preservation, and exhibition of objects in the fields of anthropology, archaeology, decorative and fine arts, medicine, local history and architecture, geological sciences and natural history.

Temporary and permanent exhibits are presented on such subjects. The Eleanor Deane Audigier Art Gallery exhibition features a series of original and color lithographs for objects from various periods through the turn of the century. Archaeological specimens, some as old as 12,000 years, that have been recovered during the University’s extensive excavations in the Tennessee River Valley are included in a major exhibition American Indian in Tennessee. The Museum’s comprehensive medical collection is reflected in the exhibit Late 19th-Early 20th Century Medical Practices in East Tennessee. Some aspects of the geological sciences and the natural history of Tennessee are explored in an exhibition on the main floor. Exhibits on the history of Knoxville, the University and East Tennessee are located in the Green Memorial Room.

Changing temporary lobby exhibits and other displays 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 UT, Knoxville Department of Art in the Ewing Group of Art and Design, and on the ground floor of the Art and Architecture Building. The outdoor Sculpture Tour displays sculpture at various locations on campus. The sculptures are replaced each year with new works of artists of regional and national reputation.

Arrowmont School of Arts and Crafts, a UT, Knoxville affiliate located in 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 and sell their works for purchase in time for Christmas. Numerous art exhibitions are scheduled in the Art Gallery throughout the year.

1990-91 Undergraduate Catalog 11
for opera and choral productions. The varied pro-
tour each spring.

Projects of this group are the annual statewide
"good will ambassadors." Among the many
activities of the following units: University
Studies 101 - Freshman Seminar
Mathematics 110 - Algebraic Reasoning;
110 - Precalculus; 121 Calculus
University Studies 101 - Freshman Seminar
biology 110, 120 - General Biology
Tutoring - in any academic area
Counseling - assistance with questions,
liaison capacity with the Tennessee Division 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. Formal registration 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 Vol- unteer Boulevard. Phone number: 974-6087.

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.

These services include assistance during registration (pre-registration, 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.

HEARING AND SPEECH SERVICES

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

The Center serves as a clinical observation and education facility for students majoring in Speech Pathology or Audiology. It also serves as a community Hearing and Speech Center, providing diagnostic and treatment services for speech, language and hearing disorders for persons of all ages.

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 facilities, including computer rooms, and are all within easy walking distance of classrooms and other university facilities. On-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.

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, or for shorter periods if the student enters the University during 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 handle 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 conditions 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.

LEARNING RESEARCH CENTER

Recognizing that the learning process is exceptionally complex, the University established the Learning Research Center in 1964. Its primary purpose is to encourage faculty members to utilize the results of research in creating arrangements and conditions for learning. The Learning Research Center publishes the Teaching-Learning Issues quarterly which circulates throughout the University system and on other campuses across the nation.

LIBRARIES

The University of Tennessee, Knoxville Libraries own approximately 1,600,000 volumes, more than 3,000,000 manuscripts, 70,000 microfilms, 100,000 items of other microfilm, plus audio and video recordings, and United States and United Nations documents. The UT, Knoxville libraries currently subscribe to more than 18,000 periodicals and theses and dissertations. The libraries' membership in the Association of Research Libraries reflects the University's emphasis on graduate instruction and research and the support of large, comprehensive collections of library materials on a permanent basis.

Library holdings in Knoxville are housed in the new 350,000 square foot facility, the John C. Hodges Library, and its branch libraries for agriculture-veterinary medicine and music. The Hodges Library has comfortable study space for 3,500 students, 300 graduate carrels, and 196 faculty studies.

The Special Collections Library in the James D. Hoskins Building is a repository of regional and local materials, Tennesseeana, and other specialties, including legislative papers and mementoes of many Tennessee political figures. Special Collections materials are of particular interest to scholars in the fields of history, political science, social sciences, biological sciences, and the arts.

Library research holdings are augmented by Reference Information Services and by Interlibrary Loan. Reference and Information Services provides research assistance and access to commercially available databases. In the reference room users may also search a number of CD-ROM databases at no charge. Interlibrary loan borrows monographs and obtains copies of other material from libraries around the world. Library holdings are accessible via a sophisticated online catalog which can be searched both in the library and from home and office computers.

The Law Library on the Knoxville campus and the libraries located on the campuses in Chattanooga, Martin, Memphis and Tullahoma are individually administered. Each library at The University of Tennessee is accessible to all students and faculty in the system.

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 underutilized students who have academic potential and motivation to develop their talents at UT, Knoxville.

Housed within the Black Cultural Center, the office furnishes information about educational, employment and financial assistance opportunities, offers tutorial services workshops, and career development programs. The office is located at 812 Volunteer Boulevard.

OMBUDSMAN OFFICE

The Ombudsman Office in the University Center supplements existing appeals channels and actively seeks better ways for the University to serve students. Students who encounter problems with any aspect of the University may receive assistance in resolving them from the Ombudsman. Problems are treated confidentially.

PARKING AND VEHICLE OPERATION

The University of Tennessee endeavors to provide adequate facilities for vehicles operated by students and staff. However, areas available for parking are necessarily limited. To reduce traffic congestion within the campus area, large student parking areas are located on the perimeter of the campus. Presently, free bus service is provided from the Main Campus to the Agriculture Campus and Perimeter lot located off Concord Street behind Tyscot Park. Also, bus service is provided to Married Student Housing Units at a nominal fee.

Each person who operates a motor vehicle in connection with attendance or employment at the University must register that vehicle with the Parking Services Office. 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 UT, Knoxville motor vehicle registration tags in their vehicles may park in any unreserved area (EXCEPT THOSE AROUND RESIDENCE HALLS) between the hours of 10 P.M. and 7 A.M.
2. Monday through Friday, and 12 Noon Saturday to 7 A.M. Monday.
2. General parking is permitted in staff areas around the residence halls between 5 P.M. and 3 A.M. After this time, vehicles without permits for these areas may be towed.
3. Staff and students with current UT, Knoxville parking permits may park in unassigned staff areas around the academic buildings from 5 P.M. to 7 A.M.
4. Overnight parking is not permitted in the Student Commuter Parking Areas nor in Student Aquatic Center Parking Area.
5. At times, certain areas will be reserved for parking for special events, such as athletic events, conferences, etc. Parking for these events will be by special parking permit for the specific event.

A University Traffic and Parking Authority determines the parking policy, traffic regulations, and fees. This information is published each year in the "University Traffic and Parking Regulations", and is available at the Parking Services Office, 1115 UT Drive, at the Campus Information Center at Circle Park, and at the vehicle point of registration.

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.

STUDENT CONDUCT OFFICE
The Student Conduct 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 disciplinary proceedings.

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 confidentiality of the student's concerns. In addition, various groups are employed to meet the special 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.

The Center also works with the faculty and student personnel to develop educational programs and projects to meet the needs of various groups at 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 GOVERNMENT ASSOCIATION
Composed of the Student Senate, the Undergraduate Academic Council, and the Graduate Student Association, the Student Government Organization is the governing body of the students at UT, Knoxville. Some objectives of the SGA are to provide a vehicle for responsible and effective student participation in the organization of student life and to promote the recognition of student rights and responsibilities.

Each spring term, general campus elections are conducted to elect the President and Vice-President of the SGA and members of the three branches of the SGA. Student Senate members are elected to represent geographical areas of the campus. The Academic Council and Graduate Student Association representatives are elected from the academic colleges and graduate student programs, respectively. Offices of the SGA are located in room 341 of the University Center.

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 optional health fee). Health services are available continuously throughout every term.

The Health Service has a regular staff of primary physicians, nurses, laboratory and x-ray technicians of Tennessee licensure. Outpatient services in the fields of family practice, internal medicine, pediatrics and psychiatry are available on a full-time basis while specialty consultants in dermatology, surgery, and gynecology are available through referral by a staff physician. Care beyond that provided by the regular staff can be arranged. 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 some 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 student health clinic at The University of Tennessee Memorial Hospital except during the break after the fall term. Ambulance and transportation service for the campus is provided by the University Police.

Students requiring hospitalization are generally admitted by an appropriate specialist to 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 term.

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

STUDENT ORGANIZATIONS
On the 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 is found in Hilltopics. All of these clubs and organizations are under the general supervision of the Dean of Students Office.

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 orientation program, specifically designed for the fall-term new student, as well as orientation programs for freshmen and transfer students presented prior to the beginning of each term.

STUDENT PUBLICATIONS
A number of student publications are printed during each school year to serve as sources of information for new students, to report the many events of interest to the campus community, and to record the year's activities.

The Daily Beacon, a student newspaper, The Volunteer, yearbook of campus activities, and The Phoenix, a quarterly literary magazine, are sponsored by The University of Tennessee Student Publications Board.

Other student publications are:
- Sorority Scope, published annually by the Panhellenic Council to provide information about the sororities at the University.
- IFC Rush Brochure, published annually by the Interfraternity Council to acquaint male students with the fraternities.
- The Tennessee Law Review, published quarterly by students of the College of Law.

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, handbook, and other regulations relating to students and for complying with them in the interest of an orderly and productive community. The student is the most active participant in the University. The student should be informed of the pertinent 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.

WOMEN'S CENTER
The Women's Center provides essential informational services and referral services to UT, Knoxville students and faculty. The library's specialized collection provides books, journals, and brochures about issues and
concerns of women from both a current and historical perspective. Information is available on a variety of topics ranging from racism, violence against women, spirituality, and sex roles. The Women's Center is located in 301 University Center.

**WRITING CENTER**

To aid students in regaining and improving their skills in writing, the University operates a Writing Center. Students, faculty and staff may visit the center at any time for help with their writing.

**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

<table>
<thead>
<tr>
<th>Undergraduate Students</th>
<th>Per Semester</th>
<th>$686</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate Students</td>
<td>Per Semester</td>
<td>$955</td>
</tr>
<tr>
<td>Law Students</td>
<td>Per Semester</td>
<td>$977</td>
</tr>
<tr>
<td>Veterinary Students</td>
<td>Per Semester</td>
<td>$1,453</td>
</tr>
</tbody>
</table>

### UNIVERSITY PROGRAMS AND SERVICES FEE

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

**TUITION (additional for all out-of-state undergraduate and graduate students) Per Semester $1,476**

**TUITION (additional for all out-of-state Law and Veterinary Medicine students) Per Semester $1,504**

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 semester 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.

<table>
<thead>
<tr>
<th>Undergraduate Students</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>In-state</td>
<td>$80 per semester hour or fraction thereof; minimum charge $160</td>
<td></td>
</tr>
<tr>
<td>Out-of-State</td>
<td>$184 per semester hour or fraction thereof; minimum charge $368</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Graduate Students</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>In-state</td>
<td>$124 per semester hour or fraction thereof; minimum charge $248</td>
<td></td>
</tr>
<tr>
<td>Out-of-State</td>
<td>$270 per semester hour or fraction thereof; minimum charge $540</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Law Students</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>In-state</td>
<td>$142 per semester hour or fraction thereof; minimum charge $284</td>
<td></td>
</tr>
<tr>
<td>Out-of-State</td>
<td>$289 per semester hour or fraction thereof; minimum charge $578</td>
<td></td>
</tr>
</tbody>
</table>

**UNIVERSITY PROGRAMS AND SERVICES FEE**

| Per Semester | $105 |

All undergraduates, graduates, and law students taking in excess of eight hours per term will be assessed a University Programs and Services Fee of $105 per semester for the academic year and $59 for the summer term. Part-time students taking eight semester hours or less will be assessed at the rate of $7 per semester hour (minimum $14) but are not entitled to admission to general activities programs. Such students may elect to pay the $30 student health fee.

Knoxville campus students taking a course load of six, seven, or eight hours may elect to pay the full University Programs and Services Fee.

Graduate and teaching assistants as well as fellowship students who may have waiver of fees (tuition and/or maintenance) must pay the appropriate University Programs and Services Fee.

Activity cards are non-transferable and may not be duplicated. The activity fee is non-refundable.

### MUSIC FEE

One half-hour lesson per week, per semester $45

One hour lesson per week, per semester $90

Payable by eligible full-time students receiving individual instruction in music.

### GRADUATION FEE

- Bachelor's Degree: $20
- Master's, Law and Veterinary Medicine Degree: $30
- Doctoral Degree: $75

Payable at the beginning of semester in which the candidate is to be graduated. This fee is non-refundable and is valid for only one year beginning with and including the semester it is paid.

### LATE PAYMENT FEE

Graduated Late Service Fee

Upon receipt of a schedule (full, partial, or incomplete) a student is registered and is immediately responsible for payment of fees. Students who preregister for a semester must pay their fees (or make satisfactory arrangements with the Bursar's Office) on the regular registration dates in order to avoid late payment service charges. The following late payment charges are applicable on the dates indicated:

<table>
<thead>
<tr>
<th>Day</th>
<th>Charge ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day 1</td>
<td>$2.00</td>
</tr>
<tr>
<td>Day 2</td>
<td>$4.00</td>
</tr>
<tr>
<td>Day 3</td>
<td>$6.00</td>
</tr>
<tr>
<td>Day 4</td>
<td>$8.00</td>
</tr>
<tr>
<td>Day 5</td>
<td>$10.00</td>
</tr>
<tr>
<td>Days 6-10</td>
<td>$12.00</td>
</tr>
<tr>
<td>Days 11-15</td>
<td>$14.00</td>
</tr>
<tr>
<td>Days 16-20</td>
<td>$16.00</td>
</tr>
<tr>
<td>Days 21-25</td>
<td>$18.00</td>
</tr>
<tr>
<td>Days 26-30</td>
<td>$20.00</td>
</tr>
<tr>
<td>Over 30 days</td>
<td>$25.00</td>
</tr>
</tbody>
</table>

Failure to pay fees or to make satisfactory arrangement for deferral or waiver by the end of the fourth week of classes will result in automatic assessment of appropriate fees, including late payment charges and forfeiture of all university services including the receipt of grades, transcripts and schedules of classes.

### REINSTATEMENT FEE

A student whose grades are withheld for failure to pay appropriate fees who is reinstated for the semester will be charged a $45 reinstatement service fee.

### LATE REGISTRATION FEE

Students who do not advance register will be charged a $15 late registration fee.

### RETURNED CHECK POLICY

**DURING REGISTRATION CHECK-IN**

ALL CHECKS ARE DEPOSITED THE DAY THEY ARE RECEIVED. A $10.00 service charge will be assessed when checks fail to clear the bank on which they are drawn. In addition, if the returned check is in payment of initial fees and charges, the late payment fee in effect at the time the check is redeemed (minimum charge - $20) will be added to the returned check service fee. If the check is not cleared within seven days an additional $10 service charge will be added. Returned checks will not be redeposited. Cash or cashier's check are required for payment of the returned check, late fee, and service charges. Failure to clear returned checks will result in the forfeiture of all university services including the receipt of grades, transcripts, and schedules of classes.

### TUITION PAYMENT PLANS

All student fees are due in advance and should be paid in full at registration each semester.

#### Prepayment Plan

A prepayment plan has been developed to assist parents and students with planning and budgeting their academic year expenses. Under the plan, students may choose the expenses they wish to prepay including room, board, tuition, and fees. Expenses can be prepaid over a period of eight months. Students and/or parents wishing to participate in the prepayment plan should contact the Bursar's Office for details.

#### Deferred Payment Policy

Although fees, rent, and other University expenses are due and payable at the beginning of each semester, a student in good financial standing with The University may request a deferral of up to 50% of the total charges at registration. The deferred payment may be divided into two equal payments payable on the 28th and 56th day of the term. All financial aid monies must be applied to fees before a deferral will be considered. A deferred payment service fee of $10.00 is assessed when any portion of tuition, fees, and other charges are deferred with the approval of the Bursar's Office. An additional $25.00 late payment charge will be assessed on each monthly installment which is not paid on or before the due date. For more details, contact the Bursar's Office.

#### DEFERRED PAYMENT SERVICE FEE

$10 (See Tuition Payment Plans)

This fee is applicable when the payment of any portion of a student's account is deferred, including accounts which must be billed to outside agencies, organizations, and institutions.

### LATE PAYMENT SERVICE FEE

$5

This fee is applicable when a supplemental 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 the initiative to pay all University 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.
The University of Tennessee

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 not refundable 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 $5 per hour credit for undergraduates and $7 per hour credit for graduates. See page 39 for other information on proficiency, and CLEP examinations.

CO-OP REGISTRATION FEE ................................ $23

If credit is received, the appropriate semester 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.

TUITION/FEES REFUND POLICY FOR WITHDRAWALS
Withdrawal from school for the term, after receiving a schedule, even though classes have not been attended or fees paid, must be by official notification to the Withdrawal Office. Withdrawal Request Form. FAILURE TO ATTEND CLASS DOES NOT AUTOMATICALLY CANCEL ENROLLMENT. The appropriate percentage of fees will be charged unless the Withdrawal Office is notified by completion of the official Withdrawal Request Form. 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 from the Bursar’s Office. Failure to notify the Withdrawal Office promptly when withdrawing could result in a larger fee assessment.

Withdrawal Date Percentage Refund
Registration Days ............................... 100%
Business days after registration days 1-5: 90% 6-10: 80% 11-15: 60% 16-20: 40% 21: No Refund

Refunds resulting from withdrawal will be made, as soon as possible, after the drop deadline. Room and board refunds are determined by the Office of Residence Halls in accordance with the terms of the Housing and Food Services Contract. Information about the insurance is mailed to the off-campus Graduate Centers. Refunds, in accordance with the withdrawal refund policy, will be made after the drop deadline.

TUITION/FEES ASSESSMENT POLICY FOR DROPPED COURSES

THE DROP/ADD PROCEDURE CAN NOT BE USED TO WITHDRAW FROM SCHOOL FOR THE TERM. Students who drop courses and continue with a reduced course load are eligible for a refund only if the total charges at the semester hour rate for the courses continued plus the percentage assessed at the semester hour rate for the courses dropped results in an amount less than that paid.

A course is not officially dropped until a drop/add slip has been processed and recorded by the admissions and records office. Failure to attend class does not automatically withdraw or drop a student from school or class. The following percentage assessments are applicable for courses dropped (if fees are assessed at the semester hour rate):

Drop Date Percentage Refund
Business days after registration days 1-8: 100% 9-10: 80% 11-15: 60% 16-20: 40% 21: No Refund

NOTE: The drop deadline for grades and the last day for refunds are NOT the same. All charges and refunds will be made to the nearest even dollar amount.

Refunds resulting from dropped courses will be made after the final audit at the end of the term.

OTHER INFORMATION REGARDING FEES
All charges and refunds will be made to the nearest even dollar amount. Refunds resulting from dropped courses will be made after the final audit at the end of the term.

The University of Tennessee

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 Card. ID cards, issued during registration or anytime during the year to all students, are prepared during registration of the first semester a student enrolls in the University and are validated each term thereafter. These cards are required for many purposes such as use of library facilities, check-cashing facilities in the UT, Knoxville 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.

Arrangement for Banking while at UT, Knoxville. Banking arrangements can be made with Knoxville banks. Knoxville banks require a waiting period before honoring out-of-town checks, 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 TERM FEES AND EXPENSES
Fees and expenses for the summer term are the same as for the other terms during the academic year with the exception of the University Programs and Services Fee as noted above.

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

The refund policy covering withdrawals and dropped courses for the summer term is based on the length of the term for the course(s) dropped.

ESTIMATE OF EXPENSES
The following estimates of the necessary expenses for an undergraduate student during the 1990-91 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 accommodation and 20-meal board plan in University facilities. Estimates for equivalent accommodations and meals elsewhere will usually be somewhat higher.

Undergraduate Maintenance Fee ............................................ $1,372
Programs and Services Fee ............................................ $210
Room and Meals ............................................ $2,964
Book Supplies, Transportation, etc. ............................................ $1,700
Total for Tennessee Residents ............................................ $6,246
Add for Non-Resident Tuition ............................................................. $2,952
Total ............................................................. $9,198
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.

STUDENT FINANCIAL AID

The University of Tennessee, Knoxville offers a comprehensive program of financial aid for students who otherwise would not be able to attend. This aid is provided to students through Federal, state, and University programs, and is designed to meet the financial need of students. Federal and state aid programs are administered by the Federal and state governments, while University aid programs are administered by UT, Knoxville.

Federal student aid is available to students who are citizens of the United States and who meet the eligibility requirements established by the U.S. Department of Education. Aid is available in the form of grants, work-study programs, and direct loans.

State student aid programs differ from state to state, and are administered by each state's Department of Education or equivalent agency. Aid is available in the form of grants, scholarships, and direct loans.

University student aid programs are administered by UT, Knoxville and are available in the form of grants, scholarships, and direct loans. Aid is available to students who meet the eligibility requirements established by UT, Knoxville.

SCHOLARSHIPS AND GRANTS

Scholarships. The UT, Knoxville scholarship program is made possible through gifts provided by the University, outside foundations, estates, private businesses, civic groups, and individuals. 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 undergraduate scholarships are awarded based on academic achievement. To qualify for academic scholarships, students must have a minimum 3.0 grade point average or a 22 ACT/SAT score. Undergraduate scholarships and honors scholarships are not available to students who are not pursuing a degree.

Supplemental Educational Opportunity Grant (SEOG). The SEOG is a federal grant program designed to assist low-income students with unmet financial need. The SEOG is a need-based grant program, and eligibility is determined by the Free Application for Federal Student Aid (FAFSA). Students who demonstrate financial need and are enrolled at least half-time are eligible for the SEOG.

Supplemental Educational Opportunity Grants (SEOGs). The SEOG is a federal grant program designed to assist low-income students with unmet financial need. The SEOG is a need-based grant program, and eligibility is determined by the Free Application for Federal Student Aid (FAFSA). Students who demonstrate financial need and are enrolled at least half-time are eligible for the SEOG. The maximum SEOG award is $4,000 per academic year.

Perkins Student Loan. The Perkins Student Loan is a federal loan program designed to assist low-income students with unmet financial need. The Perkins Loan is a need-based loan program, and eligibility is determined by the Free Application for Federal Student Aid (FAFSA). Students who demonstrate financial need and are enrolled at least half-time are eligible for the Perkins Loan.

Loan repayment and interest on Perkins Student Loans are deferred for two years while the borrower is serving in the Armed Forces, Peace Corps, VISTA, the U.S. Public Health Service, ACTION or the Peace Corps. The United States National Oceanic and Atmospheric Administration Corps, 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 totally disabled parent, 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 of the Perkins Loan. The Perkins Loan 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 handicapped children, 15 percent of the total principal plus interest may be cancelled for each year of teaching. These may be awarded for additional years if the teacher 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 handicapped children. There is no limit to the number of years a Perkins Loan may be cancelled for the purposes of teaching.

The University of Tennessee Student Loan Program is designed to assist low-income students with unmet financial need. The program is administered by UT, Knoxville and is available in the form of direct loans. UT, Knoxville Student Loans are available to students who meet the eligibility requirements established by UT, Knoxville. The maximum loan amount is $4,000 per academic year.

Loan repayment and interest on UT, Knoxville Student Loans are deferred for two years while the borrower is serving in the Armed Forces, Peace Corps, VISTA, the U.S. Public Health Service, ACTION or the Peace Corps. The United States National Oceanic and Atmospheric Administration Corps, 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 totally disabled parent, 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 of the UT, Knoxville Student Loan. The UT, Knoxville Student Loan 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 handicapped children, 15 percent of the total principal plus interest may be cancelled for each year of teaching. These may be awarded for additional years if the teacher 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 handicapped children. There is no limit to the number of years a UT, Knoxville Student Loan may be cancelled for the purposes of teaching.
Student Loan. This loan from banks, savings and loan associations, or credit unions through a state guaranteeing agency, may be able to assist with meeting 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 are required to file a FAF or FFS to determine eligibility. 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 8 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 and 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. Peace Corps, the U.S. Peace Corps, 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 $2,625 for freshmen and sophomores and $4,000 for juniors and seniors, up to an accumulated maximum of $17,250. The maximum amount a graduate student may borrow for a 9-month period of enrollment is $7,500 up to an accumulated maximum of $54,750 (including any amount borrowed as an undergraduate).

PLUS/SLS Loan Program. The PLUS/SLS 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. Applicant parents are required to file a FAF or FFS to determine eligibility. The parents can borrow up to $4,000 per year (not to exceed the cost of attendance minus other financial aid) for each undergraduate dependent child. Independent students may borrow up to $4,000 per year. Graduate/professional students are entitled to borrow up to $4,000 per year. The cumulative maximum loan amount that can be borrowed by a parent for each dependent undergraduate child is $20,000. Independent undergraduate students may borrow a cumulative maximum of $20,000. The cumulative maximum loan for graduate/professional students is $20,000 from SLS. The interest rate on PLUS/SLS loans is currently 12 percent and there is no federal interest subsidy. Parent borrowers must begin repayment on principal and 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, 404 James Robertson Parkway, Suite 1850, Nashville, Tennessee 37219.

Student Employment
Two employment programs are administered by the Financial Aid Office to help students find 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. Jobs are available in a wide variety of academic departments and other campus units. 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. Part-time jobs average from 15 to 20 hours per week. If 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.

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

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Accounting Excellence Fund
Accounting Anonymous Scholarship Fund
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Agricultural Communication Scholarship
Ailor Memorial Scholarship & Emergency Studies Aid
Akima Club Interior Design Scholarship
Alcoa Foundation CBA Minority Scholarship
Alcoa Foundation Scholars Scholarship in Accounting
Alcoa Foundation Scholars Program in Engineering
Alcoa Foundation Scholarship in Law
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Anderson County Agricultural Scholarship
Winifred A. Anderson MBA Fellowship
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Professor Duncan Angus Scholarship Fund
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Anonymous Nursing Scholarship
Anonymous Student Awards
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School of Architecture Scholarship
Armistead Award in Agriculture
Armistead Award in the College of Veterinary Medicine
James H. Armistead Scholarship in Journalism
Max B. & LaLa Block Armistead Scholarship
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Andersen Consulting Engineering Scholarships
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Daniel Arthur Rehabilitation Center
Captain Samuel E. Asher Memorial Scholarship
Asha Grant-In-Aid Goswami
Athletic Department Scholarship Fund
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Lois Beatrice Dunn Barbee Scholarship
Raymond Barnes Award in Woodwind
John H. Barrett Memorial Fund
Dorothea H. Barton Scholarship Fund
Bacon-Beard Scholarship in Philosophy Fund
Bain-Swiggert Poetry Prize
Band Scholarship
Porter Barnett Athletic Scholarship
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Henry E. Beard Memorial Scholarship in Engineering
John Beaty Scholarship Award
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Jim Bennett Memorial Development Fund
Phil Sherman Bennett Prize
Sloan Bennett Endowment Fund
Edward & King Benson Memorial Scholarship Fund
Benwood Foundation Athletic Scholarship Fund
Berkline MBA Graduate Fellowship
Berkline Corporation Scholarships
Beta Sigma Phi Scholarship
Beta Theta Pi Memorial Scholarship Fund
Better English Graduate Aid
Hodges Better English Scholarship Fund

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<td>Janenne Jones Quillen Memorial Scholarship</td>
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<td>Rachelle Scholarship and Fellowship in Ornamental Horticulture</td>
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<td>Nina V. Ratner Memorial Scholarship Fund</td>
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Jane Temple Memorial Scholarship Fund
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Tennessee Agricultural Corporation
Tennessee Association Ag Agent & Specialists Council of Coop Scholarship
Tennessee Dairy Prod Assoc Scholarship
Tennessee Eastman Scholarships in Anthropology
Tennessee Farm Bureau Leadership Scholarships
Tennessee Farmers Mutual Ins. Scholarship
Tennessee Farmers Co-op Scholarship
Tennessee Federation of Federal Land Bank Association Scholarship
Tennessee Federation of Garden Clubs Horticulture Scholarship
Tennessee Hotel/Motel Association Scholarship
Tennessee Howard Johnson Food and Lodging Scholarship
Tennessee Plant Food Education Association Scholarship
Tennessee Road Builders Association Scholarship
Tennessee Tomorrow Law Scholarship Fund
Tennessee Vegetable & Fruit Growers Association Scholarship
Daniel H. Testerman Memorial Scholarship
Texaco Scholarship
Texaco Scholarship in Engineering
Texas Instrument Graduate Trainee
Esar Thompson Memorial Fund
Mr. Jim Thompson Athletic Scholarship
William M. Tolley Scholarship
Townsend-Kafauer Memorial Fund
Wilburn B. Townsend Memorial Scholarship Fund
Tri City Metro Ad Fed Scholarship Fund
Stephen T. Trotter Memorial Scholarship Fund
R.S. Tucker Graduate Fellowship
Unisys Scholars - Computer Science
United Handicapped Worker Scholarship
University Evening School Scholarship Fund
US DOT Fellowship - Bowen
US Students Abroad Scholarship Fund
UT Band Scholarship Fund
UT Hospital Auxiliary Nursing Scholarship
UTK Architecture Scholarship Fund
UTK Band Scholarship Fund
UTK General Scholarship Fund
UTK Liberal Arts Scholarship
UTK Music Department Scholarship Fund
UTK Piano Scholarship Competition
UTK Senior Greek Prize
UTK Tourism, Food and Lodging Scholarship
UTCHS Graduate Program in Medical Ethics
UT Singers Scholarship Fund
R.R. Vance Scholarship in Education
Lee L. Verstandig Scholarship
Veterans Emergency Loan Fund
Victory Van Lines Scholarship
John M. & Manora C. Viles Scholarship Fund
Vinson & Ellis Scholarship & Award Fund
Vinylex Corporation Scholarship
Vocational Agriculture Education Fund
Frederick B. Vreeland Scholarship Fund
Dwight R. and Margaret Wade College Scholar's Endowment Fund
Tom & Patti Wade Scholarship
George A. Wagoner Graduate Scholarship in Business Education
Fred Collins Walker Scholarship Fund
Pauline C. Walker Memorial Prize
Dean Frank B. Ward Memorial Scholarship Fund
Charles & Myrtle Warner Memorial Scholarship
Harold C. Warner Centurion Scholarship
Washington Farmers Cooperative Scholarship
Watauga Area Menial Fellowship
Eugene & Mildred Waters Memorial Scholarship
Ira A. Watson Retailing Scholarship
Wattey Scholarship
Gordon J. Wilder Gift
William Way Memorial Scholarship
William Way Scholarship Fund
Brig. General G. H. Weems Scholarship
Weigel Athletic Scholarship
Horace V. Wells Scholarship Fund
Westvaco Foundation Scholarship Fund
West Virginia Architecture Scholarship
Dan B. Wexler Agriculture Scholarship Fund
White Stores Scholarship
Robert White-Selezo Athletic Scholarship Fund
Charles F. Whiteside Memorial Scholarship Fund
Chris Whittle Scholarship Fund
William H. Wicker Law Scholarship Fund
Wildes Athletic Scholarship
Marjohin Wilkin Scholarship
Willcutts Graduate Fellowship
Shelby Williams Scholarship
Shelley Williams Travel Scholarship
Shelley Williams Portfolio Scholarship
Tony Williams Scholarship Fund
Wilson Farmers Cooperative Scholarship
Frank W. Wilson Scholarship Fund
H.W. Wilson Scholarship Fund
Tony Wilson Memorial Scholarship Fund
John H. Winsted Jr. Memorial Scholarship
Irina B. Witt Memorial Scholarship Fund
Singleton Wolfe Scholarship Endowment
James Wolfkiel Scholarship in Graphic Art
Women's Choral Fund Scholarship
Margaret Woodruff Award Fund
Arthur Brownlow Wood Memorial Scholarship
George & Martha Wood Scholarship Fund
Chancellor Glenn W. Woodlee Scholarship
John Wooten Scholarship Endowment Fund
Richard Wordon Scholarship Fund
Working Students Assistance Fund
Senator J. Parks Worley Scholarship Fund
Jack Wright Memorial Scholarship Fund
Gerti Wunderlich Fund in German
C.E. Wylie Scholarship Fund
Jack York & Scott Kendall Scholarship in Finance
Zdyrka Children Memorial Scholarship
Edwin F. Zwicker Memorial Scholarship Fund
HONORS AND AWARDS

DEAN'S LIST
Public announcement of students passing a semester's work "With Highest Honors" (grades from 3.75 through 4.0), "With High Honors" (3.40 through 3.74), "With Honors" (3.0 through 3.39). To be eligible, a student must complete at least 12 hours, not counting work taken on satisfactory/no credit basis.

Effective Summer 1991:
Public announcement of students passing a semester's work "Summa cum laude" (3.80 through 4.00), "Magnas cum laude" (3.65 through 3.79), "Cum laude" (3.50 through 3.64). To be eligible, a student must complete at least 12 hours, not counting work taken on a satisfactory/no credit basis.

The honors and awards available to students at UT, Knoxville are listed here. Below, the right not to award any of the honors or awards listed herein is reserved to The University of Tennessee, Knoxville.

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 for the ASAE Student Honor Award. Based on scholarship, activities, and community contributions, the award consists of a key and certificate.

The American Society of Animal Science awards scholarship medals and embossed certificates to sophomores, junior, and senior students in the Department of Animal Science who are of good moral character and rank scholastically in the top 10 percent of their class.

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. Junior and Senior recipients may be entered in National Competition precipitating other awards.

Dee W. Coley Memorial Stockman's Award. Presented by the Coley family in memory of Mr. Dee Coley, master stockman and community leader, to any active senior Block & Bridle member with interest in the affairs and activities of the Animal Science Department, and a member of the Meats and/or Livestock Evaluation and Judging Teams.

M. Jacob Animal Husbandry Award. This award originally sponsored by the J.B. Madden family to honor Dr. M. Jacobs who was both head of the Animal Science Department and later Dean of the College of Agriculture. Presented to a senior in Animal Science based on scholarship and overall animal production ability.

Kentucky-Tennessee Society of American Foresters Scholarship. Awarded annually to the junior forestry student with the highest scholastic average. The award is in cash and a framed certificate.

Student-Faculty Council Awards. Each year the College of Agriculture Student-Faculty Council presents plaques to four seniors, three juniors, two sophomores and one freshman student 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.

SCHOOL OF ARCHITECTURE
Ray and Mary Evelyn Andrus Award. Awarded for excellence in design.

Neil Mann Brown Scholarship in Architecture. Awarded to outstanding student.

Hubert Bebb Scholarship. Awarded to outstanding design student at end of second year.
Tennessee Eastman Scholarship in Office Administration. Awarded to undergraduate students only. Recipients shall be selected on the basis of academic excellence.

James H. Armistead Scholarship. Given to an outstanding junior or senior in the School of Journalism who has an outstanding academic average.

Zeta Lambda Chapter of Alpha Kappa Psi Scholarship. Awarded to the male student pursuing a degree in business who has attained the highest academic average for three years of collegiate work in this University.

COLLEGE OF COMMUNICATIONS

Advising Scholarship Fund. Given to one or more juniors or seniors in the Department of Advertising based on academic achievement and professional promise.

James H. Armistead Scholarship. Given to an outstanding junior or senior in the School of Journalism who has an interest in news-editorial journalism.

Karl and Madrie Bickel Scholarships. Freshman, upperclass, master's and doctoral scholarships. Open to all students showing academic performance (3.5 or better), professional promise, and need.

Amanda M. Bonham Journalism Award. Given to an outstanding entering freshman.

Frederick T. Bonham Journalism Award. Given to an outstanding entering freshman.

Nat P. Caldwell Journalism Scholarship. Given to a junior or senior in the School of Journalism who has demonstrated an interest in a career as a public affairs reporter.

Josephine Chambers Scholarship. Given to an outstanding undergraduate in the Department of Advertising.

Myron G. Chambers Scholarships. To one or more outstanding undergraduates in the Department of Advertising.

The Daily Times, Maryville. Scholarship in Advertising. Awarded to juniors or seniors majoring in advertising.

The Daily Times, Maryville. Scholarship in Journalism. Awarded to juniors or seniors majoring in journalism.

Outstanding Advertising Student Award. Given to an outstanding graduate in Department of Advertising.

Leary P. Powers Scholarship. Given to one or more outstanding undergraduates in the Department of Advertising.

Ernie Pyle Award. Given to the outstanding senior in the new-editorial sequence in the School of Journalism.

Outstanding Graduate Citation. Certificate given by professional journalism society to an outstanding graduate.

Edward J. Meeman International Communications Fellowships. To two outstanding graduate students from other countries.

Memphis Gridiron Show Scholarship. Given to upperclassmen from the Shelby County area who are news-editorial majors from the sponsors of the annual gridiron show.

Chester A. Molley Memorial Scholarship. Given to an outstanding member of the staff of The Daily Beacon.

The Nashville Banner Scholarship. It covers a student's tuition expenses for the academic year. Given to an outstanding entering freshman planning a career in print journalism who has graduated from an accredited high school in Middle Tennessee.

Lindsey Nelson Scholarship. Given to an outstanding junior or senior in the Department of Broadcasting with an interest in sports broadcasting.

Outstanding Advertising Student Award. Given to an outstanding graduate in Department of Advertising.

The Francis "Red" O'Donnell Scholarship. Given to an outstanding freshman who has graduated from an accredited Tennessee High School and who is committed to a career in print journalism.

Frank B. Powers Scholarship. Given to one or more outstanding undergraduates in the Department of Advertising.

The Daily Times, Maryville. Scholarship in Journalism. Awarded to one or more outstanding undergraduate students in the Department of Advertising.

Sammie Lynn Puett Award. Given to outstanding students in the public relations sequence in the School of Journalism.

Outstanding Advertising Student Award. Given to one or more outstanding undergraduates in the Department of Advertising.

The Daily Times, Maryville. Scholarship in Journalism. Awarded to one or more outstanding undergraduate students.

Greater Knoxville Advertising Club Scholarship Fund. Awarded to an undergraduate student majoring in communication studies.

Julian Harris Memorial Scholarship. Given to an outstanding junior in the School of Journalism who has an interest in a career in public relations.

John P. Hart Scholarship in Broadcasting. Given to a junior in the Department of Broadcasting who has demonstrated outstanding professional promise.

Darrel W. Holt Scholarship. Given to one or more juniors in the Department of Broadcasting who have demonstrated outstanding academic achievement and professional promise.

Donald G. Hileman Scholarship. Given to an outstanding junior or senior in the College of Communications who displays outstanding professional promise.

Journalism Faculty Scholarship. Given to one or more outstanding news-editorial and public relations majors in the School of Journalism.

Nellie D. Kenyon Journalism Scholarship. Given to an outstanding junior in the School of Journalism who has an interest in a career in newspaper work.

The Knoxville News-Sentinel Journalism Scholarship. Given to one or more outstanding juniors or seniors in the School of Journalism who have shown exceptional professional promise.

John M. Lain Public Relations Award. Given to an outstanding junior or senior in the School of Journalism who has an interest in a career in public relations.

Lamar Outdoor Company Scholarship. Given to an outstanding student in the Department of Advertising.

Kelly Leiter Scholarship. Given to an outstanding junior or senior in the School of Journalism who has an interest in news-editorial journalism.

General Shale Products Corporation Fellowship Fund. Scholarships awarded to scholastically outstanding fifth year students.


M.K. Design Minority Scholarship. Awarded each Spring to outstanding freshman minority student.

National Association of Women in Construction Scholarship. Awarded every other year to an outstanding third, fourth or fifth year student from East Tennessee.

Pella Traveling Scholarship. Awarded to outstanding third year student in design.

Alma and Hal Reagan Scholarships. Awarded to promising minority student.

Malcolm Rice Architecture Award. Awarded annually to the third year student showing most improvement in design studio.

Ed Meiers Memorial Scholarship. Funded by the Tennessee Foundation for Architecture for third, fourth or fifth year student from East Tennessee.

Chapter or Watauga Chapter of A.I.A.

Jin Booher Memorial Scholarship. Funded by the Tennessee Foundation for Architecture for third, fourth or fifth year student from East Tennessee.

Chapter or Watauga Chapter of A.I.A.

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.

Liston 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 Psi Scholarship Award. Awarded to the College of Business Administration junior who has the highest grade point average.

John M. and Suzanne W. Larsen Beta Gamma Sigma Male and Female Awards. Awarded to the male and female College of Business Administration junior who has the highest grade point average.

James R. and Dorothy Newman Transportation Scholarship Fund. Awarded on an annual basis to a student chosen by the scholarship committee for the department.

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

Pi Omega Pi Scholarship Key. Key to senior business education major with highest 7 semester academic average.

Shell 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.
Willis C. Tucker Scholarship Award. Given by Society of Professional Journalists. Silver bowl or key to graduating senior with highest academic average.

Horace V. Wells Jr. Scholarship. Given to an outstanding junior in the School of Journalism who has a special interest in community journalism.

Whittle Minority Scholarships in Print Journalism. Given to five entering freshmen each year who have high academic achievement and experience in scholastic journalism in Tennessee high schools.

James Wolfkiel Scholarship. Given to a journalism major interested in a career in newspaper graphics.

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.

Pl 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 Chemical Society. East Tennessee Section of American Chemical Society offers 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 scholastically and in branch activities 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 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.

Association of Textile Industrial Engineers Award. A cash one-year award, based on need, given by the Department of Industrial Engineering to a senior.

East Tennessee Chapter of American Institute of Industrial Engineers Award. Award of handbook and plaque to the outstanding senior student in the engineering major.

Electrical Engineering Leadership Award. One or more cash awards may be made annually to juniors or seniors in electrical engineering who have exhibited outstanding leadership ability and have maintained a B average or above.

H.L. Weissberg Memorial Award. An annual award given by the department to an outstanding senior major in engineering science. Letter of recognition, plaque.

J. Mac Tucker Outstanding Senior Award. Recognition by the Student Section of the American Society of Mechanical Engineers of the outstanding senior in the Department of Mechanical and Aerospace Engineering.

Award is based on leadership, scholarship, and service. Name on plaque.

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


Tau 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, cash award.

Tau Beta Pi Outstanding Sophomore Award. An annual recognition by the Tennessee Alpha Chapter of a sophomore in engineering who has demonstrated outstanding academic performance and service. Plaque, cash award.

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

COLLEGE OF HUMAN ECOLOGY

Catherine Burton Chi Omega Scholarship. Awarded to junior women.

Campbell County Farm Bureau Scholarship. Awarded to student in Human Ecology or Agriculture.

Dorothy H. Barton Scholarship. Awarded to an outstanding junior in all majors except hotel and restaurant administration.

Dottie Sanders Scholarship. Awarded to an interior design student.

D.W. Proffitt Foundation Scholarship. Awarded to merchandising majors.

Edward C. and Catherine D. Cifers Scholarship. Awarded to students in all majors.

Farm Credit Bureau, Region IV. Awarded to entering freshman from any county in Region IV.

Frank and Ruth Liggett DeFriez Scholarship. Awarded to a human ecology student annually.

F. Dwight McDonald Scholarship. Awarded to an entering freshman from any county where a White Store is located.

Irene Hill Greene and Condon L. Greene Memorial Scholarship. Awarded to student from Anderson County.

Jane Savage Scholarship. Awarded to nutrition or food science students.

Jefferson County Cooperative Scholarship in Agriculture. Shared with Agriculture.

Jessie W. Harris Scholarship. Awarded to junior and senior with highest scholastic records.

Joseph K. Hach Family Scholarship. Awarded to hotel and restaurant administration students.

Knoxville A la Carte Scholarship. Awarded to hotel and restaurant administration students.

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

Louis Sr. and Lydia B. Seliz Memorial Scholarship. Awarded to child and family studies major.

Nelle Crooks Award. Award to an outstanding student.

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

Roane County Council of Home Demonstration Clubs. Awarded to freshman or transfer student from Roane County High School.

Shelby Williams Scholarship. Awarded to interior design and hotel and restaurant administration students; preference given to students from Lakeview (Morristown) area; may be awarded to out-of-state students.

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

Sylvia and Bill Moore Scholarship. Awarded to a senior in child and family studies.

Tennessee Rehabilitation Corporation Scholarships. Ten awarded to college majors who have need and who are citizens of Tennessee from a rural area and who have an agricultural background.

University of Tennessee General Scholarships. Variable.

White Stores Scholarship. Awarded to an entering freshman from any county where a White Store is located.

COLLEGE OF LIBERAL ARTS

John M. Allen Mathematics Prize. Medal, to outstanding freshman mathematics student. Prize is determined by competitive examination.

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

Philo Sherman Bennett Prize. Established by the late Honorable J. Fordham Bynum, cash award to student submitting best essay discussing principles of free government.

Bilogia Award. Plaque, to the outstanding biology senior.

Eleonora R. Burke Award. For excellence in expository writing. Founded in honor of the daughter of a former head of the English department.

Captain Robert and 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 shown the greatest proficiency in the subject.

Dorothy and Edgar D. Eaves Outstanding Teaching Award and Summer Fellowship Awards. Awarded each year to the GTA in mathematics with previous teaching experience who is named the outstanding teacher of the year in his or her group. Cash award each year to beginning GTA 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, Knoxville.

Arnett A. Elliott Award. Established by the Department of Political Science to honor Arnett A. Elliott and promote scholarship in Political Theory. This award or scholarship is given to undergraduates for distinguished performance in Political Theory.

Senior Greek Prize. Established by friends of the classics. Cash award, to member of senior Greek class showing greatest proficiency in the course.

Maud Calloway Hays Scholarship. Variable scholarship to senior history major with special interest in U. S. history.
HONORARY AND PROFESSIONAL SOCIETIES

A number of honorary and professional societies have chapters at The University of Tennessee, Knoxville. Membership in these organizations is generally based on the initiate's good character, proficiency in the chosen field, leadership characteristics, and high scholastic record.

Those honorary organizations, both national and local, with chapters at UT, Knoxville are:

**Alpha Chi Sigma**, for chemical engineering and chemistry students. Students must have a grade point average of 2.5 in chemistry and/or chemical engineering combined and 2.5 in all academic work and must have been enrolled in this school for at least one semester. Members are elected by others in the local chapter.

**Alpha Epsilon Delta**, for students pursuing pre-medical medicine. Students with minimum 3.0 average in all courses may be pledged at the end of their first year in the University. They also may be initiated in the next year if an appropriate overall average has been maintained.

**Alpha Mu Chapter,Eta Sigma Gamma** Students with a major or minor in health and safety are eligible for membership. All undergraduate students for membership must have a 2.5 cumulative average, and each graduate candidate must have graduated with a 2.7 cumulative average or must have a 3.4 graduate scholastic average.

**Alpha Phi Omega**, Any undergraduate who is a former Scout is eligible for membership. A pledge must have competed one semester or academic work with and average grade of 2.0 before being eligible for initiation.

**Alpha Psi Chapter**, for students majoring in chemical engineering students. Prospective members are chosen from the upper one-third of the senior class and upper one-fifth of the junior class. A minimum 2.5 average is required.

**Alpha Zeta**, for students majoring in the chosen field, leadership characteristics, and involvement in campus activities. Members are usually inducted in the fall and spring of the year.

**Beta Alpha Psi**, for accounting students. An accounting major registered in advanced accounting subjects and having a minimum B-minus average in all subjects, is eligible for active membership.

**Beta Gamma Sigma**, national business honorary society for undergraduate students with a major in a College of Business Administration curriculum. Additional criteria pertain to number of business administration credit hours taken and number of transfer hours/previous academic performance for transfer students. MBA students must be in the top 20 percent of graduating class, and DBA students must complete all degree requirements with a minimum GPA of 3.50.

**Chi Epsilon**, for civil engineering students. Junior and senior civil engineering majors ranking in the highest one-third of their respective class are eligible for membership.

**Delta Nu Alpha**, for transportation students. Prospective members must have completed the basic transportation courses and have a minimum 2.3 average.

**Delta Pi Epsilon**, for business education graduate students. Prospective members must have a minimum 3.4 average for nine hours of graduate work in business education. Candidates are required to show evidence of their scholarship before initiation by presenting a talk, research abstract, or written paper to the group.

**Delta Sigma Pi**, professional business fraternity for students enrolled in the College of Business Administration. Students must complete at least 30 semester hours of University credit with a scholastic average of at least 2.5 is required for initiation.

**Delta Sigma Pro-Tau Kappa Alpha** honor societies for junior and senior students who have participated at a high level of excellence in intercollegiate forensics of original speaking activities and who rank in the upper 35 percent of their college class.

**Delta Theta Phi**, for law students.

**Eta Kappa Nu**, for electrical engineering students. Members may be selected from juniors ranking in the upper one-fourth, or seniors ranking in the upper one-third of their respective electrical engineering class.

**Eta Sigma Phi**, honor society for students in classical languages. Membership is open to students who have attained at least a 3.0 average in Latin or Greek courses.

**Gamma Sigma Delta**, for students majoring in agricultural, educational-service organization open to students in all fields of study. Prospective members, usually inducted in the fall and spring, must have completed 15 hours of study, must rank in the upper 20 percent of their respective college, and must have a minimum of 3.2 overall average.

**Gamma Sigma Delta**, agricultural honorary society for graduating seniors, graduate students, and faculty of the College of Agriculture. Students selected must be in the upper one-fourth of their graduating class in the College of Agriculture and must have attained at least a 3.5 average in at least 16 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 making worthy contributions to their respective fields.

**Gamma Theta Upsilon**, honor society for students majoring in geography.

**Golden Key National Honor Society**, national scholastic honor society for students and faculty in all fields of study. Induction is held in the fall and spring, must have completed 15 hours of study, must rank in the upper one-third of their senior class.

**Golden Key National Honor Society**, national scholastic honor society for students and faculty in all fields of study. Induction is held in the fall and spring, must have completed 15 hours of study, must rank in the upper one-third of their senior class.

**Omega Delta Pi**, for students enrolled in the College of Business Administration with a minimum 3.0 average for three years of University studies.

**Omicron Delta Epsilon**, for those who have participated at a high level of excellence in intercollegiate forensics of original speaking activities and who rank in the upper 35 percent of their college class.

**Pi Kappa Phi**, student honor society for students majoring in geography.

**Psi Chi**, national honor society for graduate students and postgraduate studies. A minimum 3.5 grade point average is required. The society recognizes outstanding contributions to field of education. Membership is by invitation.

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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 CoI, 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 three hours 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 degree. Grade point average varies with number of hours completed; minimum is 3.50. At least 60 hours must have been earned at UT, Knoxville. 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 a business career. Any female student enrolled in the College of Business Administration or specializing in business and/or economics, and who is at least a second semester freshman and has the all-student average is eligible for membership.

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 year 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.

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

Phi Lambda Theta, for students in music and music education.

Phi Lambda Theta, a national honor and professional association in education. Open to juniors and seniors with a minimum of 3.2 GPA and graduate students with a minimum 3.5 GPA. Membership is by invitation. Phi Sigma Alpha, for political science students and faculty. Student members are elected solely on the basis of scholarship.

Phi 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.

Scabrack and Blade, military science honor society for upperclass students.

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

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

Sigma 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 30 hours.

Sigma Delta Pi, for Spanish students. Prospective members must have a minimum 2.75 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.

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

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

Sigma Theta Tau, national nursing honor society for those students who have demonstrated outstanding scholastic achievement, professional leadership potential, and/or marked achievement in the field of nursing. Undergraduate students having completed at least two semesters of 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 semesters. 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 qualified alumni.

Undergraduate students having completed at least one-half the degree requirements, initiates are selected during the junior year to provide the greatest degree of benefits of active membership.
ADMISSION TO THE UNIVERSITY OF TENNESSEE, KNOXVILLE

As the state's largest and most comprehensive university, The University of Tennessee, Knoxville 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 UT, Knoxville are residents of the State of Tennessee, the university welcomes qualified students from other states and 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 structure at UT, Knoxville are designed to serve students bringing with them a variety of academic backgrounds and experience. 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. UT, Knoxville 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 UT, Knoxville. 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 UT, Knoxville.

REQUIREMENTS FOR ADMISSION AS A UT, KNOXVILLE UNDERGRADUATE STUDENT

Anyone interested in attending UT, Knoxville as an undergraduate student should contact the Admissions Office, 320 Student Services Building, for application forms and informational booklets. Return of completed forms and transcripts to the Admissions Office results in the formation of an admissions file for each applicant. When all file components are complete, an admissions decision is made by personnel in the Admissions Office, and the applicant is notified of the decision by mail.

FRESHMAN ADMISSION

For admission purposes, a student is classified as an entering freshman if:
1. the student has graduated from high school; and
2. the total of attempted college-level credit work at an accredited institution after graduation from high school has been less than 12 hours, excluding summer school and college courses taken while still in high school.

Students are encouraged to apply as early as possible. Early admission contributes to better orientation, course planning, class scheduling and financial aid consideration. High school students planning to apply as freshmen should submit applications as soon as possible after completion of the junior year. Applications for admission are available from many secondary school guidance/counseling offices and from the Office of Admissions, UT, Knoxville, 320 Student Services, Knoxville, TN 37996-0230.

The University seeks to admit those students who can provide evidence of the intellectual performance and potential that will permit them to benefit from UT, Knoxville programs. In 1986 the freshman class, had an average ACT score of 21.4 or an average SAT of approximately 1000 and a high school average of 3.0 on a 4.0 scale.

A prospective student must have completed at least:
- four (4) units of English;
- three (3) units of math including two (2) units of algebra and one (1) unit of advanced math, trigonometry, geometry, or calculus (The College of Engineering requires 3 1/2 years of math including trigonometry and geometry as prerequisites for all courses. The School of Architecture requires 3 and 1/2 years of math including trigonometry and geometry as prerequisites for all offered courses for majors:);
- two (2) units of natural sciences including at least one (1) unit of biology, chemistry, or physics;
- one (1) unit of American history; one (1) unit of European or world history or world geography;
- two (2) units of a single foreign language.

Applicants with foreign language deficiencies from those high schools that do not offer the required two years of a single foreign language may, with proper approvals, be admitted to the University. However, this deficiency must be removed during the first two years (60 semester hours) of University work; courses taken to satisfy foreign language deficiencies may be taken only as electives.

As of Fall, 1993 one (1) unit of art will also be required. In addition to the application form, a freshman applicant must:
1. Have a final transcript of all high school credits sent to the Admissions Office. If any courses have been taken for college credit, the institution(s) granting credit must be contacted and asked to send an official transcript to the UT, Knoxville Admissions Office as a part of the admission file. Students who have achieved a high school diploma through the General Education Development (GED) Test also must have the GED scores sent. Older than average students may be given special consideration. (See re-entry student applicants below.)
2. Send the score report of the American College Testing program (ACT) or the Scholastic Aptitude Test (SAT) to the Admissions Office. The score report is a necessary part of the application.
3. Pay a nonrefundable application fee of $15.00.
4. Submit any additional items and information requested in the application materials or by the Office of Admissions. Any applicant who is denied admission may make written appeal to the Director of Admissions.

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Advanced Placement Examinations: Freshmen admitted to UT, Knoxville may receive credit on the basis of performance on one or more of the Advanced Placement Examinations given 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. Departments at UT, Knoxville which grant advanced placement credit for satisfactory test scores include Art, Biology, Chemistry, English, History, French, Spanish, German, Latin, Mathematics, Music, and Physics. The CEEB sends scores and test books on request to the Director of Admissions at UT, Knoxville sometime in June or July. Each participating department decides the acceptable score for credit. Information can be obtained from the Admissions Office or from the Liberal Arts Advising Center.

ADMISSION TO THE SCHOOL OF ARCHITECTURE

The School of Architecture grants and encourages provisional admission at the time of admission to the program. The program of the School is carefully designed by stages, and students who are not ready for admission at the time of university admission should consult with an Architecture advisor to plan a program that will include early required courses. Specific requirements for admission and progression are listed under the School of Architecture.

TRANSFER APPLICANTS

A student who has attempted 12 hours or more college credit coursework at one or more accredited institutions of higher learning and who does not qualify as a freshman applicant under the rules described above 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 UT, Knoxville 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. Transfer students who have taken neither the ACT nor the SAT are not required to do so. Upon admission to UT, Knoxville, a student may be classified as a freshman, sophomore, junior, or senior, according to the number of hours passed. 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 directors of the colleges and schools at UT, Knoxville, has the responsibility for determining which courses from other institutions will be accepted for transfer credit. Certain transferable courses are not equivalent to specific UT, Knoxville courses. These courses may be used to meet specific curriculum requirements only with approval of the UT, Knoxville college or school in which the student's program is located. Appeals concerning transfer of course credit, whether by institutions or by individuals, should be addressed to the dean of the appropriate UT, Knoxville college or school for review.

Prospective transfers to UT, Knoxville are encouraged to complete a sequence of related courses rather than transferring a single course from a single high school. Students at two-year community colleges, particularly within the State of Tennessee, are encouraged to complete the associate degree requirements prior to transferring to UT, provided that such action is consistent with their educational goals.

In order to be considered for admission to UT, Knoxville, a student must have completed at least four terms and have a transfer grade point average of 2.00 or better (on a 4-point scale) for all courses eligible for transfer credit.

INTERNATIONAL STUDENT APPLICANTS

All foreign nationals on non-immigrant visas are classified as international students whether they are applying to UT, Knoxville as freshmen or transfer students. In addition to the information below, a pamphlet entitled "UT, Knoxville, before Arrival," is available from the Admissions Office or from the Center for International Education.

To apply for admission as an undergraduate student, each international student is required to:

1. A completed application for undergraduate admission;
2. A completed application for student visa;
3. Evidence of English proficiency according to the following requirements for students whose first language is not English. a. Any applicant to the undergraduate program whose first language is not English - with the exception of some transfers from regionally accredited colleges or universities in the United States (see c below) - must present a "Test of English as a Foreign Language (TOEFL)" score of at least 525 (earned within two years prior to application) before admission is granted. Finalization 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 stay continuously enrolled in the assigned courses until completion of all requirements, and should complete the requirements within the first year of continuation enrollment at The University of Tennessee, Knoxville. c. An undergraduate student whose first language is not English is exempted from taking the UT, Knoxville 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 an accredited college or university in the United States. Freshmen English Placement Students do not exempt a student from presenting a TOEFL score of at least 525.

d. A United States citizen or permanent resident whose first language is not English who has graduated from a high school in a country whose first language is English may be admitted with the minimum ACT English score of 20 (SAT verbal 410) or TOEFL 525. 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 significant monetary deposit prior to issuance of Form I-20 to secure a student visa.

5. International students must enroll in the health and accident insurance plan provided by UT, Knoxville.

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.

FEES FOR SPONSORED INTERNATIONAL STUDENTS

An administrative management fee will be charged to sponsoring agencies of international students whose programs require special administrative or management services beyond those normally provided. Fees are $250 per semester and $100 per summer session.

VISITING STUDENT APPLICANTS

A visiting student is one who is actively enrolled in a program at another accredited institution of higher learning but who desires to enroll temporarily at UT, Knoxville because of the availability of certain coursework or because of temporary residence in the Knoxville area.

Visiting students are admitted for one semester. Students desiring to transfer to UT, Knoxville must file an application for admission as a transfer student. Students desiring to attend UT, Knoxville on an interim basis for only one semester must submit, in addition to the application form a letter of good standing from the institution at which enrolled.

Since academic records will not be available at UT, Knoxville for visiting students, use of UT, Knoxville courses in a visiting student's degree program is a matter to be decided by the home institution. Academic advising will be limited to information about courses in which the student enrolls and may be obtained from the academic departments. Visiting students must have the required background (prerequisites) and meet all other course requirements. Academic overloads will not be permitted.

RE-ENTRY STUDENT APPLICANTS

A re-entry student is one who has not been enrolled in school for 3 years or more prior to making application for admission to UT, Knoxville. Freshmen or transfer students should submit high school transcript(s) to the Admissions Office. Transfer re-entry students should submit high school transcript(s) and transcripts of all previous college work. ACT/SAT scores are not required for either a freshman or transfer re-entry student.

Admissions decisions will be made on an individual basis. Exceptions to the admissions criteria may be made for those applicants who demonstrate sufficient preparation.

No applicant who has attended UT, Knoxville will be considered a re-entry student. Former UT, Knoxville students should follow readmissions procedures as described elsewhere in 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. The Admissions Office processes all applications.
regardless of intended registration location. Non-degree students must show evidence of satisfactory preparation for the courses they wish to take. Ordinarily the high school class of a non-degree student must have graduated. 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 status. No more than 60 semester hours of accumulated college credit (from all institutions attended) may be used by a non-degree student in any subsequent degree program at UT, Knoxville.

SENIOR AND DISABLED APPLICANTS
Persons 60 years of age or older and/or totally disabled persons who are residents of Tennessee may audit courses without payment of fees. If space is available in the individual class. Persons 65 years of age or older and/or totally disabled persons who are residents of Tennessee may audit courses for credit at reduced fees. Interested persons should inquire at the Office of Admissions following an interview.

ACADEMICALLY TALENTED HIGH SCHOOL STUDENTS
Academically talented high school students enrolled in grades 9, 10, 11, and 12 in public or private school in Tennessee may enroll and receive regular college credit from a Tennessee postsecondary institution if: (1) they receive the recommendation and approval of the high school principal and appropriate higher education institution personnel; (2) they have a grade point average equivalent to 3.2 or higher on a 4.0 scale; and (3) such placement is a part of the student’s planned Individual Educational Placement (IEP) as established by the multidisciplinary team process.

FRESHMAN EARLY-ADMISSION STUDENTS
Freshman early-admission students are those who have completed the junior year of high school, have a grade point average of at least 50 and SAT of 26 or above or SAT of 1150 or above. Application is subject to review and approval by the Director of Admissions following an interview. For additional information and scheduling of an interview interested students should contact the Office of Admissions, 320 Student Services Building.

EXCEPTIONS TO ADMISSIONS REQUIREMENTS
The University requirements for the various categories of admission 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 thinks that some part of the requirements for the category sought should not apply as stated, he/she should write a letter to the Director of Admissions. The letter should state clearly 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. 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 scholastic skills but who have strong indications of ability to progress through UT, Knoxville and earn a degree.

DEADLINES FOR APPLICATIONS
Completed application materials and supporting credentials for first time freshmen and transfer students must be received in the Office of Admissions no later than the following dates: January 1 for Fall Semester; November 1 for Spring Semester; and April 1 for Summer Term. Any applicant who wishes to be considered for financial aid for the school year must submit completed application by March 1. Former students who have been dropped from the University for academic deficiency must apply for academic readmission and provide supporting materials to the Director of Readmissions no later than six weeks before the start of classes of the semester they wish to enter.

Former students who left the University in good standing who have not registered for at least two semesters must apply for readmission no later than three weeks prior to the start of classes of the semester they wish to enter. The readmission application for Summer Term for students in good standing is one week 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 as the result of submission 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 on the basis of 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 or employment opportunities and benefits. The classification is determined by the classification officer on or before the last day of regular registration of the term. Former students who left the University for academic deficiency must apply for academic readmission and be 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 the term. Former students who left the University in good standing who leave the University for academic deficiency must apply for readmission no later than six weeks before the start of classes of the semester they wish to enter.

Scholarship recipients and children of alumni are treated as in-state students for the purpose of applying admissions criteria. However, such students will be required to pay out-of-state fees and tuition unless they can meet the in-state residency requirements stated above. An out-of-state student completing one of the University’s pre-professional programs (law, health services, veterinary medicine, etc.), does not gain preferential priority in seeking admission to a professional program that is otherwise restricted primarily to Tennessee residents.

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 college history courses in American history on the high school level or six semester 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).

EO/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.

The University of Tennessee, Knoxville, 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 admissions to the University.

Inquiries concerning Title IX and Section 504 should be directed to the Director of Affirmative Action, 410-D Andy Holt Tower, Knoxville, TN 37996-0144, 974-2498. Charges of violation of the above policy should also be directed to the Director of Affirmative Action.

FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT
This act provides for confidentiality of student records; however, it also provides for basic identification of people at UT, Knoxville without the consent of the individual. Release of information to third parties includes directory information, such as contained in the campus telephone book and sports brochures. Such information includes name, address, telephone number, date and place of birth, classification, college, major, dates of attendance, degrees and awards, the most recent previous educational agency or institution attended, participation in school activities and sports, and weight and height (for special activities). Public notice of the categories to be contained in a directory is given, and a period of one week is provided during which a student may request that such information not be released.
SOCIAL SECURITY NUMBER USE

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 the 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 must 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.

CREDIT HOURS, GRADES AND GRADE POINT AVERAGE

The basic unit of credit at The University of Tennessee, Knoxville, is the semester 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 credit hours 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 credit hour in the course. A student's grade point average is obtained by dividing the number of quality points the student has accumulated at UT, Knoxville by the number of hours the student has attempted at UT, Knoxville, not including hours for which grades of I, N, NC, P, S, and W have been received.

UNDERGRADUATE GRADES

<table>
<thead>
<tr>
<th>Grade</th>
<th>Performance</th>
<th>Hour of Credit</th>
<th>Quality Points Per Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Superior</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>B</td>
<td>Very Good</td>
<td></td>
<td>3.5</td>
</tr>
<tr>
<td>C</td>
<td>Good</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>C+</td>
<td>Fair</td>
<td></td>
<td>2.5</td>
</tr>
<tr>
<td>C</td>
<td>Satisfactory</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>D</td>
<td>Unsatisfactory</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>F</td>
<td>Failure</td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

GRADES OF INCOMPLETE

GRADE points do not carry quality points and is not computed in the grade point average. If the "I" grade is not removed within one calendar year or upon graduation, it shall be changed to an "F" - NC. Thus, the grade is not included in the computation of the grade point average. A student need not be enrolled at the University to remove a grade of incomplete.

GRADES THAT DO NOT INFLUENCE GRADE POINT AVERAGE

The following grades carry no quality points, and hours for 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.

S (satisfactory) is assigned for C or better work when a course is taken on an S/NC grading basis.

W (withdrawal) is assigned in courses when a student has officially withdrawn from the University. Regulations concerning withdrawal from courses or from the University appear in a following section of this catalog, entitled "Changes in Registration."

SATISFACTORY/NO CREDIT GRADING SYSTEM

The purpose of this system is to encourage the student to venture beyond the limits of those courses in which the student usually does well and, motivated by intellectual curiosity, explore subject matter in which performance may be somewhat less outstanding than work in other subjects. To this end, satisfactory/no credit (S/NC) grading has been developed for undergraduate courses (100-, 200-, 300-, and 400-level courses). Neither grade is counted in a student's grade point average, but, like other grades, is entered on the permanent record. S is given for C or better work on the traditional grading scale and NC is given for less than C work. The student only receives credit in the course if an S is received.

A student may not repeat a course for S/NC if the student received a conventional grade (A, B+, B, C+, C, D, F). The instructor of a conventionally graded course will not be instructed to assign an S/NC grade. If the student elects non-conventional grading, grades of A, B+, B, C+, C, D, or F are used. The grade of I for incomplete work will be recorded as an "I," which will not be computed in the average. A student is permitted to change the system of grading in a course through the add deadline. The changing of an S/NC grade to a conventional letter grade or vice versa is not permitted unless an error is determined by the Registrar.

FRESHMAN ENGLISH

English 101, 102, 118, 121, 131, and 132 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 101, 102 or 118.

REPEATING COURSES

For all courses taken prior to and during an undergraduate student's first 30 semester 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 60 semester hours of credit in order to be eligible for this policy. For all courses taken beyond the 30 semester hour provision, all grades in all courses will be included when computing the grade point average.

Unless 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 be allowed only with prior written permission of the student's college dean. Each course is counted only once in determining credit hours presented for graduation.

MID-TERM PROGRESS REPORTS

Mid-term progress reports are issued to all students who have attempted fewer than 30 credit hours at UT, Knoxville and to students in academic review. On the progress report instructors indicate whether the student's work is unsatisfactory or at the level of a C grade or better. The reports are sent to the student and to the student's advisor or advising center. They are not entered on the transcript.

GRADUATE SCHOOL GRADES

Graduate students and undergraduates taking courses for graduate credit are graded as follows:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Quality Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>(4 quality points per hour), superior performance</td>
</tr>
<tr>
<td>B+</td>
<td>(3.5 quality points per hour), better than satisfactory performance</td>
</tr>
<tr>
<td>B</td>
<td>(3 quality points per hour), satisfactory performance</td>
</tr>
<tr>
<td>C+</td>
<td>(2.5 quality points per hour), less than satisfactory performance</td>
</tr>
<tr>
<td>C</td>
<td>(2 quality points per hour), performance well below the standard expected of graduate students</td>
</tr>
<tr>
<td>D</td>
<td>(1 quality point per hour), clearly unsatisfactory performance and cannot be used to satisfy degree requirements</td>
</tr>
<tr>
<td>F</td>
<td>(no quality points), extremely unsatisfactory performance and cannot be used to satisfy degree requirements</td>
</tr>
<tr>
<td>I</td>
<td>(no quality points), a temporary grade indicating that the student has performed satisfactorily in the course but, due to unforeseen circumstances, has been unable to finish all requirements. An I is not given to enable the student to do additional work to raise a deficient grade. The course will not be counted in the cumulative grade average until a final grade is assigned. No student may graduate with an I on the record. Consult the Graduate Catalog for regulations concerning the removal of incomplete grades.</td>
</tr>
<tr>
<td>S/NC</td>
<td>(carries credit hours, but no quality points), S is equivalent to B or better, and NC means no credit earned. Courses where NC is received may be repeated for an S. S/NC grading is allowed only where indicated in the course description in the Graduate Catalog. The number of S/NC courses in a student's program is limited to one-fourth of the total credit hours required.</td>
</tr>
<tr>
<td>P/NP</td>
<td>(carries credit hours, but no quality points), P indicates progress toward...</td>
</tr>
</tbody>
</table>
they have expressed an interest. With which they are associated or in which problems or questions is provided by course policies and procedures. A balanced education and interprets university student in selecting subjects to ensure a well-college preference. An advisor assists 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 pre-professional students consider advising both a faculty member and college policies and requirements. 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 UT, Knoxville campus and are available to admitted students. These are described in this catalog under "Student Affairs and Services."

ACCELERATED PROGRAM
The University operates on the semester calendar, and a majority of its courses, especially at the lower division, are offered every term. Through appropriate arrangements of courses and attendance during the summer terms, 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.

CLASS ATTENDANCE AND ELIGIBILITY
Only students who are properly registered for a course may attend its classes on a regular basis. Any other person in the classroom for special reasons 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.

CLASSIFICATION
Undergraduate students are classified according to the following chart, on the basis of semester hours passed. To be considered a full-time undergraduate student in any semester, a student must be enrolled in 12 semester hours, including the full summer term. Six hours for each separate term of the summer session are required for full-time classification. Audit hours are not considered in the computation.

CLASSIFICATION OF STUDENTS BY SEMESTER HOURS PASSED

<table>
<thead>
<tr>
<th>YEAR</th>
<th>All Other Undergraduate Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>0-31.9</td>
</tr>
<tr>
<td>Second</td>
<td>32-63.9</td>
</tr>
<tr>
<td>Third</td>
<td>64-95.9</td>
</tr>
<tr>
<td>Fourth</td>
<td>96-127.9</td>
</tr>
<tr>
<td>Fifth</td>
<td>128-up</td>
</tr>
</tbody>
</table>

CLEP CREDIT
When approved by a given department, nationally recognized examinations, such as the 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. The final decisions, as to specific courses for which such examinations are to be taken as evidence of acceptable proficiency, and as to the minimum score required for credit to be given, rest with the department.

The CLEP examinations may be taken at the Center for Extended Learning, 400 Communications and University Extension Building. The Center supplies information on test dates and procedures, and also current departmental policies concerning the acceptance of CLEP credit.

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 counted 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 correspondence courses without permission, for students in the Center for Health Sciences.

All courses taken by correspondence for which degree credit is given must meet degree program requirements. Students taking work for the Knoxvile campus. In addition, all current UT, Knoxville students who intend to take correspondence courses must have the approval of the dean of the college or school in which they are enrolled prior to registering for credit. Credit for correspondence courses will not be granted for correspondence courses taken at an institution other than The University of Tennessee by a UT, Knoxville student if an equivalent correspondence course is available from The University of Tennessee Center for Extended Learning. Correspondence courses are open to students who have been dropped from the University for academic reasons only with the prior permission of the dean of the college or school in which they were enrolled.

A senior may take only six hours of the last year's work (the last 30 semester 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 teacher certification purposes should consult the State Department of Education of their respective states concerning the amount of correspondence credit allowed for teacher certification.

COURSE NUMBERS AND LEVELS
Each course offered by the University is identified by the name of the department offering the course and a three-digit course number. These numbers identify course level, as follows:

<table>
<thead>
<tr>
<th>Course Numbers</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>100-009</td>
<td>Lower credit; preparatory</td>
</tr>
<tr>
<td>100-299</td>
<td>Lower division-primarily for freshmen and sophomores</td>
</tr>
<tr>
<td>300-499</td>
<td>Upper division-primarily for juniors and seniors; when taken for graduate credit, the letter &quot;G&quot; will precede the course credit hours on the grade report</td>
</tr>
<tr>
<td>500-599G</td>
<td>Graduate; sometimes available for undergraduate credit, when taken for graduate credit, the letter &quot;U&quot; will precede the course credit hours on the grade report</td>
</tr>
<tr>
<td>600-699</td>
<td>Advanced graduate; open to graduate students only</td>
</tr>
</tbody>
</table>
800-899 Law, occasionally open to other qualified students. Veterinary medicine

Following certain course descriptions in this catalog are the designations: F, Sp, Su, A-O, A-E, E. These indicate the semesters Fall, Spring, Summer, Alternate Odd Academic Years, Alternate Even Academic Years, or Every Semester in which a course is normally offered and are intended as an aide to students planning their programs of study.

DEVIA IT 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 term and must gain final approval for the petition no later than the add deadline of the term involved.

FAiIURE TO MEET PROGRESSION REQUIREMENTS

Undergraduate students who are not eligible to progress in a college, school, or major with such requirements will be notified and assigned to the advisor to University Students who will advise the student and approve enrollment requests until the student is enrolled in another college or major.

FINAL EXAMS

Any final exams must be given during the final exam period at the scheduled time, although alternative uses of the scheduled exam period may be designated by the instructor. Students are not required to take more than two exams during the exam period. Each student is responsible for his/her own personal integrity in academic life. While there is no affirmative duty to report the academic dishonesty of another, each student, given the dictates of his/her own conscience, may choose to act on any violation of the Honor Statement. Each student is responsible for knowing the terms and conditions of the Honor Statement and for adhering to the Honor Statement by writing "pledged" and signing each graded class assignment and examination.

Faculty members also have responsibilities which are vital to the success of the Honor Statement and the creation of a climate of academic integrity within the University community. Each faculty member is responsible for defining, in specific terms, guidelines for preserving academic integrity in a course. Included in this definition should be a discussion of the Honor Statement. Faculty members at their discretion may also encourage their students to acknowledge adherence to the Honor Statement by "pledging" all graded class assignments and exams. The form of pledge may include writing the honor statement on the assignment, signing the graded statement, or simply writing "Pledged." Additionally, it will be the responsibility of each faculty member, graduate teaching assistant, and staff member to act on any violation of the Honor Statement. It is also incumbent upon faculty to maintain an atmosphere conducive to academic integrity by insuring that each quiz, test, and exam is adequately proctored.

An essential feature of The University of Tennessee, Knoxville is a commitment to maintaining an atmosphere of intellectual integrity and academic honesty. As a student of the University, I pledge that I will neither knowingly nor willingly give or receive any inappropriate assistance in an academic assignment or examination. I further pledge that in the course of completing individual academic work, I will honestly and appropriately acknowledge all sources of assistance as required by the academic discipline. I will not propose to take the initiative to make up for any missed work.

HONORS COURSES

Courses specifically designated as honors courses will receive the notation "Hon." These courses are available, but not exclusive to, those students enrolled in the University Honors Program. Students selected on the basis of ACT/SAT scores and previous academic performance may be admitted. There is no limit to the number of credits that may be earned in these courses except in the senior readings courses not requiring regular class attendance. These courses may not total more than six credit hours. In the fields of science that offer four credit hour courses, the total may be eight semester hours.

Letters are sent to entering freshmen who qualify for non-departmental honors courses. Students other than freshmen should consult the Director of Honors Program or individual programs.

INCLEMENT WEATHER

The University of Tennessee, Knoxville, will remain open except in the most severe weather conditions. The Chancellor may officially close or suspend selected activities of the University because of extreme weather conditions. When a decision to close is reached, campus and local radio and TV stations will be notified so that appropriate announcements may be made. If the University is officially closed, certain essential activities such as food services, physical plant, police, steam plant, and telephone services will continue to operate. Some facilities such as the library and University Center will, if possible, continue to function as a service to students and faculty. When the University is officially closed, its policy of Days of Administrative Closing will apply for staff excepted and staff non-exempt employees.

In event of inclement weather when the University remains open, all faculty, administrators, and staff will be expected to maintain their regular work schedules, but are advised to avoid undue risks in traveling. Employees who anticipate arriving late or not arriving at all should notify their immediate supervisors. Employees will have the option of charging their time off to annual leave or leave without pay; or, with approval, they may make up their lost work hours.

Students will be responsible for any academic work which they miss due to absences caused by severe weather conditions. It is the individual student's responsibility to take the initiative to make up any missed classwork, and it is the instructor's responsibility to provide a reasonable opportunity for students to complete assignments or examinations missed due to such absences.

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.

PROFICIENCY EXAMINATION

A proficiency examination may be given in any academic course offered for undergraduate credit. The University policy is to reserve departments the decisions as to which courses, if any, cannot be passed by proficiency examinations.

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 located. A fee must be paid in advance at the Office of Registrar.

Subject to the grading policy of the college in which the student is enrolled, and except for courses which are graded only on a S/NC basis, a student who passes a proficiency examination and who wishes to have the grade recorded may choose to take the grade on the examination (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 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 UT, Knoxville English Proficiency Examination to determine placement in the appropriate English course. No credit for any English course is awarded through this special examination.
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.

SECOND MAJORS AND MINORS
Students may pursue any available minors or second majors which will be so noted on their transcripts upon graduation. Students should understand that meeting the requirements of minors or second majors may lengthen their academic programs and should consult closely with advisers in both areas.

SENIORS ELIGIBLE FOR GRADUATE CREDIT
A senior at The University of Tennessee, Knoxville, who needs 30 semester 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 semester, subject to the approval of each term of the Dean of the Graduate School.

SPECIAL REQUIREMENTS FOR STUDENT-ATHLETES
Student-athletes participating in intercollegiate sports under the provisions of the National Collegiate Athletic Association and the Southeastern Conference must fulfill the NCAA academic progress requirements in addition to the University's academic continuation and retention policies for continuation of eligibility to participate in intercollegiate sports.

TEACHER CERTIFICATION
Teacher certification is a responsibility of the College of Education of The University of Tennessee, Knoxville. Students desiring certification must meet general education, professional education, and area of specialization requirements described in the College of Education section of this catalog.

UNIVERSITY STUDENTS
Many students are undecided about their major when they enter UT, Knoxville. All undecided students are designated University Students and are advised by the Liberal Arts Advising Center. While it is proper to explore alternative choices, students should also seek guidance in pursuing a course of study that culminates in graduation. For this reason students who enter UT, Knoxville as freshmen may remain as University Students no longer than through the completion of 15 semester hours. UT, Knoxville students who fail to progress in a given major, college, or school and are undecided about an alternative course of study may continue at UT, Knoxville as University Students for a maximum of 15 semester hours. All students, whether enrolled in a college or school or University Students, must be approved by the college or school of their major for a minimum of the last year of study (30 semester hours prior to graduation).

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
If a student cannot fulfill the requirements for a course because of an inability to communicate in writing, the instructor will give the student an "IW" to designate "incomplete due to writing". Any student who receives an "IW" should report to the Writing Center for appropriate referral. As with other incompletes, the student will have one calendar year to make up the deficiency either automatically or by directed study to reflect failure for the course.

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 UT, Knoxville other than the summer term and students who have withdrawn from the previous semester will receive registration information with their letter of readmission. Evening School students should contact the University Evening School for registration times.

REQUIREMENTS FOR REGISTRATION OF ADMITTED STUDENTS
Medical History. Though a physical examination is not required, a Medical History Questionnaire is sent to all admitted students and must be completed by the student, parent, or other responsible party who is familiar with the student's medical history. Such information will facilitate University physicians in providing continuing health care. This form must be returned to the Student Health Service before enrollment.

Participation in Orientation. Beginning freshmen and transfer students are required to attend an orientation session prior to their first registration at the University. Schedules for these programs are mailed to admitted students by the Dean of Student Conduct and Orientation. Orientation programs are designed to help new students become acquainted with opportunities and services at the University and to provide information needed for registration. Students who wish to attend the Evening School should contact the University Evening School for information about registration and orientation.

FIRST CLASS MEETING
Students who do not attend the first class meeting may be dropped from the course unless they have made prior arrangements with the department. It is the responsibility of students to take whatever steps necessary to see if they have been officially dropped from a course.

MAXIMUM HOURS PER TERM
Undergraduate students may enroll for a maximum of 19 credit hours each semester unless a lower maximum is specified by the college or school in which the student is enrolled. Enrollment in more than 19 hours must be approved by the dean of the student's college or school. Graduate students may enroll for a maximum number of 15 credit hours each semester. Enrollment in more than 15 hours must be approved by the Dean of the Graduate School. Law and Veterinary Medicine students may enroll for the maximum number of credit hours each semester as specified by the respective college.

MAXIMUM HOURS PER TERM FOR SUMMER
Undergraduate students may enroll for a maximum of 6 credit hours for each of the first and second sessions. Students may enroll for a maximum of 12 credit hours for those courses that exceed the maximum of the respective session. Students may enroll for a maximum of 12 credit hours in any combination of summer session courses. Enrollments that exceed the maximum must be approved by the dean of the student's college or school.

AUDITING COURSES
Students may enter classes as auditors with the consent of the instructor. The instructor will determine the appropriate requirements or restrictions. Auditors receive no credit and the audited course will not be recorded on the transcript. The student's name will appear on the class role to inform the instructor that the student is properly enrolled as auditor.

Students are required to register and pay fees. Prior to the drop and 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 Change of Registration Form and having it processed at a terminal in Drop/Add. Once the drop and add deadline is passed, a change will not be allowed.

PREREQUISITE AND COREQUISITE COURSES
Students must meet prerequisite and corequisite requirements for all courses with such restrictions, and no student shall be permitted to register for those courses in which the requirements have not been met.

CHANGES IN REGISTRATION
Students may add courses through the tenth calendar day counted from the beginning of classes. 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 tenth day. Students must fill out and submit the appropriate form for section changes in order to receive credit for the course.

Students may withdraw from courses without penalty prior to the drop deadline. For all
undergraduate students, the drop deadline is 22 calendar days after the beginning of classes. Consult the current timetable for announced calendar dates. The exceptions to this deadline are summer and other special sessions. Students should consult the summer term timetable for the appropriate drop deadline.

Any course may be dropped before the drop deadline specified above without 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 was 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 which would not be acceptable for 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 Readmission and Withdrawal Office. It is important that all students who leave the University before the end of a term 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 10 days (or 22 days for first semester undergraduate students) after the beginning of classes, the grade of W will be given in all courses in which the student is currently enrolled. After the summer term drop deadlines are published in the summer term timetable. In cases of withdrawal before the drop deadline, the Registrar will be notified of the date of withdrawal, who will then inform the instructors that the grade in those courses is automatically W. Graduate students 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 10 calendar days (or 22 days for first term 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 changes of registration.

UNDERGRADUATE RETENTION STANDARDS

TRANSFER STUDENTS

A transfer student who has been conditionally admitted must meet the regular University standards of retention during the first term, or any subsequent term before attaining good standing.

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 UT, Knoxville may petition for Academic Second Opportunity. Whether or not Academic Second Opportunity is granted is at the discretion of the Committee of Readmission. 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 computed as Satisfactory (S) grade. At least 30 hours must be completed at UT, Knoxville after readmission. In addition, at least 60 semester hours of letter grades (A-F) must be earned after readmission in order to meet the minimum qualifications for graduation with honors. Academic Second Opportunity may only be declared once. All petitions for Academic Second Opportunity must be submitted to the Committee on Readmissions no sooner than completion of the first semester at UT, Knoxville and no later than one calendar year following readmission to UT, Knoxville.

READMISSION

A student in good academic standing who has withdrawn from school or who has been absent for a term other than the summer must make application for readmission. Transfer students must apply for readmission before the deadlines.

A student who has been dropped academically must apply for readmission. Former students who in the interval have been enrolled at another accredited college or university may apply for readmission. An official transcript from other institutions attended and an acceptable combined cumulative grade point average are required for readmission. To register for credit courses in any branch, center, or division of the University controlled by the Knoxville campus (except correspondence courses), a student must meet the readmission regulations that govern courses for credit at the Knoxville campus. Deadlines are available in the Readmissions Office.

ACADEMIC REVIEW

The University of Tennessee expects all students who enter the University to remain in good academic standing. To accomplish this, the University has established retention standards. To graduate from UT, Knoxville, the minimum cumulative GPA must be 2.00. The catalog contains additional retention, progression, and graduation requirements for specific programs.

A student whose cumulative or semester grade point average falls below the minimum acceptable level of 2.00 will be placed in academic review for the subsequent semester of enrollment. During that semester and any other semesters in review, a student must participate in a special advising program in the Dean's Office of his or her college or school. If, while in review, a student does not maintain a 2.00 grade point average for hours attempted each term, the student must meet with a committee appointed by the academic dean of the college or school of enrollment. This committee will determine the most appropriate academic action. In turn, a commitment from the student to accomplish the action recommended by the committee is expected. In certain circumstances, it may be concluded that a term of suspension from the University is necessary.

GENERAL REQUIREMENTS FOR A BACHELOR'S DEGREE

To receive a bachelor's degree from The University of Tennessee, Knoxville, a student must complete all of the requirements listed below. 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 a 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 for which 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 note the caution on 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. Providing the curriculum has been effective within six 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 dean, in consultation with the Registrar's Office.

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

(3) Complete the last 60 hours of credit offered for the bachelor's degree at an accredited senior college.

(4) Complete the last 30 hours of credit offered for the bachelor's degree in residence at The University of Tennessee, Knoxville. In the College of Agriculture at least 18 semester hours of upper-division technical agriculture approved by the student's faculty advisor must be completed at The University of Tennessee, Knoxville. Credit for coursework attempted at other University of Tennessee campuses may be counted as part of this requirement, with the exception of the limitation noted in the regulations concerning corresponding courses. 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.

(5) Comply with the state law that one unit of American history at the high school level or six semester hours of collegiate work be
satisfactorily completed. This requirement is effective for those graduating July 1, 1978 and thereafter. It may be satisfied by completing History 251-252 (or 257-258). History 449 may be used in lieu of three hours of American history. Students should consult the catalog of enrollment to determine how the six hour's credit for fulfillment of this requirement is to be included in individual curricula.

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

(7) Pay to the Treasurer's Office the graduation fee no later than the beginning of the semester of graduation.

(8) 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 semester of intended graduation. This deadline is imperative in order that all necessary processing can take place toward the degree.

(9) Comprehensive Test in Major.

HONORS CATEGORIES FOR GRADUATION

Honors are conferred upon graduating students who have displayed a high level of achievement during their university career. Recipients 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 semester preceding the graduation semester. 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 60 hours at UT, Knoxville in order to qualify for honors categories. For all other students, the honors category is based on the average earned at UT, Knoxville 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 semester preceding the graduation semester, 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.

As of June 1, 1991 honors categories will be based on the following scale:

"Cum laude" ...................................... 3.50 through 3.64
"Magna cum laude" ................................. 3.65 through 3.79
"Summa cum laude" ............................... 3.80 through 4.00

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 30 semester hours beyond the first bachelor's degree.

(3) Attend the University for at least two semesters 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.

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 Fine Arts
Master of Mathematics
Master of Music
Master of Science in Nursing
Master of Public Administration
Master of Public Health
Master of Science
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 Science in 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 Materials Science and Engineering
Bachelor of Science in Mechanical Engineering
Bachelor of Science in Nuclear Engineering

COLLEGE OF HUMAN ECOLOGY

Bachelor of Science in Home Economics
Bachelor of Science in Hotel and Restaurant Administration
Bachelor of Science in Human Ecology
Bachelor of Science in Interior Design

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

COLLEGE OF NURSING

Bachelor of Science in Nursing

COLLEGE OF SOCIAL WORK

Bachelor of Science in Social Work

COLLEGE OF VETERINARY MEDICINE

Doctor of Veterinary Medicine
THE UNIVERSITY REQUIREMENT
GENERAL EDUCATION

The goal of general education is to develop those basic skills, knowledge, attitudes, and judgments that are necessary for effective citizenship at all levels, from the local to the global; for responsible and fulfilling interactions with others and the environment; and for an enriched personal life. General education may also provide the basis for a major or professional concentration, but its aims are not career-specific. The following areas define the general education program for undergraduate curricula.

**English Composition (2 courses)**
Courses used to meet this requirement should develop the student’s ability in analytic and expository writing through the study of literature and writing applications. This requirement would normally be satisfied by completion of English 101-102 or equivalents, or by demonstration of proficiency.

**Mathematical Sciences (2 courses)**
Courses used to meet this requirement should develop the student’s ability to analyze and solve quantitative and logical problems.

**Humanities and The Arts (2 courses)**
Courses used to meet this requirement may concentrate either on critical analysis or practice of the arts. These might include the interpretation and analysis of works in one or more of the arts; consideration of significant philosophical, ethical, or religious text and issues; or participation in some area of the visual, spatial, musical, theatrical, rhetorical, or written arts.

**Historical Studies (2 courses)**
Courses used to meet this requirement should develop the student’s appreciation of continuity and change over time. Such courses would examine the connections and interactions between different aspects of the human experience through attention to significant political, social, economic, intellectual, and cultural developments in a chronological, balanced, and integrated framework.

**Social Sciences (2 courses)**
Courses used to meet this requirement should describe the structures of society, clarify the dynamics of cognitive and personal development through the life cycle, or analyze social, economic, or political issues.

**Natural Sciences (2 courses)**
Courses used to meet this requirement should describe the world around us using scientific methods and examine natural phenomena in terms of scientific principles. Such courses would normally contain a laboratory or field experience.

**Foreign Languages (2 courses at the intermediate level)**
Courses used to meet this requirement should facilitate the student’s ability to use a foreign language as a tool for oral and written communications and reading, including an understanding of the cultures for which it is the native language.

**OR**

**Integrative Studies (2 courses)**
Courses used to meet this requirement may be of three broad types:
- Multicultural studies, which analyze international dimensions of critical issues or explore elements and values that shape a culture other than the student’s own;
- Interdisciplinary studies, which incorporate the methods and approaches from two or more disciplines to explore major issues; or
- Disciplinary perspective courses, which explore the potential and limits of a discipline in terms of its impact on individuals and society or examine a student’s major course of study from a value-oriented perspective.

All majors and college or school curricular requirements described in this catalog are in accordance with the University Requirement.
**TERMS COMMONLY USED IN ADMISSION AND REGISTRATION PROCEDURES**

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admission</td>
<td>The process of being admitted to the University with the opportunity to take classes.</td>
</tr>
<tr>
<td>Progression</td>
<td>An internal evaluation process in some colleges or degree programs by means of which a 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 courses numbering system, lower division courses carry 100 and 200 numbers. 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 freshmen or sophomore classification. |
| Upper division        | 1. Courses normally taken during the junior and senior years (300 and 400 numbers). 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 and drop deadlines| The latest date in an academic term when a course may be added or dropped from a student's class schedule without approval of someone other than the student (exception: when the additional hours produce an academic overload). |
| 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 Admissions Office. |
| Admissions file       | The set of documents related to a request for admission. The set contains the application form and official transcripts of previous work in high school or college and may contain standardized test scores (ACT or SAT for freshman applicants), a statement of career objectives, forms for international students, or other information required by the Admissions Office. |
| 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. |
| Semester hour         | The unit of academic credit at UT, Knoxville.                                                                                               |
| Academic load         | The total semester hours of credit for all courses taken during a specified time—semester, summer term, or other special sessions.         |
| Full-time             | One who is registered for 12 hours or more during a semester.                                                                                |
| Semester              | The division of the calendar year used in academic scheduling. A semester is roughly 4 months in duration.                                  |
| Quality points        | Academic performance records are compiled through use of a scale assigning 4 &quot;quality points&quot; per semester hour of credit for an &quot;A&quot; grade ranging to 1 quality point per semester hour of credit for a &quot;D&quot; grade. |</p>
<table>
<thead>
<tr>
<th>Term</th>
<th>Description</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 hours of credit attempted. Certain grades do not influence this computation. 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 university course credit for these examinations is available from the Admissions Office.</td>
</tr>
<tr>
<td>CLEP test</td>
<td>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 Statements on acceptance of CLEP test scores for academic credit are found in this catalog.</td>
</tr>
<tr>
<td>Proficiency exam</td>
<td>A test given to an admitted student to evaluate knowledge or skills normally acquired through completion of a particular course.</td>
</tr>
<tr>
<td>TOEFL test</td>
<td>An internationally administered examination measuring ability to use the English language. Required of any international student applying whose native language is not English. 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</td>
</tr>
<tr>
<td>English Proficiency Test</td>
<td>A test taken at UT, Knoxville prior to initial registration (but after admission) by undergraduate international students to determine what English course (if any) must be taken. This local test is in addition to the minimum TOEFL test requirement.</td>
</tr>
<tr>
<td>University honors courses</td>
<td>Non-departmental enrichment courses available (by invitation only) from the University Honors Program.</td>
</tr>
<tr>
<td>Honors course or section</td>
<td>A version of a regular course reserved for students with superior preparation for that course. See, for example, English honors; Chemistry honors; Mathematics honors; History honors.</td>
</tr>
<tr>
<td>Evening school</td>
<td>An administrative unit of the Division of Continuing Education designed to serve students who work during the major portion of the day.</td>
</tr>
<tr>
<td>Major</td>
<td>The principal education interest of a student as represented by one of the curricula offered by the various colleges. 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.</td>
</tr>
<tr>
<td>Minor</td>
<td>A secondary subject area interest (to the major) represented by a specified set of hours and/or courses. Differs from &quot;concentration&quot; in that a minor is not a subdivision of the major subject area.</td>
</tr>
<tr>
<td>Concentration</td>
<td>A collection of courses within a major which focuses on a particular subject area. The term &quot;concentration&quot; describes the nature of the set of courses.</td>
</tr>
<tr>
<td>Option</td>
<td>A concentration of elective courses within a major which emphasizes one aspect of the major, chosen by a student according to his/her interests.</td>
</tr>
<tr>
<td>Accredited</td>
<td>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.</td>
</tr>
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</table>
# MAJORS, MINORS, AND CONCENTRATIONS

<table>
<thead>
<tr>
<th>DEPARTMENT (UNIT)</th>
<th>MAJOR</th>
<th>CONCENTRATION WITHIN THE MAJOR</th>
<th>DEGREE</th>
</tr>
</thead>
<tbody>
<tr>
<td>College of Agriculture</td>
<td>Agricultural Biology</td>
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<tr>
<td>Agriculture (Interdepartmental Unit)</td>
<td>Agricultural Economics and Rural Sociology</td>
<td>Agricultural Economics and Business</td>
<td>Bachelor of Science in Agriculture</td>
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<tr>
<td></td>
<td>Agricultural and Extension Education</td>
<td>Agricultural Education</td>
<td>Bachelor of Science in Agriculture</td>
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<tr>
<td></td>
<td>Agricultural Engineering</td>
<td>Agricultural Engineering</td>
<td>Food Engineering</td>
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<tr>
<td></td>
<td>Agricultural Engineering Technology</td>
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<tr>
<td>Agricultural Extension Education</td>
<td>Animal Science</td>
<td>Animal Science</td>
<td>Bachelor of Science in Agriculture</td>
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<tr>
<td></td>
<td></td>
<td>Animal Science Curriculum with Pre-Veterinary (3-2)</td>
<td>Bachelor of Science in Agriculture</td>
</tr>
<tr>
<td>Entomology and Plant Pathology</td>
<td>Food Technology and Science</td>
<td>Food Technology and Science</td>
<td>Bachelor of Science in Agriculture</td>
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<tr>
<td></td>
<td>Forestry, Wildlife, and Fisheries</td>
<td>Forestry</td>
<td>Forest Resource Management</td>
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<td>Forest Recreation</td>
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<td>Wood Utilization</td>
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<tr>
<td></td>
<td></td>
<td>Wildlife &amp; Fisheries Science</td>
<td>Bachelor of Science in Wildlife &amp; Fisheries Science</td>
</tr>
<tr>
<td>Ornamental Horticulture and Landscape Design</td>
<td>Ornamental Horticulture and Landscape Design</td>
<td>Bachelor of Science in Ornamental Horticulture and Landscape Design</td>
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<tr>
<td>Plant and Soil Science</td>
<td>Plant and Soil Science</td>
<td>Bachelor of Science in Agriculture</td>
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<tr>
<td>School of Architecture</td>
<td>Architecture</td>
<td>Architectural Design</td>
<td>Bachelor of Architecture</td>
</tr>
<tr>
<td>School of Architecture</td>
<td></td>
<td>Second Baccalaureate Degree</td>
<td>Bachelor of Architecture</td>
</tr>
<tr>
<td>College of Business Administration</td>
<td>Accounting and Business Law</td>
<td>Accounting</td>
<td>Bachelor of Science in Business Administration</td>
</tr>
<tr>
<td>Business Administration (Interdepartmental Unit)</td>
<td>General Business</td>
<td>Bachelor of Science in Business Administration</td>
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<tr>
<td></td>
<td>Public Administration</td>
<td>Bachelor of Science in Business Administration</td>
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<tr>
<td>Economics</td>
<td>Economics</td>
<td>Bachelor of Science in Business Administration</td>
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<td>Management</td>
<td>Management</td>
<td>Bachelor of Science in Business Administration</td>
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<tr>
<td>Management Science Programs</td>
<td>Logistics and Transportation</td>
<td>Bachelor of Science in Business Administration</td>
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<tr>
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<td>Marketing</td>
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1 Minor available  
2 Minor available for students in other colleges  
3 Minor available: General Special Education  
4 Minor available: Driver and Traffic Education and Health Education  
5 Minor available in Portuguese
<table>
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<th>DEPARTMENT (UNIT)</th>
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<th>CONCENTRATION WITHIN THE MAJOR</th>
<th>DEGREE</th>
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<td>Technological and Adult Education</td>
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<td>Distributive Education</td>
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<td>Trades &amp; Industries Industrial Arts Industrial Training</td>
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<td>Health, Leisure and Safety&lt;sup&gt;3&lt;/sup&gt;</td>
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<th>CONCENTRATION WITHIN THE MAJOR</th>
<th>DEGREE</th>
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<th>CONCENTRATION WITHIN THE MAJOR</th>
<th>DEGREE</th>
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The College 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.

Two separate administration units—the Agricultural Experiment Station and the Agricultural Extension Service—were organized and assigned responsibility for research and extension functions, respectively. More recently a College of Veterinary Medicine was established. These three units and the College now constitute the University of Tennessee's Institute of Agriculture. Thus, the College of Agriculture is not only an academic unit of The University of Tennessee, Knoxville campus, it is also an important administrative unit of the Institute of Agriculture.

There are many shared resources and positive interactions between various units of the Institute. For example, most of the faculty in the College of Agriculture hold joint appointments in the Agricultural Experiment Station and they are actively involved in significant basic and applied research in agriculture and the associated natural resources. On campus and field research laboratories are utilized in the instructional programs of the College, while extension and research activities provide many students excellent part-time job opportunities.

The unique association the College has with the UT, Knoxville campus and the other units of the Institute of Agriculture make it possible for the College to offer comprehensive high quality undergraduate and graduate programs.

CURRICULUM 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 Agriculture, 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 program in agricultural engineering receives strong support from the College of Engineering and is fully accredited by the Accreditation Board of Engineering and Technology. The forest resource management and forest recreation concentrations are 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 the 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 agriculture offered in the college. These major areas are agricultural economics and business, agricultural education, animal science, food technology and science, and plant and soil science. Specific courses required for each of these areas are given under the departmental headings in this catalog. A student must complete the curriculum outlined by the department in which he/she 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.

Students pursuing a program leading to the degree of Bachelor of Science in Agricultural Engineering may select the concentration offered in food engineering. Students seeking the Bachelor of Science in Forestry may choose concentrations in forest resource management, forest recreation or wood utilization.

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 UT, Knoxville campus must have a grade point average of 2.0.

The use of transfer credit in technical subject matter areas 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 semester in residence and must be conducted under the supervision of the head of the department in which the course is offered.

A minimum of 18 semester 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 21 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.

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 Tennes-
see 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 are the main Agricultural building, Morgan Hall; the Agricultural Engineering Building; McCord Hall; the Dairy Products Building; McLeod Food Technology Building; C.E. Brehm Animal Sciences Building, which includes a large pavilion; Ellington Plant Sciences Building which houses the plant science departments; and greenhouses for teaching and experimental work. The buildings which have been erected recently provide facilities comparable to the best in the country for the departments which they serve.

Four farms adjacent to or within eight miles of the agricultural campus are used both for instructional and experimental purposes. Morgan Farm (80 acres), Cherokee Farm (550 acres), Plant Sciences Farm (212 acres), and a livestock farm (510 acres) provide excellent field laboratory facilities for instructional programs offered in the College. Cherokee Woodlot (120 acres), the Oak Ridge Forest (2,250 acres), and Arnes 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 to 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 areas of special interest may choose the curriculum most adaptable to their needs when they register as freshmen, and an advisor 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 exploring 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 selected. 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, both 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 a double or triple 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 must maintain a complete record of the student's progress. The multiple major will normally require more than 132 hours credit for graduation.

**OPTIONAL MINORS**

Agricultural students may have single or multiple minors in agriculture or in other colleges recorded on their transcripts without regard to course overlap among majors and minors. A minor in a department of the College of Agriculture requires a minimum of 18 credit hours in courses numbered 200 and above with the majority of credit hours at the 300 and 400 level. At least 9 of the credit hours required for the minor must be completed at UT, Knoxville. Specific requirements are listed by each department offering a minor. Minors offered in the College of Agriculture are open to students of other colleges who have the approval of their advisor and department.

**MINIMUM REQUIREMENTS FOR BACCAULAUREATE DEGREE PROGRAMS**

All B.S. degree programs offered in the College have the following minimum requirements: Agriculture and Renewable Natural Resources Perspectives (3) Biological Sciences (College of Agriculture courses included) (8) Computer Science (3) (Or equivalent experience. See specific departmental requirements. English and Communications (12) English Composition (6) Speech (3) Writing or Speaking elective (3) Mathematics (6) Physical Sciences (Chemistry, Physics, Geology) (8) Social Sciences and Humanities (12) Economics (4) Electives (8) Directed Electives (6) Major Courses (24) College of Agriculture courses (outside of the major department) designated by the department and/or electives (12) Other courses designated by the department and/or electives (38) For a total of 132 hours.

Bachelor of Science in Agricultural Engineering: Must be courses in English and communications, biological sciences, physical sciences, or social sciences and humanities or combinations of these subject matter areas.

Bachelor of Science in Agricultural Engineering and Bachelor of Science in Forestry program excepted.

**INDEPENDENT STUDY**

Independent study and special topics courses and seminars offered in each department provide exceptional students the opportunity to explore in greater depth subject-matter of unusual significance to agriculture.

Students gain experience and are encouraged to assume responsibilities not available in formally organized courses. Association with students and faculty from all phases of agriculture and the renewable natural resources in the study of a common problem provides an unusual challenge.

**COURSE LOAD**

Students desiring to take more than 19 hours per semester must have the approval of the dean of the college.

**TRANSFER STUDENTS**

Students who transfer to the College of Agriculture from another institution, or from another college at UT, Knoxville, should consult the dean if in doubt about the curriculum they wish to follow and for assignment to an appropriate advisor. Requests for substitutions or special examinations should be submitted for consideration during the first semester of study in the selected curriculum.

**AGRICULTURAL ECONOMICS AND RURAL SOCIOLOGY**

**Professors:**
H. Willsman (Head), Ph.D. Missouri; M.B. Badenhop (Emeritus), Ph.D. Purdue; J.R. Brooker, Ph.D. Florida; C.L. Cleland, Ph.D. Wisconsin; D.B. Eastwood, Ph.D. Tufts; L.H. Keller, Ph.D. Kentucky; T.H. Klintz (Ass't Dean), Ph.D. Kentucky; F.O. Leuthold, Ph.D. Wisconsin; J.A. Martin (Emeritus), Ph.D. Minnesota; D.L. McLemore, Ph.D. Clemson; R.B. McManus, Ph.D. Purdue; S.D. Mundy, Ph.D. Tennessee; B.H. Periecost (Asst. Vice Pres.), J.D. Tennesseee; W.P. Ranney (Emeritus), Ph.D. Minnesota; C.B. Sappington (Emeritus), Ph.D. Illinois; T.J. Whately (Emeritus), Ph.D. Purdue.

**Associate Professors:**
B.C. English, Ph.D. Iowa State; R.H. Orr, Ph.D. Illinois; W.M. Park, Ph.D. Virginia Polytechnic Institute; R.K. Roberts, Ph.D. Iowa State; R.W. Todd, J.D. Tennessee.

**Assistant Professors:**
R.G. Hufskar, Ph.D. California (Davis); K.L. Jensen, Ph.D. Oklahoma State; G.K. Pompei, Ph.D. California (Davis); L.W. VanTassell, Ph.D. Texas A&M.

**AGRICULTURAL ECONOMICS AND BUSINESS CURRICULUM**

**Advisors:**
Professor McLemore. Associate Professors Park and Roberts. Assistant Professors Hufskar, Jensen, Pompeii and VanTassell.

This curriculum is designed to provide students with training in the social sciences as well as in the physical and biological sciences and technical agriculture. Through course selection, students may prepare for employment in the rapidly expanding field of agricultural business or in the field of farm production and related areas. The business oriented student will be prepared for the management
The Department of Agricultural and Extension Education has two educational areas of emphasis: namely, Agricultural Extension Education and Agricultural Education.

### AGRICULTURAL EXTENSION EDUCATION

Although no formal undergraduate curriculum is offered in Agricultural Extension Education, undergraduate courses are available as electives in each formal curriculum. These courses are designed to develop an understanding of the functions, responsibilities, and techniques of the Agricultural Extension Service; and to provide prospective Extension employees with work experience in selected training counties.

### AGRICULTURAL EDUCATION

Students who complete the requirements for a major in Agricultural Education receive a Bachelor of Science Degree in Agriculture with a Major in Agricultural Education. The curriculum is designed to prepare persons to assume educational and leadership roles in many phases of the agricultural industry, including agribusiness, schools, agencies, and farming and ranching. Emphasis is on preparing students to teach vocational agriculture or serve as an educator with the Agricultural Extension Service. Students may choose to concentrate either in the teacher education (certification) option or the professional services option.

The teacher education option is designed to prepare students to meet teacher certification requirements for vocational agriculture. Teacher Certification is given through the College of Education. Students must file for admission to Teacher Education 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/or agricultural mechanics by meeting the following requirements:

1. Ornamental horticulture - 12 semester 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.

2. Agricultural mechanics - 12 semester hours of courses in agricultural mechanization. Subject matter areas must include agricultural power and machinery, soil and water conservation, and agricultural structures.

Students who choose the professional services option may substitute additional technical agriculture and/or internship hours equivalent to the number of hours of student teaching required in the teacher education option. With advisor approval additional hours, required specifically for certification, may also be substituted with courses in the humanities, social sciences or technical agriculture areas.

This option provides a broad-based curriculum designed for those students who wish to prepare for careers with the Agricultural Extension Service, agribusiness, government agencies, and farming and ranching. This option does not prepare a student to meet teacher certification requirements.

### PHASES OF AGRICULTURAL BUSINESS

Employment opportunities include work in marketing of agricultural products, agribusiness firm management, agricultural credit agencies and banks, farm real estate and appraisal services, public and private market analysis, and farm information services utilizing mass communication.

Farm management oriented students will be prepared for positions such as farm managers, county agricultural agents, managers of farm supply and purchasing firms, agricultural journalists, and farm loan agents. The curriculum also provides the necessary background for graduate work in agricultural economics.

Minor consists of 19 credit hours including Economics 201, Agricultural Economics 210, 342, 350, and 6 hours of Agricultural Economics and Rural Sociology electives.

<table>
<thead>
<tr>
<th>Hours Credit</th>
<th>Freshman</th>
<th>Sophomore</th>
<th>Junior</th>
<th>Senior</th>
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<td>Agriculture 101</td>
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<td>3</td>
</tr>
<tr>
<td>Biology 119, 130</td>
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<td>6</td>
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<tr>
<td>Mathematics 121, 122</td>
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<td>Economics 210</td>
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<td>Physical Science electives</td>
<td>3</td>
<td>3</td>
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</tr>
<tr>
<td>Speech</td>
<td>120 or 240</td>
<td>120 or 240</td>
<td>120 or 240</td>
<td>120 or 240</td>
</tr>
<tr>
<td>Statistics</td>
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<td>Accounting 201, 202</td>
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<td>Nondepartmental agricultural electives</td>
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<tr>
<td>Department of Rural Sociology</td>
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<td>101, 130</td>
<td>101, 130</td>
<td>101, 130</td>
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<td>100</td>
<td>100</td>
<td>100</td>
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<tr>
<td>Electives</td>
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<tr>
<td>Senior</td>
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<td>3</td>
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</table>

### AGRICULTURAL AND EXTENSION EDUCATION

**Professors:**
- Professors Luttrell, Bledsoe, Hart, Henry, McDow, Tompkins, Wilhelm, Mote, von Bernuth, Ph.D. Tennessee, P.E.
- Professors McDow, Tompkins, Wilhelm, Mote, von Bernuth and Wilkerson.

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 accredited by the University of Tennessee.
the Engineering Accreditation Commission of the Accreditation Board For Engineering and Technology. Industry, government agencies, research and testing organizations, and foreign service offer employment opportunities to agricultural engineers.

In addition to general requirements for admission to the University, the minimum requirements for association include two units of algebra, one unit in geometry, one-half unit in trigonometry, and one unit in physics or chemistry. Students may remove deficiencies by registering for special classes during the freshman year.

The curriculum trains students in analysis and design skills to solve engineering problems in agriculture. In the senior year comprehensive design of systems and their components is emphasized. Graduates may pursue careers in design, analysis, or development in agricultural power and machinery, agricultural structures and environment, agricultural electrical and electronic systems, processing and materials handling systems, and soil and water conservation engineering.

The curriculum provides elective courses which can be taken in the student’s area of interest. Students must check with their advisors each semester regarding the selection of courses and should decide on an area of interest before starting the junior year.

In cooperation with the Food Technology and Science Department, an agricultural engineering degree with a concentration in food engineering is offered in a four-year curriculum which differs significantly from the regular agricultural engineering program. 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.

AGRICULTURAL ENGINEERING

Freshman

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
<td>Basic Engineering 100, 101, 111, 121, 131</td>
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<td>13</td>
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<tr>
<td>Chemistry, 120, 130</td>
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<td>8</td>
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<tr>
<td>English 101, 102</td>
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<td>8</td>
</tr>
<tr>
<td>Mathematics 141, 142</td>
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Sophomore

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>Agriculture 101</td>
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<tr>
<td>Agricultural Engineering 200</td>
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</tr>
<tr>
<td>Biology 110 or 120 or Botany 110</td>
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</tr>
<tr>
<td>Engineering Science and Mechanics 231, 321, 341</td>
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<td>9</td>
</tr>
<tr>
<td>Humanities/Social Science Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Mathematics 200, 231, 241</td>
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<td>8</td>
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<tr>
<td>Physics 231, 232</td>
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Junior

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Agricultural Engineering 300</td>
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<tr>
<td>Agricultural Engineering Basic Courses</td>
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<tr>
<td>Basic Engineering 201</td>
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<tr>
<td>Electrical Engineering 301, 302</td>
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<tr>
<td>Mechanical Engineering 331</td>
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<td>Nuclear Engineering 305</td>
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</tr>
<tr>
<td>Plant and Soil Science 210</td>
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<td>4</td>
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<tr>
<td>Technical Elective</td>
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</table>

Senior

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
<td>Agricultural Engineering 400, 410, 420, 425</td>
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<tr>
<td>Design Electives</td>
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Economics 201                                  |       | 4      |
| English 459                                  |       | 6      |
| Humanities/Social Science Elective           |       | 6      |
| Speech 210 or 240                            |       | 3      |
| Technical Elective                           |       | 3      |

Total: 137 hours

.or equivalent honors course.

*If Mathematics ACT is less than 28 or placement test score is unsatisfactory, take Mathematics 130 prior to 141 (see advisor for alternate course schedule). Credit toward graduation will not be granted for Mathematics 130.

Courses selected from areas of 1) Humanities and the Arts, 2) Historical Perspectives, 3) Social Science; at least one course from Humanities and the Arts and at least two upper division courses from one of the three areas.

Agricultural Engineering

with Concentration in Food Engineering

Freshman

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Engineering 100, 101, 111, 121, 131</td>
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<tr>
<td>Chemistry 100, 110</td>
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<tr>
<td>English 101, 102</td>
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</tr>
<tr>
<td>Mathematics 141, 142</td>
<td></td>
<td>8</td>
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Sophomore

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>Agriculture 101</td>
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<tr>
<td>Agricultural Engineering 200</td>
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<tr>
<td>Engineering Science and Mechanics 231, 321, 341</td>
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</tr>
<tr>
<td>Humanities/Social Science Elective</td>
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<td>3</td>
</tr>
<tr>
<td>Mathematics 200, 231, 241</td>
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<tr>
<td>Microbiology 210</td>
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<tr>
<td>Physics 231, 232</td>
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Junior

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
<td>Agricultural Engineering 300, 330, 350</td>
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</tr>
<tr>
<td>Basic Engineering 201</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Electrical Engineering 301, 302</td>
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<td>6</td>
</tr>
<tr>
<td>Food Technology and Science 410 or 411, 420, 425</td>
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<tr>
<td>Humanities/Social Science Elective</td>
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<td>3</td>
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<tr>
<td>Mechanical Engineering 331</td>
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<td>3</td>
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<tr>
<td>Nuclear Engineering 342</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>Agricultural Engineering 400, 410, 420, 425</td>
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<tr>
<td>Design Elective</td>
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<tr>
<td>Economics 201</td>
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<tr>
<td>English 457</td>
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<tr>
<td>Food Technology and Science 360, 450, 470, 480</td>
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<td>Humanities/Social Science Elective</td>
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<tr>
<td>Industrial Engineering 405</td>
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<tr>
<td>Speech 210 or 240</td>
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<tr>
<td>Technical Elective</td>
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<td>4</td>
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</tbody>
</table>

Total: 137 hours

AGRICULTURAL ENGINEERING TECHNOLOGY

Advisors:

Professors: Luttrell, Bledsoe, Henry, McDow, Tompkins, and Wilhelm, von Bernuth, Hart and Wilkerson.

No baccalaureate degree program is offered in agricultural engineering technology; however, seven undergraduate courses are offered to prepare students in other disciplines to apply elementary principles, techniques and systems of engineering to the broad industry of agriculture. A minor in agricultural engineering technology requires a minimum of 18 semester hours as follows: Agricultural Engineering Technology 201, 211, 432, 442 and two of the three courses 422, 452, 462.

A program leading to the Master of Science degree with a major in agricultural engineering technology is available (see the Graduate Catalog). The graduate program is open to qualifying BS graduates from other disciplines who earned a minor in agricultural engineering technology or who completed courses equivalent to those required for the minor in agricultural engineering technology.

ENTOMOLOGY AND PLANT PATHOLOGY

Professors:

C.J. Southards (Head), Ph.D. North Carolina State; E.C. Bernard, Ph.D. Georgia; R.R. Gerhardt, Ph.D. North Carolina State; J.W. Hilty, Ph.D. Ohio State; P.L. Lambdin, Ph.D. VPI and SU; C.D. Pless, Ph.D. Clemson.

Assistant Professors:

J.F. Grant, Ph.D. Clemson; K.D. Gwinn, Ph.D. North Carolina State; B.B. Reddick, Ph.D. Clemson; M.T. Windham, Ph.D. North Carolina State.

Advisors:

Southards, Gerhardt, Hilty, Lambdin, and Pless.

No undergraduate curriculum exists in the Department of Entomology and Plant Pathology, but a program leading to the Master of Science degree with a major in entomology and plant pathology is available (see Graduate Catalog). Courses in economic entomology, forest protection, plant pathology, and veterinary entomology are available to undergraduate students.

Instruction and training is provided in those disciplines which deal with the natural hazards that are major causes of losses in agricultural production, namely, insects and plant diseases. Courses of study in entomology or
plant pathology should give the student an appreciation of insects and microorganisms, their ecology, population dynamics, potential damage to plants and their products, and various considerations in control alternatives.

**ANIMAL SCIENCE**

**Professors:**
- K.R. Robbins (Head), Ph.D. Illinois; K.M. Barth, Ph.D. Rutgers; M.C. Bell (Emeritus), Ph.D. Oklahoma State; J.K. Bietener (Emeritus), Ph.D. Ohio State; C.C. Chamberlain (Emeritus), Ph.D. Iowa State; B.H. Erickson, Ph.D. Kansas State; O.G. Hall (Dean, College of Agriculture), Ph.D. Iowa State; S.L. Hansard (Emeritus), Ph.D. Florida; D.O. Richardson, J.B. McLaren (Emeritus), Ph.D. Auburn; G.M. An ANIMAL SCIENCE various considerations in control alternatives. damage to plants and their products, and their ecology, population dynamics, potential credits from 321 (3), 322 (3), 331 (3), 332 (3), and associated with agriculture. public relations, and various organizations supply and equipment business, agricultural marketing groups, other educational agencies, milk, egg, or poultry production, managerial or for work with feed companies, meat animal, pare for general or livestock farming, manage-

*Through course selection, students may pre-

**Associate Professors:**

**Assistant Professors:**
- G.A. Baumbach, Ph.D. Florida; A.B. Chestnut, Ph.D. Illinois; W.C. Cullen, Ph.D. Minnesota; S.E. Dick, Ph.D. Ohio State; J.J. McVay, Ph.D. Texas; J.D. Quigley, Ph.D. Virginia Polytechnic Institute; J.D. Smalling, Ph.D. Texas A&M; M.O. Smith, Ph.D. Oklahoma State.

**Advisors:**
- Professors Barth, Erickson, Robbins and Shrode. Associate Professors Backus, Heilmann, Hitchcock, Kattess, Masincupp, Oliver, Robbins and Waller. Assistant Professors Chestnut, Quigley, Smalling and Smith.

The curriculum is designed to prepare students for leadership careers in livestock production and related industries. Courses in swine, poultry, sheep, dairy and beef cattle production and management may be elected, providing the opportunity for special or additional training in the dynamic livestock and husbandry technology (production) areas. Through course selection, students 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, other educational agencies, supply and equipment business, agricultural appreciation of insects and microorganisms, public relations, and various organizations associated with agriculture.

A minor in animal science consists of 18 credit hours including 281 (3), 284 (4), and 11 credits from 321 (3), 323 (3), 331 (3), 332 (3), one of the 360 series (2) and one of the 480 series (3). Requests for substitution of similar courses in biology or zoology will be considered on an individual basis. It is suggested that the selection from the 360 series and one of the 480 series deal with the same class of livestock.

<table>
<thead>
<tr>
<th>Hours Credit</th>
<th>Freshman</th>
<th>101-102</th>
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<tbody>
<tr>
<td></td>
<td>Mathematics 121-122 or 141-142 or 151-152</td>
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<tr>
<td></td>
<td>Biology 110-120</td>
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<td></td>
<td>Chemistry 100-110 or 120-130</td>
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<tr>
<td></td>
<td>Agriculture 101</td>
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<td><strong>Sophomore</strong></td>
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<td></td>
<td>Microbiology 210</td>
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<td>Chemistry, Physics, or Geology elective</td>
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<td>Animal Science 341</td>
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<td>Statistics 201</td>
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<td>Computer Science Elective</td>
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<td>Biology 220</td>
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<td>Plant and Soil Science 210</td>
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<tr>
<td></td>
<td>Humanities/Social Science</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>English/Communications</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Economics 201</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Free Electives</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Non Animal Science Agriculture Electives</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td><strong>Senior</strong></td>
<td><strong>Animal Science 341</strong></td>
</tr>
<tr>
<td></td>
<td>Senior Animal Science 2 of 481, 482, 483, 484, 485, or 489</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>489 hours</td>
<td>485 (1 hour)</td>
</tr>
<tr>
<td></td>
<td>Non-Animal Science Agriculture electives</td>
<td>9</td>
</tr>
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<td></td>
<td>Free Electives</td>
<td>16</td>
</tr>
<tr>
<td>Total: 132 hours</td>
<td></td>
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</tr>
</tbody>
</table>

Electives allow students to select an area for specialization. Those interested in production would select additional courses in agriculture; in business administration, economics, agricultural economics, finance, and accounting in research in chemistry, zoology, physics, and statistics, etc. Electives should be chosen with career objectives in mind and in consultation with the advisor. The animal science core courses are 261, 281, 322, 331, 332 and 341.

**PRE-VETERINARY MEDICINE PROGRAM**

This program allows students to be awarded a B.S. degree in Agriculture with a major in Animal Science, after the successful completion of the first two semesters in the CVM. Students must begin this program early in the CVM (s)he should contact the Animal Science Department in order to check on graduation procedures for this program.

A total of 132 hours must be completed by the end of the first year in the CVM.

**Hours Credit**

<table>
<thead>
<tr>
<th>Hours Credit</th>
<th>Freshman</th>
<th>101-102</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mathematics 121-122 or 141-142 or 151-152</td>
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<tr>
<td></td>
<td>Biology 110-120</td>
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<td>Chemistry 120-130</td>
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<tr>
<td></td>
<td>Humanities/Social Science Elective</td>
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<tr>
<td></td>
<td><strong>Sophomore</strong></td>
<td><strong>English/Communications Elective</strong></td>
</tr>
<tr>
<td></td>
<td>Biology 210</td>
<td>3</td>
</tr>
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<td></td>
<td>Chemistry 350, 360-369</td>
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<tr>
<td></td>
<td>Animal Science 281</td>
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<tr>
<td></td>
<td>Biology 220</td>
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<tr>
<td></td>
<td>Economics 201</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Computer Science Elective</td>
<td>3</td>
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<tr>
<td></td>
<td><strong>Junior</strong></td>
<td>**Animal Science 341, 321, 331, and one of Animal Science 481, 482, 483, 484, 485, or 489</td>
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<tr>
<td></td>
<td>12</td>
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<td></td>
<td>Biochemistry 410</td>
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<td></td>
<td>Physics 221-222</td>
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<td></td>
<td>Non Animal Science Agriculture</td>
<td>6</td>
</tr>
<tr>
<td>Total: 102 hours</td>
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<td></td>
</tr>
</tbody>
</table>

Courses required beyond PV requirements for PV-BS combined program.

*May include courses in English literature, speech, music, art, philosophy, religion, language, history, economics, anthropology, political science, psychology, sociology, and geography.

1. The last 30 hours of the three-year pre-veterinary curriculum must have been taken at UT, Knoxville.
2. At least 12 hours of upper division (300 and 400 level courses) technical agriculture courses must be taken at UT, Knoxville.
3. In addition to all the required pre-veterinary medical courses, the following (or approved equivalents) must be completed before entering the College of Veterinary Medicine.
   - Agriculture 101 - 3 hours
   - Animal Science 261, 281 - 7 hours
   - Animal Science 322 - 3 hours
   - Animal Science 331 - 3 hours
   - Animal Science 341 - 3 hours
   - One of Animal Science 481, 482, 483, 484, 485, 486, or 489 - 3 hours
   - Computer Science Elective - 3 hours
   - Economics 201 - 3 hours

NOTE: The pre-veterinary requirements include 18 hours of Humanities and Social Sciences. By proper selection of these courses the pre-vet and Animal Science requirements can be satisfied.

1. Non-Animal Science Agriculture - 6 hours
5. Satisfactory completion of the first two semesters in the CVM professional program.
6. No later than December 31 of the student's first year in the CVM (s)he should contact the Animal Science Department in order to check on graduation procedures for this program.
7. A total of 132 hours must be completed by the end of the first year in the CVM.
FOOD TECHNOLOGY AND SCIENCE

Professors:  
H.O. Jaynes (Head), Ph.D. Illinois; J.L. Collins, Ph.D. Maryland; P.M. Davidson, Ph.D.  
Washington State; F.A. Collins, Ph.D. Georgia; L.S. Melton, Ph.D. Tennessee; J.T.  
Miles (Emeritus), Ph.D. Wisconsin; W.W. Overcast (Emeritus), Ph.D. Iowa State; M.P.  
Penfield, Ph.D. Tennessee.

Associate Professors:  
B.J. Demott, Ph.D. Michigan State; H.D. Loveday, Ph.D. Kansas State; J.R. Mount,  
Ph.D. Ohio State; M.J. Riemann, Ph.D. Kansas State.

Assistant Professors:  
R.N. Siswal, University of Massachusetts, Amhurst; G.L. Christen, Ph.D. Missouri.

Advisors:  
Collins, Draughon, Jaynes, Melton, Mount, Penfield, and Riemann.

The major in food technology and science prepares students to apply the sciences and  
engineering technology to manufacture, preserve, store, and distribute foods that meet  
the needs and desires of consumers. Coursework emphasizes the basic principles of  
converting raw food materials into acceptable consumer products. Selected commodity courses detail  
processing of specific types of food materials. Students entering the program must have an interest in the sciences, particularly chemistry, microbiology, and biology.  
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  
specialist, etc. The program of coursework conforms to the guidelines in the model  
curriculum of the Institute of Food Technologists. A special problems course provides  
opportunity for practical training in food processing plants and laboratories or federal  
and state laboratories.

The minor in Food Technology and Science requires a minimum of 16 hours as follows:  
140, 420-429, 410 or 411, 440, and one elective course in Food Technology and Science.

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
</tr>
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<tbody>
<tr>
<td>Agriculture 140</td>
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<td>Biology 120</td>
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</tr>
<tr>
<td>English 101, 102</td>
<td>6</td>
</tr>
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<td>Food Technology and Science 140</td>
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<tr>
<td>Mathematics 119, 121</td>
<td>6</td>
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<tr>
<td>Social Sciences and Humanities Electives</td>
<td>7</td>
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<tr>
<td>Computer Science Elective</td>
<td>3</td>
</tr>
<tr>
<td>Sophomore Electives</td>
<td>6</td>
</tr>
<tr>
<td>Chemistry 100, 110</td>
<td>8</td>
</tr>
<tr>
<td>Economics 201</td>
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<td>Microbiology 210</td>
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<td>Physics 121</td>
<td>3</td>
</tr>
<tr>
<td>Speech</td>
<td>3</td>
</tr>
<tr>
<td>Communications Elective</td>
<td>3</td>
</tr>
<tr>
<td>*Social Sciences and Humanities Elective</td>
<td>3</td>
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<tr>
<td>Junior</td>
<td>3</td>
</tr>
<tr>
<td>Agricultural Engineering Technology 422</td>
<td>3</td>
</tr>
<tr>
<td>Food Technology and Science 410, 411</td>
<td>6</td>
</tr>
<tr>
<td>Food Technology and Science 420, 429</td>
<td>5</td>
</tr>
<tr>
<td>Nutrition and Food Sciences 200, 201</td>
<td>7</td>
</tr>
<tr>
<td>Plant and Soil Science 471</td>
<td>3</td>
</tr>
<tr>
<td>Statistics 365</td>
<td>3</td>
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</tbody>
</table>

*Social Sciences and Humanities Electives | 5
Food Technology and Science 401 | 2
Food Technology and Science 430, 440 | 6
Nutrition and Food Sciences 300 | 3
*Food Technology and Sciences Electives | 9
General Electives | 15

Total: 132 hours

1Mathematics 130 and 141 or 151 accepted for students with advanced mathematics background.
2Social Sciences and Humanities courses within the departments: a. Art, Music, Theatre, Classes; b. History, Cultural Studies, c. Germanic and Slavic Languages, Romance Languages; and c. Philosophy, Psychology, Anthropology, Human Services.
3Sociology, including Agricultural Economics and Rural Sociology.
4Economics, Political Sciences, Religious Studies, Social Work. Requirements will be a minimum of 6 credits from a, b, or c and a minimum of 9 credits from d. to include Economics 201.
5Statistics 201.
6Three commodity electives are required, one each in dairy products, meats and foods from plant sources.

FORESTRY, WILDLIFE AND FISHERIES

Professors:  
G.T. Weaver (Head), Ph.D. Tennessee; J.W. Barrett (Emeritus), Ph.D. Syracuse; E.R.  
Buckner, Ph.D. North Carolina State; H.A. Core (Emeritus), Ph.D. Syracuse; R.W. Dimmick,  
Ph.D. Wyoming; W.E. Hamitt, Ph.D. Michigan; R.L. Little, Ph.D. North Carolina State; D.M. Ostermeier, Ph.D. Syracuse; M.R. Polton, Ph.D. Georgia; G. Schneider  
(Associate Dean, College of Agriculture), Ph.D. Michigan State; R.J. Strange, Ph.D. Oregon State; E. Thor (Emeritus), Ph.D. North Carolina State; J.L. Wilson, Ph.D. Tennessee; F.W. Woods, Ph.D. Tennessee.

Associate Professors:  

Assistant Professors:  
P.M. Winsforter, Ph.D. Iowa State.

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 concentrations: Forest Resource Management Concentration, Forest Recreation Concentration, and Wood Utilization Concentration.

FORESTRY

The profession of forestry is the science, the art, and the practice of managing and using for human benefit the natural resources which occur on and 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.

A minor in Forestry consists of 16 credit hours as follows: FWF 211 or FWF 250, FWF 311 and 9 hours from FWF 312, 313, 315, 316 and 416 and Forestry designated courses.

FOREST RESOURCE MANAGEMENT CONCENTRATION

The Forest Resource Management Concentration provides an opportunity within an education related to the management of the broad spectrum of wildland resources. In addition to the core of required courses, there are about 18 elective credit hours for broad studies or specialized training in one or more of the areas of forestry. These areas and examples of related fields of study are: Forest Biology including plant physiology and morphology, ecology, genetics, tree nutrition, forest soils; Forest Business Management including economics, accounting, finance, marketing, management science; Forest Economics including economic, business administration, social science; Forest Inventory including mathematics, statistics, computer science, photogrammetry; Forest Recreation including natural and social sciences; and Wildlife Management including ecology, zoology, botany.

The University has over 21,000 acres of forest land available for teaching, research, and demonstration. The Tennessee Valley Authority, Great Smoky Mountains National Park, and Cherokee National Forest provide 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.

<table>
<thead>
<tr>
<th>Freshman</th>
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</tr>
</thead>
<tbody>
<tr>
<td>English 101, 102</td>
<td>6</td>
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<tr>
<td>Mathematics 119, 121</td>
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<tr>
<td>Botany 110, 112</td>
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<td>Agriculture 101</td>
<td>3</td>
</tr>
<tr>
<td>FWF 211, 300</td>
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<table>
<thead>
<tr>
<th>Sophomore</th>
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</thead>
<tbody>
<tr>
<td>Economics 201</td>
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<td>Statistics 201</td>
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<td>Computer Science 101</td>
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<tr>
<td>Speech 210 or 240</td>
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<td>FWF 300, 311</td>
<td>3</td>
</tr>
<tr>
<td>Forestry 331, 332</td>
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<td>Social Sciences Elective</td>
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<tr>
<td>FWF 312, 313, 315, 316, 317</td>
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<tr>
<td>Forest 321, 322, 323, 324, 325</td>
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<td>EP 306</td>
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<td>FWF 416</td>
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<td>Forestry 421, 422</td>
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<td>Social Sciences Elective</td>
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<td>History Elective</td>
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<td>Communications Elective</td>
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<td>Restricted Electives</td>
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<tr>
<td>General Electives</td>
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</tbody>
</table>

Total: 135 hours

1Lists of appropriate courses in Social Sciences, Humanities, History, and Communications are available at the Department of Forestry, Wildlife and Fisheries Office.

*Restricted Electives are chosen in conference with advisor; students will choose the course from WFS 443, 444, 445 to satisfy three hours of restricted electives.
WILDLIFE AND FISHERIES SCIENCE

Wildlife and fisheries management is the science and art of maintaining populations of wild animals at levels consistent with the best interest of wild species and of the public. Management goals may be aesthetic, economic, or ecological. Success depends upon wildlife and fisheries biologists providing assistance; scholarly application of scientific information and methods to these goals; ecological perspective; and execution of programs to maintain past successes, to prevent repetition of past failures, and to prepare for future needs.

A minor in Wildlife and Fisheries Science consists of 16 hours from WFW 211 or 250. WFW 300, 317, 416, WFS 341, 441, 443, 444, and 445. Prerequisites will not be waived.

- Forestry 421, 422, 423
- Statistics 252
- Computer Science 101
- IE 300, 302
- Speech 210 or 240
- Humanities and Social Science Elective

Total: 136 hours

Statistics 252 .......................................................... 3
Computer Science 101 ........................................ 3
IE 300, 302 .......................................................... 7
Speech 210 or 240 ................................................ 3
Humanities and Social Science Elective .................. 3

Senior
Forestry 433, 434 .................................................. 4
IE 402, 403, 405 .................................................. 6
Economics 201 ....................................................... 8
Humanities and Social Science Electives ............... 12
General Elective ................................................. 3

Total: 136 hours

- Lists of appropriate courses in Communications, and
Humanities and Social Sciences are available at the
Department of Forestry, Wildlife and Fisheries Office.

ORNAMENTAL HORTICULTURE AND LANDSCAPE DESIGN

Professors:
G.D. Crater (Head), Ph.D. Ohio State; L.M. Callahan, Ph.D. Rutgers; E.T. Graham, Ph.D. Pennsylvania State; P.M. Greshoff, Ph.D. Australian National University; G.L. McDaniel, Ph.D. Iowa State; N.D. Peacock (Emeritus); Ph.D. Michigan State; R.N. Trigiano, Ph.D. North Carolina State University; H. van de Werken (Emeritus); GAVST, the Netherlands; D.B. Williams, Ph.D. Pennsylvania State, W.T. Witte, Ph.D. University of Maryland.

Associate Professor:
J.W. Day, Ph.D. Mississippi State.

Assistant Professor:
S.M. Rogers, M.L.A. University of Georgia.

Instructor:
Sue Wilson, M.S. Ohio State.

Advisors:
Callahan, Crater, Day, McDaniel, Rogers, and Williams.

The curriculum in Ornamental Horticulture and Landscape Design provides five general areas of study designed to provide students knowledge and skills needed for successful careers. The areas are landscape design, landscape construction, nursery management, floriculture and turfgrass management.

Landscape design is the shaping and enhancement of our environment for our use, comfort, and enjoyment. It not only involves the use of plant material to accomplish this goal, but also involves an understanding of the functional requirements for work, recreation, and housing. Emphasis is on understanding the design process and acquiring the appropriate graphic, scientific, and technical skills. Opportunities include landscape design services, landscape development and maintenance, garden center operation, allied sales, municipal and highway landscaping, park development, and teaching.

Landscape construction begins with a final design plan and involves implementing the plan with all the necessary construction steps including earthwork, paving surfaces, fences, pools, decks, patios, benches, and planting installation. Students learn about basic construction materials, drainage and irrigation, water features, outdoor lighting and other components of landscape construction.

Nursery management involves the growing of trees, shrubs and other ornamental plants for sale. Skills necessary to be a nursery manager include horticultural knowledge and management skills. Opportunities are in nurseries, garden centers, botanical gardens, and arboretnums, and in landscape maintenance and installation.

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, research workers, and related commercial areas. Interiorscape development is a significant new field relating to floriculture.
Turggrass management includes all aspects of growing and caring for turggrass. The increasing number of golf courses and home lawns and the emphasis on better quality make new opportunities for turggrass managers. Such opportunities include golf course superintendents, park and recreational turf managers, operation of a lawn or grounds maintenance business, and soil production. A minor in Ornamental Horticulture and Landscape Design shall consist of 18 hours of courses in Ornamental Horticulture and Landscape Design. Three of the following four courses must be included: 280, 310, 330, 340. Any of the following may be taken as part of the nine additional hours: 210, 220, 230, 320, 350, 360, 370, 380, 410, 440, 450, 460, 480, 490. Prerequisites, if any, to these courses will not be waived, but must be included in addition to the total of 18 hours.

**Freshman**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture 101</td>
<td>3</td>
</tr>
<tr>
<td>English 101, 102</td>
<td>6</td>
</tr>
<tr>
<td>Botany 110, 120</td>
<td>8</td>
</tr>
<tr>
<td>Mathematics 119, 121</td>
<td>8</td>
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<tr>
<td>Ornamental Horticulture and Landscape Design</td>
<td>12</td>
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<tr>
<td>Social Science or Humanities Elective</td>
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<td>Elective</td>
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**Sophomore**

<table>
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</thead>
<tbody>
<tr>
<td>Chemistry 100, 110</td>
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<tr>
<td>Economics 201, 240</td>
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<tr>
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<td>Ornamental Horticulture and Landscape Design</td>
<td>3</td>
</tr>
<tr>
<td>Plant and Soil Science 210</td>
<td>3</td>
</tr>
<tr>
<td>Computer Science 100</td>
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<tr>
<td>Electives</td>
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**Junior**

<table>
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<tr>
<th>Course</th>
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</thead>
<tbody>
<tr>
<td>Ornamental Horticulture and Landscape Design</td>
<td>12</td>
</tr>
<tr>
<td>Botany 321</td>
<td>4</td>
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<tr>
<td>Entomology and Plant Pathology 313, 321</td>
<td>6</td>
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<tr>
<td>Agriculture Elective</td>
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<tr>
<td>Writing or Speech Elective</td>
<td>3</td>
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<tr>
<td>Ornamental Horticulture and Landscape Design Elective</td>
<td>2-3</td>
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**Senior**

<table>
<thead>
<tr>
<th>Course</th>
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</tr>
</thead>
<tbody>
<tr>
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</tr>
<tr>
<td>Social Science or Humanities Elective</td>
<td>3</td>
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<tr>
<td>Biological Science or Physical Science Elective</td>
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</tr>
<tr>
<td>Electives</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>17-18</td>
</tr>
</tbody>
</table>

Total: 132 hours

*General Biology 110, 120 may be substituted for Botany only if taken before entering Ornamental Horticulture and Landscape Design.*
*Students should consult with departmental advisor for suggested electives and suggested course of study.*

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**PLANT AND SOIL SCIENCE**

**Professors:**

J.E. Foss (Head), Ph.D. Minnesota; F.F. Bell (Emeritus), Ph.D. Iowa State; D.L. Coffey, Ph.D. Purdue; B.V. Conger, Ph.D. Washington State; H.A. Fribourg, Ph.D. Iowa State; L.M. Josephson (Emeritus), Ph.D. Wisconsin; W.L. Parks (Emeritus), Ph.D. Purdue; B.S. Pickett (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. Kansas State; M.E. Springer (Emeritus), Ph.D. California (Berkeley); H.D. Swingle (Emeritus), Ph.D. Louisiana State; E. Winters (Emeritus), Ph.D. Illinois.

**Associate Professors:**


**Assistant Professors:**

J. Logan, Nebraska; G.V. Wilson, Ph.D. Arkansas.

**Advisors:**

Allen, Coffey, Foss, Gravelle, Lessman, Reich, and Reynolds.

Plant and soil science deals with field and vegetable crops and soil resources. Plant science includes crop ecology and physiology, crop breeding and genetics for crop improvement; 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; J.D. Gravelle, Ph.D. Purdue; soil fertility and efficient nutrient utilization; basic studies in chemistry, physics, and biology as they apply to the soil and to a better understanding of its properties and use. The plant and soil scientist must have knowledge of the basic physical, chemical, and biological sciences and be trained in communication and computer skills. The scientist may be broadly trained or may specialize in a more specific phase of the subject.

Many employment opportunities are available for the well-trained plant and soil scientist including positions with public agencies such as Agricultural Extension Services, Soil Conservation Service, Forest Service, Federal Credit Service, Phase III Forestry Service, and the many private employers of plant and soil scientists. Many soil and plant scientists are also employed in private industry as technical specialists, consultants, supervisors, salespersons, appraisers, advisors, farm managers and in international agriculture.

Students selecting this major must complete the basic curriculum for the College of Agriculture and fulfill the major group requirements. A minor may be selected from among many related disciplines.


Appropriate selection of the many electives available in the Plant and Soil Science curriculum permits students to select options that meet their individual objectives. Possible options include field crops, fruits, vegetables, soil and water conservation, plant breeding, pest management, agribusiness, international agriculture, etc.

A minor in Plant and Soil Science consists of 16 credit hours including 210, 230, and at least 9 elective hours to be taken by selecting at least one course from each of Group A and Group B. Plant and Soil Science 471 will not be accepted as a course to meet minor requirements.

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**1990-91 Undergraduate Catalog**

**Hours Credit**

**Freshman**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture 101</td>
<td>3</td>
</tr>
<tr>
<td>English 101, 102</td>
<td>6</td>
</tr>
<tr>
<td>Botany 110, 120</td>
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**Sophomore**

<table>
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<th>Course</th>
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<tbody>
<tr>
<td>Chemistry 100, 110</td>
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<tr>
<td>Economics 201, 240</td>
<td>3</td>
</tr>
<tr>
<td>Social Science or Humanities Elective</td>
<td>3</td>
</tr>
<tr>
<td>Ornamental Horticulture and Landscape Design</td>
<td>3</td>
</tr>
<tr>
<td>Plant and Soil Science 210</td>
<td>3</td>
</tr>
<tr>
<td>Computer Science 100</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>3</td>
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</table>

**Junior**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ornamental Horticulture and Landscape Design</td>
<td>12</td>
</tr>
<tr>
<td>Botany 321</td>
<td>4</td>
</tr>
<tr>
<td>Entomology and Plant Pathology 313, 321</td>
<td>6</td>
</tr>
<tr>
<td>Agriculture Elective</td>
<td>3</td>
</tr>
<tr>
<td>Writing or Speech Elective</td>
<td>3</td>
</tr>
<tr>
<td>Ornamental Horticulture and Landscape Design Elective</td>
<td>2-3</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
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</table>

**Senior**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
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</thead>
<tbody>
<tr>
<td>Ornamental Horticulture and Landscape Design</td>
<td>4</td>
</tr>
<tr>
<td>Social Science or Humanities Elective</td>
<td>3</td>
</tr>
<tr>
<td>Biological Science or Physical Science Elective</td>
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<tr>
<td>Electives</td>
<td>6</td>
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<tr>
<td>Total</td>
<td>17-18</td>
</tr>
</tbody>
</table>

Total: 132 hours

*Students with a Mathematics ACT of 26 or more or a satisfactory placement test score should take Mathematics 151-152 or 141-142.*
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 especially emphasizes the development of critical judgment which particularly distinguishes the architect from other professionals who serve the building industry.

The School of Architecture 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 Royal Mel-
bourne Institute of Architecture, Melbourne, Australia and Chongqing Institute of Architecture and Engineering, Chongquing, Sichuan Province, China.

One member of the School faculty leads a program in Europe each year at varied locations. These are designed to include visits to prominent new architectural sites and major historical locations. Other programs that have been offered include experiences in Yugoslavia and Cracow, Poland.

Studies abroad, arranged to include a full semester's credit for advanced students, include design, history and theory of architecture and directed independent study.

OFF-CAMPUS OPPORTUNITIES

Each year, throughout the year, advanced students may be given opportunity to work at locations off-campus while enrolled in a course; Architecture 492 Off-Campus Study or Architecture 493 Independent Study. 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 semester's program of study in keeping with curriculum requirements. The School has a grant from the Lyndhurst Foundation supporting an urban design studio in Chattanooga.

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 is not 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 ADMISSION REQUIREMENTS

The School of Architecture, being a professional program and having limited resources, has 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 applicants with an ACT composite score of 16 (SAT 720) or below; and (4) Refer applicants not falling into Items 1, 2, or 3 to the Committee on Admissions which meets periodically beginning in the fall semester.

Applicants will be advised promptly of the decision of the committee following receipt of high school records and test scores.

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 semester admission, and no later than three weeks before the start of classes for admission to any other semester. It should be noted that due to the strong sequential character of the curriculum and certain prerequisites, entry in any semester other than fall may be difficult.

TRANSFER STUDENTS

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

REQUIREMENTS FOR PROGRESSION TO SECOND-YEAR ARCHITECTURE

(1) Satisfactory completion of first-year architecture program with grade point average at least 2.3; exceptions may be made only by petition. (2) Application for progression must be submitted to the Dean of Students before June 15; (3) The start of the second year. Students must maintain an overall 2.3 grade point average by the end of 32 hours (attempted) in order to maintain "full status" in the program. Delinquent students must be put on "temporary status" for one semester. These students will have one semester to raise the overall GPA to 2.3 or have minimum 2.3 on each semester'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 courses satisfactorily completed before entering the third-year design courses, Architecture 371-372. Students' progress and design work in second-year will be reviewed by a committee of the faculty to determine 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 semester.

PROGRESSION TO 400-LEVEL COURSES

Architecture students must have attained third-year standing in the School before being admitted to any 400-level course, with the exception of Architecture 400 Service Practicum. Students must complete all requirements of the curriculum through the third year before entering Architecture 471.

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 12 hours. Persons interested in obtaining 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 semester 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

This option applies only to approved elective courses. Courses that are a part of the specific requirements of the School of Architecture cannot be taken as Satisfactory/No Credit.

Courses evaluated as "satisfactory" will count as hours towards graduation but will not be calculated in the student's grade point average. A student who desires to take a course S/NC should indicate this intention at the start of registration.

CURRICULA FOR ARCHITECTURE

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 non-architecture electives allow students to broaden their education in areas of general interest: the humanities, natural sciences, social sciences, arts and multicultural studies. All electives are to be taken only with the approval of the student's advisor.

All students studying for a Bachelor of Architecture degree will include the following requirements in their course of study. Students are not allowed to take these courses concurrently. 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 400.)

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.

FIVE YEAR PROGRAM

<table>
<thead>
<tr>
<th>First Year</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architecture 101, 102</td>
<td>5</td>
</tr>
<tr>
<td>1Architecture 171, 172</td>
<td>7</td>
</tr>
<tr>
<td>English 101, 102</td>
<td>6</td>
</tr>
<tr>
<td>History 151, 152</td>
<td>6</td>
</tr>
<tr>
<td>Mathematics 141, 142 or 121, 122</td>
<td>8-6</td>
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</table>

<table>
<thead>
<tr>
<th>Second Year</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architecture 211, 212</td>
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<tr>
<td>Architecture 232</td>
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<tr>
<td>1Architecture 271, 272</td>
<td>12</td>
</tr>
<tr>
<td>Computer Science 102</td>
<td>4</td>
</tr>
<tr>
<td>Physics 121</td>
<td>3</td>
</tr>
<tr>
<td>Natural Science elective or Physics 122</td>
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</table>

<table>
<thead>
<tr>
<th>Third Year</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architecture 213, 312</td>
<td>6</td>
</tr>
<tr>
<td>Architecture 331, 332</td>
<td>6</td>
</tr>
<tr>
<td>Architecture 341, 342</td>
<td>8</td>
</tr>
<tr>
<td>1Architecture 371, 372</td>
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<table>
<thead>
<tr>
<th>Fourth Year</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>Architecture 431</td>
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<tr>
<td>1Architecture 471, 472</td>
<td>12</td>
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<tr>
<td>2Electives</td>
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<table>
<thead>
<tr>
<th>Fifth Year</th>
<th>Hours Credit</th>
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<tr>
<td>Architecture 480, 482</td>
<td>7</td>
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<tr>
<td>1Architecture 481, 482</td>
<td>12</td>
</tr>
<tr>
<td>1Electives</td>
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Total: 159 hours

SECOND DEGREE PROGRAM

<table>
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<th>Hours Credit</th>
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</thead>
<tbody>
<tr>
<td>Architecture 203, 204</td>
</tr>
<tr>
<td>Architecture 211, 212</td>
</tr>
<tr>
<td>Architecture 232</td>
</tr>
<tr>
<td>1Architecture 281, 282</td>
</tr>
<tr>
<td>Architecture electives</td>
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<tr>
<td>Computer Science 102</td>
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</table>

<table>
<thead>
<tr>
<th>Second Year</th>
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<tbody>
<tr>
<td>Architecture 213, 312</td>
<td>6</td>
</tr>
<tr>
<td>Architecture 331, 332</td>
<td>6</td>
</tr>
<tr>
<td>Architecture 341, 342</td>
<td>8</td>
</tr>
<tr>
<td>1Architecture 371, 372</td>
<td>12</td>
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</table>

<table>
<thead>
<tr>
<th>Third Year</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architecture 431</td>
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</tr>
<tr>
<td>1Architecture 471, 482</td>
<td>12</td>
</tr>
<tr>
<td>Architecture 482, 490</td>
<td>8</td>
</tr>
<tr>
<td>Architecture electives</td>
<td>6</td>
</tr>
</tbody>
</table>

Total: 96 hours

- Students are not allowed to enroll simultaneously in two of these design courses.
- To 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 281 Second Degree Program: Design 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.

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 another field.

This program begins with intensive initial studies in architecture and is possible to complete within three years. A minimum of 6 semesters residency is required. The degree is 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. Credit for a year of each of calculus and physics at the college level is a prerequisite for admission to the program. 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 constructed drafting techniques prior to taking Architecture 281 Second Degree Program: Design 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.

Electives consists of 12 hours in Architecture, 3 hours in humanities, 6 hours in Social Science and 6-8 hours in Multicultural/Integrative Studies. These may be taken in any order of preference.
College of Business Administration

C. Warren Neel, Dean
Roger L. Jenkins, Associate Dean for Graduate Programs
Richard C. Reizenstein, Associate Dean for Undergraduate Programs
Michael J. Stahl, Associate Dean
David A. Hake, Director, Center for Business and Economic Research
John E. Foblet, Director, Management Development Center

Size and breadth of program immediately distinguish the College of Business Administration at UT, Knoxville from the other such programs in Tennessee and in most of the surrounding states. Despite the size, emphasis is placed on quality at all levels. The harmonious blending of undergraduate and graduate programs, of teaching and research, and of development of technical skills on the one hand and broad concern for individual, social and economic values on the other makes the college a vital and exciting place to study and work.

College programs are fully accredited by the American Assembly of Collegiate Schools of Business. The UT, Knoxville program in business was the first in Tennessee to be so recognized and one of the first ten in the South to receive accreditation.

UNDERGRADUATE PROGRAMS

General education, a business "core," and area specialization: this trinity underlies the UT, Knoxville business program. Building on a firm foundation in written and oral communications, mathematical and statistical methods, and an understanding of the methodology and accomplishments of the social, behavioral, and natural sciences, the business core seeks to expose students to the realms of financial and managerial accounting, micro- and macro-economics, and the functional fields of business. Specialization comes through intensive study in one of the seven majors offered.

The combination of breadth and depth in the undergraduate program produces graduates who are prepared to grow in their personal and professional lives and employees who are well educated in one of the professional or functional fields of business. In the preparation of graduates for roles in society, the size of the college is an important advantage. Included among the nearly 140 faculty are many generalists, but also a rich variety of those with specialized knowledge and interests. Furthermore, the comprehensive nature of the University and the combined teaching/research mission of the institution and the college mean that the faculty are almost certainly on the cutting edge of their disciplines.

While size and diversity can be important advantages, those advantages can be overwhelmed if the personal touch is lost. In an attempt to avoid the pitfall of impersonal education, the college embarked in the fall of 1980 on a plan of administered enrollments, designed to assure that the numbers enrolled would not exceed the limited capacity of the college to provide a quality education. The plan calls for admission to the programs of the college in two stages: at the lower division level (freshmen and sophomores) and at the upper division level (juniors and seniors). Admission to the upper division is limited to those who have successfully completed the prescribed lower division courses, who have shown seriousness of interest and purpose, and who have records of substantial academic achievement.

A further aspect of the college which helps in the development and maintenance of "personal scale" is found in the many student organizations in the college. More than a dozen clubs and professional fraternities and sororities represent a broad spectrum of student interest and provide continuing opportunities for the development of leadership skills and involvement with small groups on an intensive basis.

Success of any academic program is both difficult to define and hard to measure. In the final analysis, the building of character is probably the most valuable product of academe. On a more mundane level, however, we take a great deal of pride in our success in placing our graduates with local, regional, and national employers, and in the record of our graduating seniors on the nationwide Business Assessment Test, administered by the Educational Testing Service, which placed UT, Knoxville students well within the top twenty percent of business school seniors nationally.

STUDENT ADVISING CENTER

The College maintains a Student Advising Center staffed with full-time academic advisors to assist all students with their programs.

Students who have been admitted to a major will confer with a faculty advisor from the selected major regarding career goals and opportunities but will still receive their academic advising from the Center. The objective of the Advising Center is to provide students with the academic information they need.

PROGRESSION STANDARDS

Admission to the College of Business Administration does not guarantee acceptance into the chosen major. Admission to the upper-division (major) is based on the availability of space in the College as a whole and in the major requested. The academic progress of those admitted to 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 are adjusted periodically and current requirements can be determined by consulting with an advisor in the Undergraduate Programs Office.

PREMAJORS

Students who enter the College of Business as freshmen or sophomores must apply for a major the semester after attempting 45 hours. The academic record presented will be assessed by the Associate Dean for Undergraduate Programs. The following minimum requirements must have been met in order to be considered for admission to a major:

1. Must have followed a business curriculum.
2. Must have earned a minimum 2.75 average, cumulative, over the courses specifically required in the lower-division of that curriculum, excluding non-business and non-departmental electives. Some majors may have differing average requirements.

55
3. The overall record will be evaluated for quality and seriousness of purpose. An excessive number of withdrawals, incompletes, repeated courses or failures may result in denial of progression.

4. Progression standards are subject to change; current standards are available in the Undergraduate Programs Office, Glocker 52.

TRANSFERS FROM OTHER UT, KNOXVILLE PROGRAMS

Students in other colleges at UT, Knoxville must apply for progression to a major in the College of Business Administration at the earliest possible date but definitely prior to 75 hours. As a minimum, all students must be admitted to a CBA major for at least the last 30 hours of work. Only in exceptional cases will application be considered after 75 hours of coursework (at UT, Knoxville or elsewhere) have been attempted. It should not be supposed that admission must be granted to those who accumulate a substantial number of hours in the CBA courses. On the contrary, an academic record reflecting substantial work after 75 hours of work in the Business Administration curriculum may be taken as prima facie evidence of an intent to evade this policy and may result in denial of admission.

The following minimum requirements must have been met in order to be considered for admission to a major:

1. Must have earned a minimum 2.75 average, cumulative, over the courses specifically required in the lower-division of that curriculum, excluding non-business and non-departmental electives. Some majors may have differing average requirements.

2. The overall record will be evaluated for quality and seriousness of purpose. An excessive number of withdrawals, incompletes, repeated courses or failures may result in denial of progression.

3. Progression standards are subject to change; current standards are available in the Undergraduate Programs Office, Glocker 52.

TRANSFER FROM OUT-OF-STATE OR OTHER FOUR-YEAR INSTITUTION

1. A student shall be able to transfer from an out-of-state community college or any four-year institution, and shall be admitted to the College of Business Administration, only if his/her cumulative GPA is 3.00 or higher. If this standard is not met, the student shall be denied admission to the College.

2. A student shall be able to transfer from an in-state community college, and shall be admitted to the College of Business Administration, only if his/her cumulative GPA is 2.75 or higher. If this standard is not met, the student shall be denied admission to the College.

3. If a transfer applicant to the UT College of Business is denied upon transfer, he/she may reapply for admission to the College and to a major if he/she receives a 2.75 average (3.0 for an Accounting applicant) in his/her first 12 semester hours, or first semester in residence at UT (whichever is more in hours), over the courses specifically required in the lower division of the business curriculum, excluding non-business and non-departmental electives. The success of the application will be based on the entire student record. The application must be made prior to the end of mandatory advising during the student's second semester at UT (or the semester following 12 hours attempted).

APPEALS

The College has established a Progression Appeals Committee to which those students who have been denied progression may address an appeal. Information on the appeals process may be obtained by calling the Undergraduate Programs Office, 974-5096, or contacting an advisor in that office.

BUSINESS MINOR FOR NON-BUSINESS STUDENTS

Students in other Colleges at UT, Knoxville who wish to obtain a minor in Business Administration must successfully complete the following required courses: Accounting 201-202, Economics 201, and Statistics 201. Additionally, 12 hours of upper-division business electives must be taken at UT, Knoxville. No more than three hours of accounting, economics, or statistics may be used for this minor. Students are responsible for meeting listed prerequisites of any upper-division courses taken in a particular concentration. Acceptance to a minor must have approval of the student's college of enrollment. Minors in other colleges are available to College of Business Administration students.

COURSE LOAD

The normal course load for a semester is 15-18 hours. In unusual circumstances permission to take a course load in excess of this maximum may be granted by the Associate Dean for Undergraduate Programs in Business Administration.

SATISFACTORY/NO CREDIT

A maximum of 20 credit hours of satisfactory/no credit (S/NC) courses may be used toward degree requirements for a Bachelor of Science in Business Administration. Such credit hours may be used to meet only the requirements identified in the curriculum as "business or non-business electives", plus any business courses specifically designated as being available for S/NC grading.

BUSINESS CORE REQUIREMENTS

The following core courses are required in all business curricula: Computer Science 102, Economics 201, Statistics 201, Accounting 201-202, Marketing 301-302, Finance 301, Business Law 301, Management 301-303, 401. Students are advised to consult the University's degree requirements as stated in the front section of this catalog as well as the requirements for the college or department.

GENERAL EDUCATION REQUIREMENTS

The following courses are in fulfillment of the University General Education Standards and are required of all business students. Specific courses to fulfill an area may be required by individual curricula:

- English (6 hours) to be fulfilled by English 101-102;
- Mathematics (6 hours) to be fulfilled by Mathematics 121-122, or 141-142;
- Communication Skills (3 hours) to be fulfilled by courses in Speech, Communications and Theatre. Consult an advisor in Glocker 52 for specific courses.

In addition, at least two courses in each CBA program will contain a substantial writing assignment and be so identified in the catalog. This requirement may consist of a term paper or papers, technical reports, comprehensive case reports, etc.

Humans (9 hours) to be fulfilled by courses selected from Philosophy, Religious Studies, Art, Music, Literature. Consult an advisor in Glocker 52 for specific courses.

Foreign (6 hours) to be fulfilled by courses specified by an advisor in Glocker 52.

- Social Science (6 hours) to be fulfilled by courses selected from Anthropology, Geography, Human Services, Linguistics, Political Science, Psychology, Sociology. Consult an advisor in Glocker 52 for specific courses.
- Natural Science (8 hours) to be fulfilled by courses selected from Biology, Astronomy, Botany, Chemistry, Geology, Physics, Zoology. Consult an advisor in Glocker 52 for specific courses.
- Non-business (12 hours) include any course offered outside of the College of Business Administration which may include Economics and Business courses but students not majoring in these programs. University Studies and Intermediate level foreign language are recommended.
- Economics majors must take 6 hours of University Studies or Intermediate level foreign language.

FOREIGN STUDY

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 semester or summer term. A second is through individual programs. The nature of this work as well as credit for it should be negotiated by students prior to departure with the appropriate department. Students should register for credit under the Foreign Study number BA 491. Credit can be earned only after completion of all agreed upon requirements.

OFF-CAMPUS STUDY

Recognizing that learning is not restricted to formal classroom situations, the college provides students for 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 of the student's major. It may include certain kinds of work experiences, community involvements, etc. Students should register for credit under the Off-Campus Study number BA 491.
ACCOUNTING AND BUSINESS LAW


Associate Professors: K.E. Anderson, Ph.D. Indiana, CPA, H.C. Herrig, III, Ph.D. Alabama, CPA; A.F. Borthick, DBA, Tennessee, CPA, CMA, CISA; C.D. Irzard, Ph.D. Mississippi, CPA; I.A. Posey, M.S. Tennessee, CPA, CMA; J.M. Reeve, Ph.D. Oklahoma State, CPA; H.P. Roth, Ph.D. Virginia Polytechnic, CPA, CMA; W.L. Slaight (Emeritus), M.S. Tennessee, CPA; R.L. Townsend, Ph.D. Texas, CPA.

Assistant Professors: D.D. Berntley, J.D., Vanderbilt, A.W. Gatian, Ph.D., Virginia Polytechnic Institute; M.C. Letzinger, M.S. Tennessee, CPA, CMA, CISA; C.D. Irzard, Ph.D. Mississippi, CPA; I.A. Posey, M.S. Tennessee, CPA, CMA; J.M. Reeve, Ph.D. Oklahoma State, CPA; H.P. Roth, Ph.D. Virginia Polytechnic, CPA, CMA; W.L. Slaight (Emeritus), M.S. Tennessee, CPA; R.L. Townsend, Ph.D. Texas, CPA.

Distinguished Lecturer: S.B. Wolfe (Emeritus), B.S. Virginia Polytechnic.

Lecturer: E.B. Anderson, MACC, Tennessee; L.W. Hendrick, J.D., Houston; H.N. Hughes, B.S. Tennessee.

FINANCE

Professors: H.A. Black (Head), Ph.D. Ohio State; W.W. Dottenweich (William Voigt Professor of Insurance), Ph.D. Pennsylvania; W.C. Goosby, Ph.D. Wisconsin; G.C. Philippatos (Distinguished Chaired Professor of Banking and Finance), Ph.D. New York; R.E. Schriever, Ph.D. California (Los Angeles).

Associate Professors: A.L. Auxier, Ph.D. Iowa; T.P. Boehm, Ph.D. Washington (St. Louis); J.M. Wachowicz, Jr., Ph.D. Illinois; J.W. Wansley, Ph.D. South Carolina.

Assistant Professors: M.C. Collins, Ph.D. Georgia; P.R. Daves, Ph.D. North Carolina, M.C. Ehhardt, Ph.D. Georgia Tech; D.C. Ketcham, Ph.D. Pennsylvania State; J.L. Trimble, Ph.D. Texas A&M.

ECONOMICS

Professors: A. Mayhew (Head), Ph.D. Texas; R.A. Bohm, Ph.D. Washington (St. Louis); R.L. Bowbly, Ph.D. Texas; S.L. Carroll, Ph.D. Harvard; H.S. Chang, Ph.D. Vanderbilt; W.E. Cole, Ph.D. Texas; P. Davidson (J. Fred Holly Professor of Political Economy), Ph.D. Pennsylvania; G.F. Feiwel (Alumni Distinguished Service Professor), Ph.D. McGill; C.B. Garrison, Ph.D. Kentucky; H.W. Herzog, Jr., Ph.D. Maryland; H.E. Jensen (Emeritus), Ph.D. Texas; F.Y. Lee, Ph.D. Michigan State; J.R. Moore (Alumni Distinguished Service Professor), Ph.D. Cornell; W.C. Neale, Ph.D. London School of Economics; K.E. Quindry (Emeritus), Ph.D. Kentucky; A.M. Schlotthmann, Ph.D. Washington (St. Louis); G.A. Spiva, Jr., Ph.D. Texas.

Research Professor: W.F. Fox, Ph.D. Ohio State.

Associate Professors: D.D. Clark, Ph.D. Michigan State; E. Gulstoff, Ph.D. Stanford; K.E. Phillips, Ph.D. Washington (Seattle).

Research Associate Professor: J.W. Mayo, Ph.D. Washington (St. Louis).

Assistant Professors: J.A. Gauger, Ph.D. Iowa State; M. Kunkin, Ph.D. Wisconsin; D.M. Mandy, Ph.D. Illinois; J.W. Mayo, Ph.D. Washington (St. Louis); M.N. Murray, Ph.D. Syracuse.
### GENERAL BUSINESS

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Total: 121 hours

- Consult an advisor in Glocker 52 for specific courses.
- To be fulfilled by six hours of foreign language at the 200 level or higher or six hours of courses with international emphasis. Consult an advisor in Glocker 52.
- All electives required in the junior and senior years must be 300 or 400 level courses with the exception of non-business, humanities, and social science electives.

### MANAGEMENT SCIENCE PROGRAMS

**Professor:** J.K. Ho, Ph.D. Stanford.

**Associate Professor:** K.C. Gilbert (Chairperson), Ph.D. Tennessee.

**Assistant Professors:** M.R. Bowers, Ph.D. Clemson; L.A. Kaplan, Ph.D. Michigan; C.E. Noon, Ph.D. Michigan; M.H. Patel, Ph.D. Georgia Institute of Technology.

### MARKETING, LOGISTICS, AND TRANSPORTATION

**Logistics and Transportation**


**Associate Professor:** J.H. Fogggin, Ph.D. Indiana.

<table>
<thead>
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Total: 121 hours

- Consult an advisor in Glocker 52 for specific courses.
- Concentration and/or elective courses specified by the Department of Marketing, Logistics and Transportation.
- Logistics and Transportation electives are selected from 401, 402, 441, 450, 453, 497 and either 461 or 462 if not used as a requirement.

### MARKETING

**Professors:**
- D.J. Barnaby, Ph.D. Purdue; E.R. Cadotte, Ph.D. Ohio State; R.L. Jenkins (Associate Dean), Ph.D. Ohio State; W.B. Locander (Distinguished Professor), Ph.D. Illinois; R.B. Woodruff, D.B.A. Indiana.

**Associate Professors:**
- J.R. McMillan, Ph.D. Ohio State; R.C. Reizenstein (Associate Dean), Ph.D. Cornell; J.O. Rentz, Ph.D. Georgia.

**Assistant Professors:**
- D.J. Faulds, Ph.D. Iowa; S.F. Gardial, Ph.D. Houston; D.W. Schumann, Ph.D. Missouri (Columbia); P.S. Speck, Ph.D. Texas Technological.

**Logistics and Transportation**

<table>
<thead>
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<th>Freshman</th>
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<td>Technical Electives</td>
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<td>Electives</td>
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<td>'General Education</td>
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Total: 121 hours

- Consult an advisor in Glocker 52 for specific courses.
- Concentration and/or elective courses specified by the Department of Marketing, Logistics and Transportation.
- Logistics and Transportation electives are selected from 401, 402, 441, 450, 453, 497 and either 461 or 462 if not used as a requirement.
Marketing Electives ........................................... 3
'General Education ........................................ 3
Senior Management ........................................... 4
Marketing 430 .............................................. 3
'Marketing Electives ........................................ 15
'General Education ........................................ 6

Total: 121 hours

Consult an advisor in Glocker 52 for specific courses.
'Concentration and/or elective courses specified by the department.

PUBLIC ADMINISTRATION

Freshman
English 101, 102 ........................................... 6
Mathematics 121, 122 ........................................ 6
Natural Science ............................................. 8
'General Education ........................................ 9
Computer Science 102 ...................................... 4

Sophomore
'Political Science 101 or 107 ............................. 3
Accounting 201, 202 ...................................... 6
Economics 201 .............................................. 4
Statistics 201 ................................................ 3
Communications ........................................... 3
History ........................................................ 6
'General Education ........................................ 3

Junior
Economics 311 ............................................. 3
Finance 301 ................................................... 3
Management 301, 303 ..................................... 6
Business Law 301 .......................................... 3
'Economics/Political Science Electives .................. 6
Marketing 301 ............................................. 3
Political Science 340 ...................................... 3

Total: 121 hours

Consult an advisor in Glocker 52 for specific courses.
'Electives approved by the department.

STATISTICS

Professors:
D.L. Sylwester (Head), Ph.D. Stanford; R.A. McLean, Ph.D. Purdue; W.C. Parr, Ph.D. Southern Methodist; J.W. Philpot, Ph.D. Virginia Polytechnic; C.C. Thigpen, Ph.D. Virginia Polytechnic.

Associate Professors:
F.M. Guess, Ph.D. Florida State; R.W. Mee, Ph.D. Iowa State; R.D. Sanders, Ph.D. Texas; M.S. Younger, Ph.D. Virginia Polytechnic.

Assistant Professors:
M.G. Leitnaker, Ph.D. Kentucky; D.K.J. Lin, Ph.D. Wisconsin.

Instructors:
C.M. Cwiek, M.S. Tennessee; S.R. Neidert, M.S. Miami, Ohio; J.L. Schmidhammer, Ph.D. Pittsburg; S.P. Wright, M.S. Tennessee.

Adjunct:
D.J. Downing, Ph.D. Florida; S.A. McGuire, Ph.D. Kansas State; G.B. Ranney, Ph.D. North Carolina State; W.L. Sanders, Ph.D. Tennessee; Tommy Wright, Ph.D. Ohio State.

STATISTICS CONCENTRATION
Mathematics 251 ........................................... 3

INDUSTRIAL STATISTICS CONCENTRATION
Non-business elective ...................................... 3

Junior
Economics 311 ............................................. 3
'Political Science 101 or 107 ............................. 3
Accounting 201, 202 ...................................... 6
Economics 201 .............................................. 4
Communications ........................................... 3
Mathematics 241 ........................................... 4
Statistics 261 ................................................ 3
'General Education ........................................ 3
Statistics 251, 252 ........................................ 6

Total: 121 hours

Technical electives will be determined by student's advisor.

CENTER FOR BUSINESS AND ECONOMIC RESEARCH

STAFF
D.A. Hake (Director), Research Professor, Ph.D. Tennessee
K.E. Quindry (Emeritus), Professor, Ph.D. Kentucky
W.F. Fox, Associate Director, Research Professor, Ph.D. Ohio State
J.W. Mayo, Research Associate Professor, Ph.D. Washington (St. Louis)
D.M. Mandy, Research Assistant Professor, Ph.D. Illinois (Urbana)
M.N. Murray, Research Assistant Professor, Ph.D. Syracuse
M.J. Cornellus, Research Associate, M.S. Tennessee
P.M. Gilmore, Research Associate, B.A. Tennessee
P.A. Price, Research Associate, B.S. Tennessee
B.B. Vickers, Research Associate, B.A. Mary Washington
V.C. Cunningham, Research Assistant, B.A. Tennessee
M.A. Kirby, Research Assistant, B.S. Texas A&M
L.C. Polk, Research Assistant, M.L.S. Tennessee
J.P. McDonald, Managing Editor, B.A. William & Mary
J.M. Snoderly, Associate Editor, B.A. Tennessee
S.J. Knuckles, Assistant to the Director, Associate in Business

STAFF
D.A. Hake (Director), Research Professor, Ph.D. Tennessee
K.E. Quindry (Emeritus), Professor, Ph.D. Kentucky
W.F. Fox, Associate Director, Research Professor, Ph.D. Ohio State
J.W. Mayo, Research Associate Professor, Ph.D. Washington (St. Louis)
D.M. Mandy, Research Assistant Professor, Ph.D. Illinois (Urbana)
M.N. Murray, Research Assistant Professor, Ph.D. Syracuse
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J.P. McDonald, Managing Editor, B.A. William & Mary
J.M. Snoderly, Associate Editor, B.A. Tennessee
S.J. Knuckles, Assistant to the Director, Associate in Business
Communications media are a vital force in today's complex society. As a result, programs in the College of Communications acquaint students with the communications process and prepare them for professional work in many fields.

The College includes the School of Journalism and the Departments of Advertising and Broadcasting. The three academic divisions have a common core curriculum. This permits specialization at the junior and senior level.

The advertising, broadcasting, news-editorial, public relations and master's programs are accredited by the Accrediting Council on Education in Journalism and Mass Communications.

The College is a member of the Association of Schools of Journalism and Mass Communication and of the Broadcast Education Association.

COURSE LOAD
The maximum number of hours an undergraduate may take without special permission is 18 hours. Permission to take 19 or more hours must be obtained from the dean or the undergraduate advisor with the recommendation of the student's advisor and department chairman or school director.

REQUIREMENTS FOR ALL CURRICULA

CORE COURSES
All students in the College take the following core courses:
- Communications 100 - Introduction to Mass Communications
- Communications 200 - Writing for Mass Communications

PROGRESSION REQUIREMENTS
Entering freshmen are associated with the College 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 Qualifications Examinations (should be accomplished) within the first 30 hours demonstrating proficiencies in spelling, grammar and typing. Students who have not passed the examination after three attempts must wait six months before attempting to pass the examination again, or present evidence of successful completion of specific remedial work. Students who do not pass the Qualifications Examinations after a fourth attempt will be required to seek a major in another college.
2. Complete at least 30 hours of prescribed coursework with a 2.3 cumulative GPA.
3. Complete Communications 100 (Introduction to Mass Communications) with at least a "C" grade.
4. Submit an application form to the appropriate School or Department. Students who have not met these standards may remain in the College as Pre-Majors. They may enroll in non-communications courses but may not enroll in courses in the College numbered 300 or above.

Students who do not progress to a major by the time they have accumulated 80 credit hours will be dismissed from the College. Students must achieve a grade point average of at least 2.0 in all College of Communications courses used to fulfill graduation requirements.

During their last 32 hours prior to graduation, all students must have been accepted as majors in the College.

TRANSFER STUDENTS
Students from other colleges within the University are eligible to progress to a major in the College of Communications as soon as they pass the Qualifications Examination, complete at least 30 hours of prescribed coursework with a 2.3 cumulative GPA and complete Communications 100 (Introduction to Mass Communications) with at least a "C" grade and make application to the appropriate Department or School.
**COMMUNICATIONS**

**Professors:**
- P.G. Ashdown, Ph.D. Bowling Green; J.A. Crook, Ph.D. Iowa State; G.A. Everett, Ph.D. Iowa; H.H. Howard, Ph.D. Ohio; B.K. Leiter, Ph.D. Southern Illinois; N.R. Swan, Jr., Ph.D. Missouri.

**Associate Professors:**
- D.A. Bowles, Ph.D. Wisconsin (Madison); M. Miller, Ph.D. Michigan State; M.W. Singletary, Ph.D. Southern Illinois; R.E. Taylor, Ph.D. Illinois.

**Assistant Professor:**
- M.G. Hoy, Ph.D., Oklahoma State.

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

**ADVERTISING**

**Professor:**
- R. Joel (Emeritus).

**Associate Professors:**
- D. Jackson, M.S. Tennessee; R. Hovland, Ph.D., Illinois; M.J. Stanley, Ph.D., Illinois; R.E. Taylor (Head), Ph.D.

**Assistant Professor:**
- M.G. Hoy, Ph.D., Oklahoma State.

**BROADCASTING**

**Professors:**
- D.W. Holt (Emeritus), Ph.D. Northwestern; H.H. Howard, Ph.D. Ohio; N.R. Swan, Jr. (Head), Ph.D. Missouri.

**Associate Professor:**
- B.A. Moore, Ph.D. Ohio.

**Assistant Professors:**
- J.G. Buchman, Ph.D. Indiana; C. Manning-Miller, M.S. Indiana; D. Ziegler, Ph.D. Southern Illinois.

**Communications Specialist:**

**A minor in Broadcasting consists of 18 hours as follows: Communications 100, 200, Broadcasting 275 and Broadcasting electives (any 3 courses).**

**JOURNALISM**

**Professors:**
- J.N. Adamson, M.S. Tennessee; J.A. Crook (Director), Ph.D. Iowa State; P.G. Ashdown, Ph.D. Bowling Green; G.A. Everett, Ph.D. Iowa; B.K. Leiter, Ph.D. Southern Illinois (Meeman Distinguished Professor); M.W. Singletary, Ph.D. Southern Illinois.

**Adjunct Professor:**
- Alex Haley; J.N. Wilford, M.A. Syracuse.

**ASSISTANT PROFESSORS:**
- D.A. Bowles, Ph.D. Wisconsin (Madison); S.M. Caudill, Ph.D. Tennessee; M. Miller, Ph.D. Michigan State; J.L. Morrow, Ph.D. Toledo; S.L. Puett, M.S. Tennessee.

**NEWS-EDITORIAL CONCENTRATION**

**Assistant Professors:**
- C.E. Caudill, Ph.D. North Carolina (Chapel Hill); R.B. Heller, M.S. Syracuse.

**Instructor:**
- B.L. Hufford, M.Ed. Bowling Green.

**A minor in Journalism consists of 18 hours from the following: Communications 200, 400, plus 12 hours in journalism approved by the School of Journalism minor advisor.**

**PUBLIC RELATIONS CONCENTRATION**

**Assistant Professors:**
- C.E. Caudill, Ph.D. North Carolina (Chapel Hill); R.B. Heller, M.S. Syracuse.

**Instructor:**
- B.L. Hufford, M.Ed. Bowling Green.

**A minor in Journalism consists of 18 hours from the following: Communications 200, 400, plus 12 hours in journalism approved by the School of Journalism minor advisor.**

**1990-91 Undergraduate Catalog**

*Total: 128 hours*
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<td>Communications 400</td>
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<tr>
<td>Communications Elective</td>
<td>3</td>
</tr>
<tr>
<td>Social Science Electives</td>
<td>9</td>
</tr>
<tr>
<td>Humanities Electives</td>
<td>6</td>
</tr>
<tr>
<td>General Elective</td>
<td>3</td>
</tr>
</tbody>
</table>

Total: 128 hours

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*Natural Science Elective: Astronomy 151-152, Biology 110-120, Botany 110-120, Chemistry 100-110, Geology 101-102, Geography 131-132.*

*Six hours at the 200 level or above of the same language.*

*Mathematics or Philosophy electives: Mathematics elective, Philosophy 135; or Statistics 201.*

*Journalism electives: Journalism 310, 412, 414, 433.*

*English Literature electives: English 201, 231, 232, 251, 252, 253.*

*Political Science electives: Political Science 315, 320, 321.*

*Business Administration electives: Marketing 310; Management 301; Economics 325.*

*Communications electives: Must be approved by advisor.*

*Social Science - Anthropology, Geography, Economics, History, Political Science, Psychology, Sociology, Child and Family Studies, Black Studies, Women's Studies, and Library and Information Science.*

*Humanities Electives - Art, Classics, Drama, English, Music, Philosophy, Religious Studies.*
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 Teacher Simulation Laboratory, and the Bureau of Educational Research and Service.

PROGRESSION TOWARD DEGREE COMPLETION AND/OR CERTIFICATION IN TEACHING FIELDS

Progression toward completion of a degree and/or certification in a teaching field requires acceptance to the Teacher Education Program by a board of admissions. The admissions process begins at the time of matriculation to UT, Knoxville, whether the student enters as a freshman, or transfer student. 1

STEP 1: ADMISSION TO TEACHER EDUCATION

MINIMUM REQUIREMENTS

Applicants will be evaluated by a board of admissions upon attainment of the following minimal criteria:

1. Academic Achievement: Applicants will be required to earn a minimum 2.5 undergraduate cumulative GPA. GPA computations, which include transfer grades, will be made at the time other requirements, listed below, are completed but not before the completion of at least 45 hours of academic work. Any professional education course, taken either before or after admission, must be passed with a minimum letter grade of "C", otherwise such a course must be repeated. If this standard is not met: The applicant will improve his/her academic record by adding or repeating courses.

2. Pre-Professional Skills Test (PSST): The applicant will attain the minimum scores established by the State Board of Education on the Pre-Professional Skills Test. Waivers will be granted as follows:

(a) Applicants who have attained an ACT minimum composite score of 21 (a minimum composite score of 22 on the Enhanced ACT) or who have attained a minimum combined verbal and mathematics score of 990 on the SAT shall be exempt from the PSST.

(b) Applicants with a bachelor's degree from an accredited institution seeking admission to graduate level programs shall be exempt from the PSST provided the admitting institution.

1Community college students who anticipate transferring to the College should arrange to complete the admission to Teacher Education process prior to matriculating at UT, Knoxville. Students should contact the Education Advising Center, 214 Claxton Addition.

*Students seeking admission to the following program areas, in addition, must complete specific courses before being granted a board review: (a) Mathematics Education - Mathematics 141-142; (b) Science Education - 8 semester hours of any laboratory natural science; (c) Music Education - at least one semester of applied study of music at the 200 level and Music Theory 210; (d) English Education - freshman composition and one sophomore level course.
institution establishes appropriate test requirements (e.g., GRE, etc.). Applicants who qualify for a waiver based on other standardized test scores must contact the Office of the Associate Dean for Undergraduate Studies.

If this standard is not met: The applicant will retake the PPST until passed. Applicants who fail the same subtest twice should consult the Office of the Associate Dean for Undergraduate Studies to determine their eligibility for a waiver based on their performance in specific general education courses. Note that it is not necessary to repeat subtests which were previously passed.

(3) Hearing and Speech Evaluations: The applicant will perform within normal limits on hearing and speech evaluations. If this standard is not met: The applicant will participate in therapy, as specified by, and provided through the University's Hearing and Speech Center regarding admissions requirements.

(4) Conduct Record: Each applicant will be screened by the University's Conduct Office. Applicants who have established records of inappropriate conduct will be evaluated by the College's Teacher Education Standards Committee.

If this standard is not met: The applicant's disposition will be determined by the Teacher Education Standards Committee.

BOARD OF ADMISSIONS

Applicants who successfully complete the minimal requirements will be interviewed by a board of admissions. Boards of admission will base admissions decisions on applicants' academic qualifications, aptitude test scores, oral expression, written communication, perceived sense of social consciousness, expressed interest and goal directedness. Certain boards will assess applicants in ways which are peculiar to their disciplines. For example, the Art Education Board requires applicants to submit portfolios. The Music Education Board requests a performance audition.

ADMISSION DECISIONS

The College is committed to recruiting and preparing the strongest possible candidates for the teaching profession. The admissions criteria summarized above are minimum expectations. Applicants should be aware that admission decisions are made by Boards of Admission and that selection is competitive, based upon available faculty resources and field placements. Posted GPA and basic skills test scores, which are necessary to interview with boards of admission and do not ensure admittance into programs. Applicants are encouraged to achieve the highest GPA and test scores possible, and to confer regularly with the College's Advising Center regarding admissions requirements.

Applicants who are denied admission to the specific teaching field of their choice are eligible to seek admission to other teaching fields within the College. Some applicants may be encouraged to interview again with the same board following remediation.

Applicants who are admitted, thus, become eligible to enroll in upper division Professional Education courses.

STEP II: PROGRAM PROGRESSION

Each student's progress will be reviewed each semester following admission to the Teacher Education Program and a determination will be made as to the student's eligibility to advance to the next level of preparation. Particular attention will be given to the following variables:

1. Academic Achievement: The following minimum GPA's function as guidelines during the period between admission to the Teacher Education Program and enrollment in student teaching or teaching internship: (a) 2.5 undergraduate cumulative GPA and specific teaching field (major) courses; and (b) 2.8 GPA in professional education courses.

It is important to note that letter grades of "D" and "F" in professional education courses must be repeated.

2. Field Study: Each student's performance in field study will be reviewed by College faculty and school-based professionals. Students who are judged inadequate will be required to either repeat courses, participate in remedial activities, or change to a more appropriate major.

To facilitate communication and proper guidance, all students will be assigned to a mentoring team consisting of appropriate College faculty.

STEP III: PROGRESSION TO STUDENT TEACHING OR INTERNSHIP

Students seeking authorization to enroll in student teaching or internship must apply at least one calendar year prior to the term of intended student teaching or internship. For example, students desiring to student teach or intern during the Fall Term, 1989 must make application in the Office of Field Studies for that experience not later than the beginning of Fall Term, 1988.

Student teaching or internship applications are completed in group sessions. Schedules of the application sessions are available in the Office of Field Studies, 214 Claxton Addition.

Making application to enroll in student teaching or internship is not contingent upon admission to the Teacher Education Program. Students should apply at least one calendar year prior to the term of actual student teaching or internship regardless of their status in the Teacher Education Program.

The following are the general prerequisites for student teaching or internship. Prerequisites for specific program areas (e.g., Art Education, Elementary Education) are available in the Office of Field Studies or from academic advisors.

1. Admission to the Teacher Education Program no later than the term preceding student teaching or internship.

2. Completion of required courses from the Professional Core (Curriculum and Instruction 302, 303, 304; Educational and Counseling Psychology 315, 325; and Special Education 370).

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 six semester hours of prescribed coursework in Professional Education at The University of Tennessee, Knoxville.

6. Classification (minimal) as a senior-level student (i.e., at least 60 semester hours passed).

7. Possession of the following minimum grade point averages: (a) 2.5 undergraduate cumulative GPA, (b) 2.5 GPA in Specific Teaching Field, and (c) 2.8 GPA in Professional education courses (i.e., grades of "D" and "F" must be repeated).

8. Recommendation by the student's faculty mentoring team to enroll in student teaching or internship.

In addition, any record established by the student in the Office of Student Conduct will be reviewed by the Teacher Education Standards Committee.

Student teaching or internship is evaluated on a satisfactory/no credit basis and the hours are included in the University policy requiring a 2.0 in the last 30 hours of course work.

Students should note that the most important criterion in placing student teachers or interns in the public schools is the potential value of the placement to the student's professional development. Therefore, the College cannot guarantee the students' preferences regarding specific geographic placement will be granted.

STEP IV: LICENSURE

Students must attain the following minimum requirements to qualify for the College's recommendation for licensure:

1. Academic achievement: Only those students who perform satisfactorily in student teaching or internship will be recommended for 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 or internship.)

Additional academic requirements include attainment of the following minimal levels of academic achievement: (a) 2.5 undergraduate cumulative GPA and specific teaching field (major) courses, and (b) 2.8 GPA in professional education courses ("D" and "F" course grades must be repeated).

2. National Teachers Examinations (NTE): All candidates for certification are required to attain the minimum scores, as determined by the State Board of Education, on the NTE: Core Battery (General Knowledge, Communications, Special Skills, Educational Knowledge) and the appropriate NTE Specialty Area Test (or equivalent).

Complete details regarding the NTE are available in the Advising Center, 214 Claxton Addition.

Additional licensure requirements include the successful completion of: (a) a methods course in each area of endorsement; (b) at least one two-semester hours course concerning the learning and behavioral characteristics of handicapped students; (c) at least four semester hours in methods of teaching reading for applicants desiring certifi-
cation to teach grades kindergarten through eighth, grades nine through twelve language arts, and special education; two semester hours in teaching reading in content areas for all other applicants; and (d) fulfillment of all special recommendations of the student’s mentoring team.

Applications for teacher certification should be completed early in the final semester before graduation. Application forms may be obtained in the Registrar’s Office, 214 Claxton Services Building, and in the Education Advising Center, 214 Claxton Addition.

It is important to note that Tennessee regulations stipulate that applicants for initial teacher certification must be recommended by an approved teacher training institution.

REQUIREMENTS FOR ALL TEACHER EDUCATION CURRICULA

The following professional core is required of students seeking teacher certification: Educational Curriculum and Instruction 302 (3), 303 (1), 304 (1), 402 (1); Educational and Counseling Psychology 315 (3), 325 (2); and Special Education 370 (2).

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 Undergraduate 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.)

The following minors are available to teacher education students who are seeking baccalaureate degrees in the College of Education.

Minor in Health Education

- Health 300 (3), 310 (3), 325 (3), 375 (3), 400 (3), 465 (3), Nutrition 100 or Health 420 or 435 (3), Public Health 305 (3), 310 (3), Safety 452 (3) for a total of 30 hours.

Minor in Driver and Traffic Safety

- Health 310P (3), 405 (3), 435 (3), Safety 441T (3), 442T (3), 452 (3) for a total of 18 hours.

Minor in General Special Education

Special Education 270 (1), 451/480 (6), 452/490 (6), 454 (3), 481 (3) for a total of 19 hours.

Minor in Dance

The following core courses are required for Option I and II. Dance 480 (3); 490 (3); Option I: Core 6; Select 5 from 310, 320, 330, 340, 410, 420, 430 (10); 250 (2); 350 (2); 101 (1) for a total of 21 hours. Option II: Core 6; Select 3 from 310, 320, 330, 410, 420, 430 (6); 250 (2); 350 (2); 415 (2); 465 (3) for a total of 21 hours.

MINORS AND TEACHER LICENSURE FOR NON-EDUCATION STUDENTS

Undergraduate students seeking teacher licensure in English, mathematics, social studies, science, and foreign language in grades 7-12 must earn a baccalaureate degree in appropriate Liberal Arts major (see College of Liberal Arts).

Teacher preparation, with the exception of programs in Business/Marketing and Industrial Education, is a five year program (i.e., B.S. degree granted at the end of semester). Undergraduate, non-Education students who are interested in earning teacher licensure may earn a minor in Education and complete specific prerequisite courses before beginning the Professional Year (fifth year) of teacher preparation.

Interested students should inquire in the Advising Center, 214 Claxton Addition, for details regarding admission to the Teacher Education Program and fulfillment of possible additional General Education courses.

Minor in Education

Educational Curriculum and Instruction 302 (3), 303 (1), 304 (1), Educational and Counseling Psychology 310 (3), 315 (3), 325 (2), 370 (2) for a total of 15 hours.

Secondary Education

In addition to earning a minor in Education, undergraduate students majoring in English, foreign languages, mathematics, economics, history, geography, psychology, sociology, biology, chemistry, and physics should complete the following courses prior to entering the Professional Year: Educational Curriculum and Instruction 352 and/or 353 (2-4), 355 (3), 460 (3) (Required for Speech and English majors only) for a total of 5-10 hours.

During the Professional Year, students complete the following courses: Educational Curriculum and Instruction 481 (6); 482 (4); 402; 461, 517 (7); 456, 455, 454, 459, 485 or 496 (3); Foundations elective (3) for a total of 23 hours.

Students interested in Secondary Education licensure may obtain information relative to specific Educational Curriculum and Instruction methods courses from the Department of Curriculum and Instruction, 301 Claxton Education Building, the Liberal Arts Advising Center, 220 Ayres Hall, or the Education Advising Center, 214 Claxton Addition.

Elementary Education

Non-education undergraduate students interested in obtaining Elementary Education licensure, in addition to earning a minor in Education, must complete the following courses before beginning the Professional Year: Health 305 (2), 306 (2), Music Education 300 (2), Art Education 300 (2), Physical Education 335 (3), Educational Curriculum and Instruction 326 (3), 328 (3), 335 (3), 351 (2-3), 476 (1) for a total of 23-24 hours.

Refer to Elementary Education major for Professional Year courses.

PROGRESSION TOWARD DEGREE COMPLETION IN NON-TEACHING FIELDS

HUMAN SERVICES

The standards which must be met for progression and retention in Human Services are professional in nature, as well as academic, because the program in Human Services prepares students for entry into a service profession. Students who wish to pursue a major in Human Services must earn a grade of "C" or higher in the introductory course before progressing to upper division work in the major. Students whose average for courses taken in the major falls below 2.5 must regain this required minimum average by the end of the subsequent semester in order to be retained in the major. A Board of Review will meet once each semester to interview students who wish to progress into the major, and to
review the work of students who are not meeting the academic and/or professional standards of the program. Students who wish to do so may ask to be interviewed while taking the introductory course, and if they meet the standards for progression will be allowed to progress to upper division work upon completion of that course with a "C" or higher. Students who in the judgment of the members of the Board are not meeting the professional standards of the requirements of teaching majors in 127 Claxton Addition. Applications for Fall/Spring practicum sequence must be submitted at the beginning of the preceding Spring semester, and students who fail to meet the standards for progression will not be retained in the major. Applications for Fall/Spring practicum sequence must be submitted at the beginning of the preceding Spring semester, and students who fail to meet the standards for progression will not be retained in the major. (Note that any decision affecting progression or retention may be appealed to the head of the Department of Special Services Education.) Requests for information about the program, for appointments with the Board of Review, for applications for the field practicum for appointments with the Board of Review, for applications for the field practicum sequence should be directed to the program secretary in 127 Claxton Addition.

PHYSICAL EDUCATION MAJORS: NON-TEACHING CONCENTRATIONS AND PREPARATION: SPORT MANAGEMENT CONCENTRATION
Progression toward degree completion in all non-teaching Physical Education concentrations and Recreation: Sport Management requires successful attainment of the same criteria which are required of teaching majors (see Progression Toward Degree Completion and/or Certification in Teaching Fields). Students admitted into a Sport Management concentration must maintain at least a 2.5 GPA for two consecutive semesters and may be dropped from the major.

Students who are granted progression are, therefore, permitted to enroll in upper division professional courses.

SATISFACTORY/NO CREDIT COURSES
Teacher Education students may include a maximum of 20 semester 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 in controlled electives, except where the course is offered only on a S/NC basis (such as teaching internships and field experiences).

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.

COURSE LOAD
Permission to enroll in more than 19 hours during a semester or 12 hours during summer term must be obtained from the Coordinator of Undergraduate Student Services, 202 Claxton Addition. A normal semester 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. This is particularly true of students who transfer to The University of Tennessee College of Education from another college or university. The general test is whether the course content is similar or, perhaps, more appropriate to that individual's needs.

To initiate a substitution request, the student should first meet with his/her advisor. If the advisor and student agree that the substitution is an appropriate one, the substitution request form should be forwarded to the Office of the Associate Dean for Undergraduate Studies, 202 Claxton Addition. Approved petitions are forwarded to the Dean of Admissions for final approval and for filing in the Records Office.

Professional education courses taken at junior or community colleges may be substituted for lower division (100-200 level) courses or may be used as electives. These courses may not be substituted for upper division (300-400 level) professional education courses.

ART AND MUSIC EDUCATION
Professors:

Associate Professors:

Assistant Professor:
Patricia Root; M.A., Washington State University.

CURRICULUM AND INSTRUCTION
Professors:

Associate Professors:

Assistant Professors:
R.A. Austin, Ph.D. Florida; K.P. Bennett, Ed.D. University of Cincinnati; J.A. Hatch, Ph.D. Florida; D.A. Hendricks, Ph.D. Alabama.

EDUCATIONAL AND COUNSELING PSYCHOLOGY
Professors:

Associate Professors:

Assistant Professors:
Shannette Harris, Ph.D. VPI; T.A. Hutchers, Ph.D. Georgia; Arie Nettles, Ph.D. Vanderbilt.

HEALTH, LEISURE, AND SAFETY
Professors:

Associate Professors:

Assistant Professors:

Lecturer:
M. Duffy, M.D. Pennsylvania.
**HUMAN PERFORMANCE AND SPORT STUDIES**

**Professors:**
- M.J. Paul (Head), Ed.D. Alabama; E.K. Capen (Emeritus), Ph.D. Iowa; E.T. Howley, Ph.D.
- A.J. Kozar (University Professor), Ph.D. Michigan; N.E. Lay, Ph.D. Florida State; W.P. Lierohl, Ph.D. Iowa; M.M. Phillips (Emeritus), Ph.D. Iowa; H.B. Watson (Emeritus), Ph.D. Michigan; H.G. Welch, Ph.D. Florida; C.A. Wrisberg, Ph.D. Michigan.

**Associate Professors:**

**Adjunct Faculty:**

**SPECIAL SERVICES EDUCATION**

**Professors:**

**Associate Professors:**
- J.D. McLean, Ph.D. Chicago; M.K. Warden, Ph.D. Tennessee.

**Instructors:**
- D.H. Ashmore, M.S. Tennessee; A.M. Griffin, M.S. Tennessee.

**Lecturer:**
- H.K. Byrd, Jr., M.S. Tennessee.

**TECHNOLOGICAL AND ADULT EDUCATION**

**Professors:**
- G.D. Cheek (Head), Ph.D. Kansas State; W.A. Cameron, Ph.D. Ohio State; C.P. Campbell, Ed.D. Maryland; C.B. Coakley, Ph.D. Wisconsin; D.C. Craig, Ed.D. Cornell; R.W. Haskell (Coordinator, Industrial Education), Ph.D. Purdue; J.I. Matthews, Ph.D. Arizona State; K.O. McCullough, Ph.D. Florida State; J.M. Peters (Coordinator, Adult Education), Ed.D. North Carolina State; J.L. Reed (Emeritus), M.S. Oklahoma State; G.A. Wagoner (Emeritus), M.S. Indiana; G.W. Wiegert, Jr. (Emeritus), Ed.D. Missouri; R.J. Woodin (Emeritus), Ph.D. Ohio State.

**Associate Professors:**

**Assistant Professors:**
- R. Pierce, Ph.D. Ohio State; T.L. Powell, M.S. Oklahoma State.

**Instructor:**
- C.W. Wright, M.T. Arizona State.

**CURRICULA**

**ART EDUCATION**

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<th>Hours Credit</th>
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<td><strong>Freshman</strong></td>
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<tr>
<td>English 101, 102</td>
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<tr>
<td>Art 101, 295, 103</td>
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<tr>
<td>Art History 171, 172</td>
</tr>
<tr>
<td>*Humanities elective (English 293, 332, 333, 443)</td>
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<tr>
<td>Studio Art electives</td>
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<tr>
<td><strong>Sophomore</strong></td>
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<tr>
<td>Natural Science electives</td>
</tr>
<tr>
<td>History electives (non U.S.)</td>
</tr>
<tr>
<td>Studio Art electives</td>
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<tr>
<td>Art History 173</td>
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<tr>
<td><strong>Junior</strong></td>
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<tr>
<td>Art Education 301, 302, 350</td>
</tr>
<tr>
<td>*Social Science elective (Anthropology 313, 314, 315 or 461; Sociology 343; Political Science 322, 355, 365, 453, 454, 455, 459, 463, or 469; Geography 372, 373, 375, or 379)</td>
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<tr>
<td>Art History electives</td>
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<tr>
<td><strong>Senior</strong></td>
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<tr>
<td>Math</td>
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<td>Humanities Elective</td>
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<tr>
<td>*Art History elective (385, 386, or 486)</td>
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<td>Art Education 303, 304, 403, 410</td>
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<tr>
<td>Studio Art</td>
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<tr>
<td>Health 330</td>
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<tr>
<td><strong>Professional Year</strong></td>
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<tr>
<td>Art Education 461</td>
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<td>Art Education 482</td>
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<tr>
<td>Educational Curriculum and Instruction 402</td>
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<tr>
<td>Educational and Counseling Psychology 210</td>
</tr>
<tr>
<td>Educational Curriculum and Instruction 302, 303, 404, 461</td>
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<tr>
<td>Educational and Counseling Psychology 315, 325, 326</td>
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<tr>
<td>Special Education 970</td>
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Total: 165 hours

**BUSINESS/MARKETING EDUCATION TRAINING CONCENTRATION**

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<tr>
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<td>English 101, 102</td>
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<td>Mathematics 121, math elective</td>
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<tr>
<td>Natural Science electives</td>
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<tr>
<td>Humanities elective</td>
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<tr>
<td>Health 330</td>
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<tr>
<td>Physical Education elective</td>
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<tr>
<td>Computer Science elective</td>
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<tr>
<td>Speech elective</td>
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<tr>
<td><strong>Sophomore</strong></td>
</tr>
<tr>
<td>History elective</td>
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<tr>
<td>English Literature elective</td>
</tr>
<tr>
<td>Accounting 301, Accounting 302 or Business elective</td>
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<td>Economics 201, Economics elective</td>
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<tr>
<td>Humanities electives</td>
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<tr>
<td>Statistics elective</td>
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<tr>
<td>Educational and Counseling Psychology 210</td>
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<tr>
<td>Physical Education Activities elective</td>
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<tr>
<td>Technological and Adult Education 201</td>
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<tr>
<td><strong>Junior</strong></td>
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<tr>
<td>Special Education 370</td>
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<td>Technological and Adult Education 201, 430, 432</td>
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<tr>
<td>Marketing 301</td>
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<td>Finance 301</td>
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<tr>
<td>Educational Psychology 315, 325</td>
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<tr>
<td>Business elective</td>
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<tr>
<td>Educational 475</td>
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<tr>
<td>Business Law 301</td>
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<td>Educational Curriculum and Instruction 302, 303, 304</td>
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<tr>
<td>Technological and Adult Education 410, 481</td>
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<tr>
<td>Educational Curriculum and Instruction 402, 461</td>
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<td>Business electives</td>
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</table>

Total: 137 hours


**Psychology elective or Educational Psychology 475** ........................................ 3
**Business Law 301** .................................................................................................... 3
**Educational Curriculum and Instruction 415** .......................................................... 3
**Senior** ......................................................................................................................
- **Technological and Adult Education 436, 439, 440** .................................................. 15
- **Technical electives** .................................................................................................. 12

Total: 134 hours

**Includes courses in Business Administration, Textiles and Apparel, Communications, etc. Consult advisor for specific requirement.**

**ELEMENTARY EDUCATION**

Please note that this major is not expected to be available to students entering in Fall 1990. Students seeking teacher certification in Elementary Education should consult with either the Liberal Arts or Education Advising Centers regarding new curricular options.

<table>
<thead>
<tr>
<th>Concentration</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td><strong>Community Health</strong></td>
<td>6</td>
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<tr>
<td><strong>Physical Science elective.</strong></td>
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<tr>
<td><strong>Ecology 370 must be taken in lieu of one biological or physical science elective.</strong></td>
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**HEALTH EDUCATION: HEALTH CARE CONCENTRATION**

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<td><strong>SCHOOL CONCENTRATION</strong></td>
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<td><strong>Senior</strong></td>
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**HUMAN SERVICES**

<table>
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<tr>
<th>Concentration</th>
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<tbody>
<tr>
<td><strong>SCHOOL CONCENTRATION</strong></td>
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**INDUSTRIAL EDUCATION: INDUSTRIAL ARTS CONCENTRATION**

<table>
<thead>
<tr>
<th>Concentration</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td><strong>SCHOOL CONCENTRATION</strong></td>
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*Consult advisor for specific course requirements.
### Industrial Education: Instrumental Music Concentration

<table>
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<tbody>
<tr>
<td>Freshman</td>
<td>Music Theory 110, 120, 130, 140</td>
</tr>
<tr>
<td></td>
<td>Music Theory 210, 220, 230, 240</td>
</tr>
<tr>
<td></td>
<td>Major Instrument</td>
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<tr>
<td></td>
<td>Music General 200</td>
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<tr>
<td></td>
<td>Music Ensemble</td>
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<tr>
<td></td>
<td>Social Science electives</td>
</tr>
<tr>
<td></td>
<td>Mathematics electives</td>
</tr>
<tr>
<td>Sophomore</td>
<td>Music Theory 210, 220, 230, 240</td>
</tr>
<tr>
<td></td>
<td>Major Instrument</td>
</tr>
<tr>
<td></td>
<td>Minor Instrument</td>
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<tr>
<td></td>
<td>Music General 200</td>
</tr>
<tr>
<td></td>
<td>Music Ensemble</td>
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<tr>
<td></td>
<td>Natural Science electives</td>
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<tr>
<td></td>
<td>History electives</td>
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<tr>
<td></td>
<td>University Studies elective</td>
</tr>
<tr>
<td>Junior</td>
<td>Music Education 210</td>
</tr>
<tr>
<td></td>
<td>Music History 200</td>
</tr>
<tr>
<td></td>
<td>Major Instrument</td>
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<td>Minor Instrument</td>
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<tr>
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<td>Music Ensemble</td>
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<td>Music History 200</td>
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<tr>
<td></td>
<td>Health 330</td>
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<td></td>
<td>University Studies elective</td>
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### Industrial Education: Vocal Music Concentration

<table>
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<tbody>
<tr>
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<td>Music Theory 110, 120, 130, 140</td>
</tr>
<tr>
<td></td>
<td>Music Theory 210, 220, 230, 240</td>
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<td>Music General 200</td>
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<td>Music Ensemble</td>
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<td></td>
<td>Social Science electives</td>
</tr>
<tr>
<td></td>
<td>Mathematics electives</td>
</tr>
<tr>
<td>Sophomore</td>
<td>Music Theory 210, 220, 230, 240</td>
</tr>
<tr>
<td></td>
<td>Major Instrument</td>
</tr>
<tr>
<td></td>
<td>Minor Instrument</td>
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<td>Music General 200</td>
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<td>Music Ensemble</td>
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<tr>
<td></td>
<td>Professional Year</td>
</tr>
<tr>
<td></td>
<td>Music Education 461</td>
</tr>
<tr>
<td></td>
<td>Music Education 482</td>
</tr>
<tr>
<td></td>
<td>Educational Curriculum and Instruction 402, 461</td>
</tr>
<tr>
<td></td>
<td>Music Theory 310, 320</td>
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<tr>
<td></td>
<td>Music Graduate electives</td>
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<tr>
<td></td>
<td>Music Education Graduate electives</td>
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<tr>
<td>Total: 174 hours</td>
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### Industrial Education: Vocal Music (Piano or Organ Principal) Concentration

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<th>Credit</th>
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<tbody>
<tr>
<td>Freshman</td>
<td>Music Theory 110, 120, 130, 140</td>
</tr>
<tr>
<td></td>
<td>Music Theory 210, 220, 230, 240</td>
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<tr>
<td></td>
<td>Major Instrument</td>
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<td>Music General 200</td>
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<td></td>
<td>Music Ensemble</td>
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<td></td>
<td>Social Science electives</td>
</tr>
<tr>
<td></td>
<td>Mathematics electives</td>
</tr>
<tr>
<td>Sophomore</td>
<td>Music Theory 210, 220, 230, 240</td>
</tr>
<tr>
<td></td>
<td>Major Instrument</td>
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<tr>
<td></td>
<td>Minor Instrument</td>
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<td>Music General 200</td>
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<td>Music Ensemble</td>
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<tr>
<td></td>
<td>Professional Year</td>
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<td></td>
<td>Music Education 461</td>
</tr>
<tr>
<td></td>
<td>Music Education 482</td>
</tr>
<tr>
<td></td>
<td>Educational Curriculum and Instruction 402, 461</td>
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<tr>
<td></td>
<td>Music Theory 310, 320</td>
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<tr>
<td></td>
<td>Music Graduate electives</td>
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<td>Music Education Graduate electives</td>
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PHYSICAL EDUCATION: EXERCISE SCIENCE CONCENTRATION (EXERCISE PHYSIOLOGY/FITNESS OPTION)

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<tbody>
<tr>
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<td></td>
</tr>
<tr>
<td>English 101, 102</td>
<td>6</td>
</tr>
<tr>
<td>Dance Technique (Principal Area)</td>
<td>4</td>
</tr>
<tr>
<td>Humanities electives</td>
<td>6</td>
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<tr>
<td>History elective</td>
<td>6</td>
</tr>
<tr>
<td>Physical Education 100, 105</td>
<td>3</td>
</tr>
<tr>
<td>Dance 101</td>
<td>1</td>
</tr>
<tr>
<td><strong>Sophomore</strong></td>
<td></td>
</tr>
<tr>
<td>Dance Technique (Principal Area)</td>
<td>4</td>
</tr>
<tr>
<td>Dance Technique (Secondary Area)</td>
<td>2</td>
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<tr>
<td>Humanities electives</td>
<td>6</td>
</tr>
<tr>
<td>Microcomp App</td>
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<tr>
<td>Physical Education 380, 290</td>
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<tr>
<td>Natural Science elective</td>
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<tr>
<td>Math elective</td>
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<tr>
<td><strong>Junior</strong></td>
<td></td>
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<tr>
<td>Dance Technique (Principal Area)</td>
<td>4</td>
</tr>
<tr>
<td>Dance 250, 350, 480, 490</td>
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<tr>
<td>Dance 201</td>
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<tr>
<td>Dance 240 or 340</td>
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<td>Dance Technique (Secondary Area II)</td>
<td>4</td>
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<tr>
<td>Multicultural/Integrative electives</td>
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<tr>
<td>Physical Education 275, 332</td>
<td>4</td>
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<tr>
<td><strong>Senior</strong></td>
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</tr>
<tr>
<td>Dance 415, 495</td>
<td>5</td>
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<tr>
<td>Physical Education 411, 422</td>
<td>6</td>
</tr>
<tr>
<td>Dance 201</td>
<td>2</td>
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<tr>
<td>Dance Technique (Principal Area)</td>
<td>4</td>
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<tr>
<td>Dance Technique (Secondary Area)</td>
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<tr>
<td>Specialization electives</td>
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PHYSICAL EDUCATION: DANCE CONCENTRATION

<table>
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<tbody>
<tr>
<td><strong>Freshman</strong></td>
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<td>English 101, 102</td>
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<tr>
<td>Dance Technique (Principal Area)</td>
<td>4</td>
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<tr>
<td>Humanities electives</td>
<td>6</td>
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<tr>
<td>History elective</td>
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<tr>
<td>Physical Education 100, 105</td>
<td>3</td>
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<tr>
<td>Dance 101</td>
<td>1</td>
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<tr>
<td><strong>Sophomore</strong></td>
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</tr>
<tr>
<td>Dance Technique (Principal Area)</td>
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<tr>
<td>Dance Technique (Secondary Area)</td>
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<tr>
<td>Humanities electives</td>
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<tr>
<td>Microcomp App</td>
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<td>Physical Education 380, 290</td>
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<tr>
<td>Natural Science elective</td>
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<tr>
<td>Math elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Junior</strong></td>
<td></td>
</tr>
<tr>
<td>Dance Technique (Principal Area)</td>
<td>4</td>
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<tr>
<td>Dance 250, 350, 480, 490</td>
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<tr>
<td>Dance 201</td>
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<td>Dance 240 or 340</td>
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<td>Dance Technique (Secondary Area II)</td>
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<td>Multicultural/Integrative electives</td>
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<tr>
<td>Physical Education 275, 332</td>
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<tr>
<td><strong>Senior</strong></td>
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<tr>
<td>Dance 415, 495</td>
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<tr>
<td>Physical Education 411, 422</td>
<td>6</td>
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<tr>
<td>Dance 201</td>
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<tr>
<td>Dance Technique (Principal Area)</td>
<td>4</td>
</tr>
<tr>
<td>Dance Technique (Secondary Area)</td>
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<td>Specialization electives</td>
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<td>Total: 130-135 hours</td>
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PHYSICAL EDUCATION: EXERCISE SCIENCE CONCENTRATION (KINESIOLOGY OPTION)

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<tr>
<td>English 101, 102</td>
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<tr>
<td>Mathematics 121-122 or 141-142 or 151-152</td>
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<tr>
<td>Physical Education 100</td>
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<td>Humanities electives</td>
<td>6</td>
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<tr>
<td>Chemistry 120, 130</td>
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</tr>
<tr>
<td>University/Cultural Studies elective</td>
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<td>Social Science elective</td>
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<td><strong>Sophomore</strong></td>
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<tr>
<td>Physical Education 414, 415, 422, 490, 493</td>
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<td>CPR certification</td>
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PHYSICAL EDUCATION: MOVEMENT SCIENCES CONCENTRATION (MOTOR BEHAVIOR/Sport Psychology Option)

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<tr>
<td>English 101, 102</td>
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<tr>
<td>Mathematics 110</td>
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<td>Chemistry 100, 110</td>
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<tr>
<td>Physical Education 100</td>
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<tr>
<td>Physical Education Activities electives</td>
<td>6</td>
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<tr>
<td>Humanities electives</td>
<td>6</td>
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<tr>
<td>Social Science electives</td>
<td>3</td>
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<td><strong>Sophomore</strong></td>
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<tr>
<td>Mathematics 121</td>
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<td>Zoology 230</td>
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<td>Social Science electives</td>
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<td>Physical Education Activities electives</td>
<td>6</td>
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<tr>
<td>Humanities electives</td>
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</tr>
<tr>
<td>Physical Education 290</td>
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</tr>
<tr>
<td>Psychology 110</td>
<td>3</td>
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<tr>
<td>University Studies elective</td>
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<tr>
<td><strong>Junior</strong></td>
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<tr>
<td>University Studies electives</td>
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<tr>
<td><strong>Senior</strong></td>
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<tr>
<td>Physical Education 493</td>
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<td>University Studies elective</td>
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<td>Statistics 201, 411</td>
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<td>English 459</td>
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<td>Psychology 210, 360, 395</td>
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<tr>
<td>Statistics 310, 410, 461, 220, 445, 450, 454, 430, 300, and Educational Counseling and Psychology 410</td>
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Total: 138-141 hours
### PHYSICAL EDUCATION: COMMERCE CONCENTRATION

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<th>Hours Credit</th>
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<tr>
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<td>36</td>
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#### PHYSICAL EDUCATION: TEACHING CONCENTRATION

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<th>Hours Credit</th>
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<td>Sophomore</td>
<td>36</td>
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<tr>
<td>Senior</td>
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#### RECREATION: PRIVATE/COMMERCIAL CONCENTRATION

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<th>Hours Credit</th>
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<td>Sophomore</td>
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<td>Senior</td>
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#### RECREATION: THERAPEUTIC CONCENTRATION

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<th>Hours Credit</th>
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<tr>
<td>Sophomore</td>
<td>36</td>
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<tr>
<td>Senior</td>
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*Choose at least 12 hours/4 courses from the following to complete the Business Minor: Business Law 301, 401, Finance 301, 470, Management 301, 321, 431, Marketing 301, 310, 420.*
### SPECIAL EDUCATION: GENERAL SPECIAL EDUCATION CONCENTRATION

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<tbody>
<tr>
<td><strong>Freshman</strong></td>
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<tr>
<td>English 101, 102</td>
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<tr>
<td>Biology 110, 120</td>
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<tr>
<td>Human Services 220, 320, or 330</td>
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<td>Art, Music, or Theatre elective</td>
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<tr>
<td>Psychology 110</td>
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<tr>
<td>Physical Education Activity elective</td>
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<td>General Education elective</td>
<td>3</td>
</tr>
<tr>
<td><strong>Sophomore</strong></td>
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<tr>
<td>Mathematics 110, 115, 121, or 122</td>
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<tr>
<td>Chemistry 100, Physics 141, Geology 100, or Astronomy 151</td>
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<td>History 251, 252</td>
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<tr>
<td>University Studies electives</td>
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<tr>
<td>Educational and Counseling Psychology 210</td>
<td>3</td>
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<td>Non-Education elective</td>
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<td>English Literature elective</td>
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<td>Special Education 270</td>
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<td>Physical Education Activity elective</td>
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<tr>
<td><strong>Junior</strong></td>
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<tr>
<td>Health 305</td>
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<tr>
<td>Educational Curriculum and Instruction 302, 303, 304</td>
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<tr>
<td>Religious Studies, Philosophy, or Human Services elective</td>
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<tr>
<td>Sociology or Economics elective</td>
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<tr>
<td>Political Science, Sociology, Religious Studies, Women's Studies, or University Studies elective</td>
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<tr>
<td>Elective</td>
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<tr>
<td>Educational and Counseling Psychology 315, 325</td>
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<td>Special Education 370, 456</td>
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<td><strong>Senior</strong></td>
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<td>Educational Curriculum and Instruction 429, 430, 434, 443</td>
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<td>Special Education 471</td>
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<td>Special Education 506</td>
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<td>Special Education 509, 541, 543, 553, 595</td>
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<td>Educational Curriculum and Instruction 471</td>
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### SPECIAL EDUCATION: SPEECH AND HEARING CONCENTRATION

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<td><strong>Freshman</strong></td>
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<td>English 101, 102</td>
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<td>Psychology 110</td>
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</tr>
<tr>
<td>Biology 110, 120</td>
<td>8</td>
</tr>
<tr>
<td>History 251 or 252</td>
<td>3</td>
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<tr>
<td>Mathematics 110 and 115 or 121 and 122</td>
<td>6</td>
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<tr>
<td>Social Science elective</td>
<td>3</td>
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<tr>
<td>Physical Education Activity elective</td>
<td>1</td>
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<tr>
<td>University Studies elective</td>
<td>3</td>
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<tr>
<td><strong>Sophomore</strong></td>
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<tr>
<td>Humanities (English Literature)</td>
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<tr>
<td>Physical Science elective</td>
<td>3-4</td>
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<tr>
<td>Educational Psychology 210</td>
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<tr>
<td>University Studies elective</td>
<td>3</td>
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<tr>
<td>Health elective</td>
<td>2</td>
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<td>Fine Arts elective</td>
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<tr>
<td>Humanities elective</td>
<td>3</td>
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<tr>
<td>History elective</td>
<td>3</td>
</tr>
<tr>
<td>Audiology and Speech Pathology 304, 305</td>
<td>6</td>
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<tr>
<td>Special Education 371</td>
<td>3</td>
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<tr>
<td>Educational and Counseling Psychology 315</td>
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<td>Special Education 331, 404, 433</td>
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<tr>
<td>Audiology and Speech Pathology 320, 306, 461</td>
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<tr>
<td>Psychology 385</td>
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<tr>
<td>Special Education 370, 482</td>
<td>5</td>
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<tr>
<td>Educational Curriculum and Instruction 302</td>
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<tr>
<td>Social Science elective</td>
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<td><strong>Senior</strong></td>
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<tr>
<td>Special Education 434, 473</td>
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<td>Non-Education elective</td>
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<tr>
<td>Educational and Counseling Psychology 325</td>
<td>2</td>
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<tr>
<td>Educational Curriculum and Instruction 303, 304</td>
<td>2</td>
</tr>
<tr>
<td>Audiology and Speech Pathology 438, 439, or 461</td>
<td>3</td>
</tr>
<tr>
<td>Special Education 483</td>
<td>3</td>
</tr>
<tr>
<td>Humanities elective</td>
<td>3</td>
</tr>
<tr>
<td>Major elective (choose two): Special Education 440, Audiology and Speech Pathology 431, 465, 494</td>
<td>6</td>
</tr>
<tr>
<td><strong>Professional Year</strong></td>
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<tr>
<td>Audiology and Speech Pathology 506, 511, 517, 520, 522, 531, 540, 554, 579</td>
<td>26</td>
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<tr>
<td>Major elective (choose two): Special Education 440, Audiology and Speech Pathology 431, 465, 494</td>
<td>6</td>
</tr>
<tr>
<td>Educational Curriculum and Instruction 402</td>
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<td><strong>Total:</strong> 159-160 hours</td>
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COOPERATIVE ENGINEERING PROGRAM

The five-year Cooperative Engineering Program is offered in order to provide an augmented engineering education that includes significant experience in industry as well as superior academic preparation. The Program in the College of Engineering has been in existence since 1926 and is a traditional part of the engineering education offered by the College. Cooperative work assignments differ from part-time or summer employment in that they involve regularly scheduled cycles of full-time academic terms alternating with full-time work periods, resulting in planned, career-related work terms of progressive complexity and responsibility. In introducing the student in this manner to engineering employment, the College and the facilities of industry join together to offer a broader and richer preparation for postgraduate employment than can be provided by a conventional academic program. This experience in an industrial and professional environment contributes to the student's maturity, accelerates professionalism, and offers an opportunity to apply engineering course work in a real-world setting, and enables the student to define more clearly educational and career interests and objectives. Some of the experience is at a subprofessional level not available to an engineer after graduation, yet it is of great significance in achieving a complete education and early effectiveness.

Participation in the Cooperative Engineering Program usually begins with application during the freshman year, and placement with a co-op employer during the sophomore year, after the student has met academic progress and grade qualification requirements of employers and the Co-op Program. An exceptionally well-qualified candidate might begin a field assignment at the end of the freshman year.

A schedule of courses is taught by each engineering department specifically to meet the needs of co-op students, and applicants must be able to fit into that schedule in order to participate. Candidates must be able to project a minimum of fifteen months of co-op experience prior to the senior year, within the regular alternating sequence, to qualify for placement.
Those planning to transfer to the College of Engineering from other disciplines or schools should begin working as early as possible with an advisor in the department they plan to enter in order to enter the co-op schedule at an optimum time. Second-degree students, who are intercollegiate students, and other nontraditional students often find the Co-op Program a viable form of education and positions are available for such students in most instances. Very few non-citizens are able to secure co-op positions, however.

Brochures with further details, current employer list, and policies and procedures may be obtained from the Cooperative Engineering Program, University of Tennessee, Knoxville, TN 37996-2350.

INTERNATIONAL ENGINEERING PROGRAM

Since 1982 the College of Engineering has had a unique student exchange program with the Fachhochschule des Rheinland-Pfalz, Abteilung Koblenz (FH Koblenz). Under this program, Seniors and Graduate Students in all disciplines of the Colleges may apply for a 3 to 6 month educational and practical internship with German industry. In addition to the potential of receiving credit for Engineering coursework, those selected for the program will receive a stipend from German industry adequate to cover basic living expenses while in Germany.

Those interested in applying should begin making plans during the Freshman year by contacting the Program Coordinator. Language preparation should start immediately. Formal application should be made at the beginning of the Junior year. Following a selection committee interview, the applications of successful candidates will be forwarded to FH Koblenz, where a final selection will be made. The selection process will take into consideration: language preparation; academic achievement; ability to locate a suitable industrial sponsor in Germany; and personal maturity.

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 nine major subjects: aerospace engineering, chemical engineering, civil engineering, electrical and computer engineering, engineering science, mechanical engineering, metallurgical engineering, nuclear engineering, and polymer engineering. Information concerning graduate programs is given in the Graduate Catalog.

CURRICULA IN ENGINEERING

NATIONAL ACCREDITATION

Since 1936, engineering programs at institutions of higher learning have been accredited by an organization formed by many engineering societies known as the Accreditation Board for Engineering and Technology (ABET). Currently accredited engineering programs at UT, Knoxville include aerospace, agricultural, chemical, civil, electrical, engineering science and mechanics, industrial, mechanical, metallurgical, and nuclear. Co-op programs in the above areas are presently ABET accredited.

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 approved.
2. The minor must be one officially approved and described in the UT, Knoxville catalog. No unofficial minors will be recognized. Minors exist in Architecture and Business Administration, and in numerous departments in Agriculture and Liberal Arts. Presently there is no engineering student who can minor in another engineering discipline, nor can a non-engineering student declare an engineering minor.

Students planning to transfer to the College of Engineering from other disciplines or schools, who are interested in declaring a minor, may be assigned faculty advisors from their department, a student who already holds a minor, for advice and counsel.

ADVISING

Freshman students admitted to College of Engineering are not required to designate a particular course of study during the freshman year. New freshmen students are assigned to the Freshman Engineering Advising Center (102 Housers) by their department. The intention 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 minor is to appear on the final transcript. Degree applications are handled by the UT, Knoxville Records Office.

COURSES LOAD

The maximum number of hours which can be taken by an undergraduate engineering student without permission is 18. The Associate Dean for Academic Affairs must give permission to take 20 hours or more. In general, this decision is based on the student's previous performance at UT, Knoxville.

DROP DEADLINE

The drop and add deadline for all undergraduate courses administered by any department in the College of Engineering is the end of the 22nd calendar day of each semester counted from the beginning day of classes. Any drop action after this date on the part of any student (regardless of major) is subject to late drop regulations. Late drop requests, which may be approved for reasons other than academic difficulties, are handled by the Office of Academic Affairs. 118 Perkins Hall. For other procedures refer to "Changes in Registration" in the general section of this catalog.

GENERAL REQUIREMENTS

Students are advised to consult the University's degree requirements as stated in the front section of this catalog as well as departmental requirements.

Inspection Trip. Each candidate for graduation majoring in aerospace, mechanical, chemical, or metallurgical engineering must participate in inspection trips scheduled by the major department.

Transfer Students. Transfer students, as well as intercollegiate students, must meet the minimum requirements stated below in order to be considered for admission to a major within the College.

1. Must have earned a minimum 2.30 cumulative average over their prior courses, or their equivalent: English 101, 102; Chemistry 120, 130; and Math 141, 142.
2. The overall record will be evaluated for quality and seriousness of purpose. An excessive number of withdrawals, incomplete, repeated courses, or failure may result in denial.

Any UT, Knoxville student desiring association with one of the departments of the College of Engineering should go to the departmental office for the desired major. An interview with the department head or his designee is held, with the major items of consideration being the same as for all other transfer students. If an association is granted, a College Major/Advisor Change form is processed by the department to officially change the student's academic home.

Transfer Credit. Every attempt will be made to give maximum credit for courses taken elsewhere and transferred to the college. Discussions concerning the evaluation of transfer credits should be conducted with the head of the department to which the student is to transfer, but only after receiving the evaluation of transfer credits by the Admissions Office.

Program for Second B.S. Degree. Upon approval by the Department of Engineering and the Committee on Degrees of a program of study recommended by the major engineering department, a student who already holds a bachelor's degree may obtain the appropriate first degree in engineering by meeting all of the course requirements of the selected engineering program. In no case will the minimum requirement be less than 30 semester credits. The prevailing University regulations shall apply. Satisfactory/No Credit Courses. An undergraduate engineering student may count towards a degree up to 9 semester hours obtained by Satisfactory/No Credit (S/NC) grading. Such hours must be in humanities-sociology-sciences elective credit. Certain engineering courses which carry only S/NC grading do not count in this limit. Correspondence Courses. A student should check with his or her major department to see what restrictions there are, if any, on the use of correspondence course credit to meet the minimum degree requirements.

Satisfactory/No Credit Courses. An undergraduate engineering student may count towards a degree up to 9 semester hours obtained by Satisfactory/No Credit (S/NC) grading. Such hours must be in humanities-sociology-sciences elective credit. Certain engineering courses which carry only S/NC grading do not count in this limit. Correspondence Courses. A student should check with his or her major department to see what restrictions there are, if any, on the use of correspondence course credit to meet the minimum degree requirements.

Humanities and Social Science Electives. The college assumes an obligation to include in each of the engineering curricula a means whereby students gain greater insight into their interaction with society, both personally and professionally. For this purpose, a part of each engineering curriculum is devoted to humanities and social science electives. 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 and 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 a 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 their Humanities/Social Science elective program in consultation with their advisor.

Requirements:
1. Courses must be from this approved list

American History Requirement: Engineering students, regardless of natural origin, must fulfill the American history requirement described elsewhere in this catalog. Those students who have not had the required year of American history in high school may choose the required six semester hours from History 251 and 252, or other courses deemed suitable by the Department of History. These hours may 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 tabulations 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 (300 and 400 series) may be counted as technical elective credit toward an engineering degree up to a total of six (6) semester hours. Normally, Military Science courses cannot be used as humanities/social science electives. Individual departments determine the appropriate substitutions.

Approval of Electives and Substitutions. Each student shall discuss with an advisor the status of the program of study no later than the beginning of the second semester prior to anticipated graduation. Any necessary additions to or substitutions in the program, or electives requiring special approval, must be cleared in writing at that time, and it is each student's responsibility to see that all necessary approvals are secured. Inattention to such matters will most likely delay graduation.

AGRICULTURAL ENGINEERING
(See College of Agriculture)

CHEMICAL ENGINEERING

Professors:
J.J. Perona (Head), Ph.D. Northwestern, PE; D.C. Bogue, Ph.D. Delaware; E.S. Clark, Ph.D. California (Berkeley); L.W. Crawford (Space Institute, Tullahoma), Ph.D. Cincinnati; O.L. Culberson (Emeritus), Ph.D. Texas; J.F. Fellers, Ph.D. Akron; G.C. Fraizer, Jr., D. Eng. Johns Hopkins; J.M. Holmes (Emeritus), Ph.D. Tennessee; H.W. Hsu, Ph.D. Wisconsin; H.P. Johnson (Emeritus), Ph.D. Yale; C.F. Moore, Ph.D. Louisiana State; J.W. Prados, Ph.D. Tennessee, P.E.; G.D. Scott (Adjunct Status), Ph.D. Tennessee, P.E.; G.O. Thomas, Ph.D. Tennessee, J.S. Watson (Part-time), Ph.D. Tennessee.

Associate Professors:
Osman A. Basaran (Adjunct), Ph.D. Minnesota; P.R. Bienkowski, Ph.D. Purdue; J.W. Blackburn (Research), Ph.D. Tennessee; D.D. Bruns, Ph.D. Houston; C.H. Byers (Adjunct Status, University Professor), Ph.D. California (Berkeley); H.D. Cochran (Adjunct), Ph.D. MIT; R.M. Counce, Ph.D. Tennessee; B.H. Davison (Adjunct), Ph.D. California Inst. of Tech.; T.L. Donaldson (Adjunct Status); Ph.D. Pennsylvania; M.G. Hansen, Ph.D. Wisconsin; Timothy C. Scott (Adjunct), Ph.D. Wisconsin; A.C. Sheth (Space Institute, Tullahoma), Ph.D. Northwestern; F.E. Weber, Ph.D. Minnesota.

Assistant Professor:
T.W. Wang, Ph.D. Massachusetts Institute of Technology.

BACHELOR OF SCIENCE PROGRAM

Chemical engineering is a discipline dedicated to the development, design, operation and management of plants and processes for 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 fields such as food and pharmaceutical processing, biochemical engineering, fuels production and conversion, polymers and plastics, process control and instrumentation.

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. A minimum of 18 semester hours of humanities and social science courses are required, which are to be selected from the list under "Curricula in Engineering".

PROGRESSION TO UPPER-DIVISION

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 50 semester hours of Lower-Division engineering curriculum course work with an overall GPA of at least 2.4. This must include Chemical Engineering 200.

PROVISIONAL STATUS:
Students who have completed 50 semester 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 by attaining a minimum GPA of 2.0 in at least 9 hours of 200 and 300 level required courses specified by the department. Further progression to upper-division courses is dependent upon this minimum level of performance.

Any student with an overall GPA below 2.0 will not be admitted to upper-division Chemical 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.
GRADUATE STUDY PROGRAM

Graduate programs leading to the degrees of Master of Science and Doctor of Philosophy in Chemical Engineering are offered. The University's Graduate School operates a Resident Graduate Program at Oak Ridge and Kingsport. See the Graduate Catalog for detailed information.

CIVIL ENGINEERING

Including Environmental Engineering

Professors:
G.D. Reed (Head), Ph.D. Arkansas, P.E.; E.G. Burdette (Fred N. Peebles Professor), Ph.D. Illinois, P.E.; A. Chatterjee, Ph.D. North Carolina State, P.E.; W.T. Davis (Associate Dean - Graduate School), Ph.D. Tennessee; D.W. Goodpasture, Ph.D. Illinois, P.E.; Mriganka Ghosh, (Goodrich Chair of Excellence), P.E.; Ph.D. Illinois; W.L. Grecco (Associate Dean - Engineering), Ph.D. Michigan State, P.E.; K.W. Heathington (Associate Vice President - Research), Ph.D. Northwestern, P.E.; J.B. Humphreys, Ph.D. Texas A&M, P.E.; H.L. Johnson, M.S. Tennessee, P.E.; M.A. Miller (Associate Dean), Ph.D. Georgia Institute of Technology, P.E.; B.A. Tschanz (Condra Professor), ScD New Mexico State, P.E.; C.R. Walker (Emeritus) M.S. Massachusetts Institute of Technology, P.E.; J. Wegmann, Ph.D. Northwestern.

Associate Professors:
B.J. Frederick, B.C.E. Clarkson University, P.E.; J.H. Hansan (Space Institute, Tullahoma), Ph.D. Missouri; A.B. Moore, M.S. Tennessee; R.B. Robinson (Fisher Professor), Ph.D. Iowa State, P.E.; J.L. Smoot, Ph.D. P.E.; R.F. Tiry (Emeritus), B.S. Marquette, P.E.

Assistant Professors:
R.M. Bennett, Ph.D. Illinois, P.E.; E.C. Drumm, Ph.D. Arizona, P.E.; W.F. Kane, Ph.D. Virginia Polytechnic Institute and State University.

BACHELOR OF SCIENCE PROGRAM

The curriculum in civil engineering is designed to provide training in fundamental engineering sciences and in certain basic subjects in various civil engineering fields to serve as a basis for entrance into civil engineering practice and/or for graduate study. By use of technical electives a student can emphasize areas of study in construction, environmental engineering, geotechnical/materials, structural engineering, transportation, and water resources.

Students are required to maintain a cumulative grade point average of at least 2.00 in all civil engineering and environmental engineering courses taken at The University of Tennessee, Knoxville, and used to satisfy the graduation requirements.

ELECTIVES

The department maintains lists of acceptable technical electives at the departmental office. Students must consult this list prior to registering for elective courses.

MASTER OF SCIENCE PROGRAM

Graduate programs in civil engineering and environmental engineering leading to the degrees of Master of Science are offered to graduates of recognized undergraduate curricula.

The general requirements for the masters' degrees are stated in the Graduate Catalog.

DOCTORAL PROGRAM

Graduate work leading to the degree of Doctor of Philosophy with a major in civil engineering is offered. Major fields of study include environmental engineering, geotechnical/materials, structural engineering, transportation, and water resources.

The general requirements for the doctoral degree are stated in the Graduate Catalog.

ELECTRICAL AND COMPUTER ENGINEERING

Professors:
J.M. Googe (Head), Ph.D. Georgia Institute of Technology, P.E.; I. Alexeff, Ph.D. Wisconsin, P.E.; J.M. Bailey, Ph.D. Georgia Institute of Technology; J.D. Birdwell, (John Fisher Young Professorship), Ph.D. Massachusetts Institute of Technology; A.O. Bishop, Ph.D. Clemson; T.V. Blacklock, Ph.D. Tennessee; E.R. Bodenheimer, Ph.D. Northwestern; B.K. Bose (Condra Chair of Excellence), Ph.D. Calcutta; D.W. Boulikin, Ph.D. Vanderbilt, P.E.; J.W. Cunningham (Space Institute, Tullahoma), Ph.D. Tennessee; R.C. Gonzales (IBM Professorship, Distinguished Professor), Ph.D. Florida; G.W. Hoffman, Ph.D. Harvard; J.C. Hung (Distinguished Professor), Ph.D. New York, P.E.; E.J. Kennedy (Weston Fulton Professorship), Ph.D. Tennessee, P.E.; J.S. Lawler, Ph.D. Michigan State; W.O. Leefell (Emeritus), M.S. Tennessee; H.P. Neff, Ph.D. Auburn, P.E.; M.O. Pace, Ph.D. Georgia Institute of Technology, P.E.; J.F. Pierce (Distinguished Professor, Emeritus), Ph.D. Pittsburg, P.E.; R.W. Rochelle (Emeritus), Ph.D. Florida; J.R. Roth, Ph.D. Cornell; B. Smith, Jr. (Emeritus), M.S. Illinois, P.E.; F.W. Symonds, Ph.D. Nottingham (UK); J.D. Tillman (Emeritus), Ph.D. Wisconsin, P.E.; H. Weaver (Emeritus), Ph.D. Wisconsin, P.E.

Associate Professors:
R.A. Beil (Space Institute, Tullahoma), Ph.D. Tennessee; B.W. Bomar (Space Institute, Tullahoma), Ph.D. Tennessee; R.D. Joseph (Space Institute, Tullahoma), Ph.D. Case Institute of Technology; A. Pujol (Space Institute, Tullahoma), Ph.D. Auburn, P.E.; C.H. Weaver (Emeritus), Ph.D. Tennessee; M.R. Trivedi, Ph.D. Utah State; J.W. Waller, Ph.D. Tennessee.

Assistant Professors:
M. Abdi, Ph.D. Tennessee; D. Brzakovic, Ph.D. Florida; P.B. Crilly, Ph.D. New Mexico State; D.B. Koch, Ph.D. Missouri-Rolla.

Lecturers:

BACHELOR OF SCIENCE PROGRAM

The course of study for the degree of Bachelor of Science in Electrical Engineering is structured to provide a foundation in both the basic sciences and the specialized areas of electrical and computer engineering. The program also has sufficient non-technical content to enhance the cultural growth of the student and develop professionals with a strong social awareness. The faculty seeks to keep classes small enough to allow effective interaction with students.

The Electrical and Computer Engineering department maintains a number of laboratory facilities to support the undergraduate teaching program. These laboratories are dedicated specifically to circuits, communications, digital systems, electronics, electro-optics, microcomputer processing, machinery, microwaves, plasma, and power electronics and drives. Microcomputer, minicomputer and personal computer facilities are also provided within the department.

Students in the senior year have the freedom to choose from a wide spectrum of courses covering all aspects of electrical and computer engineering. They can select a program with two subjects, or they can take a number of different courses to obtain a broader technical exposure. It is required only that the design content of these senior level ECE courses total at least 8 hours. Students are encouraged to discuss an appropriate senior program with their advisors.

The selection of Humanities/Social Science electives is left to each individual student but must be made in accordance with established College of Engineering guidelines.

Generally all sophomore and junior level courses of the department are offered every term. Senior level courses will normally be offered in either the Fall or the Spring semester. This arrangement allows flexibility, since the student may elect the normal four year schedule, may choose an accelerated schedule, or may participate in the Cooperative Engineering Program. Where one senior course is a prerequisite for another, the first course of the sequence will be offered in the Fall semester. In all courses where prerequisites are indicated, they must be strictly followed.

Progression in the Electrical Engineering program is based on the timely completion of all required freshmen courses. In order to be properly enrolled in ECE 201 students must have completed all courses listed in the freshman year of the engineering curriculum. Students must make application for enrollment in 201 in the ECE department during the semester prior to anticipated enrollment. The application should be submitted in sufficient time to permit proper and complete evaluation.

To be eligible for the Bachelor of Science degree in Electrical Engineering a student must achieve a cumulative grade point average of at least 2.00 in all ECE courses taken at the University of Tennessee, Knoxville.

GRADUATE

Comprehensive course and research programs for the degrees of Master of Science and Doctor of Philosophy in Electrical Engineering are offered for students with career goals such as advanced design, research and teaching. Students admitted to
The undergraduate program is a complete, professional program, equipping the student for entry into a variety of work in industry and engineering, science, and mathematics. In the upper division, the curriculum allows some choice of courses in engineering and in physics depending upon the interest of the student.

The undergraduate program is a complete, professional program, equipping the student for entry into a variety of work in industry and research. The program also leads to graduate work in either physics or engineering.

**ENGINEERING PHYSICS**

Professor W.M. Bugg (Head); Physics staff as listed in the College of Liberal Arts.

The curriculum in engineering physics is designed to fulfill the educational requirements for professional work in various fields of applied science which are based upon a thorough knowledge of physics. The first two years are concerned with fundamental courses in engineering, science, and mathematics. In the upper division, the curriculum allows some choice of courses in engineering and in physics depending upon the interest of the student.

The undergraduate program is a complete, professional program, equipping the student for entry into a variety of work in industry and research. The program also leads to graduate work in either physics or engineering.

**ENGINEERING-science AND-Mechanics**


Research Professor: T.F. Moriarty, Ph.D. Illinois, P.E.

Associate Professors: J.A.M. Boulet, Ph.D. Stanford; E.K. Boyce (Emeritus), M.S. Tennessee; J.E. Caruthers (Space Institute, Tullahoma), Ph.D. Georgia Institute of Technology; R.C. Engels (Space Institute, Tullahoma), Ph.D. Virginia Polytechnic Institute; W.A. Lyday, Jr., M.S. Tennessee; A. Mathews, Ph.D. Illinois, P.E.; M.H. McCoy (Space Institute, Tullahoma), Ph.D. Florida; G.H. Parham, Jr. (Emeritus), B.S. Cincinnati; W.E. Scott, Ph.D. Johns Hopkins; Steinhoff (Space Institute, Tullahoma), Ph.D. University of Chicago.

Assistant Professor: G.N. Brooks, Ph.D. Stanford.

Instructor: S. Foster, M.S. Tennessee.

**BACHELOR OF SCIENCE PROGRAM**

The engineering science degree program is a flexible course of study with elective options available to satisfy individual interests and career objectives. The program provides students an opportunity for an education with breadth in one or more science, mathematics, and physical or biological science. Persons seeking the engineering science degree should feel comfortable in a rigorous, non-traditional and interdisciplinary program. Students receive a solid foundation in the engineering sciences, modern computational techniques, and their selected area of specialty. Thus they are prepared to go directly into engineering, the baccalaureate level or to continue formal engineering education in a Master's or Ph.D. program.

The first two years of study are similar to other engineering disciplines which require students to take fundamental courses in the basic sciences, engineering science, and mathematics. At the junior and senior level, the engineering science program contains the required courses we feel are necessary for the modern practice of engineering. In addition, selected group of technical electives provide the opportunity to develop special interests that cannot be accommodated in other traditional engineering disciplines. Examples of special interest electives that are available are engineering mechanics, biomedical engineering, artificial intelligence applications, engineering materials, and non-destructive evaluation. Other elective groups are currently being developed to help achieve those objectives. Each student, in conjunction with his/her faculty advisor, is required to develop a program of study no later than their junior year. Our program is accredited by the Accreditation Board of Engineering and Technology (ABET).

**MASTER OF SCIENCE AND DOCTORAL PROGRAMS**

Graduate programs leading to the degrees of Master of Science and Doctor of Philosophy with a major in engineering science are available to graduates of recognized curricula in engineering. Graduates of recognized curricula in mathematics, computer science or one of the physical or biological sciences may also qualify for admission depending upon their background or willingness to enroll in selected graduate courses. Program admission is advised as to any prerequisite courses needed to enter a program. Program options include solid mechanics, fluid mechanics, biomedical engineering, artificial intelligence applications, composite materials and fracture mechanics. Interdisciplinary programs are arranged to meet individual needs or interests. The student's program of study must be approved by his or her advisory committee, and must comply with the requirements of the Graduate School. The student's major professor may be selected from a department other than the Department of Engineering Science and Mechanics. General policies of the Graduate School relating to admission, residence, examinations, and research are described in the Graduate Catalog.

**INDUSTRIAL ENGINEERING**

Professors: J.N. Snider (Head), Ph.D. Ohio State, P.E.; W.W. Claycombe, P.D. Virginia Polytechnic Institute, P.E.; E.L. DePorter (IBM Professor),
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 Technical Engineering or to graduates of other technical curricula who take an approved list of prerequisite course work. A non-thesis option with 30 hours of course work plus a 3-hour project is available.

Graduate work in Industrial Engineering provides for concentrations in research 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 culminating 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 30-semester hour program requires 12 hours of course work in an industrial engineering core, 6 hours of technical methods electives, 6 hours of industrial engineering design electives and 6-hour thesis or design project.

MATERIALS SCIENCE AND ENGINEERING

Professors:

J.E. Spruiell (Head), Ph.D. Tennessee; K.H.G. Ashbee, Ph.D. Birmingham (England); D.C. Bogue, Ph.D. Delaware; B.S. Borie (Part-time), Ph.D. Massachusetts Institute of Technology; C.R. Brown, Ph.D. Pennsylvania; A.G. Buchanan, Ph.D. Vanderbilt; E.S. Clark, Ph.D. California (Berkeley); D.A. Canonicum (Adjunct Status), Ph.D. Lehigh; J.F. Fullers, Ph.D. Akron; J.S. Lin (Adjunct Status), Ph.D. Kansas; D.H. Loundes (Part-time), Ph.D. Colorado; C.D. Lundin, Ph.D. Rensselaer Polytechnic Institute; C.J. McNargue (Part-time), Ph.D. Kentucky; B.F. Oliver, Ph.D. Pennsylvania State; P.J. Phillips, Ph.D. London (England); E.E. Stanbury (Emeritus), Ph.D. Cincinnati.

Associate Professors:

W.T. Becker, Ph.D. Illinois; Roberto S. Benson, Ph.D. Pennsylvania State University; C.T. Liu (Adjunct Status), Ph.D. Brown University; T.T. Meek, Ph.D. Ohio State; A.J. Pedraza, PhD. National University (Argentina).

BACHELOR OF SCIENCE PROGRAM

Materials Science and Engineering is concerned with the science and technology needed to develop and apply materials for the benefit of society. The undergraduate program is designed to provide education and training in the fundamental and engineering sciences with special attention given to the production, development and utilization of materials. Emphasis is placed on developing the expertise needed to participate in selection, development and production of materials for major engineering systems. The program strives to develop in its graduates the ability to specify materials requirements, select from existing materials, conceive and characterize new materials and applications, develop the database necessary for use of materials (including an understanding of failure modes and phenomena), and develop processes for improvement of materials and/or materials systems. It is anticipated that some of the program's graduates will continue their education in graduate school; hence it is important that the program prepare those students for advanced studies.

The field of materials science and engineering is quite broad, encompassing metallic, ceramic, and polymeric materials as well as composites made from combinations of materials. Consequently, the curriculum contains a central core of courses that are applicable to all materials types with flexibility in the upper division years to permit concentration and in-depth coverage of specific materials categories. Students have the opportunity to select from three concentrations: metallurgical engineering, polymer engineering or materials engineering. By judicious choice of electives the student may get a broad perspective or may develop a speciality area such as materials processing, mechanical behavior of materials, failure analysis, and materials for electronic devices, or materials characterization.

A minimum of 18 semester-hours of humanities-socail science courses must be taken from the approved list of courses.

Graduation in materials science and engineering requires a minimum grade point average of 2.00 for all departmental courses.

PROGRESSION TO UPPER-DIVISION PROGRAMS

Progression of students to departmental Upper-Division courses is competitive. Factors considered include overall grade point average, performance in upper-division engineering 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 50 semester hours of Lower-Division engineering curriculum course work with an overall GPA of at least 2.4. This must include Materials Science and Engineering 201.

PROVISIONAL STATUS: Students who have completed 50 semester 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 ability to perform satisfactorily in upper-division courses by attaining a minimum GPA of 2.0 in at least 8 hours of 300-level required courses specified by the department. Further progress to upper-division courses is dependent upon this minimum level of performance.
TRANSFER STUDENTS: At the Upper-Division level students are admitted on a Provisional Status basis only. Any student presenting more than 28 semester hours of Lower-Division engineering 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 specialization in mechanical engineering or polymer engineering are offered. Detailed information about graduate programs in materials science and engineering and the requirements for either M.S. or Ph.D. degrees are given in the Graduate Catalog.

MECHANICAL AND AEROSPACE ENGINEERING

Professors:
D.R. Pitts (Head), Ph.D. Georgia Institute of Technology; R.V. Arinilli, Ph.D. Virginia Polytechnic Institute and State University; J.F. Bailey (Emeritus), Ph.D. De Leugh, P.E.; G.W. Broussard (Emeritus, Space Institute, Tullahoma); Ph.D. GOTTingen; F.G. Collins (Space Institute, Tullahoma), Ph.D. California (Berkeley), P.E.; A.J. Edmondson, (Associate Head), Ph.D. Texas A&M; J.A. Euler, Ph.D. Purdue, P.E.; W. Frost (Space Institute, Tullahoma), Ph.D. Washington; G.W. Garrison (Space Institute, Tullahoma), Ph.D. North Carolina State; W.H. Heiser (Space Institute, Tullahoma), Ph.D. Massachusetts Institute of Technology; J.W. Hodgson, Ph.D. Georgia Institute of Technology, P.E.; R.W. Holland (Emeritus), M.S. Tennessee, P.E.; W.S. Johnson, Ph.D. Clemson, P.E.; R.L. Maxwell (Emeritus), Ph.D. North Carolina State; R.J. Krane, Ph.D. Oklahoma State; R.J. Moulden (Space Institute, Tullahoma), Ph.D. Tennessee; H.V.L. Patrick, Ph.D. North Carolina State; R.J. Schultz (Space Institute, Tullahoma), Ph.D. Tennessee; V.G. Volk (Emeritus, Space Institute, Tullahoma), Ph.D. Tennessee.

Assistant Professors:
R.V. Dubey, Ph.D. Clemson, S.M. Jing (Space Institute, Tullahoma), Ph.D. Penn State; M. Keyhani, Ph.D. Ohio State, Ke Nguyen, Ph.D. Colorado.

BACHELOR OF SCIENCE PROGRAM

Separate curricula are offered in aerospace engineering and mechanical engineering; however, the first two years of these curricula are identical. During the first two years, the curricula provide for training and study in the basic sciences of physics, mathematics, chemistry, and engineering common to these fields. The third year of both programs continues with the development of the particular engineering sciences of the aerospace and mechanical engineering fields. In the senior year an opportunity is provided for the student to apply this fundamental knowledge to mechanical and aerospace engineering problems. Both curricula are arranged in the upper-division years to prepare the student for graduate study or technical employment.

Aerospace engineering has scientific foundations close to those of mechanical engineering. The aerospace engineer, however, devotes attention particularly to the research, development, design, testing, and production of aerospace vehicles - aircraft, spacecraft, missiles; auxiliary systems - heating, cooling, guidance, control; and propulsion systems - piston engines, turbo-jets, ramjets, rockets. Emphasis in the senior year is directed toward these topics and the program culminates in a major aerospace design project.

Mechanical engineering, the most versatile engineering discipline, has its foundation in the basic sciences and requires an understanding of such areas of applied science as solid and fluid mechanics, thermodynamics, heat transfer, structures, vibrations, mechanical design, manufacturing processes, and instrumentation in order to resolve the complex engineering problems of the real world. A major design project in the senior year builds upon this background in a capstone experience.

PROGRESSION TO UPPER-DIVISION PROGRAMS

Progression to Upper Division Programs is competitive and is based on departmental 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. A minimum cumulative grade point average of 2.0 for all departmental courses taken at UT Knoxville is required for graduation.

FULL STATUS: A Lower Division student in the department may apply for progression to upper Division Programs after completing 52 semester hours of Lower Division engineering curriculum course work with and overall GPA of at least 2.4.

PROVISIONAL STATUS: Students who have completed 52 semester 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 Status is based on the availability of space in departmental programs after Full status students have been accommodated. Provisional Status students are required to demonstrate their abilities to perform satisfactorily in Upper Division courses by attaining a minimum GPA of 2.0 in at least 11 semester hours of 300 level required engineering courses (including 8 specified hours in the department). Further progression to upper division courses is dependent upon this minimum level of performance.

Any student with an overall GPA below 2.0 will not be admitted to mechanical or aerospace engineering courses. 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 students are admitted on a Provisional Status basis only. Any student presenting more than 28 semester 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 and Doctor of Philosophy with specialization in mechanical engineering or aerospace engineering are available to graduates of recognized undergraduate curricula in mechanical or aerospace engineering and to graduates of the curricula who satisfy the necessary prerequisite courses. The general requirements for advanced degrees are summarized in the Graduate Catalog.

NUCLEAR ENGINEERING

Professors:
T.W. Kerlin (Head), Ph.D. Tennessee; H.L. Dodds, Ph.D. Tennessee, P.E.; E.G. Keshock, Ph.D. Oklahoma State; R.J. Krane, Ph.D. Oklahoma State; H.V.L. Patrick, Ph.D. North Carolina State; R.J. Schultz (Space Institute, Tullahoma), Ph.D. Tennessee; V.G. Volk (Emeritus, Space Institute, Tullahoma), Ph.D. Tennessee; M. P ascas (Emeritus), Ph.D. Northwestern, P.E.; R.B. Perez, Ph.D. Madrid (Spain); H.C. Roland, Ph.D. Tennessee; P.N. Stevens, Ph.D. Northwestern, P.E.; J.E. Turner (Part-time), Ph.D. (Vanderbilt), P.E.; N. Uckan (Part-time), Ph.D. Michigan, R.E. Uhrig (Distinguished Professor), Ph.D. Iowa State, P.E.; B.R. Upadhyaya, Ph.D. California, P.E.

Associate Professors:

BACHELOR OF SCIENCE PROGRAM

The curriculum is designed to provide a thorough educational experience for students interested in careers in nuclear engineering. The first two years are concerned with the fundamental courses needed as preparation.
for upper division courses. In the last two years students take scientific and engineering courses which equip them for entry into industry, research, or graduate studies.

MASTER OF SCIENCE PROGRAM

A graduate program leading to a degree of Master of Science 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' degree 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.

CURRICULA

Course requirements for the various engineering curricula are listed on the following pages. The numbers in the columns indicate the number of semester hours of credit for each course. Individual course prerequisites should be strictly adhered to, even if courses are not taken in the semester indicated. Although the requirements for each degree can be completed in four academic years (five for the cooperative program), the quality of the learning experience is much more important than the speed with which the curriculum is completed.

Questions about individual courses should be directed to the department responsible for the course; questions about a particular curriculum should be directed to the major department.

Prerequisites. Before registering for any engineering course, a student should take certain that any necessary background work has been completed. In addition to specific prerequisites listed, it is assumed that a student taking sophomore engineering courses has completed all freshman courses, whether specifically listed as a prerequisite or not. When this is not the case, a student should seek advice from the advisor or department responsible for the course in question before registration so as to minimize the chances of academic difficulty. Students who do not have prescribed prerequisites may be dropped from a course at any time during a semester when the lack of prerequisites is discovered.

FRESHMAN YEAR

The freshman year is common to all engineering programs, except for engineering physics. (See curriculum display which follows.)

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>English 101, 102</td>
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</tr>
<tr>
<td>Chemistry 120, 130</td>
<td>8</td>
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<tr>
<td>Mathematics 141, 142</td>
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<tr>
<td>Basic Engineering 111, 101</td>
<td>6</td>
</tr>
<tr>
<td>Basic Engineering 121, 131</td>
<td>6</td>
</tr>
<tr>
<td>Base Engineering 100</td>
<td>1</td>
</tr>
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<td><strong>Total:</strong> 35 hours</td>
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AEROSPACE ENGINEERING

<table>
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<tr>
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</tr>
<tr>
<td>Mathematics 231, 241</td>
<td>7</td>
</tr>
<tr>
<td>Mathematics 200</td>
<td>1</td>
</tr>
<tr>
<td>Physics 231, 232</td>
<td>7</td>
</tr>
<tr>
<td>Engineering Science and Mechanics 231, 321</td>
<td>6</td>
</tr>
<tr>
<td>Basic Engineering 201</td>
<td>2</td>
</tr>
<tr>
<td>Mechanical Engineering 331</td>
<td>3</td>
</tr>
<tr>
<td>*Humanities/Social Science Elective</td>
<td>6</td>
</tr>
<tr>
<td>Junior</td>
<td></td>
</tr>
<tr>
<td>Aerospace Engineering 362, 363</td>
<td>6</td>
</tr>
<tr>
<td>Mechanical Engineering 332, 341, 391</td>
<td>9</td>
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<tr>
<td>Aerospace Engineering 345, 351, 370</td>
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<tr>
<td>Electrical and Computer Engineering 301, 302</td>
<td>6</td>
</tr>
<tr>
<td>*Humanities/Social Sciences Electives</td>
<td>6</td>
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<td>Senior</td>
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<tr>
<td>Mechanical Engineering 344, 451</td>
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<tr>
<td>Aerospace Engineering 426, 429</td>
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<td>Aerospace Engineering 431, 449</td>
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<tr>
<td>Technical Electives</td>
<td>3</td>
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<tr>
<td>*Humanities/Social Sciences Electives</td>
<td>6</td>
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<tr>
<td><strong>Total:</strong> 136 hours</td>
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</table>

*Humanities/social science electives: minimum of 18 hours required. (See College of Engineering General Requirements.)

CHEMICAL ENGINEERING

<table>
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<th>Course</th>
<th>Hours Credit</th>
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<tr>
<td>Chemical Engineering 200, 240</td>
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<tr>
<td>Chemistry 310-319, 371</td>
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<tr>
<td>Mathematics 200, 231, 241</td>
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<tr>
<td>Physics 231</td>
<td>3</td>
</tr>
<tr>
<td>*Humanities/Social Science</td>
<td>6</td>
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<tr>
<td>Junior</td>
<td></td>
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<tr>
<td>Chemical Engineering 390, 340, 310, 360, 380</td>
<td>14</td>
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<tr>
<td>Chemistry 350, 381</td>
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<tr>
<td>Material Science and Engineering 201</td>
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<tr>
<td>Chemistry Option</td>
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<td>*Humanities/Social Science</td>
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<td>Senior</td>
<td></td>
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<tr>
<td>Chemical Engineering 450, 440 or 445, 480, 410, 490</td>
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<tr>
<td>Technical Electives</td>
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<td>*Humanities/Social Science</td>
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<td><strong>Total:</strong> 132 hours</td>
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CIVIL ENGINEERING

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<tr>
<td>Mathematics 241, 231, 200</td>
<td>8</td>
</tr>
<tr>
<td>Physics 231</td>
<td>3</td>
</tr>
<tr>
<td>Basic Engineering 201</td>
<td>2</td>
</tr>
<tr>
<td>Engineering Science and Mechanics 231</td>
<td>3</td>
</tr>
<tr>
<td>Civil Engineering 210, 261, 251</td>
<td>9</td>
</tr>
<tr>
<td>Mechanical Engineering 331</td>
<td>3</td>
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<tr>
<td>*Humanities/Social Science</td>
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<td>Junior</td>
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<tr>
<td>Civil Engineering 440, 471, 480, 400, 435, 442</td>
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<td>Engineering Electives</td>
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<tr>
<td>*Humanities/Social Science</td>
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<td>Senior</td>
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<tr>
<td>Civil Engineering 321, 380, 395</td>
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<tr>
<td>*Humanities/Social Science</td>
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<td><strong>Total:</strong> 138 hours</td>
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ENGINEERING PHYSICS

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<tr>
<td>Physics 137 (131), 138 (132)</td>
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<tr>
<td>Mathematics 141, 142</td>
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<td>Chemistry 120, 130</td>
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<td>English 101, 102</td>
<td>6</td>
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<td>Basic Engineering 100, 111</td>
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<tr>
<td>Sophomore</td>
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<tr>
<td>Physics 237 (231), 238 (232)</td>
<td>7-8</td>
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<td>Mathematics 241, 231</td>
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<tr>
<td>*Engineering/Tech. Elective</td>
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<tr>
<td>*Humanities/Social Science Elective</td>
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<td>Junior</td>
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<tr>
<td>Physics 311, 321, 312, 421</td>
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<td>*Physics Lab Elective</td>
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<td>*Engineering/Tech. Elective</td>
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<td>*Humanities/Social Science Elective</td>
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<td>Senior</td>
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<tr>
<td>Physics 431, 432, 412</td>
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<td>*Physics 411</td>
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<tr>
<td>*Engineering/Tech. Elective</td>
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<tr>
<td>Electives</td>
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<td><strong>Total:</strong> 128 hours</td>
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</table>

*Honors courses (137-38, 237-38) are recommended to qualified students. Transfer students from other engineering departments may substitute Basic Engineering 121-131 for Physics 137, but must show training in heat and thermodynamics or take Physics 138 (132).

*A total of 12 hours of engineering electives plus 9 hours of technical electives are required. Engineering electives should form a coherent group of courses taken in the College of Engineering. Technical electives may be taken in physics, engineering, math, other physical sciences, or astronomy.

*Non-technical electives are to be taken in the College of Liberal Arts from departments not included in the technical electives, with at least 10 hours taken in the humanities.

*From Physics 361-362 or Physics 461-462-463.

*Students not planning to pursue graduate studies may substitute Physics 340 and either 341 or 342.
### Engineering Science and Mechanics

<table>
<thead>
<tr>
<th>Semester</th>
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<tbody>
<tr>
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<tr>
<td>Mathematics 241, 231, 200</td>
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<tr>
<td>Physics 231, 232</td>
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<td>Material Science and Engineering 201</td>
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<td>Engineering Science and Mechanics 231, 321</td>
<td>6</td>
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<tr>
<td>Basic Engineering 201</td>
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<tr>
<td>Humanities/Social Science Elective</td>
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<tr>
<td>Technical Elective</td>
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<tr>
<td>Junior</td>
<td>9</td>
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<tr>
<td>Electrical and Computer Engineering 301</td>
<td>3</td>
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<tr>
<td>Engineering Science and Mechanics 301, 341</td>
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<td>Engineering Science and Mechanics 322 or 442</td>
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<td>Mechanical Engineering 331</td>
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<tr>
<td>Industrial Engineering 405</td>
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<td>Mathematics or Statistics Elective</td>
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<td>Technical Electives</td>
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<td>Humanities/Social Science Electives</td>
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**Total:** 133 hours

### Industrial Engineering

<table>
<thead>
<tr>
<th>Semester</th>
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<tr>
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<td>English Elective</td>
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<td>Mathematics 241, 231, 200</td>
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<tr>
<td>Physics 231, 232</td>
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<tr>
<td>Engineering Science and Mechanics 321</td>
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<tr>
<td>Industrial Engineering 200</td>
<td>3</td>
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<tr>
<td>Engineering Science and Mechanics 231</td>
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<tr>
<td>Statistics 251</td>
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<td>Junior</td>
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<tr>
<td>Electrical and Computer Engineering 301, 302</td>
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<td>Industrial Engineering 405, 302, 300, 400</td>
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<td>Industrial Engineering 301, 304</td>
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<td>Nuclear Engineering 310, 311</td>
<td>6</td>
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<td>Economics 404</td>
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<td>Accounting 201</td>
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<td>Senior</td>
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<td>Technical Elective</td>
<td>3</td>
</tr>
<tr>
<td>Industrial Engineering 401, 402, 403, 404, 405, 421, 422</td>
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**Total:** 139 hours

### Materials Science and Engineering

<table>
<thead>
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<td>Sophomore</td>
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<tr>
<td>Basic Engineering 201</td>
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<td>8</td>
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<tr>
<td>Physics 231, 232</td>
<td>7</td>
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<td>Mathematics 200, 231, 241</td>
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<td>Junior</td>
<td>12</td>
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<tr>
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<td>Engineering Science and Mechanics 321</td>
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**Total:** 136 hours

### Nuclear Engineering

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<td>Physics 231, 232</td>
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<td>Nuclear Engineering 201, 203, 202, 204</td>
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<tr>
<td>Electrical and Computer Engineering 301</td>
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<td>Junior</td>
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<tr>
<td>Mathematics 435</td>
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<td>Electrical and Computer Engineering 302</td>
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<td>Nuclear Engineering 301, 305, 306, 302, 304</td>
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<tr>
<td>Engineering Science and Mechanics 321</td>
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<tr>
<td>Senior</td>
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<tr>
<td>Nuclear Engineering 401, 403, 405, 402, 404, 406</td>
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**Total:** 134 hours

### Mechanical Engineering

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<tr>
<td>Mathematics 231, 241, 200</td>
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<tr>
<td>Physics 231, 232</td>
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<tr>
<td>Engineering Science and Mechanics 231, 321</td>
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<tr>
<td>Basic Engineering 201</td>
<td>2</td>
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<tr>
<td>Mechanical Engineering 331</td>
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<tr>
<td>Senior</td>
<td>6</td>
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<tr>
<td>Mechanical Engineering 451, 466, 475, 449, 431</td>
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<tr>
<td>Mechanical Engineering 455 and 459 or 456 and 479</td>
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<td>Technical Elective</td>
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<tr>
<td>Humanities/Social Science Elective</td>
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</tbody>
</table>

**Total:** 135 hours

*All electives must be approved by the student's faculty advisor and the department head. Technical electives (including biomedical engineering courses) are chosen to form a biomedical engineering emphasis. Pre-med, pre-vet, and pre-dentistry programs must include biology/zooology and organic chemistry courses as part of the technical electives.*
College of Human Ecology

Jacquelyn DeJonge, Dean
Frances Andrews, Associate Dean, Academic Administration
James Moran, III, Associate Dean, Graduate Studies, Research and Business Administration
Joan W. Howell, Coordinator, Undergraduate Services

The College of Human Ecology ranks among the top U.S. colleges of its kind in student enrollment, and in the number of master's and doctoral degrees granted. All undergraduate programs of the College are accredited by The American Home Economics Association and the Interior Design program is accredited by the Foundation for Interior Design Education Research (FIDER).

Students in the College are prepared as specialists within the integrated professional field of Human Ecology, which is focused on investigating the interactions between individuals and families, and their near environments. The faculty are not content with studying and teaching "what is"; they make the College's programs relevant to career goals and aspirations of today's students by promoting "what can and should be."

Human Ecology graduates are employed in professional positions that serve individuals, families, and consumers by helping them predict and solve future-oriented problems. The College's undergraduate programs prepare individuals to work as career professionals in fields like merchandising, interior design, hospitality management, textile science, applied child development, dietetics, and teacher education.

All departments of the College conduct basic and applied research supported by grants and contracts, and by the Agricultural Experiment Station. The diverse instructional and research facilities feature state-of-the-art equipment: closed-circuit television for observing children in Child Development Labs; an accredited small animal laboratory for nutrition research; a quantity foods demonstration facility for hotel, restaurant administration; the only non-woven textile processing laboratory with a melt-blown line on a college campus in the world, and a newly renovated microcomputer laboratory.

Fifty full-time faculty staff three departments in Child and Family Studies; Nutrition and Food Sciences; and Textiles, Merchandising and Design. Curricula lead to Bachelor of Science degrees in Human Ecology, in Home Economics, in Hotel and Restaurant Administration, and in Interior Design.

TEACHER CERTIFICATION IN VOCATIONAL HOME ECONOMICS EDUCATION AND EDUCATIONAL PROGRAMS FOR HOME ECONOMICS EXTENSION EDUCATION

A teacher certification program for secondary home economics teachers is available within the College. Individuals interested in community-based home economics programs such as Extension should follow this curriculum or the Family Life Education Program. Both programs include comprehensive study in all areas of home economics as well as in educational principles, and are housed in the Child and Family Studies Department.

UNDERGRADUATE STUDY IN HUMAN ECOLOGY

Curricula in the following majors lead to a Bachelor of Science degree in Human Ecology:

• Child and Family Studies with concentrations in Applied Child Development Family and Human Development, and Family Life Education;
• Nutrition and Food Sciences;
• Textiles, Merchandising, and Design with concentrations in Merchandising, Textile Science, and Apparel. Curricula in the following majors lead to Bachelor Science degrees with specific titles:
• Home Economics Education with concentration in Home Economics Teacher Education and Family Life Education leads to a Bachelor of Science in Home Economics;
• Interior Design leads to a Bachelor of Science in Interior Design; and
• Hotel and Restaurant Administration leads to a Bachelor of Science in Hotel Restaurant Administration.

COLLEGE POLICIES

Students working toward degrees must complete the last 30 hours of work (two semesters) at UT, Knoxville, in a degree program within the College of Human Ecology. Forty-eight hours must be earned in 300-400 level courses. Usual course loads of College majors are 15-16 hours; course loads over 19 hours must be approved by the Dean's Office at the time of registration. Prospective transfer students are advised to plan a total college program before starting any college-level work to achieve maximum use of credit and sequence of course work.

Students wishing to transfer to the College must have at least a 2.0 grade point average on a 4.0 scale. Progression requirements for each program must be met also.

All freshmen are advised by Dean's Office staff; other students are assigned an advisor in the specific program areas. New transfer students are advised initially by Dean's Office staff and then are assigned departmental program advisors. Students meet with academic advisors each semester. These conferences are designed to help students define choices to achieve academic success; identify career choices available; attain a balance between general education and professional studies; and, identify problems and potential solutions early in the academic program.

REQUIREMENTS FOR ALL CURRICULA

All students take Human Ecology 200 Professional Orientation (3) and Human Ecology 400 Professional Environments (3). These undergraduate professional courses emphasize an interdisciplinary, ecological philosophy of the professional field. The primary elements of these courses in Human Ecology are the central place given to the interdependent nature of social relationships;
the reciprocal nature of the relationship between social behaviors and their environments; and a focus on these relationships to search for implications of and predictions for individuals and family well-being. Professionals within the field have translated these key elements into the practical application of knowledge to manage human and material resources to help families maximize the potential for their members, individually and corporately.

PROGRESSION REQUIREMENTS

All programs in the College have specific requirements for progression.

APPLIED CHILD DEVELOPMENT CONCENTRATION
For progression into the applied child development concentration, students must meet the following criteria:
1. Complete at least 30 semester hours
2. Attain a minimum grade of "C" in all CFS courses
3. Earn a cumulative GPA of at least 2.3
4. Transfer hours included
5. Apply for review by the Early Childhood Education Review Panel
6. Successfully complete an interview, which includes evaluation of written and oral communication skills, with Applied Child Development Review Panel prior to the junior year of methods courses (CFS 350, 351). Students will perform within normal limits on speech and written evaluations. If these standards are not met, students will be denied progression and may choose to participate in remedial activities through the University Hearing and Speech Center and/or the University's Writing Center. Students who participate in remedial activities may re-apply for progression into the program (one time only) after waiting at least two semesters.
For progression into Student Teaching (CFS 470), students must meet the following criteria:
1. Progress into the concentration
2. Complete CFS 110, 211, 350 and 351
3. Complete at least 90 hours (senior standing)
4. Complete an application to student teach (during sophomore year)
5. Obtain written permission from academic advisor
6. Attain a minimum of "C" in all CFS courses
7. Earn and maintain a cumulative GPA of at least 2.3
8. Obtain and maintain written permission from academic advisor
9. Complete a successful participation experience and satisfactory evaluations in CFS 350 and 351
10. Complete the pre-student teaching orientation in the semester prior to student teaching

FAMILY LIFE EDUCATION CONCENTRATION
In order to progress into the Family Life Education Concentration, students must:
1. Complete prerequisites for the family life education practicum (CFS 480): CFS 210, 220, 240; 211 or 352, 320, or 360 or 420, 430; HEED 440; attain senior standing; obtain written permission from advisor; complete practicum application during the sophomore year.
2. Attain a minimum grade of "C" in all College of Human Ecology courses.
3. Attain and maintain a cumulative GPA of at least 2.3/4.0.
4. Receive satisfactory evaluations in HEED 320 and 440 and CFS 352 and 430.
5. Complete the practicum interview successfully. Interview includes evaluation of written and oral skills with Family Life Education Review Panel prior to the junior year of methods courses and again prior to practicum semester if student was admitted to Family Life Education with probationary status.
6. Complete Preparation Seminar (CFS 479) in the semester prior to enrollment in Practicum (CFS 480).

HOME ECONOMICS EDUCATION MAJORS
Family Life Education Concentration (see above)

HOME ECONOMICS TEACHER EDUCATION CONCENTRATION
Potential teachers must meet teacher education requirements of the College of Education and apply to be admitted to Teacher Education. (See College of Education pages 64, 65 and 66.)

HOTEL AND RESTAURANT ADMINISTRATION
For progression into the program, 1. 30 semester hours completed 2. Cumulative GPA of 2.5 or greater 3. Grade of "C" or better in the following courses: English 101 and 102, Math 119 and 121, NFS 100 and 101 and HRA 120
4. Complete an application form available from the Program Director; (1) Applications are submitted to the Director the semester prior to taking upper level courses, (2) Applications are due May 1 and December 1, respectively. Notification of acceptance will be mailed after grades and courses are reviewed from the previous term. (3) Students may register for program courses under the assumption that they will be progressed; transcripts will be reviewed at the end of the application semester to verify progression criteria have been met. Students failing to meet progression criteria will be dropped from the program classes, and (4) Students can apply for progression only twice.
For progression through and retention in the program, students are required to maintain progression standards to continue in the program. In order to progress through the program, students must:
1. Maintain a cumulative GPA of 2.5 or greater. This is overall GPA, not just in the major. (1) Failure to maintain a cumulative GPA of 2.5 or greater will place students on probation for one semester for the opportunity to re-establish the GPA of 2.5 or greater. (2) Failure to re-establish the GPA of 2.5 or greater will result in dismissal from the program. (3) Dismissed students cannot enroll in HRA courses, (4) Dismissed students may reapply to the program after waiting at least two semesters. (5) Students will be allowed to reapply only twice.
2. Earn the grade of "C" or better in all HRA courses.
3. Meet all course prerequisites.

NUTRITION AND FOOD SCIENCE MAJORS
Students should apply for progression after completing DFS 201 with a grade of "C" or better and before DFS 313
For progression into major, students must meet the following criteria:
1. Cumulative grade point average 2.0 or greater
2. Grade of "C" or better in each required NFS prefix course
For progression into major, students must meet the following criteria:
1. Cumulative grade point average 2.5 or greater after 64 hours
For progression into Field Work (TA 490-492), students must meet the following criteria:
1. Cumulative grade point average of 2.5 or greater
2. Recommendation of faculty committee
3. Spring Semester prior to field placement
For progression into Field Work (TA 490-492), students must meet the following criteria:
1. Cumulative grade point average 2.0 or greater after 64 hours
2. Grade of "C" or better in each required ID prefix course

INTERIOR DESIGN MAJORS
Upon admission to UT, Knoxville students may begin the ID major. Progression into third year occurs after completion of ID 240.
For progression into third year, students must meet the following criteria:
1. Cumulative grade point average 2.3 or greater
2. Portfolio review
3. Interview following completion of ID 250
4. Retention, students must meet the following criteria:
1. Grade of "C" or better in each required ID prefix course
2. Grade of "C" or better in each required ID prefix course
3. Course GPA and competency deficiencies must be removed before 85 hours are completed.

OPTIONAL MINORS
With the approval of their advisor and the Dean, students may earn a minor in one or more areas in this College or another college. To earn a minor, students must satisfy the requirements prescribed by the department offering the minor (see below). In addition, at least one-half of the hours required must be completed at UT, Knoxville and all courses must be taken for a letter grade unless otherwise specified. It is assumed that prerequisite courses will be taken and will not apply toward the minor. A student seeking a minor in the College of Human Ecology is declared upon application for graduation. Minors are recorded on the student's transcript without regard to overlap between major and minor course requirements.

Child and Family Studies:
A minor in Child and Family Studies consists of 18 credit hours: 210 Human Development (3); 220 Marriage and Family: Roles and
NUTRITION AND FOOD SCIENCES:
A minor in Nutrition and Food Sciences consists of 18 credit hours: 300 Fundamentals of Nutrition (3) or 313 Advanced Nutrition (4); 411-412 Nutrition and Food Resource Management (3); 413 Experimental Food Science (3); 414 Nutrition and Diet (4); 450 Special Topics: Nutrition and Food Sciences (1-3); 493 Directed Study: Nutrition and Food Sciences (1-3).

TEXTILES, MERCHANDISING AND DESIGN:
A minor in Merchandising consists of 18 credit hours: 120 Textiles I (3); 340 Cultural and Functional Aspects of Apparel (3); 345 Fashion in History (3); 410 Retail Management (3); 411-412 Textile Promotion (3); Textiles and Apparel Elective (3).

A minor in Textile Science consists of 18 credit hours: 120 Textiles (3); 320 Textiles II (3); 420 Textile Microscopy and Physical Testing (3); 452 Textile Fiber Chemistry (3); 455 Textiles and Apparel Economics (3); Textiles and Apparel Economics (3); Textile Science Elective (3).

CHILD AND FAMILY STUDIES:
Professors:
M.L. Bishop (Emerita), Ph.D. Cornell; J.L. Cunningham, Ph.D. Michigan State; G.L. Fox, Ph.D. Michigan; C.E. Gilbert (Emerita), Ed.D. Cornell; R.L. Hightberger (Emerita), Ph.D. Iowa; N.P. Logan (Emerita), Ed.D. Tennessee; J.D. Moran, Ill, Ph.D. Oklahoma State; V.M. Nordquist, Ph.D. Tennessee; E.L. Speer (Emerita), M.A. Columbia; C. Steele (Head), Ed.D. Texas Tech; S. Towerosz, Ph.D. Kansas; P.N. White, Ed.D. Tennessee.

Associate Professors:
J.E. Allen, Ph.D. Purdue; C.A. Buehrer, Ph.D. Minnesota; J.H. McNinis, Ph.D. Florida State.

Assistant Professors:
B. Barber, Ph.D. Brigham Young; L. Blinn, Ph.D. Ohio State; C. Catron, Ed.D. Vanderbilt; D. Smith, Ph.D. Oklahoma State; D. Tegano, Ph.D. Virginia Tech.

The Department of Child and Family Studies is concerned with the creation/discovery and dissemination of knowledge related to human development, family sciences, early childhood education, human economics education, and family life education. The focus is on integrative approaches to the study of human development, educational environments for people of all ages in both formal and informal settings, and family processes that facilitate effective interactions between individuals and society. In teaching, research, and service activities, efforts include facilitating individual and family development, strengthening family relationships, designing social and learning environments in which people can function more effectively and improving resource management and decision making in families. Building on a basic understanding of normal development and the behavior of individuals, families, and institutions, attention is directed to the study of challenges faced by families.

Through a combination of classroom instruction and field-based experience, the department prepares undergraduate students for entry-level positions in diverse occupations and for advanced education. The department offers four concentrations, three are career oriented and one is a general course of study. The largest career specialization is work in day care centers as teachers or directors. Students also are prepared as family life educators and as professional home economics educators in schools, Extension and business.

Within the curricula of undergraduate majors, meet objectives: to enhance their foundation for learning; to obtain a broad, general education; and for most, to prepare to enter a specialized career field within the profession or graduate study. Most concentrations have been constructed to provide a series of educational experiences from basic survey courses to advanced courses of specialized knowledge and from early applied experiences, such as observation and participation, to a professional experience in work settings.

CHILD AND FAMILY STUDIES: APPLIED CHILD DEVELOPMENT CONCENTRATION
This concentration is designed to meet the educational needs of undergraduates whose career plans focus on early childhood education. Closely related opportunities may be found in agencies delivering services to young children and their families, programs that include children with special needs, hospital programs directed to the particular needs of young children, and similar fields that recognize distinct developmental needs of children. This concentration is a good foundation for graduate study in the child area. Hours Credit

Freshman
Child and Family Studies 110, 210, 211 9
English 101, 102 6
*Humanities Elective 3
Mathematics 110, 115 6
*Natural Science Electives 6

Sophomore
Child and Family Studies 213, 350, 351 11
*History Electives 3
Human Ecology 200 3
*Humanities Electives 6
Nutrition and Food Sciences Elective 3
Textiles and Apparel Interior Design Elective 3

Junior
Child and Family Studies 220, 352, 450, 451 12
Computer Science Elective 3
Health 310 3
Social Science Electives 6
*Electives 7

Senior
Child and Family Studies 470 15
*Child and Family Studies Specialization Electives 9
Human Ecology 400 3
Social Science Electives 3
*Electives 0-2

Total: 125 hours

*Courses are to be chosen from two of the following categories: literature; speech or oral interpretation; art or music appreciation; philosophy or religious studies.

One of the following sequences is to be chosen: Astronomy 151-152, Biology 110-120, Botany 110-120, Chemistry 100-110, Chemistry 120-130.

One semester of American History and one semester of another history are to be chosen.

At least 48 hours in 300-400 level courses are required.

Students must select one of the following specializations each requiring 9 semester hours: Early Childhood Education, Early Childhood Special Education, Early Childhood Education Administration, Child Life, Research, or Advancing for list of recommended electives.

CHILD AND FAMILY STUDIES: FAMILY AND HUMAN DEVELOPMENT CONCENTRATION
This concentration is designed to meet educational needs of undergraduates whose career plans are focused on positions in agencies that deliver services to families and family members. Bachelor's and master's degree plans include graduate education.

Hours Credit

Freshman
Child and Family Studies 210, 211 6
English 101, 102 6
Humanities Electives 3
Mathematics 110, 115 6
*Natural Science Electives 6
*Electives 0-2

Sophomore
Child and Family Studies 213, 220, 240 9
Computer Science Elective 3
History Electives 3
Human Ecology 200 3
Nutrition and Food Sciences 100 3
Social Science Electives 6
Speech 210 3

Junior
Child and Family Studies 312, 345, 352 9
*Child and Family Studies Elective 3
*Child and Family Studies Specialization Electives 3
*History Electives 3
*Social Science Electives 3
Textiles and Apparel or Interior Design Elective 3

Senior
Child and Family Studies 360, 420 6
*Child and Family Studies Elective 3
*Child and Family Studies Specialization Electives 18
Human Ecology 400 3

Total: 125 hours

*Three courses are to be chosen from at least two of the following categories: literature, art or music appreciation, philosophy or religious studies.
Select one of the following sequences: Astronomy 151-152, Biology 110-119, Botany 110-120, Chemistry 100-110, 120-130, Geography 131-132, Physics 121-122, or Zoology 210-220.

At least 48 hours in 300-400 level courses are required.

Select one American History course and one other history course. The evolution of artifacts will not satisfy this requirement.

Courses are to be selected from at least two of the following categories: political science, economics, psychology, sociology, geography, and anthropology. Courses from applied fields such as nursing, social work, or human services will not satisfy the requirement.

Students must select one of the following specializations: Research or Social Science.

**SPECIALIZATIONS AVAILABLE IN THE FAMILY AND HUMAN DEVELOPMENT CONCENTRATION**

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<tr>
<td>Psychology 395 or Sociology 331</td>
<td>3 hours</td>
</tr>
<tr>
<td>Electives</td>
<td>14 hours</td>
</tr>
<tr>
<td>Social Science</td>
<td>26 hours</td>
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</table>

Social Science Electives... (see footnote 5 above) 9 hours

Electives 17 hours

**CHILD AND FAMILY STUDIES AND HOME ECONOMICS: FAMILY LIFE EDUCATION CONCENTRATION**

This concentration is a program shared by child and family studies and home economics education students may enroll as a CFS major or as a HEED major. Students pursuing this concentration may receive certification through the American Home Economics Association as a Certified Home Economist or the National Council on Family Relations as a Family Life Educator. This concentration requires students to take general education, subject matter and professional preparation courses that are common to certification by both associations and then allows students to use electives to meet either or both certifications. The concentration recognizes the relationship between home economics education and child and family studies and provides students with a relevant and state of the art course of study which will maximize their professional status and competencies upon graduation. The concentration also prepares students with expertise in the area of family life education who demonstrate professional competencies in both areas of family studies and home economics education.

Under this concentration in Child and Family Studies, students have a choice of three specializations: a general course of study leading to certification as a Family Life Educator; a course of study leading to certification as a Family Life Educator and a Certified Home Economist; and a course of study leading to certification as a Family Life Educator with additional preparation in research methods and statistics. Depending on the electives and the professional certification track chosen by the student, the graduate will be highly competitive for positions in government, community service, educational agencies, health care settings, and churches.

**HOME ECONOMICS EDUCATION**

**Professors:**
I. 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.

This major is a broadly based course of study encompassing all areas of home economics and designed for concentration in either Home Economics Teacher Education or Family Life Education. The concentration in Home Economics Teacher Education meets the professional needs of students who seek certification for teaching home economics in teaching home economics in junior high, secondary and post-secondary schools and in adult and continuing education programs. Also, the Home Economics Teacher Education concentration is for students whose career plans include work in community-based home economics programs which provide families with information and/or services related to home economics subject matter (family economics, home management, consumer education, child development, family relations, parenting skills, foods, nutrition, clothing, and textiles).

The Family Life Education Concentration is a joint program shared by child and family studies and home economics education. Students may enroll as a CFS major or as a HEED major. Students pursuing this concentration may receive certification through the American Home Economics Association as a Certified Home Economist or the National Council on Family Relations as a Family Life Educator.

**HOME ECONOMICS EDUCATION: HOME ECONOMICS TEACHER EDUCATION CONCENTRATION**

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
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**Freshman**

Chemistry 100 ........................................... 4

English 101, 102 ........................................... 6

Mathematics 110 ........................................... 3

Nutrition and Food Sciences 100 ......................... 3

Psychology 110 ........................................... 3

Speech 210 ................................................. 3

Textiles and Apparel 101, 120 ............................. 6

**Sophomore**

Child and Family Studies 210, 211, 220 ................ 9

Home Economics Education 220 ............................ 6

Human Ecology 200 ........................................ 3

Nutrition and Food Sciences 101 .......................... 3

Philosophy 240 or 342 or 345 ............................. 3

Zoology 220 ............................................... 3

**Junior**

Child and Family Studies 213, 220, 240 ................ 9

Child and Family Studies Specialization ................. 9

Computer Science Elective ............................... 3

Economics 201 ............................................. 3

Home Economics Education 220 ............................ 3

Human Ecology 200 ........................................ 3

Philosophy 240 or 342 or 345 ............................. 3

Zoology 220 ............................................... 3

**Senior**

Economics 201 ............................................. 3

Home Economics Education 430, 435 ....................... 9

Humanities Electives ...................................... 6

Mathematics 110 ........................................... 3

Nutrition and Food Sciences 101 .......................... 3

Philosophy 240 or 342 or 345 ............................. 3

Zoology 220 ............................................... 3

**Total:** 125 hours

- One semester of American History and one semester of another history course. The evolution of artifacts will not satisfy this requirement.
- Students must select one of the following specializations: home economics, research, or social science.
- Select one course in literature, art appreciation or music appreciation.
- At least 48 hours in 300-400 level courses are required.

- Select one American History course and one other history course. The evolution of artifacts will not satisfy this requirement.
- Students seeking Teacher Certification should take a literature elective, and an art related course that is non-studio. Students in Family Life Education should take Philosophy 240 or 342 or 345 and either a literature, art appreciation, or music appreciation course.
- Courses marked with an asterisk (*) are required for teacher certification.
- At least 48 hours in 300-400 level courses are required.
Students learn about nutritional needs from the smallest unit of the cell to the individual's needs throughout the lifecycle; the ways that attitudes, and beliefs influence food patterns; the management of resources in foodservice and lodging systems and the properties of foods. Thus, foodservice and lodging professionals can contribute to social needs in regard to nutrition and wellness, foods, lodging, foodservice and the related management areas. Both as professionals and as responsible citizens.

The professional disciplines of Nutrition and Food Sciences and Hotel Restaurant Administration are rooted firmly in general education and provide a clearly defined base of professional knowledge. The foundation for the Nutrition and Food Sciences major includes basic sciences, i.e., chemistry, microbiology, physiology, psychology and sociology. The natural sciences provide a base for understanding food, its functions in the body and the social sciences to better understand cultural aspects of food and food related consumer needs. The study of basic business and management tools enables students in Hotel Restaurant Administration to understand managerial, marketing, technological and computer principles appropriate to the diversity of positions available to graduates entering the marketplace.

In addition, students with a strong research interest may prepare for research-oriented careers in clinical laboratories or as graduate students in nutrition. Also, the Hotel Restaurant Administration program provides a good background for Master's programs emphasizing food systems administration.

**HOTEL AND RESTAURANT ADMINISTRATION**

The Hotel and Restaurant Administration major focuses on meeting the middle- and upper-level management needs of the food and lodging industry. It is a program that assists students in getting the breadth of knowledge, responsibility and creativity to meet the changing environment of complex management problems in industry. Students who want more emphasis in business may complete a business minor by taking courses established by the College of Business Administration. The two specializations are foodservice administration and lodging systems. The foodservice area emphasizes lodging administration, marketing of hospitality services, personnel management and lodging law. Both specializations incorporate knowledge about basic nutrition and the public's concern with wellness.

Both specializations offer extensive field experience in food and lodging properties in Tennessee and in the Southeast. The major requires 9 semesters to integrate knowledge and practice. The curriculum provides a strong base in management, foodservice administration, computation, social sciences, and nutrition. The general education electives help students to sharpen their analytical, conceptual and communication abilities. Graduates of these specializations may start as management trainees in large hotels, and in lodging and restaurant programs with subsequent upward mobility into property management, personnel or purchasing positions. The field experience in the senior year provides a combination of classroom instruction and field based experiences, which give a graduate a competitive edge in attaining career positions.

**NUTRITION AND FOOD SCIENCES**

**Professors:**
- Associate Professors:
  - F.E. Andrews, Ph.D. Ohio State; M.D. Brooks (Memphis), M.S. Alabama; W.C. Morris (Acting Head); Ph.D. Iowa State; B. Haughton, Ed.D. Columbia; J.D. Skinner, Ph.D. Oregon State.

**Assistant Professors:**
- J.W. Bailey, Ph.D. Iowa State; C. Costello, Ph.D. Tennessee: J.A. Powell (Memphis), MPH, North Carolina (Chapel Hill); J. Sneed, Ph.D. Ohio State.

**Instructors:**
- K. Jones, MBA East Texas State; M. McGrath, M.S. Purdue.

The Department of Nutrition and Food Sciences provides individuals with concepts and skills required in a changing society. The philosophy of the department fosters an intensive familiarity with a main field of interest and the recognition of one's responsibility to society. This philosophy is reflected in fields of study which integrate basic and applied sciences, humanities and social sciences.

**OCCUPATIONAL ENDORSEMENTS**

The following endorsements may be added to the Vocational Home Economics Teaching Certificate. They are not part of the requirements for graduation.

**Care and Guidance of Children Endorsement:** 12

**Child and Family Studies 351:** 4

**Home Economics Education 421:** 1

**Home Economics Education 445:** 3

**Clothing Management, Production and Services Endorsement:** 10

**Textiles and Apparel 230:** 3

**Textiles and Apparel 320:** 3

**Home Economics Education 421:** 1

**Home Economics Education 445:** 3

**Food Management, Production and Services Endorsement:** 10

**Nutrition and Food Sciences 220:** 3

**Nutrition and Food Sciences 320:** 2

**Nutrition and Food Sciences 321:** 1

**Home Economics Education 421:** 1

**Home Economics Education 445:** 3

Total: 128 hours

**Courses must be selected from one of the following sequences:**
- Biology 110-120; Chemistry 100-110; Physics 121-122.
- Students interested in hotel/motel management should select Hotel and Restaurant Administration 326 and 426 for 6 of their elective hours.
- At least 48 hours in 300-400 level courses are required.
- Students interested in hotel/motel management should select Hotel and Restaurant Administration 326.
- Courses must be selected from art, music, literature, speech, oral interpretation, philosophy, or religious studies.
- Credit for these courses must be earned at UT, Knoxville.

Courses used to meet this requirement must focus on fundamental historical processes and the roles of individuals in them or the connections and interactions between different aspects of the human experience through political, social, economic, intellectual and cultural developments. Courses in which the evolution of artifacts is traced will not satisfy this requirement.

**NUTRITION AND FOOD SCIENCES**

This major is designed for students interested in basic and applied sciences. Students are expected to acquire advanced education in chemistry, biology, food science, and behavioral sciences. The Nutrition and Food Sciences (dietetics) major is a course of study approved by The American Dietetic Association to meet Minimum Academic
Requirements (Plan V). These requirements are regarded as the basic education component for the preparation of persons entering the dietetic profession. The generalist emphasis of this program prepares individuals to enter the dietetic profession in general dietetics and includes nutrition, foodservice systems management, management theory and principles and communication sciences including computer and statistical applications. Graduates are prepared to enter internships or Approved Pre-Professional Practice Programs (AP4) with a general emphasis. An internship or an approved pre-professional practice experience completes academic and practice requirements for eligibility as a member of The American Dietetic Association and qualifies the graduate to apply for the Registration Examination to become a Registered Dietitian (R.D.). Students may receive more information from the department about R.D. requirements. R.D.'s work as members of health care teams in acute care hospitals and community-based settings, home health care programs, college and university foodservice facilities, wellness clinics and private practice. Extension service and food companies are also avenues of employment.

**TEXTILES, MERCHANDISING AND DESIGN**

**Professors:**
- T.L. Houser, M.S. Tennessee; E. Simpson, Ph.D. University of Oklahoma.

**Assistant Professors:**

The department is dedicated to providing quality undergraduate and graduate teaching, research and public service in the areas of Apparel, Interior Design, Merchandising and Textile Science around the focus of individual needs in the environment and concerned with the design-through-merchandising phases of products in the home and work environments. Physical scientists, designers, social and economic scientists and historians combine their knowledge with the overriding concern of human interaction in the environment. Through a combination of classroom instruction and field based experiences, students prepare for entry level positions in diverse occupations and for advanced education. The largest career concentration in the department is Merchandising, which is one of the largest programs of this type in the Southeast. Retailing is one of the fastest growing segments of our economy, and opportunities for employment will be excellent through the 1990's.

The Interior Design program is accredited by the Council for Interior Design Education Research (FIDER), and is the only five year accredited Interior Design program in the State of Tennessee. Career opportunities are excellent wherever living and working spaces are being planned.

The Textile Science career concentration affords students with an interest in science a career application of technology in textile product development and evaluation. The Apparel career concentration will graduate students for a wide range of management opportunities in the apparel industry in both production and distribution.

All of these programs offer opportunities for field study experiences where students are guided by faculty in the selection of locations for the on-the-job experiences related to their career area as a part of their educational program. Preparation in field study experiences often lead to opportunities for career placement upon graduation.

**INTERIOR DESIGN**

This five-year major is designed for students whose career plans are focused on designing interior environments for living and work spaces. Through coursework and field study experiences, students develop specialized problem solving skills and knowledge for the analysis, planning and design of interior architectural environments. They apply the use of lighting, color and mechanical systems as they plan spaces for both residential and commercial settings. The program emphasizes human well-being and the behavioral aspects of people in their environments. Students will gain experience in a state-of-the-art computer-aided design laboratory, as well as in Interior Design studios. Graduates can expect careers as interior designers for architectural firms or as space planners for hotel or retail chains, in addition to opportunities as product representatives for contract furniture manufacturers or in private practice handling residential or commercial design needs.
communications. By selecting appropriate courses during the junior and senior years, a business minor may be obtained.

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
<td>Freshman</td>
<td>6</td>
</tr>
<tr>
<td>English 101, 102</td>
<td>6</td>
</tr>
<tr>
<td>History elective</td>
<td>3</td>
</tr>
<tr>
<td>Human Ecology 210</td>
<td>3</td>
</tr>
<tr>
<td>History elective</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics 119, 121</td>
<td>6</td>
</tr>
<tr>
<td>Psychology 110</td>
<td>3</td>
</tr>
<tr>
<td>Sociology 100</td>
<td>3</td>
</tr>
<tr>
<td>Textiles and Apparel 120</td>
<td>3</td>
</tr>
<tr>
<td>History elective</td>
<td>3</td>
</tr>
<tr>
<td>Sophomore</td>
<td>3</td>
</tr>
<tr>
<td>Accounting 201, 202</td>
<td>3</td>
</tr>
<tr>
<td>Anthropology 130</td>
<td>3</td>
</tr>
<tr>
<td>Chemistry 100, 110</td>
<td>8</td>
</tr>
<tr>
<td>Economics 201</td>
<td>4</td>
</tr>
<tr>
<td>English 101, 102</td>
<td>6</td>
</tr>
<tr>
<td>Human Ecology 200</td>
<td>3</td>
</tr>
<tr>
<td>Humanities Elective</td>
<td>3</td>
</tr>
<tr>
<td>Statistics 201</td>
<td>3</td>
</tr>
<tr>
<td>Textiles and Apparel 230</td>
<td>3</td>
</tr>
<tr>
<td>Junior</td>
<td>3</td>
</tr>
<tr>
<td>*Child and Family Studies elective</td>
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</tr>
<tr>
<td>Marketing 310</td>
<td>6</td>
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<tr>
<td>Nutrition and Food Sciences Elective</td>
<td>3</td>
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<tr>
<td>Speech 210 or 240</td>
<td>3</td>
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<tr>
<td>Textiles and Apparel 310, 320, 332, 345, 350, 410</td>
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<td>Textiles and Apparel 390</td>
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<td>Senior</td>
<td>1</td>
</tr>
<tr>
<td>Human Ecology 400</td>
<td>3</td>
</tr>
<tr>
<td>Marketing Elective</td>
<td>3</td>
</tr>
<tr>
<td>Textiles and Apparel 340, 415, 450</td>
<td>9</td>
</tr>
<tr>
<td>Textiles and Apparel 490, 492</td>
<td>15</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
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<tr>
<td>Total: 130 hours</td>
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</table>

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>History elective: Course must focus on fundamental historical processes and roles of people in political, social, economic, intellectual, and cultural developments. Courses on evolution of artifacts do not meet requirement.</td>
<td></td>
</tr>
<tr>
<td>Humanities electives: six hour sequence from: art history/appreciation, foreign language, philosophy, music appreciation/history, religious studies, political science.</td>
<td></td>
</tr>
<tr>
<td>*Prerequisite to Mkt 301:</td>
<td></td>
</tr>
<tr>
<td>*OGS and NFS electives MUST be completed PRIOR to enrolling in HE 400.</td>
<td></td>
</tr>
<tr>
<td>*Prerequisites to TA 490 and TA 492.</td>
<td></td>
</tr>
<tr>
<td>*Cumulative GPA of 2.5 is required prior to registering for TA 390. Applications must be obtained from TMD and completed by November 10 of year preceding fieldwork. Student is to complete application in triplicate, obtain advisor's signature and turn in white copy to fieldwork coordinator.</td>
<td></td>
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<tr>
<td>Advisor approved upper division courses may be substituted for fieldwork.</td>
<td></td>
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<tr>
<td>A minimum of 48 upper division semester hours is required for graduation.</td>
<td></td>
</tr>
<tr>
<td>In order to meet the requirements for a minor in business, select one additional 3-credit upper division business course. It is the student's responsibility to request a business minor.</td>
<td></td>
</tr>
</tbody>
</table>

### TEXTILES AND APPAREL: TEXTILE SCIENCE CONCENTRATION

This concentration is designed for students whose career plans are focused on entry level positions in textile related industries. Students with a strong base in math and the natural sciences apply these areas to a study of the physical and chemical properties of fibers, yarns and finishes. The department's research facilities provide unique opportunities for undergraduate students to be exposed to opportunities in industry and the technological advances. Graduates have career opportunities in companies that produce and market textile chemicals, fibers and fabrics and supply apparel, home furnishings, and other textile related products to the consumer. A graduate may expect a career as a textile technologist who tests fabric specifications for a major textile manufacturer or as a research assistant who develops product specifications and acts as a liaison between manufacturing of textiles and their applications in apparel.

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
<td>Freshman</td>
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<tr>
<td>Child and Family Studies Elective</td>
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<td>Chemistry 120, 130</td>
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<td>Economics 201</td>
<td>4</td>
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<tr>
<td>English 101, 102</td>
<td>6</td>
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<tr>
<td>History Elective</td>
<td>3</td>
</tr>
<tr>
<td>Human Ecology 200</td>
<td>3</td>
</tr>
<tr>
<td>Humanities and Arts Electives</td>
<td>6</td>
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<tr>
<td>Mathematics 141, 142</td>
<td>8</td>
</tr>
<tr>
<td>Physics 151, 152</td>
<td>8</td>
</tr>
<tr>
<td>Sociology 100</td>
<td>3</td>
</tr>
<tr>
<td>Textiles and Apparel 320</td>
<td>3</td>
</tr>
<tr>
<td>Junior</td>
<td>3</td>
</tr>
<tr>
<td>Chemistry 350, 360, 369</td>
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</tr>
<tr>
<td>*History Elective</td>
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<tr>
<td>Human Ecology 210</td>
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<tr>
<td>Nutrition and Food Sciences Elective</td>
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<td>Senior</td>
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<td>Human Ecology 400</td>
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<td>Statistics 201</td>
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<td>Textiles and Apparel 330, 422, 450, 495</td>
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<tr>
<td>Electives</td>
<td>14</td>
</tr>
<tr>
<td>Total: 128 hours</td>
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</tr>
</tbody>
</table>

Courses must be chosen from a 2 semester sequence selected from the following: art appreciation/history, music appreciation/history, political science, philosophy, or religious studies.

Courses used to meet this requirement must focus on fundamental historical processes and the roles of individuals in them or the connections and interactions between different aspects of the human experience through political, social, economic, intellectual and cultural developments. Courses in which the evolution of artifacts is traced will not satisfy this requirement.

At least 48 hours in 300-400 level courses are required.

### TEXTILES AND APPAREL: APPAREL CONCENTRATION

This concentration is designed for students whose career plans are focused on entry level positions in the apparel production and management area. Students gain an appreciation for costume design's historic roots and a sense of tomorrow's fashion trends. The curriculum includes business courses for management of personnel and company resources, and the basis of the apparel production process from fabric selection to garment shipping. The use of the department's computer-aided-design laboratory for apparel production allows students to design and grade patterns and develop pattern layouts which interface with the rapidly expanding computer applications in the apparel industry. Students selecting this concentration may expect to take positions in apparel plants as supervisors securing fabrics, planning production procedures, and evaluating garment sample operations, or in establishing quality control and management of personnel and company resources.

<table>
<thead>
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<tbody>
<tr>
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<td>3</td>
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<tr>
<td>Child and Family Studies Elective</td>
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<td>Chemistry 100, 110</td>
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<td>Mathematics 119, 121</td>
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<td>Nutrition and Food Sciences Elective</td>
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<tr>
<td>Sociology 100</td>
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<td>Sophomore</td>
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<td>Accounting 201</td>
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<td>Anthropology 130</td>
<td>3</td>
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<td>Economics 201</td>
<td>4</td>
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<td>Human Ecology 200, 210</td>
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<td>Humanities Electives</td>
<td>3</td>
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<td>Psychology 110</td>
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<td>Speech 210 or 240</td>
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<td>Textiles and Apparel 230, 232</td>
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<tr>
<td>Junior</td>
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<tr>
<td>*History Elective</td>
<td>3</td>
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<tr>
<td>Industrial Engineering 304</td>
<td>3</td>
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<tr>
<td>Statistics 201</td>
<td>3</td>
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<tr>
<td>Textiles and Apparel 320, 330, 345, 350, 360</td>
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</tr>
<tr>
<td>Electives</td>
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<tr>
<td>Senior</td>
<td>3</td>
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<tr>
<td>Human Ecology 400</td>
<td>3</td>
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<tr>
<td>Humanities Elective</td>
<td>3</td>
</tr>
<tr>
<td>Industrial Engineering 305</td>
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<td>Management 301, 431</td>
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<td>Textiles and Apparel 420, 450, 495</td>
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<tr>
<td>Electives</td>
<td>8</td>
</tr>
<tr>
<td>Total: 128 hours</td>
<td></td>
</tr>
</tbody>
</table>

Courses must be chosen from a two semester sequence selected from the following: art appreciation/history, music appreciation/history, political science, religious studies, philosophy.

Courses used to meet this requirement must focus on fundamental historical processes and the roles of individuals in them or the connections and interactions between different aspects of the human experience through political, social, economic, intellectual and cultural developments. Courses in which the evolution of artifacts is traced will not satisfy this requirement.

At least 48 hours in 300-400 level courses are required.
College of Liberal Arts

Lorman Ratner, Dean
Charles O. Jackson, Associate Dean
Jack Armistead, Associate Dean for Academic Programs
Harry C. Jacobson, Associate Dean for Student Academic Affairs
Lee Magid, Associate Dean for Research.

The College of Liberal Arts is home to a wide array of academic disciplines and interdisciplinary programs. Such diverse areas of study as Computer Science and Classics, Anthropology and Zoology, Women’s Studies and Latin American Studies are represented among the twenty-six departments and twelve special programs that compose the College.

The faculty of the College are committed to providing both comprehensive general education and concentrated study in a particular field to all students enrolled at The University of Tennessee, Knoxville. General education offers opportunities to master the basic learning skills necessary to understand a specialized area of study and is essential for the continuation of learning throughout life.

Liberal Arts faculty are also committed to educating students in a discipline. Education with a disciplinary focus prepares students for further study at the graduate level and for careers in business, public service, or any other endeavor. As our world becomes both more specialized and more changeable, the need to find the right balance between general and specialized knowledge becomes essential.

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 enable one to develop an ability to reason and to express oneself clearly, an incentive to absorb emerging knowledge, and a competence to confront the uncertainties of human experience. For the student whose interests and talents lead into an endeavor. As our world becomes both more specialized and more changeable, the need to find the right balance between general and specialized knowledge becomes essential.

The great universities of the world are so labeled because their faculties have earned the reputation of being renowned scholars. The University of Tennessee, Knoxville has earned such a reputation because of the quality of the research and creative activity of its faculty. The student who studies in the College of Liberal Arts has joined a community of scholars. To study with such a talented faculty is to experience the best education possible.

The faculty of the College of Liberal Arts provide to all students a general education and to thousands of students a year a more specialized education in any one of twenty-six disciplines and a dozen or more interdisciplinary programs. The College’s faculty help their students prepare for any and all careers. Faculty research and creative activity are the foundations on which education in this College is built. As a result of that faculty endeavor the lives of students are enriched and the world’s body of knowledge grows. That is the basic mission of the College of Liberal Arts faculty in a research University.

PROGRAMS OF STUDY

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

DEGREES OFFERED

(1) BACHELOR OF ARTS

The Bachelor of Arts 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. The 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 inter-departmental major fields described below.

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.

College Scholars Program - Intended for a limited number of students who are especially qualified and motivated and who have been selected to undertake this honors program, the College Scholars Program permits the students maximum freedom to design a curriculum to meet particular interests and goals.

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) or in the 3+2 program in business and liberal arts. Students taking one of the health sciences curricula proceed directly to specialized training in the chosen area after the third year of liberal arts study and complete the first year of professional study in lieu of satisfying the requirements for the B.A. degree with a major concentration in the college. Students in the 3+2 business and liberal arts program take three years of coursework leading to a B.A. in Liberal Arts, followed by two years of study in the College of Business leading to the M.B.A.

(2) BACHELOR OF SCIENCE

The Bachelor of Science degree, offered in selected departments and programs, is designed for students who wish to pursue a more scientifically or professionally oriented program of study. Three programs leading to this degree are offered:
Basic Program - The Basic Program for the Bachelor of Arts degree contains basic skills and distribution requirements similar to the Basic Program for the B.A. as well as a unique set of requirements for the major including additional study in mathematics, statistics, or laboratory science.

Bachelor of Science in Chemistry - (See Department of Chemistry.)

(3) BACHELOR OF FINE ARTS
(See Department of Art.)

(4) BACHELOR OF MUSIC
(See Department of Music.)

REQUIREMENTS FOR DEGREES

Bachelor of Arts and Bachelor of Science Basic Programs

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

1. All University degree requirements as stated in the front section of the Undergraduate Catalog.
2. A minimum of 124 credit hours;
3. To enhance critical and analytical abilities and decision making.
4. Appropriate work to satisfy basic skills and distribution requirements, counting no course in more than one area (not required in the College Scholars Program);
5. Completion of at least one major (24-40 credits at 200 level or above for B. S. majors and 24-37 credits at 200 level or above for B. A. majors) (up to 6 hours in the major may also be used, where listed, to satisfy basic skills or distribution requirements);
6. Students may choose to develop one or more minors (minimum 15 hours at the 200 level and above);
7. Students may take up to 20 hours of courses graded Satisfactory/No Credit in any area outside the major or minor, basic skills or distribution requirements.

PROGRAMS LEADING TO BACHELOR OF ARTS AND BACHELOR OF SCIENCE DEGREES

The Bachelor of Arts and the Bachelor of Science Degrees share the same program of Basic Skills and Distribution Requirements (except where noted otherwise).

BASIC SKILLS

English Composition

Purpose:
1. To gain and improve the skills necessary to write English exposition prose coherently and convincingly.
2. To improve reading skills.
3. To enhance critical and analytical abilities as applied to key issues and texts.

Requirements:
Students may meet this requirement in one of the following four ways: (0-6 credits)
1. By completing six credits in English writing courses in one of the following series:
   (a) English 101 and 102 (English Composition).
   (b) English 118 (Honors: English Composition) and English 102 (English Composition).
   Students who obtain a grade of A or B in 118 will complete their freshman requirement by choosing 102, a sophomore literature course in the English Department, or English 385 Advanced Expository Writing. If the sophomore literature course appears on the list for Humanities distribution requirements, it may also be counted toward those requirements.
   (c) English 131 and 132 (Composition for Non-Native Speakers of English).
   (d) By earning a score of 4 or 5 on the College Board Advanced Placement Test in English.

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.

Distribution:

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.

Distribution:

Russian 201-202 Intermediate Russian.
Spanish 211-212 Intermediate Spanish.

Mathematics, Formal Reasoning, or Logic

Purpose:
1. To develop the basic calculation skills necessary to full appreciation of the course of study at the university.
2. To understand the logical processes involved in mathematics, 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 three-credit course chosen from those listed below:

Students with a Mathematics ACT score of 24 or above, or those who pass a waiver or proficiency examination on material equivalent to any of these courses, will be exempted from this requirement (0-3 credits). Standards for waiver or proficiency examinations will be set by the appropriate department. Exemption from this requirement will also be granted to students who complete a two-course mathematics package under Divisional Distribution.

Mathematics 110 Algebraic Reasoning; 130 Precalculus;
Philosophy 130 Critical Thinking; 135 Formal Logic.

DISTRIBUTION

1. Divisional Distribution

a. Non-United States History

Purpose:
1. To acquire an appreciation for the richness of the past as a statement of human capability, aspiration, and achievement.
b. To develop a historical perspective on a civilization that differs from or serves as the foundation for studying one's own.
c. To develop the ability to explore continuity and change among historical events and movements, and to be able to assess them critically.
d. 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.

Requirement:
1. By further developing writing skills.

Requirements:
1. Completion of a six-credit, two-course, writing emphasis,
2. Lower-division sequence in non-United States History (6 credits).
3. International students may fulfill this requirement with a United States History sequence.

b. Natural Science

Purpose:
1. To know and understand the basic vocabulary of at least one scientific discipline.
b. To learn the basic discoveries and their importance in one scientific discipline.
c. To be able to use the tools (i.e. mathe-
matics, laboratory equipment, computers, etc.) of one scientific discipline;

d. To understand how to devise hypotheses and how to devise and perform experiments to test them.

e. To learn to apply the methods of at least one scientific discipline in a "hands on" laboratory experience.

f. To be able to analyze a situation on a college level from one particular scientific perspective.

Requirement:
a. Part I: A two-course physical or biological science sequence that includes laboratory work. The following sequences satisfy Part I of this requirement:

  - Astronomy 161-162 Introductory Astronomy with Laboratory; 217-218 Honors: Introductory Astronomy
  - Biology 110-120 General Biology
  - Botany 110-120 General Botany; 118-126 Honors: General Botany
  - Chemistry 100 Principles of Chemistry; 110 Introduction to Organic and Biochemistry; and 120-130 General Chemistry; 121-131 General Chemistry for Chemistry majors); 128-138 Honors: General Chemistry
  - Geography 131-132 Geography of the Natural Environment
  - Geology 101-102 General Geology I, II
  - Zoology 117-118 Honors: Fundamentals of Zoology

b. Part II: A two-course package in science, mathematics, and/or computer science. The following course packages or any sequence listed in Part I will satisfy this requirement:

  - Anthropology 110 Human Origins (package with 210); 210 Principles of Biological Anthropology (package with 110)
  - Astronomy 151-152 Introductory Astronomy (non-lab)
  - Botany 306 Genetics and Society (package with 309) (Same as Anthropology 306); 309 Biology of Human Affairs (package with 306); 310-320 Plants: An Evolutionary Survey I, II; 330-340 Field Botany (can be taken as a package with 310 or 320)
  - Computer Science 111 Computer Organization (package with 112); 112 Data Structure (package with 111)
  - Geology 201 Darwin, Dinosaurs, and Extinctions: An Introduction to Evolution; 202 Earth as an Ecosystem: Modern Problems and Solutions; 203 Geology of the National Parks (Package of any two courses)
  - Mathematics 115 Statistical Reasoning (package with 121); 121 Calculus A (package with 115 or 122 or Statistics 201); 122 Calculus B (package with 115 or 121); 141-142 Calculus I, II (or 147-148 Honors); 151-152 Biocalculus I, II
  - Microbiology 210 General Microbiology (package with Zoology 230).
  - Physics 121-122 Introductory Physics; 141-142 Nature of the Physical World (package with Mathematics 121)
  - Zoology 210-220 Human Biology; 230 Human Physiology (package with Micro 210).

c. Social Science

Purpose:

a. To promote understanding of society and individual relationships.

b. To develop a critical understanding of one or more approaches, perspectives, or methodologies used in the social sciences.

c. 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:

a. Bachelor of Arts students must complete a minimum of 12 credits from at least two departments or programmatic areas indicated below.

b. Bachelor of Science students must complete a minimum of 6 credits from at least two departments or programmatic areas indicated below.

  - Afro-American Studies 201-202 Introduction to Afro-American Studies
  - Anthropology 120 Prehistoric Archaeology; 130 Cultural Anthropology; 230 American Cultures; 382 Principles of Archeology
  - Botany 305 Socio-Economic Impact of Plants
  - Economics 100 Survey of Economic Ideas; 201 Introductory Economics: A Survey Course; 207 Honors: Introductory Economics
  - Geography 111-112 World Geography; 330 Cultural Geography: Core Concepts; 333 Behavioral Geography
  - Human Services 220 Introduction to Human Services
  - Linguistics 200 Language, Linguistics and Society
  - Music History 310 Introduction to Afro-American Music (Same as Afro-American Studies 310); 390 World Music
  - Political Science 101 United States Government and Politics; 102 Introduction to Political Science; 310 Political Community; 107 Honors: United States Government Politics
  - Psychology 110 General Psychology; 177 Honors: General Psychology; 220 Behavior and Experience: Humanistic Psychology
  - Religious Studies 232 Varieties of Religious Community (Same as Sociology 232); 301 Religious Myth, Symbol, and Ritual
  - Sociology 100 General Sociology; 110 Social Problems and Social Change; 344 Power in Society; 370 Social Psychology
  - Speech Communication 100 Introduction to Speech Communication; 220 Interpersonal Communication; 300 Nonverbal Communication; 330 Group Communication
  - Women's Studies 220 Women in Society; 375 Gender in Society (Same as Sociology 375)

d. Humanities

Purpose:

a. To learn to appreciate and interpret significant literary, philosophical, or religious texts by study and application of selected methods or traditions of thought.

b. To develop further abilities to reason critically, to construct arguments, to think creatively, to analyze objectively, to assess evidence, to pose and answer questions, and to respond to and appreciate values.

c. To develop further writing skills.

d. To learn to manipulate symbols (i.e. words, sounds, images, body movements) in a variety of ways and to employ these symbols critically, affectively, and evocatively.

e. To develop abilities to participate as an enlightened observer or as an artist in a discipline within the visual, spatial, musical, theatrical, rhetorical, or written arts.

writing emphasis courses shall require out-of-class writing assignments of at least 3000 words plus at least one in-class essay examination.
Value and Reality: 111 The Human Condition: Knowledge and Reality; 120 Foundations of Western Thought: Antiquity through 1500; 121 Foundations of Western Thought: 1500 through Early Twentieth Century; 240 Ethics: 344 Professional Responsibility (Same as Religious Studies 480).
2. Upper Level Distribution
   a. United States Studies
      Purpose: a. To develop an appreciation and knowledge of United States culture and civilization.
     b. To provide a basis from which to compare foreign cultures and civilizations.
     c. To develop a critical understanding of the sources of values and traditions that constitute contemporary United States civilization.
     d. To develop an understanding of the relationship between individual and societal behavior.
     e. To further develop writing skills.
   The following courses are designated United States Studies courses:

   Afro-American Studies 364 Contemporary Issues in Afro-American Education (Same as Ed. C&I 364); 429 History and Philosophy of Afro-American Education (Same as Ed. C&I 429); 480 Black Communities in Urban America; 483 Afro-American Women in American Society (Same as Women's Studies 483).
   American Studies 310 Introduction to American Studies.
   Anthropology 310 North American Indians; 312 Appalachian Culture; 315 Afro-American Anthropology (Same as American Studies 315); 360 North American Prehistory.
   Economics 331 Government and Business.
   English 332 Women in American Literature (Same as Women's Studies 332); 333 Black American Literature and Aesthetics; 334 Film and American Culture (Same as American Studies 334).
   Geography 361 Regional Geography of the United States and Canada; 363 Geography of the American South; 365 Geography of Appalachia; 425 Historical Geography of the United States.
   History 379 American Issues: Individualism and Community; 380 American Issues: War and the People; 381 American Art; 412 American Mind, Mood and Society; 453 Women in American History (Same as Women's Studies 453).
   Political Science 311 Contemporary Issues in American Public Policy; 312 Popular Culture and American Politics; 330 Law in American Society; 374 American Political Thought.
   Psychology 434 Psychology and Gender (Same as Women's Studies 434).
   Sociology 310 American Society; 340 Class Structure; 343 Race and Ethnicity (Same as Afro-American Studies 343); 455 Society and Law.
   Speech Communication 466 Rhetoric of the Women's Rights Movement (Same as Women's Studies 466).
   Theatre 312-313 History of the American Theatre.
   Women's Studies 310 Emergence of the Modern American Woman; 340 Women, Law and Politics.

   b. Foreign Studies
      Purpose: a. To develop an appreciation and knowledge of a foreign culture and civilization.
     b. To provide a basis from which a student can analyze a foreign culture and civilization.
     c. To develop a critical understanding of the sources of values and traditions that constitute a foreign culture and civilization.
     d. To develop an understanding of the relationship between individual and societal behavior.
     e. To further develop writing skills.
      The following courses are designated Foreign Studies courses:

   NOTE: If Western Civilization is taken to satisfy the non United States History requirement under Divisonal Distribution, 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
   Afro-American Studies 421 Comparative Studies in African and Afro-American Societies. Anthropology 314 Peoples and Cultures of Africa (Same as Afro-American Studies 314); 461 African Prehistory (Same as Afro-American Studies 461).
   Geography 379 Geography of Africa (Same as Afro-American Studies 379).
   Political Science 365 Black African Politics (Same as Afro-American Studies 452).
   Religious Studies 373 African Religions (Same as Afro-American Studies 373 and Anthropology 373).
   Art 365 Chinese Art; 386 Japanese Art; 486 Art of Indian Asia.
   Economics 424 Political Economy of World Development (when topic is Asian).

   Europe and the Soviet Union
   Anthropology 462 Early European Prehistory.
   Classics 331 Archaeology of the Aegean Bronze Age and Early Greece; 334 Cities and Sanctuaries of the Ancient Greek World; 361 Greek Civilization; 382 Roman Civilization; 383 Women in the Greek and Roman World (Same as Women's Studies 383).
   Economics 325 Economic History of the North Atlantic Community.
   English 301 British Culture to 1660; 302 British Culture: 1660 to Present; 401 Medieval Literature.
   French 420 French Cinema; 431 Highlights of French Civilization; 423 Women in French Culture (Same as Women's Studies 423); 432 Contemporary French Culture.
   Geography 375 Geography of the Soviet Union.
   German 323 German Film; 363 Modern German Culture.
   History 319 Modern Europe, 1750-1914; 320 Contemporary Europe, 1900-present; 432 Women in European History (Same as Women's Studies 432).
   Medieval Studies 403 Seminar in Medieval Studies.
   Philosophy 320 Ancient Western Philosophy; 322 Medieval Philosophy; 324 Seventeenth- and Eighteenth-Century Philosophy; 326 Nineteenth- and Twentieth-Century Philosophy.
   Political Science 361 Politics in Western Democracies; 455 Government and Politics of the Soviet Union; 468 Soviet Foreign Policy, Russian 371-372 Background and Main Currents of Russian Culture.
   Russian and East European Studies 410 Selected Topics in Russian and East European Studies.
   Spanish 431 Spanish Civilization.

   Latin America
   Anthropology 313 Peoples and Cultures of Mesoamerica (Same as Latin American Studies 313).
   Economics 424 Political Economy of World Development (when topic is Latin American).
Music History 460 Music Aesthetics.
Physics 490 Background of Physics; 402
Forensics of Physics.
Psychology 496 Senior Seminar: Great
Ideas in Psychology.
Spanish 499 Capstone Colloquium in
Spanish; 495-497 Senior Tutorial in Spanish.
Urban Studies 460 Senior Seminar.
Zoology 409 Perspectives in Zoology.

AREAS OF CONCENTRATION

(1) Required Major
Requirements for specific majors vary by
program and are discussed under each
department or program. A major consists of at
least 24-40 credit hours in courses numbered
200 or above as specified by the department or
program. Up to 6 credit hours taken in the
major may also be used to satisfy basic skills
or distribution requirements where listed. In
addition, students making A or B in English 118
may use a 200-level literature course in the
English Department to satisfy both the second
half of their Composition requirement and part of their Humanities
requirement if the course is listed there. 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 9 credit hours at UT,
Knoxville in each major awarded on this
program. Students may elect as many courses
as desired in any department or program. In
lieu of a major, students may develop an Indi-
vidualized Program (described below). Majors
available in the Basic Program for a B.A. or
B.S. include: Anthropology, Art, Art History,
Audiology, Biochemistry, Biology, Botany,
Chemistry, Classics, Computer Science,
Economics, English, French, Geography,
Geology, German, History, Human Services,
Interdisciplinary Studies, Italian, Mathematics,
Microbiology, Music, Philosophy, Physics,
Political Science, Psychology, Religious
Studies, Russian, Sociology, Spanish, Speech
Communication, Statistics, and Zoology.

(2) Optional Multiple Majors
After the general requirements of basic
skills, distribution and a major have been
satisfied, additional majors may be recorded on
the student's transcript. Students making A or B in English 118
may use a 200-level literature course in the
English Department to satisfy both the second
half of their Composition requirement and part of their Humanities
requirement if the course is listed there. 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 9 credit hours at UT,
Knoxville in each major awarded on this
program. Students may elect as many courses
as desired in any department or program. In
lieu of a major, students may develop an Indi-
vidualized Program (described below). Majors
available in the Basic Program for a B.A. or
B.S. include: Anthropology, Art, Art History,
Audiology, Biochemistry, Biology, Botany,
Chemistry, Classics, Computer Science,
Economics, English, French, Geography,
Geology, German, History, Human Services,
Interdisciplinary Studies, Italian, Mathematics,
Microbiology, Music, Philosophy, Physics,
Political Science, Psychology, Religious
Studies, Russian, Sociology, Spanish, Speech
Communication, Statistics, and Zoology.

(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 major or among
majors and Basic Skills and Distribution
requirements. Students who satisfy the requirements of a degree in a college other than
Liberal Arts may also major or minor inside the
College of Liberal Arts with the approval of the
degree granting unit. The minimum require-
ment for a minor is 15 credit hours in courses
numbered 200 or above. Minors are available in
most departments or programs in which
majors are offered, and also in Portuguese.
Minors may be developed in other colleges or
schools of the University, but must be
approved by the dean of the college in which the
minor is proposed and by the Associate Dean
for Student Academic Affairs in Liberal Arts. At
least 6 of the 15 credit hours required for a
minor must be completed at The University of
Tennessee, Knoxville.

Business Minor for Non-Business
Students: Requirements include the following
courses: Accounting 201-202, Economics 201,
Statistics 201, and 12 hours of upper-
division Business electives at UT, Knoxville. No more
than 3 upper-division hours of Accounting,
Economics, or Statistics may be used for the
minor. Students are responsible for meeting all
prerequisites for 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 requirements. This
dimension of the student's experience in the
University represents that 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 semester.

INDIVIDUALIZED PROGRAM

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

Students in the Individualized Program will
satisfy all the Basic Skills and Distribution
requirements, just as do those in the Basic
Program. The point at which the individualiza-
tion takes place, is in the area of concentration.
Although the quantitative aspect of the area
of concentration is the same as for the major in
the Basic Program (i.e., a minimum of 24 hours
in courses numbered above 200), there is no
restriction in principle on the choice of courses
requiring...
of which it is composed. The student may design a program in consultation with an advisor and submit it for consideration to the Committee on the Individualized Program. The proposed courses of study must have some clear central purpose, usually implemented through intensive work in two or three departments; an undirected scattering of courses will not be approved. For further information contact the Liberal Arts Advising Center.

COLLEGE SCHOLARS PROGRAM

A limited number of freshmen, entering transfer students with fewer than 42 credit hours, and resident students with fewer than 92 at the time of their application, 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 semesters; 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 in order to have such majors or minor officially recognized.

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

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 or Science degree for students preparing for the study of dentistry. Both programs are based upon the curriculum outlined below. In the three-year program the student must complete at least 93 credit hours while enrolled in the college, and the B.S. degree is granted upon satisfactory completion of the first year of study at UT-Memphis. In the four-year program the degree is granted upon completion of 124 or more credit hours while enrolled in the college, including a major of 24 or more hours in addition to the courses listed below. The requirement for a major is waived for those completing their fourth year at UT-Memphis. Students in either the three- or four-year program must complete the last 30 hours of credit in residence at The University of Tennessee, Knoxville, before entering UT-Memphis. Although the B.A. or B.S. degree is not required for admission to the College of Dentistry at Memphis, most of the students accepted into the study of dentistry have the baccalaureate degree before admission. Therefore, pre-dental students are encouraged to plan to complete all requirements for the B.A. or B.S. degree before enrolling in the College of Dentistry.

Therefore, pre-dental students are encouraged to plan to complete all requirements for the B.A. or B.S. degree before enrolling in the College of Dentistry.

Freshman

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>English 101; 102 or equivalent</em></td>
<td>6</td>
</tr>
<tr>
<td><em>Biology 110-120 or Zoology 117-127</em></td>
<td>5</td>
</tr>
<tr>
<td><em>Chemistry 120-130</em></td>
<td>5</td>
</tr>
<tr>
<td><em>Mathematics</em></td>
<td>6-8</td>
</tr>
<tr>
<td>Electives</td>
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Sophomore

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<tr>
<th>Course</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td><em>Basic Skills (b) Foreign Language (Intermediate) 101-110</em></td>
<td>6</td>
</tr>
<tr>
<td><em>Divisional Distribution Humanities (D) Part I</em></td>
<td>3</td>
</tr>
<tr>
<td><em>Divisional Distribution Social Sciences</em></td>
<td>3</td>
</tr>
<tr>
<td><em>Upper Level Distribution (A) U.S. Studies (B) Foreign Studies or (C) Capstone Experience</em></td>
<td>6</td>
</tr>
<tr>
<td><em>Electives</em></td>
<td>16</td>
</tr>
</tbody>
</table>

Total: 124 Minimum Hours

*Or equivalent honors courses.

+Any student who has had two years of Biology or one very good year in high school should take the proficiency tests for Biology 110-120 to determine eligibility for going directly into Biology 210 or 220. Dental schools require 8 hours of General Biology. If a student takes Biology 150 (5 hours), it is recommended that he/she take Biology 210 (3 hours) or 220 (3 hours) to total 8 hours.

*Math placement depends on high school courses and grades, ACT scores, and BA/BS requirements. A math placement handout is available in the Liberal Arts Advising Center, 220 Ayers Hall. Mathematics 141-142, 121-122 or 151-152 are prerequisites to Physics. All students must complete the Math Basic Skills requirements as outlined in the Liberal Arts curriculum.

*This requirement assumes a student has had enough language background in high school to begin an intermediate language sequence at UT, Knoxville. BA students must take a two-semester course package in either literature or a philosophical perspective for Humanities. Part I and Part II students must complete one course from the remaining two lists. BS students must complete a minimum of 6 credits from the courses listed under the Humanities requirement; not more than 3 credits may be taken in the Arts.

*BA students must complete a minimum of 12 credits from at least two areas; BS students must complete a minimum of 6 credits from at least two areas for the Social Science requirement.

*BA students must complete a minimum of 6 credits in one of the three areas and 3 credits from one of the remaining two areas. BS students must complete a minimum of 6 credits in two of the three areas. (Upper Level Distribution).

*Depending upon course selection, a student may require less than the listed elective hours to reach the minimum total of 93 hours. Recommended courses in biology and zoology are genetics, cell biology, and comparative vertebrate anatomy.

PRE-MBA PROGRAM

The college offers a joint B.A./M.B.A. program with the College of Business Administration. Admission requirements are higher than those normally expected of M.B.A. applicants. Desired qualifications include a minimum of 3.4 GPA and a Graduate Management Admission Test Score of 600 or higher.

Students in this program take their first three years of coursework in Liberal Arts, and their last two years in the College of Business Administration. Within their first three years, students will fulfill all general education requirements for the B.A. degree, both upper and lower division, along with a minor offered by one of the Liberal Arts departments. They may use one Economics course only to fulfill distribution requirements, and they are required to take a year of calculus as the only pre-requisite to the M.B.A.

Students interested in the Dual B.A./M.B.A. program are counseled initially in the Liberal Arts Advising Center regarding admission standards and Liberal Arts requirements. At the end of their second year, they will have a conference with the Associate Dean for Graduate Business Programs and be advised of their prospects for formal admission. If the student is a likely candidate, he/she will be advised to take the G.M.A.T. in October of the third year and to submit an application to the M.B.A. program. The admission decision will be made by January of the following year.

Upon admission, students will begin M.B.A. coursework in the fourth year and be awarded a B.A. degree at the end of that year. Students will take 3 hours of coursework during their senior year under the senior privilege rule, which requires them to notify the Graduate School in advance of the course for graduate credit. Upon successful completion of the fifth year the student will receive the M.B.A. degree.

PRE-MEDICAL PROGRAM

The college offers a three-year program leading to a B.S. degree and a four-year program leading to a Bachelor of Arts or Science degree for students preparing for the study of medicine. Both programs are based upon the program outlined below. In the three-year program the student must complete at least 93 credit hours while enrolled in the college, and the B.S. degree is granted upon satisfactory completion of the first year of study at UT-Memphis. In the four-year program the degree is granted upon completion of 124 or more credit hours while enrolled in the college, including a major of 24 or more hours in addition to the courses outlined below. The requirements for a major are waived for those taking their fourth year at UT-Memphis. Students in either the three- or four-year program must complete the last 30 hours of credit in residence at UT, Knoxville before entering UT-Memphis.

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

Freshman

<table>
<thead>
<tr>
<th>Course</th>
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</tr>
</thead>
<tbody>
<tr>
<td><em>English 101, 102 or equivalent</em></td>
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</tr>
<tr>
<td><em>Chemistry 120-130</em></td>
<td>8</td>
</tr>
<tr>
<td><em>Mathematics</em></td>
<td>6-8</td>
</tr>
<tr>
<td><em>Electives</em></td>
<td>3</td>
</tr>
</tbody>
</table>
Sophomore
Chemistry 350, 360, 369
Physics 221, 222
Divisional Distribution (D) Humanities Part I
Divisional Distribution (A) Non U.S. History
Electives
Basic Skills (B) Foreign Language (Intermediate Level Sequence)

Junior
Divisional Distribution (D) Humanities Part II
Divisional Distribution (C) Social Sciences
Upper Level Distribution (U.S. Studies) or Foreign Studies or (C) Capstone Experience
Electives

Total: 93 hours

Senior
Completion of major program and B.A.B.S. requirements or completion of one year at UT-Memphis.

Medical schools require 8 hours of General Biology. If a student begins Biology 150 (5 hours), it is recommended that he/she take Biology 210 (3 hours) to total 8 hours.

Math placement depends on high school courses and grades, ACT scores, and BA/BS requirements. A math placement handout is available in the Liberal Arts Advising Center, 220 Ayres Hall. Mathematics 141-142, 121-122 or 151-152 are prerequisites to Physics. All students must complete the Math Basic Skills requirements as outlined in the Liberal Arts curriculum.

This requirement assumes a student has had enough language background in high school to begin an intermediate language sequence at UT, Knoxville. The College of Medicine at E.T.S.U. requires two quarters of literature. BA students must take a two semester course package in either literature or a philosophical perspective for Humanities Part I and for Part II, one course from the remaining lists. BS students must complete a minimum of six credits from the four lists under the Humanities requirement; not more than 3 credits may be taken in the Arts. BA students must complete a minimum of 12 credits from at least two areas; BS students must complete a minimum of 6 credits from at least two areas for the Social Science requirement.

BA students must complete a minimum of credits in one of the three areas and 3 credits from one of the remaining two areas. BS students must complete a minimum of 6 credits in two of the three areas. (Upper Level Distribution).

Degree upon course selection, a student may require less than the listed elective hours to reach the minimum total of 83 hours. Although not specifically required by the College, the Health Professions Advisory Committee strongly recommends that students include additional work in Biochemistry 310-319, Zoology 330-331 and in Microbiology 310-319.

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 60 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 leads to a B.S. 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 in pharmacy from UT-Memphis, are based upon the program outlined below. In the three-year program, the student must complete at least 93 credit hours while enrolled in the College of Liberal Arts, and the B.S. degree is granted upon satisfactory completion of the first year of study in

Total: 124 Minimum hours

Memphis. In the four-year program the B.A. or B.S. degree is granted upon completion of 124 or more credit hours while enrolled in the college, including a major of 24 or more hours in addition to the courses outlined below. The requirement for a major is waived for those taking their fourth year at UT-Memphis. Students in either the three- or four-year program must complete the last 30 hours of credit in residence at The University of Tennessee, Knoxville, before enrolling in the College of Pharmacy.

Freshman
'English 101, 102' or 'equivalent' 6
'Biology 110-120 or Zoology 117-127' 8
'Chemistry 120-130' 4
'Basic Skills (B) Foreign Language (Intermediate Level Sequence)' 6
'Mathematics' 6

Sophomore
'Chemistry 110' 4
'Zoology 230' 4
'Biology 210-220' 6
'Microbiology 310-319' 4
'Divisional Distribution (D) Humanities Part I' 3
'Divisional Distribution (A) Non U.S. History' 6

Senior
Medical Technology course of study at UTM RCH in Knoxville (12 month program)

Total: 124 Minimum hours

Or equivalent honors courses.

'Students who have had considerable background in biology in high school (e.g., two years of biology or an unusually good one-year course) and have completed general chemistry may be eligible to go directly into Biology 210 or 220. Consult the coordinator of the biology program for more information. Such students must include at least eight hours in biological science in their electives to satisfy the requirement for admission to the medical technology course of study.'

This requirement assumes a student has had enough language background in high school to begin an intermediate language sequence at UT, Knoxville. Math placement depends on high school courses and grades, ACT scores, and BA/BS requirements. A math handout is available in the Liberal Arts Advising Center, 220 Ayres Hall. All students must complete the Math Basic Skills requirement as outlined in the Liberal Arts curriculum. Mathematicians 115-121 or Mathematics 121-122 are required for pre-medical technology students.

'Students having completed the 350-360 Organic series may substitute it for Biochemistry 310.'

Total: 93 hours

Senior
Completion of major program and B.A./B.S. requirements or completion of one year at UT-Memphis.

Or equivalent honors courses.

'Math placement depends on high school courses and grades, ACT scores, and BA/BS requirements. A math placement handout is available in the Liberal Arts Advising Center, 220 Ayres Hall. All students must complete the Math Basic Skills requirement as outlined in the Liberal Arts curriculum. Mathematics 141-142, 121-122 or 151-152 is a prerequisite to Physics. All students must complete the Math Basic Skills requirement as outlined in the Liberal Arts curriculum.'

'This requirement assumes a student has had enough language background in high school to begin an intermediate language sequence at UT, Knoxville. The College of Pharmacy requires a minimum of six hours, it is recommended that he/she take Biology 210 (3 hours) or 220 (3 hours) to total 8 hours.'

'The College of Pharmacy requires a minimum of six hours of English or foreign language in addition to English 101-102. BA students must take a two-semester course package in either literature or a philosophical perspective for Humanities Part I and for Part II, one course from the remaining lists. BS students must complete a minimum of 6 credits from the four lists under the Humanities requirement; not more than 3 credits may be taken in the Arts.'

'Students who complete the Science-Medical Technology Curriculum receive the B.S. degree with a major in medical technology from the College of Liberal Arts. The curriculum requires a minimum of 92 hours of credit which includes the Basic Skills and Distribution requirements of the college prior to application for admission to a final year of study at The University of Tennessee Memorial Research Center and Hospital in Knoxville (UTM RCH). After completion of the course of study at UTM RCH, a Certificate of Laboratory Training is awarded by UTM RCH. Students are then eligible for examination by the Board of Registration of the American Society of Clinical Pathologists in order to be certified as registered medical technologists.'
minimum total of 93 hours. Recommended electives include courses in computer science, business administration, particularly accounting, economics, and marketing.

**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 53 credit hours while enrolled in the College of Liberal Arts, must satisfy the Basic Skills and Distribution requirements, and must complete the last 30 hours in residence at UT, Knoxville before enrolling in the College of Veterinary Medicine. A departmental major is not required. Upon successful completion of the first two years, students may be recommended for admission to the College of Veterinary Medicine. Admission to and successful completion of this program does not assure admission to the College of Veterinary Medicine.

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
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</table>
| *A.* students must take a two-semester course package in either a literature or a philosophical perspective for Humanities, Part I and for Part II students must complete a minimum of 6 credits from the four lists under the Humanities requirement; no more than 3 credits may be taken in the Arts. *B.* students must complete a minimum of 6 credits in one of the two areas. B.S. students must complete a minimum of 6 credits in two of the three areas. *Depending upon major selection, a student may require less than the listed elective hours to reach the minimum total of 93 hours.*

**PREPARATION FOR OTHER PROFESSIONS**

**LIBRARY SCIENCE**

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

**PLANNING**

Students who wish to consider a career in city and regional planning or a related field will find a brief description of the program of the Graduate School of Planning on page 126. Students are accepted into planning from a broad variety of undergraduate backgrounds. Detailed information on the planning profession, admission requirements, and the program of study may be obtained from the Graduate School of Planning.

**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 three requirements of the College of Liberal Arts and must be recommended for certification by the College of Education. The College of Education is approved by the National Council for Accreditation of Teacher Education (NCATE). Certification is granted following successful completion of the coursework and the NCATE recommendation. In the case of a course which satisfies a Basic Skills or Distribution requirement, the credit will be calculated in the student's grade point average. Satisfactory performance in the program may count it for that purpose. In the case of a course which satisfies a major or minor requirement, the credit may count as hours for graduation but may not elect additional S/NC hours.

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
<td>Total: 93 hours</td>
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</tr>
</tbody>
</table>

**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 semester will vary from 1-15 hours. Up to 21 hours of credit earned in this way may be applied toward a degree in the college, although individual departments may have different policies regarding the acceptance of these credits.
INDEPENDENT STUDY
Certain educational goals may best be met though independent study done by an individual under the direction of a faculty member. Students who wish to do such independent work should obtain the approval of the faculty member and the departments concerned prior to embarking upon their study. Credit per semester will vary from 1-15 hours. Up to 21 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 and offered on a semester or summer term basis. A second is through programs conducted abroad by other academic institutions in which UT, Knoxville students with approval may enroll for credit. Assistance in identification and registration in such programs may be obtained through the Overseas Study Information Service located in the University's Division of International Education. A third opportunity is through individualized programs under the direction of a faculty member. Students who wish to do such independent study done by an individual under the direction of a faculty member. Students who wish to do such independent work should obtain the approval of the faculty member and the departments concerned prior to embarking upon their study. Credit per semester will vary from 1-15 hours. Up to 21 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.

AFRO-AMERICAN STUDIES
See Interdisciplinary Programs.

AMERICAN STUDIES
See Interdisciplinary Programs.

ANCIENT MEDITERRANEAN CIVILIZATIONS
See Interdisciplinary Programs.

ANTHROPOLOGY

Professors:
W.M. Bass (Head and Alumni Distinguished Service Professor), Ph.D. Pennsylvania; H. Faulkner, Ph.D. Indiana; R.L. Jantz, Ph.D. Kansas; P.W. Parmalee (Emeritus), Ph.D.

Texas A&M; M.C. Wheeler (Emerita), Ph.D. Yale.

Associate Professors:

Research Associate Professor:

Assistant Professors:
M.A. Bass, Ph.D. Kansas State (part-time); A. Galloway, Ph.D. Arizona.

Research Assistant Professor:
S. Tardiff, Ph.D. Michigan State.

Anthropology 110, 120, and 130 are prerequisites to a B. A. major in anthropology, which consists of Anthropology 450 and 27 additional hours of upper division course work in Anthropology. This course work shall be distributed as follows:
(1) one course from categories (a), (b), (c), and (d); and two courses from category (e).
(a) archaeological method and theory: 411, 362, 440, 464.
(b) archaeological area: 360, 461, 462, 463.
(c) cultural area: 310, 311, 312, 313, 314, 315.
(d) cultural method and theory: 410, 411, 412, 413.
(e) biological anthropology: 480, 490, 494, 495, 496.
(2) Remaining hours may be selected from any upper division Anthropology courses.

Students with senior standing are encouraged to substitute appropriate 500 level courses with permission of the instructor of the course and approval of the Department Head) for any portion of 1) or 2) above. Anthropology 110, 120, 130 are prerequisites to a minor in anthropology, which consists of 15 hours of upper division Anthropology courses, chosen in consultation with an Anthropology advisor.

ART

Professors:

The B.F.A. in Studio Art is a professionally oriented degree designed for those students planning careers or graduate study in the visual arts. 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 B.F.A. program may take more than 8 semesters. Students are urged to seek departmental advisement each semester to ensure proper scheduling.

Transfer students are advised that a minimum of 21 hours in studio courses, and 6 upper division hours in art history, must be earned at UT, Knoxville. Transfers who expect to enroll in 300 (junior level) or 400 (senior level) courses must present a portfolio of 10-15 works, the majority of which must be in their major area of concentration.

Students may be accepted into advanced media concentrations in Ceramics, Drawing, Painting, Printmaking, Sculpture, Watercolor, and approved Inter-Area combinations, after passing the appropriate portfolio course.

Basic Requirements

<table>
<thead>
<tr>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>Core: Art History 171, 172, 173</td>
</tr>
<tr>
<td>Additional hours</td>
</tr>
<tr>
<td>Studio 101, 103</td>
</tr>
<tr>
<td>Studio 295</td>
</tr>
<tr>
<td>Studio 211 Drawing I; 213 Painting I (or 215 Watercolor I); Sculpture (241 or 243 or 244 or 245 or 246); Printmaking (161 or 262 or 265 or 266)</td>
</tr>
<tr>
<td>Total: 9 hours from the following: 211, 213, 295, 296, 211</td>
</tr>
<tr>
<td>Approved Studio Electives for Concentration</td>
</tr>
</tbody>
</table>

Total: 46

Concentration - Ceramics; Drawing; Painting; Printmaking; Sculpture; Watercolor; or Inter-Area (approved combinations of studio media).

200 level | 3

Portfolio Review (Pre-requisite to 300 and 400 courses) | 0

300 and 400 level | 20

Approved Studio Electives for Concentration | 9

Total: 32

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 6 hours of approved studio courses from Architecture, Art Education, Broadcast Journalism, Computer Science, Vocational Technical Education, Interior Design or Theatre. Students electing a joint Art/Art Education degree (B.F.A./B.B.A.) may take 15 hours in Art Education courses.

Total: 15 hours

General Curriculum

English Composition | 6
Non-U.S. History/Social Science | 6
Natural Science/Mathematics .................................................. 6-8  
Liberal Arts Non-Art Electives .............................................. 14-16  
  
Total: 34 hours  

Total: 127 hours


| B.F.A. in Studio Art and B. S. in Art Education - Joint Degree Program |

Students who wish to obtain certification to teach art in the schools may pursue the joint B.F.A. in Studio Art/B.S. in Art Education degree. For details see Art Education.

| B.F.A. in Graphic Design/Illustration |

The Graphic Design/Illustration major is specifically designed to provide the basic visual education for those persons who wish to pursue careers in the commercial application of art in fields such as advertising, art direction, package design, publications, television, etc. Students are advised that a minimum of 21 hours in studio courses, and 6 upper division hours in art history must be earned at UT, Knoxville. transfers who expect to enroll in 300 (junior level) or 400 (senior level) courses must present a portfolio of 10-15 works, the majority of which must be in graphic design.

No grade below "C" in art courses may be applied to the B.F.A. major. A minimum of 40 credit hours, 300 level or above, must be earned prior to graduation.

A minimum of 127 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 350 (Portfolio Review, S/NIC) is prerequisite to all upper division courses.

| GRAPHIC DESIGN CONCENTRATION |

| Art Core | Art 171, 172, 173 .................................................. 9  
Art History electives .................................................... 6  
Art 101, 103 ................................................................. 4  
Art 2952, 211, 213 (or 215) .............................................. 9  
  
Total: 28 |

| Graphic Design | Art 350 ............................................................... 0  
Art 212, 3 hours electives ............................................. 6  
Art 231 ................................................................. 3  
Art 151, 251, 252, 351, 352, 451, 452, 455 in sequence ........ 23  
Art 355 ................................................................. 1  
Art 456 ................................................................. 12  
  
Total: 45 |

| Design and Professional Electives |

| Art 259, 292, 293, 295, 299, 399, 404, 405, 450, 491, 492, 496, Advertising 250, 350, 490; Marketing 301 .................................................. 12  
  
Total: 6 |

Studio Electives

Students must choose a total of 9 hours from a minimum of two categories: (1) Fiber-Fabric; (2) Papermaking; (3) Printmaking; (4) Ceramics; (5) Sculpture; (6) Metal Design.  

| Professional Electives |

| Advertising 250, 350, Broadcasting 330; Marketing 301 .................................................. 6  
  
Total: 33  

| ILLUSTRATION CONCENTRATION |

| Art Core | Art 171, 172, 173 .................................................. 9  
Art History electives .................................................... 6  
Art 101, 103 ................................................................. 4  
Art 295, 211, 219 (or 215) .............................................. 9  
  
Total: 28  

| Illustration | Art 350 (S/NIC) ..................................................... 0  
Art 212, 9 hours of electives ....................................... 12  
Art 231 ................................................................. 12  
Art 151, 251, 252, 351, 355, 455 in sequence ................. 16  
Art 356 ................................................................. 4  
Art 353, 354, 453, 454 in sequence ............................. 12  
  
Total: 44 |

| Studio Electives |

| A minimum of 12 hours from one of the following areas, 9 hours from a second area (A) Fiber-Fabric, (B) Painting, (C) Printmaking, (D) Sculpture, (E) Watercolor, .................................................. 21  
  
*Approved concentration electives for B.F.A. in Studio Art (Maximum credit hours in parenthesis): Ceramics: Art 212; Sculpture: TAE 165 (3), TAE 166 (3)  
| General Curriculum | English Composition .................................................. 6  
Non U.S. History/Social Science ....................................... 6  
Natural Science/Mathematics ........................................... 6-8  
Liberal Arts Non-Art Electives ........................................ 14-16  
  
Total: 34  

| Total: 127 hours |

In addition to the general B.A. requirements (found in the Undergraduate Catalog), the following are required for B.A. majors in the Art Department:

| B.A. Majors in Art History |

| Prerequisite: Art 172, 173, 183 ....................................... 9  
Major: Art History courses numbered 200 and above (May include Greek and Roman Art and Archaeology, Department of Classics) .................................................. 21  
Studio courses numbered 200 and above ........................................ 6  
Art 481 ................................................................. 3  
  
Total: 39 hours |

Undergraduate work in Art History is enhanced by knowledge of at least one foreign language and by additional studio art experience. Graduate work normally requires reading knowledge of German, French, and any other language appropriate to an area specialization. Students anticipating possible careers in the museum or gallery field are advised that elective hours in Art 482, Museology II, should be considered.

| B.A. Major in Studio |

| Hours Credit |

| Prerequisite: Art 101, 205, 103 ....................................... 7  
Art 171 and 6 additional hours of Art History .................... 9  
  
Total: 33 |

| Studio courses numbered 200 and above, including a minimum of 15 hours in 300-400 level courses ......................... 24  
  
Total: 40 hours |

In addition to the general B.A. requirements, the following are required for minors in the Art Department:

| B.A. Minor in Art History |

| Hours Credit |

| Prerequisite: Art 172, 173 .................................................. 7  	
Minor: Art History courses numbered 200 and above ............... 15  
  
Total: 21 hours |

| B.A. Minor in Studio |

| Hours Credit |

| Prerequisite: Art 101, 103, 295 .............................................. 7  
Art 171, 172, 173 Art History (Any two) .................................. 6  
  
Minor: Studio courses which include a minimum of 8 additional upper-division hours. Concentration may be Ceramics, Drawing, Fiber-Fabric, Painting-Watercolor, Printmaking, Sculpture or a combination from these areas .................................................. 15  
  
Total: 28 hours |

| PI BETA PHI ARROWMONT SCHOOL OF ARTS AND CRAFTS |

| Director: S.J. Blain, M.F.A. Wisconsin. |

Arrowmont, located 40 miles from the UT, Knoxville campus, is a visual arts complex which functions as a regional and national cultural center. In 1954, Pi Beta Phi Fraternity established an affiliation with The University of Tennessee, and with the Department of Art in 1978. The program currently includes spring and summer one and two week media workshops, special weekend conferences, and community classes. Media offerings include: clay, fiber, fabric, metal, wood, stained glass, leather, papermaking, drawing, painting, graphics and photography. Students may receive audit, undergraduate or graduate credit for spring and summer classes through The University of Tennessee, Department of Art. Facilities include well equipped studios, on campus book and supply store, a large auditorium, art library, and resident accommodations. The Arrowmont Gallery presents changing juried, invitational, theme or media oriented exhibitions. The Gallery and Library are open to the public Monday-Saturday, 8:30 a.m. - 5:30 p.m. Arrowmont receives financial
support from chapters of the Pi Beta Phi Fraternity, alumnae clubs, and individual members.

Courses are offered periodically 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.

ASIAN STUDIES
See Interdisciplinary Programs.

ASTRONOMY
See Physics and Astronomy.

AUDIOLoGY AND SPEECH PATHOLOGY

Professors: P.J. Carney (Head), Ph.D. Iowa; S. Adler, Ph.D. Ohio State; C.W. Asp, Ph.D. Ohio State; D.M. Linscomb (Adjunct), Ph.D. Washington; H.L. Luper, Ph.D. Ohio State; 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.J. Ferrell, M.A. Tennessee; E.I. Hamby, Ph.D. Iowa; G.Wallace, Ph.D. Northwestern.

Assistant Professors: D. Arthur, M.A. Tennessee; P. Gordon, Ph.D. Tennessee; A. Krishnan, Ph.D. Texas (Dallas).

Instructors: D. King, M.A. Tennessee; T.R. Singletary, M.S. Colorado State.

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 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 department office, 457 South Stadium Hall, and students are strongly encouraged to consult with the undergraduate advisors in the department as early as possible in their studies. Students majoring in Audiology and Speech Pathology are strongly encouraged to consult frequently with their advisors before selecting additional recommended courses.

BACTERIOLOGY
See Microbiology.

BIOCHEMISTRY

Professors: W.D. Wicks, Ph.D. Harvard (Head); J.E. Churchich, Ph.D. Sheffield (England); L. Huahatcher, Ph.D. Michigan State; J.G. Joshi, Ph.D. Poona (India); K.J. Monty, Ph.D. Rochester.

Associate Professors: J. Koontz, Ph.D. Kentucky.

Assistant Professors: E. Howell, Ph.D. Lehigh; D. Roberts, Ph.D. California (Davis); E. Serperou, Ph.D. Hacettepe (Turkey).

The B.S. major in Biochemistry consists of Biology 210-220, Chemistry 350-360, 369, Physics 221-222, Biochemistry 410, 419, 420, 471, 481, and 3 hours chosen from: Biochemistry 452, Botany 321; Microbiology 310, 319, 410, 430, 439, 439, 440; Zoology 330, 350, 410, 430, 439, 440. Prerequisites to this major are Biology 110-120 (or 150), Chemistry 120, 130, Mathematics 141, 142 and either Mathematics 143, 144 or Computer Science 101.

For a minor in Biochemistry, the following courses are required: Chemistry 350, 380, 389, Biochemistry 410, 419 plus a course for additional credit from Biochemistry 420, 471, 481, and 452.

BIOLOGY CONSORIUM

Director: R.W. Beck, Ph.D. Microbiology.


Additional recommended courses for audiology and speech pathology majors include appropriate coursework from: Anthropology, Biology, Curriculum and Instruction, Educational Psychology, Psychology, Physics, Special Education and Child and Family Studies. Students majoring in Audiology and Speech Pathology are strongly encouraged to consult frequently with their advisors before selecting additional recommended courses.

A B.S. major in Biology may be obtained by completing one of three concentrations: Cell Biology, Organismal and Systems Biology, or Ecology. Prerequisites for all three concentrations are Biology 150 or 110-120, or Botany 110-120 or 118-126, or Zoology 117-118, and Chemistry 120-130. At least 3 hours of upper division courses must be selected from Biochemistry 419, 420, 430, 440, 452; Botany 310-320, 321, 412, 441, 451; Microbiology 310-319, 410, 419, 430-439, 440-449; Zoology 330-331, 350, 360, 400, 403, 404, 410, 420, 440, 445, 448, 460, 465, 490. Not more than 8 hours may be selected from one department. No more than 3 credits of research courses may be counted toward the major.

Concentration in Organismal and Systems Biology consists of Biology 210, 220, 230, Chemistry 350, 360, 369, and 18 hours of upper division courses. Students majoring in Biochemistry 410, 419, 420, 452; Botany, any 300- or 400-level courses but not more than one course from 305, 306, or 309; Microbiology, any 300- or 400-level courses; Zoology, any 300- or 400-level courses. At least 6 hours must be at the 400 level. Not more than 12 hours may be selected from one department. No more than 3 credits of research courses may be counted toward the major.

Concentration in Analytical Chemistry consists of Biology 210, 220, 230, Chemistry 350, 360, 369, one course from among Botany 431, Zoology 450 or 460; either Zoology 470 or Botany 346; and one course from among Forestry, Wildlife and Fisheries 311, 315 or Wildlife and Fisheries Science 443, 444, or 445. An additional 9 hours must be chosen from among these courses: Either Biochemistry 319 of 410; Botany 321, 330, 346, 401, 402, 403, 431; one course from among Geography 413, 433, or 434; Microbiology 470, 479; Zoology 445, 450, 459, 460, 470.

A Minor consists of Biology 210, 220, 230 and 12 hours of upper division courses chosen from the list below. Biochemistry 410-419; Botany, any 300- or 400-level courses; Microbiology, any 300- or 400-level courses; Zoology, any 300- or 400-level courses. (In meeting the upper-division minimum requirement, not more than 6 hours may be credited from any one biological science department, and not more than 3 hours of research courses may be credited.) Prerequisites to the minor are introductory biology courses (Biology 110-120 or Botany 118-128 or Zoology 117-118) and Chemistry 120-130.

BOTANY

The B.S. major in Botany may be obtained by completing one of three concentrations: General Program; Organismal Botany; Cellular and Molecular Botany. Prerequisites for all three concentrations are: Botany 110-120 or 118-128 (recommended), or Biology 110-120, and Chemistry 120-130. Corequisite to the General Program is one of the following sequences: Mathematics 115-121 or 141-142 or 151-152, or Physics 121-122, or Geology 101-102, or Chemistry 350-360-369. Corequisites for both of the other concentrations are: Mathematics 141-142 or 151-152, or Physics 121-122 or Geology 101-102; and Chemistry 350-360-369 (Health Science Organic Chemistry Package may be substituted in the Organismal Concentration).

General Program requirements are: 2 courses from Biology 210-220-230; Botany 310, 320, 321, 330, 1 hour of 371, 1 hour from 400 or 441-442/444/444; 4 hours of additional Botany; and 2 hours of upper division non-Botany courses selected from Biochemistry, Microbiology, or Zoology. A minimum of 29 hours completes this major's option.

Concentration in Organismal Botany requires: Botany 310, 320, 330, 340, 1 hour of 371, 2 hours from 400 or 441-442; and 7 additional hours selected from Botany (305, 306, 309 do not meet this requirement); Biology (220 is recommended for partial fulfillment of this requirement), or upper division Biochemistry, Microbiology, Zoology. A minimum of 38 hours completes this major's option (includes 8 hours of Organic Chemistry).

Concentration in Cellular and Molecular Botany requirements are: Biology 210, 220; Botany 321, 310, 320, 330, or 451, 1 hour of 371, 2 hours from 400 or 441-442; Biochemistry 410; and 3 additional hours selected from Botany (305, 306, 309 do not meet this requirement); Biology (230 is recommended for fulfilling this requirement); or upper division Biochemistry, Microbiology, Zoology. A minimum of 38 hours completes this major's option (includes 8 hours of Organic Chemistry).

Minor consists of 2 courses from Biology 210, 220, 230, 1 hour of Botany 371, and 6 hours of upper-division Botany (not more than one course from 305, 306, 309, and 3 additional hours of upper-division Botany or related Biological sciences. Prerequisite to the minor is Botany 110, 120, or 118, 128 (recommended) or Biology 110, 120.

### CHEMISTRY

**Professors:**

- G. Mamantov (Head and Alumni Distinguished Service Professor), Ph.D. Louisiana State; J.E. Bloor, Ph.D. Manchester (England); N.S. Bowman (Emeritus), Ph.D. Princeton; W.E. Bull, Ph.D. Illinois; J.G. Chambers, Ph.D. Kansas; J.H.D. Emery (Emeritus), Ph.D. Michigan; J.F. Eastham, Ph.D. California (Berkeley); W.H. Fletcher (Emeritus), Ph.D. Minnesota; F.A. Grimm, Ph.D. Cornell; G.A. Guiochon (Distinguished Scientist, Science Alliance of Excellence), Ph.D. Universite de Paris (France); G.W. Kabaka, Ph.D. Purdue; D.C. Kleinfield, Ph.D. Princeton; M.H. Lietzke, Ph.D. Wisconsin; L.J. Magid (Associate Dean), Ph.D. Tennessee; R.M. Magid, Ph.D. Yale; R.M. Pagen, Ph.D. Wisconsin; J.R. Peterson, Ph.D. California (Berkeley); G.K. Schweitzer (Alumni Distinguished Service Professor), Ph.D. Illinois; W.T. Smith (Emeritus), Ph.D. Ohio State; W.A. Van Hook, Ph.D. Johns Hopkins; S. York, (from either of two courses). P. Vickers, Ph.D. (Alumni Distinguished Service Professor), Ph.D. London (England); J.H. Wood (Emeritus), Ph.D. North Carolina; B. Wunderlich (Distinguished Scientist, Science Alliance Center of Excellence), Ph.D. Northwestern.

**Associate Professors:**

- J.L. Ackerman, Ph.D. Texas; S.D. Alexandratos, Ph.D. California (Berkeley); J.E. Bartmess, Ph.D. Northwestern; K.D. Cook, Ph.D. Wisconsin; J.D. Kovac, Ph.D. Yale; C.A. Lane, Ph.D. California (Berkeley); F.M. Schell, Ph.D. Indiana; M. Seppanen, Ph.D. Iowa State; C. Woods, III, Ph.D. North Carolina State.

**Assistant Professors:**

- C.E. Barnes, Ph.D. Stanford; C.S. Feigelman, Ph.D. Colorado; J.H. Shibata, Ph.D. Washington.

### Bachelor of Science in Chemistry

Students who desire to major in chemistry may select from two types of study: Bachelor of Science or Bachelor of Science in Chemistry. Only the latter program is approved by the Committee on Professional Training of the American Chemical Society. It 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 program should, at the earliest opportunity, ask the Liberal Arts Advising Center for assignment of a faculty advisor in the Department of Chemistry. For further information, contact the Head of the Department of Chemistry, 575 Buehler Hall. The B.S. degree is intended primarily for students who may have career objectives in fields other than chemistry, but in fields where chemistry has direct application such as medicine, dentistry, pharmacy, business, and ecology. The B.S. in Chemistry degree is recommended for students planning a career in chemistry. However, with the proper choice of physics, mathematics, and physical chemistry courses, the regular B.S. program is also suitable for such students.

**Requirements:**

- Chemisty 250-260
- Chemisty 230
- Mathematics 241-251
- Physics 131-131
- Distribution Electives

**Sophomore**

- Chemistry 140

**Senior**

- Chemistry 430
- Chemistry 406
- Chemistry 409
- *Chemistry Electives* 6
- Distribution Electives

**Total:** 124 hours

*Must be chosen from German, French or Russian; a student who has had two years of one of these languages in high school will need to complete the elementary sequence before taking the intermediate level sequence.

*The distribution requirements of the College of Liberal Arts are satisfied by taking: Non-U.S. History (6 hours), Social Science (6 hours), Humanities (6 hours), and Upper Level Distribution (3 hours in either U.S. Studies or Foreign Studies and 3 hours Capstone Experience). The number of credit hours shown in each year of the curriculum are merely intended as guidelines.

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

*To be chosen from Chemistry 400, 405, 450, 484, and 490. Chemistry 400 or 405 will also satisfy 3 hours of Upper Level Distribution (Capstone Experience).

B.S. Degree and Chemistry Major

For students wishing to major in chemistry but desiring a more flexible course of study than the B.S. in Chemistry, there is the regular B.S. degree. Because these two programs 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 should ask the Liberal Arts Advising Center for assignment of a faculty advisor in the Department of Chemistry. For further information, contact the Head of the Department of Chemistry, 575 Buehler Hall.

The B.S. degree is intended primarily for students who may have career objectives in fields other than chemistry, but in fields where chemistry has direct application such as medicine, dentistry, pharmacy, business, and ecology. The B.S. in Chemistry degree is recommended for students planning a career in chemistry. However, with the proper choice of physics, mathematics, and physical chemistry courses, the regular B.S. program is also suitable for such students.

Prerequisites to the major are Chemistry 120-130 or (preferably) 121-131 or 128-138, Chemistry 140, and Mathematics 141-142 or 151-152. Corequisite to the major is Physics 220 or 222 or 131-131.

**General Program**

1. **Chemistry 200-210 (3)**
2. **Chemistry 220-230 (3)**
3. **Mathematics 241-251 (7)**
4. **Physics 131-131 (7)**
5. **Distribution Electives (3)**
6. **Junior**
7. **Chemistry 310-320 (6)**
8. **Chemistry 319-329 (3)**
9. **Mathematics 241-251 (7)**
10. **Physics 131-131 (7)**
11. **Distribution Electives (3)**
12. **Senior**
13. **Chemistry 430 (3)**
14. **Chemistry 406 (2)**
15. **Chemistry 409 (2)**
16. ***Chemistry Electives* 6**
17. **Distribution Electives (9)**
18. **Total: 124 hours**

*Hours Credit*

- **Freshman**
  - Chemistry 120-130 or (preferably) 121-131 or 128-138
  - Mathematics 141-142
  - English Composition
  - 12

- **Sophomore**
  - Chemistry 140
  - Mathematics 241-251
  - Physics 131-131
  - 29

- **Senior**
  - Chemistry 300
  - Mathematics 301-302
  - Physics 230-240
  - 36

*The total number of credit hours should be 124.*

*All credit hours must be completed with a grade of 'C' or better.*

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**Curriculum Requirements:**

- English Composition
- Mathematics
- Physics
- Distribution Electives
- Senior
- Distribution Electives
- Total: 124 hours

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*The distribution requirements of the College of Liberal Arts are satisfied by taking: Non-U.S. History (6 hours), Social Science (6 hours), Humanities (6 hours), and Upper Level Distribution (3 hours in either U.S. Studies or Foreign Studies and 3 hours Capstone Experience). The number of credit hours shown in each year of the curriculum are merely intended as guidelines.*

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

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*To be chosen from Chemistry 400, 405, 450, 484, and 490. Chemistry 400 or 405 will also satisfy 3 hours of Upper Level Distribution (Capstone Experience)."
For students planning careers in chemistry, the recommended courses (from the list above) are Mathematics 141-142, Physics 131-231, and Chemistry 473-483; although not required, certain additional courses are strongly suggested for students planning to become chemists: Mathematics 241-251 and Chemistry 231-232 and 401. Because professional chemists need a reading knowledge of foreign languages, intermediate level competency should be acquired in German, French or Russian. Students who are undecided about their career goals and need to consult a chemistry faculty advisor at the earliest opportunity. Unlike the Bachelor of Science in Chemistry, the regular B.S. degree is not approved by the Committee on Professional Training of the American Chemical Society.

A minor in chemistry shall consist of the successful completion of 15 hours of chemistry courses numbered 200 and above including 310, 319 (4 hours) and at least one of the following sequences: 350-360, 369 (8 hours); or 471-481, 479 (8 hours); or 473-483, 479 (8 hours).

Cooperative Program
A cooperative program is available to students who are chemistry majors. After the freshman year, the student alternates a semester in school with a semester in a job in the chemical industry. The program normally requires five years and involves a total of four work semesters and eight school semesters. Students are required to have at least a 2.5 average to enter and remain in the program. Some offerings may not be scheduled to enter the program later than the end of the freshman year. Interested students should make application to the head of the department at least one semester in advance of the beginning of the academic year. Further information will be supplied on request.

Placement in General Chemistry Sequences
The sequences which meet all requirements of the general chemistry and which serve as prerequisites for upper-division courses are 120-130, 121-131, and 128-138; chemistry majors are strongly encouraged to take either of the latter sequences. Courses 100 and 110 emphasize general and organic chemistry, and may be used as prerequisite only for 431.

It is possible to move from one sequence to another if permission for substitution is obtained in advance. For example, a student who finds a need to complete the 120-130 series after having completed 100 may substitute 100 for 120 with approval of the Department of Chemistry and may then take 130. Credit may be received for only one of the courses 100, 120, 121, or 128.

In any chemistry course above the freshman level which has Chemistry 130 as a prerequisite, 110 may be used as a prerequisite with approval of the Department of Chemistry.

Chemistry 128-138 is an honors course designed for the student who has already made considerable progress in science. Class size is limited to promote faculty-student interaction. Selection is based on ACT scores, high school chemistry grade, and, if necessary, performance on a placement examination to be given during the first class meeting. A student receiving a passing grade below B in 128 will complete the year's work by taking 130 or 131.

Beginning students who have had high school chemistry and who have had additional experience (e.g., summer institute study, special research projects, home laboratory) are invited to apply during the summer to the head of the department for permission to take a proficiency examination in one or more sequences of general chemistry. If a satisfactory grade is made on the examination, credit will be allowed for the semester (or course) for which the exam was taken. The Department of Chemistry gives credit in general chemistry to students who present satisfactory scores on the Chemistry Advanced Placement Examination.

CHINESE
See Interdisciplinary Programs (Asian Studies).

CLASSICS

Professors:
H.C. Rutledge (Head), Ph.D. Ohio State; G.C. Gesell, Ph.D. North Carolina (Chapel Hill).

Associate Professors:
C.P. Craig, Ph.D. North Carolina (Chapel Hill); S.D. Marlin, Ph.D. Michigan; J.E. Shelton, Ph.D. Vanderbilt; D.W. Tandy, Ph.D. Yale.

The B.A. major concentration in Greek consists of 27 hours including 21 hours of Greek language courses numbered above 200, and including 3 hours of Classics 422 (capstone). 6 hours chosen from Classics 221-222, 331, 334, 491. The student majoring in Greek is strongly encouraged to have as background History 310 before taking the capstone course. The student concentrating in Greek is encouraged to begin or take advanced work in Latin.

There are two intermediate options in the Greek program, both of which fulfill the Liberal Arts Language requirement and prepare students for advanced work in the third and fourth years. The Classical Option is 261 followed by Upper Division. The New Testament Option in second year Greek is 261-262.

The Greek minor consists of 18 hours including 12 hours of Greek language courses numbered above 200, and 6 hours chosen from Classics 221-222, 331, 334. The student minoring in Greek is encouraged to take Classics 422 (capstone).

The B.A. major concentration in Latin consists of 21 hours including 21 hours of Latin language courses numbered above 200, and including 3 hours of Classics 422 (capstone); 6 hours chosen from Classics 221-222, 331, 334, 491. The student majoring in Latin is strongly encouraged to have as background History 310 or 311 before taking the capstone course. The student concentrating in Latin is encouraged to begin or take advanced work in Greek.

The Latin minor consists of 18 hours including 12 hours of Latin language courses numbered above 200, and 6 hours chosen from Classics 221-222, 331, 334. The student minoring in Latin is encouraged to take Classics 422 (capstone).

Placement Exam. Students who transfer to UT, Knoxville from other colleges and students who enter with high school units in Latin should register for the courses in which they would normally be placed on the basis of such credits. During freshman orientation a placement test will be given, and students will be advised if a change in registration is indicated by the results.

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

COMPARATIVE LITERATURE
See Interdisciplinary Programs.

COMPUTER SCIENCE

Professors:
J.H. Poore (Head), Ph.D. Georgia Tech; Jack Dorgara, Ph.D. New Mexico; R.C. Gonzalez (ECE), Ph.D. Florida; G.R. Sherman, Ph.D. Purdue; M.G. Thomason, Ph.D. Duke.

Associate Professors:
J.D. Case, Ph.D. Illinois; B.W. Char, Ph.D. Berkeley; M.A. Langston, Ph.D. Texas A&M; B.J. MacLennan, Ph.D. Purdue.

Assistant Professors:
J.R.S. Blair, Ph.D. Pittsburgh; D.C. Mutchler, Ph.D. Duke; D.W. Straight, Ph.D. Texas; M.D. Vos, Ph.D. Texas; M. Zemankova, Ph.D. Florida State.

Instructor:
J.W. Mayo, M.S. Tennessee.

The undergraduate major in computer science contains five areas of concentration: Computer Systems, Information Systems, Scientific Computing, Theory of Computation, and Machine Intelligence. Some courses are applicable to more than one concentration; consult the Department for details.

100 or 102 and 111, 112 are prerequisite to a major in computer science which consists of 219, 311; four out of 320, 340, 360, 380, Mathematics 371, plus fifteen hours at the 300 and 400 level. All students must take at least 9 of the 15 hours in one of the concentration areas and must also meet the requirements for the concentration as specified by the Undergraduate Committee.

Mathematics 141-142, 221-222, Physics 151-152 and English 456 or 459 are also required. Students must elect a two-semester lab science sequence in either Biology or Chemistry, or a sequence approved by the Computer Science Department.

It is highly recommended that all Computer Science majors own a personal computer with communications capability.

An undergraduate minor in Computer Science consists of 111 and 112 plus fifteen hours of 300 or 400 level courses.

Progression to the Major:
A student may progress to the major or minor program only after completing courses specified by the department. These courses are listed in the Undergraduate Handbook available in the department. Students who
have completed the specified courses with a minimum GPA of 3.0 and admission to the major or minor program must apply to the departmental office. This should be done as soon as the stated requirements are met so that a decision can be reached prior to the registration deadline of the next semester. Those who are not accepted into the Computer Science degree program will be counseled and advised of educational alternatives.

For undergraduate Computer Science majors who have taken at least three computer science courses at UT, Knoxville, grades in all computer science courses from UT, Knoxville, excluding service courses, 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 in order to be retained in the major. If a student's Computer Science grade point average drops below 2.50, the student will be given a warning. If one or more semester's grades have been received, the student's Computer Science average has not risen to 2.50, the student will be dropped as a major in Computer Science.

A student who desires to be readmitted after being withdrawn as described above must attain an average in Computer Science courses (computed as described above) of at least 2.70.

**ECOLOGY**

**Director:**

Dewey L. Bunting

**Basic Faculty:**


**EcoPoly Program Faculty**


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

Application forms for admission should be obtained from the Graduate School. Inquires concerning the admission requirements should be addressed to the Director, Graduate Program in Ecology, University of Tennessee, Knoxville, Tennessee, 37996-1610. Consult the Graduate Catalog for listing of graduate level courses.

**ECONOMICS**

See faculty listing the College of Business Administration.

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. 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.

**Requirements for a B.A. major in economics consist of:**

1. Economics 201 or equivalent honors courses as a prerequisite to the major and (2) Economics 311 and 313 plus 21 additional hours in upper division economics courses. Majors are encouraged to satisfy Part II of the Natural Science Distribution Requirement with one of the mathematics packages Mathematics 115-121, 121-122, or 141-142. Students planning graduate work in Economics should elect Mathematics 141-142.

2. A minor consists of (1) Economics 201; and (2) 9 additional hours in economics at the upper-level degree. Minors are encouraged to include Economics 311 and 313.

In addition, certification to teach economics in secondary schools is available. Students with such interest should consult the Certification Clerk, Room 212, Claxton Education Building as early in their program as possible to determine the appropriate requirements.

**ENGLISH**

**Professors:**

D.M. Scoll (Head), Ph.D. North Carolina; P.G. Adams (Young Professor and Emeritus), Ph.D. Texas; J.M. Armistead, Ph.D. Duke; E.W. Bratton (Associate Head), Ph.D. Illinois; D.A. Carroll, Ph.D. North Carolina; D.R. Cox, Ph.D. Missouri; K. Cupples (Emeritus), Ph.D. Yale; R. Drake, Jr., Ph.D. Yale; W. Dykeman (Adjunct), Ph.D. North Carolina; A.R. Ensor, Ph.D. Indiana; R.J. Finneran (John C. Hodges Professor), Ph.D. North Carolina; J.H. Fisher (John C. Hodges Professor and Emeritus), Ph.D. North Carolina; N.M. Goslee, Ph.D. Yale; T.J.A. Heffernan, Ph.D. Cambridge; R.M. Kelly (Young Professor), Ph.D. Duke; K.L. Knickelbecker (Emeritus), Ph.D. Yale; M.A. Lofaro, Ph.D. Maryland; F.D. Miller (Emeritus), Ph.D. Virginia; R.B. Miller, Ph.D. Brown; A.R. Penner, Ph.D. Colorado; J.E. Reese, Ph.D. Kentucky; N.J. Sanders (Young Professor), Ph.D. Shakespeare Institute, Stratford-on-Avon; J.D. Schrader (Distinguished Service Professor, Ph.D. Northwestern); W.R. Shurr (Humanities Professor), Ph.D. North Carolina; B.T. Stewart (Emeritus), Ph.D. Northwestern; J.B. Traerh, Jr., Ph.D. Princeton; R.H. Walker (Emeritus), M.A. Texas; T.V. Wheeler, Ph.D. North Carolina; J.M. White (Young Professor), M.A. Cambridge; N. Wright (Emerita), Ph.D. Yale.

**Associate Professors:**


**Assistant Professors:**


**Instructors:**


**Prerequisites and Corequisites:**

1. English 101 and 102, or the equivalents, are prerequisites to all English courses at the 200, 300, and 400 levels; and (2) as a graduation requirement for a B.A., each English major must complete the equivalent of the second year of a foreign language, maintaining a grade average of $C$ in the courses used to fulfill this requirement. (D's in some of these courses can be counted if the overall average is C or better). If a student earns less than a C average, he or she must repeat courses and/or petition the department for a waiver.
Major Requirements: At least 36 semester hours of course work in the English Department, 30 of which must be at the 300 or 400 level. For all English Majors: (1) English 201-202 (British Literature), 221-222 (Literature of the Western World), or any two of 231-232-233 (American Literature). This requirement should be satisfied, if possible, before the student takes courses at the 300-400 level; and (2) English 371 or 372 (study of the English language).

Concentration in Literature: Nine English courses at the 300-400 level, including: (1) English 376 (Colloquium in Literature), to be taken, if possible, near the beginning of the student's major program; (2) at least four courses in literature before 1900, including at least two before 1800 (see departmental brochure, Undergraduate Study in English, for a course list); and (3) four other courses, at least one of which is based on an approach to literature other than literary history (see departmental brochure, Undergraduate Study in English, for a course list).

Concentration in Writing: Nine English courses at the 300-400 level, including: (1) a two-course sequence in expository, technical, or creative writing; (2) three other courses in writing; and (3) four other courses, at least three of which must be literature courses selected in consultation with the advisor.

Individualized Program: The Director of Undergraduate Studies is empowered to approve individualized programs developed by students in consultation with their advisors. Theses approved by the program should be designed to achieve academically sound objectives that are not addressed by the above requirements.

Honors: For students who qualify, the English Department offers specially designed courses for seniors, juniors, and senior levels. The freshman and sophomore honors courses are enriched versions of regular sections in composition, in introduction to the various genres, and in American, British, and world literature. To be given "Honors" in English on the transcript, a student must have achieved a 3.0 or better GPA, a 3.5 or better grade point in English scores, and grades of A or B in English 398 and 498.

An English minor consists of at least 15 semester hours of English courses at the 300-400 level.

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

Graduate Study: Students wishing to enter a graduate program in English should address inquiries to the Dean of the Graduate School. To be accepted for graduate study in English, the student should in general have had at least eighteen semester hours in English courses above the freshman and sophomore level with a better than B average and a B average in all other undergraduate courses. Students who lack eighteen semester hours of undergraduate English may be required to take and pass with a grade of B or better a designated number of undergraduate courses at The University of Tennessee before being admitted to graduate study. Admission is also dependent on satisfactory GRE scores. Consult the Graduate Catalog for specific requirements.

FRENCH
See Romance Languages.

GEOGRAPHY

Professors: S.R. Jumpier (Head), Ph.D. Tennessee; C.S. Aiken, Ph.D. Georgia; T.L. Bell, Ph.D. Iowa; J.R. Carter (Associate Director, UT Computing Center), Ph.D. Georgia; E.H. Hammond (Emeritus). Ph.D. California (Berkeley); R.G. Long (Emeritus). Ph.D. Northwestern; C.W. Minkel (Vice Provost and Dean for Graduate Studies), Ph.D. Syracuse; C.T. Patuldan, Ph.D. Colorado; B.A. Raulston, Ph.D. Northwestern; T.H. Schmidude, Ph.D. Wisconsin; T.J. Wilbanks (Adjunct), Ph.D. Syracuse.

Associate Professors: T.J. Blasing (Adjunct), Ph.D. Wisconsin; L.W. Broussard, Ph.D. Wisconsin; Marilyn Brown (Adjunct), Ph.D. Ohio State; R.A. Foresta, Ph.D. Rutgers; L.M. Pulsipher, Ph.D. Southern Illinois; J.B. Rehder, Ph.D. Louisiana State.

Assistant Professors: C.P. Harden, Ph.D. Colorado (Boulder); S.P. Horn, Ph.D. California (Berkeley).

A B.A. major in Geography Geography 131 and 132 are prerequisite to a major in Geography, which consists of Geography 310, 320, 330, 340, 415 and 495, along with an additional 18 hours selected from geography courses at the 300 and 400 levels. At least one course must be chosen from among Geography 361, 363, 365, 372, 373, 375, and 379, and at least none of the 18 additional hours must be at the 400 level.

Minor: Geography 131 and 132 are prerequisite to a minor in Geography, which consists of Geography 310, 320, 330, and 340, and at least one additional 6 hours selected from upper level geography courses.

Professor: T.J. Blasing (Adjunct), Ph.D. Wisconsin; L.W. Broussard, Ph.D. Wisconsin; Marilyn Brown (Adjunct), Ph.D. Ohio State; R.A. Foresta, Ph.D. Rutgers; L.M. Pulsipher, Ph.D. Southern Illinois; J.B. Rehder, Ph.D. Louisiana State.

GEOLOGICAL SCIENCES

Professors: H.Y. McSween (Head), Ph.D. Harvard; R.D. Hatcher (UT, Knoxville/ORNL Distinguished Scientist), Ph.D. Tennessee; H.J. Klepser (Emeritus), Ph.D. Ohio State; O.C. Kopp, Ph.D. Columbia; K.C. Misra, Ph.D. Western Ontario; R.E. McLaughlin (Emeritus), Ph.D. Tennessee; L.A. Taylor, Ph.D. Lehigh; K.R. Walker (Carden Professor), Ph.D. Yale; 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; P.A. Delcourt, Ph.D. Minnesota; S.G. Drielie, Ph.D. Wisconsin; W.M. Dunne, Ph.D. Bristol; T.C. Labotka, Ph.D. Caltech; R.T. Williams, Ph.D. V.P.I.

Assistant Professor: Hazel R. Butcher, Ph.D. Minnesota; W.M. Dunne, Ph.D. Bristol; Claudia I. Mora, Ph.D. Wisconsin.

Prerequisites to a B.S. major are: Geography 101-102; Chemistry 120-130; Mathematics 141-142; three semesters from Physics 131-132; Biology 110-120. This requirement includes a two semester sequence in one area plus a single semester in the other; the single semester may be satisfied by high school course work in that area.

Major requirement consists of: Geography 310, 320, 330, 340, 370 (16 hours); 3 courses from: Geography 410, 420, 440, 450, 460, 470, 480; and 6 hours of geology courses numbered 300 or above. Geology 440 (field camp) is strongly recommended for students planning a career in geology.

Minor requirement consists of: Prerequisite: Geography 101-102; Geology courses at least 16 hours of courses numbered 200 or higher.

GERMANIC AND SLAVIC LANGUAGES

Professors: James E. Egan, Ph.D. Pennsylvania; Donald M. Fiese, Ph.D. Indiana; H.W. Fuller (Emeritus), Ph.D. Wisconsin; Henry Kratz, Ph.D. Ohio State; John C. Osborn, Ph.D. Northwestern; Martin P. Rice, Ph.D. Vanderbilt; Ursula C. Rittenhoff, Ph.D. Connecticut.

Associate Professors: Carolyn Hodges, Ph.D. Chicago; Nancy A. Lauckner, Ph.D. Wisconsin; David E. Lee (Head), Ph.D. Stanford; Chauncey J. Mellor, Ph.D. Chicago.

Assistant Professor: Jerzy J. Kolodziej, Ph.D. Indiana.

Instructors: Rosemarie Greenman, M.A. Pennsylvania State; Avigail - Rashkovsky, M.A. Tartu.

Placement Examination: Students who have had previous work in German or Russian either in high school or at another college should take a placement test to determine what level course they should elect. Placement tests are given for incoming freshmen during orientation in the summer and also the first week of each semester.

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

Foreign Study: Students are encouraged to study abroad, particularly through participation in the University's International Student Exchange Program (ISEP). The department is also prepared to recommend summer study programs and year abroad programs for students who are interested in foreign study. Credits from recognized foreign study programs can readily be transferred to UT. For qualified students, the department also offers German 491 Foreign Study and Russian 491 Foreign Study. Students
should consult the department before registering for the foreign study courses. The prerequisite to a major which consists of 27 hours of Russian courses, including Russian 301-302, 311-312, 401-402, 451-452, and 6 hours from Russian 221, 222, 226, 321, 322, 326, 371, 372, or other courses numbered above 400. It is recommended that majors also take Russian History 340-341 and 6 hours of sophomore English. Majors are urged to consider a minor in some other area of the humanities.

Minor in Russian: Russian 201-202 is a prerequisite to the minor. The minor in Russian shall consist of at least 18 hours of Russian courses, including Russian 301-302, 311-312, and 6 hours from Russian 221-222 or other Russian courses numbered above 300.

GREEK
See Classics.

HEBREW
See Religious Studies.

HISTORY

Professors:
P.H. Bergeron, Ph.D. Vanderbilt; E.V. Chmielowski, Ph.D. Harvard; J.C. Cobb (Bernadotte Schmidt Professor), Ph.D. Georgia; J.R. Finger, Ph.D. Washington; L.P. Graf (Benwood Distinguished Service Professor and Emeritus), Ph.D. Harvard; Y.P. Hao (Lindsay Young Professor), Ph.D. Harvard; A.G. Haas, Ph.D. Chicago; R.W. Haskins (Emeritus); Ph.D. California (Berkeley); C.O. Jackson (Associate Dean, Liberal Arts College), Ph.D. Emory; M.M. Klein (Alumni Distinguished Service Professor, Lindsay Young Professor and Emeritus), Ph.D. Columbia; M.J. McDonald, Ph.D. Pennsylvania; L.A. Ratner (Dean, Liberal Arts), Ph.D. Cornell; W.B. Wheeler, Ph.D. Virginia.

Associate Professors:

Assistant Professors:
P.H. Brunnett, Ph.D. Chicago; T.A. Diacon, Ph.D. Wisconsin; W.W. Farren, Ph.D. Harvard; P.R. Gavitt, Ph.D. Michigan; C.L. Lancing, Ph.D. Michigan; B.L. Plummer, Ph.D. Maryland; C.D. Matson, Ph.D. Columbia.

The department's program is designed to provide students with a knowledge of their cultural traditions and of and of their world, past and present, and thus to prepare them for the responsibilities of citizenship in today's complex society. Students take history courses to develop their skills in thinking, reading, writing and speaking; to understand the links between past, present and future; and to assist them in their search for personal identity. The B.A. Major in History should prepare their programs in consultation with a department faculty advisor. History 151-152 (or their honors equivalents) and 21 upper-division hours. The distribution of the upper-division courses shall be in such a way that they include at least one course dealing predominantly with a period prior to 1750 and at least one course in each of the following areas: (a) Europe-Latin America, (b) United States, and (c) Asia-Africa.

Minor: History 151-152 (or honors equivalents) are prerequisites to a minor which consists of 15 hours of courses numbered 200 or above, including at least: (1) 6 hours in United States history; and (2) 9 upper-division hours.

History for Non-Majors: The department offers non-majors in its courses. Few history courses have formal prerequisites.

Honors Program: The Department of History offers honors sections of the Western Civilization and United States history survey course. Some entering freshmen are invited to participate; other interested students may apply. These survey courses are open to nonmajors. An honors major requires successful completion of two special courses at the junior-senior level (307-308 or 407-408). The honors major consists of 33 hours, including 27 hours as outlined above, plus 307-308. All rising juniors who are declared history majors with an overall GPA of at least 3.0 are invited to join the Junior-Senior Honors Program. Students interested in honors work should consult the department's honors coordinator.

INTERDISCIPLINARY PROGRAMS

Director: Jack Armistead (College of Liberal Arts)

In keeping with the philosophy that integration of knowledge is as important as proficiency in a given field, the College of Liberal Arts has combined the resources of several departments to offer a series of interdisciplinary minors and majors. These programs are as follows: African-American Studies, American Studies, Ancient Mediterranean Civilizations, Asian Studies, Cinema Studies, Comparative Literature, Latin American Studies, Linguistics, Medieval Studies, Russian-American Studies, Urban Studies, and Women's Studies. See individual program descriptions below for the major and/or minor requirements.

AFRO-AMERICAN STUDIES

Director: Dr. Cynthia G. Fleming (History and Afro-American Studies)

Assistant Professor: Dr. Margaret P. Hartseil

The Afro-American Studies Program offers both a major concentration and a minor in Afro-American Studies. AAS courses are offered not only by the program itself but also by numerous departments within the College of Liberal Arts and some other colleges as well. This diversified sponsorship of AAS courses
enables the University to offer a particularly varied range of courses in the field of Afro-American Studies.

**Major concentration:** Afro-American Studies 201-202 are required in the concentration which consists of 24 hours from the Afro-American Studies curriculum. At least 15 hours must represent upper division credits. Majors are required to take AAS 431, preferably in their senior year. A maximum of 6 hours in AAS 492 and 493 combined can be applied toward the AAS major. In planning their program majors must include courses from at least 2 other departments which crosslist courses with Afro-American Studies in addition to the AAS core offerings.

**Minor:** Afro-American Studies 201-202 are required in the minor which consists of 15 hours at least 9 of which must be upper division credits. A maximum of 3 hours in AAS 492 and 493 combined can be applied to a minor. In planning their programs minors must include courses from at least 2 other departments which crosslist courses with Afro-American Studies in addition to the AAS core offerings.

**AMERICAN STUDIES**

**Chair:** Dr. George B. Hutchinson (English)

**Major concentration:** English 231 and either 232 or 233 are prerequisite to a major concentration in American Studies which consists of 27 upper-division semester hours including American Studies 310 and 440; at least one approved American History course besides 440; and six hours of approved courses chosen from the following disciplines: anthropology, economics, political science, or sociology. Additional courses in the major will be chosen in consultation with an American Studies advisor, from a list approved by the program, in such a way that at least 3 courses (9 semester hours) help the student achieve a focus within the field. At least one course in the student's curriculum must specifically focus upon one or more American ethnic minority cultures. An additional 3-6 hours of American Studies 493 (Independent Study) are recommended for majors in their senior year. A list of approved elective courses is published annually.

All majors and prospective majors should contact the Chair of the program.

**ANCIENT MEDITERRANEAN CIVILIZATIONS**

**Chair:** Dr. David W. Tandy (Classics)

**Co-chair:** Dr. W.L. Humphreys (Religious Studies)

The major concentration in Ancient Mediterranean Civilizations consists of Classics 381 and 382, History 366, and 18 additional hours from the following list, distributed in such a way that no more than 12 hours are in any one of the three divisions: (a) Ancient Near Eastern Cultures: Religious Studies 311, 312, 326; (b) Greek Culture: Classics 221, 222, 232, 233, 253, 331, 334, 383; History 310; Philosophy 120, 320; Political Science 475; Religious Studies 321, 322, 326; and (c) Roman Culture: Classics 222, 233, 254, 383, 462; History 311; Philosophy 120, 320; Political Science 475; Religious Studies 321, 322, 326, 416.

A minor in Ancient Mediterranean Civilizations consists of 18 hours, including at least two of the three core courses (Classics 381, 382; History 366). No more than nine of the remaining hours can come from one division. Courses of variable content, topics courses, reading and research, off-campus, or foreign study in the Departments of Art, Classics, History, Philosophy, or Religious Studies can be applied to the three divisions as approved. Students are encouraged to satisfy the foreign language requirement with Greek, Latin, or Classical Hebrew.

**ASIAN STUDIES**

**Chair:** Dr. Walter C. Neale (Economics)

The Asian Studies major concentration consists of 26 credit hours from the upper-division courses of Asian Studies and approved departmental offerings. Twelve of the courses must be taken from courses listed within one of the four geographical-cultural areas (Islamic World; South Asia; China; Japan), and 6 of those 12 hours must come from Subdivision A and 6 from Subdivision B. Subdivision A includes Art, Literature, Music, Philosophy, and Religious Studies; Subdivision B includes Anthropology, Economics, Geography, History, Political Science, and Sociology.

Six of the 26 hours must be taken from courses listed for other geographical-cultural areas.

Prerequisite to the concentration is Asian Studies 101-102. Corequisites to the major concentration is competence in a major Asian language of the chosen geographical-cultural area. Competence is defined as the successful completion of the 200-level sequence of that language, or by demonstration of equivalent mastery.

The Asian Studies minor consists of Asian Studies 101-102 and 15 credit hours at the 200 level and above. Twelve credit hours must be taken from courses within one of the four geographical-cultural areas. Six credit hours must come from Subdivision A and 6 from Subdivision B. Three hours must be taken from courses in another geographical-cultural area.

**CINEMA STUDIES**

**Chair:** Dr. Charles Maland (English)

The Cinema Studies minor consists of fifteen hours, including English 281 Introduction to the Film Studies and Art 292 Film Design. It is strongly recommended that Introduction to Film Studies and Film Design be taken before selection of electives provided for in the minor.

For further information consult the chairperson of the Cinema Studies Program. Charles Maland, English Department. Other related courses in such departments as history, philosophy, anthropology, and foreign language may be approved through consultation with Dr. Maland.

Approved Area Courses are: Art 292 Film Design (3); Art 392 Intermediate and Advanced Film Design (3-6); Broadcasting 275 Introduction to Broadcasting (3); Broadcasting 430 Producing for Television (3); English 281 Introduction to Film Studies (3); English 334 Film and American Culture (3); English 489 Special Topics in Film (3); French 420 French Cinema (3); German 323 German Film (3); Political Science 312 Popular Culture and American Politics (3).

**COMPARATIVE LITERATURE**

**Chair:** Dr. H.C. Rutledge (Classics)

A major concentration in comparative literature consists of 27 hours including Comparative Literature 201 and 401-402, and 9 hours of literature in a foreign language in courses numbered 300. The remaining 9 hours should include literature courses, either in English or in a foreign language numbered 300 or above, from at least two of the following departments: Classics, English, Germanic and Slavic Languages, Religious Studies, Romance Languages. Certain courses in Philosophy and Speech Communication 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 18 hours including Comparative Literature 201 and either Comparative Literature 401 or 402, 6 hours of literature in a foreign language in courses numbered 300 and above, and 6 hours of literature courses numbered 300 and above in a different department. These 6 hours may be either in English or in a foreign language and should be chosen from the following departments: Classics, English, Germanic and Slavic Languages, Religious Studies, and Romance Languages. Certain Philosophy and Theatre courses may be substituted with the approval of the chairperson of the Comparative Literature Program. Minors in comparative literature are strongly encouraged to continue study of a foreign language beyond the minimum requirement.

**LATIN-AMERICAN STUDIES**

**Chair:** Dr. Michael H. Handelsman (Spanish)

The major concentration consists of 27 hours including Latin American Studies 401 and 402, three hours of either History 360 or 361, three hours of an approved Spanish or Portuguese literature/culture course at either the 300 or 400 level, and fifteen additional hours selected from courses offered by three different participating departments. Majors are strongly urged to take as a prerequisite Latin American Studies 251-252.

The minor consists of 18 hours including Latin American Studies 251-252, three hours of an approved Spanish or Portuguese literature/culture course at either the 300 or 400 level,
and nine additional hours selected from courses offered by three different participating departments.

A practical working knowledge of Spanish or Portuguese acquired independently is a prerequisite for majors and minors. All students are strongly encouraged to earn credit hours through UT, Knoxville’s Latin American Studies Abroad Program at the Federal University of Ceara in Fortaleza, Brazil. Other foreign study programs are also available for Brazil and Spanish-speaking Latin America.

For further information, consult with Dr. Michael Handselman (501 McClung Tower), Chair, of the Latin American Studies Program.

LINGUISTICS

Chair:
Dr. Bethany K. Dumas (English)
Dr. Henry Kratz (German)

This major concentration offers a broad exposure to the various fields of linguistics (including historical, descriptive, theoretical and applied linguistics) along with an opportunity to study areas where linguistics overlaps with other disciplines such as psycholinguistics, sociolinguistics, and speech pathology. The program of study is designed to prepare a student for graduate work in linguistics or related areas or to serve as a general survey of language and linguistics. The program of study provides the additional possibility of emphasizing the teaching of English as a second language for the student interested in language-related employment at the B.A. level. Students should consult program advisors early in planning a Linguistics major or minor. Linguistics 200 is highly recommended.

Audiology and Speech Pathology 305 should be taken as soon as possible. Other 300-level courses should, if possible, be completed before 400-level courses are begun.

Corequisites: (a) Students must complete a third year of foreign language study (literature) which satisfies the Foreign Studies option to fulfill the upper-level distribution requirement (required). (b) A two-semester sequence of a non-Indo-European language to be selected from the following: Asian Studies 121-122 (Japanese); Asian Studies 131-132 (5.5) (Chinese); Asian Studies 141-142 (4.4) (Hebrew); Asian Studies 151-152 (5.5) (Japanese); Religious Studies 309-310 (3.3) (Hebrew); other non-Indo-European language sequences approved by the Linguistics Committee (required).

The concentration shall consist of 30 hours distributed as follows: (a) 24 hours composed of Audiology and Speech Pathology 305 (3); English 371, 372, and 471 (3,3,3); French, German, Russian or Spanish 425-426 (3,3); and Linguistics 420-430 (3,3,3); and (b) 6 hours of the following, selected in consultation with the Linguistics Committee: Anthropology 411 (3); Audiology and Speech Pathology 320, 465, 579, (3,3,3); Educational Curriculum and Instruction 457 (3); Special Education and Rehabilitation 522 (3), 532-533 (3,3); English 371, 372, 472, 475, 485, 508-509, 580 (3 hours each); French 421, 422, 521-522 (3 hours each); German 435-436 (3.3), 571-572 (3,3,3); Linguistics 400 (3); Philosophy 479 (3); Psychology 450, 482, 543, (3 hours each); Spanish 421, 422, 531-532 (2,3,3,3, Theatre 426 (4). Other hours may be substituted in (b) by approval of the Linguistics Committee.

A minor in Linguistics shall consist of 18 credit hours composed of: (1) either English 471 (3) or 3 hours from section (b) of the major, selected in consultation with the Linguistics Committee; and (2) 15 hours as follows: Audiology and Speech Pathology 305 (3); English 371 (3) or 372 (3); French, German, Russian or Spanish 425 (3) or 426 (3); and Linguistics 400 (3).

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.

MEVIDAL STUDIES

Chair:
Dr. Paul Barrette (French)

A major concentration in Medieval Studies consists of Medieval Studies 201 and 403 and 21 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; and (3) the arts: history of art, architecture, music, and theatre. Courses should either form a related pattern (for example, courses in the literature and history of Medieval England or Italy), or should revolve around a particular discipline or two closely related disciplines (for example, courses in the history of art and architecture).

A concentration in Medieval Studies focuses upon culture and society from the collapse of the Roman Empire to the 16th century. Such a concentration offers the opportunity to deepen one's self-awareness and broaden one's view of the range of human possibilities by studying a very different and remote culture: its conditions of life, social and political institutions, values and ideals, and modes of perception and expression.

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 study are strongly advised to supplement their Medieval Studies concentration with extensive work in one or more traditional disciplines.

A minor in Medieval Studies consists of Medieval Studies 201 and 403 and 12 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.

Category #1—History, Philosophy, and Political Science: History 312 Medieval History: 300-1100 (3); History 313 Medieval History: 1100-1400 (3); History 330 History of England from 1668 (3); History 334 History of Germany from 1815 (3); History 389 History of the Middle East (3); History 474 Studies in Medieval and Early European History (3); Philosophy 322 Medieval Philosophy (3); and Political Science 475 Ancient and Medieval Political Thought (3).

Category #2—Language and Literature: Classics 435 Medieval Latin (3); English 371 Foundations of the English Language (3); English 401 Medieval Literature (3); English 402 Chaucer (3); French 410 Medieval French Literature (3); Italian 401 Dante and Medieval Culture (3); and Italian 402 Petrarch and Boccaccio (3).

Category #3—The Arts: Architecture 415 Seminar in Medieval Architecture (3); Art 371 Early Christian and Byzantine Art to 1350 (3); Art 372 Northern European Painting, 1350-1600 (3); Art 381 Medieval Art of the West, 800-1450 (3); Art 382 The Art of Italy, 1250-1400 (3), and Music History 210 History of the Music to 1750 (3).

RUSSIAN AND EAST EUROPEAN STUDIES

Chair:
Dr. William Fierman (Political Science)

The major concentration consists of 30 hours from the following: Geography 375, six hours from History 340-341, Philosophy 393; Political Science 459 and four additional hours from Political Science 469, 574; Russian 311-312; Russian and East European Studies 410; and additional hours in courses numbered 301 and above offered by the Russian section of the Department of Germanic and Slavic Languages. Recommended prerequisites to the major concentration are the completion of Russian 201-202 and Russian Culture 371-372.

URBAN STUDIES

Chair:
James A. Spencer (Graduate School of Planning)

Urban Studies is a valuable major concentration for students who plan to work in such areas as housing, real estate, development, neighborhood organization, and environmental design.

A major concentration in Urban Studies consists of a minimum of 30 semester hours including Urban Studies 250, 350, 450, 460, and at least 15 additional semester hours from the Urban Studies curriculum.

A minor consists of 18 semester hours, including Urban Studies 250 and 350 plus additional semester hours from the Urban Studies curriculum. Curricular planning should be done with an advisor in Urban Studies. For more information, contact the chairperson of the Urban Studies Committee.

Approved Courses in other departments: Geography 365 Geography of Appalachia; Rural Sociology 380 Rural Sociology; Sociology 363 The City, 465 Population; and Transportation 302 Transportation Principles and Policies.

WOMEN'S STUDIES

Chair:
Dr. Martha L. Osborne (Philosophy)

Women's Studies encourages inquiry into the full range of the human experience by raising new questions and opening new areas of research concerning women. The discipline enriches the traditional liberal arts curriculum
by adding new perspectives on women's lives and accomplishments. Women's Studies can broaden the education of both male and female students by helping them to understand the limitations imposed on both sexes by narrowly defined sex roles. Wherever there is a need to understand women and an interest in the new role they are playing in society, Women's Studies can enhance a student's career preparation and opportunities.

The Women's Studies Program offers a wide variety of courses, some interdisciplinary in nature and others originating in supporting departments throughout the university. These courses may be taken as electives, they may be used to satisfy requirements in various colleges, or they may serve as a concentration in Women's Studies within an Interdisciplinary Program major or minor.

The major concentration in Women's Studies consists of 30 semester hours including one of the Images of Women in Literature courses (either 210 or 215), Women in Society (220), Emergence of the Modern American Woman (310), at least three hours of Independent Study (493), and at least one course from each of the three major areas: Women's Heritage (324, 360, 383, 432, 453, 465, 489), Contemporary Issues (375, 382, 410, 425, 434), and Literature and the Arts (330, 332, 422). As its content varies, 400 may be included in any of these areas. Students are encouraged to take at least nine hours in one of these areas.

The Women's Studies minor consists of one of the Images of Women in Literature courses (either 210 or 215), Women in Society (220), and an additional 12 hours of upper-division Women's Studies courses. Approved special topics courses related to Women's Studies may also be applied toward a major or a minor.

ITALIAN
See Romance Languages.

JAPANESE
See Interdisciplinary Programs (Asian Studies).

LATIN
See Classics.

LATIN AMERICAN STUDIES
See Interdisciplinary Programs.

LINGUISTICS
See Interdisciplinary Programs.

MATHEMATICS

Professors:
G.S. Gordon (Acting Head), Ph.D. Wisconsin; G.E. Albert (Emeritus), Ph.D. Wisconsin; D.F. Anderson, Ph.D. Chicago; G.A. Baker, Ph.D. Cornell; J.S. Bradley, Ph.D. Iowa; J.H. Carruth, Ph.D. Louisiana State; C.E. Clark, Ph.D.

Louisiana State; R.J. Daverman, Ph.D. Wisconsin; D.J. Dessart, Ph.D. Maryland; B.E. Dobbs, Ph.D. Cornell; E.D. Eaves (Emeritus), Ph.D. Texas; H. Frandsen, Ph.D. Illinois; T.G. Hallam, Ph.D. Missouri; D.B. Hinton, Ph.D. Tennessee; A.S. Householder (Emeritus), Ph.D. Chicago; L.S. Husch, Ph.D. Florida State; K. Johannson, Ph.D. Bielefeld, West Germany; G.S. Jordan, Ph.D. Wisconsin; B.A. Kupersmidt (Space Institute, Tullahoma), Ph.D. Massachusetts Institute Technology; H.T. Mathews, Ph.D. Tulane; R.M. McConnel, Ph.D. Duke; D.D. Miller (Emeritus), Ph.D. Michigan; B.S. Rajput, Ph.D. Illinois; K.C. Reddy (Space Institute, Tullahoma), Ph.D. Indian Institute of Technology; P.W. Schaefer, Ph.D. Maryland; S.M. Serbin, Ph.D. Cornell; K. Soni, Ph.D. Oregon State; F.W. Stilain (Emeritus), Ph.D. Gießen (Germany); K.R. Stephenson, Ph.D. Wisconsin; E. Wachspress, Ph.D. Rensselaer Polytechnic Institute; W.R. Wade, Ph.D. California (Riverside); C.G. Wagner, Ph.D. Duke; S. Richter, Ph.D. Michigan.

Associate Professors:
V. Alexiades, Ph.D. Delaware; N. Altkakos, Ph.D. Brown; J. Dydak, Ph.D. Warsaw (Poland); L. Cornet, Ph.D. France; Q. Karakashian, Ph.D. Harvard; K. R. Kimble (Space Institute, Tullahoma), Ph.D. Ohio State; Y. Kuo, Ph.D. Cincinnati; S. Lenhart, Ph.D. Kentucky; J. Rosinski, Ph.D. Wrocław University; H. Row, Jr., Ph.D. Wisconsin, H. Simpson, Ph.D. California Institute of Technology; J. Smith, Ph.D. California (Berkeley); B.K. Soni (Space Institute, Tullahoma), Ph.D. Texas; P. P. Soni, Ph.D. Oregon State; C. Sundberg, Ph.D. Wisconsin; M. Thistletwaiite, Ph.D. Univ. Manchester (England).

Assistant Professors:

Instructor:
C.G. Doss, M.A. Tennessee.

B.S. Major: Mathematics 141-142 (or the Honors version, 147-148) is prerequisite to a major in Mathematics. Majors must also have computer programming skills sufficient to take 371; students without other computing experience should take Computer Science 100, 101, or 102. The courses required for the major are: 221 Discrete Mathematics I (3); 231 Differential Equations I (3); 241 calculus III; or 247 Honors: Calculus III (4); 251 Matrix Algebra I; or 257 Honors: Matrix Algebra I (3); 323 Probability I (3); 341 Analysis I (3); 351 Algebra I (3); 371 Numerical Algorithms I (3); and nine additional hours selected from Mathematics 496 and Mathematics courses numbered 421 through 472.

Honors B.S. Major: Candidates for an honors degree in Mathematics must fulfill all of the requirements for the B.S. degree in Mathematics, but in addition, 12 hours in Mathematics 496 and Mathematics courses numbered 421 through 472. The grade point average computed on the 24 hours of Mathematics courses consisting of 323, 341, 351, and 371, and the 12 additional hours, will determine the honors category: GPA at least 3.4 - Honors; GPA at least 3.6 - High Honors; GPA at least 3.8 - Highest Honors.

Students with credit for more than 12 hours in Mathematics 496 and Mathematics courses numbered 421 through 472 may designate the 12 hours to be included in the above average.

Minor: Mathematics 141-142 (or 147-148) is prerequisite to a minor in Mathematics. A minor in Mathematics consists of (1) 241 and 251; (2) 221 or 231; and (3) nine additional hours in Mathematics courses numbered 300 or higher. The grade in each of the above courses must be at least C.

MEDIEVAL STUDIES
See Cultural Studies.

MEDICAL BIOLOGY/ MEMORIAL RESEARCH CENTER

The Department of Medical Biology of The University of Tennessee College of Medicine-Knoxville Unit was formed from the faculty of The University Memorial Research Center and Hospital in 1978. The Research Center was established in 1956. The faculty has research, education, and service interests in cancer, blood diseases, metabolism, neuroscience, birth defects, cytogenetics and clinical genetics. Courses in these areas are offered to students at the graduate and undergraduate levels. Elective courses are also available to students in the College of Medicine. The faculty with the College of Veterinary Medicine participates in the graduate program leading to M.S. and Ph.D. degrees in Comparative and Experimental Medicine. Other advanced degree students can do thesis research in the department by arrangement with other life science departments at the University.

MICROBIOLOGY

Professors:
Dwayne C. Savage (Head), Ph.D. California (Berkeley); A. Brown (Emeritus), Ph.D. Chicago; R.W. Beck, Ph.D. Wisconsin; J.M. Becker, Ph.D. Cincinnati; D.A. Brian, Ph.D. D.V.M. Michigan State; T.C. Monte, Ph.D. Maryland; W.S. Riggsby, Ph.D. Yale; B.T. Rouse; Ph.D. Guelph (Canada); B.V.Sc., Bristol (England); G.S. Sayler, Ph.D. Idaho; D.C. White (Distinguished Scientist), M.D. Tufts, Ph.D. Rockefeller; J.M. Woodward (Emeritus), Ph.D. Kansas; C.J. Wust, Ph.D. Indiana.

Associate Professor:
D. Bennis, Ph.D. Cornell; R.N. Moore, Ph.D. Texas (Austin); G. Stacey, Ph.D. Texas (Austin).

Assistant Professors:

B.S. Major: Prerequisites are Biology 150 or 110-120, Chemistry 120-130, and Mathematics 151-152 or 141-142. The major consists of Biology 210-220, Chemistry 350-360,369.
Biochemistry 410, Microbiology 310, 319, 410, 429, 430, 439 and 8 additional hours of 400-level Microbiology courses, of which at least 1 hour must be a laboratory course.

MEDICAL TECHNOLOGY

Courses in this major are open only to qualified students who have completed the first three years of the Science-Medical Technology Curriculum, described in the College of Liberal Arts curricula section of this catalog, and who have been approved by the Medical Technology Admissions Committee.

MUSIC


Bachelor of Music Degree: The Department of Music offers curricula leading to 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. Undergraduate students seeking entrance to applied music courses must be concurrently registered for no less than three credit hours in academic courses. Graduate students must be concurrently registered for no less than three 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.

Admission: 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 secondary level receive one-half hour of instruction per week or its equivalent in class instruction. Applied music courses do not permit non-credit registration nor may students elect non-conventional grading. Non-music students will be accepted at the secondary level if they meet audition requirements established by the faculty. Applied study is classified as Principal or Secondary.

APPLIED MUSIC

Applied study is classified as Principal or Secondary. Students studying their principal (major) instrument register for credit appropriate to their program, 2-4 credit hours; students studying a secondary instrument register for 1 credit hour. Study at the principal level requires one hour of private instruction per week or a one-hour class lesson plus a half-hour private lesson. Determination of the mode of instruction rests with the department. Study at the secondary level requires one-half hour private lesson. 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 History 480, 490 and 6 hours of Music electives, Solo class and performance experience at the University.

ENSEMBLES

Ensemble participation during each semester of enrollment is required of all students studying applied music. String, woodwind, brass, and percussion students must meet the following ensemble requirements: (1) string students participate in orchestra each semester; (2) woodwind, brass, and percussion students must acquire a minimum of four credits in any of the following ensembles: marching band, concert band, campus band, symphony orchestra, jazz ensemble. Each per week or must equivalent in class instruction. Applied music courses do not permit non-credit registration nor may students elect non-conventional grading.

BACHELOR OF ARTS DEGREE

The Department of Music offers curricula leading to 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.

BACHELOR OF ARTS IN MUSIC DEGREE

Prerequisites: Math, Science, and Social Science (one course each) and two semesters of applied music study at the 103-190 levels. B.M. Curriculum in Sacred Music (Organ or Piano) consists of 17 hours in courses numbered 200 and above, distributed as follows: Music History 200, 8 hours in applied music, and 6 hours in music electives. Prerequisites are Music General 100 or equivalent and two semesters of applied music study (Music Performance) at the 103-190 levels. (b) Concentration in Music History and Literature - consists of 17 hours in courses numbered 200 and above, distributed as follows: Music History 200, 9 hours in Music History and Literature courses, and 5 hours in music electives. Prerequisites are Music General 100 or equivalent and two semesters of applied music study at the 103-190 levels.

B.M. CURRICULUM IN SACRED MUSIC (ORGAN OR PIANO)

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<td>Music Keyboard 460-470</td>
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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, and spring semesters and the first day of the summer terms in order to be accepted for applied music study. Applied music fees are not refundable after the first day of classes.

APPLIED MUSIC FEES

Freshman: $90 per semester hour (1 credit hour) $90 per semester hour for lesson (2-4 credit hours). Summer terms in order to be accepted for applied music study.

BACHELOR OF ARTS IN MUSIC DEGREE

Computer registration and applied music course fees must be verified in the Department of Music office no later than the end of the second day of classes of the fall, and spring semesters and the first day of the summer terms in order to be accepted for applied music study. Applied music fees are not refundable after the first day of classes. Bachelor of Arts Degree: The Department of Music offers curricula leading to 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.
Sophomore

Non-U.S. History or Social Science ........................................... 6
Music Theory 210, 220 .............................................................. 6
Music Theory 230, 240 .............................................................. 2
Music History 210, 220 .............................................................. 6
Applied Music ................................................................. 1
Music Ensemble ............................................................... 1
Music Theory 250 ............................................................... 2
Music Theory 290 ............................................................... 3
Music General 200 .............................................................. 0

Junior

Applied Music ................................................................. 1
Mathematics, or Natural Language ........................................... 6
Applied Music ................................................................. 6
Music Theory 310, 320, 390 ................................................. 9
Music History (300 level or above) ........................................ 3
Music History 310 .............................................................. 3
Music Ensemble ............................................................... 2
Music General 200 .............................................................. 0
Electives ....................................................................... 3

Senior

General Education ............................................................ 6
Music Theory 420, 430, 440 ................................................... 9
Applied Music ................................................................. 1
Music Ensemble ............................................................... 2
Music History or Theory (300 level or above) ........................... 3
Music General 200 .............................................................. 0
Electives ....................................................................... 3

Total: 129 hours

1Humanities-Arts (Non-music), Literature, Philosophical Perspectives or Interdisciplinary Studies.

B.M. Curriculum in Sacred Music (Voice)

Freshman

English Composition ......................................................... 6
Music Theory 110, 120 .......................................................... 6
Music Theory 130, 140 .......................................................... 2
Music History 200 .............................................................. 3
Music Performance 385 ....................................................... 6
Music Ensemble ............................................................... 2
Music Keyboard 110-120 or Music Performance 190 ................. 2
Foreign Language .............................................................. 6
Music General 200 .............................................................. 0

Sophomore

Religious Studies, Non-U.S. History or Social Science .......... 6
Music Theory 210, 220 .......................................................... 6
Music Theory 230, 240 .......................................................... 6
Music Performance 255 ....................................................... 6
Music Ensemble ............................................................... 2
Music Keyboard 210-220 or Music Performance 190 ................. 2
Music Voice 240-250 ........................................................... 4
Music General 200 .............................................................. 0

Junior

Mathematics, or Natural Science ......................................... 6
Music History Elective ....................................................... 3
Music Theory 310 .............................................................. 3
Music History 480, 490 ........................................................ 6
Music Performance 385 ....................................................... 6
Music Ensemble ............................................................... 2
Music General 200 .............................................................. 0
Electives ....................................................................... 6

Senior

General Education ............................................................ 6
Music Education 310 ........................................................... 3
Music General 401 .............................................................. 0
Music General 301 .............................................................. 0
Music General 200 .............................................................. 0
Music General 200 .............................................................. 0
Music General 200 .............................................................. 0

Total: 130 hours

1Humanities-Arts (Non-music), Literature, Philosophical Perspectives or Interdisciplinary Studies.

B.M. Curriculum in Electronic Music

Freshman

English Composition ......................................................... 6
Music Theory 110, 120 .......................................................... 6
Music Theory 130, 140 .......................................................... 2
Music History 200 .............................................................. 3
Applied Music ................................................................. 1
Music Ensemble ............................................................... 1
Foreign Language .............................................................. 6
Music General 200 .............................................................. 0
Electives ....................................................................... 4

Sophomore

Computer Science 102 ....................................................... 4
Music Theory 210, 220 .......................................................... 6
Music Theory 230, 240 .......................................................... 2
Music History 210, 220 ........................................................ 2
Applied Music ................................................................. 1
Music Ensemble ............................................................... 1
Music Ensemble 250 ........................................................... 2
Music Ensemble 313 ........................................................... 1
Music Theory 290, 390 ........................................................ 6
Music General 200 .............................................................. 0

Junior

Music Performance 392 ....................................................... 6
Applied Music ................................................................. 1
Music Theory 310, 320, 420, 430, 440 ..................................... 15
Music History Elective ....................................................... 3
Music Ensemble 313 ........................................................... 1
Music Ensemble ............................................................... 1
Music General 200 .............................................................. 0
Electives ....................................................................... 4

Senior

Music Performance 492 ....................................................... 6
Music Ensemble 313 ........................................................... 1
Music Ensemble ............................................................... 1
Applied Music ................................................................. 1
Music General 120 ............................................................ 3
Music General 200 .............................................................. 0
Non-U.S. History, Social Science ......................................... 6
Electives ....................................................................... 12

Total: 129 hours

1Humanities-Arts (Non-music), Literature, Philosophical Perspectives or Interdisciplinary Studies.

B.M. Curriculum in Multiple Keyboard Instruments (Piano, Organ, Harpsichord)

Freshman

English Composition ......................................................... 6
Music Theory 110, 120 .......................................................... 6
Music Theory 130, 140 .......................................................... 2
Music History 200 .............................................................. 3
Applied Music Principal (100 level) ........................................ 4
Applied Music Secondary .................................................... 2
Music Ensemble ............................................................... 2
Music Keyboard 210, 220 .................................................... 2
Foreign Language .............................................................. 6
Music General 200 .............................................................. 0

Sophomore

Music Theory 210, 220 .......................................................... 6
Music Theory 230, 240 .......................................................... 2
Music History 210, 220 ........................................................ 2
Applied Music Principal (200 level) ........................................ 4
Applied Music Secondary .................................................... 2
Music Ensemble ............................................................... 2
Music Keyboard 210, 220 .................................................... 2
Foreign Language .............................................................. 6
Music General 200 .............................................................. 0

Junior

Music Theory 310, 320 .......................................................... 6
Music Instrument 320 ........................................................... 3
Applied Music Principal (300 level) ........................................ 4
Applied Music Secondary .................................................... 4

Total: 129 hours

1Humanities-Arts (Non-music), Literature, Philosophical Perspectives or Interdisciplinary Studies.

B.M. Curriculum in Multiple Woodwind Instruments

Freshman

English Composition ......................................................... 6
Music Theory 110, 120 .......................................................... 6
Music Theory 130, 140 .......................................................... 2
Music History 200 .............................................................. 3
Applied Music Principal (100 level) ........................................ 4
Applied Music Secondary .................................................... 4
Music Ensemble ............................................................... 4
Music Keyboard 110, 120 .................................................... 2
Music General 200 .............................................................. 0

Sophomore

Music Theory 210, 220 .......................................................... 6
Music Theory 230, 240 .......................................................... 2
Music History 210, 220 ........................................................ 2
Applied Music Principal (200 level) ........................................ 4
Applied Music Secondary .................................................... 4
Music Ensemble ............................................................... 2
Music Keyboard 210, 220 .................................................... 2
Foreign Language .............................................................. 6
Music General 200 .............................................................. 0

Junior

Music Theory 310, 320 .......................................................... 6
Music Instrument 320 ........................................................... 3
Applied Music Principal (300 level) ........................................ 4
Applied Music Secondary .................................................... 4

Total: 129 hours

1Humanities-Arts (Non-music), Literature, Philosophical Perspectives or Interdisciplinary Studies.
Music Theory 250, 290 7
Music History 210, 220 6
Music Theory 210, 220 6
Sophomore
Music General 200 0,0
Music Ensemble 2
Music General 401 0
Mathematics, Natural Science 6
Music General 301 0
Music General 200 0,0

Total: 128 hours

*Humanities-Arts (Non-music), Literature, Philosophical Perspectives or Interdisciplinary Studies.

B.M. Curriculum in Music History and Literature

Hours Credit

Freshman
English Composition 6
Music Theory 110, 120 6
Music Theory 130, 140 6
Music History 200 3
Applied Music 4
Music Ensemble 2
Music General 200 0,0

Sophomore
Music Theory 210, 220 6
Music Theory 230, 240 2
Music History 210, 220 6
Applied Music 4
Music Ensemble 2
Art History 6
*Foreign Language 6
Music General 200 0,0

Junior
Music Theory 310, 320 6
Music History 390 3
Music History/Literature (300 level or above) 9
Music Theory (300 or above) 3
Music Education 310 3
Applied Music 4
Music Ensemble 2
Natural Science or Mathematics 6
Music General 200 0,0

Senior
Music History 493 3
Music History/Literature (300 or above) 6
Applied Music 4
Music Ensemble 2
Music General 200 0,0
Non-U. S. History, Social Science 6
Electives 15

Total: 129 hours

*Humanities-Arts (Non-music), Literature, Philosophical Perspectives or Interdisciplinary Studies.

*Must be two years in either French or German.

B.M. Curriculum in Music Theory

Hours Credit

Freshman
English Composition 6
Music Theory 110, 120 6
Music Theory 130, 140 6
Music History 200 3
Applied Music 4
Music Ensemble 2
Non-U. S. History/Social Science, Mathematics, Natural Science 9
Music General 200 0,0

Sophomore
Music Theory 210, 220 6
Music Theory 230, 240 2
Music History 210, 220 6
Applied Music 4
Music Ensemble 2
Music General 200 0,0

Junior
Mathematics, Natural Science 6
Music History Elective 3
Music Theory 310 3
Music Keyboard 230, 240 2
Music Theory 430 3
Music Performance 390 6
Music Ensemble 2
Elective 3
Music General 301 0
Music General 200 0,0

Senior
Music Education 310 3
Music Keyboard 310, 320, 460, 470 8
Music Performance 490 8
Music Theory 493 3
Music General 401 0
"General Education 6
Electives 6
Music General 200 0,0

Total: 129 hours

*Humanities-Arts (Non-music), Literature, Philosophical Perspectives or Interdisciplinary Studies.

B.M. Curriculum in Music History Electives

Hours Credit

Freshman
English Composition 6
Music Theory 110, 120 6
Music Theory 130, 140 6
Music History 200 3
Applied Music 4
Music Ensemble 2
Non-U. S. History/Social Science, Mathematics, Natural Science 9
Music General 200 0,0

Sophomore
Music Theory 210, 220 6
Music Theory 230, 240 2
Music History 210, 220 6
Applied Music 4
Music Ensemble 2
Music General 200 0,0

Junior
Music Theory 310, 320 6
Music Theory 420, 430, 440 6
Applied Music 2
Music Ensemble 2
Foreign Language 6
Music History (300 and above) 9
Music General 200 0,0

Senior
Music Education 310 3
Music Theory 493 3
Applied Music 2
Music Ensemble 2
Liberal Arts Electives 6
Electives 9
Music General 200 0,0

Total: 129 hours

*Humanities-Arts (Non-music), Literature, Philosophical Perspectives or Interdisciplinary Studies.

B.M. Curriculum in Organ

Hours Credit

Freshman
English Composition 6
Music Theory 110, 120 6
Music Theory 130, 140 6
Music History 200 3
Applied Music 4
Music Ensemble 2
Music Jazz 110, 130, 140 4
Music History Elective 3
Music General 200 0,0
Electives 6

Total: 131 hours

*Humanities-Arts (Non-music), Literature, Philosophical Perspectives, Interdisciplinary Studies.

B.M. Curriculum in Piano

Hours Credit

Freshman
English Composition 6
Music Theory 110, 120 6
Music Theory 130, 140 6
Music History 200 3
Foreign Language 6
Music Performance 180 8
Music Ensemble 2
Music General 200 0,0

Sophomore
Music Theory 210, 220 6
Music Theory 230, 240 2
Music History 210, 220 6
Music Performance 290 8
Non-U. S. History, Social Science 6
Music Ensemble 2
Music General 200 0,0

Junior
Music Theory 310 3
Music Keyboard 440, 450 4
Music General 301 0
Music General 200 0,0

Senior
Music Theory 310 3
Music History Elective 3
Music Keyboard 420, 430 4
Music Ensemble 399 2
Music Performance 380 8
Music Jazz 310, 320 4
Music Electives 3
Electives 6
Music General 301 0
Music General 200 0,0

Total: 130 hours

*Humanities-Arts (Non-music), Literature, Philosophical Perspectives, Interdisciplinary Studies.
### B.M. Curriculum in Piano Pedagogy and Literature

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<th>Courses</th>
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<td>English Composition</td>
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<td></td>
<td>6</td>
<td>Music Theory 110, 120</td>
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<td>Applied Music Principal (200 level)</td>
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<td>Music Theory 230, 240</td>
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*Humanities-Arts (non-music), Literature, Philosophical Perspectives, Interdisciplinary Studies.

### B.M. Curriculum in Strings

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<td>English Composition</td>
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<td>6</td>
<td>Music Theory 110, 120</td>
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### B.M. Curriculum in Voice

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<td>Music Theory 110, 120</td>
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</table>

*Humanities-Arts (non-music), Literature, Philosophical Perspectives, Interdisciplinary Studies.
PHILOSOPHY

Professors: G.G. Brenkert (Head), Ph.D. Michigan; R.E. Aquila, Ph.D. Northwestern; L.B. Cebik, Ph.D. Nebraska; J.W. Davis, Ph.D. Emory; R.B. Edwards, P.D. Emory; G.C. Graber, Ph.D. Michigan; B.C. Postow, Ph.D. Yale; D. Van de Vate, Ph.D. Yale.


Assistant Professors: H.P. Hamlin, Ph.D. Georgia.

Major Prerequisite: Three hours of logic, normally 130 or 135. Requirements: 24 hours of courses numbered 200 or above, including three hours of ethics, normally 240 or 440, and six hours in the history of philosophy, three in ancient, normally 320, and three in modern, normally 324. Majors are required to discuss their programs with a member of the Philosophy faculty.

Minor: 18 hours in courses 200 or above. Minors should discuss their program with a member of the Philosophy faculty.

PHYSICS AND ASTRONOMY

Professors: W.M. Bugg (Head), Ph.D. Tennessee; C.R. Bingham, Ph.D. Tennessee; W.E. Blass, Ph.D. Michigan State; M.A. Brazeale (on leave), Ph.D. Michigan State; J. Burgdoerfer, Ph.D. Freis Universitat Berlin; T.A. Callcott, Ph.D. Purdue; R.W. Childers, Ph.D. Vanderbilt; L.G. Christophorou, Ph.D. Manchester (England); F.E. Close (Distinguished Scientist, Science Alliance Center of Excellence, On leave), Ph.D. Oxford (England); G.T. Condo, Ph.D. Illinois; W.E. Deeds (Emeritus), Ph.D. Ohio State; K.E. Duckett, Ph.D. Tennessee; K. Fox, Ph.D. Michigan; N.M. Galler (Emeritus), Ph.D. Ohio State; S. Georghiou, Ph.D. Manchester (England); M.W. Guidry, Ph.D. Tennessee; E.G. Harris (Alumni Distinguished Service Professor), Ph.D. Tennessee; E.L. Hart, Ph.D. Cornell; H.C. Jacobson, Ph.D. Yale; D.T. King (Emeritus), Ph.D. Bristol (England); R.J. Lovell, Ph.D. Vanderbilt; G.D. Mahan (Distinguished Scientist, Science Alliance Center of Excellence), Ph.D. University of California (Berkeley); J. Mack (Distinguished Scientist, Science Alliance Center of Excellence), Ph.D. Rensselaer Polytechnic Institute; A.H. Nielsen (Emeritus), Ph.D. Michigan; F.E. Obenshain, Jr., Ph.D. Pittsburgh; L.R. Painter, Ph.D. Tennessee; J. Parks, Ph.D. Tennessee; D.J. Pogg, Ph.D. New Hampshire; J.J. Quinn, Ph.D. Maryland; L.L. Riedinger, Ph.D. Vanderbilt; R.H. Ritchie, Ph.D. Tennessee; W.R. Rusk (Emeritus), M.S. Tennessee; H.C. Schweinler (Emeritus), Ph.D. Massachusetts Institute of Technology; I.A. Sellin (on leave) (Alumni Distinguished Service Professor and Chancellor's Research Scholar), Ph.D. Chicago; C.C. Shih, Ph.D. Cornell; P.H. Stelson, Ph.D. Massachusetts Institute of Technology; J.R. Thompson, Ph.D. Duke; J.O. Thomson, Ph.D. Illinois; J.W. White (Emeritus), Ph.D. North Carolina.

Associate Professors: M.J. Breing, Ph.D. Oregon; S.B. Elston, Ph.D. Massachusetts Institute of Technology; T. Ferrell, Ph.D. Clemson; T.H. Handler, Ph.D. Rutgers; R.W. Lide, Ph.D. Michigan; S.Y. Shieh, Ph.D. Maryland; S.P. Sorensen, Ph.D. Copenhagen (Denmark); B.F.L. Ward, Ph.D. Princeton.

Assistant Professors: S.J. Daunt, Ph.D. Queens (Kington, Ontario, Canada); R. DeSera, Ph.D. Chicago; R. Harmatz, Ph.D. Ohio State; A.J. Sanders, Ph.D. Tufts.

Research Professors: G. Bolteh, Ph.D. Queen's University of Belfast; M.R. Strayer, Massachusetts Institute of Technology.


Research Assistant Professor: R. J. Warmack, Ph.D. Tennessee.

Lecturers: R.C. Fairman, B.A. Earlham College; T. Riedinger, M.S. Vanderbilt.

PHYSICS

B.S. Major: The undergraduate physics major provides a thorough introduction to all of the core disciplines of physics so that students are prepared to pursue related specialties at a later point in their career. Students with special interests are encouraged to pursue those interests through research projects and/or independent study under the direction of members of the physics faculty through Physics 493.

Prerequisites to the major are: Physics 131-132 or 137-138; Mathematics 141-142.

The major consists of: Physics 231-232 or 237-238; Mathematics 231 and 241; Physics 311 (students intending to pursue graduate studies in Physics should also take 312 and 421 as electives); Physics 321, Physics 431-432, Physics 411-412 (340 and 341 or 342 may be substituted for students who do not intend to pursue graduate studies), 361-362 or 461-462-463. Physics 401-402 are recommended. Total major hours: 42-43.

Minor: A minor in physics shall consist of Physics 231-232 or 237-238 and 10 hours from physics and astronomy courses numbered 300 and above. Substitution provisions in the major statement also apply to the minor.

POLITICAL SCIENCE


Associate Professors: R.B. Cunningham, Ph.D. Indiana; J.W. Dodd, Ph.D. Tulane; G.C. Evans, Ph.D. Columbia; W. Fierman, Ph.D. Harvard; P.K. Freeman, Ph.D. Wisconsin; M.M. Gant (Head), Ph.D. Michigan; R.L. Peterson, Ph.D. Yale; J.M. Scheb, Ph.D. Florida; T.M.C. Simpson, Ill, Ph.D. Johns Hopkins.


B.A. Major: Political Science 101 or 107 and 102 are prerequisites to the major which consists of 24 hours of courses numbered 300 and above. These 24 hours must include at least one course in each of the four areas of the discipline:


International Relations: 365, 366, 370, 455, 463 and 470.

Political Theory: 301, 475 and 476.

Majors must earn a "C" or better in prerequisite courses.

Minor: Prerequisites to the minor are Political Science 101 or 107 and 102. The minor consists of 15 hours of courses numbered 300 and above.

Honors in Political Science: The Honors concentration encourages highly motivated students to obtain a superior liberal education and more rigorous preparation in the discipline. Admission is selective. The Honors concentration is normally a two year program. Political Science 101 or 107 and 102 are prerequisites to the major which consists of thirty-six hours, Political Science 301, 387-388, 487-488, and 21 additional hours numbered 300 and above. These 21 hours must include at least one course in each of four areas of the discipline:

United States Government and Politics/Public Administration; Comparative Government and Politics; International Relations; and Political Theory.

To graduate with Honors in Political Science, the student must have a minimum GPA of 3.3 in Political Science, and a minimum cumulative GPA of 3.0.

Major in Political Science with a Concentration in Public Administration: Students majoring in Political Science who wish to prepare for a career in the public service may select to follow the concentration in Political Science. Political Science 101 or 107 and 102 and Economics 201-202 are prerequisites to a major in Political Science with a concentration in Public Administration. Corequisite courses are Mathematics 121 and 122 and Accounting 201 and 202. Majors must earn a "C" or better in prerequisite and corequisite courses. The concentration consists of 24 hours of upper division course work in Political Science and 12 hours of upper division course work in Economics. In Political Science, students must include one course in each of the four fields of Political Science: American Government and Politics/Public Administration, Comparative Government and Politics, International
Relations, and Political Theory. Students must also take Political Science 340, 440, 441 and 442. In Economics students must take Economics 311, 471, and 472.

PSYCHOLOGY


Assistant Professors: J.M. Barlow, Ph.D. Tennessee; L.M. Coleman (On leave), Ph.D. Harvard; M.G. Johnson, Ph.D. Johns Hopkins; K.A. Lawler, Ph.D. North Carolina; A. McIntyre, Ph.D. Yale; W.G. Morgan, Jr., Ph.D. Tennessee; R.S. Saudargas, Ph.D. Florida State; C.B. Travis, Ph.D. California (Davis).


Major: Psychology 110 or equivalent and Biology 110-120 or Zoology 210-220 are prerequisites to a major consisting of 32 credit hours: (1) Psychology 210 or 220; (2) Three courses chosen from 300, 310, 320, 330, 350, and 370; (3) At least 8 credit hours in research, quantitative methods, and their application consisting of 385 (or Statistics 201, Mathematics 115, or equivalent), 395, and at least 2 credit hours chosen from 396, 399, 445, 459, 469, 489, and 499; (4) Two courses chosen from: 400, 410, 420, 430, 450, 461, 470, 480, and 496; and (5) Two Psychology electives including at least one at the 400 level.

Major and Non-major Lower and Upper-Division Course Prerequisites: Psychology 110 or equivalent, and 210 or 220 are the minimum prerequisites for upper-division courses for both majors and non-majors unless otherwise specified or open to students who obtain instructor consent.

At least 6 credit hours in 300 level courses are ordinarily prerequisites for 400 level courses. Consult the catalog description of each course for specific prerequisites or exceptions.

For students who plan to seek graduate training in Psychology: Applicants to most graduate programs in Psychology are expected to take the Graduate Record Examination in Psychology by December of the year preceding the year they plan to graduate. The Psychology Department recommends that a prospective graduate student complete as many of the requirements for the major as possible before taking the examination. In addition to the minimum requirements for the major, the following courses are strongly recommended: and preparation of the United States student in psychology: one year of Calculus; one course in Computer Science; Philosophy 110-111; two or three additional Psychology courses chosen from 400, 410, 420, 430, 440, 445, 450, 461, 470, 480, 496.

Minor: Consists of 110 or equivalent; 210 or 220; and 12 additional upper-division hours.

RELIGIOUS STUDIES

Professors: C.H. Reynolds (Head), Ph.D. Harvard; F.S. Lusby, B.D. Colgate (Rochester); D.L. Dungan, Th.D. Harvard; W.L. Humphreys, Ph.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; R.W. Gwynne, Ph.D. Washington; J.O. Hodges, Ph.D. Chicago; M.L. Levering, Ph.D. Harvard.

Assistant Professors: L.C. Ehrlich, Ph.D. Hawaii; R.I.J. Hackett, Ph.D. Aberdeen

Adjunct: L.M. Tober, Ph.D. Vanderbilt.

Major: The basic concentration is designed to assure that students attain skills to analyze and interpret religious phenomena in different cultures and in different historical periods, including how sacred texts and traditions, and interpretations of critical reasoning, inform and are informed by religion. The basic concentration consists of at least 24 hours of religious studies courses at the 300 level or above, including 300, one course from each of the first five categories listed below, and two courses from category six: (1) The roots of western religion, 311, 321, or 322; (2) religion and culture in South Asia, 374 or 376; (3) religion and culture in East Asia, 379 or 383; (4) religious traditions, the United States, 351 or 352; (5) critical thinking about religion, 301, 305, 342, or 371; and (6) Two 400 level seminars on methods of interpreting religious phenomena, at least one of which must be 499. The remaining 3 hours, which complete this major shall not include related language courses.

As an alternative to the basic concentration, a student-initiated concentration is available for students with special educational needs, such as those who intend to enter a graduate or professional school (ministry, law, medicine) which recommends a specific course of undergraduate study. A faculty member in Religious Studies will assign a student to formulate this major consisting of at least 27 hours of credit at the 300 level or above, including 300 and 499. Up to 9 hours in this major may be taken in approved courses from other programs or departments in the College of Liberal Arts. Students whose vocational goals would best be served by such a major must discuss this option with a faculty member in the department, who will submit any specific proposal to the faculty in religious studies for approval.

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: Fifteen hours of courses at the 300 level or above, not including related language courses. It is recommended that students minoring in religious studies discuss their program with a member of the department faculty.

ROMANCE LANGUAGES

Professors: John B. Romeiser (Head), Ph.D. Vanderbilt; P.E. Barrett, Ph.D. California (Berkeley); P. Brady, Ph.D. Universite de Paris (Sorbonne); O. Cazenave, Ph.D. Penn State; C.W. Cobb, Ph.D. Tulane; J.C. Elliott, M.A. Illinois; M.H. Handelsman, Ph.D. Florida; W.H. Huffin, Jr., Ph.D. Florida State; T.B. Irving (Emeritus), Ph.D. Princeton; F.D. Maurino (Emeritus), Ph.D. Columbia; C.R.M. Pinksy (Emeritus), Ph.D. California (Berkeley); M. Petrovskaya, Ph.D. Kentucky; Oscar Rivera-Rodas, Ph.D. California; A.M. Vazquez-Big (Emeritus), Ph.D. Minnesota; A.H. Wallace, Ph.D. North Carolina; Y.M. Washburn, Ph.D. North Carolina.

Associate Professors: E.J. Campion, Ph.D. Yale; R.M.E. DeRuycke, Ph.D. Illinois; S. DiMaria, Ph.D. Wisconsin; D.M. Dippicco, Ph.D. Kansas; C.K. Duncan, Ph.D. Illinois; K.D. Levy, Ph.D. Kentucky.

Assistant Professors: F. Brizio, Ph.D. Washington; O. Cazenave, Ph.D. Penn State; Charlotte G. Cox (Emeritus), M.A. Tennessee; C. Holmlund, Ph.D. Virginia; E. Johnson, Ph.D. Tennessee; Margo Milleret, Ph.D. Texas (Austin); A. Rodriguez, Ph.D. Brown; Paula Wilson (Emeritus), M.A. Tufts; Dolly Young, Ph.D. Texas.

Instructors: A. McKeeby, M.A. Tulane; M.T. Rabot, Cert. de Lic. Poitiers.

French Major: Consists of 31 hours in courses numbered 311 and above. All majors must have the following courses (or their equivalent with consent of the department): 311-312, 313; 341 or 342 or 345, 421; 422; 440. Literature concentration students must also have 6 hours of literature at the 400 level, 3 hours of which must be either 410, 411, 412, 413, 414, or 415; 3 hours of language oriented or civilization courses at the 300 or 400 levels. Language concentration students must also have 9 hours of language-oriented or civilization courses at the 300 or 400 levels.

French Minor: The minor consists of 18 hours in courses numbered 311 and above distributed accordingly: 311-312; 313; 341 or 342 or 421; plus 3 hours of electives at the 300 or 400 levels.

Italian Major: Consists of 27 hours in courses numbered 311 and above. All majors must take 311, 312, 341, 342, and 401.

Italian Minor: Consists of 18 hours in courses numbered 311 and above. Students pursuing a minor must consult with a departmental advisor.
Portuguese Minor: Consists of 18 hours in courses numbered 300 or above. Students pursuing a minor must consult with a departmental advisor.

Spanish Major: Consists of 30 hours in courses numbered 311 or above. The following are required: 311; 312; 421; 422; 459-460. Students must also have a minimum of 3 hours of civilization, either 431 or 471; a minimum of 6 hours of conversation and composition from 323, 324, 422, or 493; 422 or one of 311; 458, 473, 474, 479. Majors are encouraged to take as many hours as possible, especially the surveys, 435-436 and 473-474. Students must also take 459 and 460. Spanish Minor: Consists of 18 hours in courses numbered 311 or above, including 311 and 312; 422; one course in conversation and composition from among the following: 323, 324, 422, 423, and the remaining courses to be chosen among conversation and composition, civilization, phonetics, or literature. Students pursuing a minor are strongly advised to consult with a departmental advisor.

Courses with the equivalents of the foregoing may be substituted with the consent of the department. Courses in Spanish literature in English translation, however, may not be counted toward either a major or minor.

Major in French or Spanish with a Concentration in Language and World Business: Students who wish to prepare for careers in international business may complete (a) a special major in either French or Spanish, (b) a professional emphasis in either International Business or International Logistics and Transportation, and (c) some form of practical experience related to the concentration.

Admission is by permission of the program director.

(a) Language Major: (1) French major consists of 32 hours. The following are required: French 199, 311-12, 313, 341, 345, 420, 421, 491, 492, 493, and 12 additional hours in courses numbered 300 or above. Students must also take French 422 or 493. (2) Spanish major consists of 32 hours. The following are required: Spanish 199, 311-12, 323, 345, 422, 423, 431 or 471, 459-60, 3 hours of 491 and any 400-level literature course.

(b) Professional Emphasis: (1) International Business students will take 25 hours. The following are required: Accounting 201, Economics 201 or 207 and 321, Business Administration 311 and 495, Management 471, Logistics and Transportation 441, and an elective from a related business area chosen in consultation with an advisor. (2) International Logistics and Transportation students will take 25 hours. The following are required: Accounting 201, Economics 201 or 207, Business Administration 311 and 495, Management 471, and Logistics and Transportation 301, 302, and 441.

(c) Practical experience: Through French 491 or 493, or Spanish 491, each LWB student must undertake study abroad, an internship, or a relevant research project for a minimum of 3 hours (including 100 or odd-numbered requirements).

Additionally, LWB students must consult an advisor in the Department of Romance Languages for help in selecting relevant courses under the Basic Skills and Distribution requirements of the College.

For further information, inquire in 601 McClung Tower.

Placement Examination: Students who have had two or more years of work in French, Italian, or Spanish in high school or one year's work in another college should register in French, Italian, or Spanish 211. During the first week of the semester a placement test will be given, and students will be advised if a change in registration is indicated.

Proficiency Examinations: Students who have acquired a knowledge of French, Italian, or Spanish through private study, tutoring, residence in foreign countries, or the like should initiate a request for a proficiency test in the Office of the Dean of Admissions and Records. A student earning a grade of C or better on such a test will receive credit for a limited number of courses. Superior students are encouraged to complete their degree as rapidly as their achievement permits.

Study Abroad. Four summer study abroad opportunities are available to students through the Department of Romance Languages. The department sponsors programs in Brazil (Fortaleza), France (Lille), Italy (Urbino), and Spain (Madrid). Students can earn up to six credit hours by participating in these programs. In most cases, the courses will fulfill part or all of the foreign language requirement (completion of the elementary or intermediate level). Classes in literature, culture, and language are also available at the third- and fourth-year levels, so that students can earn credit toward minors and majors. Participation in these programs will also satisfy the foreign study requirements for the Language and World Business concentrations. A faculty member accompanies students on the program. In addition to formal classes held at a major university in the city, group excursions to cultural and historical sites are an integral part of the program. For more information concerning prerequisites, lodging arrangements, costs, and dates of an individual program, contact the Department of Romance Languages, 601 McClung Tower, Telephone #874-2311.

RUSSIAN

See Germanic and Slavic Languages.

RUSSIAN AND EAST EUROPEAN STUDIES

See Interdisciplinary Programs.

SOCIOLGY

Professors:
T.C. Hood (Head), Ph.D. Duke; Michael L. Benson, Ph.D. Illinois; D.M. Betz, Ph.D. Michigan State; J.A. Black, Ph.D. Iowa; D.J. Champion, Ph.D. Purdue; D. Clelland, Ph.D. Michigan State; D.W. Hastings, Ph.D. Massachusetts; D.R. Ploch, Ph.D. North Carolina; N.E. Shover, Ph.D. Illinois (Urbana); S.E. Wallace, Ph.D. Minnesota.

Associate Professors:
S. Kurfth, Ph.D. Illinois (Chicago); R.G. Perrin, Ph.D. British Columbia.

Assistant Professors:

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

Major: Prerequisites to the major are six lower-division hours in sociology which must include either 100 or 110, followed by 200. The major consists of 24 upper-division hours in sociology and must include 321 and 331. Students should complete these two courses by the end of their junior year.

Concentration in Criminal Justice: All prerequisites and upper-division courses required for general majors are required for this concentration. In addition, the concentration consists of 18 hours of upper-division sociology as follows: 350, 351, 451, 459, 492 (3), and one course selected in consultation with advisor.

Minor: The minor consists of 12 upper-division hours in sociology and must include 321 and 331. Prerequisites to the minor are six lower-division hours in sociology which must include 200.

COLLEGE SCHOLARS HONORS

Director:
Dr. Harry C. Jacobson

College Scholars is a major with selective admission. For details contact the director. All Scholars must enroll in one of the College Scholars Seminars 317-318 each term. They are encouraged to complete work in College Scholars Honors 491-492-493. Each student must complete a substantial piece of research, scholarship, or creative imagination. College Scholars 498 is the appropriate course to use to receive credit for this work.

SPANISH

See Romance Languages.

SPEECH COMMUNICATION

Professors:
L.W. Lester (Head), Ed.D. Tennessee; F.D. Julian, Ph.D. Tennessee; G.A. Yeomans (Emeritus), Ph.D. Louisiana State.

Associate Professors:
M.L. Ambrester, Ph.D. Ohio; J.E. Buckley, Ph.D. Northwestern; N.C. Cook, M.A. Alabama; R.W. Glenn, Ph.D. Northwestern.

Assistant Professors:
R.S. Ambler, Ph.D. Ohio State; J.W. Haas, Ph.D. Kentucky.

Major: Speech Communication 100 is prerequisite to a major which consists of Speech Communication 270, 300, 310, 330, either 350 or 460, and 12 additional hours in Speech Communication courses, of which 9 hours must be in courses numbered 300 and above. No more than 5 hours from Speech Communication 200, 271-272, 371-372, 491, 492, and 493 may be counted toward the major. Students interested in broad applications (e.g., teacher certification or religious
training) may complete their required hours from a wide range of Speech Communication courses. In addition, specially designed options are available in (1) Interpersonal/Organizational Communication and (2) Public Communication. Students should inquire in the Department Office for information and recommended advisors.

Minor: Speech Communication 100 is prerequisite to a minor which consists of 18 additional hours of Speech Communication courses at least 12 of which must be at the 300 level and above. No more than 3 hours from Speech Communication 200, 271-272, 371-372, and 491-492-493 may be counted toward the minor. Additional information for planning minor areas of focus which will complement a wide variety of majors in other Liberal Arts fields as well as in other colleges is available in the Department Office.

STATISTICS

See faculty list in the College of Business Administration.

Liberal Arts students may major or minor in statistics under the supervision of the faculty of the Statistics Department in the College of Business Administration. The major is designed to prepare students for graduate study in statistics or for professional work in various applications of statistical methods, including applications in the natural and social sciences, business and industry. Contact the Statistics Department for further information on careers in statistics and appropriate courses to take. It is highly recommended that a student majoring in statistics have a minor in an area of application.

Major: (a) Required courses consist of 25 hours from Mathematics 241, 251; Statistics 251, 252, 261, Statistics 461, 462; Statistics 471 or Mathematics 323; (b) Statistics elective consists of 3 hours from upper-division statistics courses not listed in part (a); and (c) Electives consist of 6 hours to be selected from two of the following groups: Computer Science 111, 112, 401, 402, 403, 404; Industrial Engineering 307, 402, 406; Management 481; Mathematics 371, 421, 423, 425, 453 (other quantitative courses may be substituted as Electives with the faculty advisor's approval).

Minor: (a) Required courses consist of 16 hours from Mathematics 241, 251; Statistics 251, 252, 261; and (b) Statistics electives consists of 3 hours from upper-division statistics courses not in part (a) of the minor.

THEATRE


Major: Theatre 100 and 220 are prerequisites to a concentration which consists of (1) Theatre 210, 211, 245, 250, 260, 310, 311, 430; (2) three chosen from the following: 481, 482, 483, 484, 485; (3) 5 additional hours of Theatre courses numbered 200 or above, 4 of which may be in cognate areas approved by the department; (4) at least one half of the hours in the major must be at the 300 level or above.

Minor: Theatre 100 and 220 are prerequisites to a minor which consists of 430 and 15 additional hours of Theatre courses numbered 300 or above, 6 of which must be in history and criticism.

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

WOMEN'S STUDIES

See Interdisciplinary Programs.

ZOOLOGY

Professors: A.C. Echternacht (Head), Ph.D. Kansas; R.M. Bagby, Ph.D. Illinois; D.L. Bunton, II, Ph.D. Oklahoma State; J.G. Carlson (Emeritus), Ph.D. Pennsylvania; D.A. Etnier, Ph.D. Oklahoma State; J.G. Carlson (Emeritus), Ph.D. Colorado; G.F. McCracken, Ph.D. California (Berkeley), K.W. Jeon, Ph.D. London (England); D.C. Joy (Distinguished Scientist, Science Alliance Center of Excellence), Ph.D. Oxford (England); J.R. Kennedy, Ph.D. Iowa; J.N. Lies, Ph.D. Ohio State; J.A. MacCabe, Ph.D. California (Davis); G.F. McCracken, Ph.D. Cornell; S.L. Pimm, Ph.D. New Mexico State; S.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; G.L. Vaughan, Ph.D. Duke, H.G. Welch (Emeritus), Ph.D. Florida; G.L. Whiston, Ph.D. Iowa.

Associate Professors: K.D. Burnham (Emeritus), Ph.D. Iowa; T.T. Chen, Ph.D. Florida; D.J. Fox, Ph.D. Johns Hopkins; N.B. Greenberg, Ph.D. Rutgers; M.L. Pan, Ph.D. Pennsylvania.

Assistant Professors: C.Boake, Ph.D. Cornell; J.L. Gittleman, Ph.D. Sussex (Brighton, England); J. Drake, Ph.D. Purdue; J.C. Hall, Ph.D. Illinois; R. Ganguly, Ph.D. Nebraska.

Research Associate Professors T. Ashley, Ph.D. Florida State; R. Tindall, Ph.D. Pennsylvania State.

Prerequisites to upper division courses: Biology 110-120 or Biology 150 or Zoology 117-118 are prerequisites for all upper division courses (with the exception of 480). Additional prerequisites are included with course descriptions.

Major: Prerequisites to the major are Biology 110-120 or 150 or Zoology 117-118 and Chemistry 120-130. Corequisites are Mathematics 121-122 or 151-152 or 141-142 and a year sequence in physics (except 141-142). Physics 221-222 are recommended and are required for admission to some professional schools.

The major consists of Biology 210-220-230, 18 hours of upper division Zoology courses and two semesters of chemistry or biochemistry at the 200 level or above. (Acceptable second year chemistry sequences include: Chemistry 350-360-369, Chemistry 350 and 310-319; Chemistry 350 and Nutrition 200; Chemistry 350, 431 and Biochemistry 310; Chemistry 310-319 and Biochemistry 310). All Zoology majors are required to take at least 4 hours at the 400 level, including at least one laboratory or field course. The upper division Zoology courses must include at least one course from three of the following four areas: (1) Cellular and Developmental Biology (330, 420); (2) Physiology (440, 445); (3) Animal Diversity (350, 360); and (4) Evolution and Behavior (450, 460).

Minor: Prerequisites to the minor are Biology 110-120 or 150 or Zoology 117-118 and Chemistry 120-130 or 100-110. The minor consists of Biology 210-220-230 and 9 hours of upper division Zoology.

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 specific semesters. Students should plan in advance the proper sequence. Information on the semesters a course is to be offered is available in the department office.
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 and develop creative thinking and other cognitive, affective, and psychomotor processes that are essential for effective nursing practice and for full and meaningful involvement as a contributing member of society.

A broad base of general education, a thorough study of human behavior, emphasis on health maintenance, health promotion, and health restoration and a strong family and community orientation are essential components of baccalaureate education in nursing. By maintaining a high quality, relevant program that is responsive to the increasing complexity of health care delivery, the ever-changing health needs of society, and the changing and expanding role of the nurse, graduates of the program 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; and (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 eight semesters of full-time study or the equivalent in part-time study. Students may complete the entire program at UT, Knoxville or they may take most or all of the lower division component of the program at any regionally accredited college or university. One-hundred-twenty semester hours are required for graduation. The program is designed to accommodate high school graduates, transfer students from within or external to UT, Knoxville, and registered nurses who hold associate degrees in nursing or who are graduates of diploma nursing programs.

**PROGRESSION POLICIES AND PROCEDURES**

1. During the spring semester of the year the student expects to meet all lower division course requirements, she/he must complete a Petition for Progression form and submit it to the college's Student Affairs Office no later than the second Friday of UT, Knoxville's spring semester. If the number of course withdrawals and repetitions exceeds the number of students that can be accommodated students will be selected on the basis of: (a) cumulative GPA for courses completed; (b) grades in required courses; (c) number of course withdrawals and repetitions; (d) grade improvement over time; and (e) probability of completing all lower division requirements prior to the following fall.

2. If a student is selected for progression to upper division nursing courses but then fails to successfully complete all lower division requirements prior to the fall semester, the student will not be permitted to enroll in nursing courses and must submit another petition the following year.

3. Registered nurses must also complete all lower division courses but, at the discretion of the faculty RN advisor, they may enroll in Nursing 305 once they are within 12 semester hours of meeting these requirements. Nursing 301 and 305 must be successfully completed before RN's may challenge or take Nursing 312. Nursing 304 and 312 are pre- or co-requisite to Nursing 315. All junior level courses are pre-requisite to the senior year.

**GRADING AND CONTINUATION POLICIES**

1. The minimum acceptable grade for all courses in the curriculum is a "C". The satisfactory/no credit grading option is not available for nursing courses.

2. No nursing course may be repeated more than once. If a "D" or "F" grade is earned on the second attempt the student will be required to withdraw from the program.

3. Any student who receives a grade of "D" or "F" for more than two nursing courses will be required to withdraw from the program even if previous courses for which "D's" or "F's" were
awarded have been repeated with a grade of "C" or higher.

(4) If a student receives an Incomplete "I" in a nursing course, the "I" must be removed prior to enrolling in any course for which the uncompleted course is a prerequisite.

(5) If a student's clinical performance for any nursing course is found to be unsatisfactory, the grade for that course will be an "F" regardless of any other grades earned in other components of the course. If the unsatisfactory clinical performance is characterized by unethical, unprofessional, or unsafe behavior, behavior that actually or potentially places the client in jeopardy, the student will be required to withdraw from the program.

(6) Requirements for competence or certification in cardio-pulmonary resuscitation are included in the Undergraduate Student Handbook.

HEALTH AND INSURANCE REQUIREMENTS

Students must meet specific physical examination and immunization requirements as specified by state law and by the rules and regulations set forth by the various clinical agencies. All non-nurse students must participate in the college's group malpractice and liability insurance program. All registered nurses must provide proof that they have appropriate malpractice-liability insurance coverage. Specific information concerning these requirements will be provided to the students at appropriate times by the nursing faculty and the Associate Dean for Student Affairs.

COURSE LOAD

The maximum credit hours per semester for which a nursing student may register without special permission is 18.

THE BACHELOR OF SCIENCE IN NURSING CURRICULUM

<table>
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<tr>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
<td>Freshman</td>
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<tr>
<td>English 101, 102</td>
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<td>Mathematics 110, 115</td>
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<td>Chemistry 100, 110</td>
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<td>Humanities</td>
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<td>Zoology 240</td>
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<td>Microbiology 210</td>
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<td>Nutrition 300</td>
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<td>Child and Family Studies 210</td>
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<td>Sociology or Anthropology</td>
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<td>History</td>
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<td>Multicultural or Integrative Studies</td>
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<td>Nursing 401, 403, 404, 411</td>
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</tbody>
</table>

Total: 120 hours

Registered nurses must successfully complete all of the non-nursing courses listed above as well as the nursing courses listed below. Courses with an asterisk may be challenged.

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
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<tr>
<td>*301 Pharmacology</td>
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<td>304 Nursing Assessment and Health Promotion</td>
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<td>305 Transition to Professional Nursing</td>
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<td>*312 Acute Care Nursing Theory</td>
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<td>403 Community Health Nursing</td>
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<td>404 Nursing Management and Strategies</td>
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<td>Validation Examinations or Nursing Electives</td>
<td>11</td>
</tr>
<tr>
<td>Total: 53 hours</td>
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</tr>
</tbody>
</table>

Registered nurses may earn up to eleven semester hours of upper-division nursing credits by means of validation examinations that are designed to measure prior learning. More information about the examinations may be obtained from the Student Affairs Office or from the faculty advisor for registered nurses. The following courses are open to all university students: 202, 214, 301, 317.

GRADUATE

General requirements for the Master of Science in Nursing degree are given in the Graduate Catalog.
College of Social Work

Eurice O. Shatz, Dean and Professor of Social Work, Ph.D. Brandeis University, The Florence Heller School for Advanced Studies in Social Welfare

Professors:
- Gideon W. Fryer (Emeritus), Ed.D. Columbia University; Charles A. Gilson, Ph.D.
- Washington University; Ben P. Granger, Ph.D. Brandeis University; Jane Kronick (Director), Ph.D.
- Tate, Roger M. Nooe, DSW Tulane University; James D. Orten, DSW University of California (Berkeley); Frank J. Spicuzza, University of Tennessee.

Associate Professors:
- Reginald Avery, Ph.D. Brandeis University
- Thomas Cruthirds, DSW Tulane University
- Catherine A. Faver, Ph.D. University of Michigan
- Lorraine Blackman, MSSW, Tennessee

Assistants Professors:
- Carmelo L. Cocozzelli, Ph.D. University of Illinois
- Judith I. Fiene, Ph.D. University of Tennessee
- Ann R. Wachter (Emerita), MSSW Tennessee

Lecturer:
- Lorraine Blackman, MSSW, Tennessee

Social work is a helping profession which focuses on providing 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 up 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 600 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 undergraduate social work program (BSSW) started in 1982 in the College of Liberal Arts. It was granted initial accreditation by the Council on Social Work Education in January 1984, and reaffirmation was given in 1987. The program was transferred to the College of Social Work in September 1985. The three programs, BSSW, MSSW and Ph.D., in the College 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 on the UT, Knoxville campus in Knoxville. 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. Masters Degree Programs are offered in the campus in Knoxville and in Nashville and Memphis. The Ph.D. Program is offered in Knoxville.

GRADING POLICY
The satisfactory/no credit option is not permitted in the major. The minimum acceptable grade for all social work courses is a C. Courses, other than field, in which a D or F is achieved may be repeated once. Field courses must be completed with a C or better, and may not be repeated.

A student receiving an incomplete (I) in any social work course must remove the incomplete before enrollment in subsequent field practice.

COURSE LOAD
The maximum credit hours per semester allowed for any student is 18. Special permission must be obtained for any over load.

PROGRESSION REQUIREMENTS
Students admitted to the University may request a faculty advisor from the College of Social Work. Students in the College must move through Initial and Full Progression. The following factors identify progression criteria for all social work students:
INITIAL PROGRESSION
1. Successful completion of Social Work 200 and 250 with a grade of C or better.
2. Cumulative grade point average of 2.0 or above.
3. Successful completion of a minimum of 60 semester hours. Initial progression must be completed prior to enrollment in any 300-level social work courses.
4. Favorable review of the student’s application for entry into the junior level social work courses by the faculty admissions committee. The application requires an essay discussing the student’s interest in and preliminary understanding of the profession.

FULL PROGRESSION
1. Successful completion of junior level social work courses with a grade of C or better.
2. Cumulative grade point average of 2.0 or above.
3. Successful completion of a minimum of 90 semester hours. Full progression must be completed prior to enrollment in 400-level social work courses.
4. Favorable approval by the BSW faculty prior to entry into senior level classes. This process will include a review of the student’s performance in junior field practice.

Full progression is based on the recognition that social work has an intensive field component in which students demonstrate aptitude and ability to work with other people. While review is ongoing, full progression provides an additional opportunity to review the students’ potential for entry-level practice.

CURRICULUM

<table>
<thead>
<tr>
<th>Freshman</th>
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<tr>
<td>English 101, 102</td>
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<tr>
<td>Foreign Language (Intermediate Level)</td>
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<tr>
<td>Mathematics 110</td>
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<tr>
<td>History 151-152 or 161-162</td>
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<tr>
<td>*Physiology or Biology Sequence with lab</td>
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<td>Women’s Studies 220</td>
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<tr>
<td>Anthropology 130</td>
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<tr>
<td>*Humanities (Literature Package)</td>
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<tr>
<td>*Humanities (Philosophy Package)</td>
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<td>Psychology 220</td>
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<td>Social Work 200, 250</td>
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<tr>
<td>Economics 201</td>
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<td>*United States Studies</td>
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<td>*Foreign Studies</td>
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<td>Political Science 101</td>
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<td>Sociology 336 or Math 115</td>
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<td>Social Work 310, 380</td>
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<td>Child and Family Studies 220</td>
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<td>Social Work 480, 481</td>
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<td>Social Work 460</td>
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<td>Anthropology 312</td>
<td>3</td>
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<tr>
<td>Electives</td>
<td>8</td>
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</table>

Total: 124 hours

*The following sequences may be selected: Astronomy 161-162; Botany 110-120; Chemistry 120-130; Geography 131-132; Geology 101-102; Physics 121-122.

*The following literature packages may be selected: Classics 253-254; English 201-202; English 221-222; English 231-232 or 233; Germanic and Slavic Languages 221-222; Religious Studies 312-313; French 291-292; Spanish 291-292.

*One course selected from Classics 221; Classics 222; Philosophy 220; Philosophy 111; Philosophy 130; Philosophy 121; Philosophy 240; Philosophy 344; Philosophy 380; Philosophy 382.

*One course selected from: Anthropology 310; Anthropology 315; Geography 362; History 379; History 380; History 440; Philosophy 390; Political Science 311; Political Science 374; Religious Studies 352; Sociology 343; Sociology 340; Speech 466.

*One course selected from: Anthropology 314; Classics 381; Classics 382; English 302; Geography 372; Geography 373; Geography 375; Geography 376; Germanic and Slavic Languages 363; History 320; History 374; Philosophy 306; Political Science 350; Political Science 361; Political Science 469; Religious Studies 332; French 432; Spanish 431; Spanish 471; Sociology 446.
University Honors

Bruce Wheeler, 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; one credit hour Tennessee Scholars seminar each term for four years; and a senior honors paper or project. The Tennessee Scholars Program is administered by the University Honors Committee which includes representatives from each of the ten baccalaureate colleges and schools. Students are selected on the bases of ACT/SAT scores, high school GPA and schools. Students are selected on the bases of past academic performance and their potential for academic excellence. As Tennessee Scholars, they are expected to adhere to the written policies and requirements of the Tennessee Scholars Program and are encouraged to enroll in courses that will stimulate and challenge them as well as broaden their horizons. As a result, the University Honors Committee will not be concerned if grades in occasional courses fall below superior range. However, all Tennessee Scholars are expected to maintain a cumulative grade point average of 3.25.

Retention in Tennessee Scholars Program and Whittle Scholars Program

Tennessee Scholars are selected on the bases of leadership experience and skills, academic performance and promise, and extracurricular activities. As Tennessee Scholars, they are expected to adhere to the written policies and requirements of the Whittle Scholars Program and are encouraged to enroll in courses that will stimulate and challenge them as well as broaden their horizons. As a result, the University Honors Committee will not be concerned if grades in occasional courses fall below superior range. However, all Tennessee Scholars are expected to maintain a cumulative grade point average of 3.25.

Whittle Scholars are selected on the bases of leadership experience and skills, academic performance and promise, and extracurricular activities. As Whittle Scholars, they are expected to adhere to the written policies and requirements of the Whittle Scholars Program and are encouraged to enroll in courses that will stimulate and challenge them as well as broaden their horizons. All Whittle Scholars are reviewed annually by the Whittle Scholars Committee as to their academic performance and progress, the planning and execution of their international experiences and their senior projects. Whittle Scholars are expected to maintain a cumulative grade point average of 3.25.

A student in the Tennessee Scholars Program or Whittle Scholars Program whose cumulative GPA falls below 3.25 will be allowed to continue in the Program and receive its benefits so long as he or she earns a 3.25 GPA or better every semester, thus eventually raising the cumulative GPA to the required 3.25. If, while the cumulative GPA is less 3.25, a student fails to earn a 3.25 or better in any semester, he or she will be removed from the program and lose all its benefits, unless the student can demonstrate extenuating circumstances to the University Honors Committee or the Whittle Scholars Committee.

Senior Project Deadlines in Tennessee Scholars Program and Whittle Scholars Program

The following is a list of mandatory deadlines for the senior research project in the Tennessee Scholars Program:

1. No later than the end of the second year in residence, a student must have chosen a UT, Knoxville faculty member to serve as mentor for the senior research project, and that faculty member must have agreed in writing to serve as the student’s mentor.

2. No later than the end of the third year in residence, a student, together with the faculty mentor, will choose two other faculty members who, together with the faculty mentor, will serve as the student’s research project committee. The purpose of the committee is to aid students in formulating, designing and executing their projects and to evaluate the projects when completed. Similarly, by the end of the third year in residence, a student must submit a written abstract or proposal for the senior research project to his/her faculty committee for suggestions and approval.

3. No later than the end of the first semester of a student’s senior year, a first draft of the senior research project must be submitted to the faculty mentor, and the faculty mentor must report that fact to the University Honors Director. In addition, a student will be expected to present the results of his or her research to the Tennessee Scholars senior seminar.

4. Within four weeks of the end of a student’s final semester, he or she will be expected to present the completed project to the student’s committee, the student’s peers in the Tennessee Scholars Program, and invited
Upon the conclusion of the presentation, the student's faculty mentor will submit a letter to the Director of the University Honors Program certifying that the research project has been completed and has been accepted by the committee. One copy of the research project must be filed in the University Honors Office and additional copies should be given to the student's committee.

Failure to meet these guidelines will result in the delay of a Tennessee Scholar's graduation.

UNIVERSITY HONORS COURSES
Seminars and colloquia focused on various topics, issues, and problems, and limited in size to 15-20 students. These are taught by faculty from all ten undergraduate colleges and schools, and may be repeated. University Honors courses are open to all undergraduate students on the basis of high school GPA, ACT/SAT scores, UT, Knoxville GPA of 3.25 or better, or by strong professorial recommendation.

There may be types of projects that do not lend themselves to a formal (public) defense. Hence the decision whether or not to have a public defense should be decided by the research committee and the Director of the University Honors Program.
University Studies

Ralph Norman, Chair (Acting)

The University Studies Program has three general objectives: (1) to foster interdisciplinary teaching and scholarship, especially across college boundaries; (2) to promote active, integrative, and personal learning; and (3) to nurture the personal and intellectual development of faculty and students.

In pursuit of these objectives, University Studies sponsors two main types of activities: FACULTY COLLOQUIES, which are on-going, structured, interdisciplinary conversations on a topic or nexus of topics; and INTERDISCIPLINARY COURSES, often team-taught, many stemming from the colloquy discussions.

Faculty Colloquies explore important contemporary issues which are sufficiently fundamental to involve the attention of faculty and students from all colleges. Current colloquies are: Technology, Society and the Common Good; Aging and Society; Land and People (Tennessee Appalachian Forum); Learning, Thinking, Creating; Forum on International Development; Humanistic Perspectives on Science and Society; Appalachian Studies; and Freshman Year Experience.

The University Learning Community at the sophomore level has as its goals: (a) To form a community of learners, including both faculty and students; (b) To promote active involvement in learning by making use of case studies, active class exercises, small-group projects, and other alternatives to a lecture method of instruction; (c) To promote integrative learning by focusing on a common theme from the point of view of a variety of disciplines throughout a year-long series of courses; and (d) To integrate classroom learning with wellness activities and social interaction with other students and faculty of the learning community.

For further information, contact: Dr. Ralph Norman, Acting Chair University Studies Program 515 Andy Holt Tower PHONE: 974-3265.
Reserve Officers Training

DEPARTMENT OF MILITARY SCIENCE

ARMY ROTC

LTC Hugh E. Howard, III, Professor of Military Science

The military program at The University of Tennessee predates that of any other state university in the country, having been introduced in 1844. In that year, Professor Albert Miller Lea, a West Point graduate, organized an infantry company. With the outbreak of the Mexican War, the entire company, as well as thousands of other Tennesseans, volunteered for service in the war. Thus, Tennessee became known as the “Volunteer State.” When The University of Tennessee re-opened after the Civil War, a system of military discipline was adapted. A Code of Military Regulations was drawn up and a copy was provided to each student when he matriculated. The whole institution was put under regular West Point discipline. The student body was organized into a battalion of cadets, which consisted of four companies fully officered, armed and equipped under the command of the commandant and his staff of cadet officers. The University of Tennessee remained as a Military Garrison for a period of six years, until 1877. Military Science continued to be taught, since the University of Tennessee was a Land Grant Institution and instruction in Military Science was required by the 1862 Act of Congress. The National Defense Act of 1916 changed the old military organization into a ROTC unit. For the first time, the Federal Government began to pay a part of the uniform cost for basic course students; uniforms and other equipment were provided by the Government for Juniors and Seniors, and a monthly subsistence allowance was given to advanced course students.

From 1928-1930, Major (later Brigadier General) Robert R. Neyland was the Professor of Military Science and football coach at The University of Tennessee. Today, Neyland Stadium stands in tribute to his great accomplishments.

The purpose of Army ROTC 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 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; and to establish a sound basis for the students’ future professional development.

ROTC draws young men and women for training from all geographical, economic, and social strata of our society as well as from the many educational disciplines required for the modern Army. The program insures that men and women educated in a liberal and broad spectrum of American institutions of higher learning are commissioned annually into the officer corps.

SATISFACTORY/NO CREDIT COURSES

Since Military Science is not a major course of study that leads to a degree in a specific academic discipline, the number of satisfactory/no credit courses is decided by the college of the student’s academic major. All ROTC courses are offered on a letter grade basis only.

COURSE LOAD

No more than one Military Science course may be taken during any given semester, unless an exception to policy is approved by the Professor of Military Science on a case-by-case basis. Students enrolled in the advanced program (upper division Military Science 300 and 400 level courses) and ROTC scholarship cadets are required to be full-time students, taking at least 12 hours each semester.

COURSE SUBSTITUTION

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 (Military Science 100 and 200 level courses). Placement credit may also be authorized for completion of basic training and advanced individual training. Exemption allowed will be determined by the Professor of Military Science. Military Science courses taken at other colleges or universities are transferable as approved by the Professor of Military Science.

REQUIREMENTS FOR ENROLLMENT AND CONTINUANCE

The general requirements for enrollment and continuance in the Army ROTC program are:

1. Basic Military Studies
   a. Be a citizen of the United States.
   b. Be physically qualified.
   c. Freshman and Sophomore standing.
   d. Be under 30 years old at time of application for enrollment in the Advanced ROTC program who seek a Commission must:
      a. Have successfully completed Military Science 110, 120, 210, 220 or have accomplished one of the following: Prior Military Service, ROTC Basic Military Studies - Practicum (MS 200), 3-Year High School ROTC Basic Course.
   b. Have two years remaining at the University (either undergraduate, graduate or in pursuit of additional course work).
   c. Have completed a minimum of 30 semester hours.
   d. Be under 30 years old at time of commissioning (waiverable).
   e. Be enrolled as a full-time student, either at The University of Tennessee or at a nearby institution in a cooperative program.
   f. Meet military screening and physical requirements.
g. Maintain a 2.0 G.P.A.

h. Maintain B average in Military Science Courses as a scholarship student.

NOTE: Regularly enrolled students who meet the academic prerequisites may take individual courses as electives with the permission of the department head and academic advisor.

REQUIREMENTS FOR ALL MILITARY SCIENCE COMMISSIONEES

The following Military Science (MS) Advanced Course Curriculum must be successfully completed:

Military Science 310 (4) - Advanced Military Studies I
Military Science 320 (4) - Advanced Military Studies II
Military Science 400 (4) - Advanced Camp-Practicum
Military Science 410 (4) - Command and Staff Functions
Military Science 420 (4) - Military Ethics and Law

In addition to a baccalaureate degree, there are required and recommended courses in designated fields of study that students must complete prior to commissioning. Students meet these prerequisites by successful completion of required and elective courses taken from the university curriculum in the required areas of concentration.

Courses in the following designated fields of study are required of students seeking a commission in the United States Army.

a. One course in written communications.
b. One course in human behavior.
c. One course in military history.
d. One course in a foreign language (scholarship students only).
e. One course in Math Reasoning.
f. One course in Computer Literacy.

Courses in management and national security studies are strongly recommended but are not required.

SPECIAL PROGRAMS

Pay and Entitlements All students enrolled in the Army ROTC program are furnished texts by the Army through the Military Property Officer. Students enrolled in the ROTC Advanced Course receive uniforms and equipment plus an allowance of $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.

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 subsidily, 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.

Simultaneous Membership Program The "SMP" option combines the Army ROTC living allowance ($100/month) with membership in the Army Reserve or Army National Guard and allows those students to receive pay from both programs. ROTC cadets serve as "officer-trainees" in direct leadership/management positions. SMP cadets participation with the reserve forces is one weekend per month and two weeks each summer.

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: the personal interests of the cadet; the major course of study; academic accomplishments; leadership potential; and 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, Pershing Rifles and Sponsor Corps. These organizations provide both student to student contact and a valuable opportunity to acquire military skills. Additionally, each term, a number of Field Training Exercises are conducted allowing such military skills as Small Unit Tactics.

MILITARY SCIENCE CURRICULUM

Normal Course

<table>
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<tr>
<th>Course</th>
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<td>Military Science 110, 120</td>
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<tr>
<td>Military Science 210, 220</td>
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<td>Military Science 310, 320</td>
<td>8</td>
</tr>
<tr>
<td>Military Science 400</td>
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<td>Military Science 410, 420</td>
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Total: 30 hours

Basic Military Studies - Practicum

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<tr>
<td>Military Science 400</td>
<td>4</td>
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<td>Military Science 410, 420</td>
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Total: 24 hours

Advanced Placement

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</tr>
<tr>
<td>Military Science 400</td>
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</tr>
</tbody>
</table>

Total: 20 hours

Variations to these sequences of study may be approved by the Professor of Military Science on a case-by-case basis. Total Military Science hours offered is 34. Maximum total Military Science hours applicable for commission is 30. Minimum total Military Science hours applicable for commission is 20. Lower division credit hours granted by the University for military service are dependent upon time spent in service and service schools attended.

PROGRESSION REQUIREMENTS

1. Minimum semester hours/GPA for entrance into Basic Military Studies - Practicum (Military Science 200): 30 semester hours/2.00 GPA
2. Minimum overall GPA for entrance into the advanced course (Military Science 310, 400, 410, 420): 2.00
3. Minimum GPA in Military Science Courses: 2.00
4. Minimum overall GPA for commissioning: 2.00
5. Quarterly counseling sessions with military advisor required for Advance Course and scholarship students only.
6. Officer Selection Battery test.

DEPARTMENT OF AIR FORCE

AIR FORCE ROTC PROGRAM

Professor of Air Force Aerospace Studies: Colonel Rex W. Jones (Head), M.S. University of Kentucky.

Assistant Professors:
Captain Louise W. Ewing, M.A. Webster University; Captain James E. Goss, M.S. University of Florida; Captain Richard L. Modell, M.S. AF Institute of Technology.

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 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 being medically qualified; 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 the Professor of Aerospace Studies, applicants seeking enrollment in the Two-Year Program are evaluated using the same criteria used for the four-year program except the length of the field training course is six weeks. 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 Department 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.

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 stipend each month during the school year while on scholarship status.

High School Students: Competitive four-year 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 stipend each month during the school year while on scholarship status.

Pay and Entitlements

All cadets enrolled in AFROTC are furnished texts and uniforms. Enrollees are required to deposit $75 as security to the University against loss or damage to the uniforms. The deposit, minus a nominal fee to cover cost of shoes, is returned to the student upon early withdrawal or disenrollment from the program. 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 of active duty. Those graduates going into pilot assignments will be required to serve eight years of active duty after completion of pilot training. Those graduates going into navigator assignments will be required to serve five years of active duty after completion of navigator training.
Advanced Studies

THE COLLEGE OF LAW

Marilyn Yarbrough, Dean
Mary Jo Hoover, Associate Dean
Julia P. Hardin, Associate Dean
Richard S. Wirz, 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. Two dual degree programs are available in conjunction with the College of Law: the J.D.-M.B.A program with the College of Business Administration and J.D.-M.P.A. program with the Department of Political Science.

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.

THE GRADUATE SCHOOL

C.W. Minkel, Vice Provost and Dean of The Graduate School
Wayne T. Davis, Associate Dean of The Graduate School
Linda R. Painter, Associate Dean of The Graduate School
Diana Lopez, Director, Graduate Admissions and Records
S. Kay Reed, Graduate Recruitment Coordinator
Ann L. Lacava, Thesis/Dissertation Coordinator
Rose Ann Trantham, Assistant Director, Graduate Admissions and Records
Irene Kaplan, Assistant Director, Graduate Admissions and Records

The University of Tennessee is the official land-grant institution for the State of Tennessee with its main campus in Knoxville. It is a comprehensive research-oriented institution offering a wide range of graduate programs leading to the Master's and doctoral degrees. The University offers Master's programs in 85 fields of specialization and doctoral work in 52. Approximately 6,000 graduate students are enrolled, both on and off campus. Administration of graduate student policies and procedures, 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 UT, Knoxville'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 visit the Office of Graduate Admissions and Records, 218 Student Services Building, The University of Tennessee, Knoxville, Tennessee 37996-0220 or call (615) 974-3251.

GRADUATE SCHOOL OF BIOメディカル SCiences

Raymond A. Popp, Director

FULL-TIME FACULTY

Professor:
D.E. Olins, Ph.D. Rockefeller.

Research Professor:

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

Research Assistant Professors:
Robert S. Foote, Ph.D. Duke; Lan-Yang Ch'ang, Ph.D. Vanderbilt.

The University of Tennessee, Knoxville is available in the Graduate Catalog published annually. For a copy, write or visit the Office of Graduate Admissions and Records, 218 Student Services Building, The University of Tennessee, Knoxville, Tennessee 37996-0220 or call (615) 974-3251.
The Graduate School of Biomedical Sciences offers programs leading to the Master of Science and Doctor of Philosophy degrees. The School publishes supplementary information in addition to the regular Graduate Catalog. All inquiries regarding admission should be addressed to: Director, The University of Tennessee-Oak Ridge Graduate 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 PROGRAM**

**Coordinating Committee:** J.E. Fuhr; J.E. Lawler; C. Loizzo.

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 University of Tennessee, Knoxville Graduate School. The graduate program is intended to prepare students for teaching and research careers in the health sciences, emphasizing the comparative approach to the study of pathology, immunology, pathology, aberrant metabolism, oncology, genetic disorders. For complete information, refer to the Graduate Catalog where the UCHS College of Medicine/Knoxville Unit courses are listed.

**ENERGY, ENVIRONMENT, AND RESOURCES CENTER**

E. William Colglazier, Director

The Energy, Environment, and Resources Center was created to encourage interdisciplinary research directed at solutions to problems related to energy and the environment. The Center provides assistance to faculty interested in continuing education for updating knowledge, and assists Tennessee government and industry in specific problems related to energy, environmental, resource, and technology policy issues. The Center has a close working relationship with Oak Ridge National Laboratory and the Tennessee Valley Authority.

**GRADUATE SCHOOL OF LIBRARY AND INFORMATION SCIENCE**

Gary R. Purcell, Director

**Professors:**
- A. Palko, M.A. Iowa; R. Pollard, Ph.D. Brunel (UK)

**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: 330, 340, 475, 510, 530, 551, 564, and 574.

**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.

**LIFE SCIENCES**

**Coordinating Council:**
- H.J. Adler (Chair); Physiology: R. Bagby; Biotechnology: D.K. Dougall; Cellular, Molecular and Development Biology: J.M. Becker; Environmental Toxicology: W.R. Farkas; Ethology: G.B. Burghardt; Plant Pathology and Genetics: O.J. Schwarz.

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 in genetics and research in the following areas: physiology, biotechnology (M.S. only); 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 Dean of the area of interest. For complete information, refer to the Graduate Catalog.

**GRADUATE SCHOOL OF PLANNING**

James A. Spencer, Director
Theodore J. Newsom, Ph.D. Penn State, Assistant Director

**Professors:**

**Associate Professors:**
- G.E. Bowen, M.A. George Washington; P. Fisher, Ph.D. Florida State.

The Graduate School of Planning offers a program of studies leading to the professional degree of Master of Science in Planning. For complete information, refer to the Graduate Catalog.

**SPACE INSTITUTE**

Wesley L. Harris, Vice President
Richard M. Robers, Associate Dean

The Space Institute is a graduate education and research institution 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 45 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 advanced study. Programs are available to students devoting full-time effort toward M.S. and Ph.D. degrees, 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, Chemical Engineering, 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, advanced space propulsion, knowledge engineering, energy conversion processes, thermal sciences, coal combustion, magnetohydrodynamics, plasma physics, space systems, remote sensing, propulsion, computational fluid dynamics, and other aspects of atmospheric and space flight.
The Institute has an established 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 nonlinear 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

Stephen H. Richards, Assistant Director

The Transportation Center was created in 1970 to foster and facilitate interdisciplinary research and public service in the field of transportation at The University of Tennessee. It began operating full-time in 1972 and since then has contributed greatly to the overall research program of The University.

The Center, 357 South Stadium Hall, is a University-level organization administratively positioned with the Office of the Vice Provost for Research at UT, Knoxville. The Center’s staff is presently organized into eight research divisions: Energy and Environment; Systems Analysis and Data Management; Policy and Services; Rail and Water; Safety and Operations; Structures and Construction; Highway Engineering; and Training and Technology Transfer.

The Center has three goals. The first is to conduct a program of research in transportation that is recognized for its excellence, comprehensiveness, innovation, productivity, and national leadership. The second is to develop and sustain the technical expertise for high quality transportation research by the faculty and students within the various departments and colleges of UT. The third goal is to serve the transportation research, service, and training needs of state and local government, business, and industry in Tennessee, the southeast region, and the nation.

WATER RESOURCES RESEARCH CENTER

E. William Colglazier, Director

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 which addresses a wide range of problems of interest to the state, region, and nation; (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; and (3) to promote education in fields relating to water resources and to encourage the entry of promising students into careers in
<table>
<thead>
<tr>
<th>College of Agriculture</th>
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<tbody>
<tr>
<td>Agricultural Extension Education</td>
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</tr>
<tr>
<td>Agricultural Economics</td>
<td>M.S., Ph.D.</td>
</tr>
<tr>
<td>Agricultural Engineering</td>
<td>M.S., Ph.D.</td>
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<tr>
<td>Agricultural Engineering Technology</td>
<td>M.S.</td>
</tr>
<tr>
<td>Animal Science</td>
<td>M.S., Ph.D.</td>
</tr>
<tr>
<td>Entomology and Plant Pathology</td>
<td>M.S.</td>
</tr>
<tr>
<td>Food Technology and Science</td>
<td>M.S., Ph.D.</td>
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<tr>
<td>Forestry</td>
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<tr>
<td>Ornamental Horticulture and Landscape Design</td>
<td>M.S.</td>
</tr>
<tr>
<td>Plant and Soil Science</td>
<td>M.S., Ph.D.</td>
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<tr>
<td>Wildlife and Fisheries Science</td>
<td>M.S.</td>
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<tbody>
<tr>
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<tr>
<td>Business Administration</td>
<td>M.B.A., J.D.-M.B.A., Ph.D.</td>
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<tr>
<td>Economics</td>
<td>M.A., Ph.D.</td>
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<tr>
<td>Management Science</td>
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<tr>
<td>Statistics</td>
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<tr>
<td>Communications</td>
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<tbody>
<tr>
<td>Art Education</td>
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<tr>
<td>College Student Personnel</td>
<td>M.S., Ed.S., Ed.D.</td>
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<tr>
<td>Curriculum and Instruction</td>
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<tr>
<td>Education</td>
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<tr>
<td>Educational Administration and Supervision</td>
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<td>Educational Psychology</td>
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<td>Educational Psychology and Guidance</td>
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<td>Guidance</td>
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<td>Health Education</td>
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<td>Music Education</td>
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<td>Physical Education</td>
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<tr>
<td>Public Health</td>
<td>M.P.H.</td>
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<tr>
<td>Recreation &amp; Leisure Studies</td>
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<td>Rehabilitation Counseling</td>
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<tr>
<td>Safety Education and Service</td>
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<td>School Health Education</td>
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<tr>
<td>Special Education</td>
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<td>Technological &amp; Adult Education</td>
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<tr>
<td>Vocational-Technical Education</td>
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<td>Aerospace Engineering</td>
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<td>Chemical Engineering</td>
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<tr>
<td>Civil Engineering</td>
<td>M.E., M.S., Ph.D.</td>
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<tr>
<td>Electrical Engineering</td>
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<tr>
<td>Engineering Science</td>
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</tr>
<tr>
<td>Environmental Engineering</td>
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<td>Industrial Engineering</td>
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<tr>
<td>Mechanical Engineering</td>
<td>M.S., Ph.D.</td>
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<tr>
<td>Metallurgical Engineering</td>
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<td>Nuclear Engineering</td>
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<tr>
<td>Polymer Engineering</td>
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<tr>
<th>College of Human Ecology</th>
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<td>Child and Family Studies</td>
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<td>Food Systems Administration</td>
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<td>Home Economics</td>
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<td>Art</td>
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<td>Audiology</td>
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<td>Biochemistry</td>
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<td>Botany</td>
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<td>Chemistry</td>
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<td>Computer Science</td>
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<td>English</td>
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<tr>
<td>French</td>
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<td>Geography</td>
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<td>Geology</td>
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<td>German</td>
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<tr>
<td>History</td>
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<tr>
<td>Mathematics</td>
<td>M.Math., M.S., Ph.D.</td>
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<td>Microbiology</td>
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<td>Modern Foreign Languages</td>
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<td>Music</td>
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<td>Sociology</td>
<td>M.A., Ph.D.</td>
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<tr>
<td>Spanish</td>
<td>M.A.</td>
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<tr>
<td>Speech and Hearing Science</td>
<td>Ph.D.</td>
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<td>Speech Pathology</td>
<td>M.A.</td>
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<td>Theatre</td>
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<td>Zoology</td>
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<th>College of Nursing</th>
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<tbody>
<tr>
<td>Nursing</td>
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<th>College of Social Work</th>
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<tbody>
<tr>
<td>Social Work</td>
<td>M.S.S.W., Ph.D., M.P.A.-M.S.S.W.</td>
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<th>College of Social Work (Memphis, Nashville, and Knoxville)</th>
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<tbody>
<tr>
<td>Social Work</td>
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<th>School of Biomedical Sciences</th>
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<td>Biomedical Sciences</td>
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<td>Library Science</td>
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<th>School of Planning</th>
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<tbody>
<tr>
<td>Planning</td>
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</table>
The Division of Continuing Education, Knoxville, is the administrative unit of UT, Knoxville 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.

Conference Services Supervisor: 
M. Purdy

UT Conferences, is a department of the Division of Continuing Education, University of Tennessee, Knoxville. Housed in the new UT Conference Center, the staff provides management services to any individual or group who desires to hold a high quality convention, conference or meeting anywhere in the state of Tennessee.

Utilizing the new Conference Center and state-wide University system facilities, major hotels and convention centers across Tennessee, UT Conferences provides a unique contribution to continuing education and public service. Programs are custom designed to meet the needs of the participants in order to achieve maximum learning benefits. Affordable services are tailored within the budget guidelines. The overall plan is administered with the participants personal and professional enhancement as the objective. Programs which meet appropriate criteria qualify for Continuing Education Credits. The Division of Continuing Education maintains a record of CEU's earned and provides records upon written request.

Conferences' staff provides professional guidance and management for small group meetings as well as for major conventions of several thousand delegates. Consulting services begin with the initial planning and budgeting. They continue as UT Conferences acts in the sponsor's behalf in negotiating and contracting all arrangements for lodging, food services, speakers, promotional material, travel, meeting rooms and the myriad of details that must be monitored in order to assure a successful event. The site management team is the first on the scene prior to the event and is prepared to register the early arrivals. Room sets, audio visual equipment, sound systems, refreshment breaks, tours, banquets—every detail is executed as planned and problem solving is made easy through experienced management. A final evaluation after the event reflects a positive performance, a balanced budget and a growth experience for your organization. This turn-key support allows the sponsors to concentrate on quality of program content and to serve as host to attendees.

UT Conferences has joined hands with UT Educational Video and Photography to provide teleconferencing services for the University and community. Professional groups and interested individuals may arrange to receive (downlink) satellite programming at the UT Conference Center or to transmit (uplink) to earth stations around the world. Additional information may be obtained from UT Conferences, P.O. Box 2648, Knoxville, TN 37901, or by calling (615) 974-0250. FAX (615) 974-0264.

ENGLISH LANGUAGE INSTITUTE

Director:
Dale A. Myers, Ph.D., Florida

Assistant Director:
Jan G. Hitt, M.S., Tennessee

Instructors:
Anwar F. Accawi M.Ed., Tennessee
Mostafa Rahbar, M.Ed., Tennessee

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 their 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 eight proficiency levels: 101-108, Introductory through Pre-Academic.

Each level meets 4-5 periods each day with classes from the following:

DEPARTMENT OF CONFERENCES

Acting Director:
R. Reynolds, M.S., Tennessee

Assistant Director:
N. Dahlin-Brown, B. of Arch., M.S., Tennessee

Program Managers:
W. Brown, M.S. Tennessee
E. Keener, B.A. Temple University
L. Law, B.S. Tennessee
G. Mosby, M.Ed. Texas South. University
G. Trantham, B.S. Tennessee

Conference Services Supervisor:
M. Purdy

UT Conferences, is a department of the Division of Continuing Education, University of Tennessee, Knoxville. Housed in the new UT Conference Center, the staff provides management services to any individual or group who desires to hold a high quality convention, conference or meeting anywhere in the state of Tennessee.

Utilizing the new Conference Center and state-wide University system facilities, major hotels and convention centers across Tennessee, UT Conferences provides a unique contribution to continuing education and public service. Programs are custom designed to meet the needs of the participants in order to achieve maximum learning benefits. Affordable services are tailored within the budget guidelines. The overall plan is administered with the participants personal and professional enhancement as the objective. Programs which meet appropriate criteria qualify for Continuing Education Credits. The Division of Continuing Education maintains a record of CEU's earned and provides records upon written request.

Conferences' staff provides professional guidance and management for small group meetings as well as for major conventions of several thousand delegates. Consulting services begin with the initial planning and budgeting. They continue as UT Conferences acts in the sponsor's behalf in negotiating and contracting all arrangements for lodging, food services, speakers, promotional material, travel, meeting rooms and the myriad of details that must be monitored in order to assure a successful event. The site management team is the first on the scene prior to the event and is prepared to register the early arrivals. Room sets, audio visual equipment, sound systems, refreshment breaks, tours, banquets—every detail is executed as planned and problem solving is made easy through experienced management. A final evaluation after the event reflects a positive performance, a balanced budget and a growth experience for your organization. This turn-key support allows the sponsors to concentrate on quality of program content and to serve as host to attendees.

UT Conferences has joined hands with UT Educational Video and Photography to provide teleconferencing services for the University and community. Professional groups and interested individuals may arrange to receive (downlink) satellite programming at the UT Conference Center or to transmit (uplink) to earth stations around the world. Additional information may be obtained from UT Conferences, P.O. Box 2648, Knoxville, TN 37901, or by calling (615) 974-0250. FAX (615) 974-0264.
English Structure (Grammar)
Listening Comprehension
Writing/Composition (Rhetoric)
Conversation Practice for Communicative Purposes
Reading and Vocabulary

In addition, classes also assist students in pronunciation, test-taking strategies, U.S., culture orientation, and university study skills. Additional information may be obtained at 907 Mountcastle Street, telephone (615) 974-3404.

NON-CREDIT PROGRAMS

Director:
G.D. Cooper, Ed.D., Tennessee

Coordinators:
D.T. Howard, M.S., Tennessee
D.J. von Weisenstein, M.S., Tennessee

The Department of Non-Credit Programs provides a comprehensive array of courses and seminars designed and planned to serve the needs or demands of individuals in Knoxville and surrounding communities, as well as those of business and industry throughout Tennessee. Most courses are offered on a seasonal term (Fall, Winter, Spring, Summer) 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. Business seminars are offered to the public in the major cities throughout the state of Tennessee. These can also be delivered "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, aviation, CEBS (Certified Employee Benefit Specialist) and CCA (Certified Credit Administrator). The business seminars range from "hands-on" computer training to topics pertinent to management development for business and industry. "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 and seminars offered by the department. 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 transcript of all CEU’s earned at The University of Tennessee, Knoxville, may be obtained upon written request.

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 UT, Knoxville free of charge on a space available basis. Legal verification of either of these conditions is required for enrollment. Additional information may be obtained at The Hess Building, 600 Henley Street, Suite 105, Telephone (615) 974-0150.

UNIVERSITY EVENING SCHOOL

Director:
S.C. Bills, Ed.D., Tennessee

Associate Directors:
J.C. Sekula, Ph.D., Tennessee
M.K. Warden, Ed.D., Tennessee

Assistant Director:
L.U. Jurand, M.S., Tennessee

Administrative Assistant:
B.H. Beeler

Assistant Professor:
C.B. Mamantov, Ed.D., Tennessee

Director, Oak Ridge Resident Graduate Program:
S.C. Bills, Ed.D., Tennessee

Assistant Director, Oak Ridge Resident 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 nontraditional 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.

College of Liberal Arts — Bachelor of Arts with majors in Art, 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 and Venture Analysis. For other majors, consult the appropriate academic department.

Mini-Term. The University Evening School offers a Mini-Term during May. Students may enroll in one concentrated credit course during the 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 semester 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 UT, Knoxville location. All course offerings and instructors are approved by the appropriate academic departments, and the credit awarded is resident credit.

The College of Education (Off-Campus) offers a Bachelor of Science in 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 Educational Administration and Supervision (Chattanooga); Master of Science in Education with a major in Curriculum (Athens); Master of Science in Education with a major in Vocational-Technical Education (Statewide). The Evening School conducts undergraduate and graduate courses at Oak Ridge, a campus center at Oak Ridge where courses leading to advanced degrees in science and engineering are offered. At Oak Ridge, Graduate Study Programs lead to a Master's in Chemical, Electrical and Industrial Engineering (engineering management). Courses are offered in Nuclear Engineering (concentration in radiation protection), Environmental Engineering (concentration in hazardous waste management), Computer Science, Mathematics, Physics, Chemistry, Public Health and Mechanical Engineering.

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 semester system. Workshops offer flexibility of timing, location, and content. Summer workshops are particularly popular with teachers and school administrators. Although most workshops are held on the UT, Knoxville campus, geography is not a limiting factor.

Student Services. A comprehensive program of services is provided by the University Evening School for both on and off campus students.

Registration. Registration by mail is offered as a convenience to former Evening School students. Secondary registration at both on and off campus locations is also available. Advising. An advising counseling program is available for the benefit of all evening students who need assistance with academic or related matters. The program caters to individual students during regular daytime hours (8:00-5:00) and in the evenings by appointment, as well as at various centralized off campus locations. The College of Liberal Arts, Business, Education, and Engineering also cooperate with the Evening School by providing extended hours several times a week to advise students. A veterans' advisor
The University assists in academic planning 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 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 $7 per credit hour up to a maximum of $75 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 and University Extension Building on the UT, Knoxville campus and may be reached by calling (615) 974-5361 or 1-800-334-1724. All inquiries concerning these programs are welcome.

DEPARTMENT OF INDEPENDENT STUDY

Director:
David F. Holden, Ph. D. Kansas

Assistant Director:
Samuel A. Cain, M.S. State University of New York (Stony Brook)

The UT, Knoxville Department of Independent Study administers the program of independent study by correspondence for all campuses of the University. The program includes college credit courses, high school courses (for credit or for college entrance requirements), and non-credit courses. College credit correspondence courses are based on regular UT campus courses, and the credit is recorded on the student's UT transcript. High school courses are based on the curriculum frameworks of the Tennessee Department of Education. Non-credit courses can be taken to meet personal or professional education goals. The courses utilize videotapes and audiotapes as well as traditional print materials. Through this program, The University of Tennessee is able to overcome geographic limitations in performing its services as Tennessee's land-grant institution of higher education. The program is open to UT students and to anyone who has the educational preparation required for a particular course. UT students must have the approval of their college advising center before they enroll in college credit courses. With the cooperation of a UT instructor, independent study through directed readings may also be arranged through this department for courses not listed in the Independent Study catalog.

The Department of Independent Study also serves as the Tennessee state office for Elderhostel, an education and travel program for people over 60. One-week, non-credit Elderhostel programs are available throughout Tennessee, the U.S., and many countries overseas.

For information and enrollment forms for correspondence courses or Elderhostel, contact: Department of Independent Study, 420 Communications Bldg., The University of Tennessee, Knoxville, TN 37996. Telephone: (615) 974-5134.
ACCOUNTING (009)

201 Principles of Financial Accounting (3) Introduction to financial accounting theory and practice with emphasis on preparation and reporting of financial information. Prerequisite: Mathematics 110 or 121. E

202 Principles of Managerial Accounting (3) Introduction to managerial and cost accounting concepts with emphasis on uses of accounting data by managers in planning operations, controlling activities, and decision making. Prereq: 201. E

311-312 Intermediate Financial Accounting (3,3) Theory, principles, and procedures related to valuation of assets, liabilities and equities; measurement of periodic income; and preparation of financial statements. Prereqs: 202 for 311; and 311 with a grade of C or better and Management 303 for 312. E

321 Cost and Managerial Accounting (3) Analysis of costing for products, projects, and management control. Topics include cost behavior, cost prediction, budgeting, and responsibility accounting. Prereq: 202. Prereq or Coreq: Management 303. E

341 Accounting Information Systems (3) Development and use of accounting information systems for collection, organization, and distribution of economic information about organizations for internal and external decision making. Prereq: 321, Management 303, junior standing. Major exam may be given during the last class meetings. F, Sp

400 Special Topics (3) Critical consideration of selected current topics. May be selected from managerial, cost, financial, systems or auditing. May include written reports and cases. Prereqs: 312, 321, and 341 and consent of instructor.

411 Auditing (3) Role of auditing in society, operational auditing, professional auditing standards, auditor's legal responsibilities, audit evidence and reporting, role of internal control and statistical sampling in auditing, applications to specific transaction cycles. Prereq: 312 with a C or better, 341, F, Sp

414 Advanced Accounting (3) Issues and alternatives in advanced theory and problem areas including financial accounting theory, partnership accounting, business combinations, consolidated financial statements, and not-for-profit accounting. Major writing requirement. Prereq: 312 with a C or better.

431 Federal Income Taxation (3) Fundamentals of gross income, deductions, credits, and tax determination. Introduction to taxation of corporations and partnerships. Prereq: 311 with a C or better, or consent of instructor. E

ADVERTISING (012)

250 Advertising Principles (3) Survey of the role of advertising in American business and society. Relationship between advertising and marketing; functional components of the advertising process: research, media, creative, and management.

340 Advertising Research Methods (3) Secondary data and primary research techniques for advertising decisions. Prereq: 250 with a grade of C or better and Statistics 201.

350 Advertising Creative Strategy (3) Basic concepts of creative strategy with intensive practice in developing creative platforms, writing and designing advertisements, and judging creative work. Prereq: 250 with a grade of C or better.

360 Advertising Media Strategy (3) Assessment of markets, vehicle audiences and mathematical techniques for advertising planning. Instruction in media planning, buying, and evaluation. Prereq: 340 with a grade of C or better.

380 Advertising Professional Seminar (1) Exploration of career choices in mass communications. Resume and letter writing, interviewing, and portfolio preparation. Prereq: Progression as a major in the Department of Advertising.

450 Advertising Management (3) Case-study approach to advertising decisions. Data analysis and interpretation, generating alternative strategies, oral and written presentation of recommendations. Prereqs: 350 and 360 with grades of C or better. Open to marketing seniors in the College of Business Administration with consent of Head of Department of Advertising.

470 Advertising Campaigns (3) Group-based development, execution and evaluation of an advertising campaign for a regional or national client. Prereq: 450 with a grade of C or better.

490 Special Topics (3) Detailed study of a specialized area of advertising. Topics vary by semester and include written reports and cases. Prereqs: 201, 312, 321, 341, and consent of instructor.

ADVERTISING (012)

250 Advertising Principles (3) Survey of the role of advertising in American business and society. Relationship between advertising and marketing; functional components of the advertising process: research, media, creative, and management.

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360 Advertising Media Strategy (3) Assessment of markets, vehicle audiences and mathematical techniques for advertising planning. Instruction in media planning, buying, and evaluation. Prereq: 340 with a grade of C or better.

380 Advertising Professional Seminar (1) Exploration of career choices in mass communications. Resume and letter writing, interviewing, and portfolio preparation. Prereq: Progression as a major in the Department of Advertising.

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470 Advertising Campaigns (3) Group-based development, execution and evaluation of an advertising campaign for a regional or national client. Prereq: 450 with a grade of C or better.

490 Special Topics (3) Detailed study of a specialized area of advertising. Topics vary by semester and include advanced media strategy, advanced creative strategy, direct marketing, and advertising and social issues.

492 Advertising Practicum (1) Experience in a functional area of advertising. Ten hours laboratory each week. May be repeated once. Prereq: Progression as a major in the Department of Advertising. Satisfactory-No credit.

493 Independent Study (1-3) Individual study in a specialized area under the supervision of a faculty member. Prereq: Consent of instructor.

AFRO-AMERICAN STUDIES (022)

201 Introduction to Afro-American Studies (3) Multidisciplinary approach to the Afro-American experience through the Civil War period which examines such issues as traditional African societies, the institution of slavery, the development of Afro-American culture, the beginnings of Afro-American protest tradition, and the Civil War and Reconstruction.

202 Introduction to Afro-American Studies (3) Multidisciplinary approach to the Afro-American experience from the Civil War through the Civil Rights era which focuses on such topics as Afro-American rural and urban societies, the Afro-American church and education, and Afro-American intellectual and protest movements.

310 Introduction to Afro-American Music (3) (Same as Music History 310.)

314 Peoples and Cultures of Africa (3) (Same as Anthropology 314.)

315 Afro-American Anthropology (3) (Same as Anthropology 315.)

322 Minority Group Politics in the United States (3) (Same as Political Science 322.)

343 Race and Ethnicity (3) (Same as Sociology 343.)

350 History of Jazz (3) (Same as Music History 350.)

352 Afro-American Religion (3) (Same as Religious Studies 352.)

353 Topics in Afro-American Religion (3) (Same as Religious Studies 353.)

364 Contemporary Issues in Afro-American Education (3) 1954 to the present. Examines issues relevant to the current dilemma of providing quality education for the Afro-American student including professional school quotas, intelligence testing, homogeneous grouping, Afro-American college survival, busing, Black English/Standard English controversy. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom. (Same as Curriculum and Instruction 364.)

371-372 African History (3,3) (Same as History 371-372.)

373 African Religions (3) (Same as Religious Studies 373 and Anthropology 373.)

379 Geography of Africa (3) (Same as Geography 379.)

420 Families: Race, Class and Culture (3) (Same as Child and Family Studies 420.)
346 Strategies for Teaching and Program Planning in Agriculture (3) Methods and techniques for teaching agriculture, preparing teaching plans and courses of study, and developing programs of activities for agriculture. F

411 Fundamentals of Agricultural Extension (3) History; philosophy; organizational structure; clientele served; major areas of program development; teaching methods, and relationships with other educational agencies. Sp

420 Methods of Teaching Agricultural Mechanics (2) Methods for vocational agriculture students. Special competencies for planning, conducting and evaluating agricultural mechanics program. Prereq: Agricultural Engineering Technology 201 on consent of instructor. Sp


482 Agricultural and Extension Education Internship (3) Supervised work experience in approved county extension offices, agricultural businesses, or agricultural related agencies. (Requires living off-campus for a specified time.) Prereq: 411 and consent of instructor. Sp, Su

493 Independent Study (1-3) Individualized study of a special project or problem in Agricultural and Extension Education, the consultation with the instructor. Prereq: Consent of instructor. May be repeated. Maximum 6 hours. E

AGRICULTURAL ECONOMICS (047)

110 Orientation to Agricultural Economics and Business (1) Primarily for Agricultural Economics and Business majors; survey of economic concepts and economic factors influencing current issues, subject matter areas, and career opportunities in the field. Satisfactory/No Credit grading. F

210 Introduction to Agricultural Economics (3) Application of economic concepts of demand, supply, price determination, and market structure to agriculture, natural resources, rural community development, and international trade and development. Economic aspects of current issues and problems associated with production, marketing, consumption, resource use, and government intervention in the agricultural, rural, and international sectors. Prereq: Economics 201. F, Sp

310 Farm and Agribusiness Law (3) Survey of law applicable to the farmer, agribusiness manager, and agricultural industry. Property, contracts, torts, drainage and water rights, landlord-tenant relationships, taxation and insurance, forms of business organization, estate planning, corporate and personal income tax planning, regulatory laws, and other selected topics. Prereq: Junior standing or consent of instructor. F

342 Farm Business Management I (3) Principles and procedures for the management of the farm business. Farm organization and system of operation: nature of managerial processes; farm records and their uses; budgeting; economic aspects of production and management of capital, land, labor and machinery resources. Prereq: Economics 201 and Junior standing. F

350 Marketing of Agricultural Products (3) Survey of U.S. food and fiber marketing system; marketing functions; industry structure; market channels; marketing options of farmers; basic analysis of marketing problems. Prereq: 210 or consent of instructor. Sp

352 Commodity and Financial Futures Markets (3) Foundations of commodity, credit, and financial futures markets; market function, and organizational characteristics common to most futures markets. Special topics on risk management, forward price discovery, securing operating capital and market capacity, for information use and dissemination. Course is intended for advanced undergraduate students. F

410 Seminar in Agricultural Economics and Business (1) Primarily for Agricultural Economics and Business majors in their senior year. Analysis of contemporary problems in the field. Discussion of career objectives, opportunities, and placement process. Assignments for written and oral presentation. F

412 Agricultural Finance (3) Macro-finance, financial objectives, acquisition of debt and equity funds, capital investments, capital allocation, debt repayment, credit analysis, borrower and lender loan application analysis; insurance strategies; computer applications, kinds and sources of agricultural credit, and financial intermediaries. Prereq: Economics 201; Junior standing or consent of instructor. F

430 Agricultural and Trade Policy (3) Values, goals, and policy process; historical development and current characteristics of commodity, credit, food, and trade policy; relationship between domestic and international agricultural policy. Prereq: 210 or consent of instructor. Sp

440 Agricultural Production Economics (3) Application of microeconomic theory to problem of resource allocation, enterprise selection, scale of operation of agricultural firms; economics interpretation of technical agricultural production relationships. Prereq: 210 and Economics 311. F

442 Farm Business Management II (3) Advanced topics and methods for farm business analysis using micro and mainframe computers; linear programming applications in farm planning; spreadsheet analysis of whole farm business, systems analysis and management control; risk analysis and management; income tax management; farm growth and intergeneration transfer. Prereq: 342. Sp

450 Agricultural Price Analysis (3) Demand and supply in agricultural commodity and services markets; analysis of factors influencing environmental quality; alternative public policy tools for influencing natural resource use or improving environmental quality. Prereq: 210 or consent of instructor. Sp

493 Independent Study (1-3) Directed individual or team research and report writing. Off-campus intern experience and reporting. Special courses in specific topics. Student must arrange with instructor before registering. May be repeated. Maximum 6 hours. Prereq: Junior standing. E

AGRICULTURAL ENGINEERING (066)

201 Specialty Areas of Agricultural Engineering (1) Activities and opportunities in five areas of specialization: soil science; engineering for each area; career counseling. 1 hour. F

300 Environmental Relationships (2) Application of thermodynamics principles to agriculture. Psychrometrics, thermodynamics cycles, biothermal sciences to processing and handling of agricultural products; physical properties; thermal processing, cur- ring, drying and materials handling. Prereq: 310; Engineering Science and Mechanics 341. 2 hours. Prereq: Junior standing. F

310 Power Units and Machinery (2) Components and operating characteristics of internal combustion engines and tractor power transmission systems; functional analysis; capabilities of agricultural machines; tractor-implement system performance. Prereq: Mechanical Engineering 331; 1 hour and 1 lab. Sp

329 Structures and Environment (2) Environmental concerns and systems; design and selection of agricultural structures; heat loads and insulation; functional requirements of agricultural buildings; material selection and characteristics. Prereq: Junior standing. F

330 Processing (2) Application of basic engineering sciences to processing and handling of agricultural products; physical properties; thermal processing, curing, drying, and materials handling. Prereq: 310; Engineering Science and Mechanics 341. Nuclear Engineering 342; 1 hour and 1 lab. Sp
Agricultural Engineering Technology (067)

201 Materials and Fabrication (3) Properties of materials including wood, metals, concrete, plastics, and lubricants; drafting and plain reading; fabrication techniques and processes involving hand tools, power equipment, and arc and gas welding. 1 hour and 2 labs. Sp, Prereq: Engineering Science and Mechanics 341. 1 hour and 1 lab. F

400 Professional Development (1) Engineering ethics; professional registration; opportunities for professional development and continuing education. 1 hour. F

410 Electronic Measurements and Control for Agriculture (2) Sensing and controlling physical and environmental parameters electronically; sensor selection and interfacing; analog and digital I/O signal conditioning; process control; application of programmable controllers. Prereq: Electrical Engineering 302 or senior standing. 2 hours including project laboratory.

420 Agricultural Engineering Design Fundamentals (2) Nature of design; creativity; analysis and synthesis; design team organization; selection and functional analysis of design project. Prereq: Senior standing. 1 hour and 1 lab. M

425 Agricultural Engineering Design Project (2) Synthesis of design; structure, kinematic, control system analysis; preparation of design drawings, specifications, model build and model construction report of project. Prereq: 420. 1 hour and 1 lab. Sp

430 Mobile Hydraulic Power System Design (2) Functional and operational characteristics of mobile hydraulic system components including pumps, valves and actuators; analysis and synthesis of power transmission and control circuits. Prereq: Engineering Science and Mechanics 341. 1 hour and 1 lab. Sp

435 Design of Mechanisms for Agricultural Machines (2) Types of mechanisms; transmission angles; synthesis of plane mechanisms; introduction to space mechanisms. Prereq: Mechanical Engineering 465 or equivalent. 1 hour and 1 lab. Sp, Ap

440 Irrigation and Drainage Design (2) Design of irrigation and drainage systems including crop, climate, water quantity, and quality, and system characteristics. Prereq: 340 or equivalent. 2 hours and 1 lab (on alternate weeks). Sp, Ap

445 Processing and Materials Handling Design (2) Systems and components for processing and utilization of agricultural products, including materials in process, energy and mass balance, storage, handling and economic merit. Prereq: 330. 1 hour and 1 lab. Sp, Ap

450 Electrical Distribution and Utility Design (2) Design of on-farm electrical systems; control, motors, stray voltage, special electrical loads; safety. Prereq: Electrical Engineering 301. 1 hour and 1 lab. Sp, Ap


460 Design of Agricultural Structures (2) Design fundamentals for wood, steel and concrete components, compression and tension members; beam and column design; pole structure design; fastener and joint design. Prereq: 320. 1 hour and 1 lab. Sp, Ap

470 Special Problems in Agricultural Engineering (1-3) Special problems in solution and report of problem. May be repeated. E

480 Selected Topics in Agricultural Engineering (1-3) Current trends and problems in agricultural engineering. May be repeated. E

American Studies (099)

310 Introduction to American Studies (3) Explores dynamic and nature of the culture(s) of the United States through interdisciplinary study and interpretation. Considers both "mainstream" and "minority" cultures. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

334 Film and American Culture (3) (Same as Cinema Studies 334 and English 334)

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

440 America: Mind, Mood, and Society (3) (Same as History 440)

493 Independent Study (1-15)
281 Farm Animal Health and Management Practices (3) Integration of herd/flock programs and management practices into cattle, horse, poultry, sheep, goats, and swine. Topics include nutrition, housing, preventive medicine and management of handling animals, including facilities and restraint. Involves the study and application of prevention and treatment of major diseases, internal and external parasites. Government health programs and regulations. Agribusiness practicum experience. Consent of instructor. 2 labs. S, F.

482 Dairy Cattle Production and Management (3) Integration of principles of nutrition, physiology, and breeding into total dairy cattle management program. Structure of industry, enterprise establishment, systems of production, production practices and herd improvement programs, genetics, disease evaluation, feeding, reproductive and milking management. 2 hours and 2 labs. Sp.

321 Anatomy and Physiology of Farm Animals (3) Skeletal and muscular systems; blood and the circulatory system; the respiratory system; the gastrointestinal system; demonstration of physiological phenomena. Prereq: Biology 120. 2 hours and 1 lab. F.

222 The Physiology of Reproduction and Lactation (3) Biology of sex and sexual differentiation, functional anatomy of male and female, reproduction and lactation, gametogenesis, neuroendocrinology and endocrinology of reproduction and lactation, sex cycles, folliculogenesis, ovulation, spermatogenesis, fertilization, embryonic development, implantation, pregnancy, parturition, initiation of lactation and maintenance of the dry period, artificial control of reproduction and lactation. Prereq: Biology 120. 2 hours and 1 lab. Sp. (Same as Zoology 322.)

341 Principles of Animal Breeding (3) Genetic and environmental bases of animal variation. Selection and mating systems as mechanisms of genetic change. Planning breeding programs for economically important domestic species. Prereq: Biology 220. 2 hours and 1 lab. Sp.


362 Dairy Cattle Judging and Selection (2) Comparative judging, oral reasons, breed classification programs, economic value of conformation traits. Prereq: 261. 2 labs. F.

331 Animal Nutrition and Feeds (3) Properties, functions of nutrients, appetite-satiety symptoms, essential nutrients; nutritive value, properties and functions of feedstuffs. Prereq: Chemistry 110. 3 hours lecture/week.

323 Ration Formulation and Linear Programming Applications (3) Nutrient requirements and ration formulation for beef and dairy cattle, sheep, swine, poultry and laboratory animals. Mathematical and computer solutions for formulating complex rations with constraints. Prereq: 331, Math 121 and an introductory computer science course or consent of instructor. 1 hour and 2 labs.

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331 Animal Nutrition and Feeds (3) Properties, functions of nutrients, appetite-satiety symptoms, essential nutrients; nutritive value, properties and functions of feedstuffs. Prereq: Chemistry 110. 3 hours lecture/week.

323 Ration Formulation and Linear Programming Applications (3) Nutrient requirements and ration formulation for beef and dairy cattle, sheep, swine, poultry and laboratory animals. Mathematical and computer solutions for formulating complex rations with constraints. Prereq: 331, Math 121 and an introductory computer science course or consent of instructor. 1 hour and 2 labs.

342 Principles of Animal Breeding (3) Genetic and environmental bases of animal variation. Selection and mating systems as mechanisms of genetic change. Planning breeding programs for economically important domestic species. Prereq: Biology 220. 2 hours and 1 lab. Sp.


362 Dairy Cattle Judging and Selection (2) Comparative judging, oral reasons, breed classification programs, economic value of conformation traits. Prereq: 261. 2 labs. F.

331 Animal Nutrition and Feeds (3) Properties, functions of nutrients, appetite-satiety symptoms, essential nutrients; nutritive value, properties and functions of feedstuffs. Prereq: Chemistry 110. 3 hours lecture/week.

323 Ration Formulation and Linear Programming Applications (3) Nutrient requirements and ration formulation for beef and dairy cattle, sheep, swine, poultry and laboratory animals. Mathematical and computer solutions for formulating complex rations with constraints. Prereq: 331, Math 121 and an introductory computer science course or consent of instructor. 1 hour and 2 labs.

342 Principles of Animal Breeding (3) Genetic and environmental bases of animal variation. Selection and mating systems as mechanisms of genetic change. Planning breeding programs for economically important domestic species. Prereq: Biology 220. 2 hours and 1 lab. Sp.

409 Cultural Comparison of Housing Patterns (3) Patterns of housing in specific areas, evaluated through lectures, readings, essays, and sketch studies including historical change in urban form and design.

410 History and Theory of Urban Form (3) Patterns of community development. Selected historical and contemporary examples. Basic urban design issues and evaluation emphasized. Prerequisites: architectural history and urban design.

411 Architecture Since 1945 (3) Recent architectural developments and trends of the future.

412 Non-Western and Indigenous Architecture (3) Building responsive to climate, material availability, and economic level, as designed by anonymous builders. Examples from pre-historic times to the present including the fertile Crescent; the Indus Valley; Hindu, Buddhist, and Mughal architecture of India, China, and Japan.

413 Tennessee Architecture (3) History of settlement patterns and building in Tennessee. Selected examples examined through reading assignments, lectures, discussion, and field trips. Historical research using primary material.

414 History of Architectural Technology (3) Building materials and construction techniques from antiquity to the present.

415 Medieval Architecture (3) History of architecture from the decline of Rome to the beginning of the Renaissance and Baroque. (Same as Classics 415.)


417 The International Style (3) A survey of architecture of the early modern movement, primarily in Europe and America, covering the years 1920 to 1940.


420 American Architecture, 1840 - 1940 (3) Stylistic periods from the Gothic Revival through the Twentieth Century.

421 History of Landscape Architecture (3) Intellectual, societal, and geographical influences which provide the theoretical basis for design throughout history. Selected examples of landscape architecture analyzed in terms of design.

422 Modern East European Architecture (3) Twentieth century architecture in Russia, Czechoslovakia, Poland, Hungary, East Germany, Romania, Bulgaria, Yugoslavia.

425 Special Topics in Architecture (1-4) Individual projects under faculty direction. Credit for project may be repeated. Maximum credit 6 hours. E

426 Special Topics in History, Theory and Criticism (1-4) Special topics in history-related subjects. May be repeated. Maximum credit 6 hours.

431 Structural and Mechanical Applications (4) Analysis and selection of structural and mechanical systems for a specific case study to integrate technical information into a unified design solution. Prerequisites: 332, 342, Coreq: 471. F

433 Earthquake-Resistant Structures (3) Analysis and design of structures to resist earthquake effects. Earthquake phenomena, vibration of single degree structural systems, response and damping. Introduction to dynamic analysis of structures, instrumentation and structural response, frame and shear wall behavior, ground and structure interaction. Prerequisites: Consent of instructor. (Same as Civil Engineering 433.)

434 Elementary Structural Matrix Methods (3) Introduction to generalized matrix methods of analysis of structures. Review of matrix algebra and vectors; development of member stiffness and flexibility matrices; assembly of structure stiffness and flexibility matrices. Basic theory and standard methods of analysis for steel, concrete, and masonry structures; foundations. Prerequisites: Consent of instructor.

443 Building Energy Analysis (3) Balancing heat flow through external skin of residential and small and large commercial buildings; local climate evaluation; site planning; building size and orientation, window area, wall treatment, infiltration control. Energy use quantification, methods and economic analysis of energy efficient design features. Architectural program analysis of external and internal load dominated buildings. Prerequisites: 334, 339. Prerequisites: Consent of instructor.

444 Advanced Environmental Control Systems (3) In-depth analysis and innovative concepts in design of heating, ventilating, and air conditioning.

445 Advanced Lighting (3) In-depth analysis and innovative concepts in design of lighting. Prerequisite: 341.

462 Professional Practice (4) Management and organizational theories and practices for delivering professional design services. Included are assessment of the building industry and its influence on practice; analysis of the basic management functions within professional firms; and legal and ethical concerns facing practitioners today. Special obligations and privileges of the design professional.

463 Architectural Development (3) Principles and practice of the architect as a developer. Impact of economics, finance and urban policy on the design and development of real estate. Open to all students.

464 Project and Construction Management (3) Principles, methods, and application of project and construction management in the building process. Project manager's role and responsibility; quantity surveyor's function; responsibilities, and activities investigated through case studies. Methods and theories of estimating project cost and building installation in current practice. New techniques of cost analysis.


466 Marketing Services (3) Theories of marketing for architectural practice. Case studies. Public relations procedures.

469 Codes, Zoning, and Fire Protection (3) Theory, review, and research of city; county, state, regional, and national codes and zoning. History and development of fire safety and building codes; history and development of zoning emphasizing architect's responsibility for specific project application. Characteristics of fires in buildings. Fire codes, building evacuation, sprinklers and other fire protection systems, emergency power and lighting. Fire resistant materials and construction.

471 Architecture Design V (6) Design project from conceptual through design development phase. Specification of component building systems including structural, mechanical, lighting and construction details. Prerequisite: 372. F

472 Architectural Design VI (6) Order and form in complex buildings developed to address programmatic, structural, energy, and environmental issues. Prerequisite: 471. Sp

473 Architectural Photography (3) Photography as a design, research, and presentation medium. Application of photographic techniques, printing and processing. Color, black and white.


481 Advanced Architectural Design Topics (6) Special areas which affect architectural design, such as alternative approaches to design, energy, urban design, urban development, structural studies, historic preservation. Course is subject to change. Course content from this program may relate to the student's Comprehensive Design Project. Prerequisite: 472. Certain architectural electives may be stipulated for second semester. Prerequisite: Consent of instructor.

482 Comprehensive Design Project II (6) Student selected project under faculty direction. Exploration of design hypothesis which informs the character of a sustainable building. Open to architectural majors only. Course may relate to the student's Comprehensive Design Project. Prerequisite: 472. Certain architectural electives may be stipulated for second semester. Prerequisite: Consent of instructor.

483 Independent Study (6) Faculty initiated study and projects which are approved by the dean and conducted in a studio. May be repeated once. Prerequisite: Consent of dean.

ART (140)

101 Studio Fundamentals: Drawing (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.

102 Studio Fundamentals: Painting (3) Development of painting—painting with oil and watercolor. Primarily for art, architecture, interior design, and art education majors.

103 Studio Fundamentals: Three Dimensional Design (3) Projects conducted with real space and three-dimensional materials. Primarily for art, architecture, interior design and housing majors.

104 Fabric: Experimental Media on Cloth (3) Experimental media and methods of development in two-dimensional fabric construction open to all students. Use of copy machine transfers, airbrush, machine free stitching, pencils, and related media.

105 Fiber: Three Dimensional Non-Woven Structures (3) Contemporary approaches to fiber art including exploration and experimentation with various fiber media and techniques in development of sculptural fiber forms.

106 Introduction to Metalsmithing and Jewelry (3) Basic metalworking and jewelry fabrication techniques including repoussé, annealing, forging, chasing, embossing, damming, drawing, rolling, sinking, soldering, forging, polishing, and patination with individual studio problems to develop a personal style of expression.

151 History of Graphic Design/Illustration (2) Major movements and pivotal artists/designers/illustrators/art directors, 1850 to the present, and their impact on current graphic design trends. (Does not apply to art history requirement.)

161 Basic Printmaking (3) An introductory survey of print-making, including monotype, cliche' verre, relief and collograph.


172 Western Art I (3) Major movements in Western Art with emphasis on Europe from prehistory through the Middle Ages. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

173 Western Art II (3) Major movements in Western Art with emphasis on Europe and America from 1400 to the early 20th century. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

176 Exploring Art (3) Form and meaning in the visual arts. Lecture-discussion. Especially for non-majors.

183 Asian Art (3) Art of Central and Southeast Asia, India, China, Korea, Japan. Artistic traditions in common Buddhist forms and into modern media. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

191 Introduction to Studio Art: Various Media (3) Individual sections for various artistic disciplines. For non-majors only. Course may be repeated, medium may not
201 Fabric: Painting and Dying (3) Painting and dying processes in the development of surface design. Prereq: 191-Painting for non-art majors.


204 Fiber: Woven Wall Works (3) Fabrication of woven wall forms on the vertical loom, with emphasis on experimental use of fiber media in development of architecturally scaled wall works.

205 Jewelry (3) Metalworking and jewelry techniques emphasizing integration of casting and fabrication methods (including stonsetting, fastenings, and mechanisms) with individual studio problems to develop a personal style of expression. Prereq: 105. May be repeated. Maximum 6 hours.

206 Enameling (3) Graphic, painterly, and dimensional capacities of vitreous enamel techniques (including basse-taille, cloisonne, plaque-a-jour, limoges, sgraffito, grisaille, and champeval) with individual studio problems to develop a personal style of expression. May be repeated. Maximum 6 hours.

209 Special Topics in Fiber and Fabric (3) Student or instructor-initiated course to be offered at convenience of department. Prereq: Determined by department for individual topic. May be repeated. Maximum 12 hours.


212 Drawing II: Life Drawing (3) Development of drawing and observation skills with special emphasis on structure and dynamics of the human figure and of the figure in environment. Prereq: 211. May be repeated. Maximum 6 hours.

213 Painting I: Introduction (3) Capacities of oil and acrylic painting on canvas. Prereq: 101, 103 for art majors; none for non-art majors.

214 Painting II (3) Techniques of expression in oil and/or acrylic. Prereq: 213 for art majors; 191-Painting for non-art majors. May be repeated. Maximum 6 hours.


216 Watercolor II (3) Capacities of transparent watercolor, with attention to individual exploration of surface, space, and concept. Prereq: 215 for art majors; Art 191-Watercolor for non-art majors. May be repeated. Maximum 6 hours.

219 Special Topics in Drawing/Painting (3) Student or instructor-initiated course offered at convenience of department to expand and enhance the painting, drawing, and watercolor curriculum. Prereq: Determined by department for individual topic. May be repeated. Maximum 12 hours.

221 Ceramics I: Handbuilding (3) All ceramic handbuilding techniques including forming methods, glazing, clay preparation, firing, small and large scale pieces. Ceramic history through slide lectures.

222 Ceramic II: Throwing (3) Thrown ceramic forms including functional utilitarian pottery techniques, glazing and firing methods. Prereq: 221 for art majors; 191-Ceramics for non-art majors.

223 Special Topics in Ceramics (3) Student or instructor-initiated course to be offered at convenience of department. Prereq: Determined by department for individual topic. May be repeated. Maximum 12 hours.

231 Photography I (3) Art of black and white photography. Field and studio shooting, history of photography, basic developing, and enlarging techniques.

232 History of Photography (3) Photography as a fine art: construction of Steiglitz, Strand, Weston, and White. (Does not apply to art history requirement.) Prereq: 231.

233 Special Topics in Photography (3) Student or instructor-initiated course offered at convenience of department. Prereq: Determined by department for individual topic. May be repeated. Maximum 12 hours.

241 Sculpture I (3) Problems which explore basic materials and techniques including clay modeling, plaster construction, moldmaking, limited work in plastics, wood, or metal.

242 Life Sculpture (3) Modeling techniques in clay and wax, wood, or fabric. Possibilities of expression with human figure as subject. Modeling process as both observational and material handling technique. Prereq: 101, 103, or consent of instructor. May be repeated. Maximum 6 hours.

243 Metal Cast Sculpture I (3) Metal casting methods in bronze or aluminum. May include lost wax, styrofoam sand, ceramic sand, casting methods. May be repeated. Maximum 6 hours.

244 Wood Sculpture I (3) Wood as sculptural medium. May include use of hand and power tools, carving, and construction.

245 Steel Sculpture I (3) Problems to introduce steel as a material for the creation of sculpture. Development of welding techniques.

246 Mixed Media Sculpture I (3) Use of two or more materials, and a variety of sculptural techniques, joined to create dimensional form. Emphasis on modeling, sculpting, casting, and found objects.

249 Special Topics in Sculpture (3) Student or instructor-initiated course offered at convenience of department. Prereq: Determined by department for individual topic. May be repeated. Maximum 12 hours.

251 Beginning Graphic Design I (3) Survey of graphic design: tools, materials, techniques, lettering, and use of type: layout and design. Prereq: 106. May be repeated. Maximum 6 hours.

252 Production (3) Design and layout; practice of mechanical preparation of art for various printing processes: skills and craftsmanship emphasized. Prereq: 251.

253 Advertising Design (3) Fundamentals of lettering and layout for newspapers, magazines, television, outdoor advertising. Non-art majors only.

255 Special Projects: Graphic Design/Illustration (3) Prereq: Consent of instructor. May be repeated. Maximum 6 hours.

269 Special Topics in Printmaking (3) Student or instructor-initiated course offered at convenience of department. Prereq: Determined by department for individual topic. May be repeated. Maximum 12 hours.

279 Special Topics in Art History (3) Student or instructor-initiated course offered at convenience of department. Prereq: Determined by department for individual topic. May be repeated. Maximum 12 hours.

291 Papermaking Workshop (3) Papermaking as a medium for two and three-dimensional art. Includes sheet forming, imbedding, laminating, embossing, pulp dyeing, inlaying, casting, and other related techniques. Emphasis on development of personal form.

292 Film Design (3) Introductory theory and practice of film making. Emphasis on graphic elements through use of motion picture camera. (Same as Cinema Studies 252.)

295 Intermediate Design and Color (3) Further exploration of basic techniques of two-dimensional design, with emphasis on color theory and technique. Prereq: 101, 103.

299 Special Topics (3) Student or instructor-initiated course offered at convenience of department. Prereq: Determined by department for individual topic. May be repeated. Maximum 12 hours.

300 Inter-area Portfolio Review (0) Review of prior studio work. Successful completion required prior to registration for junior and senior courses. Prereq: Consent of department. Satisfactory/No credit only.

301 Fabric: Individual Class Projects (3-6) Prereq: 104, 201, 203 or consent of instructor. May be repeated. Maximum 6 hours.

302 Fiber: Individual Class Projects (2-6) Prereq: 105, 202, 204 or consent of instructor. May be repeated. Maximum 6 hours.

306 Silversmithing (4) Intensive metal smithing techniques including forging, raising, shell forming, lathing, monume, and lamination with individual studio problems to develop a personal style of expression. Prereq: 106, 202 or consent of instructor. May be repeated. Maximum 8 hours.

311 Drawing III (4) Development of personal drawing techniques and concepts through class problems. Prereq: 214 and 314 or consent of instructor. May be repeated. Maximum 8 hours.

312 Drawing Portfolio Review (0) Review of prior work in drawing. Successful completion required prior to registration for junior and senior courses. Prereq: Consent of department. Satisfactory/No credit only.

313 Painting III (4) Individual expression with varied media on canvas. Prereq: 214 and 314 or consent of instructor. May be repeated. Maximum 8 hours.

314 Painting Portfolio Review (0) Review of prior work in painting. Successful completion required prior to registration for junior and senior courses. Prereq: Consent of department. Satisfactory/No credit only.

315 Watercolor III (4) Individual expression with varied water-based media on paper. Prereq: 216 and 316 or consent of instructor. May be repeated. Maximum 8 hours.

316 Watercolor Portfolio Review (0) Review of prior work in watercolor. Successful completion required prior to registration for junior and senior courses. Prereq: Consent of department. Satisfactory/No credit only.

320 Ceramics Portfolio Review (6) Review of prior work in ceramics. Successful completion required prior to registration for junior and senior courses. Prereq: Consent of department. Satisfactory/No credit only.


331 Photography II (4) Individual expression in photographic medium. Prereq: 231. May be repeated. Maximum 8 hours.


334 Photographic Techniques Workshop (4) Theories and practices of film exposure and development. Introduction to zone system. Prereq: 331.

340 Sculpture Portfolio Review (6) Review of prior work in sculpture. Successful completion required prior to registration for junior and senior courses. Prereq: Consent of department. Satisfactory/No credit only.

341 Sculpture II (3) Further exploration and development of sculptural concepts and materials. Prereq: 241 and 340 or consent of instructor. May be repeated. Maximum 6 hours.

475 History of the 19th Century Painting in Europe and America (3) Faustwism, Die Brucke, Cubism, Der Blaue Reiter, Futurism, Dada and Surrealism, geometric abstraction, social commentary painting, Abstract Expressionism in the USA and parallels in Europe; Pop, Op, Minimal and Concept Art.

476 History of 20th-Century Painting in Europe and America (3) Faustwism, Die Brucke, Cubism, Der Blaue Reiter, Futurism, Dada and Surrealism, geometric abstraction, social commentary painting, Abstract Expressionism in the USA and parallels in Europe; Pop, Op, Minimal and Concept Art.

479 Special Topics in Art History (3) Student or instructor-initiated course offered at convenience of department. Prereq: Determined by department for individual topic. May be repeated. Maximum 12 hours.

480 Special Topics in Art History (3) Student or instructor-initiated course offered at convenience of department. May be repeated. Maximum 12 hours.

481 Museology I: Museums, Purpose and Function (3) Purposes, functions and development of museums of art, history, natural and applied science. (Same as Anthropology 481.)

482 Museology II: Exhibition Planning and Installation (3) Exhibition concept development and implementation. Exhibition design and installation techniques. Publicity, production, matting and framing, storage and handling. Prereq: 481 or consent of instructor. (Same as Anthropology 482.)

483 Museology III: Field Projects (1-12) Special field projects including restoration, preservation, registration, and other related research on or off campus. Prereq: 481 and 482. May be repeated. Maximum 12 hours. (Same as Anthropology 484.)


485 History of Fiberglass and Fiber Molding (3) Survey of techniques used in fiberglass and fiber molding. Prereq: 301 and admission to Teacher Education Program. F, Sp, Su

486 Art of Indian Asia (3) History of Indian art with major genres and masterpieces of Indian literature-epic poetry, drama, court poetry, modern novel. Concentration in individual selected areas. Prereq: 12 hours of art history and consent of instructor. May be repeated. Maximum 6 hours.

487 Art of Indian Asia (3) History of Indian art with major genres and masterpieces of Indian literature-epic poetry, drama, court poetry, modern novel. Concentration in individual selected areas. Prereq: 12 hours of art history and consent of instructor. May be repeated. Maximum 6 hours.

488 Studies in Art History (3) Concentration in individually selected areas. Prereq: 12 hours of art history and consent of instructor. May be repeated. Maximum 6 hours.

489 Foreign Study (1-15)

490 Special Topics (2-4) Student- or instructor-initiated course offered at convenience of department. May be repeated.

491 Special Topics (2-4) Student- or instructor-initiated course offered at convenience of department. May be repeated.

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

494 Individual Problems (3) Prereq: Consent of instructor. May be repeated. Maximum 12 hours.

210 Drawing (2-4) Beginning to intermediate. May be repeated.

220 Ceramics (2-4) Beginning to intermediate. May be repeated.

230 Photography (2-4) Beginning to intermediate. May be repeated.

240 Painting (2-4) Beginning to intermediate. May be repeated.

250 Metal Design (2-4) Beginning to intermediate. May be repeated.

260 Fibers (2-4) Beginning to intermediate. May be repeated.

270 Fabric (2-4) Beginning to intermediate. May be repeated.

280 Enameling (2-4) Beginning to intermediate. May be repeated.

290 Wood (2-4) Beginning to intermediate. May be repeated.

400 Special Topics (2-4) Student or instructor initiated course offered at convenience of department. May be repeated.

410 Drawing (2-4) Intermediate to advanced. May be repeated.

420 Ceramics (2-4) Intermediate to advanced. May be repeated.

430 Photography (2-4) Intermediate to advanced. May be repeated.

440 Painting (2-4) Intermediate to advanced. May be repeated.

450 Metal Design (2-4) Intermediate to advanced. May be repeated.

460 Fibers (2-4) Intermediate to advanced. May be repeated.

470 Fabric (2-4) Intermediate to advanced. May be repeated.

480 Enameling (2-4) Intermediate to advanced. May be repeated.

490 Wood (2-4) Intermediate to advanced. May be repeated.

ART EDUCATION (141)

300 Art for the Elementary Classroom Teacher (2) Methods of teaching art in elementary classrooms including developmental theory, philosophical concerns and selected media experiences. E

301 Foundation of Art Education (3) Basic philosophy and structure including directed learning activities in two and three dimensional design, art appreciation, and teaching methodology. F, Sp

302 Concepts of Drawing and Painting (3) Processes in teaching of drawing and painting including consideration of pertinent literature and research. Prereq: 301 and admission to Teacher Education Program. F

303 Concepts of Sculpture and Crafts (3) Processes in teaching of sculpture and crafts including pertinent literature and research. Prereq: 301 and admission to Teacher Education Program. F

304 Concepts of Printmaking, Graphic Design and Lettering (3) Processes in teaching printmaking, graphic design and lettering including pertinent literature and research. Prereq: 301 and admission to Teacher Education Program. Sp

350 Field Experience (1) Tasks related to teaching and to teacher roles. May be repeated. Maximum 2 hours. Prereq: Admission to Teacher Education Program. Satisfactory/No credit only. Sp

400 Curriculum Planning and Teaching Strategies (3) Program development, instructional methods, professional literature, contemporary issues, simulation and micro teaching situations. Prereq: 301 and admission to Teacher Education Program. F, Sp

410 Pre-Internship Seminar (1) Orientation describes the objectives and policies of the internship program. Must be completed the term immediately preceding the internship. Prereq: Admission to Teacher Education Program. Satisfactory/No Credit only. F

481 Internship I: Grades K-12 (3-6) Test of materials and theories of teaching. Internship is completed in local public schools. Application for internship should be made upon admission to Teacher Education Program. Prereq: 410 and admission to Teacher Education Program. Satisfactory/No Credit only. F

482 Internship II: Grades K-12 (3-6) Demonstration of professional competence in planning, instruction and classroom management. Internships completed in local public schools. Prereq: 481 and admission to Teacher Education Program. Satisfactory/No Credit only. Sp

490 Special Topics (3) May be repeated. Maximum 6 hours.

493 Independent Study (3) May be repeated. Maximum 9 hours.

ASIAN STUDIES (145)

101-102 Asian Civilization (3,3) Comparative study of development of religion, social institutions, and high culture in India, China, Japan, and the Islamic world. Prereq: 101 and the Islamic World. 102-China and Japan. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

121-122 Elementary Modern Standard Arabic I, II (5,5) Literary Arabic, the language of the press, broadcasting, literature, and formal situations. Meets every day, three days with instructor and two with native informant in addition to language lab. Must be taken in sequence.

131-132 Elementary Chinese I, II (5,5) Must be taken in sequence.

141-142 Elementary Modern Hebrew I, II (4,4) Taped language program. Must be taken in sequence.

151-152 Elementary Japanese I, II (5,5) Must be taken in sequence.

161-162 Elementary Persian (4,4) Taped language program. Must be taken in sequence.

221-222 Intermediate Modern Standard Arabic I, II (5,5) Literary Arabic, the language of the press, broadcasting, literature, and formal situations. Meets every day, three days with instructor and two with native informant in addition to language lab. Must be taken in sequence. Prereq: 121-122 or equivalent or consent of instructor.

231-232 Intermediate Chinese I, II (5,5) Prereq: 131-132 or equivalent or consent of instructor. Must be taken in sequence.

241-242 Intermediate Modern Hebrew I, II (4,4) Taped language program. Prereq: 141-142 or equivalent or consent of instructor. Must be taken in sequence.

251-252 Intermediate Japanese I, II (5,5) Prereq: 151-152 or consent of instructor. Must be taken in sequence.

261-262 Intermediate Persian (4,4) Taped language program. Prereq: 161-162 or equivalent or consent of instructor. Must be taken in sequence.

311-312 Chinese Literature in English Translation (3,3) 311-Classical literature. 312-Vernacular and modern literature. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

313-314 Japanese Literature in English Translation (3,3) 313-Classical/Traditional: masterpieces of poetry, fiction, and drama to 1800. 314-Modernday masterpieces of fiction since 1800. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

315 The Literature of India in English Translation (3) Major genres and masterpieces of Indian literature-epic poetry, drama, court poetry, modern novel. Concentration on ancient and classical periods of Indian literary history.

319 Islamic Literature in English Translation (3) Selections from the Koran, Arabic poetry, and classical Arabic, Persian, and Turkisk prose, including history, philosophy, mysticism, and belles-lettres.

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ART ARROWMONT PI BETA PHI SCHOOL OF ARTS AND CRAFTS

200 Special Topics (2-4) Student- or instructor-initiated course offered at convenience of department. May be repeated.
321 Spoken Lebanese-Palestinian Arabic (4) Informal Arabic for use in daily life. Emphasizes appropriate response and understanding of cultural context. All work is oral, including exams, but grammatical analysis is based on written Arabic. Prereq: 121-122 or consent of instructor.

322 Advanced Modern Standard Arabic (4) Advanced grammar and readings in modern Arabic. Prereq: 221-222 or consent of instructor.

331-332 Advanced Chinese I, II (4,4) Prereq: 231-232 or equivalent or consent of instructor. Must be taken in sequence.

351-352 Advanced Japanese I, II (4,4) Includes conversation techniques, composition practice with native speaker as well as reading and translation. Prereq: 251-252. Must be taken in sequence.

421 Readings in Islamic Literature (3) Prereq: Mastery of intermediate-level of Arabic or consent of instructor. May be repeated. Maximum 8 hours.

431 Readings in Chinese Literature (3) Prereq: Mastery of intermediate-level of Chinese or consent of instructor. May be repeated. Maximum 9 hours.

451 Readings in Japanese Literature (3) Prereq: Mastery of intermediate-level of Japanese or consent of instructor. May be repeated. Maximum 9 hours.

471 Selected Topics in Asian Studies (3) Content varies. May be repeated. Maximum 9 hours.

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

ASTRONOMY (150)

151-152 Introductory Astronomy (4,4) Survey of the universe, components of astronomy and scientific method. Components of the solar system including results from interplanetary exploration; hypotheses and theories of the origin and evolution of our solar system in light of current knowledge and scientific reasoning; stellar birth, evolution and death as a chain of events; characteristics of galaxies and the origin of the universe examined in light of modern astrophysics and particle physics. A minimum of mathematical analysis. Must be taken in sequence. 4 hours lecture-demonstration and star chart field work. Only one of the three sequences 151-152, 161-162, or 217-218 may be taken for credit.

161-162 Introductory Astronomy with Laboratory (4,4) Survey course, with accompanying laboratory, treating the composition, structure and dynamics of the universe which introduces fundamental vocabulary of astronomy and scientific method. Components of the solar system including results from planetary exploration; hypotheses and theories of the origin and evolution of our solar system in light of current knowledge and scientific reasoning; stellar birth, evolution, and death as a chain of events; characteristics of galaxies and the origin of the universe investigated in light of modern astrophysics and particle physics. Prerequisites for introductory level are observations which are reinforced in laboratory. Must be taken in sequence. 3 hours lecture, 2 hour lab. Only one of three sequences 151-152, 161-162 or 217-218 may be taken for credit.

217-218 Honors: Introductory Astronomy (4,4) Introduction to astronomy and astrophysics. Historical perspectives in understanding the celestial universe, with emphasis on the laws of physics as they apply to the changing conceptions of the universe; structure and evolution of the solar system and celestial motions; evolution and properties of the Sun, gaseous structure and modes of the universe; observational technique and interpretation of underlying physical laws in accompanying lab. 3 hours lecture, 2 hours lab. Coreq: Mathematics 141 or 130 or equivalent. Credit given for only one sequence of lower division astronomy. This sequence satisfies the liberal arts requirement and Natural science laboratory with 220 and 230.

411 Astrophysics (3) Development of analytical physical models of the galactic structure of the universe, stellar and interstellar matter, and planetary systems. Topical presentation of introductory approaches includes consideration of quasars, pulsars, black holes and current developments in the field. Acceptable for major credit in physics. Prereq: Physics 232 and consent of instructor.

490 Special Topics in Astronomy (1-3) Topics of current interest in Astronomy and Astrophysics. May be repeated for credit with consent of department. Maximum 9 hours.

AUDIOLINGUISTIC AND SPEECH PATHOLOGY (160)

128 Speech for Foreign Students (3) Sounds and intonation patterns of American English; introduction to vowel-spelling to sound. Designed to improve students' ability to speak and understand English. Satisfactory/No credit.

304 Introduction to Communication Disorders (3) Nature, etiology, and incidence of speech, hearing and language disorders.

305 Speech Science I: Phonetics and Acoustics of Speech (3) Basic phonetics including recognition and production of spoken English sounds with analysis of their formation, acoustic characteristics of speech and sound perception.

306 Speech Science II: Anatomy and Physiology (3) Anatomy, physiology and embryologic development of the speech production mechanism. Prereq: 305.

320 Speech and Language Development (3) Speech and language development in the normal child.

331 Articulation Disorders (3) Etiology, diagnosis, and treatment of articulatory defects. Prereq: 304, 305, or consent of instructor. (Same as Special Education 331.)

371 Audiology I (3) Basic acoustics. Fundamental aspects of auditory function. Introduction to disorders of hearing. Basic Psychacoustics. (Same as Special Education 371.)

404 Appraisal of Speech and Language Disorders (3) Diagnostic procedures for children and adults with speech and language problems including observation and practice with diagnostic tests. Prereq: 304, 305, 433 or consent of instructor. (Same as Special Education 404.)

431 Stuttering (3) Nature, appraisal and treatment. Prereq: 304 or consent of instructor.

435 Clinical Practice in Speech-Language Pathology (1-4) Prereq: 320, 331 or consent of instructor. Enrollment for fewer than 2 semester hours must have prior departmental approval. (Same as Special Education 435.)

434 Clinical Practice: Speech-Language Pathology II (1-4) Prereq: 431 or consent of instructor. Enrollment for fewer than 2 semester hours must have prior departmental approval. May be repeated. Maximum 4 hours. (Same as Special Education 434.)

440 Voice Disorders (3) Etiology, diagnosis, and treatment of organic and functional voice disorders. Prereq: 304, 306, or consent of instructor. (Same as Special Education 440.)

461 Clinical Practice in Audiology (1-4) Prereq: 473 and 494.

455 Problems in Speech Pathology (1-3) Prereq: Consent of instructor.


463 Practical Applications of Language Habilitation Techniques (3) Various methods and procedures used in treating delayed/disabled preschoolers. Alternative/ augmentative systems included. Prereq: 461 or consent of instructor.

469 Speech and Language of the Culturally Different Child (3) Speech and language differences of children of various minority groups, of different ethnic and class membership and from different geographic regions.

473 Audiology II (3) Basic principles of clinical audiology; pure tone, speech, masking and overview of special audiologic tests. Prereq: 371 or consent of Special Education 473.)

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

494 Introduction to Aural Rehabilitation (3) Rehabilitation acoustically impaired who have communication difficulties, stressing maximum use of residual hearing and utilizing other sensory modalities. Prereq: 473. (Same as Special Education 494.)

BIOCHEMISTRY (188)

310 Introduction to Biochemistry (3) Biochemical principles underlying physiological events in animal tissues. Metabolism of carbohydrates, lipids, proteins, and nucleic acids, Biochemistry of body fluids. Action of drugs and hormones. Prereq: Chemistry 120-30 or 100 and Biology 110-20. Lectures and discussions. Not available for credit if credit has previously been received for 410 or 420, F, Sp.

410 Cellular and Comparative Biochemistry (4) Electrolyte behavior; chemistry and structure of proteins; enzyme behavior and biological function; catalysis and energy capture; synthetic metabolism; nucleic acid function, protein synthesis, and biochemical genetics; regulatory systems. Offered in sequence. Prereq: Chemistry 360-60 and Biology 210-20. Three lectures and discussion, F, Sp.


420 Advanced Topics in Biochemistry (3) Selected Topics of current research interest, e.g., membrane structure and control of protein function, immunology, regu- lation of gene expression, bioenergetics, etc. Emphasis on original literature and the experimental basis of current knowledge. Historical background, societal impact, ethical and moral implications, and future development of technologies. Written reports required. Prereq: 410. Sp Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

462 Independent Research in Biochemistry (1-6) Special experimental problems under direction of a staff member. Limited to undergraduates and by consent of instructor. May be repeated. Maximum 12 hours. Prereq or Coreq: 410, 419.

471-481 Introduction to Physical Biochemistry (3,3) Physicochemical principles with applications to biological systems. Basic tools: sequence in sequence. 471-Thermo- dynamics; chemical equilibrium; solution chemistry; transport; electrochemistry; kinetics including enzyme-catalyzed reactions. 481-Elementary quantum chemistry; interactions of light with biological molecules; optical and magnetic spectroscopy; light scattering; case studies of selected macromolecules. Prereq. Mathematics 142, Chemistry 360-369 and Biology 120 or consent of instructor. 471-F; 481-S. (Same as Chemistry 471-481.)

BIOLOGY (190)

110-120 General Biology (4,4) Biology 110 - Biology of cells; chemical basis of life; cell structure and function; energy metabolism; cell division: Mendelian and molecular genetics; kingdoms of monera, protista, and fungi. Biology 120 - Plant and animal anatomy (tissues, organs, and organ systems), physiology, growth, and reproduction; ecology; population genetics; behavior; and evolution. Recommended, but not required to be taken in sequence. Students who receive credit for 110-120 may not also receive credit for Biology 150, Botany 110-120, Honors Botany 118-128, or Honors Zoology 117-118.

150 Biology for Majors (5) General biology emphasizing the cellular level. Open to students who have a year of high school biology and a score of 26 or better on the natural science section of the ACT. Students who receive credit for 150 may not also receive credit for Biology 110, Botany 110-120, Honors Botany 118-128, or Honors Zoology 117-118.

210 Cell Biology (4) Organization and function of the cell. Prereq: 110-120 or 150, or Botany 110-120 or 118-128, or Honors Zoology 117-118 or the equivalent of 2 years of high school biology and satisfactory ACT scores; Chemistry 120-30 and 1 hour and 1 additional class meeting. May be taken in any sequence or combination with 220 and 230.
220 General Genetics (4) Classical and modern principles of genetics. Prereq: 110-120 or 150, or Botany 110-120, or 118-128, or Honors Zoology 117-118 or the equivalent of 2 years of high school biology and satisfactory scores on ACT or SAT. 4 hours lecture and 1 hour discussion each week. May be taken in any sequence or combination with 210 and 230.

230 General Ecology (4) Relations between organisms and their environment, including human environmental problems. Prereq: 110-120 or 150, or Botany 110-120 or 118-128, or Honors Zoology 117-118 or the equivalent of 2 years of high school biology and satisfactory scores on ACT or SAT. 3 hours lecture. 1 hour discussion field trip each week. May be taken in any sequence or combination with 210 and 220.

**BOTANY (198)**

110-120 General Botany (4,4) 110 - introduction to taxonomy through tree identification; basic organization and function of cells: respiration; photosynthesis; genetics (including meiosis, mitosis, Mendelian inheritance); survey of plant kingdom (bacteria, algae, fungi, mosses, ferns, conifers, and flowering plants). 120-Plant growth, anatomy, growth regulation; uptake and transport; origin of life and mechanism of evolution; ecology, importance to humans and environmental concerns. Students must not receive credit for both Botany 110-120 and Biology 110-120, Botany 118-128, or Biology 150. 110 - F, Su; 120- Sp, Su

118-128 Honors: General Botany (4,4) Same as General Botany 110-120 with emphasis on special topics and among faculty. Selection of special topics and field experiences. Prereq: Open to freshmen with a score of 27 or better on the national science section of the ACT or 3.25 (or 3.50 in the sciences) or who are approved through an interview with a member of the botany faculty. Students may not receive credit for both Botany 118-128 and Biology 110-120, Botany 118-120, or Biology 150. 118 - F; 128 - Sp

305 Socio-Economic Impact of Plants (3) Significance of plants in their origin and development of human cultures, evolution of cultivated plants, and role of plants in present civilization. Occasional field trips. Sp, Su, Mini-Term.

306 Genetics and Society (3) Introduction to genetics, anthropology, and evolution with emphasis on their implications for human society. Same as Anthropology 306.

309 Biology of Human Affairs (3) Basic biological principles involved in determination and preservation of an environment in which humans and their cultures may survive.

310-320 Plants: An Evolutionary Survey I, II (3,3) Morphology, development, natural history, and evolution. 310 - Surveys non-vascular plants (monera, algae, fungi); 320 - surveys vascular plants (ferns, fern allies, gymnosperms, and flowering plants). Need not be taken in sequence. Prereq: 8 hours in biological sciences.

346 Introduction to Oceanography (3) Same as Geology 346.

371 Undergraduate Seminar (1) At least one hour is required for a Botany major or minor. Junior or senior standing recommended. May be repeated. Maximum 2 hours. 1 hour must be at WUTK-FM. 150 hours of work last semester. Prereq: 275, 310, 320, 330.

401-402 Field Studies in Botany: (Specific Topic to be announced) Principles of systematics and taxonomy of special plant groups. Selected field topics will vary and may include: Bryology, Lichenology, Phycology, Agrostology, Mycology, and others. 4 hours lecture and discussion. Prereq: Botany 110-120 or Botany 120-130, 3 hours lecture. 1 hour discussion. May be repeated for credit. 401 and 402.


412 Plant Anatomy (3) Cells, tissues and organs; their development in vegetative and reproductive structures of vascular plants; emphasis on uses of woody plants. Prereq: 110-120 or Botany 110-120.

426 Paleobotany and Palynology (3) Same as Geology 426.

431 Plant Ecology (3) Interactions between individuals, species, communities and their environments. Circulation of energy and matter in ecosystems. Weekly field trips or laboratory periods, and at least two weekend field periods. Prereq: 310-320 or equivalent. Sp

441-442 Undergraduate Research Participation (1-2) Experience in active research projects under supervision of staff members. Prereq: Junior or senior standing, minimum grade average 3.0, consent of instructor. May be repeated. Maximum 8 hours. E

451 Plant Tissue Culture (3) Methods for the culture of cells, tissues, and organs including media preparation and maintenance of cultures. Lecture and lab. Prereq: Botany 110-120 or Botany 120-130 or equivalent (may be taken with Botany 320). 412, Microbiology 310 or 319, Ornamental Horticulture and Landscape Design 330, and Plant and Soil Science 331. (Same as Ornamental Horticulture 451).

**BROADCASTING (202)**

275 Introduction to Radio and Television (3) History, economics, structure and regulation of broadcasting including radio, television, cable, satellites and related technologies. Includes role of broadcasting in society. Lecture, case studies, and trips. Prereq: Communications 100.

310 Radio News (3) Writing, reporting, and producing news for radio. Lecture and lab course with experience in total news operation of WUTK. Prereq: 275 and Communications 100.

320 Radio and Television Advertising (3) Principles of successful radio, television and cable advertising with an emphasis on ratings and related audience research. Includes theories toward development of advertising on radio and television commercials. Prereq: 275 and Communications 200.

330 Producing for Radio (3) Functions, theories, and techniques of writing, performing, and producing for radio. Students write, perform and produce on WUTK. Overview of audio equipment and production techniques. Prereq: 310 and Communications 200.

410 Television News (3) Writing, reporting, and producing news for television news program. Includes an overview of electronic news gathering equipment and techniques as well as video editing. Prereq: 310.

420 Radio and Television Sales and Promotion (3) Problems and practices of television, radio, and cable sales and promotion. Case studies in sales, sales management, pricing, rate cards, use of rating and sales presentation. Includes an overview and analysis of effective station promotions. Prereq: 320.

420 Producing for Television (3) Principles of television studio and field production, both technical and creative. Writing, producing, shooting and editing video stories and programs. Class uses 3/4" cameras, recorders, and editing system. Prereq: 330.


490 Radio and Television Management (3) Business problems related to broadcast management, marketing, financial management, cost, and income analysis, leadership styles and techniques with an emphasis on mid-level managers. Course includes case studies of students in last semester. Prereq: 275, 310, 320, 330.

492 Practicum (1) On or off-campus work and learning experience at radio, television, cable or non-broadcast facility. Prereq: must be WUTK-FM. 150 hours of work required for each hour of credit. Final written report required. May be repeated once. Prerequisites: 275, permission of a Broadcast major and consent of department head. Satisfaction/No Credit only.

493 Independent Study (3) Area of study in broadcasting to be determined by student in consultation with faculty advisor. Ordinarily the area of study is not part of the department curriculum. Students must complete an application form available in the department. Prerequisites: Senior standing and consent of department head.

**BUSINESS ADMINISTRATION (205)**

311 International Business (3) Survey of strategic implications of conducting business operations in an international context. Analysis of relevant cross-national environments including cultural, political and legal characteristics. Prereq: Economics 201.

320 Business Career Planning and Placement (1) Career opportunities in business. Making the career decision, preparing for and conducting a job search. Using the Placement Office. Satisfaction/No Credit only. Prereq: Satisfaction progression to upper-division level in the actuarial, accounting, finance, marketing and international business programs.

457 Honors: Corporate Executive in Residence Seminar (3) Interaction with top corporate executives from a wide spectrum of business disciplines. Domestic and international strategic planning as it is applied in major U.S. Corporations. Executive presentations and small group discussion on goods and services in consumer and industrialsettings. Prereq: Senior standing. Finance 301, Management 301, and consent of instructor.

491 Foreign Study (1-15) Prereq: Consent of Instructor. See page 56.

492 Off-Campus Study (1-15) Satisfaction/No Credit grading only. Prereq: Consent of Instructor. See page 57.

493 Independent Study (1-15) Prereq: Consent of Instructor. See page 57.

495 Seminar in International Business Policy (3) Coparticipation course for students in the Language and World Business Program designed to integrate concepts covered in other business courses. For students with major concentrations in International Business only.

**BUSINESS LAW (216)**

301 The Legal Environment of Business (3) Introduction to legal system including legal ethics (jurisprudence), sources of law, steps in court proceedings, constitutional law related to business, administrative regulation, general principles of law, antitrust law, employer-employee relations, product liability, consumer protection, business associations, environmental law, international law, contracts, and white collar crimes and torts. Prereq: Junior standing. E

401 Law of Business Organizations and Commercial Transactions (3) Law of contracts for sale, telemarketing, trust and agency, bankruptcy, obligations, negotiable instruments, secured transactions, bankruptcy, enforcement of contracts, sale of goods, secured transactions, bankruptcy, employer-employee relations, product liability, consumer protection, business associations, environmental law, international law, contracts, and white collar crimes and torts. Prereq: Junior standing. E

447 Law of Business Organizations and Commercial Transactions (3) Introduction to legal implications of basic business transactions including contracts, property, negotiable instruments, secured transactions, bankruptcy, employer-employee relations, product liability, consumer protection, business associations, environmental law, international law, contracts, and white collar crimes and torts. Prereq: Junior standing. E

**CHEMISTRY (235)**

100 Principles of Chemistry (4) Bonding and molecular structure, gas laws, liquid and solid state, solutions, collids, acids and bases, oxidation and reduction, kinetics and equilibria. 3 hours and 2 lab. 4 hours.

110 Introduction to Organic and Biochemistry (4) General concepts of organic chemistry and biological chemistry.
406 Senior Seminar (1) Discussions by faculty and 3000 words of writing outside the classroom. Topics in the Development of Chemistry (3) Historical treatment of scientific controversy. Written reports will be required. Senior standing in chemistry. May be repeated. 2 hours.

409 Advanced Chemical Experimentation (3) Lab course in application of mass, and redox equilibria; applications of trimetric analysis; potentiometry; elementary spectrophotometry; chemical separations including chromatography, ion exchange, and solvent extraction. Coreq: 310 or 131 or 138. E

310 Analytical Chemistry (3) Principles and practices of quantitative measurements in chemical systems. Atomic absorption, emission, and optical emission spectroscopy; mass spectrometry; electrochemical techniques; magnetic resonance methods; mass spectrometry; optical spectroscopic techniques; magnetic resonance methods; advanced chromatographic theory. E

320 Advanced Analytical Chemistry (3) Modern electroanalytical methods; mass spectrometry; optical spectroscopic techniques; magnetic resonance methods; advanced chromatographic theory. Prereq: 310. Sp

329 Advanced Analytical Chemistry Laboratory (2) Experiments on topics covered in 320. Coreq: 320. Sp

350-360 Organic Chemistry (3,3) Compounds of carbon and hydrogen; nucleic acids and membranes; mechanistic, synthetic, spectroscopic and other physical properties. Must be taken in sequence. Coreq: 360 or 389 or 369. E

369 Organic Chemistry Laboratory (2) Experiments on topics discussed in 350-360. Coreq: 360. One 5-hour lab. E

400 Research in Chemistry (3) Open to senior majors with consent of department head. Written reports are required. Advanced students work with faculty on projects requiring knowledge and skills acquired in chemistry curriculum. May be repeated. E

405 Topics in the Development of Chemistry (3) Historical development of topics such as the atomic theory; chemical industry; interrelationships of population, energy, and food. Subject matter may vary from one offering to another. Assignments include readings from older original literature (Dalton, Faraday, Kekule) and from current journals and monographs. Includes the use and misuse of evidence, at least one in-class essay examination and 3000 words of writing outside the classroom.

406 Seminar (1) Discussions by faculty and students. Format may vary from one offering to another. Assignments include readings from older original literature and 3000 words of writing outside the classroom.
ment and ends on the day before Summer commencement, and 479. Satisfactory/No Credit only.

471 Advanced Practicum in Applied Child Development Specializations (3-6) Supervised experiences with children and families in community settings related to each student's child development specialization: Child life, early childhood education, early childhood health, family and community development, and research. Prereq: 470 and consent of the instructor. May be repeated. Maximum 6 hours. Satisfactory/No Credit only. F, Sp

475 Day Care Administration (3) Theories, methods, and materials for administrators of early childhood education programs: funding proposals, staff selection, financial management, recruiting and enrolling children, supervision, evaluation, public relations, communication, conflict resolution. Includes participation experience. Prereq: 351 or consent of instructor. Sp

479 Preparation Seminar (1) Orientation to practicum placement, experiences and requirements. Must be completed term immediately preceding enrollment in 480. Prereq: Must meet progress requirements. Satisfactory/No Credit only. F, Sp

480 Practicum in Family Life Education (8) Supervised experiences in community-based family life education programs. Prereq: Progression into the concentration and 479. Satisfactory/No Credit only. F, Sp

481 Research in Child and Family Studies (3-6) Supervised research experiences. Prereq: 9 hours in Child and Family Studies, cumulative GPA of 3.0 or above, minor or senior standing, or consent of the instructor. May be repeated. Maximum 12 hours.

485 Special Topics in Child and Family Studies (1-9) Personal or professional interest in human development or family studies. Prereq: 9 hours in Child and Family Studies, Junior or Senior standing, or consent of instructor. May be repeated. Maximum 9 hours. F, Sp, Su

497 Honors: Child and Family Studies (3-9) Issues or topics affecting children and/or families, designed to meet the needs of the student. Arnheim, N., Art and Children: a Guide in Child and Family Studies, overall GPA of 3.25 or greater, Junior standing, or consent of instructor. May be repeated. Maximum 6 hours. F, Sp, Su

CINEMA STUDIES

292 Film Design (3) (Same as Art 292.)

281 Introduction to Film Studies (3) (Same as English 281.)

312 Popular Culture and American Politics (3) (Same as Political Science 312.)

233 German Film (3) (Same as German 323.)

334 Film and American Culture (3) (Same as English 334 and American Studies 334.)

392 Advanced Film Design (3-6) (Same as Art 392.)

420 French Cinema (3) (Same as French 420.)

489 Special Topics in Film (1-3) (Same as English 489.)

CLASSICS (257)

221 Early Greek Mythology (3) Archaic Greek religion through comprehensive study of Greek myths with emphasis on how they reflect the early Greek vision of the universe and humanity's place in it. Origins and development of Greek myths and the rise of organized religion, from Bronze Age to about 450 B.C. Readings include Hesiod and Aeschylus. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

222 Classical Greek and Roman Mythology (3) Use of myth in literature, history, religion and philosophy of Greece and Rome from about 450 B.C. to about 350 A.D. Two foci are the latter half of the fifth century B.C. and the last quarter of the first century B.C. Includes Oriental intrusions into Greece and Rome, including early Christianity. Readings include Hesiod, Pindar, Sappho, Homer, Aeschylus, Socrates, Plato, Aristotle, Vatican Vergil, Tacitus, Dionysus, Roman poetry, and modern scholarship. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

232 Archaeology and Art of Ancient Greece (3) Special focus on prehistoric times to the Roman period (ca. 3000-100 B.C.). For prehistoric times emphasis on architecture and artifacts used to recreate the culture of the Minoan and Mycenaean civilizations and that of the following Dark Age. For Archaic, Classical, and Hellenistic periods emphasis on development of architecture, sculpture, and vase painting. Includes minor arts and the relationship between archaeology and art. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

233 Archaeology and Art of Etruria and Rome (3) Survey of the archaeology of the Italian peninsula and the Roman World from the Etruscan culture to the fall of the Roman Empire (1000 B.C.-500 A.D.). Reconstruction of the Etruscan culture from tombs, paintings, artificats, development of Roman architecture, and urban planning in Rome and the provinces. Prereq: 232 or consent of instructor. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

253-254 Greek and Roman Literature in English Translation (3.3) 253-Greek Literature. Major literature of ancient Greece from Homer to Menander; with emphasis on the sixth and fifth centuries B.C. 254-Roman Literature. Major literary works of the Romans from Plautus to Tacitus. How the Romans borrowed from the Greeks and then achieved their own artistic identity by the time of Vergil's Aeneid. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

273 Medical and Scientific Terminology (3) Greek and Latin roots from which medical and scientific terminology is derived. Includes Greek, Latin, Greek-Latin roots, Latin terminology, translation of Latin, use of medicine-specific terminology. Practice in use of Latin nomenclature.

313 Archaeology of the Aegean Bronze Age and Early Greece (3) Includes Troy, the Cycladic Islands, the Greek mainland, Crete, and Cyprus ca. 3000-700 B.C. Rise and fall of the Minoan and Mycenaean civilizations and their effect on the Aegean World and Cyprus. Evidence for daily life, religion, trade, and foreign contacts. Architecture, wall paintings, and artifacts. Prereq: One of the following: 232, 381, ancient history (Ancient Near East or Ancient Greece), or consent of instructor. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

334 Cities and Sanctuaries of the Ancient Greek World (3) Archaeological survey of the development of the Greek city and sanctuary from prehistoric times through the Roman period (ca. 2000 B.C. - 200 A.D.). Includes topography and plans of major cities and sanctuaries, functions of buildings, development of city planning, quality of city life, religious rites and festivals including the Olympic Games. Readings include Mycena, Athens, Priene, Alexandreia, Pergamon, Olympia, Delphi. Students are recommended to have taken Myth, Art, and Society or to have already taken an introductory archaeology course. Prereq: History 132, 233, 281, 310. History 132, 233. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

381 Greek Civilization (3) Major aspects of ancient Greek civilization: religion, fine arts, political life, Mediterranean relations, the prominence of Athens; the role of modern archaeology in interpretation; emphasis on the sixth and fifth centuries B.C. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

382 Roman Civilization (3) Major aspects of ancient Roman civilization: political institutions, art and architecture, history, culture and daily life, emphasizing the late Republic and early Empire. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

383 Women in the Greek and Roman World (3) The contributions of women in the apparently male-dominated world of Classical Greek and Classical Rome. Evidence from literature, vase paintings, and other arts is examined in the context of women's lives in the second century B.C. and the second century A.D. with emphasis on Athens in the fifth century B.C. and Roman Italy in the first and second centuries A.D. (Same as Women's Studies 383.)

422 Seminar in Classical Studies (3) Field of Classical studies today: recent achievements in the areas of both philology and archaeology; impact of the decipherment of Linear B; new understandings of the culture and politics of the "golden age" of Pergamum and Augustus; Classical studies and the academic profession on both the high school and college levels. May be repeated. Maximum 6 hours. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

441 Special Topics in Classical Civilization (1-3) Topics in art, literature, religion, and society of Greece and Rome. May be repeated up to three times with different topics.

461 Studies in Classical Archaeology (3) Variable content course offering subject matter not taught in an existing course, or concentration on one aspect of the field. May be repeated. Maximum 9 hours. Prerequisites: Reading ability in Latin.

462 Roman Law (3) Development of Roman law through examination of cases from the writing of the Roman jurists, the world's first legal professionals. Emphasis on understanding legal institutions in relationship to Roman society. Cases cover aspects of Roman property and contract law.

491 Foreign Study (1-15)

COLLEGE SCHOLARS HONORS

317-318 College Scholars Seminar (1, 1) Sequence (in limited order) to prepare College Scholars each year. May be repeated. Maximum 8 hours. Satisfactory/No Credit grading only.

491 College Honors: Foreign Study (1-15) See Director of Special Programs. Primarily for College Scholar students.

492 College Honors: Off-Campus Study (1-15) See Director of Special Programs. Primarily for College Scholar students.

493 College Honors: Independent Study (1-15) See Director of Special Programs. Primarily for College Scholar students.

498 Honors: College Scholars Studies (2-12) Designed for College Scholars working on their senior thesis, project, or performance. May be repeated. Maximum 16 hours.

COMMUNICATIONS (259)

100 Introduction to Mass Communications (3) Overview of systems of mass communications, with emphasis on the mass media's role in society, their ownership, legal and social controls, and effects on the public. History of the mass media, the development of mass media, the role of mass media in society, and the effect of mass media on individuals. May be repeated up to three times. Maximum six hours.

102 Introduction to Mass Communications Research (3) Information gathering and writing under deadline for print and broadcast media, including news and promotional copy. Preparation of news, advertising and persuasive text. Comparison of styles and organization techniques. Grammar, usage, and style workshop. Prerequisites: 100, English 150, and college admission tests (typing, spelling and grammar). E

300 Mass Communications Research Methods (3) Social science research methods, especially sample surveys, used by communications media. Applications to both internal decision-making and to external communication in media. Prereq: 200 or consent of instructor. F, Sp

400 Mass Communications Law and Ethics (3) Emphasis on legal issues directly affecting the mass media: libel, privacy, freedom of the press, judicial controls, governmental regulations. Also includes ethical standards and practices of the mass media in America. Prereq: 200 or consent of instructor. F, Sp

COMPARATIVE LITERATURE (260)

201 Introduction to Comparative Literature (3) Basic knowledge, techniques, and sources necessary to compare literatures of various cultures, ages, and nations.
202-203 Cross-Cultural Perspectives in World Lit-
erature (3) Literatures and perspectives of differ-
et time periods and cultures. Variable content. Writing-
emphasis course: at least one in-class essay examina-
tion required. 3 lab hours.

301 Computer Techniques for Literary Study (3)
Computer research in literary studies including writing
programs in BASIC which have literary research appli-
cations. Programming in BASIC, word processing, and
bibliography, concordances, syntactic analysis, content analysis, au-
thorship attribution, and stylistic analysis. 4 lecture hours and
writing outside the classroom.

302 Concepts and Techniques (3,3) Content varies. May be repeated. Maximum 9
hours.

Writing outside the classroom.

371 Numerical Algorithms (3) Same as Mathematics 371.

380 Theory of Computation (3) Recursive functions, Turing machines, computability, halting problems, Godel

381 Formal Languages (3) Grammars of the Chomsky hierarchy and their recognizers, Properties of languages and
machines. Prereq: 111 and 112 and 311.

401 Applications of Computer Graphics (3) Commercial
software, techniques, hardware. Prereq: 109 or 112. May not be taken for credit by Computer Science
majors. 3 hour lab required.

402 Applications for Artificial Intelligence (3) Com-
nercial software, techniques, hardware. Prereq: 109 or 112 or 102. May not be taken for credit by Computer
Science majors. 3 hour lab required.

403 Applications of Microcomputers (3) Microcom-
puters, DOS, commercial software and hardware. Pre-
req: 109 or 101 or 102. May not be taken for credit by Computer Science majors. 3 hour lab required.

404 Applications of Database Systems (3) Commer-
cial software, systems, techniques. Prereq: 111 or 109 or 102. May not be taken for credit by Computer
Science majors. 3 hour lab required.

411 Senior Thesis I (3) Frontiers of computer-sci-</p></div>
428 Graph Theory and Applications (3) Planarity, network flow, critical paths, etc. Prereq: 111, 112 and 311.

438 Information Theory (3) Theory of communication: Entropy, information measures and the quantification of informa-

493 Independent Study (1-15) Special project in an area of student's primary interest. Directed by Computer Sci-
ence faculty, perhaps jointly with student's faculty advis-
tor. Intended for students with a specific project to purs-
ue in conjunction with a faculty member. Project may be-
ning from a department other than Computer Science in
which case a faculty member from the appropriate
department will help oversee the project. May be re-
peated. Maximum of 6 hours may be applied to the
major. Prereq: Consent of instructor.

494 Special Topics in Computer Science (1-3) May be repeated. Maximum 9 hours.

CULTURAL STUDIES (270)
100 Selected Topics (1-3) May be repeated. Maximum credit 6 hours.

300 Selected Interdisciplinary Cultural Topics (1-12) Acceptable for credit in any cultural studies concentra-
tion or minor with the consent of the director of cultural studies and the respective chairperson. May be re-
peated for credit up to maximum of 12 hours.

491 Foreign Study (1-15) Acceptable for credit in any cultural studies concentration or minor except Afri-
American studies. Registration by consent of director of cultural studies and the respective chairperson.

492 Off-Campus Study (1-15) Acceptable for credit in any cultural studies concentration or minor except Afri-
American studies. Registration by consent of director of cultural studies and the respective chairperson.

493 Independent Study (1-15) Acceptable for credit in any cultural studies concentration or minor except Afri-
American studies. Registration by consent of director of cultural studies and the respective chairperson.

DANCE (274)
101 Practicum: Dance Production (1) Supervised technical and promotional production aspects of univer-
sity dance company. May be repeated. Maximum 2 hours.

201 Practicum: Dance Performance (1-2) Preparation and presentation of university dance company perfor-
mances. Participation through audition only. May be re-
peated. Maximum 16 hours.

210 Ballet: Level I (2) Instruction and practice in ele-
mentary classical ballet techniques. May be repeated.
Maximum 4 hours.

220 Jazz: Level I (2) Instruction and practice in elemen-
tary jazz dance styles and techniques. May be repeated.
Maximum 4 hours.

230 Modern: Level I (2) Practice in elementary modern dance techniques. May be repeated.
Maximum 4 hours.

240 Tap: Level I (2) Instruction and practice in elemen-
tary tap dance techniques.

250 Composition I (2) Choreographic skills emphasizing	form, content and music.

310 Ballet: Level II (2) Instruction and practice in inter-
mediate classical ballet techniques. Available to majors and minors with or consent of instructor. May be re-
peated. Maximum 15 hours.

320 Jazz: Level II (2) Instruction and practice in interme-
diate jazz dance styles and techniques. Available to
dance majors and minors with or consent of instructor.
May be repeated. Maximum 12 hours.

330 Modern: Level II (2) Instruction and practice in intermediate modern dance techniques. Available to
majors and minors with or consent of instructor. May be repeated. Maximum 15 hours.

340 Tap: Level II (2) Instruction and practice in interme-
diate tap dance techniques. Prereq: 240 or consent of instructor.

350 Composition II (2) Choreographic skills emphasizing	form, content and music.

360 History of Dance (3) Survey of the development of dance in theater, recreation and education during the 20th century. Senior standing or graduate status required for graduate credit.

370 Environment and Conservation (2) Introduction to natural and artificial environments and natural re-
source conservation. Limited to students in the College of Education.

SCIENCE (278)
100 Survey of Economic Ideas (3) Ideas of major economists in context of socioeconomic conditions of their times. Emphasis on nonmathematical treatment. May not be substituted for Economics 201.

201 Introductory Economics: A Survey course (4) Theory of consumer behavior, of production and costs, of price and behavior of firms in various market structures, of demand, supply, and competition, of government intervention in the economy. Prereq: 201.

250 Environmental Economics (3) Theory of consumer behavior, of production and costs, of price and behavior of firms in various market structures, of demand, supply, and competition, of government intervention in the economy. Prereq: 201.

300 Selected Interdisciplinary Cultural Topics (1-12) Acceptable for credit in any cultural studies concentra-

315 Teaching Creative Dance for Children (2) The-
ory, methods, materials and practical experience in the presentation and integration of creative dance in grades K-6. A mini-lesson, demonstration and discussion is involved in this class.

320 Jazz: Level III (2) Instruction and practice in ad-
vanced jazz and musical theater dance styles and techniques. Available to dance majors and minors with consent of instructor. May be repeated. Maximum 16 hours.

325 Jazz Notation (3) Fundamentals of movement and notation with emphasis on organizing and reading of elementary movement studies. Senior standing or graduate status required for graduate credit. Different level of performance is expected of those registered for graduate credit.

326 Dance History through the 19th Century (3) Sur-
vey of the dance of various societies and cultures from pre-history through the nineteenth century. Senior stand-
ing or graduate status required for graduate credit.

330 History of Dance II (3) Survey of the development of dance in theater, recreation and education during the 20th century. Senior standing or graduate status required for graduate credit. Different level of performance is expected of those registered for graduate credit.

335 Modern: Level II (2) Instruction and practice in elemen-
tary classical ballet techniques. May be repeated.
Maximum 4 hours.

340 Tap: Level II (2) Instruction and practice in elemen-
tary tap dance techniques.

350 Composition I (2) Choreographic skills emphasizing	form, content and music.

360 History of Dance (3) Survey of the development of dance in theater, recreation and education during the 20th century. Senior standing or graduate status required for graduate credit.

365 Dance Notation (3) Fundamentals of movement and notation with emphasis on organizing and reading of elementary movement studies. Senior standing or graduate status required for graduate credit. Different level of performance is expected of those registered for graduate credit.

370 Environment and Conservation (2) Introduction to natural and artificial environments and natural re-
source conservation. Limited to students in the College of Education.


381 Econometrics (3) Methods of specification, esti-

tation, testing, and forecasting of economic relation-
ships. Includes specification of models, estimation methods, statistical inference of empirical results, forecast-
ing procedures and common econometric prob-

391 Regional and Urban Economics (3) Overview of
tional differences. Theory of industrial and agricul-
tural location and human migration, economic basis for
land use patterns, central places, and urban form, re-
gional and urban structure, growth, and methods of
evaluation. Prereq: 201.

392 History of Economics (3) Methods of study of eco-

economic principles to labor markets, public policy ques-
tions, demand and supply, theory of wage differentials,
unemployment, unions in the private sector, investment in

400 Special Topics (3) Topics vary. Prerequisites deter-
mined by department each time course is offered. Prereq:

413 Macroeconomic Fluctuations (3) Analysis of his-
torical data, methods of analyzing macro-economic fluc-
tuations, theoretical explanations of cycles, and the role
of fiscal and monetary policies in the aggregate econ-
omy. Prereq: 312 or consent of instructor.

415 History of Economics (3) Methods of study of docu-
tental history. Origins and evolution of major do-
tines. Classical and Neoclassical economics. History of
the economics of Keynes and his followers, some principal develop-
ments of second half of twentieth century. Major writing requirement. Prereq: 201 and consent of instructor.
212 Career and Personal Development (3) Systematic approach to facilitating career development and life planning.

215 Learning Skills and Study Systems (3) Approaches to enhancing academic performance through study skills, efficient reading and understanding of personal factors.

305 Laboratory in Educational and Counseling Psychology (1) Practice in acquiring and knowledge and skill in areas such as interpersonal relations, career decision-making, assessment and self-awareness. Individual and small-group format. May be repeated twice. Satisfactory/No Credit only. E

315 Psychology of Learning and Classroom Management for Teachers (3) Understanding and application of the psychology of learning and classroom management to the teaching/learning process in educational settings. Prereq: 210 or equivalent and admission to Teacher Education Program. (Same as Education 315.) F

325 Principles of Educational Test Construction for Teachers (2) Constructing classroom tests for diagnosing student learning needs and for evaluating mastery of subject matter. Prereq: 315 and admission to Teacher Education Program. (Same as Education 325.) Sp

404 Special Topics (1-3) Instructor initiated course offered at convenience of the department on various topics of current interest. Departmental examination and 3000 words of writing outside the course. May be repeated. Maximum 15 hours. E

410 Sex Role Development: Implications for Education and Counseling (3) Theories and research concerning the development of sexual role and its relevance in educational and counseling settings. E

431 Personality and Mental Health (3) Perspectives of mental health with applications to education and other social institutions. E

432 The Disadvantaged Student: Psychological Perspectives (3) Theory and research regarding etiology, psychosocial behavior and appropriate interventions. E

450 Self-Management in the Helping Professions (3) Applications of self-management strategies to career, social, emotional and health domains for both helping professionals and their clientele. Prereq: Introductory course in psychology or permission of instructor. E

453 Independent Study (1-15) Independent investigation of problems in educational and counseling psychology. May be repeated. Maximum 15 hours. E

EDUCATIONAL CURRICULUM AND INSTRUCTION (301)

141 Efficient Reading and Study Skills (2) Improvement of reading comprehension and rate, intensive vocabulary enrichment may relate to content area subjects. Satisfactory/No Credit only. F, Sp

203 Field Study in Education (1-3) Problems of persons in active service in the field. Includes methods of teaching, curriculum materials, school-community relationships and school organizations. May be repeated. Maximum 6 hours. E

302 School and American Society (3) (Same as Educational Curriculum and Instruction 402.) E

315 Psychology of Learning and Classroom Management for Teachers (3) (Same as Educational and Counseling Psychology 315.) E

325 Principles of Educational Test Construction for Teachers (2) (Same as Educational and Counseling Psychology 325.) E

370 Survey of Exceptional People (2) (Same as Special Education 370.) E

EDUCATIONAL AND COUNSELING PSYCHOLOGY (311)

210 Psychology of Human Development for Teachers (3) Understanding and application of the psychology of human development to teaching learning process in educational settings. For students intending to enter the Teacher Education Program and Human Services studies. Sp, Su

326 Teaching Language Arts/Reading in Elementary and Middle Schools (3) Language and language development as applied to teaching of oracy (listening-speaking) and certain aspects of literacy (reading process/readiness and writing). Includes methods and materials. Prereq: Admission to Teacher Education Program. F, Sp

329 Teaching Developmental Reading in the Elementary and Middle Schools (3) Methods and background of Multi-sensory model; application and use of language skills and comprehension, evaluation, and materials. Prereq: Admission to Teacher Education Program. F, Sp

335 Teaching Elementary and Middle School Mathematics (3) Specific procedures for helping children learn mathematics. Unit planning, daily planning, grouping, classroom management are included. Prereq: Admission to Teacher Education Program. F, Sp

351 Laboratory and Field Studies in Elementary Education (1) Simulated and actual experiences in which students apply concepts and skills from professional methods courses in a variety of school settings and levels. May be repeated. Maximum 3 hours. Prereq: Admission to Teacher Education Program. Satisfactory/No Credit only. E

352 Field Experiences in Teaching: Secondary I (1) Field experiences in tasks related to teaching and teacher roles. Prereq: Admission to Teacher Education Program. Satisfactory/No Credit only. E

353 Field Experience in Teaching: Secondary II (1) Field experiences in tasks related to teaching and to teacher roles. Prereq: 352 and admission to Teacher Education Program. Satisfactory/No Credit only. E

355 Introduction to Secondary Schools (3) Aspects of teaching in grades 7-12, including curricular program and roles and responsibilities of secondary school teachers and administrators. Prereq: Admission to Teacher Education Program. Sp, Su

364 Contemporary Issues in Afro-American Education (3) (Same as Afro-American Studies 364.) F

402 Social Theory and Educational Practice (1) Concurrent with internship, designed to integrate student's own experience with foundational theory and policy. Prereq: Admission to Teacher Education Program. (Same as Education 402.) F

404 Problems in Improvement of Instruction (1-3) Special conferences, workshops or inservice programs designed for improvement of instruction. May be repeated. Maximum 6 hours. Satisfactory/No Credit. E

410 Pre-Internship Seminar (1) Objectives and policies of the internship program. Must be completed the term immediately preceding the internship. Prereq: Admission to Teacher Education Program. Satisfactory/No Credit only. Sp, Su

419 Teaching Laboratory (3) Learning and practicing research based effective teaching behaviors. Video taping in simulated school settings. Sp, Su

421 Elementary and Middle School Science and Social Studies Instruction (3) Methods and materials for teaching science and social studies. Development of functional relationships and individual entities of the two fields. Not open to students with recent course or background in the Teaching of Elementary School Science and/or Social Studies. Prereq: Admission to Teacher Education Program. F, Sp

424 Studies in Elementary Education (1-3) Variable topics on teaching in Early Childhood (K-3) (Same as Elementary Education 424-5); and King K-8. Prereq: Admission to Teacher Education Program and permission of instructor. E

429 Language Arts/Reading Instruction in Elementary and Middle Schools (3) Language and language development as applied to teaching of oracy (listening-speaking) and aspects of literacy (reading process/readiness and writing). Not open to students who have had recent course in language arts methods. Prereq: Admission to Teacher Education Program. F, Sp

430 Elementary and Middle School Developmental Reading Instruction (3) Word recognition (including phonic's), comprehension, evaluation, and materials. Prereq: Admission to Teacher Education Program. F, Sp
434 Topics in Reading Education (1-6) May be repeated. Maximum 6 hours. Prereq: Admission to Teacher Education Program and a course in reading Education, E

443 Elementary and Middle School Mathematics Instruction (3) Procedures for helping children learn mathematics. Unit planning, daily planning, grouping, general factors related to classroom management. Not open to students with a recent course in teaching of elementary mathematics. Prereq: Admission to Teacher Education Program. E

445 Early Childhood Education: Program Development 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 Program. E

451 Education in Cultural Perspective (3) Contribution of anthropological concepts to understanding of educational processes; major conceptual frameworks; revitalization ethnographic research on process of school- ing. F

453 Adolescent Literature (3) Literature written or appropriate for adolescents.

454 Teaching Strategies and Issues in Social Studies Education (3) Goals, objectives, techniques, material selection, classroom organization in public schools, preparation of teaching plans and materials; simulated teaching experiences. Prereq: Admission to Teacher Education Program. F

455 Teaching of Foreign Language, Grades 7-12 (3) Instructional methods, lesson planning, peer-teaching; materials for teaching Foreign Language and culture; evaluation techniques. Required for certification in modern foreign languages and Latin. Prereq: Completion or near completion of foreign language hours for certification and admission to Teacher Education Program. F

456 Teaching Speech and Drama Grades 7-12 (3) Purposes, techniques, material and evaluation for teaching Speech and Drama in secondary school. Required for certification in Speech. Prereq: Admission to Teacher Education Program. F

459 Teaching English in the Secondary School (3) Techniques of teaching composition, language, and literature. Prereq: Admission to Teacher Education Program. F

460 Teaching Reading and Literature in the Secondary School (3) Teaching basic reading skills and classroom management. Internship is completed in local public schools. Prereq: 410 and admission to Teacher Education Program. Satisfactory/No Credit only. F

461 Developing Reading Skills in Content Fields (3) Teaching reading and study skills in content areas of the school program. Extensive assessment of textbooks. Emphasis on the selection, evaluation and use of texts in high school. Prereq: 456. F, Sp

471 Internship I: Elementary (3-6) Methods and theorems of teaching. Internship is completed in local public schools. Application for internship should be made upon admission to Teacher Education Program. Prereq: 410 and admission to Teacher Education Program. Satisfactory/No Credit only. F

472 Internship II: Elementary (3-6) Demonstration of professional competence in planning, instruction, and classroom management. Internship is completed in local public schools. Prereq: 471 and admission to Teacher Education Program. Satisfactory/No Credit only. F

473 Student Teaching in the Elementary School (3-10) Semester assignment to Elementary Education Curriculum and Instruction 4810 or 4820. Intended for students in the four year program or equivalent. Not to be substituted for Educational Curriculum and Instruction 471. Internship I or 472: Internship II. Prereq: Admission to Teacher Education Program, permission of Mentoring Team, and 203 (1). Satisfactory/No Credit only. F

474 Student Teaching, Grades 7-12 (3-10) Semester assignment to Educational Curriculum and Instruction 4710 or 4720. Intended for students in the four year program or equivalent. Not to be substituted for Educational Curriculum and Instruction 481: Internship I or 482: Internship II. Prereq: Admission to Teacher Education Program, permission of Mentoring Team, and 203 (1). Satisfactory/No Credit only. F

475 Utilization of Instructional Media (3) Basic communication process, need for instructional media, in-
and computer methods to design of stage wise separations. Differential operations-applied to analytical and computer methods to the design of diffusional processes. Applications include gas absorption, distillation, precipitation, ion exchange and membrane separations. Prereq: 330.

360 Process Dynamics and Control (4) Introduction to process modeling and industrial control system design. Methodology for characterizing dynamic behavior of processes; theory and practice of operating and controlling such systems. Includes laboratory work. Lab. Prereq: 341. Making decisions in process control. 3 hours, 1 lab. Prereq: 330.

380 Seminar (1) Presentation and discussion of topics in the practice of chemical engineering. Satisfactory/No credit.

401 Chemical Engineering Data Analysis (3) Analysis of experimental data; identification of system extremals; statistical properties of samples, empirical modeling of processes; statistical process control; optimization techniques.

403 Introduction to Optimization (3) Principles and applications of optimization techniques to chemical process design; unconstrained and equality constrained optimizations, linear programming, dynamic programming, and geometric programming. Prereq: Math 241.

410 Chemical Engineering Laboratory II (3) Laboratory investigations of mass transfer and chemical reaction phenomena in chemical engineering. Prereq: 440, 447.

415 Computer Applications in Chemical Engineering (3) Introduction to computer solution of chemical engineering problems. Primary focus on the application of personal computer programs. Includes flow sheet simulators, statistics, spreadsheets, graphics and process modeling.


440 Transport Phenomena (3) Overview of momentum, heat and mass transfer processes, the analogies, differential and macroscopic balances, applications involving molecular diffusion, including simultaneous mass transfer and chemical reaction. Prereq: 340.

445 Separation Process Technology (3) Multicomponent distillation, theory and computer simulations; humidification/specialized technologies, including membrane separation, crystallization, dialysis, adsorption, ion exchange, etc. Prereq: 340.

450 Chemical Reactor Fundamentals (3) Homogeneous and heterogeneous chemical reaction kinetics; idealized homogeneous reactor models, both for closed and flow systems; corrections for non-ideal residence time distributions; identification of scaling parameters; catalyst, effectiveness factors and conversion in fixed bed catalytic reactors. Prereq: 340. Chemistry 350.

451 Advanced Process Dynamics and Control (3) Process and control system simulation and advanced industrial control techniques, including digital control, multi-variable, deadtime, adaptive, and nonlinear control system design. Includes computer and laboratory work. Lab. Prereq: 360.

469 Engineering Internship in Process Control (4) Selected students work in small groups on industrial problems in process dynamics and control. Directed by faculty and engineers from host company. Prereq: 380 and consent of instructor.

475 Fundamentals of Bioreactor Design (3) Reactor modeling, analysis and design for microbial fermentations and cell culture. Including batch, fed batch and continuous operation; suspension cultures and immobilized systems; factors affecting productivity and control.

476 Principles of Biochemical Separations (3) Selection and application of physical separation processes; analysis of separation processes including chromatography, electrophoresis, centrifugation, membrane processes, and biocatalysts. Treatment of theoretical and practical fluid extraction.

490 Equipment Design and Economic Methods (4) Design, optimization and costing of chemical plant equipment, introduction to economic evaluation methods.

ods, capital investment, discounted cash flows, net present-value, etc. Coreq: 440.

485 Hydrocarbon Processing (3) Chemical and physical properties of selected petroleums and processes utilized in conversion of raw material into various fuels and selected product feedstocks. Prereq: 340.

486 Coal Processing to Liquid Fuels (3) Characterization of various coals with respect to current gasification and liquefaction technologies; modeling of conversion processes, identification of product yields and the associated water, oxygen, and energy requirements; catalytic hydrogenation and reactor design considerations; economic assessments. Prereq: 485.


494 Special Problems in Chemical Engineering (3) Chemical engineering problems related to recent developments in industrial practice or engineering research. Prereq: Consent of instructor. May be repeated. Maximum credit 6 hours.

**ENGINEERING CIVIL (254)**

210 Engineering Surveys (3) Measurement through applications of differential principles. Analysis of errors in their analysis; concepts of horizontal, vertical and angular measurements and control; construction surveys; and thorough knowledge of practical and horizontal and vertical curves. Prereq: Sophomore standing.

251 Transportation Engineering I (3) Transportation problems and perspectives, rural and urban; use of a systematic planning process; analysis of evolving travel patterns, modeling and demand, development of alternatives and the evaluation of civil engineering projects. Civil engineering design making and applications of economic analysis. Prereq: Sophomore standing.

261 Structural Analysis I (3) Reactions; shear and moment diagrams; forces in trusses; uniaxial stress and strain; area moments of inertia; torsion. Prereq: Basic Eng. 121.

305 Seminar (2) Selected topics including historical and modern civil engineering achievements; professional and ethical responsibilities. Prereq: Senior standing and completion of all junior level non-engineering courses.

310 Route Surveying (3) Basic principles and practical applications of horizontal and vertical alignment of transportation routes, including compound, reverse and parabolic curves and spiral transitions. Includes earthwork computations by micro-computer. Prereq: 210.

321 Materials of Construction (3) Physical and mechanical properties of soils, theory of compaction, sieving, and effective stress. Consolidation theory, lime rate and settlement, and shear strength of sands and clays. 3 hours, 1 lab. Prereq: 261.

330 Transportation Engineering II (3) Introduction to design, construction, maintenance, and operation of various transportation modes, their guideways and terminals. Two lectures and 1 lab. Prereq: 261.

352 Traffic Engineering (3) Characteristics of driver, vehicle, and roadway and their interrelationship; traffic studies: basic considerations of traffic circulation and control, lighting, capacity analysis, roadway safety analysis and design. Prereq: 210, 251, 352.

395 Hydrology (3) Concept of hydrologic cycle; weather patterns; precipitation and evaporation; surface and ground water; snow, ice, and permafrost; ground water flow. Prereq: 390.

400 Senior Design Project (3) Open-ended design projects including problem formulation, specifications, feasibility studies; integration of computer design tools, topographical surveys, and nondestructive testing. Two lectures and 1 lab. Prereq: 321.

431 Earthquake-Resistant Structures (3) Same as Architecture 433.

435 Foundation Engineering (3) Fundamentals of geotechnics applied to design and analysis of soil-structure systems; subsurface investigation; design of shallow and deep foundations; foundation on rock. Lateral earth pressure and retaining structures. Analysis of homogeneous slopes. Prereq: 330.

440 Civil Engineering Systems Design and Management (2) Methods of data analysis and modeling of civil engineering systems to enhance resource allocation for specific application to problems of transportation, environmental, water resources, structural analysis materials. Emphasis on micro-computer applications. Prereq: Junior standing or consent of instructor.

442 Construction Methods and Equipment (3) Fundamental operations in construction and equipment selection and use in practice of engineering and construction; and construction contracts and economics. Prereq: 330.

451 Highway Engineering (3) Design, construction, operation, and maintenance of highway facilities; includes application of various engineering principles and techniques to process of planning, locating and design of highway facilities; covers both geometric and pavement design. Prereq: 210, 251, 352.

452 Traffic Engineering (3) Characteristics of driver, vehicle, and roadway and their interrelationship; traffic studies: basic considerations of traffic circulation and control, lighting, capacity analysis, roadway safety analysis and design. Prereq: 210, 251, 352.

453 Airport/Railroad Planning and Design (3) Airport management and engineering. Runway configuration, airfield capacity, geometry and terminal layout and design. Railroad capacity, airfield and system layout and design. Prereq: 210, 251, 352.

461 Analysis of Framed Structures (3) Maximum stresses due to imposed loads; idea of influence lines, lateral forces due to earthquake and wind; analysis of portals, bridge frames, and space frames; matrix methods; use of computer in structural analysis. Prereq: 361.

471 Introduction to Structural Design (3) Selection of rolled structural steel beams, design of structural steel members for axial tension and compression loads, reinforced concrete beams; use of standard specifications. Prereq: 361.

472 Steel Design (3) Design of plate girders and composite beams; consideration of members subjected to...
differential equations. Passing grade is required in order
amplifier. Steady state and transient analysis; the trans-
element - operational amplifier; measurement of volt-
ammeters, and oscilloscopes; RLC transients; active
transformers as circuit elements; linear and ideal trans-
sitions using risk-based methods; case studies. Prereq:
495 Water Resources Development and Manage-

tion systems and solid waste collection systems. Prereq: 390.
393. 495 Water Resources Development and Manage-
ment (3) Institutional framework including: water law, eval-
and hydraulic principles to design of drainage systems for urban, sump mining, and
and safety concepts, including dam break analyses. Prereq: 390, 395.

ENGINEERING ELECTRICAL AND COMPUTER (320)
201 Circuits I (3) Fundamental laws of circuit analysis. Ohm's Law, Kirchoff's current and voltage laws, the law of conservation of energy, circuits containing independent and
dependent voltage and current sources, resistances, con-
tance, inductance, capacitance and inductance analy-
ized using mesh nodal analysis, superposition and
and Thévenin's Theorems. Steady state analysis of DC and AC circuits.
Complete solution for transient analysis for circuits with one and two storage elements. Prereq: All course work in the Freshman Engineering curriculum. Coreq: Physics 231 and Mathematics 231.

202 Circuits II (4) Average complex, imaginary and real
circuit elements; three phase systems; delta and wye connections; power measurement using two wattmeters. Complex frequency; sinusoidal forcing functions; voltage and current; real and imaginary parts; complex number operations; frequency response of RLC circuits; circuit synthesis using operational amplifiers. Prereq: 201. Coreq: 209. Physics 232 and Mathematics 241.

209 Circuits II Laboratory (0) Use of computer in lab preparation and analysis of circuits. Use of voltmeters, ammeters, and oscilloscopes; RLC transients; active elements - operational amplifier; measurement of volt-
dages and the phasor plots. Frequency response of RLC circuits; simulation of RLC circuits with operational amplifiers. Steady state analysis of nonlinear systems, digital analysis, the trans-

251 Small Computer Systems (3) Structured as-
bled circuits using microprocessors. Communications
between computers; spreadsheet applications; word pro-
cessing software; computer systems; internet; on-line, real time

301 Circuits and Electro Mechanical Components (3) DC and AC Circuits. Transistors, Transformers, Motors, Generators. For non-majors only. Prereq: Mathemat-
ces 231, Physics 231.

320 Electronics and Computer Circuits (3) Analao
Circuits, Operational Amplifiers, Digital Systems and Logic Circuits, and Semiconductor Devices. For non-majors only. Prereq: 301.

311 Transient Analysis (3) Parallel treatment of con-
tinuous and discrete time dynamic systems; solution of linear constant coefficient differential/difference equations by transform methods. Frequency response tech-

312 Linear System Analysis (3) Steady-state and tran-
sient analysis of continuous and discrete time systems, stability, block diagrams and signal flow graphs, intro-

319 Systems Lab (0) Experiments and projects demon-
strating systems discussed in 312. Coreq: 312.

321 Electric Energy System Components (4) Mag-
netic circuits, power transmission lines, transformers, single-phase, three phase, unit notation. Induction
motors; equivalent circuit, performance. Synchronous
machines; parallel operation in power systems. D.C.

329 Electrical Energy Lab (0) Experiments and proj-

331 Electronic Devices (3) Fundamentals of energy band theory; work functions, density of states, electron transport in semiconductors; bipolar transistors; ionized carriers; device application, simple device modeling, and fabrication. Design content: 1 hour. Prereq: 202. Coreq: 335.

332 Electronic Circuits (3) Multistage transistor ampli-
fi er biasing; gain stages, and output stages; frequency and transient response of open loop linear amplifiers; fundamentals of integrated circuit operational amplifiers, applications in basic feedback configurations; basic transistor switching circuits. Design content: 2 hours. Prereq: 331. Coreq: 339.

335 Electronics Devices Lab (0) Experiments and proj-
ects discussed in 331. Coreq: 331.

339 Electronics Lab (0) Experiments and projects demon-
strating electronics discussed in 332. Coreq: 332.


420 Analog Signal Processing Electronics (4) Basic processing and fabrication of active and passive components for non-lin
circuits; characteristics of bipolar, MOS and JFET transistors in typical
and phase detection, multiplexers, modulation and

399 Plasma Engineering Lab (0) Experiments and proj-
ects demonstrating plasma engineering concepts discussed in 396. Coreq: 361.

405 Digital Signal Processing and Filter Design (3) Discrete time signals and systems, sampling, discrete Fourier transforms, digital signal processing, recursive and recursive filter design, and CAD tools for filter design. Design content: 1 hour. Coreq: 409.

409 Digital Signal Processing and Filter Design Lab (0) Experiments and projects demonstrating digital signal processing and filter design discussed in 405. Coreq: 405.

411 System Simulation and Modeling (3) Modeling of continuous and discrete time dynamic processes using simulation tools.
Computer simulation of control systems models. Design content: 2 hours. Prereq: 312.

412 Linear Control System Design (3) Classical and
modern techniques for design of linear feedback control systems; system stability, root locus method, compensation; state feedback. Design content: 3 hours. Prereq: 411.

413 Passive and Active Network Synthesis (3) Net-
work analysis techniques, passive network driving point
synthesis, transfer function synthesis, approximation theory, topics in active network synthesis. Design content: 3 hours. Prereq: 412.

421 Electric Energy Systems (3) Structure and opera-
tion of the electrical energy grid, load flow, economic load dispatch, planning; concepts of generation. Balanced and unbalanced faults; system protection; system stability. Design content: 1 hour. Coreq: 321.

422 Machines (3) Dynamic behavior of rotating ma-
cines; basic characteristics of DC, AC, and brushless electric motors; design parameters of operation of d.c. machines; response to different wave forms in supply; describing equations for a.c. machines and their electrical circuits. Design content: 1 hour. Prereq: 321. Coreq: 426.

423 Power Electronics (3) Principles and characteris-
tics of power semiconductor devices, single-phase and

424 Power Electronics Circuits (3) Voltage-fed in-
vters, PWM principle of operation, d-c converter, d-c converters, d-c machine drives, resonance converters, step motor drives, brushed and brushless d-c machine principles. Design content: 2 hours. Prereq: 423.

425 Direct Electrical Energy Conversion (3) Prin-
ciples and practices of energy conversion devices and interfacing them to loads. Includes photovoltaics, MHD, and fuel cells. Design content: 2 hours. Prereq: 321.

426 Machines Lab (1) Experiments and projects demon-
strating machines discussed in 422. Coreq: 422.

429 Power Electronics Lab (1) Experiments and proj-
ects demonstrating power electronics discussed in 423. Coreq: 429.

431 Digital and Analog Integrated Electronics (4) Basic processing and fabrication of active and passive components for monolithic integrated circuits; charac-
teristics of bipolar, MOS, and JFET transistors in typical
and digital integrated circuit designs; standard
circuit diagram techniques, including active filter design, level and
phase detection, multiplexers, modulation and

432 Analog Signal Processing Electronics (4) Basic processing and fabrication of active and passive components for monolithic integrated circuits; charac-
teristics of bipolar, MOS, and JFET transistors in typical
and digital integrated circuit designs; standard
circuit diagram techniques, including active filter design, level and
phase detection, multiplexers, modulation and

433 Electronic Amplifiers (4) Feedback amplifier principles; wideband linear amplifier design; radiation effects; power supply design; stabilizing circuits. Coreq: 312. Coreq: 435.

435 Digital and Analog Integrated Electronics Lab (8) Variations of circuit and circuit operating electronics
200 Fundamental Applications Computer in Industrial Engineering of production simulation systems using hardware and software. The course covers the development of simulation models, including detailed models of manufacturing systems and production processes. Includes practical exercises using simulation software.

456 Digital System Design Laboratory (0) Experiments and projects demonstrating digital systems discussed in 455.

459 Data Acquisition Systems Laboratory (0) Experiments and projects demonstrating digital communications discussed in 458.

461 Plasma Magnetohydrodynamics (3) The MHD simulation: MHD waves and instabilities in static and dynamic systems; MHD in pulsed and steady-state power generation. Applications to fusion energy, industry, and astrophysics. Design content: 1 hour. Prereq: 361.

462 Plasma Kinetic Theory Engineering (3) Introduction to kinetic theory: beam-plasma systems; driven waves as a generator of turbulence; transport and renormalization; Boltzmann kinetic equation; magnetohydrodynamic turbulence; advanced fusion fuels, fusion technology, plasma engineering, and fusion reactor design studies. Includes design projects on fusion plasma systems and computational modeling. Design content: 2 hours. Prereq: 463 or consent of instructor. (Same as Nuclear Engineering 464.)

463 Introduction to Fusion Energy (3) High-temperature plasma physics relevant to fusion plasmas, principles of fusion reactors, and engineering and physics constraints on fusion reactors. Prereq: 361 for ECE majors, or consent of instructor. (Same as Nuclear Engineering 463.)

464 Introduction to Fusion Energy (3) Continuation of 463. Includes principles and phenomenology of tokamak and stellarator magnetic confinement concepts; advanced fusion fuels, fusion technology, plasma engineering, and fusion reactor design studies. Includes design projects on tokamak plasma systems and computational modeling. Design content: 2 hours. Prereq: 463 or consent of instructor. (Same as Nuclear Engineering 464.)

469 Plasma Laboratory (1) Experiments and design projects in plasma physics and material sciences. Design content: 1 hour. Prereq: 461, 462, and 463. Design content: 1 hour.


489 Electio-Optics I Lab (1) Experiments and projects demonstrating electro-optics discussed in 481. Coreq: 481.

494 Special Problems in Electrical Engineering (1-3) Problems in Electrical Engineering involving library and experimental work. Includes extended research and study. Maximum nine hours. Prereq: Consent of instructor.

495 Senior Seminar (1) Topics may be repeated once. Prereq: Senior standing or consent of instructor. Satisfactory/No Credit or letter grade.

412 Quantitative Methods in Project Management (2) Project planning, scheduling, and control based on network analysis and precedence diagramming methods. Includes resource allocation and time-cost trade off algorithms, multi-project control, computer applications, and techniques of handling uncertainty in time estimates.

413 Research Methods in Industrial Engineering (3) Methods to collect and analyze data as related to industrial engineering topics such as process control, statistical modeling of processes, behavioral sampling, single subject experimental designs, classical experimental design methods, and time series models of experiments. Validity and reliability concepts as related to measurement and collection of data. Strategies to control rival hypotheses such as randomization, matching, yoking, fixing variables, and building extraneous variables into an experiment. Selection of appropriate experimental design, size of samples, product liability design, and analysis of messy data. Prereq: 300 and senior standing. Statistics 251.

414 Laboratory and Methodology in Human Factors Engineering (3) Project and laboratory-oriented investigation of human factors problems. Instrumentation and measurement of human capabilities and limitations, environment factors that affect work such as temperature, humidity, and noise. Measurement of task loading effects and interfaces of design human performance. Student selected group project. Prereq: 304 and senior standing.

421 Informational Systems I (3) Systems engineering approach to design, development, implementation, and evaluation of information systems. Emphasizes informational aspects of IS systems. Study of data structures and database management systems. Prereq: 200 and senior standing.

422 Special Industrial Engineering Problems Analysis (3) Application of Industrial Engineering to field assignments in local organizations, including problem definition, analysis and presentation. Prereq: 402, 403 and 405.


494-495 Special Topics in Industrial Engineering (3,3) Recent developments in Industrial Engineering including new areas of application, new research techniques and new methodologies. May be repeated once. Prereq: Senior standing and consent of instructor.

ENGINEERING MATERIALS SCIENCE (638)

201 Introduction to Materials Science and Engineering (3) Correlation of atomic structure, crystal structure and microstructure of solids with mechanical, physical and chemical properties of engineering significance. Prereq: Chemistry 150. E


302 Mechanical Behavior of Materials (3) Loading behavior for ceramics, polymers and metals; standardized tensile testing procedures; analytical treatment of stress, strain, and constitutive equations; theory of failure for ductile materials; analytical linear elastic fracture mechanics. Prereq: 201, sophomore mathematics, ESM 331, (Time as Engineering Science and Mechanics 323.)

303 Thermodynamics of Solids (2) Applications to solids of free energy, activity: Raoult’s and Henry’s laws; gas-solid equilibria; kinetics, crystal growth, crystallization, polycrystalline rule; multicomponent systems. Prereq: Chemistry 371. Sp

365 Structural Characterization of Materials (4) X-ray diffraction and fluorescence; scanning and transmission electron microscopy; microanalytical techniques.


320 Physical Metallurgy (3) Phenomenology and micromechanisms of plastic deformation in single and polycrystalline materials. Applications of crystallography and x-ray diffraction. Solidification of metals and alloys. Recovery and recrystallization processes of cold worked structures. Strengthening mechanisms in metallic alloys. Prereq: 301, 3 hours or 2 hours and 1 hour lab. Sp

340 Introduction to Polymer Science and Engineering (3) Structure-property relations of polymers; polymerization kinetics; molecular characterization; crystalline and glass transitions; crystallization kinetics; mechanical properties; rheology and processing. Prereq: 201. F

342 Structure-Property Relationships in Polymers (3) Crystal structure and morphology, structure-property relationships with respect to interchain interactions, deformation mechanisms and orientation types. Electrical properties of polymers. Prereq: 340 or consent of instructor. Sp

360 Introduction to Ceramic Materials and Processing (3) Characterization of ceramic materials as to their crystal structure, their mechanical, electrical, and optical properties. Ceramic fabrication processes from the initial green body fabrication through the firing state. Prereq: 201

341 Mechanical Metallurgy (3) Brittle fracture due to metallurgical and environmental factors; stress-life and stress-fatigue analytic; residual stresses; creep and stress rupture; finite plastic strain, ductile fracture; fabrication by forging, rolling, deep drawing, stretch forming, and forming mechanisms in metallic alloys. Also suggested for mechanical engineering and engineering science and mechanics majors. F

342 Chemical Process Metallurgy (3) Application of chemical processes to the processing of metals. Ferrous and nonferrous pyrometallurgical refining, slag-metal equilibria, solidification, gas-metal processing. Prereq: 303. F

343 Metallurgical Fabrication (3) Principles and processes of welding, casting and powder metallurgy; solidification, segregation, heat flow, microstructure, residual stresses, crystal structure, and non-destructive testing. Prereq: 320 (3 hours or 2 hours and 1 lab.) Sp

424 Metallurgical Process Design (3) Property control through composition, thermal and mechanical processing, material and product form design, steel and nonferrous alloys. Prereq: 201. Sp

425 Metallurgical Applications in Manufacturing and Processing (3) Fabrication methods, standards and specifications for ferrous and nonferrous metals. Mechanical processing for finished and semi-finished products; casting; forming, joining, heat treatment, powder metallurgy, corrosion control. Prereq: 201.

442 Mechanical Properties of Polymers (3) Deformation in the amorphous and crystalline states; isotropic and anisotropic properties; phenomenological and molecular interpretations. Rubber elasticity; thermodynamics and mechanical behavior in terms of the statistics of networks. Yielding and crazing. Fiber drawing; structural models, technologies, microscope; rubber in synthetic superposition principle; time-temperature superposition. Internal friction. Prereq: 302, 340 or consent of instructor. F

443 Polymer Processing (3) Rheological measures; flow through tubes and slits, including end effects and extrude swell; selected applications, including screw extrusion, injection molding, synthetic fibers, including structure development, properties. F

444 Plastics Fabrication and Design (3) Lectures, laboratories and field trips; unit operations of plastics fabrication; plastic fabrication; selection and evaluation criteria; processing techniques; characterization laboratory. Sp

470 Corrosion Science and Engineering (3) Mechanisms and control of corrosion and degradation processes; thermodynamics and electrode kinetics of corrosion reactions; electrochemical measurement techniques. Prereq: 201. Recommended for chemical engineering, mechanical engineering, civil engineering and science and mechanics majors. F

471 Semiconductor Materials (3) Theory properties and processing of semiconductors with emphasis on applications to solid-state devices; basic physics of semiconductor materials; crystal growth, dicing, annealing, etching, property and performance evaluation. Prereq: 313. F

472 Fundamental Principles of Composite Materials (3) Principles based on science and engineering of fabrication and application of fiber reinforced polymers, metals and ceramics. Prereq: 302 or equivalent. (Same as Engineering Science and Mechanics 426) F

474 Bionanomaterials (3) Metals, polymers and ceramics utilized in orthopedic, cardiovascular, and dental surgical implant devices; corrosion and degradation problems; material properties of primary importance; tissue response to synthetic materials. Prereq: 201. Recommended for engineering science and mechanics majors.

475 Fracture-Safe Design (3) (Same as Engineering Science and Mechanics 423)


494 Special Project Laboratory (1-3) Group or individual investigation of problems related to materials science and engineering. May be repeated once. Prereq: Senior standing or consent of professor.

495 Thesis (3) Research problems in materials science and engineering with prior approval of a professor. May be repeated once. Prereq: Senior standing or consent of instructor.

496 Special Topics in Materials Science and Engineering (1-3) Recent developments in materials research; developments and applications; Prereq: Senior standing or consent of instructor.

ENGINEERING MECHANICAL (650)

331 Thermodynamics I (3) Energy and laws governing energy transformations; thermodynamic properties; thermodynamic cycles; applications to engineering problems. Prereq: Chemistry 130, and Mathematics 231. F, Sp, Su

332 Thermodynamics II (3) Properties of gases and mixtures; chemical reaction; chemical equilibrium; applications to engineering problems. Prereq: 331. F, Sp, Su

341 Fluid Flow (3) Development of mass, momentum, and energy principles for fluid systems; dimensional analysis and design; forced and free flows. Prereq: ESM 251, Mathematics 231. F, Sp, Su

344 Heat Transfer (3) Heat transfer by conduction, radiation, convection, and convection. Prereq: 331, 341, 391. F, Sp, Su

345 Mechanical Engineering Instrumentation and Measurement (3) Fundamentals of measurement systems; standards, dynamic characteristics of instruments; statistical data treatment and interpretation; signal conditioning; strain, pressure, temperature and flow measurement. Coreq: 363, Prereq: 341, ECE 301. Sp


474 Solar Energy Utilization (3) Nature and availability of solar radiation; review of heat transfer topics pertinent to solar energy collection and use; design analysis of solar energy systems and methods of storage; selected applications. Prereq: 332, 344 or consent of instructor.

475 Thermal Engineering (3) Thermal systems with emphasis on turbomachinery, heat exchangers, combustion and system analysis and design including second law analysis. Prereq: 332, 344, F, Sp


494-495 Selected Topics in Mechanical Engineering (1-4, 1-4) Problems and topics related to developments and practice in mechanical engineering. Prereq: Consent of instructor. F, Sp, Su

ENGINEERING NUCLEAR (716)

201-202 Seminar (1, 1) Topics related to nuclear engineering. Satisfactory/No credit.

203 Thermodynamics I (3) First law analysis of open and closed systems; application to ideal gases and real fluids. Prereq: Mathematics 142.

204 Thermodynamics II (3) Second law, development of entropy concept and availability. Various power plant cycles and systems. Prereq: 203.

301 Introduction to Nuclear Engineering (3) Nuclear systems, radioactive decay, cross sections, flux, health physics, reactor theory. Prereq: Physics 232, Mathematics 231.

302 Introduction to Nuclear Reactor Theory (3) Fundamentals of nuclear reactor physics and neutron transport; kinematics of elastic scattering, reactor kinetics, reactor systems and nuclear data. Analytical and numerical methods applicable to general criticality problems; eigenvalue searches, perturbation theory, and the multigroup diffusion equations. Prereq: 301.

304 Nuclear Engineering Laboratory (3) Radiation detection and counting instrumentation, counting statistics, half-life and decay schemes, gamma spectroscopy, heat transfer experiments. Prereq: 305. Coreq: 302.

305 Energy Transport (3) Development of differential and integral energy conservation; conduction and convection heat transfer, including numerical methods; application to reactor fuel elements, reactor cores, storage tanks, and fuel transport. Prereq: 304.

306 Designing for Energy Transport (3) Radiation heat transport, hydromechanics and heat transport in boiling and condensing systems; boiling crises; fuel element and heat exchanger thermal design; steam generator design. Prereq: 305.

310-311 Thermalhydraulics (3, 3) Energies and the manner in which they are transferred and transported. First and second laws of thermodynamics with application to power cycles; transfer of heat through conductive and radiative mechanisms; and development of fluid flow principles for the transport of energy. Prereq: Mathematics 241.

342 Thermal Science (3) Fluid statics; conservation equations of mass, momentum, and energy; application to fluid machinery; heat transfer processes; heat conduction, thermal radiation, free and forced convection. For non-departmental majors only.

401 Nuclear Reactor Theory (3) Thermal spectrum computational methods; heterogeneous effects in fast and thermal spectra; considerations in reactor core design; equations that relate thermal and neutron variables; power distribution calculations and reactivity control methods. Prereq: 371.

402 Nuclear System Design (3) First order design and analysis of a nuclear system, interface with non-nuclear aspects of system design including system reliability and economics, class project. Prereq: 401.
333 Black American Literature and Aesthetics (3)
Black American literature and aesthetics since 1899, with emphasis on cultural evaluations and the principles of being "African American." Writing-emphasis course; at least one in-class essay examination and 3000 words of writing outside the classroom.

334 Film and American Culture (3)
American films as both works of art and social documents. Relationship between the medium of film and American culture in the twentieth century. (Same as American Studies 334 and Cinema Studies 334.) Writing-emphasis course; at least one in-class essay examination and 3000 words of writing outside the classroom.

351 The Short Story (3)
Emphasis on the short story of the 19th century. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

352 Introduction to Folklore (3)
Folklore in the Bible: legend, folktale, history, biography, and popular ballads and folktales of English, Scottish, and North American tradition.

353 Foundations of the English Language (3)
Phonology, morphology, and syntax of English. History of the English language to 1800. (Same as Linguistics 371.)

357 The Structure of Modern English (3)
Survey of approaches—traditional, descriptive, and generative—toward the structure of modern English. (Same as Linguistics 372.)

358 Colloquium in Literature (3)
Methods and objectives of literary study; current issues in theory; plan student's program in major.

359 Literary Criticism (3)
Historical survey of major works of literary criticism.

361 Introduction to Folklore (3)

369 Language of the English Bible (3)
Types of literature in the Bible: legend, folktale, history, biography, poetry, prophecy, apocalyptic. (Same as Religious Studies 389.)

385 Introduction to Sociology of the Family (3)
Emphasis on the family of modern times and social problems. (Same as Sociology 385.)

386 Teaching English as a Second or Foreign Language I (3)
Grammar and pronunciation of English, teaching principles and practices for classroom teaching. (Same as Linguistics 471 and Sociology 471.)

387 Teaching English as a Second or Foreign Language II (3)
Second language acquisition theory. Issues in teaching the four language skills to learners of English. Materials and methods of language teaching and testing with emphasis on preparation of materials. Observation and practice of instruction. Teaching of English to native and non-native speakers with some attention to diagnostic analysis of English with other languages. Prereq: Second year of a foreign language. (Same as Linguistics 474.)

388 Teaching English as a Second or Foreign Language III (3)
Teaching English to native speakers with some attention to contrastive analysis of English with other languages. Prereq: Second year of a foreign language. (Same as Linguistics 474.)

389 Teaching English as a Second or Foreign Language IV (3)
Teaching English to advanced learners of English, with emphasis on preparation for written and oral language. Teaching grammar and phonology to non-native learners of English. Basic phonological structures of English. Teaching grammar and phonology to non-native speakers with some attention to contrastive analysis of English with other languages. Prereq: Second year of a foreign language. (Same as Linguistics 474.)

390 Teaching English as a Second or Foreign Language V (3)
Teaching advanced learners of English, with emphasis on preparation for written and oral language. Teaching grammar and phonology to non-native learners of English. Basic phonological structures of English. Teaching grammar and phonology to non-native speakers with some attention to contrastive analysis of English with other languages. Prereq: Second year of a foreign language. (Same as Linguistics 474.)

391 Teaching English as a Second or Foreign Language VI (3)
Teaching advanced learners of English, with emphasis on preparation for written and oral language. Teaching grammar and phonology to non-native learners of English. Basic phonological structures of English. Teaching grammar and phonology to non-native speakers with some attention to contrastive analysis of English with other languages. Prereq: Second year of a foreign language. (Same as Linguistics 474.)

392 Teaching English as a Second or Foreign Language VII (3)
Teaching advanced learners of English, with emphasis on preparation for written and oral language. Teaching grammar and phonology to non-native learners of English. Basic phonological structures of English. Teaching grammar and phonology to non-native speakers with some attention to contrastive analysis of English with other languages. Prereq: Second year of a foreign language. (Same as Linguistics 474.)

393 Teaching English as a Second or Foreign Language VIII (3)
Teaching advanced learners of English, with emphasis on preparation for written and oral language. Teaching grammar and phonology to non-native learners of English. Basic phonological structures of English. Teaching grammar and phonology to non-native speakers with some attention to contrastive analysis of English with other languages. Prereq: Second year of a foreign language. (Same as Linguistics 474.)

394 Teaching English as a Second or Foreign Language IX (3)
Teaching advanced learners of English, with emphasis on preparation for written and oral language. Teaching grammar and phonology to non-native learners of English. Basic phonological structures of English. Teaching grammar and phonology to non-native speakers with some attention to contrastive analysis of English with other languages. Prereq: Second year of a foreign language. (Same as Linguistics 474.)

395 Teaching English as a Second or Foreign Language X (3)
Teaching advanced learners of English, with emphasis on preparation for written and oral language. Teaching grammar and phonology to non-native learners of English. Basic phonological structures of English. Teaching grammar and phonology to non-native speakers with some attention to contrastive analysis of English with other languages. Prereq: Second year of a foreign language. (Same as Linguistics 474.)

396 Teaching English as a Second or Foreign Language XI (3)
Teaching advanced learners of English, with emphasis on preparation for written and oral language. Teaching grammar and phonology to non-native learners of English. Basic phonological structures of English. Teaching grammar and phonology to non-native speakers with some attention to contrastive analysis of English with other languages. Prereq: Second year of a foreign language. (Same as Linguistics 474.)
493 Independent Study (1-15) Tutorial in subjects not adequately covered in regular courses.

498 Senior Honors Paper (3) Intended for (but not limited to) students with a 3.2 or better GPA, this is an individual writing project in which the student writes a documented study or creative project that is more substantial than what can be accomplished in a standard course. See the Director of Undergraduate Studies in English for details.

ENTOMOLOGY AND PLANT PATHOLOGY (341)

306 Forest Protection (3) Biological, economic and legal consideration of fire, pathogens, insects, vertebrates, wind, and pollutants in the forest ecosystem. One or more all day or overnight field trips may be required. 2 hours and 1 lab. Sp, E

313 Plant Pathology (3) Principles of plant pathology illustrated by diseases of common agricultural crop plants. Prereq: Six hours of Biological Science. 2 hours and 1 lab. (Same as Botany 313). F, E

321 Economic Entomology (3) Structure, life history, habits and principles of control of important pest insects of writing, horticulture and household. Prereq: Six hours of Biological Science. 2 hours and 1 lab. Sp, E

325 Veterinary Entomology (3) Identification, biology and control of arthropods that attack major livestock species. Principles of insect physiology, methods of insect control, major pest species groups and problems associated with specific host production operations. Prereq: Biology 122 or equivalent. 2 hours and 1 lab. F, E

FINANCE (349)

Accounting 201-202, Economics 201, and Statistics 201 are prerequisite to all Finance courses. Finance 301 is prerequisite to all 400 level courses.

301 Financial Management (3) Principles of financial management. Investment, financing and asset management functions of the firm.

400 Special Topics (3) Seminar. Topic(s) announced prior to offering.

421 Investment Analysis (3) Principles and concepts of asset valuation in competitive and efficient financial markets. Basic analytical tools are developed and used to study valuation of different types of securities. Major writing requirement.

422 Portfolio Analysis and Management (3) Portfolio theory and evidence of behavior of security returns with a view to determining rational investment policy. Including: portfolio theory, asset allocation, portfolio analysis and capital market theory, and extensions of portfolio analysis. Prereq: 421.

430 Financial Markets (3) Role of short and long term financial markets in the process of capital formation and allocation. Theories and mathematics of interest rates in money and capital markets.

431 Financial Institutions (3) Management policies of financial institutions including asset, liability and capital management, legal, economic and regulatory environment and their implications for management. Financial institutions' structure and competition and changing trends in the U. S. financial system.

450 Financial Management: Theory and Practice (3) Decision making topics in financial management including valuation, capital budgeting under uncertainty; cost of capital, capital structure theory and dividend policy. Major writing requirement.

460 Advanced Topics in Financial Management (3) Contemporary issues in corporate finance, liquidity and current asset management, corporate growth and control, international financial management, and pension fund management. Prereq: 450.

470 Risk Management and Insurance (3) Identification, measurement and decision making with regard to insurance and risk management. Types of risks facing the firm. Emphasizes handling these risks in the most cost-efficient manner.

471 Estate and Financial Planning (3) Process of estate accumulation, safekeeping, and distribution, with particular emphasis on impact of insurance and taxation.

481 Real Estate Finance and Investment Analysis (3) Principles of financing and investing in real property. Utilizes discounted cash flow models and ratio analysis. Current federal law applicable to real property. Limited partnerships and other joint ventures. (Same as Urban Studies 481.)

482 Urban Development and Finance (3) Economic analysis of determination of urban land value and use, and discussion of current urban problems in the United States. Primary and secondary mortgage markets and economic analysis of the effects of these markets on urban development. (Same as Urban Studies 482.)

FIRST YEAR STUDIES

101 Approaches to the University (1) Integration into the academic life of the campus, including the nature and purpose of a college education, career planning, the organization of university discipline, and assessment of special needs in areas such as time management, study skills, counseling, and financial aid. Satisfactory/No Credit grading only. Meets weekly.

110 Peer Mentoring Seminar (2) Designed to prepare the upperclass student to effectively mentor the freshmen student. Includes theories of helping, the development of mentoring skills, cognitive and developmental theories of the college-age student, and the investigation of the problems of transition. Satisfactory/No Credit grading only. Meets weekly.

FOOD TECHNOLOGY AND SCIENCE (390)

140 The Food Industry (3) Role of the food industry in providing an adequate, safe food supply for the United States and international markets. Interaction of the food industry with governmental agencies and consumers. 2 hours and 1 lab. F

269 Meat Evaluation and Grading (2) Grading standards for quality and yield; principles for evaluating beef, pork and lamb, and application of standards for institutional meat cuts. Practice grading, judging carcasses and cuts, and application of purchase specifications. F

360 Meat Science (2) Carcass characteristics of meat animals, muscle structure and composition, cut identification, curing, freezing and cookery. Sp

369 Meat Science Lab (1) Slaughter and processing methods for beef, pork, lamb and poultry. Prereq: 360 or concurrent enrollment. Sp

401 Food Technology and Science Seminar (1-2) Research techniques and statistical methods for making derived data. May be repeated; maximum 3 credit hours. Pre: Senior standing or consent of instructor. F, Sp

410 Food Chemistry I (3) Reactions of proteins, enzymes, and additives in foods. Study of physical-chemical interactions of foods. Prereq: Chemistry 110 or equivalent. 2 hours and 1 lab. F

411 Food Chemistry II (3) Reactions of inorganic compounds, carbohydrates, lipids and vitamins in foods. Prereq: Chemistry 110 or equivalent. 2 hours and 1 lab. Sp

420 Food Microbiology I (2) Physical, chemical and environmental factors moderating growth and survival of foodborne microorganisms; pathogenic and spoilage microorganisms affecting quality of foods and their control. Prereq: Microbiology 210. Coreq: 429 F


430 Sensory Evaluation of Food (3) Principles and methods of sensory evaluation of foods. Prereq: Agricultural Engineering Technology 422. 2 hours and 1 lab. Sp

440 Preservation of Food (3) Prevention of deterioration and spoilage of foods. Methods of preservation. Prereq: Agricultural Engineering Technology 422. 2 hours and 1 lab. Sp

442 Special Topics in Food Technology and Science (1-3) Topics of current concern to the food industry. May be repeated. Maximum 9 hours. Prereq: Consent of instructor. F, S

450 Dairy Products I (3) Procurement, processing and distribution of fluid milk. Manufacture of butter, frozen and condensed dairy products. Prereq: 140 or consent of instructor. 2 hours and 1 lab. F

451 Dairy Products II (3) Manufacture of cheese and specialty products. Market standards and written and coded product defects, scoring of dairy products. Prereq: 140 or consent of instructor. 1 hour and 2 labs. Sp

460 Meat Products Technology (4) Processing methods for forming cured, smoked and frozen formed products. Effect of processing methods on product characteristics. Prereq: 360 or consent of instructor. 3 hours and 1 lab. F

470 Food Crop Products (3) Food products from plants emphasizing types, manufacturing systems, quality attributes and utility. Prereq: 3 hours Biological Science. 2 hours and 1 lab. Sp-E

480 Cereal Science and Bakery Products (3) Chemistry and technology of processing cereal grains; interactions of ingredients during production and storage of baked products. Prereq: 410 or 411 or equivalent. 2 hours and 1 lab. F-O

493 Independent Study (1-12) Specialized research in areas of interest under faculty direction. Field experience in supervised internship in the food industry. May be repeated maximum 12 hours. Prereq: Consent of instructor. F

FORESTRY (396)

301 Forest and Wildland Resource Economics (3) Production functions, supply-demand and market analysis; non-market programs and projects; economic analysis and decision models, investment and financial analysis; managerial economics; taxes; forest products marketing. Prereq: 324 or consent of instructor. F

321 Forest Recreation (3) Philosophical foundation of recreation: planning, development, and management of forest recreation resources; interpretation of forest resources. Overnight weekend field trips may be required. F

322 Applied Silviculture (3) Application of silvicultural techniques; tree improvement; use of herbicides; fire management. Prereq: Forestry, Wildlife and Fisheries 312. Coreq: 323, 324, 325, and Entomology and Plant Pathology 306. Sp


324 Forest Resource Analysis (3) Growth and yield prediction; harvest determination; goal setting under multiple use concepts; approaches to regulation; financial aspects of forestry with computer simulation. Prereq: Forestry, Wildlife and Fisheries 303. Coreq: 322, 323, 325 and Entomology and Plant Pathology 306. Sp

325 Forest Resource Inventory and Surveying (3) Volume and growth estimation; timber appraisal; surveying techniques; road layout and construction as applied to forestry; land surveying. Prereq: Forestry, Wildlife and Fisheries 313. Coreq: 322, 323, 324 and Entomology and Plant Pathology 306. Sp

331 Wood Properties and Uses (2) Fundamental structural properties and uses of wood. Prereq: Botany 110 or consent of instructor. Coreq: 332 for Forestry and Wood Utilization majors. Sp

332 Wood Identification (1) Macro and micro identification of woods. Commercial softwoods, hardwoods, and foreign woods. Prereq: Forestry, Wildlife and Fisheries 311 or consent of instructor. Coreq: 331 for Forestry and Wood Utilization majors. 1 lab. Sp

422 Forest and Wildland Resource Policy (3) Policy forest and special interest groups and issues. Environmental, social and economic analysis of national and international policies. (Same as Urban Studies 482.)

423 Forest Recreation Planning and Management (3) Planning processes, master and site planning, site design projects; management strategies, methods of
431 Solid Wood Processing (3) Production processes for solid wood products including sawmilling, secondary machining, drying and preservation. Prereq: 331 and 332, or consent of instructor. 2 hours and 1 lab. Sp

432 Practicum in Wood Products (2) Standard labora-
tory procedures used in the evaluation of wood and
wood products. Plant visits including sawmills, pulp,
plywood, flooring, composite panel, and wood
products. Prereq: Senior standing in Wood Utilization or
consent of instructor.

433 Wood Composites and Gluing (3) Principles of
adhesion; wood adhesives; fundamentals of plywood
and furniture composite panel manufacture. Evaluating
resin properties; bonding strength and durability. Prereq:
301 and 332, or consent of instructor: 2 hours and 1 lab. F

434 Measurement and Marketing of Wood Products
(3) Measurement systems used for sale and transfer of
wood products. Application of market principles and
economic structures of wood products industry. Prereq: 431, 433 and
Forestry, Wildlife and Fisheries 313, or consent of in-
structor. Sp

482 Off-Campus Internship in Forestry (1-6) Super-
visor experience at departmental-approved internship
site. Prereq: Junior standing. Satisfactory/No credit only. E

492 Independent Study in Forestry (1-15) Special re-
search experience in forestry. E

494 Independent Study in Wood Utilization (1-15) Special research or individual work in utilization. E

FORESTY, WILDLIFE AND
FISHERIES (398)

211 Introduction to Forestry, Wildlife and Fisheries
(3) Development of the principles of resource manage-
ment: social perspectives and attitudes concerning natural
resources and their use; techniques of integrated nat-
rual resource management, ecological principles, cur-
rent policies, social trends, and forest and wildlife
resource use. Day-long field trips may be required. Sp

250 Conservation (3) Use and abuse of wildlife re-
sources. Historical and current manage-
ment of forests, wildlife, and fish of North America
including aspects of outdoor recreation and pollution
problems.

300 Current Issues in Renewable Natural Resources
(2) Exploration of selected. Maximum 3 hours. Satisfactory/No
credit only. F

311 Dendrology/Ecology/Silvics (4) Principles of plant
identification; ecological principles: characteristics of
forested communities. Prereq: 1 year of Botany or Biology. 2 hours and 2 labs. F

312 Silviculture (2) Principles for treating forest stands to
achieve selected objectives. Prereq: 311, Coreq: 313, 315, 1 hour and 1 lab. F

313 Measurements and Sampling (2) Measurement
techniques and sampling methods for vegetation; esti-
lation of animal populations; map and aerial photo use.
Prereq: Statistics 201. Coreq: 312, 315, 1 hour and 1 lab. F

315 Forest Soils and Watershed Management (3)
Soil information, properties, water relations and the
location of forest soils. Prereq: 101, 2 hours and lab. Sp

316 Managing Natural Resource Organizations (3)
Evolution of natural resource professions and organiza-
tions. Cultural and social structure of natural resource
organizations. Organizational and managerial functions.
Overview of current issues including case studies.
Prereq: 211. 2 hours and 1 lab. F

317 Principles of Wildlife and Fisheries Manage-
ment (3) Ecological relationships of wildlife animals with
other animals and their habitats. Biological, social and
economic aspects of their management. Coreq: 312, 313 and 315, or consent of instructor. F

416 Planning and Management of Forest, and Wild-
life Fisheries Resources (3) Integrated forest and
wildlife resource management through developing land
management plans and analyzing case studies includ-
ing conflict resolution. Prereq: Senior standing. 1 hour and 2 labs. Sp

FRENCH (405)

111-112 Elementary French (3,3) Introduction to French.
May not be repeated for credit by students with two years of high school or one year college French. Must be taken in sequence. Language Laboratory required.

199 The French Language and World Business (1) This course will examine the importance of foreign trade at the local, state and national levels. An interdisciplinary
program. Language Laboratory required.

300-001 Concurrent and Simultaneous French-English
and English-French Translation (3,3) Concurrent-
Translation to and from English. Introduction to
simultaneous translation to English. 401-Simultaneous
Translation to and from English, training of students with good knowledge of French for consecutive and simulta-
nenous translation from French into English, and vice
versa, on a variety of subjects such as business, politics,
entertainment. Prereq: 342, 345 or equivalent. Preferably taken in sequence.

410 Medieval French Literature (3) Major representa-
tive works of Medieval French Literature. Texts in modern French.
Prereq: 212, 216 or equivalent. (Same as Medieval Studies 410.

411 French Literature of the 16th Century (3) High-
lights of 16th century French literature. Excerpts from
Rabelais and Montaigne; readings of poems from the
writers of the Renaissance. Prereq: 216 or equivalent.
Prereq: 212, 216 or equivalent.

412 French Literature of the 17th Century (3) Master-
pieces of 17th-century French literature. Prereq: 212, 216 or equivalent.

413 French Literature of the 18th Century (3) Major
works of the Enlightenment. Prereq: 212, 216 or equiv-
alent.

414 French Literature of the 19th Century (3) French
Romanticism and its counter movements: Realism,
Parnassianism, and Naturalism. Prereq: 212, 216 or equivalent.

415 French Literature of the 20th Century (3) Evolu-
tion of 20th century French literature. Prereq: 212, 216 or equivalent.

416 Survey of Francophone Literature (3) Introduc-
tion to writing in French outside of France. Prereq: 342, 216 or equivalent.

419 Readings in French Literature (3)

420 French Cinema (3) The French cinema from its
earliest days through the New Wave directors. Prereq: 212, 216 or equivalent. Can be applied to major. Writing
emphasis course: at least one in-class essay examina-
tion and 3000 words of writing outside the classroom.

421 Phonetics (3) Foundation in the science of phonet-
ics. Practical exercises and individual performance.
Laboratory training highly recommended. Students from
different countries are welcome. May take this course for graduate credit. Graduate credit is not
approved for students majoring in the Department of
Foreign Languages. Prereq: 212, 216 or equivalent.

422 Advanced Grammar (3) Improving one's own style
studying basic and more refined structures of the French
language. Writing creative free-style compositions.
Prereq: 342 or 345.

423-424 Advanced Conversation (1,1) Informal con-
versation with native speaker on contemporary topics.
Stresses in class context rather than outside prepara-
tion, meets two hours a week for one semester credit.
Prereq: 342 or 345.

425 Introduction to Descriptive Linguistics (3) Pro-
notica and phonemics, morphology and syntax. Types of
languages, linguistic groups, dialects, and dialect geog-
raphy. Application of descriptive linguistics—field lin-
guistics, dialect study, its practical use in learning lan-
guages, and language teaching. Introduction to trans-
formational grammar. Prereq: six hours of upper division
French or six hours of upper division courses in a
moderately advanced language (exclusive of German and
French 301-302, courses in literature in translation, and
general courses in Latin and Greek requiring no knowl-
edge of these languages), or consent of department.
GEOGRAPHY (415)

101-102 World Geography (3,3) Selected topics and world regions, especially those with problems or situations involving conflict or cooperation between nations. No prerequisites. May be taken in sequence.

131-132 Geography of the Natural Environment (4,4) Characteristics and processes of the earth's surface and lower atmosphere; their interaction to produce a world pattern of distinctive environments significant to human activity. No prerequisites. May be taken in sequence.

141 Introduction to Economic Geography (3) Location and spatial organization of the world's major types of economies: agriculture, energy and mineral production, manufacturing, transportation, trade, and services. No prerequisites.

310 Introduction to Maps, Aerial Photographs, and Cartography (3) Properties, sources, uses, design and production of maps, aerial photos, and other forms of spatial images as tools for geographical analysis. 2 hours lecture and 2 hours lab per week.

320 Cultural Geography: Core Concepts (3) Back- ground and method of cultural geography; basic concepts and theories focusing on cultural landscape, culture regions, cultural ecology, innovation and diffusion, cultural integration, and world patterns of cultural phenomena.

323 Behavioral Geography (3) Types of human behavior, such as shopping, territoriality, commuting, residential mobility, and regional consciousness as they relate to distance, natural environment, and culture. (Same as Urban Studies 323.)

334 Meteorology (3) Dynamic atmosphere and resulting weather events. Nature of individual weather elements, their measurement and analysis over time and space.


431 Regional Geography of the United States and Canada (3) Physical, economic, and social distributions as they interrelate to give distinctive character to regions of the United States and Canada. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

433 The Land-Surface System (3) Characteristics of surface form, water, vegetation, and surface materials, and their regional interrelationships. People as evaluators of changes. Prereq: 131-132 or consent of instructor.

434 Climate (3) General circulation system leading to world pattern of climates. Climate change and modifications due to natural and human activities. Prereq: 131-132 or 334 or consent of instructor.

436 Water Resources (3) Global water resources and hydrologic processes, including water availability, flooding, and water quality issues examined from physical and economic geographic perspectives. Prerequisite: 131-132 or 330 or consent of instructor.

437 Water Quality (3) Problems and trends and resource availability from time to time and place to place, with particular emphasis upon energy and metallic resources. Prereq: 131-132 or 141 or 340 or consent of instructor.

438 Geography of Transportation (3) Examination of transportation systems, emphasizing their effects on trade patterns, land use, location problems, and development. Prereq: 141 or 340 or consent of instructor.

449 Geography of Transportation (3) Examination of transportation systems, emphasizing their effects on trade patterns, land use, location problems, and development. Prereq: 141 or 340 or consent of instructor.

455 Process Geomorphology (3) (Same as Geology 455.)

491 Foreign Study (1-15) Prereq: Written consent of department required prior to registration.

492 Off-Campus Study (1-15) Prereq: Written consent of department required prior to registration.

493 Independent Study (1-15) Prereq: Written consent of department required prior to registration.

499 Seminar in Geography (3) Major topics in geography, especially trends over the past 40 years. Required for majors. Open only to graduate students. Prereq: Senior standing and completion of at least 12 hours of major or minor requirements in geography. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

500-599 Special Topics (1-15) Prereq: Written consent of department required prior to registration.

500 Essay Examination (1-15) Prereq: Written consent of department required prior to registration.

510-599 Undergraduate Research (1-15) Prereq: Written consent.

591-599 Independent Study (1-15) Prereq: Written consent of department required prior to registration.

599 Honors Thesis (1-15) Prereq: Written consent of department required prior to registration.

GEOLOGY (424)

100 The World's Oceans (3) Geophysical, biological, and geological aspects of oceans and human interactions with the marine environment. 3 lecture hours per week.

101-102 General Geology I, II (4,4) Physical processes and environments upon the earth. Principal features include the formation of rocks, plate tectonics and earthquakes, and landscapes. 102-Fossil history, evolution and ancient environments. 4 hours lecture per week. Prereq: 101 or consent of instructor.

425 Historical Geography of the United States (3) Survey of the changing human geography of the United States during four centuries of settlement and development. Emphasis on changing population patterns, development of agricultural systems, and regional patterns of urban-industrial development. Prereq: 361 or consent of instructor.

435 Biogeography (3) Study of the changing distribution patterns of plants and animals on a variety of spatial and temporal scales. The effects of continental drift, Pleistocene climatic change, and human activity on world biota are emphasized. Prereq: 131-132 or 330 or consent of instructor.

449 Geography of Transportation (3) Examination of transportation systems, emphasizing their effects on trade patterns, land use, location problems, and development. Prereq: 141 or 340 or consent of instructor.

455 Process Geomorphology (3) (Same as Geology 455.)

491 Foreign Study (1-15) Prereq: Written consent of department required prior to registration.

492 Off-Campus Study (1-15) Prereq: Written consent of department required prior to registration.

493 Independent Study (1-15) Prereq: Written consent of department required prior to registration.

499 Seminar in Geography (3) Major topics in geography, especially trends over the past 40 years. Required for majors. Open only to graduate students. Prereq: Senior standing and completion of at least 12 hours of major or minor requirements in geography. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

433 The Land-Surface System (3) Characteristics of surface form, water, vegetation, and surface materials, and their regional interrelationships. People as evaluators of changes. Prereq: 131-132 or consent of instructor.

434 Climate (3) General circulation system leading to world pattern of climates. Climate change and modifications due to natural and human activities. Prereq: 131-132 or 334 or consent of instructor.

436 Water Resources (3) Global water resources and hydrologic processes, including water availability, flooding, and water quality issues examined from physical and economic geographic perspectives. Prerequisite: 131-132 or 330 or consent of instructor.

437 Water Quality (3) Problems and trends and resource availability from time to time and place to place, with particular emphasis upon energy and metallic resources. Prereq: 131-132 or 141 or 340 or consent of instructor.

438 Geography of Transportation (3) Examination of transportation systems, emphasizing their effects on trade patterns, land use, location problems, and development. Prereq: 141 or 340 or consent of instructor.

455 Process Geomorphology (3) (Same as Geology 455.)

491 Foreign Study (1-15) Prereq: Written consent of department required prior to registration.

492 Off-Campus Study (1-15) Prereq: Written consent of department required prior to registration.

493 Independent Study (1-15) Prereq: Written consent of department required prior to registration.

499 Seminar in Geography (3) Major topics in geography, especially trends over the past 40 years. Required for majors. Open only to graduate students. Prereq: Senior standing and completion of at least 12 hours of major or minor requirements in geography. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

GEOLOGY (424)

100 The World's Oceans (3) Geophysical, biological, and geological aspects of oceans and human interactions with the marine environment. 3 lecture hours per week.

101-102 General Geology I, II (4,4) Physical processes and environments upon the earth. Principal features include the formation of rocks, plate tectonics and earthquakes, and landscapes. 102-Fossil history, evolution and ancient environments. 4 hours lecture per week. Prereq: 101 or consent of instructor.

425 Historical Geography of the United States (3) Survey of the changing human geography of the United States during four centuries of settlement and development. Emphasis on changing population patterns, development of agricultural systems, and regional patterns of urban-industrial development. Prereq: 361 or consent of instructor.

435 Biogeography (3) Study of the changing distribution patterns of plants and animals on a variety of spatial and temporal scales. The effects of continental drift, Pleistocene climatic change, and human activity on world biota are emphasized. Prereq: 131-132 or 330 or consent of instructor.

436 Water Resources (3) Global water resources and hydrologic processes, including water availability, flooding, and water quality issues examined from physical and economic geographic perspectives. Prerequisite: 131-132 or 330 or consent of instructor.

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438 Geography of Transportation (3) Examination of transportation systems, emphasizing their effects on trade patterns, land use, location problems, and development. Prereq: 141 or 340 or consent of instructor.

455 Process Geomorphology (3) (Same as Geology 455.)

491 Foreign Study (1-15) Prereq: Written consent of department required prior to registration.

492 Off-Campus Study (1-15) Prereq: Written consent of department required prior to registration.

493 Independent Study (1-15) Prereq: Written consent of department required prior to registration.

499 Seminar in Geography (3) Major topics in geography, especially trends over the past 40 years. Required for majors. Open only to graduate students. Prereq: Senior standing and completion of at least 12 hours of major or minor requirements in geography. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.
203 Geology of National Parks (3) Geologically spe-
cular landscapes and geologic history of national
parks of the world. Human attempts to preserve the
Earth’s surface are a study of the structures, plus a field
trip during the term. May not be applied toward the Geology
major.

210 Basic Geology for Engineers (2) Materials and
structures of the Earth. Recommended for College of Engineering
students only. 2 lecture hours and one 2-hour lab or field period.

310 Mineralogy (4) Introduction of crystallography,
crystal chemistry, and the rocks of the earth. Emphasis on
identification of minerals. Prereq: 101, Chemistry 120-130 or equivalent. 3 hours
lecture and 1 lab.

320 Paleobiology (3) Fossils and their uses in func-
tional morphology, paleoecology, biogeography, phylo-

critatigraphy, and evolution. Prereq: 102 or consent of instructor. 2 lecture hours and one 2-hour lab or field period.

325 Geological History of Land Organisms (3) Origin
and development of terrestrial organisms in space and
time with emphasis on the fossil record and land plants and vertebrates. Prereq: Elementary biology
sequence or consent of instructor. 2 lecture hours and one 2-hour lab or field period.

330 Igneous and Metamorphic Petrology (3) Classi-

ication and properties of igneous and metamorphic rocks, the processes that produce them, and the tec-
tonic environments in which they form. Prereq: 310, 2 lecture hours and one 2-hour lab.

340 Stratigraphy and Sedimentation (3) Stratigraphic
principles and practices; physical and chemical pro-
cesses and interpretation of depositional environments. Prereq: 101, 102 and 310. 2 lecture hours and one 2-
hour lab or field work.

345 Geology of East Tennessee (1) Geology of the
Southern Appalachians in Tennessee. Prereq: Completion of
major core courses or consent of instructor. 1 hour lecture plus field trips.

346 Introduction to Oceanography (4) Physical, chemi-
cal, biological, and geological processes of the oceans,
including tides, waves, ocean circulation, ocean basin
processes, marine sedimentation, biogeochemical cycles, and food webs. Prereq: Chemistry 120-130; recommended: 101-102; 3 lecture hours and one 2-hour lab. (Same as Botany 348.)

370 Structural Geology (4) Common geologic struc-
tures (folds, faults, cleavage) and their genesis. Labora-
tory includes map interpretation, cross-sections, projec-
tions, structures. Prereq: 101-102; Mathematics 141-
142; 2 lecture hours and one 2-hour lab.

380 Resources Crises - Minerals and Energy (3) World and United States resources of minerals and
energy, price and production trends, future supply of minerals and energy, national mineral and energy pol-
cies. Emphasis on appraisal of conventional and alter-
native energy resources. 3 lecture hours.

410 Advanced Mineralogy (3) Crystal chemistry of the
rocks and minerals. Interaction of electromagnetic radiation and crystalline solids. Optical properties of
minerals, visible and infrared spectroscopy, and x-ray diffraction. Laboratory exercises emphasize thin section and x-ray diffraction methods of mineralogy. Prereq: 310. 2 lecture hours, one 2-hour lab.

420 Paleozoology (4) Principles of ecological analysis as
applied to fossils and fossil assemblages with em-
phasis on data collection and interpretation. Laboratory is
designed around preparation of scientific reports based
on field and laboratory analysis. Writing emphasis
course. 3 lecture hours and one 2-hour lab.

421 Invertebrate Paleontology I (3) Preservational
processes and geologically important representatives of
Prostoa, Porifera, Cnidaria, Bryozoa, and Brachiopoda. Emphasis is on morphological, skeletal structures, ecol-
y, and stratigraphic distribution. Prereq: 320 or consent of instructor. 2 lecture hours and one 2-hour lab.

422 Invertebrate Paleontology II (3) "Higher inverte-
brates": Annelida and other worms, Mollusca, Arthro-
poda, Echinodermata, Graptzoa, Conodonta, Chor-
424 German Literary Movements (3) Major periods in the development of German literature since 1750, with emphasis on the problems and pitfalls of periodization.

425 Introduction to Descriptive Linguistics (3) (Same as Russian 425, French 425, Spanish 425, and Linguistics 425.)

426 Methods of Historical Linguistics (3) Phonetics, distinctive feature analysis, sound change types, nature of sound change, principles of reconstruction and fundamental assumptions about language change through time. Phonological and syntactic changes, language families, Proto-Indo-European and other proto languages. Prereq: 6 hours of upper-division foreign language courses excluding courses in translation or graduate reading courses. (Same as Russian 426, French 426, Spanish 426, and Linguistics 426.)

435 Structure of the German Language (3) Contrastive-English-German segmental and suprasegmental phonemes, contrastive English-German linguistic structures, selected topics in advanced German grammar and syntactic analysis. Prereq: 6 hours of upper-division German language courses excluding courses in translation and graduate reading courses. (Same as Linguistics 435.)

436 History of the German Language (3) Development of the German language from Indo-European through Proto-Germanic, Old High German, Middle High German, and Early New High. Emphasis on phonology and the linguistic history of German speech. Prereq: 6 hours of upper-division German language courses excluding courses in translation or graduate reading courses. (Same as Linguistics 436.)

485 Business German (3) German used in fields of business, government, administration and economics. Prereq: 6 hours of upper division German excluding courses in translation and graduate courses.

491 Foreign Study (1-15)

493 Independent Study (1-15)

497 Senior Honors (1-6) Admission by consent of department. May be repeated. Maximum six hours.

GREEK

121-122 Beginning Greek (3,3) Must be taken in sequence.

261 Intermediate Greek: Grammar Review and Readings (3) Systematic review of Attic Greek and readings from selected authors. Prereq: 122.


401 Greek Poetry (3) Epic, lyric, drama. Authors vary. Prereq: 261.

402 Greek Prose (3) History, philosophy, and oratory. Authors vary. Prereq: 261.

405-406 Selected Readings from Greek Literature (3,3) For advanced students in Greek, the study of plays, the historical writings, the poetry of ancient Greece in the original Greek. May be repeated for credit. Maximum 9 hours. Prereq: 401-402 or consent of instructor.

HEALTH (449)

110 Personal Health and Wellness (3) Information and behavior necessary to approach health and wellness scientifically and to develop confidence in judgments affecting personal health and wellness. E

200 Seminar in Human Sexuality (2) Problems and responsibilities of being male and female as they relate to health and wellness. Satisfactory/No Credit only. F, Sp

225 Alcohol/Drugs and the College Student (2) Problems related to use and abuse of substances potentially harmful to health and wellness. Covers alcohol, drugs, tobacco and other substances. Satisfactory/No Credit only. F, Sp

230 Cardiopulmonary Resuscitation (2) Theory and skills to implement basic cardiac life support following 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 cardiovascular disease. Leads to basic life support certification. F, Sp

300 Health Education, Promotion, and Behavior (3) Health education goals, roles, target populations; school, community and health care settings; health careers and opportunities; health behavior and intervention techniques; health promotion strategies. F, Sp

305 The School in Community Health (2) Roles and responsibilities of teachers in school health programs with emphasis upon: health problems of the school child; recognition and methods for handling them; healthful school environment; school health services; and community resources, health personnel, voluntary and official health agencies. May not be taken for credit by health majors. F, Sp

306 Instruction in Elementary Grades (2) Topics appropriate for school-aged child in elementary grades. Organization and presentation of health content emphasized. Teachers become familiar with health materials, curricula, literature, community resources and planned programs for teaching health. Prereq: 305 and admission to Teacher Education Program. F, Sp

310 Advanced First Aid and Emergency Care (3) Theory and practice of first aid and emergency care. Preparation for responsibility for emergency care; first aid capabilities of lay persons. Course leads to Advanced First Aid and Emergency Care certification. Prereq: must be at least 15 years old for certification. E

325 Planning, Evaluation and Administration of Health Programs (3) Organization of health programs in school, community and health care settings at public and private levels. Plan and assess various health education and health promotion efforts. F

330 Wellness Through Health, Leisure and Physical Activity (3) Emphasis on taking personal responsibility for one's health. Includes topics related to the healthy lifestyle, and provides specific guidelines of how to change inappropriate behaviors. (Same as Physical Education 330.)

357 Health Education: Curriculum, Methodology, Communications (3) Principles of health education curriculum construction, methodology and communication strategies for teaching/transmitting health education information. Sp

380 Research and Grant Writing (2) Study and application of research methods and grant writing techniques for health education programs. Skills for reading and interpreting journal and research articles. Exercises and student projects to develop a research or grant proposal. Emphasis on development and review processes. Sp

400 Consumer Health (3) Major consumer health care problems and concerns. Includes topics related to purchasing, evaluating and financing medical and health care services/products. (Same as Public Health 400.) E

405 Alcoholism and Alcohol Education (3) Factors which make alcoholism a serious health and safety problem. Varies types of instructional/educational and intervention programs. F, Sp

406 Death, Dying and Bereavement (3) Aspects of dying, death and handling the trauma of loss. Medical, financial, physical, legal and social implications of death. F, Sp

410 Pre-Internship Seminar (1) Objectives and policies of the internship program. Must be completed the term immediately preceding the internship. Prereq: Admission to Teacher Education Program. Satisfactory/No Credit only. Sp, Su

414 Physical Activity and Fitness (2) (Same as Physical Education 414)

415 Field Evaluation of Physical Fitness (1) (Same as Physical Education 415.)

420 Sex Education As It Relates to Human Sexuality (3) Science of human sexuality. Emphasis on the trends, issues, concepts and careers. F

425 Women's Health (3) Factors influencing women's health and women as consumers in nation's health service delivery systems. Study of health problems concerns of women and techniques for prevention, management and/or correction. (Same as Women's Studies 425.) E

430 Suicide and Crisis Intervention (3) Factors which make suicide a serious health problem. Assessment, intervention, and prevention techniques. Sp

435 Substance Use and Abuse (3) Drug and alcohol abuse problems and suspected causes, pharmacology of drugs and effects on society; strategies for intervention and education. Sp

465 Aging and Health (3) Aging process in a health perspective as it relates to health promotion and wellness of the aged. F, Sp

470 Special Topics (1-3) For advanced students, teachers, school administrators, nurses and other para-medical personnel. Lectures, demonstrations, films, field trips, and supervised research in special health/wellness or health promotion issues. May be repeated. Maximum 12 hours. E

475 Directed Independent Studies (1-3) Individual identification and study of a health/wellness or health promotion problem/issue. Prereq: Consent of instructor. May be repeated. Maximum 12 hours. E

481 Internship I: Grades 7-12 (3-6) Methods and theories of teaching, internship is completed in local public schools. Application for internship should be made upon admission to Teacher Education Program. Prereq: 410 and admission to Teacher Education Program. Satisfactory/No Credit only.

482 Internship II: Grades 7-12 (3-6) Demonstration of professional competence in planning, instruction, and class management teaching strategies, and counseling in local public schools. Prereq: 481 and admission to Teacher Education Program. Satisfactory/No Credit only. Sp

483 Field Practice (10) Off-campus internship or field practice in an educational or other agency with qualified professional. Prereq: Consent of instructor. Satisfactory/No Credit only. E

HISTORY (462)

151-152 Development of Western Civilization (3,3) Historical survey of the civilization of the western world. 151-Ancient world to 1715. 152-1715 to present. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

157-158 Honors: Development of Western Civilization (3,3) Consent of department required. 157-F: 158-Sp Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

161-162 A History of World Civilization (3,3) Historical survey of world civilization. 161-Origins to 1500. 162-1500 to present. 161-F: 162-Sp Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

195-196 Afro-American History: An Introduction (3,3) Afro-American experience to 1890. Traditional African societies from which Afro-Americans emerged; evolution of prejudice and racism in America; institution of slavery; free Negroes; Civil War and Reconstruction. 196-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.

202 The City in Europe, 1000-1900 (3) Urban growth, emphasizing urbanization and growth and social foundation of the cities, their political and cultural development and their physical structure.

251-252 History of the United States (3,3) 251-Settlement to 1877. 252-1877 to present. E

253-254 United States History for International Students (3,3) 253-Settlement to 1889. 254-1889 to present. 253-F: 254-Sp

257-258 Honors: History of the United States (3,3) Prereq: Consent of department. 257-F: 258-Sp

307 Honors: Introduction (3) Historical analysis and interpretation, philosophical principles and techniques of research. Required of students working for honors in history. Prereq: Consent of department.
481 Studies in History (3) Variable content. Subject matter not covered in other courses. May be repeated. Maximum 9 hours.

482 Colloquium in History (3) Historical theme or problem; emphasis on questions and skills, with special reference to historical writing, including critical analysis of both primary and secondary sources. Recommended for seniors. Writing emphasis: course at least one in-class essay examination and 3000 words of writing outside the classroom.

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

HOME ECONOMICS EDUCATION (490)

210 Field Experience in Teaching Home Economics Education (1-3) May be repeated. Maximum 3 hours. Satisfactory/No Credit only. F, Sp

220 Introduction to Home Economics Educational Programs (3) School-based and community-based home economics programs. Field experience included. Sp

320 Strategies of Teaching Home Economics (3) Teaching methods, techniques, use of media. Field experience included. F, Sp

420 Curriculum Development in Vocational Home Economics (3) Program planning, evaluation, design of instruction for classroom. Prereq: 320, Admission to Teacher Education Program. To be scheduled immediately preceding student teaching. Includes laboratory.

421 Teaching Occupational Home Economics (1) Methods, organization, curriculum for Home Economics Related occupational programs. Prereq: or Coreq: 420. Sp

430 Student Teaching in Vocational Home Economies (6-15) Prereq: 420. Satisfactory/No Credit only. F

440 Teaching in Community-Based Programs (3) Planning and implementing non-formal instructional programs; methods, curriculum, delivery systems, evaluation. Includes field experience. Prereq: Senior standing. (Same as CFIS 440.) Sp

445 Field Experience in Community-Based Programs (1-15) Placement in Home Economics-related programs or businesses. Includes seminar. May be repeated. Maximum 15 hours. Prereq: Consent of instructor. Satisfactory/No Credit only. F, Sp, Su

497 Honors: Home Economics Education (3-6) Issues or topics affecting home economics education, design to meet individual or group interests. Prereq: Junior or Senior standing and consent of instructor. May be repeated. Maximum 6 hours. F, Sp, Su

HOTEL AND RESTAURANT ADMINISTRATION (551)

120 Introduction to Hotel and Restaurant Administration (2) History and place of industry in national economy; basic operating systems, organization structure; problems in the hospitality complex. F

125 Front Office Management (3) Front office procedures within context of overall operation of the hotel/motel; includes reservation systems, equipment, accounting procedures, settlement procedures, public relations, and management. F, Sp

220 Foodservice Systems Administration (3) Management of human resources, equipment, work scheduling; decision-making and problem solving principles. F, Sp

320 Quantity Food Procurement, Production and Service Laboratory (1) Application of principles in determining needs, procuring, storing, producing and serving foods in volume. Prereq: 220; NFS 100 or 107, 101 or 311. Micro 210 or PH 310; progression into HRA program or consent of the instructor. Coreq: 321 or 322. F, Sp

321 Quantity Food Procurement, Production and Service Laboratory (1) Application of principles in determining needs, procuring, storing, producing and serving foods in volume. Prereq: 220; NFS 100 or 107, 101 or 311. Micro 210 or PH 310; progression into HRA program or consent of the instructor. Coreq: 320. F, Sp

322 Quantity Food Procurement, Production and Service Observation (1) Application of principles in determining needs, procuring, storing, producing and serving foods in volume as they apply in the hotel/motel industry. Prereq: 220; NFS 100 or 107, 101 or 311. Micro 210 or PH 310; progression into HRA program or consent of the instructor. Coreq: 320. F, Sp

324 Tourism and Travel Administration (3) Economic and social forces influencing domestic and international tourism; tourist services, function of the student. Prereq: 120; progression into HRA program or consent of the instructor. F, Sp

326 Food and Lodging Cost Control (3) Budget, cost analysis, computer, financial statement use in decision making in lodging and foodservice systems. Prereq: 320. 321 or 322; Accounting 202 or consent of instructor. F, Sp

420 Field Experience in Hotel and Restaurant Administration (6) Supervised educational experiences in selected tourism, food and lodging operations followed by a two-day seminar. Offered only in summer semester. Students must be enrolled in other courses. Prereq. 320, 321 or 322; Accounting 202; Economics 201; Marketing 301; Business Law 301; 100 hours of verifiable work experience. Satisfactory/No Credit only. Su

422 Food and Lodging Personnel Development (3) Training programs; personnel management procedures and analysis involving human resource, management, and labor. Prereq: in any other courses. Prereq. 320 or 321 or 322; Accounting 202; Economics 201; Marketing 301; Business Law 301; 100 hours of verifiable work experience. F, Sp

423 Hospitality Sales and Marketing (3) Strategic marketing for lodging and restaurant organizations includes property/product, market, and competition analyses; promotion and sales planning; internal and external sales and promotion techniques. Prereq: Marketing 301; progression into HRA program or consent of the instructor. F, Sp

424 Advanced Hotel and Restaurant Administration (3) Integration of functional areas. Management level administrative processes and decision making concerning hotel and restaurant business policy, strategy formulation, implementation, and evaluation. Prereq: 320, 321 or 322; Accounting 202; Economics 201; Marketing 301; Business Law 301; 100 hours of verifiable work experience. F, Sp

425 Hospitality Law (3) Legal rights and responsibilities of the hospitality industry. Prereq: Junior or Senior standing in Hotel and Restaurant Administration Program or consent of the instructor. F, Sp

426 Convention Management (3) Scope and management of convention management including requirements meeting individual needs; methods and techniques for outstanding service. Prereq: 423, Marketing 301; for consent of the instructor. F, Sp

440 Special Topics: Hotel and Restaurant Administration (1-3) Developments, issues and problems in Hotel and Restaurant Administration, topics variable. Prereq: Junior or Senior standing in Hotel and Restaurant Administration Program or consent of the instructor. May be repeated. Maximum 3 credits. E

494 Directed Study: Hotel and Restaurant Administration (1-3) Individual student; faculty experience. Prereq: Junior and Senior Standing, consent of the instructor. Satisfactory/No Credit only. E

497 Honors: Hotel and Restaurant Administration (1-3) Senior project. Prereq: Senior standing, consent of the instructor.

HUMAN ECOLOGY (520)

100 Special Topics in Human Ecology (1-3) Topics variable. Prereq: Consent of the instructor. Satisfactory/No Credit only. May be repeated. Maximum 3 credits of verification.

200 Professional Orientation (3) Presentation of ecosystem model and its application to the enhancement of individual and family well-being; examination of the ecological nature of human environments; relationship between people and their environments. F, Sp
493 Independent Study (1-15)

INTERIOR DESIGN (582)

140 Introduction to Interior Design (3) Orientation to the profession; relationship to allied fields; contemporary developments; philosophical approaches. Open only to majors in interior design and architecture. F

150 Visual Studies (3) Classification and properties of two and three-dimensional forms; composition; interpretative principles; visual and spatial elements within simple and complex visual systems; role of movement in experiencing scale and volumetric space. Open only to majors in interior design and architecture. F

200 Human-Environment Systems (3) Role of culture in defining environment; physical, social and conceptual aspects of human-environment systems; impact of environment on human behavior, feelings and values; mutual-casual properties of behavior-environment systems. (Same as Urban Studies 200.) F

240 Fundamentals of Interior Design I (4) Principles of spatial organization; creative problem-solving and communication techniques for micro-interior environments; perspective drawing; model building; experimentation with various media. Prereq.: 140, Art 172. F

250 Fundamentals of Interior Design II (4) Problem solving, spatial organization of micro environments, increasingly larger scale; communication of total design solution, graphic, audio and photographic techniques. Prereq.: 240. Sp

270 History of Interior Architecture I (3) Interior architecture, decoration and decorative arts within cultural context. Emphasis on France, Italy, and England. Prereq.: one semester Art History. F

280 Micro-Computers for Interior Design (3) Electronic spreadsheets, word processing systems, data-base management; data-base information to relate anthropometric data to furniture dimensioning and specifications for maximum comfort and product trade-offs in meeting budget constraints. Prereq. or Coreq.: 240. Interior Design students only. F

310 Survey of Interior Design (3) Planning and organizing interior spaces (rooms, apartments, residences) to meet personal and family housing needs; relation of furnishings to architectural space. Not open to Interior Design majors. Enrollment preference given to Home Economics Education and Hotel Restaurant Administration majors. A, Sp

315 Survey of Contract Interiors (3) Planning and organizing interior spaces for restaurants and lodging facilities; relation of furnishings to architectural space. Open only to Hotel Restaurant Administration majors. (Offered Fall and Spring in even years; F, A, Sp.)

340-350 Intermediate Interior Design I, II (4, 4) Studio problems of space planning and design. Integrates previous design experience emphasizing hands-on application of design theory to practice. Prereq.: Progression to the major, 330; senior standing; consent of instructor. Sp

365 Interior Design Synthesis I (4) Student and/or staff initiated research or studio investigation, or studio experiences. May be approved by supervising Interior Design faculty. Prereq.: 350; consent of instructor. Sp

380 Furniture Design (4) Human factors data applied to design of body support, task support, storage and systems, construction and scale models; advanced workshop design; materials and manufacturing processes. Prereq.: 200, 350 and fifth year in Interior Design, F.

417 Honors: Interior Design (1-4) Advanced research in interior design problems for juniors or seniors. May be repeated. Maximum 8 hours. Prereq.: Consent of Interior Design faculty.

420 Practicum for Interior Design (15) Supervised experience in a professional design firm; business practices, project management and design philosophy. Prereq.: Third year in Interior Design, 360 and consent of instructor. Sp

430 Computer-Aided Design (3) Interaction between computer-aided design and computer-aided design software; cost estimating, construction drawings related to space planning. Prereq.: 280, 340; Interior Design majors only. Sp

440-460 Advanced Interior Design I, II (4, 4) Complex problems in contemporary design need and material construction; commercial and institutional environments, and/or historic preservation/adaptive reuse of older structures with considerations of governmental policies. Prereq.: 350 for 440; 441 for 450 and fifth year in Interior Design, F.

467 Lighting for Interior Designers (3) Application of elements and principles of lighting and wiring to design of visual environment. Prereq.: Third year in Interior Design, Sp

470 History of Contemporary Interior Architecture (3) Interior architecture, furniture, design philosophies, eighteenth century to twentieth century developments, Europe and America; design as influenced by movements in fine arts, technological advances, cultural context. Prereq.: 370 or consent of instructor. F

475 History of American Interior Architecture (3) Historical developments in interior architecture and decorative arts within cultural context, colonial era through nineteenth century. Prereq.: 370 or consent of instructor. Sp

480 Furniture Design (4) Human factors data applied to design of body support, task support, storage and systems, construction and scale models; advanced workshop design; materials and manufacturing processes. Prereq.: 200, 350 and fifth year in Interior Design, F.

485 Interior Design Synthesis II (4-8) Student and instructor initiated advanced research topics must be approved by supervising Interior Design faculty. Prereq.: 450 or consent of instructor. Sp

491 International Study (1-15) Individual or group studio and/or study abroad; academic research, field investigation, or studio experiences. May be substituted for 420 in student's professional curriculum. Determination of credit based on particular international experience. Prereq.: Consent of department head. Su

493 Directed Studies in Interior Design (1-4) Student or staff initiated research or studio investigation of special topic. Elective credit only. May be repeated. Maximum 9 hours. Prereq.: Consent of department head.}

ITALIAN (584)

111-112 Elementary Italian (3,3) Introduction to Italian. May not be taken for credit by students with two years of high school or one college Italian. Must be taken in sequence. Language Laboratory required. F

211-212 Intermediate Italian (3,3) Sequence stresses reading, writing, listening and speaking Italian to prepare for upper division courses in the language. Must be taken in sequence. Language Laboratory required. F

311-312 History of Italian Literature (3,3) Chronological view of Italian literature in relation to the specific historical developments that have influenced it. Prereq.: 212 or equivalent.

341-342 Intermediate Grammar, Composition and Conversation (3,3) Grammatical analysis of Italian prose; review of grammatical principles and their application in translation from English to Italian; development of oral and written exercises in free composition. Prereq.: 212 or equivalent.

401 Dante and Medieval Culture (3) Introduction to the significance of this great Italian writer. Prereq.: 212 or consent of instructor. (Same as Medieval Studies 401.)

402 Petrarch and Boccaccio (3) Prereq.: 212 or consent of instructor. (Same as Medieval Studies 402.)

403-404 Literature of the Rinascimento(3,3) From Pucci to Tasso, the Quattrocento and the Cinquecento. Prereq.: 212 or consent of instructor.

405 Modern Italian Poetry (3) Prereq.: 212 or consent of instructor.
JOURNALISM (594)

203 Editing (3) Methods and practice in judging news, editing copy, writing headlines and designing newspapers and magazines. Emphasis on precise word use and news display. Prereq: Communications 200. F, Sp.


290 Photojournalism (3) Principles and practice of photography as a creative tool of communication. Basic camera technique, darkroom work, historical and contemporary photojournalism. Lecture and laboratory. E.

310 Feature Writing (3) Skills of journalism for writing feature articles for newspapers, magazines and company publications. Critiquing of students' work in writing workshops, and analysis in in-class pieces as assigned. Prereq: typing proficiency.


370 Public Relations Cases (3) Oral and written analysis of current and classic case studies in public relations. Ethics, professional organizations, publications, research and forms of public relations. Methods of communication and persuasion. Prereq: 270. F.

390 Communications Graphics (3) Principles and practice in the visual aspect of communications. Emphasis on graphic design, typographic, illustration and photography, printing and production techniques and publication design. Lecture and laboratory. Prereq: 201, or Communications 200, or consent of instructor. E.

403 International Communications (3) Development and operations of world mass communications channels and agencies. Comparative analysis of media, media practices, flow of news throughout the world. Print and broadcast systems studied in terms of relevant social, political, economic, and cultural factors. Relation of communication practices to international affairs and understanding. E.

412 Opinion Writing (3) Analysis of editorial positions, practices, and pages. Writing editorials and columns for newspapers, magazines, and company publications, with emphasis upon study and use of rhetorical devices and logic. Prereq: 203 or consent of instructor.

414 Magazine Article Writing (3) Techniques of writing in-depth articles for mass circulation and specialized magazines. Organizing and presenting material, with attention to problems in areas such as business, science, agriculture, the humanities. Prereq: 203 or consent of instructor.

416 Issues in Journalism (3) Topics vary. May be repeated. Maximum credit 6 hours. Prereq: Consent of instructor.


433 Advanced Editing (3) Primary focus is on sensitivity to language and logic. Includes headline writing and production. Prereq: 203.

490 Mass Communications History (3) Development of the press and the role of mass communications in American history. Newspapers, radio, television and magazines. E.


480 Journalism in the High School (3) Functions and methods of high school publications. Staff selection, content of publications, copy, layout, photography, printing, advertising and business. Planning course outlines and curricula for journalism/mass media studies.


492 Field Experience (1-2) Approved internships and other supervised practice in journalism and public relations. May be repeated for a maximum of 4 credit hours. Prereq: Senior standing and consent of instructor. E.

493 Independent Study (3) May be repeated for maximum of 6 hours. Prereq: Consent of instructor.

LATIN
111-112 Beginning Latin (3,3) Must be taken in sequence.

251 Intermediate Latin: Grammar Review and Readings (3) Prereq: 112 or equivalent.

252 Intermediate Latin: Vergil's Aeneid (3) Prereq: 251 or equivalent.

351 Cicero and Sallust (3) Prereq: 252 or equivalent.

352 Roman Lyric Poetry (3) Poetry of Catullus, Horace, and the elegists. Prereq: 252 or equivalent.

414 Cicero and Techniques of Latin Prose Composition (3) For advanced students in Latin. Practice in prose composition; the writings of Cicero, the model. Prereq: 351-352 or consent of instructor.

431-432 Selected Readings from Latin Literature (3,3) For advanced students in Latin. Oratory, historical writings and poetry of ancient Rome, in the original Latin. May be repeated for credit. Maximum 9 hours. Prereq: 351-352 or consent of instructor.

435 Medieval Latin (3) Selected readings from the Latin prose and poetry of medieval Europe. Prereq: Consent of instructor.

LATIN-AMERICAN STUDIES (600)
251-252 Introduction to Latin American Studies (3,3) Societies of Latin America with special emphasis on dominant culture patterns, social changes, and impact of nationalism. 500-Pre-Colombian and Colonial periods through Independence era. 252-Latter 19th century and the Modern period. Writing-emphasis course: at least one 3000 words of writing outside the classroom.

311 Aspects of Luso Brazilian Literature (3) (Same as Portuguese 311.)

312 Aspects of Spanish American Literature (3) (Same as Spanish 312.)

313 Peoples and Cultures of Mesoamerica (3) (Same as Anthropology 313.)

355 Latin American Government and Politics I (3) (Same as Political Science 355.)

360 History of Latin America (3) (Same as History 360.)

361 History of Latin America (3) (Same as History 361.)

372 Geography of Middle America (3) (Same as Geography 372.)

373 Geography of South America (3) (Same as Geography 373.)

401 Cultural Pluralism and Institutional Changes in Latin America (3) Value systems, behavioral patterns, political parties, role of the military, the church, educational institutions, dictatorship and nationalism. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

402 Latin American Studies Seminar (3) Selected topics in Latin American studies. May be repeated. Maximum 6 hours.

431 Directed Readings in Brazilian and Portuguese Literature (3) (Same as Portuguese 431.)

432 Directed Readings in Brazilian and Portuguese Literature (3) (Same as Portuguese 432.)

450 20th Century Hispanic Theater (3) (Same as Spanish 450.)

455 Latin American Government and Politics II (3) (Same as Political Science 455.)

471 Latin American Civilization (3) (Same as Spanish 471.)

472 Masterpieces of Spanish American Literature (3) (Same as Spanish 472.)

473-474 Survey of Spanish American Literature (3) (Same as Spanish 473-474.)

475 Studies in Latin American History (3) (Same as History 475.)

Social Protest Literature of Latin America (3) (Same as Spanish 479.)

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LIBRARY AND INFORMATION SCIENCE (620)
310 Finding Information: Resources and Strategies (3) Information as a critical resource for research and decision making, emphasis on planning and executing in information searches and using library resources. E.

330 Books and Related Materials for Children (3) Materials for children in leisure time or classroom activities; criteria for selecting books, magazines, recordings, films and related materials; storytelling and other devices for encouraging reading. Undergraduate Credit only. E.

340 Books and Related Materials for Young People (3) Materials for teenagers in leisure time or classroom activities; criteria for selecting books, magazines, recordings, films and related materials; book talks and other devices for encouraging reading. Undergraduate Credit only. Sp.

343 History of the Book (3) History of writing and various methods of bookmarking from earliest times through the 19th century. Sp.

475 Utilization of Instructional Media (3) Same as Educational Curriculum and Instruction 475. E.

LINGUISTICS (623)
200 Language, Linguistics and Society (3) Introduction to linguistics with focus on language development and use of language by individuals and groups. Prereq: Consent of Freshman English or equivalent.

371 Foundations of the English Language (3) (Same as English 371.)

372 The Structure of Modern English (3) (Same as English 372.)

400 Topics in Linguistics (3) Content varies. May be repeated. Maximum 6 hours.

411 Linguistic Anthropology (3) (Same as Anthropology 411.)

420 The Development of Historical Linguistics as a Science (3) Development of the scientific understanding of language change. Emergence of the Neogrammarian paradigm from 19th century intellectual trends. Impact of synchronic, descriptive, structural and transformational-generative linguistics on contemporary diachronic theory. Prereq: 6 hours of courses required for Linguistics concentration or consent of instructor.

425 Introduction to Descriptive Linguistics (3) (Same as French 425, German 425, Russian 425, and Spanish 425.)

426 Methods of Historical Linguistics (3) (Same as French 426, German 426, Russian 426, and Spanish 426.)

429 Romance Linguistics (3) (Same as French 429 and Spanish 429.)
MANAGEMENT (625)

301 Principles of General and Operations Management (3) Basic functions of general management and the concepts and techniques used in operations management. Includes lectures and discussion/problem solving sessions. Prereq: Statistics 201.

303 Management Information Systems (3) Management information system processes. Organizational information needs, management decisions relating to technology and systems design. Data base management systems and applications; software development. Prereq: Computer Science 102.

311 Labor Relations and Collective Bargaining (3) American labor history, structure and philosophy of contemporary unions, nature of collective bargaining, and dispute settlement. (Same as Economics 345.)

321 Organizational Structure and Behavior (3) Behavioral processes in organizations; motivation, leadership, decision making, communication; behavioral consequences; group behavior, informal organizations, organizational structure, conflict, politics, change and development. Prereq: 301.


401 Business Strategy/Policy (3) Strategy and policy which will enable the organization to reach its objectives. Major writing requirement. Prereq: Completion of business core courses and senior standing. Must be admitted to a business major.

421 Business Strategy Formulation and Implementation (3) General business simulation used by teams which formulate and implement business strategy. Application of strategic planning and group management skills. Prereq: Computer Science 261.

431 Personnel Management (3) Theory, methods and issues pertaining to successful personnel management. Prereq: 301, senior standing.

432 Implementation and Evaluation of Personnel Programs (3) Methods of identifying, developing, implementing and evaluating various personnel programs. Prereq: 431, senior standing.

440 Organizational Psychology (3) (Same as Psychology 440.)

441 Operations Management II (3) Planning and control of operations systems. Aggregate planning; scheduling systems, materials management. Prereq: 341.

461 Database Management in Business (3) Application, logical structure, and implementation of database systems. May be repeated for credit by teams which formulate and implement database systems. Prereq: Computer Science 261.

471 International Management (3) Factors significant to the manager in international business activities. Prereq: 301.

481 Management Science (3) Quantitative methods for constructing and evaluating types of decisions continually confronting promotion executives. Prereq: 301 and 320.

493 Independent Study (1-6) Directed research on subjects of mutual interest to student and staff member. May be repeated. Maximum six hours credit. Prereq: Consent of instructor.

497-498 Honors I & II (3, 3) Topics may include non-business marketing applications, macroenvironmental marketing, marketing services, marketing channels and related issues. Prereq: Consent of instructor.

MATHMATICS (641)

110 Algebraic Reasoning (3) A course in the applications of elementary mathematics to life in the modern world. Includes applications in financial mathematics, consumer mathematics, and other areas. Students preparing to take 121 should take 110 instead of 110. Prereq: Two years of algebra and one year of geometry. This course should not be taken to remove an entrance requirement.

115 Statistical Reasoning (3) An introduction to probability and statistics without calculus. Not available for credit to students in the College of Business Administration. Prereq: Two years of algebra and one year of geometry in high school, plus satisfactory placement test scores, or 110, or 119, or 130.

119 Precalculus A (3) A review of algebraic functions, equations, and inequalities for students who satisfy the course prerequisites for 121 but whose placement test scores indicated additional preparation is necessary. Students who receive credit for Math 119 or 130 may not subsequently receive credit for 121. Prereq: Two years of algebra and one year of geometry in high school, plus satisfactory placement test scores, or 110, or 130.

121 Calculus A (3) For students not planning to major in the physical sciences, engineering, mathematics, or computer science. Calculus of algebraic, exponential, and logarithmic functions, with applications. Prereq: No student who has received credit for Math 141 or 151 with a grade of C or better in any course numbered 121 or higher may subsequently receive credit for 121. Prereq: Two years of algebra and one year of geometry in high school, plus satisfactory placement test scores, or 110, or 130.

122 Calculus B (3) Sequel to 121, including elementary matrix algebra, multiple integral calculus, and optimization. No student who has received credit for 241 or 251 may subsequently receive credit for 122. Prereq: 121, or 141, or 120.

130 Precalculus (4) Review of algebraic, logarithmic, exponential, and trigonometric functions for students who satisfy the course prerequisites for 141 or 151, but whose placement test scores indicate additional preparation is necessary. Students who have earned a grade of C or better in 141 or 151 may not subsequently receive credit for 120. Prereq: Two years of algebra, a year of geometry, and half a year of trigonometry in high school. Students who did not study trigonometry in high school may make the noncredit course in trigonometry simultaneously with 130.

MANAGEMENT SCIENCE (627)

310 Management Science and Managerial Decision Support Systems (3) Introduction to quantitative decision models and their integration into microcomputer-based decision support systems. Topics include linear, dynamic, and network models, as well as decision analysis, Markov, inventory and queuing models. Prereq: Mathematics 121, 122 and Statistics 201.

MARKETING (632)

301 Marketing Management (3) Institutions comprising the marketing environment; principal environmental oppor-
(4,4) Standard first-year course in single variable calculus, especially for students of science, engineering, mathematics, and computer science. Differential and integral calculus with applications. Credit will not be given for both 141 and 151. Prereq: Two years of algebra, a year of geometry, and half a year of trigonometry in high school, plus satisfactory placement test scores, or 130.

143-144 Microcomputer Laboratory (1,1) Optional supplement to the calculus courses, featuring computer documentation and programming. Students registering for one of these lab courses must also be registered for the corresponding calculus course.

147-148 Honors: Calculus I, II, (4,4) Honors version of 141-142 for well-prepared students. Qualified students are usually invited to enroll, but inquiries from other students having excellent high school mathematics backgrounds are welcome.

151-152 Biocalculus I, II (3,3) For students majoring in the life sciences. Topics from calculus of algebraic, logarithmic, and exponential functions, probability and statistics, with emphasis on applications to the life sciences. Credit will not be given for both 141 and 151. Prereq: Two years of algebra, a year of geometry, and half a year of trigonometry in high school, plus satisfactory placement test scores, or 130.

200 Matrix Computations (1) Introduction to matrix calculations, including determinants, eigenvalues and eigenvectors. For students in the College of Engineering and Computer Science. Bathers only. Students who have received a grade of C or better in 251 may not subsequently receive credit for 200. Prereq: 141-142.

201 Structure of the Number System (3) Problem solving, sets and relations, numeration systems, integers, elementary number theory, rational numbers and decimals. Prereq: Two years of algebra and one year of geometry in high school.

203 Probability, Statistics, and Euclidean Geometry (3) Probabilities in simple experiments, measures of central tendency and variation. Basic plan and three-space geometry, congruence and similarity, constructions with compass and straightedge, transformations, area and volume measurement. Turtle graphs. Prereq: Two years of algebra and one year of geometry in high school.

221-222 Discrete Mathematics I, II, (3,3) Logic, sets, combinatorics and probability, functions and relations, induction and recursion, elementary number theory. Prereq: 141 or 151.


241 Calculus III (4) Calculus of functions in two or more dimensions. Includes solid analytic geometry, partial differentiation, vector calculus, and selected topics in vector calculus. Prereq: 141-142.

243 Microcomputer Laboratory (1) Optional supplement to 241, featuring computer demonstrations and projects. Coreq: Students registering for 243 must also be registered for 241.

247 Honors: Calculus III (4) Prereq: 147-148 or invitation of the department.

251 Matrix Algebra I (3) First course in the algebra of simultaneous linear equations and matrices. Includes Gaussian elimination, elementary matrices, vector spaces, linear transformations, eigenvalues, and eigenvectors. Prereq: 141-142.

253 Microcomputer Laboratory (1) Optional supplement to 251, featuring computer demonstrations and projects. Coreq: Students registering for 253 must also be registered for 251.

257 Honors: Matrix Algebra I (3) Prereq: 147-148 or invitation of the department.

314 Analysis I (3) Introduction to the theory of the real number system, limits of sequences, and functions of a real variable. Prereq: 241.

351 Algebra I (3) Introduction to abstract algebra, emphasizing integers and polynomial rings. Prereq: 221 and 251.

371 Numerical Algorithms I (3) Selection of algorithms and associated library software for problems selected from roots of polynomial equations, least squares data fitting, interpolation, numerical integration, numerical methods for ordinary differential equations. Prereq: 141, 241, 251, and knowledge of a high level programming language, such as FORTRAN. (Same as Computer Science 371.)

399 Studies in Mathematics (3) May be repeated. Maximum 9 hours. Prereq: Consent of instructor.

400 History of Mathematics (3) Development of major ideas in mathematics from ancient to modern times and the influence of these ideas in science, technology, philosophy, art, and other areas. Prereq: 141-142 or equivalent. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

401 Mathematics and Microcomputers (3) Primarily for students seeking certification as mathematics teachers at the secondary level. The use of microcomputers to study concepts and problems in mathematics. Does not satisfy major requirements for a B.S. or M.S. in mathematics. Prereq: 141; 221 or 504.

404 Applied Vector Calculus (3) Topics from multivariable vector calculus including line and surface integrals, the divergence theorem and the theorems of Gauss and Stokes. Prereq: 241.

405 Models in Biology (3) Difference and differential equation models of biological systems. Prereq: 141-142 or 151-152.

411 Mathematical Modelling (3) Construction and analysis of mathematical models used in science and industry. Projects emphasized. Prereq: 231, 241, and 251. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

421 Combinatorics (3) Introduction to problems of construction and enumeration for discrete structures such as sequences, partitions, graphs, finite fields and geometries, and experimental designs. Prereq: 323 or consent of instructor.


425 Statistics (3) Derivation of standard statistical distributions including t, F, and X2; independence of sample mean and variance; basic limit theorems; point and interval estimation, Bayesian estimates, statistical hypotheses, Neyman-Pearson theorem; likelihood ratio and other parametric and non-parametric tests; sufficient statistics.


443 Complex Variables I (3) Introduction to the theory of functions of a complex variable, including residue theory and contour integrals. Prereq: 241; one 300 or 400-level mathematics course recommended.

444 Complex Variables II (3) Applications of complex variables to thermal, electric, and hydraulic problems, and fluid flow. Prereq: 443.

445-446 Advanced Calculus I, II, (3,3) Introduction to the theory of sequences, series, differentiation, and Riemann integration, as well as more variabies. Prereq: 341 or consent of instructor.

447-448 Honors: Advanced Calculus II, II, (3,3) Honors version of 445-446. Prereq: 341 or consent of instructor.

451 Topics in Algebra (3) Topics chosen from number theory and the theory of polynomial equations, such as the quadratic reciprocity law and Sturm separation. Prereq: 351.

453 Matrix Algebra II (3) Advanced topics in matrix theory, including the Jordan canonical form. Prereq: 251.

455-456 Abstract Algebra I, II, (3,3) Introduction to algebraic structures as groups, rings, fields, vector spaces and linear transformations. Prereq: 351 or consent of instructor.


460 Geometry (3) Axiomatic and historical development of neutral, Euclidean, and hyperbolic geometry stressing proof technique and critical reasoning. Models of Non-Euclidean geometries. Prereq: 141-142 and 221, or consent of instructor.

461 Topology (3) Includes topology of line and plane, separation properties, compactness, connectedness, continuous functions, homeomorphisms, continuity, and topological invariants. Prereq: 341 or consent of instructor.

471 Numerical Analysis (3) Introduction to computation, instabilities, and rounding. Interpolation and approximation by polynomials, orthogonal polynomials. Quadrature and numerical solution of initial and boundary value problems of ordinary differential equations, initial value problems. Prereq: 371. (Same as Computer Science 471.)


490 Readings in Mathematics (1-3) Open to superior students with consent of department head. Independent study with consent of instructor. Independent work. Projects emphasized. Prereq: 9 hours. Prereq: Agreement of faculty mentor to supervise independent work.

499 Seminar in Mathematics (1-3) Topics will vary. Will require out-of-class projects and in-class presentations by students. Students must register for the number of credit hours announced for a particular seminar. May be repeated. Maximum 9 hours. Prereq: Consent of instructor.

MEDICAL BIOLOGY (661)

410 Laboratory Safety Education (2) Preparation for the proper handling and disposal of, and exposure to, corrosive chemicals, isotopes, pathogens, poisons, and equipment will be discussed. Techniques of safe operation and handling will be presented. 

411 Undergraduate Research Participation (1-3) Experience in active biomedical research projects under supervision of faculty. Students in pre-medicine and other biology majors may conduct their own research projects within designated areas. Prereq: Junior or senior standing; prior consent of faculty member. May be repeated. Maximum 9 hours. Satisfactory/ No Credit only.

MEDICAL TECHNOLOGY (669)


420-421 Clinical Chemistry (5,5) 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 techniques, including gas analysis, including radioactive immunoenassay, and analysis of blood and other body fluids for enzymes, hormones, and other constituents of clinical interest, utilizing both automated and manual techniques, physical characteristics, detection, and use
of short half-life radioactive materials for in vivo procedures such as radiomunossay which utilize radioisotopes.

430-431 Hematology and Clinical Microscopy (4,4) Principles, theories, and instrumentation related to both qualitative and quantitative evaluation of cellular elements of blood and other body fluids; factors of hemostasis, quantitative and qualitative aspects of infection, and research and patient studies. Emphasis on microscopic identification of cells and the significance and correlation of laboratory data.


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

470 Orientation and Basic Techniques (1) For facilitation of students from campus to hospital community and clinical laboratory, introduction to medical terminology, ethics, and team concept. Orientation to basic techniques including procedures for collection and handling of specimens, principles of operation of many laboratory instruments, review of laboratory math, and introduction to quality control procedures. Portions of course extend over entire clinical year.

480 Principles of Supervision and Education in Medicine (4) Principles of management, supervision, and education theories and methods. Comprehensive examination covers entire course.

MEDIEVAL STUDIES (674)

201 Medieval Civilization (3) Introduction to basic themes in the medieval experience, approached from interdisciplinary points of view and including philosophy and religion, art and architecture, language and literature, and the classroom.

261 Medieval Culture: Readings from the Early Middle Ages, 500-1000 (3) Critical analysis and interpretation of selected works from the early medieval period. Focuses on major types of literature produced during the period 500-1000 A.D., e.g., cultural, religious, rhetorical, lyric, epic, biographical. Includes Augustine's Confessions, Boethius' Consolation, St. Gregory's Life of St. Benedict, The Life of Charlemagne, etc. Writing-emphasis course: at least one in-class essay examination and 3,000 words of writing outside the classroom.

262 Medieval Culture: Readings from the Later Middle Ages, 1000-1500 (3) Critical analysis and interpretation of selected works from the later medieval period. Focuses on romantic, allegorical and mystical writings from the high and later Middle Ages, e.g., the Song of the Nibelungen, the Romance of the Rose, St. Bernard's Canticle of Love, The Song of Songs, Peter Abelard's History of My Calamities. Should be taken in sequence with 261. Writing-emphasis course: at least one in-class essay examination and 3,000 words of writing outside the classroom.

312-313 Medieval History (3,3) Same as History 312-313.

322 Medieval Philosophy (3) Same as Philosophy 322.

371 Early Christian and Byzantine Art, to 1500 (3) Same as Art 371.

372 Northern European Painting, 1350-1600 (3) Same as Art 372.

382 The Art of Italy, 1250-1540 (3) Same as Art 382.

401 Dante and Medieval Culture (3) Same as Italian 401.

402 Petrarch and Boccaccio (3) Same as Italian 402.

403 Seminar in Medieval Studies (3) Interdisciplinary treatment of selected topics. Content varies. May be repeated. Writing-emphasis course: at least one in-class essay examination and 3,000 words of writing outside the classroom.

410 Medieval French Literature (3) Same as French 410.

415 Medieval Architecture (3) Same as Architecture 415.

475 Ancient and Medieval Political Thought (3) Same as Political Science 475.

MICROBIOLOGY (684)

200 Microbiology for Student Nurses (3) Only for student nurses in diploma program of hospitals affiliated with The University of Tennessee. Microbiological principles as they apply to nursing care of the patient, epidemiology of infection, and principles of immunity and allergy.

210 General Microbiology (3) General properties of bacteria and viruses including physiology, metabolism, genetics, applied bacteriology, pathogenesis, and immunity. May not be used as part of the major in microbiology, 2 hours and 2 labs.


319 Introductory Microbiology Laboratory (2) Basic techniques for identification and cultivation and identification of microorganisms. Coreq: 310, F, Sp.

400 Laboratory Problems in Microbiology (2-4) Research projects under the direction of a faculty member. May not be used for credit toward requirements for a major. May be repeated. Maximum 9 hours. Satisfactory/No Credit only. Prereq: Consent of instructor. E

410 Physiology and Genetics of Bacteria (3) Modern concepts of the structure and function of the bacterial cell, including metabolism, energy flow, and the transmission and expression of genetic information. Prereq: 310, F.

419 Bacterial Physiology and Genetics Laboratory (1) Laboratory exercises designed to accompany 410. Coreq: 410, F.

420 Pathogenic Bacteriology (2) Disease producing microorganisms including bacteria, rickettsia, and chlamydia. Prereq: 310.


430 Immunology (2) Principles of inflammation and immunity; immunoglobulin structure and functions of formation and diversity; complement, hypersensitivities, cell cooperation and recognition in immune mechanisms; soluble factors. Prereq: Biology 220. (Same as Zoology 430.)

439 Immunology Laboratory (1) Laboratory exercises designed to accompany 430. Coreq: 430. (Same as Zoology 439.) F


480 Mycology (3) Morphology, physiology, genetics, and taxonomy of yeasts and molds; pathogenesis of disease causing fungi. Prereq: 310.

489 Mycology Laboratory (1) Laboratory exercises designed to accompany 489. Coreq: 480.

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

495 Senior Seminar (3) In-depth consideration of microbiological problems of current interest requiring an integration of two or more disciplines. Emphasis on original literature and the presentation of current knowledge. Historical background, impact on society, predictions of the future, and the basis of moral and ethical judgements. Prereq: Consent of instructor. Letter grade only. F, Sp, Su.

120 Leadership Development Techniques (2) Introduction to basic leadership theory, human motivation theory, and principles of efficient and effective leadership applications. Application of theories and principles in individual and group exercises. Prereq: 110 or consent of the Professor of Military Science. Letter grade only. F, Sp, Su.

200 Basic Military Studies - Practicum (4) 240 contact hours of instruction and examination at Fort Knox, Kentucky over a six week period during the summer. Prereq: United States citizens; age under thirty years; eligible for OCS. Offered only students standing for more than two years remaining to complete the University (either undergraduate, graduate or in pursuit of additional college work; cumulative GPA 2.00 or above; legally qualified. Letter grade only. Su.

210 Basic Military Leadership (2) Preview of the platoon leader job with practical exercises in leadership principles and skills. Includes a concentration in basic academics. Prereq: 120 or consent of the Professor of Military Science. Letter grade only. F, Sp, Su.

220 Basic Officer Skills (3) Skill units operating techniques including organization of the military team, electronic communications, land navigation, small unit leadership, internal defense development, field trip, and leadership laboratory. Philosophy of organization and organization of military in tactical and administrative roles. Prereq: United States citizen; age under thirty years; eligible for OCS. Offered only students standing for more than two years remaining to complete degree (undergraduate or graduate); physically qualified; under thirty years age at time of commissioning; 3 or 4 years of JROTC (or 110, 120, 210, 220 completion or 200 completion) (9) Basic training completion (or) regimental course of study of 310, 320, 410, 420, 440, 450. Letter grade only. 3 hours and 1 hour lab. F.

320 Advance Military Studies II (4) Applied leadership including organization of the military team, electronic communications, land navigation, small unit leadership, internal defense development, four field trips, and leadership laboratory. Philosophy of organization and operation of military in tactical and administrative roles. Prereq: 310 or consent of instructor. Letter grade only. 3 hours and 1 hour lab. F.

400 Advance Camp-Practicum (4) 240 contact hours of instruction and examination at Ft. Lewis, Washington during the summer between the Junior and Senior year. Prereq: 310, 320. Letter grade only. Su.

410 Command and Staff Functions (4) Command and staff duties and relationships including logistics, personnel systems, efficiency reports, correspondence, training management, briefings, counselling, strategic force postures, and non-commissioned officer relationships. Prereq: 310 and 320, 400 or consent of instructor. Letter grade only. 3 hours and 1 hour lab. F.

420 Military Ethics and Law (4) Military profession, ethics, reasoning and decision operations, military law, leadership, military justice system, individual leadership, Law of Land Warfare. Prereq: 310, 320 and 400,
428 Internship II: Grades K-12 (3-6) Demonstration of professional competence in planning, instruction and classroom management. Internship is completed in local public schools. Prereq: Admission to Teacher Education Program. Satisfactory/No Credit only. Sp.

490 Special Topics in Music Education (1-3) Prereq: Consent of instructor. May be repeated. Maximum 9 hours. Letter grade only. E.

493 Independent Study in Music Education (1-5) Prereq: Consent of instructor. May be repeated. Maximum 9 hours. Letter grade only. E.

455 Advanced Music Methods for Elementary Teachers (3) Continuation and amplification of the concepts and skills covered in Music Education 330. Intended for Elementary Education majors. Prereq: 300 or consent of instructor. Letter grade only. Sp.

MUSIC ENSEMBLE (708)

361-501 Woodwind Choir (1,1) May be repeated.

363-503 Small Jazz Ensemble (1,1) May be repeated. Maximum 12 hours.

364-504 Jazz Ensemble (1,1) May be repeated. Maximum 12 hours.

366-506 Trombone Choir (1,1) May be repeated.

369-509 Tuba Ensemble (1,1) May be repeated.

310-510 Percussion Ensemble (1,1) May be repeated.

311-511 Marimba Choir (1,1) May be repeated.

312-512 Baroque Ensemble (1,1) May be repeated.

313-513 Synthesizer Ensemble (1,1) May be repeated.

314-514 Brass Choir (1,1) May be repeated.

315-515 Chamber Music Ensemble (1,1) May be repeated. Maximum 12 hours.

320-520 UT Singers (1,1) May be repeated.

320-530 Chamber Singers (1,1) May be repeated.

322-532 Collegium (1,1) May be repeated.

334-534 Saxophone Choir (1,1) May be repeated.

340-540 Opera Theater (1,1) May be repeated.

342-542 Opera Workshop (1,1) May be repeated.

350-550 Concert Band (1,1) May be repeated.

352-552 Campus Band (1,1) May be repeated.

354-554 Varsity Band (1,1) May be repeated.

356-556 Laboratory Band (1,1) May be repeated.

359-559 Marching Band (1,1) May be repeated.

370-570 Symphony Orchestra (1,1) May be repeated.

380-580 Concert Choir (1,1) May be repeated.

382-582 University Choir (1,1) May be repeated.

383-583 Men's Chorale (1,1) May be repeated.

389-589 Women's Chorale (1,1) May be repeated.

399-599 Accompanying (1,1) May be repeated.

MUSIC GENERAL (698)

100 Fundamentals of Music (3) Theory and practice of basic elements of music. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

110 Music Appreciation (3) Developing listening skills and understanding of Western music from the ancient world through the 20th century. For non-music majors. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

120 History of Rock (3) Study and appreciation of rock music, its origins in blues and rock and roll, its development and cultural dimensions to the present. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

130 Music Performance (3) Individualized course of study combining participation in a University musical ensemble with collateral study of an instrument or voice. One of the courses of applied study (Music Performance 103-440) and ensemble rehearsals as scheduled (Music Ensemble 301-389). May be repeated once for credit. Requires permission of Applied Music fee. For non-majors only. Prereq: Performing ability on an instrument or voice.

200 Solo Class (0)

301 Junior Recital (0)

401 Senior Recital (0)

411 Lecture Recital (0)

421 Special Topics in Performance (1-3) Prereq: Consent of department head. May be repeated. Maximum 4 hours.

431 Special Topics in Pedagogy (1-3) Prereq: Consent of department head. May be repeated. Maximum 4 hours.

MUSIC HISTORY (709)

200 Introduction to Music Literature (3) Basic forms of music and accepted masterworks through chronological approach. For music majors and minors only.

210-220 History of Music I, II (3,3) 210 to 1750, 220 to 1750 to present. Prereq: 200. Must be taken in sequence.

310 Introduction to Afro-American Music (3) History of African music, blues, gospel music, and jazz with emphasis on Black artists and their contributions. (Same as Afro-American Studies 310.)

330 Women in Music (3) History of women in music from the Middle Ages to present as composers, performers, educators, and patrons. (Same as Women's Studies 330.)

350 History of Jazz (3) Origin, development, and styles of jazz music and its exponents. Cultivation of special listening techniques. (Same as Afro-American Studies 350.) Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

390 World Music (3) Basic attitudes and techniques of ethnomusicology. Survey of music cultures throughout the world, with emphasis on the Pacific, Near East, Asia, and Europe.

400 Music History Survey (3) History of music with emphasis on genres, style changes, and cultural forces. Western European tradition from 400 to 1900. Recommended as a review course for graduate students. Prereq: Consent of instructor.

410 Music History Genre (3) Topics vary. May be repeated for credit. Maximum 8 hours.

420 History of Opera (3) Dramatic, vocal, and orchestral elements in opera of Italian, French, and German schools. 1600-present.

430 Symphonic Literature (3) Survey of literature for orchestra from Baroque to the present, with emphasis on the evolution of the symphony.

440 Music of North America (3) Folk and art music of the United States and Canada from colonial times to the present. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

450 Composer Seminar (3) Life and works of a single composer. Topics vary.

460 Music Aesthetics (3) Nature of music and musical experience, sense perception and emotions, music, and role of artist in society. Aesthetic viewpoint of individuals and historical era through selected writings. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

480 Music in Christian Worship (3) Music traditions in Christian worship, including hymnody.

490 Church Music Methods and Administration (3)

493 Independent Study (1-15) Prereq: Consent of department head. May be repeated for credit.
MUSIC INSTRUMENT (710)
310 Brass Literature (3) Prereq: Consent of instructor.
320 Woodwind Literature (3) Prereq: Consent of instructor.
330 Percussion Literature (1) Prereq: Consent of instructor.
340-350 String Literature I, II (2,2) 340-Survey of string techniques, issues, research and pedagogies; topical presentations by the applied string faculty and guests. 350-Development of the violin family of instruments and bows; survey of string literature, performances, and performance styles; application of historical, analytical, and pedagogical perspectives to performance. Prereq: 340 and applied enrollment in strings at 300 level or above or consent of instructor.
410 Band Arranging (3) Study and application of techniques employed in scoring for the marching and concert bands. Prereq: Music Theory 320.
490 Instrumental Conducting (3) Knowledge and skills in instrumental conducting; various periods and composers and relationship of different styles to the conductor's art; musical analysis and practice in conducting. Prereq: Music Education 320 or equivalent.
495 Suzuki Violin Method (2) Psychology, procedures, and literature of the Suzuki violin method and pedagogy. May be repeated. Maximum 8 hours. Prereq: Consent of instructor.

MUSIC JAZZ (711)
110 Jazz Theory (2) Fundamentals of the jazz language, including terminology, chord symbols, chord/ scale relationships, and improvisation,plus ear-training lab. Prereq: Music Theory 110.
120 Analysis of Jazz Styles (2) Individual improvisatory styles through analysis of their transcribed solos. Training and function of the ear in music. Transcription of solos from recordings and preparation for analysis. Prereq: Analysis 110.
130-140 Jazz Piano I, II (1,1) Harmonic language of jazz. Interpretation of chord symbols, formulae for voicing chords, chord progressions, and fundamental melody-playing and improvisation for right hand. Must be taken in sequence.
150 Studio Guitar Styles (2) Introduction to guitar styles in jazz, rock, country, and blues idioms. Prereq: Consent of instructor.
160 Introduction to Styles in Jazz Drumming (2) Examination of major composers and performers who have contributed significantly to creation of principal styles of jazz drumming.
210-220 Jazz Improvisation I, II (2,2) Study and application of principles of improvisation, including nomenclature, chord progressions, chord-scales, patterns, melodic development, and tone styles. Prereq: 110.
310 Jazz Composition and Arranging (2) Prereq: Consent of instructor.
320 Jazz Band Arranging (2) Arranging and scoring for the Big Jazz Band. Prereq: Consent of instructor.
410 Advanced Improvisation (3) Development of individual skills and involving individual problems in jazz improvisation. Prereq: 210 and 220.
420 Jazz Pedagogy (1) Methods and materials relating to teaching of jazz, designing and administering jazz programs, and rehearsals techniques for jazz ensembles. Prereq: Studio Music and Jazz major or consent of instructor.

MUSIC KEYBOARD (712)
110-120 Class Piano I, II (1,1) Development of keyboard skills in reading, technique, repertoire, harmonization, and transcription. Must be taken in sequence.
210-220 Class Piano III, IV (1,1) Continuation of 110-120. 220 completes piano competency requirement; must be taken in sequence.
230 Keyboard Harmony (1) Melody harmonization, figured bass realization, and improvisation. Prereq: Music Theory 110-120.
240 Church Service Playing I (1) Practical skills applicable to the use of the organ in church services, including improvisation, hymn playing, and accompanying. Prereq: 230 and organ proficiency at the 200 level.
310-320 Church Service Playing II, III (1,1) Continuation of 240. Prereq: 240.
330 Sight Reading at the Keyboard (1) Prereq: Consent of instructor.
410 Early Keyboard Literature (2) Keyboard music through the baroque period, with primary emphasis on music for the harpsichord. Prereq: Music History 210-220.
420-430 Piano Literature I, II (2,2) 420-From 1750 to middle 19th century. 430-Middle 19th century to the present.
440-450 Piano Pedagogy I, II (2,2) Pedagogical methods and materials related to the development of principles of learning; specific programs based on pupil aptitude and background; technical teaching experience. Must be taken in sequence. Prereq: Consent of instructor.
460-470 The Organ and Its Literature I, II (3,3) 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: Music History 220 and consent of instructor.
480 Teaching Class Piano (2) Historical survey and evaluation of teaching methods and methodology for college and/or adult beginning piano classes, with collateral teaching experience. Prereq: Consent of instructor.
485 Suzuki Piano Method I (2) Study of the psychology, procedures, and literature of the Suzuki piano method. Must be taken in sequence. Prereq: Consent of instructor.
489 Suzuki Piano Method II (2) Study of the psychology, procedures, and literature of the Suzuki Piano Method. Prereq: Consent of instructor.

MUSIC PERFORMANCE (713)
103-203-303-403-503 Flute (1-4) May be repeated.
105-205-305-405-505 Oboe (1-4) May be repeated.
110-210-310-410-510 Bassoon (1-4) May be repeated.
115-215-315-415-515 Clarinet (1-4) May be repeated.
120-220-320-420-520 Saxophone (1-4) May be repeated.
125-225-325-425-525 Horn (1-4) May be repeated.
130-230-330-430-530 Trumpet (1-4) May be repeated.
135-235-335-435-535 Trombone (1-4) May be repeated.
140-240-340-440-540 Baritone (1-4) May be repeated.
145-245-345-445-545 Tuba (1-4) May be repeated.
150-250-350-450-550 Percussion (1-4) May be repeated.
155-255-355-455-555 Voice (1-4) May be repeated.
160-260-360-460-560 Violin (1-4) May be repeated.
165-265-365-465-565 Viola (1-4) May be repeated.
170-270-370-470-570 Cello (1-4) May be repeated.
175-275-375-475-575 String Bass (1-4) May be repeated.
180-280-380-480-580 Piano (1-4) May be repeated.
190-290-390-490-590 Organ (1-4) May be repeated.
294-394-494-594 Composition (1-3) May be repeated. Prereq: Consent of instructor.
395-495-595 Composition with Electronic Media (1-3) May be repeated. Prereq: Consent of instructor.
496 Composition for Media (2) May be repeated. Prereq: Consent of instructor.
499 Improvisation (1-2) May be repeated. Prereq: Consent of instructor. Cannot be used to satisfy applied music requirement.

MUSIC THEORY (714)
110-120 Theory I, II (3,3) Materials of music including basic elements through triads and seventh chords and modulation. Exercises in writing and analysis of music with emphasis on common practice.
130-140 Ear Training I, II (1,1) Development of proficiency in identifying and notating melodic, harmonic, and rhythmic models. Includes computer lab. Must be taken in sequence. Should be taken concurrently with 110-120. A, B, C, NC grading.
210-220 Theory III, IV (3,3) Materials of music with emphasis on literature of Classic, Romantic, and contemporary periods. Exercises in writing and analysis. Must be taken in sequence. Prereq: 120 or consent of instructor.
250 Composition (2) Writing short vocal and instrumental compositions. Prereq: 220 or consent of instructor. May be repeated for credit. Maximum 4 hours.
290 Sound Recording Techniques (3) Theory and applications of tape recording's sound reproduction and reinforcement systems. Topics include room acoustics, audio measurements, microphones, studio and real-time processing, noise reduction, mixing, editing, monitors, system wiring, and maintenance.
310 Form and Analysis (3) Study and practice in analysis of forms of music from smallest structural units to large compound forms. Prereq: 220.
320 Instrumentation (3) Basic techniques in scoring for voices; brass, woodwind, and string chords; and percussion. Prereq: 220.
390 Synthesis Techniques (3) Studio and real-time applications of synthesizers. Historical background, theoretical concepts, equipment interface and usage, analysis of sounds and compositions. Prereq: 250 or consent of instructor.
400 Survey of Music Theory (3) Emphasis on harmonic practice of Baroque, Classic, and Romantic periods. Exercises in writing and analysis. Recommended as a electives course for graduate students. Prereq: Consent of instructor.
420 Orchestration (3) Advanced techniques in instrumental writing with emphasis on scoring for the concert orchestra. Prereq: 320.
430-440 Counterpoint I, II (3,3) 430-Species counterpoint and practical applications with emphasis on works of Pauliniana and J.S. Bach. Prereq: 220. 440-Writing of contrapuntal forms of the 18th century and fugue analysis of works from the 18th through the 20th centuries. Prereq: 430.
493 Independent Study in Music Theory (1-15) May be repeated for credit. Prereq: Consent of department head.

MUSIC VOICE (715)
110 Class Voice I (1) Development of basic vocal skills. May be repeated for credit. Maximum 2 hours.
120 Class Voice II (1) Prereq: Consent of instructor. May be repeated for credit. Maximum 2 hours.
210 Vocal Techniques in Popular Music (1) Development of performance techniques in Broadway and other contemporary music styles. Prereq: Consent of instructor. May be repeated for credit. Maximum 4 hours.
220 Introduction to Music Theatre Technology (2) Stage technology unique to lyric stage.
240-250 Diction I, II (2,2) Sounds by phonetic symbols.

241 Electronic and Motor Movements of the Voice (2) Focus on posture, leverages, and rhythm of the voice. Prerequisite: Consent of instructor. Maximum 12 hours.

410-420 Song Literature I, II (2,2) 410-German songs. 420-French, Italian, Russian; Scandinavian, Czechoslovakian, Polish, and American art songs.

430 Styles in Opera Acting (2) Study and practice of styles in opera acting based on historical and national characteristics. Prerequisite: Consent of instructor. No credit for students who have taken 306, 311, 315, 321, or 321S.

440 Projects in Opera Theatre (1-3) May be repeated for credit. Prerequisite: Consent of instructor. Maximum 9 hours.

480 Pedagogy I, II (1,1) 450-Concepts and approaches to teaching singing (past and present). 460-Vocal teaching materials, including collateral teaching experiences. Prerequisite: Consent of instructor.

NURSING (720)

202 Health and Culture (3) An exploration of the beliefs and practices of various cultural groups within the United States in relation to health, illness and the health care delivery system. Clinical experiences in the helping professions are examined. This course has no prerequisites and will be open to all UT, Knoxville undergraduate students.

214 Integrated Biomedical and Health Sciences (1-3) Examination and application of selected theories from physics and chemistry, microbiology, and nutrition to nursing practice. Each module carries one credit. Prerequisite: One year of biology or chemistry or consent of instructor.

301 Clinical Pharmacology (3) Biochemical and pharmacological effects of therapeutic drugs on the human body; positive and negative reactions to drugs and interaction effects between and among drugs. Prerequisite: Chemistry 100-10 and 6 semester hours of anatomy and physiology.

302 Introduction to Professional Nursing (9) History, philosophy, and scope of nursing practice with emphasis on nursing process; cognitive and psychomotor skills necessary for effective nurse-client interactions. Clinical laboratory experiences emphasize the nursing process and its application to the care of individuals whose health problems require in-patient services. 6 lectures, 3 lab. Corequisite: 301 and 304.

304 Nursing Assessment and Wellness Promotion (4) Developmental, psychosocial, cultural, environmental, spiritual, and related dimensions of health assessment. Collection, analysis, and application of assessment data in nursing diagnoses. Wellness-oriented nursing diagnoses and use of the nursing process in promotion and wellness. Evolution and expansion of the nursing role in health care delivery systems and practice. Laboretory sessions for development of nursing assessment skills. 3 lectures, 1 lab. Corequisite: 301, 302.

305 Transition to Professional Nursing (6) Current status of professional nursing; utilization of the nursing process in a changing health care delivery system; Philosophy and conceptual framework of the baccalaureate nursing program and selected physiological and behavioral deviations demonstrated by clients whose health problems require in-patient services. 5 lectures, 1 lab. For RN's only.

311 Acute Care Nursing (10) Continuation of 302 with emphasis on physiological and behavioral deviations which underlie or are associated with more complex and critical illnesses of adults and children. Clinical laboratory experiences in adult and pediatric acute care settings for enhanced knowledge and skill in providing nursing care for children and adults with complex and critical illnesses. 6 lectures, 4 lab. Prerequisite: 301, 302, and 304.

312 Acute Care Nursing Theory (6) Theoretical component of 311. For RN's only. Prerequisite: 301, 302, and 304.

313 Introduction to Nursing Research (3) Language of research, research approaches, sampling, data analysis, and significance of findings. Evaluation of existing and ongoing nursing research studies. Prerequisite: 302 or consent of instructor.

315 Clinical Nursing Practice (2) Application of nursing theories, principles, and concepts to care of hospitalized clients. Topics include: injury; 304, 312. For RN's only. Satisfactory/No Credit only. 317 Wellness and Lifestyle (3) Models of wellness and holistic health within the framework of modern medicine, emphasis on personal philosophy, and recent discussion about the role of interaction of mind and body. Biopsychosocial interactions of lifestyle and genetic risk factors for cardiovascular and respiratory disease, and potential longevity. Process of lifestyle changes will be facilitated by faculty. Open to undergraduate students in all colleges.

320 Advanced Placement Credit: Care of the Adult Client (3) For registered nurses only. Satisfactory/No Credit only.

310A Advanced Placement Credit: Care of the Child-Bearing Client (3) For registered nurses only. Satisfactory/No Credit only.

322 Advanced Placement Credit: Care of the Child (2) For registered nurses only. Satisfactory/No Credit only.

323 Advanced Placement Credit: Care of Client with Mental Disorder (3) For registered nurses only. Satisfactory/No Credit only.

360 Clinical Practice Elective (1-3) Supervised clinical practice in acute care settings; further development of clinical practice skills is emphasized. Prerequisite: 311. Satisfactory/No Credit only.

401 Family Health Nursing (6) Nursing needs of families in health and in crisis. Provision of comprehensive care to families in the childbearing and childrearing phases of development. Family and community adaptation of theories of human growth and development, family dynamics, and crisis intervention to nursing care to families experiencing normal child birth and to those experiencing such health problems or complications as congenital anomalies, high-risk birth, disturbed parent-child relationships, or gynecologic disturbances. 3 lectures, 3 lab. Prerequisite: All 300 level nursing courses.

402 Family Health Nursing Theory (3) Theoretical component of 401. For RN's only. Prerequisite: 312.

403 Community Health Nursing (4) Application of the nursing process of care of individuals, families, and groups in home and community settings with special emphasis on health promotion, disease prevention, and control of communicable diseases. Epidemiological approach is used to identify aggregates within the population that are at risk for illness, disability, or premature death. Political, social, economic, environmental, and ethical issues related to community health nursing. 2 lectures, 2 lab. Prerequisite: All 300 level nursing courses.

405 Professional Nursing Seminar (2) Critical examination of legislative, legal, ethical, social, and educational issues and trends that have immediate or long-range implications for professional nursing practice. Prerequisite: Senior standing. For nursing majors only.

409 Nursing Management and Strategies (8) Management and leadership principles and their application to client care. Course topics include quality assurance procedures, staffing patterns, nursing service delivery models, nursing practice standards, and evaluation of nursing practice. Opportunities are provided for development of entry level nursing management role. 3 lectures, 3 lab. Prerequisite: 10 credits of 400 level nursing courses.

411 Psychosocial Long-Term Nursing (6) Nursing needs of clients whose health problems are of a developmental, psychological, or long-term nature. Equal emphasis on prevention, wellness promotion, and rehabilitation. Nursing laboratory/clinical experiences with a psychologist, a psychiatrist, and a social worker. Prerequisite: A variety of acute, extended care, and rehabilitation facilities. 3 lectures, 3 lab. Prerequisite: All 300 level nursing courses.

412 Psychosocial Long-Term Nursing Theory (3) Theoretical component of 411. For RN's only. Prerequisite: 312.

414 Community Mental Health Nursing (6) Nursing needs of clients and groups with psychosocial and/or long-term needs. 415S, RN status or consent of instructor. Prerequisite: All 300 level nursing courses. For non-nurse MSN students only.

415 Family/Community Health Nursing (6) Application of the nursing process to individuals, families, groups in the childbearing/rearing stages of development. Clinical experiences are provided in a variety of hospital and community settings on concepts and techniques. Prerequisites: All 300 level nursing courses. For non-nurse MSN students only.

450 Physiological Principles (3) Concepts and principles of normal human physiology; tissue and organ systems as a basis for integration of system physiology and for understanding pathophysiological mechanisms. Prerequisite: RN status or consent of instructor. No credit for students who have taken 302, 305, 311, or 312.

451 Computers and Nursing Care (3) Computerized information processing with application to patient care, health care administration, nursing education, and nursing research. 2 lectures, 1 lab. Prerequisite: All 300 level nursing courses or consent of instructor.

453 Oncology Nursing (3) In-depth exploration of cancer related to molecular and cellular kinetics to theories of carcinogenesis and metastasis; treatment modalities and nursing interventions employed in all phases of the disease. Interdisciplinary approach analyzed. Prerequisite: 411 or 412 or consent of instructor.

470 Special Topics (1-3) Independent study of selected nursing topics, problems, or issues not covered in other courses. Topics determined by faculty and student interest. Prerequisite: Consent of instructor.

493 Independent Study (1-3) Nursing or health-related topic not covered in other nursing courses. Prerequisite: Senior standing or permission of instructor.

NUTRITION AND FOOD SCIENCE (725)

100 Introductory Nutrition (3) Nutritional concepts; current consumer issues in nutrition; nutritional needs through life cycle; international nutrition concerns and/or issues. A student who has received credit for NFS 107 or 300 may not receive credit for this course. F

101 Food Principles (3) Food selection, safety, preparation, evaluation, meal planning, service. 2 hours and 1 lab. F, Sp

105 Food for the Next Century (3) Interdependence of people on this planet; global perspective from United States point of view. F

107 Honors: Introductory Nutrition (3) Nutritional concepts; current consumer issues in nutrition; nutritional needs through life cycle; international nutrition concerns and/or issues. A student who has received credit for NFS 107 or 300 may not receive credit for this course. F

301 Food and Clinical Analysis: Principles, procedures, instrumentation for analysis of food and body fluids. Prerequisite: 200 with a grade of C or better for NFS majors. 2 hours and 2 labs. Sp

300 Fundamentals of Nutrition (3) Nutrition in normal and altered health states during life cycle; nutritional analysis of diets. Prerequisite: Chemistry 110 or equivalent, Zoology 239. A student who has received credit for NFS 117 or 227 may not receive credit for this course. F, Sp

301 Nutrition for Educators (3) Principles of nutrition: biochemical and physiological aspects of nutrition during the life cycle; nutrition education concepts and strategies. Prerequisite: 100 or 107, 101, Chemistry 100 or equivalent, Zoology 230, or consent of instructor. A, Sp

311 Science of Food (4) Chemical and physical properties of food related to functional and nutritional properties; food science and technology; effects of processing on food; application of food principles to meal planning and presentation; computer applications. Prerequisite: 100 or 107, 201, Micro 210. 3 hours and 1 lab. F

312 Science of Food (4) Chemical and physical properties of proteins and lipids related to functional and
220 Basic Landscape Plants (2) Identification, classification and design uses of ornamental plants including trees, shrubs, vines and herbaceous plants and generally excluding those covered in 220. Prereq: 220 or consent of instructor. 2 lab. Sp

320 Plant Materials (2) Identification, classification and design uses of ornamental plants including trees, shrubs, vines and herbaceous plants and generally excluding those covered in 220. Prereq: 220 or consent of instructor. 2 labs. Sp

330 Plant Propagation (3) Physiology, methodology, and environmental requirements for propagation. Prereq: 110 and 8 hours Botany or consent of instructor. 2 hours and 1 lab. F

340 Turfgrass Management (3) Practical turfgrass management; cultivar selection, identification, establishment; basic applied fertilizer programs, mowing, and irrigation practices, and thatch and compaction control; pest identification and basic controls. Prereq: 110, Plant and Soil Science 210 and 8 hours of Botany or consent of instructor. 2 hours and 1 lab. F

530 Basic Landscape Construction (3) Basic materials and detailing. Introduction to the landscape construction and contracting industry; application of landscape materials, equipment, and contractual procedures; site drainage, and landscape grading. Prereq: 280. 2 hours and 1 lab. Sp

360 Practicum in Landscape Construction (3) Practical experience and application of landscape develop projects. Directed lab and field instruction in plantings and basic landscape construction including preparing and implementing landscape design drawings and specifications. Prereq: 250. Two 6 hour lab.

370 Grounds Maintenance (3) Identification and understanding of maintenance tasks; transplanting, soil amendments, growth control, irrigation, climate protection and pest control. Maintenance and use of equipment; management practices, Prereq: 110. 2 hours and 1 lab. F

380 Supplemental Landscape Design Graphics (2) Refinement of graphic skills. Sketches, elevations, sections, isometric projections, and perspectives. Lettering, plan graphics, color rendering, and other visual presentation media. Prereq: HRA 320, 321 or consent of instructor. A, F

400 Advanced Turfgrass Management (4) Principles and scientific basis of turfgrass culture; adaptation, ecology, physiology, soil fertility, and grass nutrition; climatic influences on grass culture; physiology of clipping and water management; design, construction, and management of golf courses; physiological influences of waste collection and control measures. Prereq: 340 or consent of instructor. 3 hours and 1 lab. Sp

450 Specialty Landscape Construction (2) Design, materials, and construction techniques for specialized components of the landscape industry. Irrigation systems, outdoor lighting, pools and other water features, and interior space construction. Prereq: 350. Two 2 hour labs. F

451 Plant Tissue Culture (3) (Same as Botany 451.)

480 Advanced Landscape Design (4) Comprehensive application of landscape design skills. Design applications involving site layout, landscape grading, applied landscape materials, and natural and synthetic vegetation. Analytical and technical programming, design, detailing, estimating, and specifying applicable to a variety of landscape projects. Prereq: 280, 350, and 380. 1 hour and 2 three hour labs. Sp

490 Seminar (1) Current problems in ornamental horticulture and landscape design. Prereq: Senior standing. Sp

492 Off-Campus Internship (1-3) Work experience in approved ornamentals, turf or landscape industry. May be repeated. Maximum of 6 credits. E

493 Individual Problem Study (1-3) May be repeated. Maximum of 6 credits. E

PHILOSOPHY (745)

110 The Human Condition: Value and Reality (3) The meaning of life, the existence of God, freedom of the will, human nature and value. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

111 The Human Condition: Knowledge and Reality (3) The place of mind in a material universe and the nature and possibilities of human knowledge. May be taken before 110. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

120 Foundations of Western Thought: Antiquity through 1500 (3) Plato, Late Antiquity and the Medieval Period. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

121 Foundations of Western Thought: 1500 through Early Twentieth Century (3) Development of Rationalist, Empiricist, and Idealist traditions in the Classical, Renaissance and Enlightenment periods. May be taken before 120. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

130 Critical Thinking (3) An introduction to practical reasoning in natural language, designed to enhance skills in recognizing, analyzing, evaluating, and constructing arguments. Add to Basic Skills Requirement "Mathematics, Computer Science or Logic".

135 Formal Logic (3) Introduction to formal deductive systems: propositional and predicate logic.

200 Special Topics (3) When content varies, may be repeated. Maximum 6 hours.

240 Ethics (3) Theories of ethical values. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

290 Social and Political Philosophy (3) Basic problems and concepts of social and political philosophy.

320 Ancient Western Philosophy (3) Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

322 Medieval Philosophy (3) Development of medieval thought from St. Augustine to William of Occam. Secular and religious thought from the Middle Ages to the Renaissance. May be taken before 410. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

324 Seventeenth- and Eighteenth-Century Philosophy (3) Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

326 Nineteenth- and Twentieth-Century Philosophy (3) Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

335 Intermediate Formal Logic (3) Metatheory of formal logic and philosophy of logic. Prereq: 135 or consent of instructor.

342 Business Ethics (3) Ethical problems as they confront both business as a social institution and individuals in both business and private life.

344 Professional Responsibility (3) Critical analysis of selected classic texts from philosophy, religious studies, and social sciences dealing with responsibility and the behavior of public and private persons. Theoretical principles and analytical skills applied to selected case studies and other detailed descriptions of professional practice from
466 Theoretical Issues in Medical Ethics (3) Prereq: 240 or 345 or consent of instructor. (Same as Religious Studies 446.)

460 Philosophy of Science (3) Methodological and conceptual issues in the natural and social sciences; patterns of theory modification and replacement, the nature of explanation and causation, the status of theoreti- cal entities. Prereq: 360 and one year of natural or social science, or consent of instructor.

465 Philosophy of History (3) Speculative and critical aspects of philosophy of history. Prereq: 6 hours of philosophy or consent of instructor.

473 Philosophy of Mind (3) Problems of mind and body in relation to consciousness and personal identity. Prereq: 6 hours of philosophy or consent of instructor.

475 Analytic Metaphysics and Epistemology (3) Topics in Anglo-American tradition. Prereq: 6 hours of philosophy or consent of instructor.

476 Philosophy of Language (3) Survey of issues such as meaning, reference, and truth. Prereq: 6 hours of philosophy or consent of instructor.

479 Studies in Recent Continental Philosophy (3) Selected thinkers or topics from areas such as Existen- tialism, Phenomenology, Hermeneutics, Structuralism, Post-Structuralism. Prereq: 6 hours of philosophy or consent of instructor. When content varies, may be repeated. Maximum 6 hours.

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

PHYSICAL EDUCATION (764)

100 Orientation to Physical Education (2) Overview of the professional and disciplinary areas in physical education with special emphasis on introductory field experiences. Prereq: Taken the first semester in the student's major.

102 PE Major: Basketball (1) Fundamentals of basket- ball, including individual and team skills with considera- tion of techniques for effective teaching of these funda- mentals.

103 PE Major: Tennis (1) Development of skills, rules and game strategies in tennis applying skill analysis and various styles of teaching.

104 PE Education Major: Gymnastics (1) Beginning skills in tumbling and on selected men's and women's gymnastics apparatus. Tumbling skills include forward, backward, and balance skills. Apparatus include vaulting, balance beam, and pommel horse. Special emphasis on teaching techniques, safety, progression, and spotting.

105 PE Major: Folk and Square Dance (1) Basic folk and square dance steps, patterns and designs with empha- sis on skill development, terminology, etiquette and teaching techniques.

106 PE Major: Track and Field (1) Basic skills of track and field with consideration of techniques for effective teaching.

260 Practicum I (1-6) First practical experiences to support and clarify career goals. May be repeated. Prereq: Consent of instructor and progression to the major.

271 PE Major: Soccer/Softball (1) Basic fundamen- tals, including individual and team skills with considera- tion of techniques for effective teaching.

272 PE Major: Volleyball (1) Elementary and interme- diate volleyball skills, general rules, and strategy related to the game of volleyball with particular emphasis on teaching techniques and sport psychology.

273 PE Major: Golf (1) Fundamental skills, general rules, and strategies related to the game of golf with emphasis on skill development and teaching techniques.

274 PE Major: Gymnastics II (1) Beginning 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.
345 Movement Education (3) Educational games, sports, dance, and gymnastics for children. Prereq: Admission to Teacher Education Program.

350 Sport Management: Theory to Practice (3) An overview of the managerial theories and applications including responsibilities and practices associated within the broad perspective of the sport enterprise. This course will deal primarily with the sport enterprise in the private sector.

356 Motor Development (3) Evolution of human motor behaviors and the development of structure/function changes, and with the respect to psychological, sociological, and social-psychological factors related to and/ or affecting motor performance/learning; analysis of changes in motor performance and underlying attributes across the lifespan with emphasis upon critical developmental periods. Prereq: Admission to Teacher Education Program or progression to the major.

372 Philosophy of Sport and Physical Education (3) Theories of reality and value as they apply to sport with emphasis on ethical issues. Prereq: Admission to Teacher Education Program or progression to the major.

380 Special Topics (1-3) Study in selected disciplinary or professional areas of Physical Education. May be repeated up to 9 credit hours. Prereq: Permission of instructor. (Same as Sociology 405.)

391 Psychology of Coaching (2) Major topics and theories dealing with psychological factors affecting and relating to sport performance, with practical implications for coaching and teaching. Prereq: Admission to Teacher Education Program or progression to the major.

405 Sociology of Sport (3) Social meaning, organization, participation, and social influences of sport, sport as an occupation, place of sport in mass culture, sport subcultures, and social influences of sport and cultural milieu. Prereq: 291 or Sociology 295, or permission of instructor. (Same as Sociology 405.)

409 Measurement and Evaluation of Physical Education (3) Measurement and evaluation in Physical Education. Critique, selection, and administration of appropriate affective, sport and skill, and knowledge assessment instruments for children through adult age group. Prereq: Junior standing and admission to Teacher Education Program or progression to the major.

410 Pre-Internship Seminar (1) Objectives and policies of the internship program. Must be completed the term immediately preceding the internship. Prereq: Admission to Teacher Education Program. Satisfactory/No Credit only. Sp, Su

411 Applied Physical Education (3) Developmental disabilities, other physical/medical handicaps and variant/invariant characteristics of specific syndromes or geriatric populations to motor development/programming for those with special educational needs.

412 Practicum in Applied Physical Education (1) Teaching those with special educational needs. Observation and teaching in educational and therapeutic settings. Students may teach in schools for the handicapped and/or in which many handicapped individuals are mainstreamed. Prereq: Permission to the major. Coreq: 411.

413 Special Practicum in Applied Physical Education (1) Two sections including an on-campus lab program with one-one-one with a 2-5 year-old child who is a high-educational risk and a section with experiences of professional, macro teaching and field experiences. Prereq: Minimum 6 credits in Physical Education Major activities courses and admission to Teacher Education Program.

422 Applied Kinesiology (3) Study and emphasis of human movement with emphasis on biomechanical principles and their application to movement and neuromuscular function. Prereq: 322.

423 Readings in Physical Education (2) Current and classic literature in physical education.

424 Program Planning in Physical Education (2) Curriculum theory, principles, practices and issues specific to physical education with opportunities to develop and evaluate K-12 physical education programs. Prereq: Admission to Teacher Education Program.

426 Practicum II (1-6) Supervised experience in sports management or exercise/fitness areas. May be repeated up to 9 credit hours. Prereq: 290, progression to the major, and consent of instructor.

442 Administration of Physical Education and Athletics (2) Topics in organizational concepts and management of the physical education and athletics program.

450 Field Studies II (3) For physical education majors to design and implement learning units and evaluation techniques appropriate for K-12 physical education settings. Includes video-taping of learning experiences in the school setting. Prereq: 396 or 466 and admission to Teacher Education Program.

466 Motor Development Laboratory: Preschool or Primary (3) Application of selected perceptual-motor development, movement education, and pedagogical concepts to performance assessment and motor task/lesson design and presentation to normally developing preschool or primary grade children. Participation in intra- or inter-disciplinary research projects. Prereq: 335 and admission to Teacher Education Program.

480 Physiology of Exercise (5) Lecture and lab class dealing with functions of the body in muscular work. Topics include physiological aspects of fatigue, training and adaptation to environment. Prereq: Zoology 230 or 440. 2 lectures and 1 lab. (Same as Zoology 480.)

481 Internship I: Grades K-12 (3-6) Methods and theories of teaching. Internship is completed in local public schools. Application for Internship should be made upon admission to Teacher Education Program. Prereq: 410 and admission to Teacher Education Program.

490 Physiology of Exercise (5) Lecture and lab class dealing with functions of the body in muscular work. Topics include physiological aspects of fatigue, training and adaptation to environment. Prereq: Zoology 230 or 440. 2 lectures and 1 lab. (Same as Zoology 480.)

482 Internship II: Grades K-12 (3-6) Demonstration of professional competence in planning, instruction, and classroom management. Internship is completed in local public schools. Prereq: 481 and admission to Teacher Education Program. Satisfactory/No Credit only. F

490 Management or Fitness Internship (12-15) Full-time practice in approved business/agency. Prereq: Completion of practicum hours and progression to the major; additional prereq: for Exercise Physiology/Fitness Option: 322, 414, 415.

493 Directed Independent Studies (1-3) Independent study in a specialized area with physical education. May be repeated. Maximum 9 hours. Prereq: Consent of advisor and progression to the major. Satisfactory/No Credit or letter grade.

PHYSICAL EDUCATION SERVICE PROGRAM (766)

200 Special Topics (2) When content varies, may be repeated. Maximum 2 hours. Prereq: Approval of instructor.

201 ARC WSI-Handicapped (1)

202 Badminton (1)

203 Elementary Ballet I (2)

204 Elementary Ballet II (2)

205 Basketball (1)

206 Bowling (1)

209 Flag Football (1)

210 Folk and Square Dance (1)

211 Golf (1)

212 Handball (1)

213 Ice Skating (1)

214 Elementary Jazz I (2)

215 Elementary Jazz II (2)

216 Martial Arts: (Special Topics) (1)

219 Coed Gymnastics: Men's Apparatus (1)

220 Elementary Modern Dance I (2)

221 Elementary Modern Dance II (2)

222 Paddleball (1)

223 Personal Safety and Self-Defense (1)

224 Physical Fitness: Conditioning (1)

225 Physical Fitness: Exercise to Music (1)

226 Physical Fitness: Exercise and Weight Control (1)

229 Physical Fitness: Jogging (1)

230 Physical Fitness: Swimming (1)

231 Physical Fitness: Walking (1)

233 Raquetteball II (1)

234 Soccer (1)

235 Social Dance (1)

236 Softball (1)

239 Beginning Swimming (1)

240 Intermediate Swimming (1)

241 Emergency Water Safety (1)

242 Tap Dance I (2)

243 Tap Dance II (2)

244 Tennis I (1)

245 Tennis II (1)

246 Track and Field (1)

249 Tumbling I (1)

250 Tumbling II (1)

251 Volleyball (1)

252 Weight Training (1)

253 Coed Gymnastics: Women's Apparatus (1)

254 Yoga and Relaxation (1)

255 Water Safety Instructor (1)

256 Lifeguarding (1)

PHYSICS (773)

121-122 Introductory Physics (3,3) For students whose major is outside the physical sciences. Concepts of physics developed by observation of phenomena and logic, using a minimum of mathematical analysis. 121- Description of motion, forces, energy and momentum, properties of matter. 122-Electricity, magnetism, light, topics from modern physics including properties of atoms and nuclei. Must be taken in sequence. 3 hours lecture including demonstration lab. Prereq: Algebra.

131-132 Fundamentals of Physics: Mechanics and Heat (4,4) For engineers and liberal arts majors in mathematics and the physical sciences. Basic Engineering 121-131 is equivalent course for engineers. Must be taken in sequence. Coreq: Mathematics 141-142. 3 hours lecture, 2 hours lab.

PLANNING (782)

401 The City in the United States (3) Development and change in United States cities. Contemporary issues and selected case studies. (Same as Urban Studies 401.)

402 Survey of Planning (3) History of city development and of planning with particular emphasis on the United States experience in urban and other levels of planning. State of the art; the process, the comprehensive plan, implementation devices. May be repeated for credit. Prereq: Math 130 or equivalent. 3 hours and 1 lab. F, Sp

403 Urban Design (3) Principles and methods for the restructuring and development of the physical environment of the city. Prereq: Consent of instructor. 3 hours and 1 lab. F

420 Urbanism and the Future (3) The city as an infinite problem. Prereq: Consent of instructor. 3 hours and 1 lab. F

PLANT AND SOIL SCIENCE (792)

210 Introduction to Soil Science (4) Differences in soils; soil genesis; physical, chemical, and biological properties of soil; relation of soils to land use and pollution; soil management relative to tillage, erosion, moisture supply, temperature, aeration, fertility, and plant nutrition. Introduction to fertilizer chemistry and use. Prereq: Chemistry 130 or equivalent. 3 hours and 1 lab.

210-211 Crop Science (4) Fundamentals of structure, classification, growth and reproduction of higher plants and use of plant products basic to plant science. Principles and methods of crop improvement. Several important agronomic, fruit and vegetable crops, detailing their origin and cultural requirements. 2 hours lecture and one 2 hour lab. Prereq: Botany 110. 120 or Biology 110, 120. F

292 Soil Morphology (1) Intensive course involving describing, classifying and interpreting soils in preparation for regional and national soil judging contests. Prereq: 210 and consent of instructor. Maximum 6 hours. 1 hour and 1 lab. F, Sp

310 Soil Fertility (3) Influence of soil properties on plant nutrient availability and uptake. Principles of fertilizer use and their reaction in soils. Prereq: 210. 2 hours and 1 lab. Sp

312 Soil and Water Conservation (2) Hydrologic, agronomic, and engineering principles applied to reclamation and management of fresh and processing markets with emphasis on both warm and cool season crops. Prereq: 210 or 230. 2 hours and 1 lab. Sp

313 Soil and Water Conservation Laboratory (1) On topics covered in 312. Coreq: 312.

330 Fruit Propagation (3) Principles of propagation, tree training, pest control and related implementation devices. Planning issues in society. Not open to majors in Environmental Engineering. Prereq: Consent of instructor. May be repeated. 3 hours. F-A

340 Weed Management (3) Principles of weed interference, integrated management, herbicide selectivity and behavior, specific recommendations for various crop and non-crop situations. Prereq: 210 or 230. 2 hours and 1 lab. Sp-A

342 Weed Management (3) Principles of weed interference, integrated management, herbicide selectivity and behavior, specific recommendations for various crop and non-crop situations. Prereq: 210 or 230. 2 hours and 1 lab. Sp-A

392 Practicum in Agriculture (2-4) Working with agricultural-related enterprises in area of student's area of interest. May not be used in place of instruction for any course in Plant and Soil Science. Prereq: Consent of advisor and faculty committee.

401 Seminar (1-3) Current topics in the plant and soil sciences. Techniques of effective oral and written professional presentation; professional ethics; review of literature; assignments for written and oral presentation. Subject to standing. F-A

411 Soil Microbiology (3) Soil microbial population and the soil ecosystem; microbial transformations of organics and organic compounds; decomposition of residues. Prereq: 210 and Biochemistry 311 or consent of instructor.
310 Political Community (3) Examination of a variety and statistical techniques used in the study of politics. prerq: one year of physical or biological science, junior standing. 2 hours and 1 lab. F-A.

432 Agricultural Climatolgy (3) Interactions between world, regional and local climates and agricultural systems; quantification of macro- and micro-climates, effects of macro- and micro-climatic factors on plant and animal distributions and productivities. Prereq: one year of physical or biological science, junior standing. 2 hours and 1 lab. F-A.

433 Agricultural Pesticides (3) 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: one year of biological sciences and one semester chemistry. 2 hours and 1 lab. Sp-A.

453 Principles of Plant Breeding (3) Genetic principles and techniques used in crop improvement. Prereq: Biology 220 or equivalent. 2 hours and 1 lab. Sp.

471 Statistics for Biological Research (3) Notation, descriptive statistics, probability, distributions, confidence intervals, chi-square tests, analysis of variance, mean separation procedures, linear regression and correlation. Prereq: Math 121 or equivalent. 3 hours and 1 rec. F.

493 Problems in Plant and Soil Science (1-3) Special research or library problems in plant and soil science. May be repeated. Maximum 6 hours. E

POLITICAL SCIENCE (801)

101 United States Government and Politics (3) Introduction to the nature, processes and institutions of American national politics including the Constitution, voting, the presidency, the Congress and the courts.

102 Introduction to Political Science (3) Analysis of politics and political systems in various countries.

107 Honors: United States Government and Politics (3) Analysis and exploration of the American political system for students with superior ability. Admission by permission of department for students with at least a B average; entering freshmen accepted on basis of strong placement scores and high school record.

301 Introduction to Political Analysis (3) Nature, character, and functions of research design, data collection, and statistical techniques used in the study of politics.

310 Political Community (3) Examination of a variety of value systems and social and political structures related to political community.

311 Contemporary Issues in American Public Policy (3) Selected public policy issues confronting the nation, including the background, nature, and effects of present policies, and options for the future. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

312 Popular Culture and American Politics (3) Popular culture related to American politics and government focused on film, television, fiction, music, drama, and arts. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom. (Same as Cinema Studies 312.)

315 Tennessee Government and Politics (3) Major elements in Tennessee government and politics.

320 State Government and Politics (3) Setting, institutions, and processes of government in the fifty states: generalization and emphasis on federalism and inter-governmental relations.

321 Urban Politics and Process (3) Development of politics and policy-making in the modern American city. (Same as Urban Studies 321.)

322 Minority Group Politics in the United States (3) Content varies. May be repeated with consent of the department. Maximum 6 hours. (Same as Afro-American Studies 322.)

330 Law in American Society (3) Law as a process through which social problems are addressed in the United States. Examples from case law, legislation, and administrative regulation. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

331 Judicial Process (3) Courts as components of political systems, and public policy formulation through judicial decision making.

340 Introduction to Public Administration and Public Policy (3) Public agencies, their organization, personnel, and financial management and administrative responsibility; the policy-making process, political environment, and the public sector.

350 Political Change in Developing Areas (3) Characteristics and problems of political changes with primary focus on developing areas. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

355 Latin American Government and Politics I (3) Introduction to contemporary conditions in Latin America. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

361 Politics in Western Democracies (3) Political culture patterns, and institutions of Western democratic systems. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

365 Introduction to International Relations (3) Resource availability, international economics, international security and peace (imperialism, war, diplomacy, the balance of power, international law and international organization.) Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

366 United States Foreign Policy Process (3) Processes whereby United States foreign policies are made and implemented, focusing on interaction within federal bureaucracy and roles of the President, Congress, the press, and the public.

370 Contemporary International Problems (3) Analysis of current international events.

374 American Political Thought (3) Major themes and ideas in American political thought related to the development of American political institutions, values, and practices. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

387-388 Upper Honors Seminar (3) Required of honors majors; admission with consent of department.

410 Special Topics in United States Government and Politics (3) May be repeated with consent of department. Maximum 6 hours.

411 Presidency (3) Nature, functions, and processes of the United States presidency, historical and contemporary, with emphasis on the United States Congress.

420 Congress (3) Nature, functions, and processes of the United States Congress.

421 Political Parties and Group Interests (3) Role of political parties and organized groups in American politics and government.

422 Political Campaigns and Elections (3) Nature of campaigns and elections in the American political process.

430 United States Constitutional Law: Sources of Power and Restraint (3) Sources of governmental powers of the President and Congress, federalism, sources of regulatory authority, and constitutional protection of political and economic rights.

431 United States Constitutional Law: Civil Rights and Liberties (3) Current issues in civil rights and liberties including: first amendment freedoms, equal protection, privacy and the rights of the accused.

440 Public Management and Human Resources (3) How to mobilize and manage technical and human resources in pursuit of public sector organization goals.

441 Budgetary Process and Financial Management (3) Fiscal planning, budget and expenditure processes in government, their policy and administrative implications.

442 Administrative Law (3) Legal dimensions of administrative power and procedures, and constitutional controls over administrators.

452 Black African Politics (3) Recent evolution and current political environment of Black African nations. (Same as Afro-American Studies 452.) Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

453 Government and Politics of China and Japan (3) Political structure, and political processes in China and Japan. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

454 Latin American Government and Politics II (3) Selected topics on Latin American political dynamics, including constitutional development since 1917 and selected problems of Soviet foreign policy post World War II. (Same as Latin American Studies 454.) Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

458 Government and Politics of the Soviet Union (3) Origins and development of the Soviet political system, and selected policy areas. (Same as Russian and East European Studies 458.) Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

459 Government and Politics of the Soviet Union (3) Origins and development of the Soviet political system, and selected policy areas. (Same as Russian and East European Studies 458.) Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

460 Revolution (3) Characteristics, theories, and consequences of revolution with particular focus on left-wing revolutions and movements.

461 Policy Making in Democracies (3) Comparative approach to theory and process of making public policies.

463 Contemporary Middle East Politics (3) Government and movements in the Middle East, their characteristics, bases, and interrelationships.

464 Special Topics in Comparative Government (3) May be repeated with consent of department. Maximum 6 hours.

469 Soviet Foreign Policy (3) Soviet international behavior since 1917 and selected problems of Soviet foreign policy post World War II. (Same as Russian and East European Studies 469.) Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

470 International Law (3) Nature and development of international law and compliance with it. Particular attention to function of international law in the context of international conflict.

475 Ancient and Medieval Political Thought (3) Major western political thinkers from Socrates to Marsilio of Padua (same as Ancient History 475.)

476 Modern Political Thought (3) Major western political thinkers from Machiavelli to Marx.

487-488 Senior Honors Thesis and Seminar (3,3) Required of honors majors; admission with consent of department.

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)
the evolutionary approach to behavior, including appli-
fications of research concerning individual behavior in a
360 Social Psychology (3) Theories, methods, and
laboratory in Human Relations (3) Interpersonal
220, or consent of instructor.
359 Laboratory in Human Relations (3) Interpersonal
220 Behavior and Experience: Humanistic Psychol-
210 Biological Basis of Behavior (3) Survey of theo-
ratical and psychological theories of perception. Em-
pulsion, use, and development of language. Prereq: 310 or
90 Cognitive Psychology: Language and Symbolic
400 Cognitive Psychology: Language and Symbolic Processes (3) Psychology of knowing, explaining, and understanding. Directed and associative thinking, memory, problem solving, and concept formation. Na-
ture, use, and development of language. Prereq: 310 or
420 History and Systems of Psychology (3) History of psychological thought. Classical approaches and recent developments. Prereq: 110, 210, 220 and three upper-
424 Psychology and the Law (3) Psychological as-
310 Environmental Management and Control (3) Environmental management and control. Emphasis on environmental quality, resource management, waste management (liquid, solid and hazardous), vector control, safe food management, recreational sanitation and safety to include pool management, shelter hygiene (homes, child care, schools, hospitals, etc.), occu-
300 Introduction to Public Health (3) Principles of public health and their application. Emphasizes the relationship between health status and the environment. Topics include epidemiology, preventive medicine, health and safety policies, and the role of public health in the community. Prereq: 1 year of biological science or consent of instructor. F, Sp
305 Communicable and Noncommunicable Diseases (3) Communicable and noncommunicable diseases. Emphasis on the prevention and control of disease. Prereq: 1 year of biological science or consent of instructor. F, Sp
480 Theories of Learning (3) Classical and current approaches to learning and cognition. Prereq: 310.
482 Topics in Psychology (3) Advanced study of special topics, such as Afro-American Psychology or evolution of programs in the community. Prereq: 210 or
89 Supervised Research (1-3) Individual study and supervised experience in the laboratory to study different topics in psychology. Prereq: 210, 220, and 385 or Statistics 201 or
490 Directed Independent Study (1-3) Individual study and supervised experience in the laboratory to study different topics in psychology. Prereq: 210, 220, and 385 or Statistics 201 or
491 Foreign Study (1-15) Prereq: Consent of in-
90 General Psychology (3) Introduction to primary ap-
117 Honors: General psychology (3) Enriched intro-
210 Biological Basis of Behavior (3) Survey of theo-
ratical and psychological theories of perception. Em-
300 Child Psychology (3) The normal child from con-
ception through infancy, childhood, and adolescence. Emphasis on physical, social, emotional, and cognitive development. Prereq: 110 or equivalent and 210 or 220, or consent of in-
turer and senior standing. Writing-emphasis course: at least 100 in-class exercises and 3000 words of writing outside the classroom.
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220 Introduction to Therapies and Medical Terminology (1) Responsibilities of recreation, occupational, physical, horticulture, art, and music therapists. Basic terminology used in medical environment. Sp

250 Specialized Study in Leisure Education (1-3) Focus on selected attributes of leisure service delivery. Contribution of leisure to mental and physical health. Creative Cooking, Bike Hikes, New Games. E

290 Field Practice (1-2) Supervised practice in approved leisure services. Each hour's credit requires 25 hours of work in field agency. For recreation students only. Prereq. Permission of instructor. F

310 Leisure Program Development and Evaluation (3) Essential elements and basic principles involved in organization, administration, marketing, evaluation of various methods used in the program. Observation and development of program objectives, practical and comprehensive program designs and evaluation for population specific. Prereq: 300. Corequisite of instructor. F

320 Analysis of Leisure and Special Populations (3) Principles, concepts, historical development of recreation; leisure services; and leisure services to special populations. Explanation of legislation, attitudes, barriers to participants, mainstreaming, advocacy, as related to leisure fulfillment. Prereq. 220 or consent of instructor. Sp

390 Field Practice (1-2) Supervised practice in approved agency offering leisure services. Each hour's credit requires 25 hours of work in field agency. For recreation majors only. Prereq. 290 and permission of instructor. E

410 Maintenance and Management of Recreation and Sports Related Facilities (3) Principles for operation and maintenance of recreation and sports related facilities and management systems. Cost tracking, inventory systems, specialized maintenance techniques, safety guidelines. Maintenance management systems and security. Prereq: 110, 310 or consent of instructor. F

420 Principles of Therapeutic Recreation (3) Principles and procedures in therapeutic recreation including activity analysis, activity and program selection adaptation, individual assessment, treatment plans and professional supervision. Prereq.: 390 or permission of instructor. F

430 Organization and Administration of Leisure Service (3) Principles of administration applied to provision of leisure services offered by public, private and community agencies. Leadership, personnel, and organizational problems. Prereq: 390 or permission of instructor. F

440 Dimensions of Private and Commercial Recreation Businesses (3) Nature and function of recreation and leisure services involved in private, commercial, and industrial settings. Development of recreation facilities and services offered in leisure market, factors influencing participation, management, evaluation, legal authority, introduction to budgeting and fiscal procedures. Prereq.: 310 or consent of instructor. Sp

450 Specialized Study in Leisure Education (1-6) Special interest leisure activities for developing positive attitudes toward leisure. Contribution of leisure to mental and physical health. May be repeated. Maximum 6 hours. E

490 Practicum in Recreation (12) Full time practice in approved recreation agency. Emphasis on supervisory and administrative procedures. Prereq: 290, 390, senior standing. Satisfaction/No Credit only. E

RELIGIOUS STUDIES (863)

101 World Religions in History (3) Introduction to religion in culture and society, including examination of religious traditions from China, India, and the Mediterranean world. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

102 The Comparison of World Religions (3) Introduction to religion in culture and society, focusing on cross-cultural interpretation and the treatment of common pronouncements of religious traditions. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

222 Varieties of Religious Community (3) How different forms of religious communities (cults, tribes, sects, monastic orders, denominations, familial, etc.) have sought to reject, reinforce, transform, ignore, or assimilate the cultural and religious environment. Prereq: 220. Maximum 6 hours.

235 Issues in Religious Studies (1-3) Introduction to the study of religion through selected themes, problems, controversies, or contemporary issues. Variable content. May be repeated. Maximum 6 hours.

300 Ways of Understanding Religion (3) Sources and methods used in the study of religion and religions; analysis of approaches to the study of religion. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

311 Religious Myths, Symbol, and Ritual (3) Distinctive modes of religious expression and analysis of theoretical approaches appropriate to their particular social and cultural functions in religions.

312 Religion of Primitive Peoples (3) Religions of selected non-literate peoples. Role of religion in their social and cultural systems. (Same as Anthropology 330.)

305 Contemporary Religious Thought (3) Major themes, issues, and thinkers in twentieth century religion.

309-310 Elementary Classical Hebrew (3,3) Basic elements of Hebrew phonology, script, morphology and syntax. Introduction to basic elements of text, form, and literary criticism.

311 Ancient Hebrew Religious Traditions (3) Development of ancient Israelite and early Jewish traditions with emphasis on the period leading to the formation of the Hebrew Bible. Contribution of the literary tradition to the formation of the religious, and religious life, thought, and culture from pre-colonial to present. Prereq: 290 or consent of instructor. F

312 Religious Aspects of Biblical and Classical Literature (3) Ways in which contemporary modes of literary analysis appropriate biblical and classical material. Ways in which the western literary tradition has appropriated and reconstituted biblical and classical heritage. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

313 Religious Aspects of Modern Literature (3) Issues raised for religious inquiry in contemporary literature. Relation of religious and moral considerations to problems of religious literacy; relation between religious language and forms of human expression (symbol, metaphor, myth, image) identified in study of literature. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

315 Reformation Europe, 1500-1650 (3) (Same as History 315.)

316 Topics in Religion and Literature (3) Selected themes that suggest points of intersection between literary art and religious tradition. Variable content. May be repeated. Maximum 6 hours.

319 Sociology of Religion (3) (Same as Sociology 319.)

320 Women and Religion (3) Concepts of gender in religious traditions, religious, social and psychological dimensions of gender-related symbols (e.g., the Goddess, God the Father) that shape women's and men's experiences; contemporary feminist discussions of ways in which gendered perspectives influence experience of religious oppression. (Same as Women's Studies 320.)

321 New Testament Origins (3) Influence of pre-Christian Judaism and Greek culture and philosophy on early Christianity. Motivations and guiding concepts which led to the formation of the New Testament. History of the Christian Church over the forces of persecution and the Constantine settlement (311 A.D.). (Same as History 321.) Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

322 Christian Thought (3) Principal forms of Christian thought and institutions through the interpretation of representative thinkers and movements from Augustine of Hippo to Immanuel Kant. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom. (Same as History 322.)

326 Images of Jesus (3) Major portrayals of Jesus Christ from the first century to the twentieth within the context of the cultural milieu which gave birth to each. Extensive use of slides, video material, recordings, and literature. Prereq: 300. Maximum 6 hours.


331 Judaism (3) Comprehensive introduction to the history, tradition, culture, and religious institutions of Judaism, and interactions with modern culture.

332 Islam (3) Comprehensive introduction to the origin and early history of Islam, rapid spread as a missionary religion, development of theology and culture, and interactions with modern culture. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

342 Religious Ethics (3) Selected ethical theories and moral teachings of religious communities and thinkers, their action guides for individuals and institutions, their application to persons and social problems.

344 Professional Responsibility (3) (Same as Philosophy 344.)

345 Medical Ethics (3) (Same as Philosophy 345.)

351 Introduction to Religion in the United States (3) A representative profile of religion in the United States, organized around selected focal themes or problems.

352 Afro-American Religion in the United States (3) Historical, critical, and empirical examination of the development of African-American religious thought and institutions in America. (Same as Afro-American Studies 352.) Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

353 Topics in Afro-American Religion (3) Selected subjects, movements, or problems in the Afro-American religious tradition. Variable content. May be repeated. Maximum 6 hours. (Same as Afro-American Studies 353.)

355 Religion and Culture in the United States (3) Selected figures, movements, and problems in American religious life, thought, and culture from pre-colonial period to present. Prereq: 290 or consent of instructor. F

356 Topics in Afro-American Religion (3) Selected subjects, movements, or problems in the Afro-American religious tradition. Variable content. May be repeated. Maximum 6 hours. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

370 Philosophy of Religion (3) (Same as Philosophy 370.)

371 Eastern Religions and Western Thought (3) Comparative study of selected movements, thinkers, and practices of religious traditions, Asian and Western. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

373 African Religions (3) Religions of the indigenous peoples of Africa, their myth, rites, and symbols and certain cultural and political movements in Africa have been and are being informed by religious sensibilities. (Same as Anthropology 373 and Afro-American Studies 373.) Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

374 Philosophy and Religion in India (3) Survey of the development of the major non-Buddhist themes of philosophical and religious thought in India. (Same as Philosophy 374.) Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

376 Buddhist Philosophy and Religion (3) Survey of the origins of Buddhism in India and further development of Buddhist philosophy and religion in India, China, Korea, Japan, the countries of Southeast Asia, and beyond. (Same as Philosophy 376.) Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

377 Religion and Philosophy in China (3) Traditional Chinese thought, religious and philosophical thought as basis for understanding modern China. (Same as Philosophy 377.) Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

378 Buddhist Philosophy and Religion (3) Survey of the origins of Buddhism in India and further development of Buddhist philosophy and religion in India, China, Korea, Japan, the countries of Southeast Asia, and beyond. (Same as Philosophy 376.) Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.
303 Religion in Japan (3) Traditional religious heritage and contemporary expressions of religion in Japan with attention to shinto, Shinto-Buddhist syncretism, and Shinto-Buddhist difference. No foreign language credit. Prereq: Consent of instructor. May be repeated. Maximum 6 hours.

401 Advanced Religious Studies (3) Selected topics and issues. Variable content. May be repeated. Maximum 6 hours.

411 Modern Religious Philosophies (3) Religious implications of major Western thinkers and movements from Nietzsche to Kierkegaard. Prereq: Consent of instructor. May be repeated. Maximum 6 hours.

421 Classical Indian Systems of Philosophy: The Moksha Trilogy (3) Selected writings and philosophical problems of the traditions of Sankhya, Yoga, Vedanta, Buddhism, or Jainism. Prereq: Religious Studies/Philosophy 374 or 376 or consent of instructor. (Same as Philosophy 412.)

416 Jesus and Paul Compared (3) Central ideas and concepts of each person compared with equivalent concepts in the other. Advanced study of the Gospels and Epistles of Paul, involving extensive independent research.

421-422 Elementary Sanskrit I, Elementary Sanskrit II (3,3) 421-Introduction to the grammar of classical Sanskrit and the reading of epic and classical Sanskrit texts. Prereq: 421 or consent of instructor in advance. May be repeated. Maximum 6 hours.

425 Seminar in Western Religions (3) Selected figures, themes, movements, and problems. Prereq: Consent of instructor. Variable content. May be repeated. Maximum 6 hours.

430 Seminar in American Religion (3) Selected figures, themes, movements, and problems. Prereq: Consent of instructor. Variable content. May be repeated. Maximum 6 hours.

435 Seminar in Asian Religions (3) Selected figures, themes, movements, and problems. Prereq: Consent of instructor. Variable content. May be repeated. Maximum 6 hours.

440 Seminar in Comparative Religion (3) Selected figures, themes, movements, and problems. Prereq: Consent of instructor. Variable content. May be repeated. Maximum 6 hours.

446 Theoretical Issues in Medical Ethics (3) (Same as Philosophy 446.)

463-464 Intermediate Sanskrit I, Intermediate Sanskrit II (3,3) 463-Advanced grammatical constructions and reading of epic and classical religious and narrative texts (e.g., Bhagavad Gita, Mokshadharma, Ramayana, Kathasaritsagara). Prereq: 422 or consent of instructor. 464-Continued reading of classical religious and narrative texts. Prereq: 463 or consent of instructor. (Same as Philosophy 465.)

467 Historical and Comparative Linguistics (3) Historical and comparative study of languages and cultures. Prereq: Consent of instructor. May be repeated. Maximum 6 hours.

490 Readings in Religious Studies (3) Selected figures, themes, and issues. Variable content. May be repeated. Maximum 6 hours.

499 Proseminar in Religious Studies (3) For advanced students in Religious Studies; required for majors. Selected topics, e.g., nature and function of myth in religion, problem of evil, transcendence, theories of religion, history of religions, representing various disciplines involved in study of religion. Prereq: Consent of instructor. May be repeated. Maximum 6 hours.
312 Social Work Practice I (3) Knowledge, values, and skills for entry level generalist practice in a variety of settings. The social work problem solving process, different client systems, ethical-sensitive assumptions, and the worker's role for person-environment configuration. Coreq: Laboratory. Prereq: Initial progression. Pre or Coreq: 314.


314 Human Behavior and the Social Environment (3) Interrelationship of human, biological, social, cultural, environmental, and psychological factors in human behavior. Person-in-environment over the life span with special attention to diversity, impact of racism, sexism, and other sociocultural factors. Integration of knowledge into a social work practice perspective. Prereq: Initial progression.


412 Social Work Practice III (3) Generalist practice with emphasis on groups and communities, including treatment of social work roles, techniques, and issues. Prereq: Full progression. Coreq: 416 and 480.


460 Integrative Seminar (2) Social work content for entry-level professional practice and current issues in functioning of profession. Includes development of a portfolio reflecting BSW competencies. Prereq: Full progression. Coreq: 481.

491 Foreign Study (1-15) Prereq: Consent of instructor.

492 Off-Campus Study (1-15) Prereq: Consent of instructor.

493 Independent Study (1-15) Prereq: Consent of instructor.

SOCIology (915)

100 General Sociology (3) Major concepts and theoretical approaches. Sociology with emphasis on culture, socialization, social organization, and social stratification.

110 Social Problems and Social Change (3) Increasing responsibilities of the social worker. Social problems such as alcoholism, violence, crime, inequality, life-style preferences, and environmental abuse within the context of social change. Assessment of control strategies. May be taken instead of 100.

200 Sociological Analysis (3) Selected set of contemporary issues emphasizing theoretical and logical structure of the issues and development of data needed to enter into informed debate on the issues. Students are expected to develop their own analytical arguments. Prereq: English 301 or equivalent.

220 Interpersonal Communication (3) (Same as Speech 220.)

232 Varieties of Religious Community (3) (Same as Religious Studies 232.)

291 Sport in American Society (3) (Same as Physical Education 291.)

310 American Society (3) Institutional organization of contemporary American society with particular attention to major social values. Writing-emphasis course. At least one in-class essay examination and 3000 words of writing in the classical framework.

311 Family (3) Theoretical frameworks and methodological approaches; their application in the sociological study of past and present family forms.

319 Sociology of Religion (3) Interrelationship of social structure, and religion. (Same as Religious Studies 319.)

320 Interpersonal Communication Processes (3) (Same as Speech 320.)

321 Sociological Theory (3) Survey of contemporary issues and problems. Emphasis on critical appraisal of the topics addressed.

330 Computers and Society (3) History of computing and computer systems; capabilities of computer applications in various fields; social, cultural, and economic impacts.

331 Sociological Research (3) Selected issues in philosophy of science, research design, sampling, methods of data collection, and interpretation. Requires written research report.

336 Elementary Social Statistics (3) Statistics used in social research; elementary descriptive techniques; measures of central tendency, dispersion, elementary statistical inference; tests of significance for parametric and nonparametric data.

340 Class Structure (3) Class structure and conflict; causes and consequences of structured social inequality. Emphasis on the United States. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

343 Race and Ethnicity (3) Social sources of racial and ethnic cleavages and social, economic, and political consequences. Emphasis on race and ethnicity in the United States. (Same as Afro-American Studies 343.) Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

344 Power and Society (3) Sociological analysis of the formation and application of nation state policies. Examination of who gets what, why and how. Emphasis on contrasting explanations of the control of the state and the relative autonomy of the state.

345 Collective Behavior and Social Movements (3) Collective phenomena leading to social change. Response to disaster, popular crazes, and social protests and development, organization, and function of social movements. Emphasis on American cases.

346 Sociology of Occupations (3) Occupations and professions as interest groupings in work settings and the wider community.

350 Criminology (3) Systemic inquiry into alternative definitions of crime, statistical distribution of different types of crime, motivation, and responses to crime, primarily by the police.


352 Deviance and Social Control (3) Deviants, their lifestyles, social organization, and social control.

360 Environment and Resources (3) 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.

363 The City (3) The revolutionary impact of cities and urban environment with emphasis on conservation and the use of appropriate technology. (Same as Urban Studies 464.)

370 Social Psychology (3) Social psychological analysis of social behavior emphasizing its acquisition, its enactment, and its dynamic nature.

375 Gender in Society (3) Exploration of gender in society utilizing various sociological perspectives with special focus on social structure, social roles, and gender identities. (Same as Women's Studies 375.)

380 Rural Sociology (3) (Same as Rural Sociology 380.)

400 Special Topics (3) Variable topics. Scope of subject matter determined by students and instructor with consent of department. Prereq: Determined by department. May be repeated. Maximum 2 hours.

405 Sociology of Sport (3) Social meaning, organization, and process of sport. Prereq: 291 or consent of instructor. (Same as Physical Education 405.)

413 Formal Organization (3) Organizational models, typologies, and the implications of authority; communication, interpersonal relations in work settings; organizational change.

414 Sociology of Health Care (3) Organization of health care facilities, staff-patient relationships, demographic characteristics, and prevalence of disease.

415 Sociology of Aging (3) How roles and statuses change with age in relation to the major social institutions, the impact that the rapidly increasing number of older people have on society, the effect of society on older people.

442 Comparative Poverty and Development (3) A critical examination of patterns of poverty and inequality in developing areas of the world, along with a review of major sociological theories which attempt to explain differences in patterns of development. (Same as Afro-American Studies 442.)

446 The Modern World System (3) Critical examination of the capitalist world-system as a social system, its boundaries, coherence, regions, member groups, cleavages, and patterns of relations. Emphasis on the role of the United States. (Same as Afro-American Studies 446.)

451 Criminal Justice (3) A critical assessment of the criminal justice apparatus and its components. Brief examination of the police, with most of the emphasis on the criminal courts and institutions and programs such as the prison, probation, and parole. Analysis of their operation and impacts. Prior completion of 350 is recommended.

455 Society and Law (3) How laws and legal processes are affected by social change, the social impact of legal sanctions, relations between law and social justice. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

459 Organizational and Corporate Crime (3) Crime and deviance committed by organizations. Case studies of corporate and organizational crime, the organizational dynamics of crime, and theories of corporate crime, and organized responses to this type of crime by government regulatory agencies.

462 Population (3) Demographic factors and social structure; trends in fertility, mortality, population growth, migration, distribution, and composition; population policy.

464 Urban Ecology (3) The relation of humans to their urban environment with emphasis on conservation and the use of appropriate technology. (Same as Urban Studies 464.)

471 Sociolinguistics (3) (Same as English 471 and Linguistics 471.)

480 Diffusion of Agricultural Technology (3) (Same as Rural Sociology 480.)

491 Foreign Study (1-15) Prereq: Advance departmental approval of number of hours and topics. May be repeated. Maximum 15 hours.

492 Off-Campus Study (1-15) Prereq: Advance departmental approval of number of hours and topics. May be repeated. Maximum 15 hours.

493 Independent Study (1-15) Prereq: Advance departmental approval of number of hours and topics. May be repeated. Maximum 15 hours.

SPANISH (924)

111-112 Elementary Spanish (3,3) (Introduction to Spanish. May not be taken for credit by students with two or more years of high school or college Spanish. Must be taken in sequence. Language Laboratory required.)

117-118 Honors: Elementary Spanish (3,3) An introductory course for students with a special interest in
210 Intermediate Spanish Transition (3) A thorough study of the fundamentals of Spanish language for those who have completed two or more years of high school study but whose placement test results indicate that they are not prepared for the 211-212 sequence. Special emphasis on developing communicative proficiency in Spanish. The course will meet five hours per week and will prepare students for the College of Liberal Arts intermediate-level foreign language requirement. For elective credit only.

211-212 Intermediate Spanish (3,3) Reading, writing, listening, and speaking of Spanish to prepare for upper division courses in the language. Must be taken in sequence. Language Laboratory required. Prereq: 111-112 or equivalent.

217-218 Honors: Intermediate Spanish (3,3) Honors course in Spanish. Incoming freshmen are admitted on the basis of a diagnostic test, high school average and performance on the ACT. Classes normally held to a maximum of 15 students. Students follow enriched program with continuing instruction. Prereq: 212, 218 or equivalent.

291 Spanish Literature in English Translation (3) From the Golden Age, Don Quixote, the picaresque novel, and St. John of the Cross, to the modern, Unamuno, Lorca, Ortega, and Celso. No foreign language major credit. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

292 Spanish American Literature in English Translation (3) Literature of Spanish America from the Inquisition through the 20th century. Works of all genres. Prereq: 311, 312 or equivalent.

311 Aspects of Spanish Literature (3) Introduction to the Golden Age and the modern period of works of all genres. Prereq: 311, 312 or equivalent.

312 Advanced Grammar (3) Finer points of grammatical structures. Required of all majors. Native speakers may take the course for credit. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

313 Phonetics (2) Prereq: 212, 218 or equivalent.

314 Advanced Conversation and Composition (3,3) Advanced conversational and written skills in Spanish for pre-professionals.

315 Introduction to Descriptive Linguistics (3) Same as French 425, German 426, Russian 426 and Linguistics 426.

316 Methods of Historical Linguistics (3) Same as Russian 426, French 426, German 426 and Linguistics 426.

317 Romance Linguistics (3) Same as French 426 and Linguistics 426.

318 Spanish Civilization (3) Major social, political, and cultural achievements of the Spanish people from the origins of their civilization until today. Prereq: 311, 312 or equivalent. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

319 Romance Literature (3) Introduction to the major 20th century Spanish American dramatists. Prereq: 311, 312 or equivalent. (Same as Latin American Studies 450.)

320 Capstone Colloquium in Spanish (3) An integrative experience focusing on a broad range of issues and topics that affect much of the Spanish-speaking world and also involve those who specialize in Hispanic Studies. Prereq: 311, 312 or equivalent. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

321 Reading, writing, listening, and speaking of Spanish to prepare for upper division courses in the language. Must be taken in sequence. Language Laboratory required. Prereq: 311-312 or equivalent.

322 Advanced Grammar (3) Finer points of grammatical structures. Required of all majors. Native speakers may take the course for credit. Writing emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

323-324 Intermediate Conversation and Composition (3,3) Introduction to the study of Spanish American literature, with emphasis on the picaresque, La casualidad, the novel and modern periods. Required of all majors. Prereq: 212, 218 or equivalent.

325 Aspects of Spanish American Literature (3) Introduction to the study of Spanish American literature, with emphasis on the picaresque, La casualidad, the novel and modern periods. Required of all majors. Prereq: 212, 218 or equivalent.

326 Methods of Historical Linguistics (3) Same as Russian 426, French 426, German 426 and Linguistics 426.

327 Social Protest Literature of Latin America (3) Literature as a medium for understanding social ills that have traditionally beset Latin America. Among major themes: indigenismo, Black literature, women writers, the role of the artist in Latin America, political institutions. Prereq: 311, 312 or equivalent. (Same as Latin American Studies 479.)

328 Foreign Language (1-15) SPECIAL EDUCATION (933)

270 Special Education Seminar (1) Introduction to the field; career goals and objectives including observation in the field.

331 Articulation Disorders (3) Prereq: Admission to Teacher Education Program. (Same as Audiology and Speech Pathology 331.)

370 Survey of Exceptional People (2) Definition, characteristics and special needs of exceptional individuals; mainstreaming; historical and legal background of special education; causes, effect and remediation of exceptional abilities; educational settings; adaptations for instruction; professional roles and responsibilities; social adjustments of exceptional persons, and social, legal, and moral issues in special education. Prereq: Admission to Teacher Education Program. (Same as Education 370.)

371 Audiology I (3) Same as Audiology and Speech Pathology 437.

404 Appraisal of Speech and Language Disorders (3) (Same as Audiology and Speech Pathology 404.)

410 Pre-Internship Seminar (1) Objectives and policies of the internship program. Must be completed the term immediately preceding the internship. Prereq: Admission to Teacher Education Program. Satisfactory/No Credit only. Sp, Su.

423 Communication Processes for the Hearing Impaired (3) Expressive and receptive vocabulary development in sign communication. Fingerspelling and educational applications of sign language.

424 Nature of Hearing Impairments (3) Anatomy and physiology of hearing; nature and causes of hearing loss; methods and instrumentation for assessment of hearing level; interpretation of audiologic services to medical and other rehabilitative disciplines.

425 Introduction to the Psychology and Education of the Hearing Impaired (3) Primarily for those planning to teach the hearing impaired. Perception and interpretation of psychology, social adjustment, communication methodology, and language development for the hearing impaired. Survey of literature. Visits to programs.

433-434 Clinical Practice in Speech Pathology (1-4,1-4) (Same as Audiology and Speech Pathology 433-434.)

440 Voice Disorders (3) (Same as Audiology and Speech Pathology 440.)

451 Psychology and Education of the Mildly Handicapped (3) Nature and characteristics of mildly handicapped students with learning disabilities, emotional disorders, and mental retardation. Instructional approaches, techniques, and evaluation and development of materials. Prereq: Admission to Teacher education Program. Coreq: 480. F.


454 Education of the Gifted and Talented Children (3) Principles and methods of educational assessment; Analysis of past and present school practices in reference to curriculum and program implementation. Prereq: Admission to Teacher Education Program. Sp.

456 Speech and Language Basis of Learning Disabilities in the Classroom (3) Normal communication development; understanding of speech and language handicapping conditions in school-age students; integration of oral/ written communication skills into existing curriculum, especially for high incidence special education students. Sp.

470 Psychology of the Exceptional Child (3) General characteristics and educational needs of exceptional children. Implications of developmental variations for functioning of adults. Enrollment limited to non-education majors.


472 Internship II (3) (Same as Audiology and Speech Pathology 472.)

480 Field Experience with Mildly Handicapped Students (3) Practicum in teaching mildly handicapped persons with hearing impairments, reading disabilities, and remedial instruction. Prereq. Admission to Teacher Education Program. Coreq: 451. Satisfactory/No Credit only. F.

199 The Spanish Language and World Business (1) The course will examine the importance of foreign trade at the local, state, and national levels. An interdisciplinary team of faculty from the Colleges of Business and Liberal Arts will provide an overview of the value of language study and international cultural awareness in world business. Restricted to students majoring in the program in Language and World Business. See the Director for further information.
484 Internship with Hearing Impaired Children (6) and Speech Pathology 433, 434 (80-100 clinical contact hours) and admission to Teacher Education Program.

483 Clinical Practice in Communication Disorders in Schools (3) Supervised practice with children with communication disorders. Prereq: 482 and Audiology and Speech Pathology 433, 434 (80-100 clinical contact hours) and admission to Teacher Education Program.

484 Internship with Hearing Impaired Children (6) Supervised practicum with preschool, day school and residential students. Prereq: Admission to Teacher Education Program.

485 Student Teaching in Special Education (3-10) Intended for students in the four year program or equivalent. Not to be substituted for internship (Educational Consent form,まったく必要). Prereq: Admission to Teacher Education Program, permission of Mentoring Team, and Educational Curriculum 203 (1). Satisfaction/No Credit only. Sp

490 Field Experience with Moderately and Severely Handicapped Students (3) On-site teaching experience with moderately and severely handicapped children and youth. Prereq: Admission to Teacher Education Program. Coreq. 452. Satisfactory/No Credit only. Sp

494 Introduction to Aural Rehabilitation (3) (Same as Audiology and Speech Pathology 494.)

SPEECH COMMUNICATION (943)

100 Introduction to Speech Communication (3) Fundamentals theories and practices with particular reference to interpersonal, group, organizational, and public communication.

200 Developing Speech Confidence (1) Principles and techniques for coping with apprehension about communication. Prereq: Recommended for students who are concurrently enrolled in 200 level speech courses and desire additional work in dealing with their anxiety about speaking.

210 Public Speaking (3) Preparation and delivery of informative and persuasive speeches. Topics include research, organization, adapting to an audience, topic selection, reasoning, and evaluating the discourse of others.

220 Interpersonal Communication (3) Process by which thoughts, feelings, and actions affect and are affected by the face-to-face communication situation. (Same as Sociology 220.)

240 Business and Professional Speaking (3) Basic principles of oral communication within organizations, including such topics as organizational/communication theory, group problem solving, formal presentations, and interviewing.

270 Argumentation and Debate (3) Reasoned decision-making with emphasis on analysis, evidence, reasoning, and clarifying rules of logic for oral arguments.

280 Introduction to Oral Interpretation (3) Art of reading aloud: development of interpretive techniques and their application to selected passages of prose, poetry, and drama. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

300 Nonverbal Communication (3) Exploration of nonverbal behavior in all public and private settings. Prereq: 280 and reading arguments.

486 Rhetoric of the Women's Rights Movement (3) Historical and critical study of public address in campaign for women's rights from the 1830's to present. Sane and in the written text (see chapter 465). Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

491 Foreign Study (1-15) See description of major concentration.

492 Off-Campus Study (1-15) See description of major concentration.

493 Independent Study (1-15) See description of major concentration.

494 Introduction to Aural Rehabilitation (3) (Same as Audiology and Speech Pathology 494.)

STATISTICS (962)

201 Introduction to Statistics (3) Descriptive statistics, including bivariate trends and time series analysis; concepts of probability and probability distributions, binomial and normal distributions, linear correlation and regression, estimation, confidence intervals; tests for means, contingency tables. Prereq: Mathematics 121. E

221 Sampling Techniques (2) Procedures used in probability sampling from finite populations. Development of estimators and standard errors associated with sampling schemes. Sane and in the written text (see chapter 465). Prereq: Permission of the Chairperson of the Statistics Department Undergraduate Affairs Committee. Satisfaction/No credit only. May be repeated. Maximum 2 hours.


252 Probability and Statistics for Scientists and Engineers II (3) Hypothesis testing. Introduction to statistical process control, reliability, analysis of variance. Simple and multiple linear regression. Prereq: 251 and a working knowledge of the U TCC VAX system, or Coreq: 261. S

261 Computing for Data Management and Analysis (3) Use of computer operating system commands and packaged programs for managing data files and statistical analysis. Prereq: 251. Sp

302 Statistical Methods (3) Linear regression and correlation, multiple regression, analysis of variance, and covariance: categorical data. Emphasis on data analysis and interpretation. Not available for credit to students with credit in 461. Prereq: 201 or equivalent. E

365 Industrial Statistics (3) Introduction to statistical process control; introduction to statistical techniques in government and for profit or non-profit organizations, culminating in a written and an oral report. Prereq: Consent of instructor. May be repeated. Maximum 6 hours.

420 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 levels.

440 Organizational Communication (3) Organizational setting and those variables of the communication process that affect the quality of human interaction both within and outside the organization.

445 Internship (1-3) Supervised career-related experiences using Speech Communications theories and techniques in government and for profit or non-profit organizations, culminating in a written and oral report. Reserved for Junior/Senior level majors with at least a 3.0 GPA, or by special permission of Internship Director. S/N credit only. May be repeated; maximum 6 hours. Major credit limited to 3 hours.

500 Topics in Speech Communication (3) Variable content course affording opportunity to offer subject matter not covered in an existing course. Topics, scope of subject matter, and prerequisites to be determined by Department. Must have credit in 494. Satisfactory/No Credit only. Sp

201 or 251. E


462 Analysis of Variance and Experimental Design (3) Variance techniques for single and multifactor models. Post hoc procedures. Design considerations for completely randomized, randomized block, factorial, hierarchical and split-plot experiments. Major writing requirement. Prereq: 252 or 461. Sp

471 Random Processes and Probability Models (3) Functions of random variables, multivariate distributions, additional applications, waiting time distributions, random processes, Markov chains, queueing theory. Prereq: 251. F

481 Special Topics in Probability (1-3) Topics in probability and stochastic processes. Prereq: Consent of the instructor. May be repeated. Maximum 6 hours.

483 Special Topics in Statistics (1-3) Topics vary. Prereq: Consent of instructor. May be repeated. Maximum 6 hours.

486 Principles of Statistical Process Management (3) Control charts and other statistical techniques applied to management of business processes. Prereq: Consent of department head. E

486 Undergraduate Seminar (1) Directed readings and active participation in the Department's undergraduate seminar program. Prereq: Senior standing and consent of Chairperson of Statistics Department Undergraduate Affairs Committee. Satisfaction/No credit only. May be repeated. Maximum 2 hours.

492 Internship (1-6) Supervised off-campus experience in application of statistical principles and methods in business, industry, government, culminating in a written and an oral report. Prereq: Permission of the Chairperson of the Statistics Department Undergraduate Affairs Committee. Satisfaction/No credit only. May be repeated. Maximum 6 hours.
161 Graphic Communications (3) Drafting as a means of communicating ideas in technology: graphic and multiview drawing, conventional practices, pictorial techniques and applications, sheet metal development and auxiliary view drawing. Sketching, dimensioning, board work, and CAD. F

163 Power and Energy Systems (3) Automotive technology and internal combustion engines. Includes various prime movers, methods of utilization, distribution, and transmission of power. Engine tune-up and overhaul and small engine maintenance and repair is stressed through experimental and applied laboratory experiences. F

165 Woods Technology (3) Processes, tools, equipment, and products of the woodworking industry. Importance of safety and using hand tools and basic machinery. F

166 Metals Technology (3) Processes, equipment, materials and products of metal working industries. Processes in machine, foundry, forging, heat treatment, sheet metal, and welding. S

201 Field Experience in Vocational Technical Edu-
cation (1) Field experience in public school programs in distributive education. May be repeated. Maximum 3 hours. Satisfactory/No Credit only. E

230 Typewriting and Shorthand Proficiency (3) Proficiency in shorthand and typewriting as it relates to business and office technology who have typewriting and/or shorthand courses. Prereq: Department Approval. E

261 Architectural Graphics (3) Graphic representation and architecture. Principles of construction, working drawings for a residential dwelling, and CAD techniques. Prereq: 191 or consent of instructor. S

263 Basic Electricity/Electronics (3) Operation and characteristics of electrical systems and devices; includes general AC/DC theory and application, use of electronic measuring instruments, circuit analysis, introduction to semiconductors and various laboratory experiences that involve the function of different types of circuits. Prereq: Department Approval. E

265 Construction Technology (3) Residential construction, including site selection, foundations, framing, roofing, interior, and exterior finishes. Prereq: 165 or consent of instructor. S

266 Machine Tool Processes (3) Function, care, set-up, operation and theory of basic machine tools. Prereq: 166 or consent of instructor. S

336 Micro Business Applications (3) Operating and programming microcomputers. BASIC language is used and programming examples are oriented in business and office technology. Prereq: Admission to Teacher Education Program. F

355 Microcomputer Applications in Technology (3) Use and applications of microcomputers for education, business, and industry. Implications and impact of microcomputers on occupations and everyday living. Open lab for required hands-on experience in operations and programming. F

356 Lab Organization, Management, and Safety (3) Principles of classroom and laboratory organization, management, safety, and management in vocational and technical laboratories. S

361 Graphic Reproduction Processes (3) Principles of printing, duplicating, photography, and other forms of graphic communication; includes laboratory experience in SLR camera applications, camera copy preparation, line and halftone photography, layout, stripping, platemaking, and offset presswork. Prereq: Admission to Teacher Education Program. F

363 Applications of Integrated Electronics (3) Electrical circuit analysis and IC applications; including amplifiers, comparators, and timing and oscillators. Emphasis on the basic principles and applications of digital electronics through lecture and laboratory experiments and projects. Prereq: Consent of instructor and admission to Teacher Education Program. F

365 Manufacture of Wood Products (3) Design and construction of case and carcass furniture and building-in-place. Emphasis on use of wood as material. Prereq: 165, S

366 Manufacturing Technology (3) Manufacturing system, including investigating and developing products, preparing to produce, producing, marketing, and servicing products. Prereq: 165, 166, and admission to Teacher Education Program. S

372 Job Analysis (3) Applied techniques of job analysis to determine job descriptions, training requirements, performance standards and sequence of training technical personnel. F

373 Instructional Techniques in Industrial Educa-
tion (3) Application of learning theories, motivational techniques, and instructional strategies to technical and related subjects. F

374 Planning Instruction for Human Resource De-
velopment (3) Development of training programs, including researching and developing products, preparing to produce, producing, marketing, and servicing products. Prereq: 165,166, and admission to Teacher Education Program. S

375 Utilization of Community Resources (3) Strategic development of linkages between vocational education and the private sector through advisory committees, councils and working partnerships. Development and management of public relations programs. Prereq: Three years of teaching experience. A

410 Pre-Student Teaching Seminar (1) Objectives and policies of the student teaching program. Must be completed the term immediately preceding student teaching. Prereq: Admission to Teacher Education Program. Satisfactory/No Credit only. F, Sp

413 Special Topics in Technological and Adult Edu-
cation (1-3) Topics to be assigned. May be repeated. Maximum 6 hours. E

414 Individual Study in Technological and Adult Edu-
cation (3) Prereq: Consent of supervising instructor with approval form filed in the office of the department head. May be repeated. Maximum 6 hours. E

415 Coordination Techniques (3) Necessary pro-
duces, duties and responsibilities to implement, main-
tain, and evaluate a successful cooperative education program. S

420 Introduction to Adult Education (3) Breadth of adult education activities and the diversity of adult clientele, including opportunities for professional practice apart from traditional instructional settings. A

421 Adult Education Program Design and Manage-
ment (1-3) Selection of courses in the introduction and special application to adult training programs. E

422 Adult Development and Training (3) Application of adult development concepts to design and management of training programs for adults. Sp

430 Principles and Organization of Business Mar-
testing Education (3) An overview of business marketing and the retailing function. Prereq: Admission to Teacher Education Program. F

431 Word Processing and Office Technology (3) Word processing concepts and applications, methodology for teaching word processing and machines. Prereq: Advanced typewriting skill and permission of instructor. Sp

432 Methods and Materials in Business and Market-
ing Education (3) Teaching techniques, aids and evaluation in subject matter fields. Prereq: Admission to Teacher Education Program. Sp

433 Methods in Office Technology (3) Materials, meth-
ods, evaluation procedures, and recent research in typewriting, shorthand, and other office procedures. Sp

434 Methods in Accounting and Data Processing (3) Methods, evaluation procedures, and recent research in accounting and data processing. Automated accounting systems introduced. Prereq: Admission to Teacher Education Program. F

436 Supervised Occupational Experience (3-9) Prac-
tical field experience in business and marketing settings under the supervision of practitioner and departmental representative. May be repeated to a maximum of 9 credits. E

439 Areas of Marketing (3) Marketing, personnel development, operations and management as these affect the instructional leadership program in marketing education. Sp

440 Special Topics in Business and Marketing Edu-
cation (1-3) Topics to be assigned. May be repeated. Maximum 9 hours. E

450 Seminar in Industrial Education (1-3) Current is-
uations, problems, and other topics associated with technical programs. May be repeated. Maximum 6 hours. A

454 Training Aids Development (3) Study and prepa-
ration of instructional aids and non-print media commonly used by technical instructors and trainers. F

455 Performance-Based Evaluation (3) Assessing the effectiveness of training through the development of performance-based measures; evaluation of incumbent worker job performance. Sp

456 Organization and Operation of VICA/HOSA (3) Planning, organizing and implementing youth-club activities in vocational-technical programs. A

459 New Developments in Industrial Education (3) Developments pertinent to industrial education presented by coordinating instructor and guest speakers from industry. May be repeated. Maximum 6 hours. E

454 Methods and Mediation in Technology Educa-
tion (3) Methods and media used in teaching technology education in the secondary public schools. Prereq: Admission to Teacher Education Program. F

455 Materials and Processes (3) Materials relative to specifications, testing, and methods to classify and characterize materials. Determining correct processes to match industrial product needs. Prereq: Consent of instructor. Sp

464 Course Construction in Technology Education (3) Selection and arrangement of course content. Planning, instructional objectives, project/product selection, assignments and evaluation. Prereq: Admission to Teacher Education Program. Sp

469 Plastic Technology (3) Characteristics and appli-
cations of thermoplastic and thermosetting materials. Plastics production equipment related product design and processing of plastics. Prereq: 165 and admission to Teacher Education Program. Sp
TEXTILES AND APPAREL (971)

101 Apparel Construction (3) Garment construction focused on decision making and time management; pattern alterations, fitting and quality of construction. Not available for credit for departmental majors. F, Sp

120 Textiles I (3) Consumer-oriented textiles: fibers, fabric construction and finishes in relation to use, serviceability and care of apparel and household fabrics. F

230 Apparel Evaluation (3) Analysis of construction techniques, quality, fit and general appearance. Emphasis on principles of design in relation to garment construction. Prereq: 120. F

232 Design Analysis (3) Apparel design analysis based on flat pattern, draping and drafting techniques; comparison of methods for style variations and costing of garments. Sp

310 Principles of Merchandising (3) Buying practices, procedures, problems, activities, techniques, underlying concepts fundamental to merchandising. Prereq: Accounting 201. F

320 Textiles II (3) Recent developments in fibers, fiber structure, yarn processing, yarn structure and fabric construction: dyeing, finishing and printing; textile performance and evaluation; legislation and standards. Prereq: 120, Chemistry 100-110 or 120-130. F

330 Apparel Production (3) Industrial methods in garment production, focus on stages of production, plant layout, costing and quality control. Prereq: 230. F

331 Computers in Merchandising and Manufacturing (3) Computer-aided design and other computer applications for management, merchandising, design, and marketing. Hands-on experiences. Field trips. Prereq: HE 210 or consent of instructor. F

332 Retail Merchandising Applications (3) Foundations and applications of retail operational methods. Prereq: Accounting 201. F

340 Cultural and Functional Aspects of Clothing (3) Cultural, socio-psychological, functional and technological developments in textiles and apparel; integrative approach to apparel analysis. Prereq: Sociology 100. Sp

345 Fashion in History (3) Development of apparel styles in western civilization from middle ages to present; factors associated with origin, adoption and abandonment including historic, social and economic settings. F

350 Consumers in the Market (3) Consumer decision-making and problems in the domestic and international marketplace. Consumer issues and policies, emphasis on consumer choice, information, consumer protection and current issues. Prereq: Economics 201. Sp

390 Introduction to Field Experience (1) Interviews, placement and planning for field experience. Prereq: Approved application for field experience. Sp

410 Retail Management (3) Retail sector of economy from management perspective; decision-making in retail operations: promotion, pricing, financial planning and control—computer input, product mix-strategy. Prereq: 2 semesters Marketing. Sp

415 Fashion Promotion (3) Advertising and special purpose media used to promote fashion merchandise; evaluation of retail sales promotion activities. Sp

420 Textile Microscopy and Physical Testing (3) Microscopic and physical testing techniques applied to textile fibers, yarns and fabrics; standard methods and equipment used in physical testing. Prereq: 320. F

422 Textile Fiber Chemistry (3) Chemistry of textile fibers, their structure, behavior under various treatment conditions, and reactions; implications relating to dyeing and finishing of fabrics. Prereq: Chemistry 350. Sp

450 Textile and Apparel Economics (3) Economics of the United States textile, apparel and fiber industries; emphasis upon production, distribution, institutions, impact upon consumers; international and domestic issues. Prereq: 395 or consent of instructor. Sp

490 Methods in Field Experience (6) Investigation of retail sales, purchasing, production, and merchandising organizations, analysis of jobs and evaluation of field experience. Prereq: 390, Coreq: 492. F

492 Field Experience in Merchandising, Apparel or Textiles (9) Off-campus, cooperative program with business establishments which merchandise or manufacture textiles and/or apparel. Prereq: 390, Coreq: 490. F

493 Directed Study (1-3) Individual problems for junior and senior students with special interests in textiles, merchandising or apparel. Prereq: Junior or Senior standing, consent of instructor. E

495 Special Topics (3) Topics in textiles, merchandising, and/or apparel. May be repeated. Maximum of 9 hours. Prereq: Junior or Senior standing, consent of instructor. E

497-498 Honors: Textiles and Apparel (3) Individual problems for Junior and Seniors showing special ability and interest in textiles and apparel. Prereq: Recommendation of Department Head. E

THEATRE (972)

100 Introduction to Theatre (3) Understanding theatre: thought, philosophy, aesthetics, and production practices. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

210-211 Survey of World Drama (3,3) 210-Includes Greek, Roman, Medieval, Elizabethan, and Eastern periods of drama. 211-Covers 19th century, as well as realism through contemporary drama. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

220-221 Acting (3,3) 220-Basic Acting techniques. 221-Further exploration and development of acting techniques through exercises and beginning scene work. Prereq: 220. Writing-emphasis courses: at least one in-class essay examination and 3000 words of writing outside the classroom.

222 Voice and Diction (3) Voice production; attention to articulation and individual speech problems. 245 Basic Stage Costuming (3) Design and construction of costume, production and technique. Production participation required. Prereq: 100.

250 Introduction to Scenery Technology (3) Techniques of scenery and stage properties construction. Production participation required.

260 Fundamentals of Lighting and Sound Production (3) Survey of practical information on electricity, physics, psychology, and instrument engineering as it relates to stage lighting and sound production. Emphasis on hands-on skills in labs. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

310-311 History of the Theatre (3,3) 310-Drama in Britain and selected foreign dialects in North America. 311-From its beginnings to 1900. 312-From 1900 to period costumes. Includes corsetry and the study of historic patterns 1500-1900. Prereq: 345 or consent of instructor.

326 Applied Phonetics (3) Development of skills in transcription and reproduction of the principal varieties of the English Language in North America and Great Britain and selected foreign dialects in North America. Prereq: Consent of instructor.

331-332 Principles of Play Directing (3,3) Problems in composition, picturization, rhythm, movement, Prereq: 220. Must be taken in sequence.


445 Advanced Costume Construction (3) Advanced construction technique, such as tailoring, vacuum forming, plastic molding, and cobblering. Prereq: 345 or consent of instructor.

453 Costume Pattern Making (3) Draping patterns for period costumes. Includes corsery and the study of historic patterns 1500-1900. Prereq: 345 or consent of instructor.

455 Advanced Scenecy Technology I (3) Study and practice of theatre woodwork; production participation will be required. Prereq: 250. Graduate credit available to theatre M.F.A. students only.

456 Advanced Scenecy Technology II (3) Study and practice of metalworking and plastics for theatrical production; production participation will be required. Prereq: 250. Graduate credit to theatre M.F.A. students only.

457 Advanced Scenecy Technology III (3) Study and practice of stage rigging for theatrical productions; production participation will be required; Prereq: 250. Graduate credit available to theatre M.F.A. students only.

460 Advanced Lighting and Sound Technology (3) Projects in lighting and sound coordination. May include opera, dance, musical theatre, and “Rock videos”. Final projects will be live productions. Emphasis on developing artistic sensitivity and subtleties in control. Prereq: 260.

461 Special Effects in Lighting and Sound (4) Projects in special effects including various creative applications of technology. Problem solving, drafting, and execution of effects for production emphasized. Production participation required. Prereq: 260 or instructor's permission.

462 Advanced Lighting Design (3) Advanced problems in lighting design and theory including areas such as lighting musical theatre, opera, and dance. Prereq: 362 or consent of instructor.

340 Introduction to Costume Design (3) Development of research and rendering skills. Prereq: 245 or consent of instructor.

345 Costume Construction (3) Study and practice of costumes in costume construction. Includes stitching, costume fitting, and testing. Production participation is required.

355 Introduction to Scenic Design (3) Introduction to art and craft of scenic design.


401 Principles of Theatrical Design (3) Fundamental principles of design; visual and structural relationships. Projects will be assigned to develop understanding and perspective.

409 Stage Make-Up (2) Problems in make-up design and application, characterization, physiognomy and characuro. Prereq: 100.

410 Dramatic Theory and Criticism (3) Theatre aesthetics from Aristotle to the present.

420 Special Studies in Acting (3) Content varies. Excursion in selected concentrated areas such as styles, techniques, approaches, e.g., Shakespeare, movement, humor. Prereq: 320 and consent of instructor. May be repeated. Maximum 9 hours.

428 Applied Phonetics (3) Development of skills in transcription and reproduction of the principal varieties of the English Language in North America and Great Britain and selected foreign dialects in North America. Prereq: Consent of instructor.

430 Special Studies in Acting (3) Content varies. Excursion in selected concentrated areas such as styles, techniques, approaches, e.g., Shakespeare, movement, humor. Prereq: 320 and consent of instructor. May be repeated. Maximum 9 hours.

453 Costume Pattern Making (3) Draping patterns for period costumes. Includes corsery and the study of historic patterns 1500-1900. Prereq: 345 or consent of instructor.
463 Sound Design (3) Sound design for the performing arts. Review of equipment and acoustical factors that affect sound production. Sound designs will be plotted from onstage and offstage perspectives. Final projects will be mounted, edited, and cued for production.

465 Introduction to Lighting Design for Non-Designers (3) Theory and practice of stage lighting design with emphasis on the relationship between designers and non-design practitioners such as directors, actors, choreographers, architects, etc.

470-471 Playwriting (3.3) Advanced instruction in the writing of plays. Prerequisite: Consent of instructor.

481 Applied Theatre: Costumes (2) Laboratory in costume design for departmental productions. Credit available to Theatre majors only or with consent of instructor. 90 hours of work required.

482 Applied Theatre: Scenery (2) Laboratory in scenery for departmental productions. Credit available to Theatre majors only or with consent of instructor. 90 hours of work required.

483 Applied Theatre: Lighting (2) Laboratory in lighting for departmental productions. Credit available to Theatre majors only or with consent of instructor. 90 hours of work required.

484 Applied Theatre: Performance (2) Laboratory in performance for departmental productions. Credit available to Theatre majors only or with consent of instructor. 90 hours of work required.

485 Applied Theatre: Management (2) Laboratory in management for departmental productions. Credit available to Theatre majors only or with consent of instructor. 90 hours of work required.

491 Foreign Study (1-15)

492 Off-Campus Study (1-15)

493 Independent Study (1-15)

UNIVERSITY HONORS (983)

118-128 Whittle Scholars Seminar (1,1) Sequence limited to and required of all Whittle Scholars in their freshman year. 118 concentrates on contemporary issues in leadership. 128 concentrates on leadership of organizations. Satisfactory/No Credit grading only.

237, 337, 437 Honors: Concentration in the Humanities (3,3,3) Small group studies of selected topics, issues or problems in one of the humanistic disciplines. Open to all students with a GPA of 3.25 or greater. Topics vary. May be repeated.

247, 347, 447 Honors: Concentration in the Social Sciences (3,3,3) Small group studies of selected topics, issues or problems in one of the social sciences. Open to all students with a GPA of 3.25 or greater. Topics vary. May be repeated.

257, 357, 457 Honors: Concentration in the Natural and Applied Sciences (3,3,3) Small group studies of selected topics, issues or problems with a concentration in the natural and applied sciences. Open to all students with a GPA of 3.25 or greater. Topics vary. May be repeated.

335-348 Tennessee Scholars Seminar (1,1) Sequence limited to and required of all Tennessee Scholars each year. May be repeated. Maximum 8 hours. Satisfactory/No Credit grading only.

418-428 Seminar on International Travel/Study/Work Overseas (1,1) Sequence required of all Whittle Scholars. Open to all students who intend to travel, study or work abroad. Satisfactory/No Credit grading only.

491 Honors: Foreign Study (3-15) Open to any undergraduate honors student. Proposals must be approved in advance. See the Director of University Honors for further information.

492 Honors: Off-Campus Study (3-15) Open to any undergraduate honors student. Proposals must be approved in advance. See the Director of University Honors for further information.

493 Honors: Independent Study (3-15) Open to any undergraduate honors student. Proposals must be approved in advance. See the Director of University Honors for further information.

UNIVERSITY STUDIES (984)

101 Freshman University Seminar (3) Introduction to university education as an adventure in personal growth and professional development. A/B/C/C+ grading. Open only to freshmen, transfer students, and re-entry students; or by permission of instructor.

210-220 Case Studies (4.4) Variable content using case studies and problem-solving approaches to explore interdisciplinary issues. Includes a one-hour learning laboratory. Designed for undergraduate honors students enrolled in a University Learning Community.

310-320 Special Topics in University Studies (3.3) Interdisciplinary approaches to issues transcending the boundaries of a single discipline. Topics may be initiated by faculty or students through arrangement with the University Studies Program. Taught by faculty from throughout the University (often team-taught). Extensive use of films, field trips, student discussion. May be repeated. Maximum: 9 hours.

410-420 Advanced Topics in University Studies (3.3) Interdisciplinary research approaches to major issues transcending the boundaries of a single discipline. Topics may be initiated by faculty or students through arrangements with the University Studies Program. Taught by faculty from throughout the University (often team-taught). Extensive use of films, field trips, student discussion. May be repeated. Maximum: 9 hours.

URBAN STUDIES (985)

200 Human-Environment Systems (3) Same as Interior Design 200. Open only to freshmen, transfer students, or by permission of instructor.

250 Introduction to Urban Studies (3) Multidimensional nature of urban studies. Includes lectures by specialists presenting the approach of their disciplines to Urban Studies. Open to all students without a specific focus or interest.

401 The City in the United States (3) Same as Planning 401.

402 Survey of Planning (3) Same as Planning 402.

441 Urban Geography (3) Same as Geography 441.

442 Urban Political Science (3) Same as Political Science 442.

443 Fisheries Science (3) Same as Sociology 443.

444 Urban Ecology (3) Same as Sociology 444.

445 Ecology and Management of Wild Mammals (3) Biological and ecological characteristics of game mammals and endangered species. Introduction to population estimation, age and growth, biological assessment, and stocking. Prerequisite: Forestry, Wildlife and Fisheries 317 or Biology 230, and 6 hours of mathematics. 2 hours and 1 lab. 5p.

446 Ecology and Management of Wild Birds (3) Biological and ecological characteristics of game birds, endangered birds, and bird pests. Current principles and practices of wild bird management. Prerequisite: Forestry, Wildlife and Fisheries 317 or Biology 230, 2 hours and 1 lab. One weekend field trip required.

447 Ecology and Management of Wild Birds (3) Biological and ecological characteristics of game birds, endangered birds, and bird pests. Current principles and practices of wild bird management. Prerequisite: Forestry, Wildlife and Fisheries 317 or Biology 230, 2 hours and 1 lab. One weekend field trip required.

493 Independent Study in Wildlife and Fisheries Science (1-15) Special research or individual problem in wildlife and fisheries science.

WOMEN’S STUDIES (994)

210 Images of Women in Literature: Biography and Autobiography (3) Introduction to women’s journals, diaries, autobiographies, and biographies. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

215 Images of Women in Literature: Fiction, Poetry, Drama (3) Introduction to the study of women through the roles and stereotypes portrayed in a variety of literary genres (fiction, poetry, and drama), including works from diverse historical, geographical, and cultural contexts. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

220 Women in Society (3) Role played by women in various societies during different historical periods, factors which have limited women’s participation in society, social scientists’ assumptions about women.

230 Marriage and Family: Roles and Relationships (3) Same as Childhood and Family Studies 220.

310 Emergence of the Modern American Woman (3) Role of women in the development of American civilization and values. Major topics include women’s legal and personal status, the emergence and development of feminism, women and the creative arts, and women’s roles in industrial and post-industrial American society. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

320 Women and Religion (3) Same as Religious Studies 220.

324 Women in French Culture (3) Same as French 244.

325 Women in French Culture (3) Introduction to women’s thought through the roles and stereotypes portrayed in a variety of literary genres (fiction, poetry, and drama), including works from diverse historical, geographical, and cultural contexts. Writing-emphasis course: at least one in-class essay examination and 3000 words of writing outside the classroom.

326 Women and Religion (3) Same as Religious Studies 220.

327 Women in Music (3) Same as Music History 220.

328 Women and Religion (3) Same as Religious Studies 220.

329 Women in Music (3) Same as Music History 220.

330 Women in Music (3) Same as Music History 220.

331 Women in Music (3) Same as Music History 220.

332 Women in American Literature (3) Same as English 332.

340 Women, Politics, and the Law (3) An examination of recent changes in the laws affecting women and a study of the role of women in contemporary American politics.

350 Women in Cross-Cultural Perspective (3) An examination of the changing role of women in various cultural contexts: industrial democracies, developing nations, communist countries. A team taught course with guest lecturing and slide presentations.

375 Gender in Society (3) Same as Sociology 210.

380 The Concept of Woman (3) Same as Philosophy 380.

WILDLIFE AND FISHERIES SCIENCE (993)

341 Law Enforcement and Public Relations (3) Fundamentals and general principles of local, state and federal laws and regulations governing natural resources and their management. Principles and practices of interacting with the public.

441 Wildlife and Fisheries Techniques (3) Capturing and handling fish and wildlife; population restoration; food habits; or impounding through game management; marking techniques; fish culture systems; track and sign identification. Prerequisite: Forestry, Wildlife and Fisheries 317, 1 hour and 2 labs or field. One weekend field trip required.

442 Ecological Studies in Wildlife Science (3) Quasi-quantitative and interpretive studies in wildlife science, including habitat sampling; wildlife damage control; marking and handling fish and wildlife; population restoration; and cage trapping. Prerequisite: Forestry, Wildlife and Fisheries 317, 1 hour and 2 labs. 5p.

443 Ecology and Management of Wild Mammals (3) Biological and ecological characteristics of game mammals and endangered species. Introduction to population estimation, age and growth, biological assessment, and stocking. Prerequisite: Forestry, Wildlife and Fisheries 317 or Biology 230, and 6 hours of mathematics. 2 hours and 1 lab. 5p.

444 Ecology and Management of Wild Birds (3) Biological and ecological characteristics of game birds, endangered birds, and bird pests. Current principles and practices of wild bird management. Prerequisite: Forestry, Wildlife and Fisheries 317 or Biology 230, 2 hours and 1 lab. One weekend field trip required.

445 Ecology and Management of Wild Birds (3) Biological and ecological characteristics of game birds, endangered birds, and bird pests. Current principles and practices of wild bird management. Prerequisite: Forestry, Wildlife and Fisheries 317 or Biology 230, 2 hours and 1 lab. One weekend field trip required.

493 Independent Study in Wildlife and Fisheries Science (1-15) Special research or individual problem in wildlife and fisheries science.
117-118 Honors: Fundamentals of Zoology (4,4) For superior students in any field, open to students with a minimum ACT composite score of 27 or a minimum college GPA of 3.2, or consent of instructor. Students not achieving at least a B in the first semester must complete the sequence with Biology 120. Must be taken in sequence. 117-Cellular processes, genetics, and development. 118-Physiology, phylogeny, and ecology. 6 hours combined lecture and lab. May not receive credit for 117-118 and Biology 110-120 or Botany 110-120.

210-220 Human Biology (3,3) For non-majors; not combined lecture and lab. May not receive credit for 117-118 and Biology 110-120 or Botany 110-120.

230 Diversity of Life Forms, Uniqueness of Humans, Reproduction, Prenatal Development and Physiology. 2 hours and 2 labs.

240 Human Anatomy (3) Gross and microanatomy of the human. Credit may not be applied toward Zoology major. Introduction to biological or Zoology 230 or equivalent recommended. 2 hours and 1 lab.

301 Special Topics (1-2) Topics of current interest. Consult departmental listing for topics offered. May be repeated but maximum of 2 credit hours may be applied toward the Zoology major. 302 Zoology Colloquium (1) Weekly discussions of topics of contemporary interest. Intended for life sciences majors. Satisfactory/No Credit only. May be repeated but 1 credit hour may be applied toward the Zoology major.

310 Bioethics (3) Relationships between biological discoveries and human values. Open discussions of selected dilemmas arising from new knowledge about evolution of behavior, genetics, reproduction, medicine, and environment.


331 Animal Development and Embryology Laboratory (2) Coreq: 330. 2 labs.

335 Comparative Vertebrate Biology (4) Origins, phylogeny, diversity and functional anatomy of vertebrates. Laboratory involves dissection of shark, cat, and selected other vertebrates. 2 hours and 2 labs.

360 Comparative Invertebrate Biology (4) Origins, phylogeny, and functional anatomy of invertebrates with emphasis on diversity of life forms and adaptations to specific local environments. 2 hours and 2 labs.

370 Ethnology and Sociobiology (3) (Same as Psychology 370).

380 General Entomology (3) Introduction to insects: basic structure, physiology, behavior, evolution, and classification of insect orders. 2 hours and 1 lab.

400 Undergraduate Research (2) Research projects under supervision of faculty. Prereq: Junior or senior standing and prior consent of instructor. May be repeated. Maximum of 4 hours may be applied toward the Zoology major.

420 Practicum in Zoology (2) Participation in individually designed practical applications of zoology in community, government, and industry. Prereq: 210, 220, and prior consent of instructor.

430 General Genetics Laboratory (2) Experiments designed to illustrate basic principles of inheritance; primary organism used is Drosophila. Prereq: Biology 210, 220, 230, and prior consent of instructor.

439 Immunology Laboratory (1) (Same as Microbiology 439).

440 Comparative Animal Physiology (3) Comparison of diverse physiological mechanisms aiding in adaptation to particular habitats and lifestyles. Prereq: Biology 210, 230, 2 years of chemistry; recommended: 380.

449 Laboratory in Physiology (2) Prereq: Coreq: 440 or 445.

450 Comparative Animal Behavior (3) Principles and methods of ethology with emphasis on ecological, developmental, physiological, and evolutionary aspects. (Same as Psychology 450).

459 Comparative Animal Behavior Laboratory (3) Introduction to observational and experimental research in ethology. Coreq: 450. (Same as Psychology 459).

460 Evolution (3) Modern concepts of animal evolution. Prereq: Biology 220.

465 Human Genetics (3) Genetic and molecular principles and problems of human inheritance. Prereq: Biology 220.

470 Aquatic Ecology (3) Introduction to the physio-chemical nature of inland waters with description of biotic communities and their interrelationships. Prereq: Chemistry 120-130 and Biology 230. 2 hours and 1 lab.

472 Arachnology (3) Biology of spiders, ticks, scorpions and relatives. Prereq: 369 or 380. 2 hours and 1 lab.

473 Herpetology (3) Biology of amphibians and reptiles with emphasis on emphasis on ecology and adaptive radiation. Prereq: Biology 230. 2 hours and 1 lab.

474 Ichthyology (3) Evolution, classification, collection and identification, distribution and biology of fishes with emphasis on freshwater fauna of Eastern North America. Prereq: Biology 230 or consent of instructor. 2 hours and 1 lab.

475 Ornithology (3) Behavior, ecology, populations, evolution, and identification of birds. Prereq: Biology 230. 2 hours and 1 lab.

476 Mammalogy (3) Evolution, classification, biogeo-ecology, behavior and functional anatomy of mammals. Prereq: Biology 230 or equivalent. 2 hours and 1 lab.

480 Physiology of Exercise (3) (Same as Physical Education 480).

490 Comparative Endocrinology (3) Comparative analysis of physiology and morphology of endocrine glands in vertebrates and invertebrates, their role and interaction in maintenance of the organism and species. Prereq: 440 or equivalent.
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