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 adviser, head of major department, College Advising Center, or dean of college/school
Fees and Tuition — Office of the Treasurer

EEO/TITLE IX/SECTION 504 STATEMENT
The University of Tennessee, Knoxville does not discriminate on the basis of race, sex, color, religion, national origin, age, handicap, or veteran status in provision of educational opportunities or employment opportunities and benefits. UTK does not discriminate on the basis of sex or handicap in the education programs and activities which it operates, pursuant to the requirements of Title IX of the Education Amendments of 1972, Pub. L. 92-318, and Section 504 of the Rehabilitation Act of 1973, Pub. L. 93-112, respectively. This policy extends to both employment by and admission to the University.

Inquires concerning Title IX and Section 504 should be directed to the Office of the Vice Chancellor for Planning and Administration, 525 Andy Holt Tower, 974-4391. Charges of violation of the above policy should also be directed to the Office of the Vice Chancellor for Planning and Administration.
## ACADEMIC CALENDAR FOR 1982-83

### Summer Quarter 1982
- **June 17**: Orientation (Transfer and Freshman)
- **June 18**: Registration, First or All Terms
- **June 21**: Classes Begin
- **July 5**: Independence Day (No Classes)
- **July 8**: Drop Deadline, First Term
- **July 23**: Classes End, First Term
- **July 21-23**: Registration, Second Term
- **July 26**: Classes Begin, Second Term
- **July 26**: Drop Deadline, Full Term
- **August 12**: Drop Deadline, Second Term
- **August 25**: Classes End
- **August 28**: Commencement

### Fall Quarter 1982
- **September 20**: Orientation (Transfer)
- **September 21**: Orientation (Freshman)
- **September 20-21**: Upperclass and Graduate Registration
- **September 21-22**: Freshman and Transfer Registration
- **September 23**: Classes Begin
- **October 27**: Drop Deadline
- **October 29**: East Tenn. Educ. Assoc. (No Classes)
- **November 6**: Homecoming (No Classes)
- **November 25-27**: Thanksgiving (No Classes)
- **December 3-7**: Final Evaluation Period (Alternative Period)
- **December 7**: Classes End
- **December 10**: Commencement

### Winter Quarter 1983
- **January 3**: Orientation
- **January 3-4**: Registration
- **January 5**: Classes Begin
- **February 8**: Drop Deadline
- **March 10-15**: Final Evaluation Period (Alternative Period)
- **March 15**: Classes End
- **March 18**: Commencement

### Spring Quarter 1983
- **March 24**: Orientation
- **March 24-25**: Registration
- **March 26**: Classes Begin
- **April 1-2**: Easter
- **April 29**: Drop Deadline
- **June 2-6**: Final Evaluation Period (Alternative Period)
- **June 6**: Classes End
- **June 9**: Commencement

### Summer Quarter 1983
- **June 13**: Orientation-Advising: Freshman & Transfer
- **June 14**: Registration, First or All Terms
- **June 15**: Classes Begin
- **July 4**: Independence Day (No Classes)
- **July 5**: Drop Deadline, First Term
- **July 19**: Classes End, First Term
July 19  Drop Deadline, Full Term
July 15-19 Registration, Second Term
July 20  Classes Begin, Second Term
August 8  Drop Deadline, Second Term
August 22  Classes End
August 24  Commencement

**Fall Quarter 1983**
- September 19  Orientation (Transfer)
- September 20  Orientation (Freshman)
- September 19-20  Upperclass and Graduate Registration
- September 20-21  Freshman and Transfer Registration
- September 22  Classes Begin
- October 26  Drop Deadline
- October 28  East Tenn. Educ. Assoc. (No Classes)
- November 12  Homecoming (No Classes)
- November 24-26  Thanksgiving (No Classes)
- December 2-6  Final Evaluation Period (Alternative Period)
- December 6  Classes End
- December 9  Commencement

**Winter Quarter 1984**
- January 3  Orientation
- January 3-4  Registration
- January 5  Classes Begin
- February 8  Drop Deadline
- March 10-14  Final Evaluation Period (Alternative Period)
- March 14  Classes End
- March 16  Commencement

**Spring Quarter 1984**
- March 22  Orientation
- March 22-23  Registration
- March 26  Classes Begin
- April 20-21  Easter
- April 30  Drop Deadline
- June 1-5  Final Evaluation Period (Alternative Period)
- June 5  Classes End
- June 8  Commencement
THE UNIVERSITY OF TENNESSEE, KNOXVILLE

Administrative Officers
Chancellor, Jack E. Reese, A.B., A.M., PH.D.
   Assistant to the Chancellor, Donald R. Eastman III, A.B., Ph.D.
Vice Chancellor for Academic Affairs, Walter R. Herndon, B.S., M.S., Ph.D.
   Associate Vice Chancellor for Academic Affairs, Hardy Liston, Jr., B.S., M.E.A.
   Associate Vice Chancellor for Academic Affairs, Ralph V. Norman, Jr., B.S., B.D., M.A., Ph.D.
Vice Chancellor for Business and Finance, Homer S. Fisher, B.S., M.B.A.
Vice Chancellor for Graduate Studies and Research, L. Evans Roth, A.B., M.S., Ph.D.
Vice Chancellor for Planning and Administration, Luke Ebersole, A.B., A.M., Ph.D.
   Associate Vice Chancellor for Planning and Administration, Betsey B. Creekmore, A.B., M.A., M.A.L.S.
Vice Chancellor for Student Affairs, Howard F. Aldmon, B.S., A.M., Ed.D.

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Development, Executive Director, Jack E. Williams, B.S.
Finance, Director, Harold B. Whitehead, B.S., CPA
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Physical Plant, Director, John C. Parker, B.S.
Public Relations, Director, David H. Lauver, B.S.
Research, Dean, Maria Peterson, B.A., M.A., Ph.D.
Student Affairs:
   Admissions and Records, Dean, John J. McDow B.S., M.S., Ph.D.
   Career Planning and Placement Service, Director, Howard H. Lumsden, B.S.
   International Student and Cultural Affairs, Director, Dixon C. Johnson, B.S., M.A., Ph.D.
   Intercollegiate Athletics for Women, Director, Gloria S. Ray, B.S., M.S.
   Student Developmental Services, Dean, William H. Byas, B.S., M.S., Ed.D.
   Student Activities, Dean, Philip A. Scheurer, B.A., M.S.
   Student Conduct and Orientation, 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.

Colleges and Schools
AT KNOXVILLE
Graduate School
   Vice Chancellor for Graduate Studies and Research, L. Evans Roth, A.B., M.S., Ph.D.
Institute of Agriculture
   Dean, College of Agriculture, O. Glen Hall, B.S., M.S., Ph.D.

Dean, College of Veterinary Medicine Hyram Kitchen, D.V.M., Ph.D.
School of Architecture
   Dean, Roy F. Knight, A.B., M.Arch.
College of Business Administration
   Dean, C. Warren Neel, B.S., M.B.A., Ph.D.
College of Communications
   Dean, Donald G. Hileman, B.S., M.S., Ph.D.
Division of Continuing Education
   Dean, Joseph P. Goddard, B.S., M.S., Ed.D.
College of Education
   Dean, William H. Coffield, B.S., M.S., Ed.D.
School of Health, Physical Education, and Recreation
   Director, Madge M. Phillips, B.S., M.S., Ph.D.
College of Engineering
   Dean and Director of Engineering Experiment Station, Robert E. C. Weaver, B.S. in CHE, M.S., M.A., Ph.D.
College of Home Economics
   Dean, Nancy H. Belck, B.S., M.S., Ph.D.
College of Law
   Dean, Kenneth L. Penegar, A.B., J.D., LL.M.
College of Liberal Arts
   Dean, Robert G. Landen, B.A., M.A., Ph.D.
School of Library and Information Science
   Director, Ann E. Prentice, A.B., M.L.S., D.I.S.
College of Nursing
   Dean, Sylvia E. Hart, B.S.N., M.S.N., Ph.D.
School of Planning
   Director, David A. Johnson, B.A., M.C.P., Ph.D.
School of Social Work
   Dean, Ben P. Granger, B.A., M.P.A., M.S.S.W., Ph.D.
Independent Departments
   Air Force Reserve Officers' Training Corps Professor of Air Science, William J. Haynes, B.S., M.B.A., Colonel, USAF
   Army Reserve Officers' Training Corps Professor of Military Science, Daniel H. Bauer, B.A., M.A., Colonel, USA

AT OAK RIDGE
Oak Ridge Graduate School of Biomedical Sciences
   Director, W. E. Barnett, B.S., M.S., Ph.D.

AT TULLAHOMA
Space Institute
   Interim Dean, B. H. Goethert, B.S., M.S., Ph.D.

Other Educational and Public Service Units
Division of International Education
   Director, Dixon C. Johnson, B.S., M.A., Ph.D.
Libraries
   Director, Donald R. Hunt, B.A., M.A., M.A.L.S.
**THE UNIVERSITY OF TENNESSEE BOARD OF TRUSTEES**

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

*Ex-Officio*

<table>
<thead>
<tr>
<th>From Congressional Districts</th>
<th>District</th>
<th>Service Began</th>
<th>Term Expires</th>
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<tr>
<td>Buford Goldstein, Elizabethton</td>
<td>First</td>
<td>1975</td>
<td>June 1, 1984</td>
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<tr>
<td>A. B. Long, Jr., Knoxville</td>
<td>Second</td>
<td>1977</td>
<td>June 1, 1986</td>
</tr>
<tr>
<td>Scott L. Probasco, Jr., Lookout Mountain</td>
<td>Third</td>
<td>1979</td>
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<tr>
<td>William M. Johnson, Sparta</td>
<td>Fourth</td>
<td>1975</td>
<td>June 1, 1987</td>
</tr>
<tr>
<td>Marcia Austin Echols, Nashville</td>
<td>Fifth</td>
<td>1979</td>
<td>June 1, 1982</td>
</tr>
<tr>
<td>Ben S. Kimbrough, Clarksville</td>
<td>Sixth</td>
<td>1980</td>
<td>June 1, 1990</td>
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<tr>
<td>Turner O. Lashlee, Humboldt</td>
<td>Seventh</td>
<td>1979</td>
<td>June 1, 1988</td>
</tr>
<tr>
<td>Tom Elam, Union City</td>
<td>Eighth</td>
<td>1956</td>
<td>June 1, 1986</td>
</tr>
<tr>
<td>R. Lee Winchester, Memphis</td>
<td>Ninth</td>
<td>1975</td>
<td>June 1, 1984</td>
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| From Anderson, Bedford, Coffee, Franklin, Lincoln, Moore, and Warren Counties | | |
| Charlotte Parish | 1979 | June 1, 1988 |

| From Davidson County | | |
| Elaine McReynolds | 1975 | June 1, 1984 |

| From Hamilton County | | |
| Paul J. Kinser | 1969 | June 1, 1987 |

| From Knox County | | |
| Ann Baker Furrow | 1971 | June 1, 1989 |
| 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 T. Harrison | 1981 | June 1, 1980 |

| Student Member | | |
| Pamela Anthony Moon | 1981 | July 1, 1982 |

**Officers of the Board**  
Lamar Alexander, Chairman  
Ann Furrow, Vice Chairman  
Edward J. Boling, President  
Brodie Baynes, Treasurer  
Beauchamp E. Brogan, Secretary  
Linda Logan, Assistant Secretary
THE UNIVERSITY OF TENNESSEE
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Executive Vice President and Vice President for Development,
Joseph E. Johnson, A.B., A.M., ED.D.
Vice President for Academic Affairs, John W. Prados, B.S.,
M.S., PH.D.
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PH.D.
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CPA
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M.B.A.
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Executive Assistant to the President, Andrew J. Kozar, B.S.,
A.M., PH.D.
Treasurer, Brodie Baynes, B.S., CPA

Emeriti Administrators:
Emeritus President, Andrew David Holt, A.B., M.S., LL.D.,
LITT.D., SC.D., PH.D.
Emeritus Vice President for Business and Finance, W. Harold
Read, B.S., M.B.A., CPA
Emeritus Vice President for Academic Affairs, Kenneth L.
Knickerbocker, A.B., A.M., PH.D.
The University

The University of Tennessee is a multi-campus, multi-purpose system of higher education encompassing all Tennessee. As Tennessee's State University and Federal Land-Grant Institution, it has been called "the capstone of the state's educational system." The institution is owned by the people of Tennessee. In addition to state funds and student fees, the University also receives support from private gifts, research grants and contracts, and federal appropriations. The central administrative staff consists of the president and six vice presidents who have the responsibility of administering the affairs of the statewide educational organization. Each primary campus is under the direct supervision of a chancellor.

In carrying out its unique responsibilities, The University of Tennessee has a statewide mission beyond the scope of any other institution of higher learning in Tennessee. The University seeks to develop human and material resources of the state through three broad programs: instruction, research, and extension and public service.

Instruction

As the most comprehensive institution in the state's public education system, the University has the responsibility of providing the people of Tennessee with the educational opportunities they need to become intellectually prepared for responsible and successful citizenship. Students may specialize in a great number of professional and occupational fields, thus helping to fill the state's needs for trained personnel in medicine, business, law, agriculture, industry, and other vocations essential to the welfare and progress of the citizens of Tennessee. In addition to fulfilling this traditional role, the University also offers a wide range of quality programs in continuing education which help contribute to the personal and professional growth of students of all ages.

Programs of Study

In student enrollments and the scope of its academic programs, The University of Tennessee ranks among the larger institutions of higher education in the United States. In the fall of 1981, a total of 43,740 students enrolled in the campuses of The University of Tennessee system. This total included 28,601 enrolled at Knoxville and centers; 2,118 at the Center for The Health Sciences (Memphis); 6,538 at Martin; and 7,483 at Chattanooga.

To serve the academic needs of all of those students, the University system offers 178 degree programs at the bachelor's level, 151 at the master's level, and 62 at the doctoral level. The degree programs offered by colleges and schools at the UT Knoxville campus are described in this catalog. Degree programs offered by the Center for the Health Sciences (at Memphis) and at Martin and Chattanooga are described in special catalogs issued from those campuses.

The various colleges, departments, and administrative offices of the University hold membership in more than 60 regional and national education associations. The University as a whole is fully accredited by the Southern Association of Colleges and Schools. Individual colleges and departments are accredited by appropriate professional accrediting agencies.

Colleges and Schools

The University's colleges and schools offer programs at the primary campuses at Knoxville, Memphis, Martin and Chattanooga. The Knoxville campus also offers programs at Oak Ridge, Tullahoma, Nashville, Chattanooga, Memphis, and Kingsport. These colleges and schools and other academic units are as follows:

UT KNOXVILLE
Graduate School (offering programs leading to the master's or the doctor's degree)
College of Agriculture
College of Architecture
College of Business Administration
College of Communications
Division of Continuing Education
College of Education
School of Health, Physical Education, and Recreation
College of Engineering
College of Home Economics
College of Law
College of Liberal Arts

Graduate School of Library and Information Science
College of Nursing
Graduate School of Planning
Graduate School of Social Work
College of Veterinary Medicine

At Oak Ridge
Oak Ridge Graduate School of Biomedical Sciences
Oak Ridge Evening School
Oak Ridge Resident Graduate Program

At Tullahoma
Space Institute

At Kingsport
Graduate Center

At Chattanooga
Graduate Engineering Center

UT CENTER FOR THE HEALTH SCIENCES

At Memphis
College of Basic Medical Sciences
College of Community and Allied Health Professions
College of Dentistry
College of Medicine
College of Nursing
College of Pharmacy
Graduate School—Medical Sciences

Other academic units associated with the Center for the Health Sciences

At Knoxville

UT Memorial Research Center and Hospital Clinical Education Center

UT AT MARTIN
School of Agriculture
School of Business Administration
School of Education
Department of Engineering and Engineering-Technology
School of Home Economics
School of Liberal Arts
Department of Military Science
Department of Nursing
Division of Extended Services

UT AT CHATTANOOGA
College of Arts and Sciences
College of Professional Studies
Engineering Division
Continuing Education and Public Service

Faculty

A highly competent faculty is the most essential quality of a strong institution of higher
The University of Tennessee, Knoxville

Main Campus

A — Ayres Hall (Liberal Arts)
AA — Art & Arch. Bldg.
ACC — Aconda Court (Personnel, Placement)
ACH — Arts & Crafts House (Laurel House)
AD — Holt Ave. Apartments
AH — Tyson Alumni House
AHT — Andy Holt Tower (Administration)
AP — Austin Peay Memorial Bldg. (Psych.)
APG — Administration Parking Garage
AOC — Student Aquatic Center
BCC — Black Cultural Center
BH — Berry Hall
BT — Tom Black Track and Recreation Area
BU — Buehler Hall
C — Claxton Education Building
CAH — Carrick Hall (Residence)
CBT — Clarence Brown Proscenium Theatre

Agricultural Campus

AE — Agricultural Engineering Bldgs.
AEL — Agricultural Engineering Lab
ASB — C.E. Brehm Animal Sciences Bldg.
CC — Corn-Cotton Bldg.
DP — Dairy Products Bldg.
FL — Fiber Research Laboratory
FOR — Tennessee Division of Forestry
FT — J.H. McLeod Food Technology Bldg.
GH — Greenhouses
MC — McCord Hall

CLH — Clement Hall (Residence)
CN — College of Nursing
CO — Conferences
CM — Communications and University Extension Bldg.
CR — Craft House
CT — Carousel Theatre
CU — Credit Union
DAB — Dabney Hall
DES — Design House
DO — Dougherty Engineering Bldg.
DUH — Dunford Hall (Residence)
ESH — East Stadium Hall
EST — Estabrook Hall
EMP — UT Employment Office
FH — Fraternity House
FR — Ferris Hall

MH — Morgan Hall
PB — Plot Barn
PO — Poultry Diagnostic Laboratory
PPL — Ag. Campus Power Plant
PR — Printing and Supply
PS — Ellington Hall—Plant Sciences
PSX — Plant Sciences Annex
SL — Spinning Lab
V — College of Veterinary Medicine (Clyde York Bldg.)

FLC — Family Life Center
G — Glocker Business Administration Bldg.
G&G — Geology and Geography Bldg.
GIB — Gibbs Hall (Residence)
GRH — Greve Hall (Residence)
GSP — Graduate School of Planning
GYM — Alumni Memorial Auditorium-Gymnasium
H — Hesler Biology Bldg.
H&S — Hearing & Speech Center
HE — Harris Home Economics Bldg.
HEH — Hess Hall (Residence)
HH — Henson Hall
HO — Hopecote
HPR — Health, Physical Education & Recreation Bldg.
HSS — Humanities and Social Sciences Bldg.
HUH — Humes Hall (Residence)

10 The University
education. The University of Tennessee has a distinguished group of faculty members, nationally recognized for scholastic and professional achievements. The faculty elects a representative body called the Faculty Senate, which transacts most of its business. The Senate holds those powers and duties delegated to it by the Trustees and by the faculty of the University. The educational policies of the institution are established by the faculty. It determines the entrance requirements for students, prescribes and defines courses of study, establishes the requirements of degrees, determines rules for the academic guidance of students, and recommends to the administration the candidates for degrees who have completed prescribed courses of study.

**Extracurricular Opportunities**

In addition to a broad scope of specialized studies, the University offers numerous extracurricular opportunities that contribute to educational development. Students may take part in religious activities, social and cultural programs, and recreational and avocational activities. More than 200 different extracurricular organizations and activities are maintained on the University's Knoxville campus.

**Research**

As Tennessee's most broadly based institution of higher education, the University has the skilled personnel, the laboratories, and libraries needed for its role as the state's official research center. University research is conducted to find solutions to problems confronting the people of Tennessee, and to discover new knowledge leading to greater development of human and material resources. Funding of sponsored research at the University totaled more than $22.3 million in fiscal year 1979. This growth in the dollar value of grants and contracts parallels growth in the quality and diversity of research programs of importance to the Volunteer State and the entire nation. Increased crop yields, improved industrial processes, more effective medical services, and greater citizen understanding of our environment and our society are but a few of the benefits resulting from the practical applications of University research.

**Research Organizations**

The University's research is strengthened by a number of special organizations, within the colleges and schools, which sponsor and coordinate studies and experimentation in broad areas of investigation. These are:

- Agricultural Experiment Station (with research units at Knoxville, Oak Ridge, and Martin; six branch stations at Crossville, Greeneville, Jackson, Lewisburg, Springfield, and Spring Hill; and five field stations at Grand Junction, Wartburg, Chattanooga, Tullahoma, and Milan).
- Bureau of Educational Research and Service Engineering Experiment Station
- Center for Business and Economic Research
- Bureau of Public Administration
- Water Resources Research Center

**Physical Facilities of the University**

The University of Tennessee operates a system-wide focal point for the University's programs in the fields of industry, government, and urban development. Units of the institute include the Municipal Technical Advisory Service, the Center for Industrial Services, the County Technical Assistance Service and the Technical Assistance Center. In addition, the Institute jointly supports with UT Knoxville two specialized research and service units, the Energy, Environment and Resources Center and the Transportation Center.

**Extension and Public Service**

The University teaching programs and research findings extend beyond the limits of campuses to reach people in every community and county in Tennessee. Extension and public service programs are part of the work of every University department, and the institution has several large divisions created specifically to promote and coordinate statewide activities to meet the need that can be served by its educational resources. These special divisions are:

- Agricultural Extension Service, specializing in agriculture and home economics, sponsored jointly by the U.S. Department of Agriculture. Agents to assist farmers and homemakers are stationed in every Tennessee county. District offices are maintained at Chattanooga, Cockeville, Jackson, Knoxville, and Nashville.

Division of Continuing Education, Knoxville extends academic programs and services from UT to persons throughout the state through its Evening School, Off-Campus Credit Programs, Workshops and Non-Credit Programs, and Department of Conferences. The division cooperates with all other campuses of the University in statewide extension activities.

Institute for Public Service, which provides a system-wide focal point for the University's programs in the fields of industry, government, and urban development. Units of the institute include the Municipal Technical Advisory Service, the Grants and Contracts in Human Services, the Center for Industrial Services, the County Technical Assistance Service and the Technical Assistance Center. In addition, the Institute supports with UT Knoxville two specialized research and service units, the Energy, Environment and Resources Center and the Transportation Center.

**The Campus of the University of Tennessee**

Is the State of Tennessee
Research Center and Hospital at $21,258,371. Facilities of the Center for the Health Sciences at Memphis are valued at approximately $82,296,668; the Martin campus, $40,960,774; and Chattanooga campus $40,998,853. Facilities at the Tullahoma Space Institute are valued at $3,866,023. Experimental farms, livestock, and other facilities throughout the state have a value of $12,577,460.

Buildings on the main campus and agriculture campus at Knoxville are shown on the map printed in this catalog. A map of the state showing locations of the University's academic campuses and other physical facilities is located on page 12. Maps or aerial photographs showing buildings on the Center for the Health Sciences campus at Memphis and the Martin and Chattanooga campuses are printed in the catalogs issued by those units of the University.

**Historical Background**

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

In 1794, two years before statehood was achieved, the Legislature of the Federal Territory which later became Tennessee granted a charter to Blount College, the earliest predecessor of the University at Knoxville. Blount College was named in honor of William Blount, Governor of the Territory, and was located near the center of Knoxville's present business district.

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

Blount College for a few years admitted women as students, thus becoming the first coeducational college in the United States. It is possible that this, along with other reasons, helped to keep it in business until its doors were closed in 1839.

In 1807 the institution began to widen the scope of its service area. During that year the State Legislature changed the institution's name to "East Tennessee College" and made it the recipient of one-half of the proceeds of the sale of land set aside by Congress for the support of colleges.

In 1826 the present site at Knoxville, the 40-acre tract known as "The Hill," was acquired by East Tennessee College.

In 1840 the State Legislature changed the institution's name to "East Tennessee University." The Civil War forced the institution to close for a period; its buildings were used as a hospital for Confederate troops and were later occupied by Union troops.

East Tennessee University reopened after the war, and from that time to the present the institution has enjoyed its most significant advances. In 1869 East Tennessee University was selected by the State Legislature as Tennessee's Land-Grant Institution, under which the Morrill Act passed by Congress in 1862. This designation enabled the University to broaden its offerings by establishing an Agricultural and Mechanical College. The new program was supported by an endowment resulting from the sale of land warrants received by Tennessee from the federal government.

Ten years later, in 1879, East Tennessee University was chosen by the State Legislature as Tennessee's State University, and its name was changed to "The University of Tennessee." By this act the University became pledged to the service and interest of the entire state. The state pledged to the University its own name and reputation, promising the institution a vital role in the progress of the state.

The University today is a statewide institution in terms of its physical locations as well as its services. The Center for the Health Sciences, founded in Nashville and taken over by the University in 1879, was moved to Memphis in 1911. The Martin campus was established in 1900 as a private institution, Hall-Moody Junior College, and it became a part of The University of Tennessee in 1927. The School of Social Work at Nashville became part of the University in 1951. A fourth primary campus was established at Chattanooga in 1898 with the merger of the University with the University of Chattanooga. The University's Nashville Center, established in 1947, was made the fifth primary campus in 1971. UTN's academic programs were merged with those of Tennessee State University in 1979.

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

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

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

**Academic Policies and Costs**

Any and all course offerings, academic requirements, and other information contained in this publication are subject to change and/or revocation without notice. See page 2 for sources of current information.
standards apply to all, individual variations in academic background are recognized to the maximum extent possible in admissions procedures. UT Knoxville is committed to assist each student in the identification and achievement of realistic academic goals.

ADMISSION TO THE UNIVERSITY AND ASSOCIATION WITH A COLLEGE OR SCHOOL

There are two distinct steps in the acceptance of a student by the University. These steps can be separated in time or may occur simultaneously. The initial step is an admission to The University of Tennessee, Knoxville. The admission action occurs only once, unless a student leaves the University for some reason and then returns after a time lapse. The second step involves dual selection: 1. selection by the student of the school or college offering the desired educational program, and 2. selection by a college or school of those students who have the necessary academic preparation for the programs in the college and who can be adequately accommodated by the available staff, space, and facilities.

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

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

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

Admission to UTK entities one to take many courses and to pass in programs which do not lead to an academic degree. However, completion of a baccalaureate degree requires the selection of, and acceptance by, one of the colleges in the University system which grants undergraduate degrees. These units and the various degrees available are summarized subsequently in Table IV.

Admission as a University student does not guarantee acceptance by any particular school or college, since each degree-granting unit defines its own standards and prerequisites as presented subsequently. A student must associate with a particular school in order to receive a degree, since there is no general university degree.

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

Sources of Information for Prospective and New UTK Students

Tables I and II which follow list the most commonly-sought sources of information about admission and related matters at the University of Tennessee, Knoxville.

Requirements for Admission as a UTU Undergraduate Student

Anyone interested in attending UT 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 a file is complete, an admissions decision is made by personnel in the Admissions Office, and the applicant is notified of the decision.

The contents of a complete admission file for each of the various admission categories is described below and in Table III. When requesting admission to the Admissions Office, an individual should be sure to state which category of admission is being sought.

Freshman Applicants

For admission purposes, a student is classified as an entering freshman if:

1. there has been no previous college-level credit earned or
2. the total of attempted college-level credit work at an accredited institution has been less than 12 quarter hours.

In addition to the application form, a freshman applicant should:

1. Have a high school transcript sent to the Admissions Office by all high schools attended. At least three units of English must have been completed. A supplemental report is commonly sent by a high school when the initial transcript is submitted to UT prior to graduation. If any courses have been taken for college credit (but the total credit hours of the courses attempted is 11 or less), the institution granting the credit must be contacted by the student and asked to send a transcript to the UTK Admissions Office as a part of the admission file. Students who have achieved a high school diploma through the General Education Development Test must have the GED scores sent.

2. Have a college score report of the American College Testing Program (ACT) sent by that organization to the Admissions Office. The score report is a necessary part of the application. Although Scholastic Aptitude Test (SAT) scores may be sent, they are not required and cannot substitute for the ACT scores.

The ACT tests are administered five times a year: late October, December, February, April, and June. Information concerning the ACT and application forms may be obtained from high school guidance counselors or directly from: American College Testing Programs, P. O. Box 168, Iowa City, Iowa 52240. The test can be taken in either the junior or senior year of high school.

Freshman applicants having a relatively low ACT composite score and/or high school grade point average may be considered for admission by a University Admission Committee. Extremely low probability of academic success at UT, based on available evidence, may result in denial of admission. Applicants will be promptly notified of the admission decision. The application deadlines stated elsewhere in this catalog should be closely observed.

Advanced Placement Examinations

Freshmen admitted to UT may receive credit on the basis of performance on one or more of the Advanced Placement Examinations offered each May by the College Entrance Examination Board in 15 subject areas. The tests are usually taken by junior or senior high school students preparing to enter college.

Because the material covered by the tests is comparable to introductory courses at the college level, many colleges and universities have granted advanced placement or actual course credit with the "Satisfactory" notation. Scores of 5, 4, and 3 usually produce some sort of credit at the college level.

Departments at UTK which grant advanced placement and/or grades for satisfactory test scores include Arts, Biology, Chemistry, English, History, French, Spanish, German, Latin, Mathematics, Music, and Physics. The CEEB sends score and test books on request to the Director of Admissions at UTK sometime in June or July. Each participating department decides how to grant credit. Information can be obtained from the Admissions Office or from the Liberal Arts Advising Center.

Transfer Applicants

A student who has attempted 12 quarter hours or more of college credit coursework at one or more accredited institutions of higher learning must apply for admission as a transfer student. A complete transcript of all work at each institution attended should be sent by those institutions to the University 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. ACT scores and high school transcripts are not normally required. When these are needed, notification will be sent by the Admissions Office following receipt of the admission application form. Upon admission to UTK, a transfer student may be classified as a freshman, sophomore, junior, or senior, according to the number of quarter hours passed (see page 32).

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

In order to be admitted to UTK, a transfer applicant must have a transfer grade point average of 2.00 or better (on a 4-point scale).

International Student Applicants

All foreign nationals on a non-immigrant visa are classified as international students, whether
<table>
<thead>
<tr>
<th>Area of Information or Question</th>
<th>Contact</th>
<th>Telephone</th>
</tr>
</thead>
<tbody>
<tr>
<td>University admission requirements</td>
<td>Admissions Office</td>
<td>(615) 974-2184</td>
</tr>
<tr>
<td>Application forms</td>
<td></td>
<td></td>
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<tr>
<td>Transfer credit evaluation</td>
<td></td>
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<tr>
<td>Residency Classification</td>
<td></td>
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<tr>
<td>Fee information</td>
<td></td>
<td></td>
</tr>
<tr>
<td>International student requirements, services</td>
<td>Admissions Office</td>
<td>(615) 974-3177</td>
</tr>
<tr>
<td></td>
<td>Office of International Students Affairs</td>
<td></td>
</tr>
<tr>
<td></td>
<td>201 Alumni Hall</td>
<td></td>
</tr>
<tr>
<td>College association requirements, courses, programs</td>
<td>Refer to Table II</td>
<td></td>
</tr>
<tr>
<td>Veteran's Affairs</td>
<td>Veteran's Benefits</td>
<td>(615) 974-2103</td>
</tr>
<tr>
<td></td>
<td>209 Student Services Building</td>
<td></td>
</tr>
<tr>
<td>Transcript of previous work at UTK</td>
<td>Registrar—Transcripts</td>
<td>(615) 974-2101</td>
</tr>
<tr>
<td>Financial aid; loans; work-study; student employment; scholarships</td>
<td>Financial Aid Office</td>
<td>(615) 974-3131</td>
</tr>
<tr>
<td></td>
<td>115 Student Services Building</td>
<td></td>
</tr>
<tr>
<td>Readmission of former UTK students (absent for more than one quarter)</td>
<td>Readmissions Office</td>
<td>(615) 974-4379</td>
</tr>
<tr>
<td></td>
<td>212 Student Services Building</td>
<td></td>
</tr>
<tr>
<td>Handicapped students' facilities, programs, services</td>
<td>Handicapped Student Services</td>
<td>(615) 974-6087</td>
</tr>
<tr>
<td></td>
<td>900 Volunteer Boulevard</td>
<td></td>
</tr>
<tr>
<td>Single student on-campus housing</td>
<td>Single Student Residence Halls</td>
<td>(615) 974-3411</td>
</tr>
<tr>
<td></td>
<td>405 Student Services Building</td>
<td></td>
</tr>
<tr>
<td>Married student housing</td>
<td>Married Students Housing</td>
<td>(615) 974-3431</td>
</tr>
<tr>
<td></td>
<td>107 South Stadium Hall</td>
<td></td>
</tr>
<tr>
<td>Off-campus housing opportunities in non-university property</td>
<td>Off-Campus Housing</td>
<td>(615) 974-5276</td>
</tr>
<tr>
<td></td>
<td>336 University Center</td>
<td></td>
</tr>
<tr>
<td>General campus information; other telephone numbers</td>
<td>Campus Information Operator</td>
<td>(615) 974-2591</td>
</tr>
<tr>
<td>Evening school schedules, registration</td>
<td>University Evening School</td>
<td>(615) 974-5361</td>
</tr>
<tr>
<td></td>
<td>451 Communications and University Extension Building</td>
<td></td>
</tr>
<tr>
<td>Correspondence courses, CLEP tests</td>
<td>Center for Extended Learning</td>
<td>(615) 974-5135</td>
</tr>
<tr>
<td></td>
<td>447 Communications and University Extension Building</td>
<td></td>
</tr>
<tr>
<td>Orientation sessions for new students; tutors; general information</td>
<td>Orientation Office</td>
<td>(615) 974-2435</td>
</tr>
<tr>
<td></td>
<td>412 Student Services Building</td>
<td></td>
</tr>
<tr>
<td>ACT, GED testing; vocational and psychological counseling</td>
<td>Student Counseling Services Center</td>
<td>(615) 974-2196</td>
</tr>
<tr>
<td></td>
<td>900 Volunteer Boulevard</td>
<td></td>
</tr>
<tr>
<td>Graduate programs, courses at UTK</td>
<td>The Graduate School</td>
<td>(615) 974-3251</td>
</tr>
<tr>
<td></td>
<td>218 Student Services Building</td>
<td></td>
</tr>
<tr>
<td>Admission to units of the University of Tennessee Center for Health Sciences in Memphis (refer to Health Sciences Catalog)</td>
<td>Director of Admissions</td>
<td>(901) 528-5500</td>
</tr>
<tr>
<td></td>
<td>The U.T. Center for the Health Sciences</td>
<td></td>
</tr>
<tr>
<td></td>
<td>62 South Dunlap Street</td>
<td>Memphis, TN 38103</td>
</tr>
<tr>
<td>Admission</td>
<td>The process of being admitted to UTK as a university student with the opportunity to take classes.</td>
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<tr>
<td>--------------------------------</td>
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<td></td>
</tr>
<tr>
<td>Association</td>
<td>The process of acceptance of an admitted student into a particular academic degree program of a college or school at UTK.</td>
<td></td>
</tr>
</tbody>
</table>
| Lower division                 | 1. A course normally taken during the freshman and sophomore years. In the UTK courses numbering system, lower division courses carry 1000 and 2000 numbers (see page 31). Credit for lower division courses completed at another institution may be labeled “LD credit.”  
2. A term referring to a student’s location in the progression of coursework leading to an undergraduate degree and implying freshman or sophomore classification. |
| Upper division                 | 1. Courses normally taken during the junior and senior years (3000 and 4000 numbers at UTK). A student taking primarily junior and senior courses is said to be an upper division student. Credit for upper division courses may be labeled “UD credit” on a transfer evaluation.  
2. The state of being classified as a junior or senior. |
| Add deadline                   | The latest date in an academic quarter at UTK when a course may be added to a student’s class schedule without approval of someone other than the student (exception: when the additional hours produce an academic overload, see page 31). |
| Drop deadline                  | The latest date in an academic quarter at UTK for removing a course from a student’s official course schedule without approval of someone other than the student (see page 31). |
| Curriculum                     | The set of courses offered in a particular degree program. More generally, the courses (in total) offered in a college or university. The plural word is curricula. |
| Prerequisite                   | A requirement to be completed (or a level of skill or knowledge to be demonstrated) before enrollment in a course, a degree program, or association with a college. |
| Corequisite                    | A course to be taken or a requirement to be fulfilled at the same time as a particular course is being taken. |
| Application deadline           | The date which all documents required for the admissions file of a prospective student must be received by the UTK Admissions Office (see page 26). |
| Admissions file                | The set of documents related to a request for admission to UTK. The set contains the application form and official transcripts of previous work in high school or college and may contain standardized test scores (ACT for freshman applicants), a statement of career objectives, forms for international students, or other information required by the Admissions Office or by a particular college or school. |
| Registration                   | The process of officially gaining entrance into one or more courses. |
| Orientation                    | A meeting (or series of meetings) designed to acquaint a new student with the facilities, policies, sources of information and assistance, and academic and social atmosphere of UTK. |
| Quarter hour                   | The unit of academic credit at UTK (see page 29). |
| Semester hour                  | A unit of academic credit used in the UT Law College and at many colleges and universities. Three quarter hours is equivalent to two semester hours. |
| Academic load                  | The total quarter hours of credit for all courses taken during a specified time—quarter, mini-term, semester. |
| Full-time undergraduate student| One who is registered for 12 quarter hours or more during a quarter. |
| Quarter                        | The division of the calendar year used in academic scheduling at UTK. A quarter is roughly 3 months in duration. More specifically, courses normally last for approximately 11 weeks. |
Quality points

UTK compiles academic performance records through use of a scale assigning 4 "quality points" per quarter hour of credit for an "A" grade ranging to 1 quality point per quarter hour of credit for a "D" grade (see page 29).

Grade point

An average on the 4-point scale determined by dividing the total accumulated quality points by the corresponding total of quarter hours of credit attempted. Certain grades do not influence this computation (see page 29). High schools have a similar procedure for computing an average on the numerical grading scale (often abbreviated as HSGPA).

AP exam

An Advanced Placement Examination in a specific subject area available nationally to high school students from the College Entrance Examination Board (CEEB). Obtain information on taking the examination from a high school guidance counselor. Information on UTK course credit for these examinations is available from the Admissions Office. (See page 14.)

CLEP test

Subject area examination administered by the College Entrance Examination Board. Details and comparisons with the AP exam can be obtained from:

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

Refer to page 34 for acceptance of CLEP test scores for academic credit at UTK.

Proficiency exam

A test given to a student admitted to UTK to evaluate knowledge or skills normally acquired through completion of a particular UTK course. Refer to page 33 for details.

TOEFL test

An internationally-administered examination measuring ability to use the English language. Required of any international student applying to UTK whose native language is not English (see page 26 for exceptions). For information and to make arrangements to take the examination, contact:

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

English Proficiency Test

A test taken at UTK prior to initial registration (but after admission) by undergraduates international students to determine what English course (if any) must be taken at UTK. This local test is in addition to the minimum TOEFL test requirement (see page 26).

University honors course

A non-departmental enrichment course available (by invitation only) from the College of Liberal Arts (page 214).

Honors course or section

A version of a regular course reserved for students with superior preparation for that course. See, for example, English honors (p. 205); Chemistry honors (p. 195); Mathematics honors (p. 215); History honors (p. 212).

Evening school

An administrative unit of UTK's Division of Continuing Education designed to serve students who work during the major portion of the day (see page 102).

Major

The principal education interest of a student as represented by one of the curricula offered by the various colleges at UTK. The undergraduate degree may or may not carry the same title as the major. Every student has one or more majors but may or may not have a concentration within a major or be following an option within a major.

Minor

A secondary subject area interest (to the major) represented by a specified set of hours and/or courses. Differs from "concentration" in that a minor is not a subdivision of the major subject area.

Concentration

A collection of courses within a major which focus on a particular subject area. The term "concentration" describes the nature of the set of courses; the term "option" designates the mechanism by which a student enters into a particular concentration.

Option

A concentration of elective courses within a major which emphasizes one aspect of the major, chosen by a student according to his/her interests.

Accredited

A term applied to a school or specific program which has been recognized by some national or regional organization as meeting certain academic standards for quality and educational environment.
# TABLE III
ADMISSIONS REQUIREMENTS FOR
SPECIFIC CATEGORIES

<table>
<thead>
<tr>
<th>Admissions Category</th>
<th>Admissions Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRESHMAN In-state</td>
<td>Graduation from an approved high school; submission to UTK of transcript and ACT test results. Applicants whose ACT composite score is below 10 and whose high school GPA is below 2.00 will not be admitted. Others having relatively low scores will be reviewed for admission by a university committee.</td>
</tr>
<tr>
<td>FRESHMAN Out-of-State</td>
<td>Same as for in-state. In addition, applicants from states in the region served by the Southern Association of Colleges and Schools (AR, AL, FL, GA, KY, LA, MS, NC, SC, TX, and VA) must have a high school grade point average at least 2.25 and an ACT composite score at least 18. Applicants from other states must have high school grade point average at least 2.25 and ACT composite score at least 20.</td>
</tr>
<tr>
<td>FRESHMAN—GED Diploma</td>
<td>Applicant’s high school class must have graduated; must be at least 18 years old; and must have an average standard score of at least 50 on the high school level General Education Development Test. High School transcript(s) showing all work completed must be submitted. Out-of-state applicants must take ACT test and have a composite score of at least 20. High School GPA is not a factor in admission.</td>
</tr>
<tr>
<td>FRESHMAN—EARLY ADMISSION</td>
<td>Must have completed junior year in high school, have a high school grade point average of at least 3.50, and have an ACT composite score of 28 or above. Application is subject to review and approval by the Director of Admissions following an interview.</td>
</tr>
<tr>
<td>TRANSFER In-State</td>
<td>At least 12 quarter hours of college credit work attempted at an accredited institution of higher learning; honorable dismissal from all such institutions attended; transfer grade point average of at least 2.00.</td>
</tr>
<tr>
<td>TRANSFER Out-of-State</td>
<td>Same as for in-state transfer applicants except that those applicants desiring college or school association at the time of admission will have the admissions decision made by the College Committee on Admissions.</td>
</tr>
<tr>
<td>INTERNATIONAL</td>
<td>Refer to &quot;International Student Applicants&quot; in text.</td>
</tr>
<tr>
<td>TRANSIENT</td>
<td>Refer to &quot;Transient Student Applicants&quot; in text. One quarter limit in this category at UTK unless special permission is given by the Director of Admission.</td>
</tr>
<tr>
<td>NON-DEGREE</td>
<td>May not be a candidate for the bachelor’s degree. Must show satisfactory evidence of preparation for the courses to be taken at UTK. Applicant’s high school class must have graduated (this is not an early admissions category).</td>
</tr>
</tbody>
</table>
### MAJORS, MINORS, CONCENTRATIONS AND TRACKS

#### TABLE IV

<table>
<thead>
<tr>
<th>DEPARTMENT (UNIT)</th>
<th>MAJOR</th>
<th>CONCENTRATION/OPTION/TRACK/ETC. WITHIN THE MAJOR</th>
<th>DEGREE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Institute of Agriculture</strong>&lt;br&gt;<strong>College of Agriculture</strong>&lt;br&gt;Agriculture (Interdepartmental Unit)</td>
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<tr>
<td><strong>Agricultural Biology</strong></td>
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<tr>
<td>Agriculture Economics and Rural Sociology</td>
<td>Agricultural Business</td>
<td>Bachelor of Science in Agriculture</td>
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<tr>
<td></td>
<td>Agricultural Economics and Rural Sociology</td>
<td>Bachelor of Science in Agriculture</td>
<td></td>
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<tr>
<td>Agricultural Education (Intercollegiate program with the college of Education)</td>
<td>Agricultural Education</td>
<td>Bachelor of Science in Agriculture</td>
<td></td>
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<tr>
<td>Agricultural Engineering</td>
<td>Agricultural Engineering</td>
<td>Bachelor of Science in Agricultural Engineering</td>
<td></td>
</tr>
<tr>
<td>Agricultural Mechanization</td>
<td>a. Business and Industry Option&lt;br&gt;b. Production and Processing Option</td>
<td>Bachelor of Science in Agriculture</td>
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<tr>
<td><strong>Agricultural Extension Education</strong></td>
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<tr>
<td>Animal Science</td>
<td>Animal Science</td>
<td>Bachelor of Science in Agriculture</td>
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<tr>
<td></td>
<td>1. Animal Science Option&lt;br&gt;2. Pre-Veterinary Medicine Option&lt;br&gt;3. Animal Science Curriculum with a Pre-Veterinary Option (3-1)</td>
<td>Bachelor of Science in Agriculture</td>
<td></td>
</tr>
<tr>
<td>Food Technology and Science</td>
<td>Food Technology and Science</td>
<td>Bachelor of Science in Agriculture</td>
<td></td>
</tr>
<tr>
<td>Forestry, Wildlife, and Fisheries</td>
<td>Forestry</td>
<td>Bachelor of Science in Forestry</td>
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<tr>
<td></td>
<td>1. Forest Resource Management Option&lt;br&gt;2. Forest Recreation Option</td>
<td>Bachelor of Science in Forestry</td>
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<tr>
<td>Ornamental Horticulture and Landscape Design</td>
<td>Ornamental Horticulture and Landscape Design</td>
<td>Bachelor of Science in Agriculture</td>
<td></td>
</tr>
<tr>
<td>Plant and Soil Science</td>
<td>Plant and Soil Science</td>
<td>Bachelor of Science in Agriculture</td>
<td></td>
</tr>
<tr>
<td><strong>Institute of Agriculture</strong>&lt;br&gt;<strong>College of Veterinary Medicine</strong>&lt;br&gt;Animal Science—Veterinary Medicine&lt;br&gt;Environmental Practice&lt;br&gt;Microbiology—Veterinary Medicine&lt;br&gt;Pathobiology&lt;br&gt;Rural Practice&lt;br&gt;Urban Practice&lt;br&gt;Veterinary Medicine (Interdepartmental Unit)</td>
<td>Veterinary Medicine</td>
<td>Doctor of Veterinary Medicine</td>
<td></td>
</tr>
<tr>
<td><strong>School of Architecture</strong>&lt;br&gt;<strong>School of Architecture</strong>&lt;br&gt;Architecture*</td>
<td>Architectural Design&lt;br&gt;History&lt;br&gt;Criticism&lt;br&gt;Restoration/Preservation&lt;br&gt;Management&lt;br&gt;Production&lt;br&gt;Development&lt;br&gt;Structure and Environmental Controls&lt;br&gt;Systems Building&lt;br&gt;Second Baccalaureate Degree Program</td>
<td>Bachelor of Architecture</td>
<td></td>
</tr>
<tr>
<td><strong>College of Business Administration</strong>&lt;br&gt;<strong>Accounting and Business Law</strong>&lt;br&gt;Accounting</td>
<td>Accounting Management Science Option</td>
<td>Bachelor of Science in Business Administration</td>
<td></td>
</tr>
</tbody>
</table>

*Minor available for students in other colleges.
<table>
<thead>
<tr>
<th>DEPARTMENT (UNIT)</th>
<th>MAJOR</th>
<th>CONCENTRATION/OPTION/TRACK/ ETC. WITHIN THE MAJOR</th>
<th>DEGREE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Administration (Interdepartmental Unit)</td>
<td>General Business</td>
<td>General Business Management Science Option</td>
<td>Bachelor of Science in Business Administration</td>
</tr>
<tr>
<td></td>
<td>Public Administration</td>
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<td>Bachelor of Science in Business Administration</td>
</tr>
<tr>
<td>Economics</td>
<td>Economics</td>
<td></td>
<td>Bachelor of Science in Business Administration</td>
</tr>
<tr>
<td>Finance</td>
<td>Banking</td>
<td>Business Finance and Financial Management</td>
<td>Bachelor of Science in Business Administration</td>
</tr>
<tr>
<td></td>
<td>Finance</td>
<td>Finance Management Science Option</td>
<td>Bachelor of Science in Business Administration</td>
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<tr>
<td></td>
<td></td>
<td>Investments and Security Analysis</td>
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<td></td>
<td></td>
<td>Monetary Theory and Policy</td>
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<tr>
<td></td>
<td></td>
<td>Public Finance and Fiscal Policy</td>
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</tr>
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<td>Elementary Music Education (Voice Principal)</td>
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<td>13. Social Science</td>
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<td>a. Crippling and Special Hearing Conditions</td>
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<td>d. Specialization in Multiple Handicapped</td>
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*Minor available.
**Minor available: Driver and Traffic Safety Education.
***Minor available: Coaching.
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5Minor available: Business.

*Minor available.

**Business minor available to programs in Bachelor of Arts degree.

***A list of electives is available from advisors to aid students in emphasizing the areas of arts/crafts, business/merchandising, history/preservation/restoration, and/or human environment interaction.
<table>
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<th>DEPARTMENT (UNIT)</th>
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<th>CONCENTRATION/OPTION/TRACK ETC. WITHIN THE MAJOR</th>
<th>DEGREE</th>
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| Cultural Studies* | Cultural Studies | American Studies  
Asian Studies*  
Comparative Literature*  
Ancient Mediterranean Civilizations  
Latin American Studies*  
Linguistics*  
Medieval Studies*  
Russian and East European Studies  
a. Track I  
b. Track II  
Urban Studies* | Bachelor of Arts |
| Economics | Economics* | 1. Concentration in Literature  
2. Concentration in Creative Writing  
3. Concentration in English Language  
4. Individualized Program  
5. Honors Program | Bachelor of Arts |
| English | English* | Geography* | Bachelor of Arts |
| Geology* | 1. Cultural Geography  
2. Economic Geography  
3. Physical Geography  
4. Regional Geography | Bachelor of Arts |
| Germanic and Slavic Languages | German*  
Russian* | Bachelor of Arts |
| History | History* | 1. Cultural Geography  
2. Economic Geography  
3. Physical Geography  
4. Regional Geography | Bachelor of Arts |
| Honors Program | | | |
| Human Services | Human Services*  
Social Work | Bachelor of Arts |
| Mathematics | Mathematics* | Program 1  
Program 2  
Program 3A  
Program 3B  
Program 4A  
Program 4B  
Program 4C  
Program 5 | Bachelor of Arts |
| Microbiology | Microbiology | Bachelor of Arts |
| Medical Technology | Bachelor of Arts |
| Music | Music | Applied Music*  
Music History and Literature* | Bachelor of Arts |
| Applied Music* | a. Multiple Woodwind Instruments  
b. Organ  
c. Organ and Church Music  
d. Piano  
e. Strings  
f. Voice  
g. Woodwind, Brass, and Percussion Instruments  
h. Studio Music and Jazz  
i. Suzuki String Pedagogy  
j. Electronic Music Composition  
Music History and Literature  
Music Theory  
Music Theory  
Piano Literature | Bachelor of Music |
| Philosophy | Philosophy* | Bachelor of Arts |
| Physics and Astronomy | Physics* | Health Physics | Bachelor of Arts |
| Physical Sciences* | | | |
| Political Science | Political Science* | Standard option  
Honors in Political Science  
Public Administration | Bachelor of Arts |

*Minor available.
*Minor available in Women's Studies.
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| intracollegiate (Intercollegiate with the College of Business Administration) | Statistics* | Bachelor of Arts |
| College of Nursing | Individualized Program | Basic Option | Bachelor of Arts |
|                     | College Scholars Program | Basic Option | Bachelor of Arts |
| College of Nursing  | Nursing | Basic Option | Bachelor of Science in Nursing |

Graduate School of Library and Information Science
Graduate School of Library and Information Science*

*Minor available.
they are applying to UTK as freshmen, or transient students. In addition to the information below, a pamphlet entitled "The University of Tennessee Overseas Applicant Information" is available from the Office of International Student Affairs upon request. In making application for admission to undergraduate study, each international student is required to provide the following:

1. A completed application for undergraduate admission;
2. Authenticated copies of all academic records. These records should describe the course of study in terms of years spent in school and types of subject matter covered, with grades earned in each subject;
3. Evidence of English proficiency according to the following requirements for students whose first language is not English.
   a. Any applicant to the undergraduate program whose first language is not English - with the exception of some transfers from certain 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 550 (received within two years prior to application) before being admitted; final consideration cannot be granted until test results are received by the Director of Admissions.
   b. The University of Tennessee English Placement Test must be taken prior to registration; this test will determine whether the student needs to take more English courses and, if so, at what level. The English Placement Test grants no credit. Students assigned to special English courses must enroll the first quarter of attendance, stay continuously enrolled in the assigned courses until completion of all requirements, and should complete the requirements within the first year of continued enrollment at The University of Tennessee, Knoxville.
   c. An undergraduate student whose first language is not English is exempted from the TOEFL requirement if the student has satisfied all requirements for freshman composition with a grade of C or better at a college or university in the United States which is accredited by a regional association.
   d. A United States citizen or permanent resident whose first language is not English but who has graduated from a high school in a country whose first language is English, may be admitted under the conditions that apply to United States citizens whose first language is English. Any other United States citizen or permanent resident whose first language is not English must conform to the regulations stated in (a) and (b) above.

4. Applications from Ghana, Nigeria and Iran are required to make a financial monetary deposit prior to insurance of Form I-20 to secure a student visa. This deposit is credited to tuition and fees. The balance is remitted to the student at the beginning of each quarter or four quarterly installments. Information on these requirements is sent to international student applicants along with the necessary forms upon receipt of a letter of inquiry about admission. Information may also be requested from the Office of International Student Affairs, 201 Alumni Hall.

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.

Transient Student Applicants
A transient (temporary) student is one who is actively enrolled in a program at another accredited institution of higher learning but who desires to enroll temporarily at UTK, because of the availability of certain coursework or because of temporary residence in the Knoxville area.

Transient students desiring to continue at UTK for more than one quarter must file an application for admission as a transfer student.

Students desiring to attend UTK on an interim basis only one quarter must submit, in addition to the application form, (1) a letter of good standing form the institution at which enrolled, and (2) a statement of the objective for enrolling one quarter at UTK. This statement should describe desired UTK courses, or at least the subject areas of coursework to be taken here.

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

Non-Degree Student Applicants
Persons desiring to take courses for credit, but who do not intend to pursue a degree, should apply for non-degree status. Working adults may choose to apply through the University Evening School for convenience. There is no difference in regulations, and the Admissions Office should describe desired UTK courses, regardless of source. Non-degree students are often part-time students, though this is not a requirement. Non-degree students must show evidence of satisfactory preparation for the courses they wish to take. The high school class of a non-degree student must have graduated (otherwise, an early admission application must be filed). Former University of Tennessee students may not be admitted in this category prior to the receipt of a bachelor's degree.

If there is a change in educational goals towards a degree program, a non-degree student must file all transfer admission and college association requirements for the degree program. No more than 90 quarter hours of accumulated college credit (from all institutions attended) may be used by a non-degree student in any subsequent degree program at UTK.

Exceptions to Admissions
University admission requirements for the various categories are toughened to be reasonable and consistent with good educational practice. Thus, these requirements are not normally waived or modified for any applicant, except as specifically noted. However, unusual circumstances sometimes exist. If a potential student feels that some part of the requirements for the category sought should not apply as stated, that person should write a letter to the Director of Admissions. The letter should clearly state the specific circumstances prompting the appeal and what changes in the stated requirements are sought. The reply to this letter will indicate whether any exception to the requirements will be made, the reasons for the decision, and will describe any further action which the applicant should take.

Deadlines For Applications
Applications for undergraduate admission as a University student and all supporting credentials must be received by the Director of Admissions no later than August 1 for the fall quarter admission, and no later than three weeks before the start of classes for admission to any other quarter, except as noted below.

Applications for the College of Veterinary Medicine must be received by the Director of Admissions by January 15 for admission into the fall quarter. Applications for the School of Architecture must be received no later than March 1 for admission to the summer and fall quarters. Selection will be made by April 1. November 1 is the deadline for application for the spring quarter; enrollment is closed for the winter quarter. Applications for the College of Nursing must be received by March 1. Selection will be made by April 1; enrollment is closed for the winter quarter. Applicants for the School of Architecture must be received no later than March 1 for admission to the summer and fall quarters. Selection will be made by April 1. November 1 is the deadline for application for the spring quarter; enrollment is closed for the winter quarter. An applicant who is not accepted may be reconsidered if an application is made for a future class.

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

FEE CLASSIFICATION FOR THE PURPOSE OF PAYING UNIVERSITY FEES AND FOR ADMISSION PURPOSES
Students are classified as in-state or out-of-state for the purpose of paying University fees. This classification is also the basis of some University admission requirements. The classification is determined by the information recorded on the application for admission and the 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 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
FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT
This act provides for confidentiality of student records; however, it also provides for basic identification of people at UTK without the consent of the individual. Release of information to third parties includes directory information, such as contained in the campus telephone book. Such information includes name, address, telephone number, date and place of birth, major, dates of attendance, degree and awards, the most recent previous educational agency or institution attended, participation in school activities and sports, and weight and height (for special activities).

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 this number. However, if a student does not desire the social security number to be used, notification to the University must be made at the time of 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 1976, the Tennessee State Board of Education requires that all students preparing for a teaching career in Tennessee must pass a standardized test of basic skills (mathematics, reading, and language) prior to admission to teacher education programs. The University of Tennessee will administer such tests each quarter to applicants seeking admission to teacher education programs to fulfill this certification requirement of the State Board of Education.

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

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

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

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

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

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

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

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

HIGH SCHOOL CREDITS:
Students who seek School of Architecture association in candidacy for the Bachelor of Architecture must offer the following units:
Algebra, 2; Trigonometry, 5; Geometry, 1; Science or Humanities, 4.5.
II. ASSOCIATION AT THE UPPER Administration Building.
Business, Room 52 Glocker Business to the University on the basis of a request for Catalog and will schedule the courses prescribed in the CBA portion of the General expected the students will follow the curricula programs will be encouraged to seek standards for admission to upper division programs of the College is evaluated progress of those admitted to the lower DIVISION LEVEL

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

B. Transfers from other UTK Colleges
1. Meet CBA high school distribution requirements see IA above.
2. Association will be based on prior academic performance including high school record, ACT (or SAT) test scores, progress within undergraduate courses previously attempted, academic achievement in lower division courses prescribed in the curricula of the College of Business Administration, and an assessment of the seriousness of purpose of the student as may be reflected in the number of course withdrawals, incomplete grades, etc.

C. Transfers from Other Institutions
1. Meet CBA high school distribution requirements (see IA above).
2. Meet requirements for association for transfers from other UTK Colleges as stated in IB2.
3. Students denied association may wish to seek affiliation with other UTK Colleges.

Evaluation of Progress. The academic progress of those admitted to the lower division programs of the College is evaluated periodically (e.g., on completion of 45 hours of coursework work). Those failing to make acceptable progress toward meeting the standards for admission to upper division programs will be encouraged to seek alternative educational opportunities. It is expected the students will follow the curricula prescribed in the CBA portion of the General Catalog and will schedule the courses indicated in the sequence indicated.

II. ASSOCIATION AT THE UPPER DIVISION LEVEL
The College of Business Administration grants association as a degree candidate (major) only after completion of 84 hours of coursework. Association is competitive and is based upon the space available in the College. Factors considered in determining association are both subjective and objective. Included is consideration of overall grade point average, grades earned in courses required in the lower division curricula of the College, the seriousness of interest in College programs as exemplified by regular and orderly progress through the prescribed curriculum without abuse of withdrawal and course repeat privileges. The standards applied for these criteria may be adjusted from time-to-time to balance overall demand with faculty resources and space availability.

Students seeking association with the College of Business Administration at the upper division level (as a major) must offer the following:

HIGH SCHOOL CREDITS: (See IA above.)

COLLEGE WORK:
A university student may be granted association with the College of Business Administration as a major after completion of 84 quarter hours of coursework. Included in the 84 hours, a student must have passed with a minimum GPA of 2.00 the number of credit hours indicated in the subject area shown below (or equivalent work as prescribed in the major area desired):

Accounting 2110-20-30................. 9
Computer Science elective............. 3
Economics 2110-20-30............... 9
English 1010 or 1011 or 1020 or 1031 or 1032 1033......................... 9
Mathematics 1540-50-60............... 12
Statistics 2100......................... 3
Students who intend to major in the College of Business Administration should follow closely the stipulated curricula in the first 84 hours.

Students who have completed 84 hours and believe that they have met the minimum standards must apply to the Assistant Dean for Undergraduate Programs. This should be done as soon as the stated requirements are met so that the decision on granting association can be reached prior to the advanced registration date for the next quarter. Please note that acceptance to upper division association is not automatic for lower division association. Application must be made by all who seek to move from the lower division to the upper division.

Upper division course enrollments are determined on a basis which gives first priority to students with College of Business Administration association, CBA minors, and those in other colleges whose major curricula require this work.

PROVISIONAL ASSOCIATION:
Students who have completed between 70 and 84 hours of coursework and can meet the conditions for upper division college association by completing the coursework in which they are presently enrolled may request provisional association. Application must be made to the Assistant Dean for Undergraduate Programs at least three months prior to the first day of registration for the term in which the student expects to have met the requirements for full association. Those accepted provisionally will be given advanced registration priority for core and other essential courses in the College. However, if they have not met the conditions for full association by the time they have completed 84 hours of course work, they may be removed from the registration lists at late registration.

College of Communications
Association with the College of Communications may be made at any time. Those interested in this college should obtain a copy of the Program Planning Guidebook of the College of Communications. Freshmen admitted to the College of Communications are temporarily classified as premajors. They may apply for admission to a major degree program after they pass typing and spelling proficiency tests and complete, with at least a 2.0 cumulative average, the following courses:

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

A final decision on admission may be deferred until students complete the core courses in their intended major with a minimum grade of B in one core course and no grade below C in other core courses.
Students granted early admission must also meet these standards. Students must pass the college’s typing and spelling tests before enrolling in or preregistering for any course in the college other than Communications 1110 or 1118. Students may not enroll in courses numbered 3000 or above in the college with the exception of Adverisng 3000 until they have successfully completed the core courses.

The core courses are:
Advertising - Communications 1110 or 1118
Journalism 2215, Advertising 3000
Broadcasting - Journalism 2215, Advertising 3000
Journalism - Journalism 2215, Journalism 2220, Journalism 2230

Transfer students may apply for admission into the College of Communications after they have completed all the premajor requirements including the core courses, and attained at least a 2.0 average in all work attempted.

College of Education
Application for association with the College of Education may be made at any time. Freshmen are required to have at least 16 units of high school credits. Students desiring to teach, in addition to associating with the College of Education, must also gain admittance to Teacher Education. Applicants are encouraged to begin the multiphase admission process during their first quarter as a full-time student and complete the process by approximately their 60th quarter hour. The specific admission criteria appear in the College of Education section of this catalog.

College of Engineering
Association with the College of Engineering may be undertaken at any time. Mathematics preparation is particularly important for engineering courses. A freshman applying for association with this college must have completed two units of high school algebra, one unit of geometry, and one-half unit of trigonometry. If trigonometry was part of a high school course carrying another name, such credit will also satisfy the trigonometry requirement. Regardless of course title, right-triangle trigonometry and basic trigonometric
law must have been covered in sufficient depth to permit working with vector quantities. Transfer students must also show adequate mathematical preparation, either through high school courses or through successful completion of college-level math courses, utilizing the equivalent subject matter.

*International* out-of-state and in-state transfer applicants whose transfer GPA is below 2.50 will be reviewed by a College Admissions Committee. Transfer applicants from another UTK unit are screened by the appropriate engineering department head prior to a decision on association.

**College of Home Economics**

The College of Home Economics grants and encourages association at the time of admission to the University for all programs except Professional Interior Design and the Coordinated Undergraduate Program in Dietetics. These restricted programs have specific entrance requirements noted below. Students must have an overall GPA of 2.0 in all previous college work for transfer into the College of Home Economics.

**PROFESSIONAL INTERIOR DESIGN**

1. Automatic admission
   a. Freshmen with a composite ACT score of 18 and high school cumulative GPA of 2.25 or above.
   b. Transfers from other departments and colleges within UTK having a composite ACT of 18 and high school cumulative GPA of 2.25 or above.

2. Admission by departmental review
   a. Transfers not meeting automatic admission criteria; college GPA and high school GPA will be evaluated; composite ACT will be considered if available.
   b. Schedule for admission by departmental review
      1. Transfers within UTK—each quarter, 2 weeks before end of quarter
      2. Transfers outside UTK—twice a year, November 1 and March 1

**COORDINATED UNDERGRADUATE PROGRAM IN DIETETICS**

1. Complete freshman and sophomore courses or equivalents as listed on page 203 of this catalog.
2. Have an overall GPA of 2.2 or above.
3. Pass interview with a personal interview.
4. Submit recommendations from faculty and employer.

**College of Liberal Arts**

The College of Liberal Arts grants and encourages association of eligible students for admission to the University. To associate, a student must:

1. Have completed two units of the same foreign language in high school or a year of one unit of foreign language in high school with one unit of foreign language in college.
2. Have completed a unit of algebra and one unit of geometry at the college level, or one year of algebra and one year of geometry in high school.

**College of Nursing**

The College of Nursing has a two-fold selection process:

1. Entering freshmen are selected on the basis of a composite ACT score of 18 and a minimum high school GPA of 2.50.
2. Students must petition to progress to upper division nursing courses. This petition must be completed during the sophomore year by the fifth class day of Winter Quarter. The minimum requirement for progression to upper division courses is completion of lower division requirements with a grade of C. However, since the College has limited clinical facilities available in the community, the college GPA is used as the selection criterion. The cut-off varies from year to year. The cut-off will be in the 2.80 to 3.00 range.

Transfer and change of major students must apply to the College by March 1 if they intend to begin upper division nursing courses in the Fall. The cut-off for these students is generally 3.0. Students who have a lower overall GPA but have shown significant improvement in lower division courses required by the College of Nursing will have this partial GPA weighted more heavily in the selection process.

**General Academic Regulations**

**Credit Hours, Grades, and Grade Point Average**

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

**Undergraduate Grades:**

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

**TEMPORARY GRADES**

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

*Incomplete*: An attempt to associate a student whose work is satisfactory but who has failed to complete a laboratory, shop, or other parallel exercise. The I carries no quality points and counts as a failure in the computation of grade point average until removed. The grade of I may also be assigned by any faculty member to students who appear to be deficient in their usage of English in the course, but otherwise passing; the grade of I is removed when the Committee on Grades notifies the instructor that a student has made the necessary improvements.

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

**GRADES THAT DO NOT INFLUENCE GRADE POINT AVERAGE**

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

- NC (no credit) indicates failure to complete a course satisfactorily when taken on an S/NC basis.
- 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 from which a student has officially withdrawn.

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 preferred subject fields. To this end Satisfactory/No Credit (S/NC) grading has been developed for undergraduate courses (1000-, 2000-, 3000-, and 4000-level courses). Neither grade is counted in a student's grade point average, but, like all 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, or I). The instructor of a conventionally graded course will not assign an S/NC grade to a student who has already received credit for the course in a different grading system (A, B+, B, C+, C, D, F, or I).
FRESHMAN ENGLISH
English 1010 or 1011, 1020, 1031 or 1032
or 1033, 1018-28-38, 1211, 1221, 1431, 1441,

ENGLISH PROFICIENCY
Students are expected to maintain a satisfactory standard of oral and written English throughout their college programs. Any student may be given a grade of I (incomplete) by a member of the faculty for examination in English, and, if found deficient by the Committee on Writing, be required to take without credit such further work as the Committee may direct. To facilitate the computing of student's deficient in English, faculty members may simply check the column headed "English" on the quarterly grade sheets. A student checked by any faculty member will be required to remedy the deficiency through work in the Writing Laboratory. Remedial work in the laboratory shall be started as soon as possible after the student has been notified of the deficiency and it shall continue until the student's performance in English has been declared satisfactory by the laboratory instructor.

REPEATING COURSES
When a course is repeated the last grade only is counted in computing the grade point average. All grades and work as the last quarter of intended graduation have the privilege of standing an examination in that subject at the beginning of or during the next quarter. The last grade will count.

GRADUATING SENIOR PRIVILEGES
A senior who fails one subject during the quarter of intended graduation has the privilege of taking a remedial course in that subject at the beginning of or during the next quarter, and, if successful, receiving the degree at the next commencement.

A senior who has received the grade of I in any subject will, on request to the instructor, be given the opportunity to remove the deficiency before the close of the quarter, but not later than the last day before commencement, providing that successfully passing these courses will make the senior eligible for graduation.

GRADUATING SENIOR PRIVILEGES
A senior who fails one subject during the quarter of intended graduation has the privilege of taking a remedial course in that subject at the beginning of or during the next quarter, and, if successful, receiving the degree at the next commencement.

A senior who has received the grade of I in any subject will, on request to the instructor, be given the opportunity to remove the deficiency before the close of the quarter, but not later than the last day before commencement, providing that successfully passing these courses will make the senior eligible for graduation.

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

A— (4 quality points per quarter hour); indicates superior work.
B+— (3.5 quality points per quarter hour); indicates above satisfactory work.
B— (3 quality points per quarter hour); indicates satisfactory work.
C+— (2.5 quality points per quarter hour); indicates performance less than that expected by the standard expected of graduate students.
C— (2 quality points per quarter hour); indicates work of borderline quality. This grade represents work below the standard expected of graduate students.
D— (1 quality point per quarter hour); indicates clearly unsatisfactory work, and carries no graduate credit.
F— (no quality point value); indicates extremely unsatisfactory work.
I— (no quality point value); indicates that the student has not completed satisfactory work in the course, but, because of circumstances beyond control, has been unable to finish all requirements. It is not to be given unless the student has demonstrated the ability to do additional work to bring up a deficient grade. All incompletes must be removed within 2 quarters. If a supplementary grade report is not received in the Graduate Office one week prior to the end of the second quarter, the I will be converted to an F. The incomplete will not be counted in the cumulative average until a grade is assigned. No student may graduate with an I on the record.

S/NC— (carries credit hours, but no quality point value); S is equivalent to B or better, and NC means no credit earned. NC grades may be repeated for an S. S/NC grading is allowed only where indicated in the Graduate Catalog. S/NC is used for courses which culminate in a thesis, dissertation, or preliminary examination. The N grades take on the value of the S when the thesis or dissertation is accepted by the Graduate School. The number of S/NC courses to be allowed in a student's program of study shall be limited to one-fourth of the course work hours required (excluding thesis or dissertation) in a program. (This would be 9 hours or 12 hours in a 48-hour non-thesis program or 18 hours in a doctoral program of 72 hours excluding dissertation hours.)

Graduate students are required to make an overall minimum grade average of B in courses taken for graduate credit. No graduate student will be allowed a course for the purpose of raising a grade already received. Transferred work will not be counted in computing the grade average on courses completed in Graduate School.

LAW SCHOOL GRADES
Law students are graded on a numerical scale from 0.0 to 4.0. Quality points per quarter hour of credit in a given course are equal to the numerical grade received in the course. Grades of 0.9 and below count as failures. Some courses are graded on an S/NC basis.

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

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

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

If high school courses are needed to meet association requirements, the need may be met through non-credit or correspondence courses available through the UTK Evening School or the Center for Extended Learning. Such courses can be taken as a UTK student or prior to admission to the university.

Students admitted to the University on the basis of the GED Test (see Table III) must demonstrate the attainment of any required background knowledge as specified in the association requirements for the desired college. Association requirements may be met through the presentation of high school credits, by the satisfactory completion of a proficiency exam or exams, or by any of the other means open to any student who lacks some college association requirement.

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

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

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

At the time of application for admission to UTK, each student is asked to indicate whether he/she has already identified a preferred college or school. Students who complete the dual selection process at the time of university admission and are accepted into a particular college are assigned an advisor in that college at the time of initial registration for courses. Assignment of advisors is made through the offices listed in Table I or by the major department. Colleges which have limited or competitive enrollment plans normally select interested students only after several quarters.
at UTK. Advising centers exist in the colleges of Liberal Arts, Business Administration, and Education. Office personnel or a particular office or person who serves as a general advisor, with most advising activity taking place within the various departments.

Students who are admitted as university students but not transfer or freshman students are allowed to register upon receipt of their Admission Notice. New students at UTK should seek information at every opportunity from the college in which association is desired.

New students at UTK should review carefully the prescribed curricula of the respective degree-granting units and choose courses in accordance with their college preference (even prior to actual college association). An advisor assists a student in selecting subjects to ensure a well-balanced educational program and interprets university and college policies and requirements. However, the student (not the advisor) bears the ultimate responsibility for academic decisions. Students have the responsibility to assure that they have been dropped; otherwise they are liable for a grade of F in the course. Maximum hours per quarter vary depending on the college or school. Undergraduate and graduate students should consult the college catalog for regulations concerning dropping of courses.

Changes in Registration

Mid-Term, or the drop deadline, is an announced date midway between the beginning and ending days of classes each quarter or session (30 calendar days after the beginning of classes, except for summer sessions). Prior to mid-term undergraduate students may withdraw from courses as specified below. A course may be withdrawn without departmental permission through the seventh calendar day counted from the beginning of classes. Due to the nature of some courses, permission of the department head or course instructor is required. Change of section within a given course must be made in accordance with departmental policy and in all instances no later than seven calendar days counted from the beginning of classes. The student must have the instructor's nor the advisor's permission is required. Students who fail to attend the first class meeting of a course may be dropped from the course after the drop deadline (verified by the registrar). A student has the responsibility to process withdrawal to the Registrar, who will then inform the instructors that the grade in those courses is automatically W.

All official withdrawals from the University are made through the Office of Special Services. It is important that students who leave the University prior to the completion of a quarter report their withdrawal to this office. Official withdrawals from the University by Evening School students are made through the University Evening School.

Registration

Dates for orientation and registration are announced to new transfer and freshman students when the Certificate of Admission is issued. Graduate students are instructed when to register upon receipt of their Admission Status. Former students who have been absent from UTK other than the summer term and students who have withdrawn from the previous quarter will receive registration information with their letter of readmission. Law students should consult the Admissions Office, College of Law, for information about registration. Veterinary medicine students may enroll for the maximum number of 15 credit hours each quarter. Enrollment in more than 15 hours must be approved by the Vice Chancellor for Graduate Studies.

Prerequisite and Corequisite courses.

It is the responsibility of the student to see that prerequisite and corequisite requirements are met when registering for courses which have such restrictions.

Changes in Registration

Mid-Term, or the drop deadline, is an announced date midway between the beginning and ending days of classes each quarter or session (30 calendar days after the beginning of classes, except for summer sessions). Prior to mid-term undergraduate students may withdraw from courses as specified below. A course may be withdrawn without departmental permission through the seventh calendar day counted from the beginning of classes. Due to the nature of some courses, permission of the department head or course instructor is required. Change of section within a given course must be made in accordance with departmental policy and in all instances no later than seven calendar days counted from the beginning of classes. The student must have the instructor's nor the advisor's permission is required. Students who fail to attend the first class meeting of a course may be dropped from the course after the drop deadline (verified by the registrar). A student has the responsibility to process withdrawal to the Registrar, 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.

Dropping Courses before Mid-Term (35 calendar days). A course may be dropped with a W (withdrawal) before mid-term (for summer quarter drop deadlines, see summer quarter timetable). A drop form must be executed by the student and submitted to the Registrar. A mid-term is necessary if the instructor's or the advisor's approval is required. Students are permitted to drop a course through the fifth calendar day counted from the beginning of classes without any notation of the academic record.

Any student enrolled in undergraduate courses in the College of Engineering must drop a course by the end of the sixth calendar day from the beginning of classes (the day preceding the add deadline) in order to receive a grade of F. After the sixth day, late drop regulations apply. Evening School students should consult the University Evening School timetable for procedures concerning the dropping of courses.

Graduate students should consult the Graduate Catalog for regulations concerning the dropping of courses.

Dropping Courses or Withdrawing from the University after Mid-Term (35 calendar days). An undergraduate student withdrawing from a course, or from the University, after 35 calendar days from the start of classes will receive the grade of F. If it can be demonstrated that the request for withdrawal is based on circumstances beyond the student's control, Examples of circumstances beyond the student's control are illness or injury of the student (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 are within the student's control and which would not be acceptable to grant withdrawal permission are improper registration on the part of the student or academic failure to achieve academically.

Course Numbers and Levels

Each course offered by the University is identified by the name of the department offering the course, the course number, and the credit hours. These numbers indicate course level, as follows. The University
To be eligible for upper-division work a student must normally have attained junior (third-year) status. Some departments, colleges, or schools require approval by the dean of the student's college to enroll in upper-division work. This rule applies to transfers as well as to those who have previously attended the University. A cumulative grade point average of at least 2.00 is required to begin upper-division work.

**Classification**

Undergraduate, law, and veterinary medicine students are classified according to the chart above, on the basis of quarter hours passed.

To be considered as a full-time undergraduate student in any quarter, a student must be enrolled in 12 quarter hours, including the full summer quarter. Six hours for each separate term of the summer session are required for full-time classification. Audit hours are not considered in the computation.

**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 departmental certification requirements described in the College of Education section of this catalog. In keeping with requirements of the Tennessee Department of Education, programs leading to teacher certification include a nine (9) semester hour requirement in health or physical education.

**Honors Courses**

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

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

**Auditors**

Students registered for credit courses may enter classes as auditors. Auditors are under no obligation of regular attendance, preparation, recitation, or examination. They receive no credit. They may not take part in laboratory or field work.

Auditors are required to register and pay fees. A student may not change from credit to audit or conversely from audit to credit without departmental consent after the add deadline.

**Minimum Class Size**

An undergraduate course will not normally be given for fewer than five students except by permission of the Vice Chancellor for Academic Affairs. The University reserves the right to cancel, postpone, or combine when necessary.

**Class Attendance and Eligibility Policy**

Only students who are properly registered for a course may attend its classes on a regular basis. Any other person in the classroom for a special reason must obtain the consent of the instructor.

It is the prerogative of the individual instructor to set the attendance requirements for a particular class. This means, for example, that an instructor in Freshman English may state in a syllabus how many absences are allowed before a student receives a grade of No Credit.

**Deviation from Catalog Rules**

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

**Undergraduate Retention Standards**

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

<table>
<thead>
<tr>
<th>Total Quarter Hours</th>
<th>Minimum Acceptable Grade Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>30-39</td>
<td>1.00</td>
</tr>
<tr>
<td>36-59.9</td>
<td>1.50</td>
</tr>
<tr>
<td>60-83.9</td>
<td>1.60</td>
</tr>
<tr>
<td>84 and above</td>
<td></td>
</tr>
</tbody>
</table>

A student whose cumulative grade point average falls below the minimum acceptable level in any quarter will be placed on academic probation for the subsequent quarter of enrollment. During the probationary quarter the student must attain the minimum acceptable cumulative average shown above, or a 2.0 average for that quarter, or be dropped from the University.

A student who has previously dropped and readmitted will be placed on academic probation. Failure to meet the regular University standards of retention during the probationary quarter, or subsequent quarters prior to attaining good standing, will result in the student's being dropped from the University and being ineligible to make application for readmission for three academic quarters.

A transfer student who has been conditionally admitted and fails to meet the regular University standards of retention during the probationary quarter, or any subsequent quarter before attaining good standing, will be dropped from the University and may not make application for readmission for three academic quarters.

**Readmission**

A student in good academic standing who has withdrawn from school has a minimum acceptable grade point average of 2.00 for a quarter other than the summer quarter must make application for readmission. Application must be made at least three weeks before the start of classes.

A student who has been dropped academically must make application for readmission. Readmission is not automatic. Application must be made at least six weeks before the start of classes. The Committee on Readmissions may waive the minimum acceptable level in the application for readmission. Students are strongly encouraged to appear in person before the Committee on Readmissions.

Former students who in the interval have been enrolled at another accredited college or university must apply for readmission. An official transcript from other institutions attended and an acceptable combined cumulative grade point average are required for readmission.

**General Policies**

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

B. Summer quarter is considered a regular academic quarter in satisfying the requirement of compulsory absence due to academic deficiency.

C. Quarter hours attempted are used only for determining the minimum acceptable level for the grade point average.
in hours attempted but excluded in calculating minimum cumulative grade point average requirements for retention and graduation.

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

E. Correspondence courses are open to students regardless of readmission status.

F. 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 admission or readmission regulations that govern courses for credit at the Knoxville campus.

G. The Committee on Readmissions will consider the applicant’s total record, including the academic record and other factors which may be expected to influence academic performance. A student will not be readmitted when the record indicates a very low probability of success in college work.

H. There will be no tentative readmissions.

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

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

**General Requirements 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. It should be noted that some of the colleges and schools within the University have special requirements above and beyond those stated here, and students are advised to consult the appropriate sections of this catalog for any further degree requirements. Each program presented by the candidate for the bachelor’s degree is reviewed and approved for meeting the degree requirements by the Office of the Dean of Admissions and Records.

1. Complete satisfactorily all requirements of the curriculum 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 provided the curriculum has been in effect within 10 years of the date of graduation. This does not obligate the University to offer a discontinued course. Programs may be adjusted by the student’s faculty adviser and college dean, in consultation with the Registrar’s Office. A student who transfers to UTK subsequent to prior enrollment at a community college, junior college, or another senior institution may elect the UTK catalog in effect at the time of enrollment at the other institution provided that the student enrolls at UTK within one year after the last period of study at the institution from which the student is transferring.

2. Achieve a cumulative grade point average of at least 2.00 on all college work attempted at all institutions attended.

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

4. Achieve a grade point average of at least 2.00 on the last 45 hours (last three quarters as a minimum) of work at The University of Tennessee.

5. Complete the last 45 hours of credit offered for the bachelor’s degree at an accredited senior college.

6. Complete the last 45 hours of credit offered for the bachelor’s degree in residence at The University of Tennessee, Knoxville. In the College of Agriculture the last 27 quarter hours of upper-division technical agriculture approved by the student’s faculty adviser must be completed at The University of Tennessee, Knoxville. Credit for correspondence courses taught by the faculty of the Knoxville campus may be counted as part of this requirement, with the exception of the correspondence credit limitation noted below. Special arrangements to allow work taken at other University of Tennessee campuses to be counted as part of this requirement must be approved by the dean of the student’s major college or school and the Dean of Admissions and Records.

7. Comply with the state law that one unit of American history at the high school level or nine quarter hours of collegiate work be satisfactorily completed. This requirement is effective for those graduating July 1, 1978 or afterwards. It may be satisfied by the completion of History 2510-20 (or 2518-28) and History 2521 or 2521. History 3311 or 3321 may be used in lieu of three hours of American history. Students should consult the catalog of the major college or school and the Dean of Admissions and Records.

8. Comply with the state law that one unit of American history at the high school level or nine quarter hours of collegiate work be satisfactorily completed. This requirement is effective for those graduating July 1, 1978 or afterwards. It may be satisfied by the completion of History 2510-20 (or 2518-28) and History 2521 or 2521. History 3311 or 3321 may be used in lieu of three hours of American history. Students should consult the catalog of the major college or school and the Dean of Admissions and Records.

9. Achieve a grade point average of at least 2.00 on the last 45 hours (last three quarters as a minimum) of work at The University of Tennessee.

10. Complete the last 45 hours of credit for the bachelor’s degree at an accredited senior college.

11. Complete the last 45 hours of credit offered for the bachelor’s degree in residence at The University of Tennessee, Knoxville. In the College of Agriculture the last 27 quarter hours of upper-division technical agriculture approved by the student’s faculty adviser must be completed at The University of Tennessee, Knoxville. Credit for correspondence courses taught by the faculty of the Knoxville campus may be counted as part of this requirement, with the exception of the correspondence credit limitation noted below. Special arrangements to allow work taken at other University of Tennessee campuses to be counted as part of this requirement must be approved by the dean of the student’s major college or school and the Dean of Admissions and Records.

Seniors Eligible for Graduate Credit

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

**Correspondence Work**

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

All courses taken by correspondence for which degree credit is given must meet degree program requirements of the Knoxville campus. Degree credit will not be granted for correspondence courses taken at an institution other than The University of Tennessee at a UTK student if an equivalent correspondence course is available from The University of Tennessee Center for Extended Learning.

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

Students taking work for teacher’s certification purposes should consult the State Department of Education and respective states concerning the amount of correspondence credit allowed for a teacher’s certificate.

**Proficiency Examination**

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

When applying to a department for a proficiency examination, a student should present evidence of having developed the abilities, knowledge, and attitudes expected of those who have taken the course in question. The giving of the examination may be approved by the head of the department in which the course is offered. A fee of $10 per course will be paid in advance at the Office of the Registrar. Subject to the grading policy of the college in which the student is enrolled, except for courses which are graded only on an 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, A-, B, C, or C) or take an S. An S gives credit for the course but does not affect the grade point average. If a grade of D or F is made on a proficiency examination, the department is expected to note the attempt but no record of the examination is made on the student's transcript. The maximum credits obtainable through proficiency examination and the use of proficiency examinations to remove the failing grade (also the grade of I) are determined by the department offering the proficiency examination.

Entering international students whose native language is not English are required to take the UTK English Proficiency Examination to determine placement in the appropriate English course. The regular proficiency examination fee of $10 is charged. No credit for any English courses is awarded through this special examination.

**CLEP Credit**

When approved by a given department, nationally recognized examinations, such as the College Level Examination Program (CLEP) of the College Entrance Examination Board, may be used as proficiency examinations in one or more courses offered by that department. In such cases the final decision as to whether or not credit is to be given on this basis rests with the department awarding credit, as does the determination of the number of credit hours and the specific courses for which such examinations are to be taken as evidence of acceptable proficiency. The University will charge a fee of $5 for the evaluation of such an examination.

**CLEP CREDIT FOR FRESHMAN COMPOSITION**

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

a. Students entering with a CLEP score of at least 750 on the General or 65 on the Subject Examination (approximately 93rd percentile) and with ACT scores of 25, English and Composite, may take a sophomore English course, preferably Literature of the Western World. If they earn an A in it, they will receive credit for 1010-20-31 with a grade of A; if they earn a B in sophomore English, their grade in 1010-20-31 will be either S or B.

b. Students entering with a CLEP score of 700 at least on the General or 60 on the Subject Examination (approximately 84th percentile) and with ACT scores of 25, English and Composite, may take Honors Freshman Composition 1038. If they earn an A in it, they will receive credit for 1010-20-31 with a grade of A. If they earn a B in 1038, their grade in 1010-20-31 will be either S or B.

II. Students transferring into the University with lower-division credit for any CLEP composition subject of at least 550 or 55 may have that credit substituted for the appropriate freshman course(s) provided that they have already passed a sophomore literature course or courses with an average grade of at least B, and that those with less than junior standing pass a sophomore or upper-division English course at the University with a grade of at least B.

**Honors Categories for Graduation**

The diplomas of graduating seniors show honors categories based on the following scale:

- **"honors"** 3.00 through 3.39
- **"high honors"** 3.40 through 3.74
- **"highest honors"** 3.75 through 4.00

These honors categories are based on a student's cumulative average at the end of the quarter preceding the graduation quarter. The honors category is also based on both the average earned at UT, Knoxville and the combined average on all college work attempted, with the lower of the two averages determining the honors category.

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

**Accelarated Program**

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

**Advanced Military Service and Air Force Aerospace Studies**

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

**Special Requirements for Student-Athletes**

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

1. A Freshman who has had no previous college enrollment must, to maintain eligibility for competition during his second and third quarters, pass a minimum of five (5) quarter hours of acceptable degree credit in the quarter preceding his participation in a given sport.
2. Student-athletes qualifying for eligibility beyond the first year of residence must have satisfactorily completed 36 quarter hours by the beginning of the last season and the next season for the sport.

No more than ten (10) quarter hours of correspondence or transfer credit may be used to satisfy this requirement. The student-athlete must have also passed at least eight (8) quarter hours of acceptable degree credit during the term preceding the beginning of the sport season and each subsequent quarter in which the sport season continues.

**Degrees**

**AT KNOXVILLE**

**Graduate School**
- Doctor of Business Administration
- Doctor of Education
- Doctor of Philosophy
- Specialist in Education
- Master of Accountancy
- Master of Arts
- Master of Arts in College Teaching
- Master of Business Administration
- Master of Engineering
- Master of Fine Arts
- Master of Mathematics
- Master of Music
- Master of 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 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

**School of Health, Physical Education, and Recreation**
- Bachelor of Science in Education

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

**College of Home Economics**
- Bachelor of Science in Home Economics

**College of Liberal Arts**
- Bachelor of Science in Interior Design
- Bachelor of Science in Tourism, Food and Lodging Administration

**College of Law**
- Doctor of Jurisprudence
## College of Liberal Arts
- Bachelor of Arts
- Bachelor of Fine Arts
- Bachelor of Music
- Bachelor of Science in Chemistry

## College of Nursing
- Bachelor of Science in Nursing

## College of Veterinary Medicine
- Doctor of Veterinary Medicine

## CENTER FOR THE HEALTH SCIENCES
(See CHS Bulletin)

## Graduate School—Medical Science
- Doctor of Philosophy
- Master of Science
- Master of Science in Forensic Toxicology

## College of Medicine
- Doctor of Medicine

## College of Dentistry
- Doctor of Dental Surgery
- Master of Science in Orthodontics
- Master of Science in Pedodontics

## College of Pharmacy
- Bachelor of Science in Pharmacy
- Doctor of Pharmacy

## College of Nursing
- Bachelor of Science in Nursing
- Master of Science in Nursing

## College of Community and Allied Health Professions
- Bachelor of Science in Cytotechnology
- Bachelor of Science in Dental Hygiene
- Bachelor of Science in Medical Records Administration
- Bachelor of Science in Medical Technology
- Bachelor of Science in Physical Therapy
- Bachelor of Science in Radiological Technology

## AT CHATTANOOGA
(See Bulletin of UT at Chattanooga)
- Bachelor of Arts
- Bachelor of Music
- Bachelor of Science in Engineering
- Bachelor of Science in Nursing
- Master of Business Administration
- Master of Education
- Master of Music
- Master of Science
- Master of Science in Criminal Justice

## AT MARTIN
(See Bulletin of UT Martin)
- Associate of Arts in Nursing
- Bachelor of Arts
- Bachelor of Music
- Bachelor of Music in Music Education
- Bachelor of Science in Agriculture
- Bachelor of Science in Business Administration
- Bachelor of Science in Chemistry
- Bachelor of Science in Criminal Justice
- Bachelor of Science in Education
- Bachelor of Science in Engineering Technology
- Bachelor of Science in Home Economics
- Bachelor of Science in Natural Resources Management
- Bachelor of Science in Public Administration
- Bachelor of Science in Nursing

### 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:

<table>
<thead>
<tr>
<th>Fee Type</th>
<th>Undergraduate Students</th>
<th>Graduates Students</th>
<th>Law Students</th>
<th>Veterinary Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAINTENANCE FEE</td>
<td>Per Quarter $211</td>
<td>Per Quarter $263</td>
<td>Per Semester $404</td>
<td>Per Quarter $464</td>
</tr>
<tr>
<td>Tuition (additional for all</td>
<td>Per Quarter $510</td>
<td></td>
<td>Per Semester $765</td>
<td></td>
</tr>
<tr>
<td>out-of-state students)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NOTE: In lieu of the above charge for tuition and/or maintenance fee, part-time students may elect to pay fees computed by the quarter hour credit (or audit) at the rates shown below, total charge not to exceed the regular maintenance fee for in-state students or the maintenance fee plus tuition for out-of-state students.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Additional Late Service Fees

Students who do not preregister but register through the "secondary" registration procedures will be charged an additional $2 per day for the first regular business day that fees become due. Such students will be charged the graduated late service fee beginning with the week in which they are to be graduated. This fee is non-refundable and is valid for only one year beginning the quarter or semester it is paid.

### DELAYED REGISTRATION SERVICE FEE
Graduated Late Service Fee

Upon receipt of a schedule (full, partial, or incomplete) a student is immediately responsible for payment of fees. Students who preregister for a quarter must pay their fees (or make satisfactory arrangements with the Bursar's Office) on the regular registration dates. Effective the first regular business day following the last regular registration day a graduated late service fee of $2 per day will be charged during the next ensuing five regular business days.

Students who do not preregister but register through the "secondary" registration procedures will be charged an additional $2 per day for the first regular business day that fees become due. Such students will be charged the graduated late service fee beginning with the week in which they are to be graduated. This fee is non-refundable and is valid for only one year beginning the quarter or semester it is paid.
If the student responds promptly to the first notice regarding the returned check but cannot redeem the check within a week, the $5 Delayed Payment Service Fee will be added. Any student who does not respond within seven days from the date of the first notice will be subject to withdrawal from the University. Withdrawals will be assessed an additional $10 Service Fee plus the $5 Delayed Payment Service Fee (total $45).

For other returned checks in the amount of $30 (except for initial registration fees), the service charge will be $10 if the check is made good within seven days from the date of notice and $10 if made good after seven days. For a returned check in excess of $30 (except for initial registration fees), the service charge will be $10 if the check is made good within seven days from the date of notice and $15 if made good after seven days from the date of notice. If it becomes necessary to withdraw a student from school for failure to clear a check, and if after redeeming the return check the student petitions to be reinstated, the $20 Reinstatement Service Fee will be added to the return check service charges.

WITHDRAWALS AND DROPPED COURSES

Withdrawals and drops in the college vary for withdrawals and drops in the college system.

APPLICATION FEE

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 $10 before it will be processed. This fee is not refundable and is not required for transfers within the University system.

PROFESSIONAL FEES

For proficiency, CLEP, or other examinations are $10 per course. See page 33 for information on proficiency, CLEP, or other organized examinations.

CO-OP REGISTRATION FEE

If credit is received, the fee will be determined by applying the appropriate quarterly hour rate.

AUDITOR’S FEE

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

REFUND OF FEES AND ADJUSTMENTS FOR WITHDRAWS AND DROPPED COURSES

Withdrawal from school for the quarter after receiving a schedule must be by official notification to the Withdrawal Office, Student Counseling and Services Center, 900 Volunteer Boulevard. The student must be accompanied by a fee of $10 before it will be processed. This fee is not refundable and is not required for transfers within the University system.

For credit is received, the fee will be determined by applying the appropriate quarterly hour rate.

THE UNIVERSITY

The effective date of withdrawal is the date the Withdrawal Office is notified by completion of the official withdrawal request form. The appropriate percentage of fees will be charged unless the action is completed by the close of the last day designated for regular registration and before the first official day of classes of the quarter. Failure to promptly notify the Withdrawal Office when withdrawing will result in a larger percentage fee assessment. Withdrawal does not cancel fees and charges already incurred.

The drop/add procedure must not be used to withdraw from school for the quarter. For a student to withdraw within seven calendar days beginning with the first day following regular registration permits a 90 percent fee refund. Withdrawal between eight and 14 calendar days following regular registration permits a 70 percent fee refund. Withdrawal between 15 and 21 calendar days following regular registration permits a 50 percent fee refund. Withdrawal between 22 and 28 calendar days following regular registration permits a 30 percent fee refund. Refunds, in accordance with the withdrawal refund policy, will be made after the drop deadline. A student may pay fees computed at the appropriate quarter hour rate. There is no charge for courses dropped during the first five calendar days following regular registration. For part-time students there is a 40 percent charge at the quarter hour rate for courses dropped between six and 21 calendar days following regular registration. There is 100 percent charge for courses dropped after the twenty-first day following registration.

Students who drop courses are eligible for a refund only if the sum of the charges computed at the quarter hour rate for the hours continued plus the percentage assessed for the hours dropped results in an amount less than the amount paid. A student's schedule is officially dropped and becomes effective on the date that the drop/add slip has been processed and recorded by the Admissions and Records Office. The student always has the responsibility of initiating drop/adds. Any refund due for dropped courses will be made after the last audit at the end of the quarter. The above deadlines may vary for withdrawals and drops in the college of law because of the seminar system.

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

OTHER INFORMATION REGARDING FEES

All charges and refunds will be made to the nearest even dollar. All charges are subject to subsequent audit and verification. The University reserves the right to correct any error by proper adjustment charges or refunds.

All students are required to have a validated student identification card. Students must show their student identification card whenever using student parking permits and admission to various athletic, social, and cultural events. These cards are non-transferable and may not be duplicated. A current 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.

Military Deposits. All students, whether they are members of the band or not, should be familiar with the Military Deposits Plan established.

NOTE: Some family policies do not cover the dependent child after the nineteenth birthday. The family hospitalization insurance policy should be reviewed every year.

Military Deposits. All students registering for Air Science and members of the band are required to make a deposit of $35 each to cover damage to or loss of property issued to them. The unused portion of the deposit will be returned to the students after completion of training.

Identification Card. ID cards, issued during registration or anytime during the year to all students, are prepared during registration of the first quarter a student enrolls in the University and are validated quarterly thereafter. These cards are required for many purposes such as use of library facilities, check cashier's facilities in the UT Bookstore, and admission to various athletic, social, and cultural events. These cards are non-transferable and may not be duplicated. A current 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 UTK. Banking arrangements can be made with Knoxville banks. Some Knoxville banks require a waiting period of 10 days before honoring withdrawals, if the deposit is a personal check. New students who wish to open a checking account are encouraged to deposit a certified check or cashier's check unless they can pay initial college expenses by a personal check on a bank account already fully established.

Summer Quarter Fees and Expenses

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

Although the summer quarter is divided into terms of varying length, residence halls are assessed at the regular quarter hour rate not to exceed the maximum charge for a complete regular quarter.

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

**Estimate of Expenses**

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

<table>
<thead>
<tr>
<th>Description</th>
<th>Undergraduate</th>
<th>Graduate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintenance Fee</td>
<td>$80</td>
<td></td>
</tr>
<tr>
<td>Programs &amp; Services Fee</td>
<td>$108</td>
<td></td>
</tr>
<tr>
<td>Room and Meals</td>
<td>$1,803</td>
<td></td>
</tr>
<tr>
<td>Books, Supplies, etc.</td>
<td>$250</td>
<td></td>
</tr>
<tr>
<td><strong>Total for Tennessee Residents</strong></td>
<td>$2,794</td>
<td>$3,232</td>
</tr>
<tr>
<td><strong>Add for Non-Resident Tuition</strong></td>
<td>$1,530</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$4,324</strong></td>
<td><strong>$3,232</strong></td>
</tr>
</tbody>
</table>

*Add $159 for Graduate School; add $175 for College of Law; and $349 for Veterinary Medicine.*

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

**Housing**

The University provides modern residence facilities in order to give students comfortable housing at reasonable cost and with an atmosphere conducive to academic achievement and personal development.

**Undergraduate Students.** Single freshman students are required to live in University residence halls when space is available unless otherwise notified by their parent or legal guardian. Other single students are encouraged to reside in University facilities.

Housing contracts are a commitment for the academic year, September to June, or for shorter periods if the student enters the University during winter or spring. A Housing Application will be mailed as a part of the Application for Admission. Residence hall assignments for the academic year are made in the late spring and summer. The student must be admitted to the University prior to occupancy. If a student withdraws from the University, the housing contract is canceled in accordance with the University’s policy. Students assigned to residence halls on the University campus may be assigned to the residence halls or the single student apartments.

**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 the conduct and care of the 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. Information and application for these facilities may be secured from the Office of Rental Properties, The University of Tennessee, Knoxville, Tennessee 37996-0730.

**Food Service Facilities**

Excellent University-operated food service facilities have been provided. They are air-conditioned, conveniently located in relation to residence halls, and serve nourishing food at reasonable prices. The University recognizes the educational role that its food service facilities play in students and group living.

The Food Services Department employs a skilled dietetic and management staff to insure that the student gets the highest quality meal at the lowest possible cost.

Room and board meal arrangements are available. This plan offers the best combination of balanced, nutritious meals, carefully planned and served at a reasonable charge to the student. For students not under the Board Plan, meals can also be obtained from cafeterias operated on a cash basis. In addition, the Food Services Department offers a charge plan whereby students can change meals and may have the bill rendered to their parents monthly.

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

**Student Financial Aid**

The University of Tennessee offers a comprehensive program of financial aid for students who otherwise would not be able to attend. Through these federal, state, and University programs, an eligible student may receive one or more types of assistance.

Financial need is defined as the difference between a family’s resources and the total expenses of attendance. To determine the amount the parents and students can contribute toward educational expenses, the University requires each student to apply annually for financial aid. Students desiring assistance based upon financial need (some scholarships, grants, loans, and part-time employment) must submit either the Financial Aid Form or the Family Financial Statement. Students desiring only scholarships based upon academic merit are not required to complete any application forms.

**Deadlines for Applications**

Because a student’s family resources can change significantly during an academic year, UTK requires each student to apply annually for renewal of financial aid. Students desiring financial aid files by the following dates: March 1 - undergraduate entering freshmen; April 1 - entering graduate, law, veterinary medicine, transfer, and currently enrolled students.

**Scholarship and Grants**

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

Most scholarships are awarded to students who demonstrate strong academic achievement and proven need for assistance.

There is, however, an academic merit scholarship program which makes awards on the basis of academic achievement only. To compete for merit scholarships only, a student need only be admitted or currently enrolled by the priority deadline indicated above. An application form or financial statement is not necessary. Academic achievement is judged for entering freshmen students by the applicant's secondary school academic record and scores on the American College Testing Battery (ACT). Academic achievement for currently enrolled and transfer students is judged by the applicant's collegiate cumulative grade point average.

All scholarships, including merit scholarships, are highly competitive; despite the generosity of University friends and alumni, there are not enough funds to provide scholarship aid to all qualified students. Annual stipends range from $100 to $2,100. Most scholarships are one-year awards, but the recipient competing for scholarships each year of enrollment.

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

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

When the program is fully funded, maximum grants are $1,800 and not more than one-half the cost of education. The above regulations and provisions of the Pell Grant Program are correct as of November 1981, and are subject to change by federal legislative action.

Supplemental Educational Opportunity Grants. This is a program of direct grants available to undergraduate students with exceptional financial need. Grants must be matched by an equal amount of assistance from other sources, i.e., scholarships, loans, and provisions of the Pell Grant Program are correct as of November 1981, and are subject to change by federal legislative action.

Nursing Scholarships. The purpose of this program is to assist students of exceptional financial need who are enrolled as full-time students in a course of study leading to a baccalaureate degree or a graduate degree in nursing.

The maximum scholarship available for a 12-month period of enrollment is $2,000. The above regulations and provisions of the Nursing Scholarship Program are correct as of November 1981, and are subject to change by federal legislative action.

Tennessee Student Assistant Assistance Award is designed to further the educational opportunity to residents of the state who display a financial need for assistance. Awards cover one-half of the maintenance fees for Fall, Winter, and Spring quarters. Applications must submit a copy of their Financial Aid Form/Family Financial Statement to the Tennessee Student Assistance Corporation.

More information may be obtained on this program by writing to the Tennessee Student Assistance Corporation, Capitol B-3 Towers, Suite 9, Nashville, Tennessee 37219.

Student Loans

National Direct Student Loan. Long-term loans are available to students who have a proven need for financial assistance.

Loan repayment and interest payments on National Direct Student Loan (NDSL) are deferred until after graduation or as long as the individual remains in half-time attendance at an accredited institution of higher education in the United States. Repayment may be deferred for a period of three (3) years while the borrower is serving in the Armed Forces, Peace Corps, Vista, the U.S. Public Health Service, ACTION agency programs or as a full-time volunteer in a similar tax-exempt service organization, or while (s)he is temporarily, totally disabled or providing care for a spouse who is temporarily, totally disabled. Repayment may be deferred for two years while the borrower is serving an internship required for professional recognition.

Interest is 5 1/2 percent per year on the unpaid balance at the rate of 60 percent (of the amount of the loan that was unpaid on the first day of the next repayment period) for a 9-month period or for a 12-month period if the loan that was unpaid on the first day of the repayment period is less than $1,000. The above regulations and provisions of the National Direct Student Loan Program are correct as of November 1981, and are subject to change by federal legislative action.

The University of Tennessee Student Loan. Student loans from University sources are available to currently enrolled students with a 2.0 or higher cumulative grade point average. A loan of $250 per quarter to an annual maximum of $1,000 can be extended. The above regulations and provisions of the National Direct Student Loan Program are correct as of November 1981, and are subject to change by federal legislative action.

The maximum loan amount a graduate student may borrow is $2,500 plus the cost of tuition. The above regulations and provisions of the University of Tennessee Student Loan Program are correct as of November 1981, and are subject to change by action of the Board of Trustees.

Nursing Student Loan. These loans are available to students who are enrolled or admitted as students in a course of study leading to a baccalaureate degree in nursing and who demonstrate an exceptional financial need. The program provides a long-term loan at 9 percent per year on the unpaid balance.

The maximum amount a graduate student may borrow is $2,500 plus the cost of tuition. The above regulations and provisions of the University of Tennessee Student Loan Program are correct as of November 1981, and are subject to change by federal legislative action.
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 to 20 hours per week. The rate of pay is at least the federal minimum wage.

Student Employment Service

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 of work per week. If part-time employment is financial necessity to the student with a low grade point average, the student is advised to accept a job requiring fewer hours of work per week.

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

- George G. Abraham Scholarship Fund
- Roy & Mildred Acuff Scholarships in Band
- The Roy & Mildred Acuff Scholarships/Choral Program & UT Singers
- The Roy & Mildred Acuff Scholarship in Music
- AFL-CIO Estates Kefauver Memorial Scholarship Fund
- Agncio Scholarship Fund
- Agricultural Alumni Scholarships
- James Thurman Allor and Judge Thurman Allor Scholarship
- Air Force ROTC
- Akiona Club Interior Design Scholarship
- Alcoa Foundation Scholarships
- Clyde and Grace W. Alley Scholarships
- Allied Chemical Foundation Fellowship Grant—Chemical Engineering
- Allied Chemical Grant—Industrial Engineering
- Allied Chemical Scholarship Grant—Industrial Engineering
- Allied Chemical Scholarship Grant—Mechanical Engineering
- Alpha Gamma Rho Scholarship Fund
- Alpha Delta Kappa Scholarships
- Joe Mac Alphin Memorial Scholarship
- Altrusa Club of Knoxville Scholarship
- American Home Economics Association Scholarship, College Chapter
- American Society for Metals, Oak Ridge Section, Scholarship
- American Society of Tool and Manufacturing Engineers—Knoxville-Oak Ridge Chapter Scholarship
- AMFS Scholarship Fund
- Ica A. Anders Scholarship
- Winifred Anderson MBA Fellowship
- Anderson County Agricultural Scholarship
- Animal Husbandry Award
- Anthropology Department Scholarship Fund
- Artificial Feat Award in Veterinary Medicine Fund
- Armour and Company Scholarship
- Army ROTC
- Max B. and Lalla B. Arnstein
- J. Clayton Arnold Teacher Training Scholarship
- General Henry H. Arnold Educational Fund
- Art Department Acquisition Scholarship
- ASCE Armour T. Granger Memorial Scholarship
- Captain Samuel E. Asher Memorial Scholarship
- Charles H. Bass Scholarship
- Bacon-Beard Scholarship in Philosophy Fund
- Hop Bailey, Sr. Scholarship
- John Bailey Bank of Commerce Scholarship
- Howard H. Baker Memorial Fund
- Bank of Maryville Scholarship
- The Bannister Scholarship
- Paul Barnett Memorial Scholarship Fund
- Dorothy H. Barton Scholarship in Home Economics
- Col. T. H. Bartow Scholarship
- Grace and Brodie Baynes Scholarship in Accounting
- C. Grier Beam Scholarship in Transportation
- Beard Scholarship in Public Finance
- Bedford County Farmers Cooperative Agricultural Scholarship
- Roy F. and Addie Bell Scholarships
- Bellenfant Scholarship in Veterinary Medicine
- The Carl M. Bennett Agricultural Scholarship Fund
- Edna M. And King M. Benson Memorial Scholarship Fund
- Berdine Corporation Scholarships
- Beta Gamma Sigma Awards
- Beta Sigma Phi Scholarship
- Kari and Madra Bickett Scholarship
- Big Orange Swimming Scholarship
- Mr. and Mrs. L. Bibro Scholarship
- Voula Bitzas Scholarship
- Black Faculty Staff Association Scholarship Fund
- Bledsoe County Scholarship
- Block and Bridele Agriculture Scholarship
- Amandis Minnis Bonham Scholarship
- Frederick T. Bonham Foundation Scholarship
- Frederick T. Bonham Journalism Award
- Book & Supply Store Scholarship Fund
- Borden Home Economics Scholarship Award
- Dr. Wade H. Boswell Scholarship
- Dr. and Mrs. Donald H. Bradley, Sr. Scholarship
- Endowment Fund
- Harry E. Bradley Scholarships
- Brainerd Kwane Club Agriculture Scholarship
- Margaret Browder Scholarship
- Fred and Ruth Brown Scholarship
- Grover C. Brown Scholarship
- Nell Mann Brown Scholarship
- William Lester Brown Memorial Scholarship
- Pat and Frank Briggs Scholarship
- William P. Bryant Scholarship Fund
- W. W. Burchfield Scholarship
- Jim Burkett College Student Scholarship Fund
- Burlington Industries Foundation Scholarships
- C & M. Livestock Market, Inc. Agriculture Scholarship
- Campbell College Scholarship Fund
- Dick Campbell Student Coach Award
- Campus Bookstore U. T. Band Book Scholarships
- Cannon County Scholarship
- Robert C. Carlach-Gary W. Hood Scholarship
- Carter County Scholarship
- Central State Bank of Lexington Scholarship
- Myron G. Chambers Scholarship
- Frank Cloche Memorial Scholarship
- E. J. Chapman Memorial Scholarship Fund
- Chattanooga Hotel-Motel Scholarship
- The Chemistry Department Scholarship
- George S. Child, Sr. Memorial Law Scholarship
- James A. and Virginia Childress Agricultural Scholarship
- The Church Street Methodist Church Scholarships
- Edward C. and Catherine Dougherty Cifers Scholarship
- Scholarship Fund
- Claiborne County Farm Bureau-Farmers Cooperative Scholarship Fund
- Clayton Watkins Fund
- The Donaldson-Turner Orchestral Instruments Award
- W. C. Clay Agricultural Scholarship
- Frank G. Clement Foundation Mental Health Scholarship
- Jesse David Clettr Memorial Scholarship
- Lilton T. Cockran Scholarship
- Cooke County Farm Agricultural Scholarship
- Cooke Farmers Coop Agriculture Scholarship
- Coffee County Alumni Scholarship Fund
- Guy Colesele Conservation Fund
- Professor J. W. Cole Meat Scholarship and Award
- Vic Davis Torchbearer Award Fund
- The College of Education Alumni Scholarships
- The College of Home Economics General Scholarship
- Ed Collins Memorial Scholarship
- Colonial Baking Company Scholarships
- Commonwealth Conference Irregular Route Scholarship Fund
- Continuing Education of Women Scholarship
- J. A. Cooney Agriculture Scholarship
- CPA Women's Auxiliary
- Ray Cowles Memorial Scholarship Fund
- Cari T. Cox Scholarship
- Frank B. Creekmore Memorial Scholarship Fund
- Nellie Crookes Scholarship Award
- Robert A. and Mary L. Culver Scholarship Award in Theatre and Music
- Cumberland Farmers Cooperative Agricultural Scholarship
- Captain Herbert L. Davis Memorial Lew Scholarship
- McArm Davis Egerton Scholarship
- Edna M. And King M. Benson Memorial Scholarship Fund
- Dr. K. G. Dixon Scholarship
- Grace Darden Doggett Scholarships
-一点都不完整
The University of Tennessee wishes to express gratitude to the contributors and donors of the following loan funds:

- American Association of University Women Loan Fund
- American Institute of Architecture Loan Fund
- Samuel W. Atkins Loan Fund
- W. T. Cox Banking Corporation Loan Fund
- Harry Beard Loan Fund in Engineering
- Betsy-Kriss Loan Fund
- John H. Cantrell Scholarship Fund
- Centro-Carolina Loan Fund
- Fred Collins Memorial Loan Fund
- Nancy M. Dismuke Loan Fund
- P. F. Frost Tennessee Memorial Loan (The Scarabean Society Loan Fund)
- Eugene Gambill Loan Fund
- Helen B. Gibson Loan Fund
- Gordon A. Hawkins Memorial Loan Fund
- Dr. and Mrs. Timothy Glower Student Loan Fund
- Flats Chilla Hodge Memorial Loan Fund
- J. E. Hogan Loan Fund
- Ruth Hope Memorial Loan Fund
- R. N. Kesterson Loan Fund
- Knoxville Academy of Medicine Loan Fund
- J. L. Eulz Memorial Loan Fund
- Clarence H. Modly Loan Fund
- Ise Moore Memorial Loan Fund
- Ph. P. Pea Loan Fund
- Phi Mu Alumnae Association Loan Fund
- Mary Plummer Memorial Loan Fund
- Maude Powell Student's Aid Fund
- James H. Rader Memorial Loan Fund
- Charles C. Rifhoff Loan Fund
- William Rule Loan Fund
- Senior Memorial Loan Fund, 1922
- Senior Memorial Loan Fund, 1925
- Sarah Hawkins Sivler Memorial Fund
- James A. Shull Loan Fund
- J. Allen Smith Students' Aid Fund
- Southern Railway Loan Fund (William Wilson Finley Foundation)
- B. R. Strong Trust Fund
- Students Loan Fund (Special)
- Students Loan Fund of the Tennessee Banker's Association (Fred Collins Memorial Foundation)
- Mary B. Terry Scholarship
- Williamson County Farm Bureau Scholarship
- Nathaniel S. Woodard Memorial Loan Fund

**Honors and Awards**

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

**Deans List.** Public announcement of students passing a given term's work: "With Distinction," "With High Honors." (grades from 3.75 through 4.0). "With High Honors." (3.40 through 3.74), "With Honors." (3.0 through 3.38). To be eligible, a student must complete at least 12 hours work taken on satisfactory/credit basis.

**Student Awards.** $300 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 American Society of Agricultural Engineers' Award. Based on scholarship, activities, and community contributions, the award consists of a key and certificate.

**The American Society of Agronomy** makes available a Certificate of Merit for an outstanding senior in the Department of Agricultural Science who has a superior academic record and displays evidence of high potential in this field.

**The American Society of Animal Science** awards scholarships to men and women students, and to sophomores, juniors, and senior students in the Department of Animal Science who are of good moral character and rank academically 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.

Jesse David Ciletti Memorial Scholarship

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

Kentucky-Tennessee Section, Society of American Foresters Scholarship, awarded every third year to the freshman forestry student with the highest scholastic average. The award is in cash and a framed certificate.

M. Jacob Animal Husbandry Award, given by East Tennessee Packing Company.

J. B. Madden Memorial Foundation Fund, established by J. B. Madden family. Income from $1,000 fund, for prizes in livestock judging competition.

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

Tennessee Poultry Improvement Board Awards. $100 available for awards to students competing in poultry and poultry products judging.

School of Architecture

General Shale Products Corporation Fellowship Fund Five $1,000 scholarships awarded to scholastically outstanding fifth year students.

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

Malcolm Rice Achievement Award. $100 awarded annually to the third-year student showing most improvement with design studio.

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

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

College of Business Administration

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

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

Liston M. Fox Memorial Undergraduate Scholarship Fund, will be awarded annually to the rising sophomore who is being admitted to a major in the College of Business Administration.

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

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

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

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

James R. and Dorothy Newman Transportation Scholarship 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 11-quarter scholastic 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.

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

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

Zeta Lambda Chapter of Alpha Kappa Psi, professional business fraternity, awards annually the Alpha Kappa Psi Scholarship Award to the male student pursuing a bachelor's degree in business who has attained the highest scholastic average for three years of collegiate work in this University.

College of Communications

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

Alcoa Foundation Scholarship, $600 to an outstanding undergraduate planning a career in public relations.

Alcoa Foundation Minority Scholarship, $600 to an outstanding undergraduate minority student in the College.

Karl and Madira Bickel Scholarships. Freshman Scholarships up to $1,000. Upperclass Scholarships up to $1,000. Doctoral Scholarships up to $4,000. Open to all students showing academic performance (3.00 or B or better), professional promise, and need.

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

Ernie Pyle Memorial Award, given by Scripps-Howard Newspapers. Certificate and basic journalism library awarded to the outstanding senior in recognition of scholarship and journalistic achievement.

Greater Knoxville Advertising Club Scholarship Fund. Awarded to an undergraduate student in advertising.

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

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

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

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

Journalism Faculty Scholarship, Up to $500 to an outstanding major in the School of Journalism.

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

Pen Women of America Scholarship, $100 given by the Knoxville Branch to an outstanding junior journalism student who has shown promise as a writer.

Frank B. Powers Scholarship, given by Scripps-Howard Newspapers. $1,000 total to one or more outstanding undergraduates in the Department of Advertising.

Sammie Lynn Puett Award, given to outstanding student in the public relations sequence in the School of Journalism.

Tom Siler Scholarship, $1000 given by East Tennessee Professional Chapter of The Society of Professional Journalists, Sigma Delta Chi, to an outstanding student in the news-editorial sequence of the School of Journalism.

Society of Professional Journalists Scholarships. The East Tennessee professional chapter of Sigma Delta Chi gives $1,000 awards to newscastional or broadcasting majors funded by the parents. These funds are raised by the chapter's annual Front Page Foibles and presented in the names of Tom Siler and Escar Thompson, distinguished East Tennessee journalists.

Society of Professional Journalists, Sigma Delta Chi Outstanding Graduate Award.

Citation, Certificate given by professional journalism society to outstanding graduate.

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

College of Education

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

New Repertory Dance Company Scholarship Fund.

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

College of Engineering

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

American Chemical Society, East Tennessee Section of American Chemical Society offers an award each year to an outstanding chemical engineering student.

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

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

American Institute of Chemical Engineers Scholarship for 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.

Armour T. Granger Memorial Scholarship. A cash award given jointly by the Department of Civil Engineering and the American Society of Civil Engineers, Tennessee Valley Section, to a senior. Based upon scholarship, need, and activity in the ASCE student chapter.

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

Association of Textile Industrial Engineers Award. A $500 one-year award based on need, given by the Department of Industrial Engineering to a senior.

Billy J. and Sylvia F. Moore Scholarship Fund. A cash award given to one or more upperclass students majoring in electrical engineering, preferably seniors.
who have participated in the engineering co-op program. Based on both academic achievement and need.

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

Electrical Engineering Leadership Award. One or more cash awards may be made annually to juniors and 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.

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

Joel F. Bailey Award. Recognition by Tennessee Tau Eta Chapter of the Alpha Tau Omega fraternity for leadership in mechanical and aerospace engineering having the highest grade point average in each calendar year. Name on plaque.

Klimy-Horn Scholarship in Civil Engineering

Proctor & Gamble Minority Chemical Engineering Scholarship Fund. Awards can be made to minority CHE students who are either U.S. citizens or USA permanent-visa holders.

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

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

Tau Beta Pi Outstanding Senior Award, given by the University of Tennessee Book and Supply Store to the senior who is named the outstanding teacher of the year in his or her major.

University of Tennessee Book and Supply Store Scholarship. Awarded to an outstanding junior.

American Dietetic Association. Awarded to student enrolled in interior design. In-state tuition.

College of Home Economics

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


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

Jack Daniel Distillery Scholarship. Awarded to student enrolled in the tourism, food and lodging administration program. $500.

Hawkins County Farm Bureau. Awarded to a freshman from Hawkins County. $300.

Howard Johnson’s Scholarship. Awarded to student enrolled in tourism, food and lodging administration program. $700.

Tennessee Howard Johnson’s Scholarship. Awarded to student enrolled in the tourism, food and lodging program. $700.

Greater Knoxville Hotel-Motel Association Scholarship. Awarded to student enrolled in tourism, food and lodging administration program. $700.

Jere B. Ford Memorial Scholarship. Awarded to an outstanding student on the basis of financial need and promise for the general practice of law in Tennessee.

Herbert L. Davis Memorial Trust Fund. An award of $100 to the student who has the highest scholastic average for the first two years of work in the College of Law.

Knoxville Auxiliary to the Tennessee Bar Association. An award of $150 to law student who has the highest scholastic average in the first year of work in the College of Law.

Lawyers Cooperative Publishing Company and the Bar Committee. The joint publishers of American Jurisprudence offer separately bound topics from the encyclopedias to students receiving the highest grades in each subject.

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

Cyril A. Soans Prize. A prize of $200 to be awarded for the best paper by a law student on a topic pertaining to the protection or regulation of intellectual property.

The Southern Title Insurance Company Real Property Prize will be offered annually by the Southern Title Insurance Company to the student enrolled in the College of Law who submits the best Memorandum of Law on a topic selected by the Prize Committee of the College of Law faculty. The award is $500.

United States Law Week Award. The editors have established this award in an effort to recognize the outstanding Student Bar Association of the University of Tennessee at Knoxville for the law student who submits the best essay discussing principles of free government.

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

West Publishing Company Award. A title selected from its hornbook Series is offered annually to that member of each of the three classes who has made the most significant contribution toward overall legal scholarship.

John M. Allen Mathematics Prize. Medal, to outstanding student in mathematics who has the highest average for the first two years of work in the College of Law.

John M. Allen Mathematics Prize. Medal, to outstanding student in mathematics who has the highest average for the first two years of work in the College of Law.

Tennessee Chapter of Future Homemakers of America. One, $300.

Schenley Industries Scholarship. Awarded to student enrolled in the tourism, food and lodging administration program. $300.

Scruggs Restaurant Equipment, Inc., Scholarship. Awarded to student enrolled in tourism, food and lodging administration program. $500.

Standard Textile Scholarship. Awarded to student enrolled in tourism, food and lodging administration program. $100.

Statter Foundation Scholarship. Awarded to hospitality students throughout the United States. $500 to $2000.

Stouffer Foods Corp. Scholarship. $300.

Tennessee Chapter of Future Homemakers of America. One, $300.

University of Tennessee General Scholarships. Letter, plaque.

Tennessee Rehabilitation Corporation Scholarship. Ten, $450 each.

Hon. William J. Bryan. cash award to student submitting the best essay discussing principles of free government.

Knoxville Auxiliary to the Tennessee Bar Association. An award of $150 to law student who has the highest scholastic average in the first year of work in the College of Law.

Tennessee Restaurant Association Scholarship. Awarded to student enrolled in the tourism, food and lodging administration program. $300.

Tennessee State Hotel-Motel Association Scholarship. Awarded to student enrolled in tourism, food and lodging administration program. Two, $250 each.

Tennessee Hotel-Motel Association Scholarship. Awarded to student enrolled in tourism, food and lodging administration program. $700.

Tennessee Hotel-Motel Association Scholarship. Awarded to student enrolled in tourism, food and lodging program. $700.

Tennessee Hotel-Motel Association Scholarship. Awarded to student enrolled in tourism, food and lodging administration program. $500.

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Tennessee Hotel-Motel Association Scholarship. Awarded to student enrolled in tourism, food and lodging program. $700.
Delta Sigma Pi, professional business fraternity for students enrolled in the College of Business Administration. A minimum of 45 quarter hours of University credit with a scholastic average of at least 2.5 for initiation.

Delta Sigma Rho-Tau Kappa Alpha honor societies for junior and senior students who have participated at a high level of excellence in intercollegiate forensics or intercollegiate activities and who rank in the upper 25 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 Beta Phi, scholastic honor, 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, rank in the upper 20 percent of the junior class and upper one-fifth of the junior class, and have a minimum of 3.2 overall average.

Gamma Sigma Delta, agricultural honorary society for graduating seniors, graduate students, faculty, and agricultural alumni. Students selected must be in the upper one-fourth of the graduating class in the College of Agriculture and must have a 3.0 average or better. Graduate students must have attained a 3.4 average or better. A minimum of 2.5 average or better must be carried toward the advanced degree. They must have shown promise or superior ability in carrying on advanced study and/or research directly concerned with agriculture and of making worthy contributions in their respective fields.

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

Iota Lambda Sigma, for industrial education students. No one may be initiated until he has acquired a minimum of 90 hours in industrial education courses with at least B average.

Kappa Delta Pi, honor society for professionals and students in education. Minimum 3.5 grade point average. Recognizes outstanding contributions to field of education. Membership by invitation.

Mortar Board, for senior students. Members are elected from juniors having completed 120 through 150 credit hours, or top 10 percent of all those having completed 120 through 150 credit hours, or top 20 percent of any given class.

Order of the Coif, for law students.

Phi Alpha Delta, for law students.

Phi Beta Lambda professional fraternity for students enrolled in the College of Business Administration. Prospective membership may 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 honor society for liberal arts and sciences who are candidates for either the Bachelor of Arts or the Bachelor of Science in Chemistry degree. Grade point average varies with number of quarter hours completed: major 3.50, major 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 quarter and be elected by recommendation of others in the chapter.

Phi Epsilon Delta, for students preparing for study in medicine. Students with minimum 3.0 average in all courses may be pledged at end of their third quarter and have a minimum 2.8 overall average. They may be initiated at end of five quarters if an overall 2.8 average has been maintained.

Phi Mu Chapter, Eta Sigma Gamma. Students with a major in English and safety or excellence in composition and declamation. Subjects are selected by the Department of Speech and Theatre.

Phl Beta Kappa, the oldest national academic honor society for liberal arts juniors and seniors who are members of the American honor society, for liberal arts juniors and seniors who are members of the American honor society. Minimum 3.5 grade point average. Recognizes outstanding contributions to field of education. Membership by invitation.

Phi Beta Lambda professional fraternity for students enrolled in the College of Business Administration. Prospective membership may 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 honor society for liberal arts and sciences who are candidates for either the Bachelor of Arts or the Bachelor of Science in Chemistry degree. Grade point average varies with number of quarter hours completed: major 3.50, major 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 quarter and be elected by recommendation of others in the chapter.

Phi Epsilon Delta, for students preparing for study in medicine. Students with minimum 3.0 average in all courses may be pledged at end of their third quarter and have a minimum 2.8 overall average. They may be initiated at end of five quarters if an overall 2.8 average has been maintained.

Phi Mu Chapter, Eta Sigma Gamma. Students with a major in English and safety or excellence in composition and declamation. Subjects are selected by the Department of Speech and Theatre.
Sigma Pi Sigma, professional fraternity for women interested in a business career. Any woman student enrolled in the College of Business Administration, or specializing in business and/or economics, being at least a third-quarter freshman and having at least the all-student average, is eligible for membership.

Phi Chi Thea, professional fraternity for women interested in a business career. Any woman student enrolled in the College of Business Administration, specializing in business and/or economics, being at least a third-quarter freshman and having at least the all-student average, is eligible for membership.

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

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

XI Sigma Pi, forestry honor society for upperclass and graduate students, faculty members, and persons who have attained a national reputation in forestry. Students must have completed 110 quarter hours of credit including 15 hours in professional forestry courses. When practical, initiatives are selected during the junior year to provide the greatest degree of benefits of active membership.
experience. The program offers specially designed courses in mathematics, biology, English, and educational psychology. The courses function in such a manner that each student receives individual help and is given every opportunity for success. The opportunities include small classes, the availability of the professor for individual help, special help sessions, individual and small-group, self-paced courses, individual academic advising each quarter, and both academic and personal counseling services. In addition, the EAP staff attempts to serve as liaison for the student in any area of University experience in which the student needs help.

The offices of the program are located on the ground floor of the Student Counseling Center at 900 Volunteer Boulevard. Phone number: 974-6807.

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

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

Office of the Dean of Student Activities

The Office of the Dean of Student Activities Suite 413 Student Services Building, Circle Park Drive, coordinates all student activities and programs. Its area of operation encompasses the University Center, the Student Aquatic Center and Recreational Facilities, Student Publications, and all other extracurricular activities of University students.

Office of the Dean of Student Conduct and Orientation

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

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

Office of International Student Affairs

This office assists students from other countries with the many matters which are of particular concern to them during their stay in the United States. It also serves as chief advisor to University representative in all matters involving immigration authorities, international educational organizations, and foreign governments.

The office maintains the overseas students' official records and provides a liaison with the teaching faculty. It coordinates such projects as a community volunteer program and activities for foreign student spouses. To help the overseas student adjust to American life, its professional staff serves as ex officio advisers on personal and academic problems. Special orientation programs are offered at the beginning of each term and foreign students admitted to the University are notified in advance and are urged to arrive in time to attend.

Non-U.S. students who are applying for University School admission should write to: The Vice Chancellor for Graduate Studies and Research, The University of Tennessee, Knoxville, Tennessee 37916, U.S.A. Persons seeking undergraduate admission should apply to: Director of Admissions, The University of Tennessee, Knoxville, Tennessee 37916, U.S.A. Other specific inquiries or requests for more detailed information may be directed to: Office of International Student Affairs, 201 Alumni Hall, The University of Tennessee, Knoxville, Tennessee 37916, U.S.A.

UNIVERSITY INTERNATIONAL HOUSE

The "International House" is located approximately two blocks from the heart of the campus. It is provided by the University and operated by the Office of International Student Affairs as a facility where domestic and foreign students can come to relax and discuss matters of mutual interest.

International student programs and activities are planned and held at the International House. Students representing various national students groups and accociations, along with interested domestic students, staff, and faculty, participate in these activities which are held throughout the year.

University Center

Playing a unique role in the University community, the Carolyn P. Brown Memorial University Center is a central gathering place for students, faculty, and staff as well as campus visitors.

A variety of activities and facilities is available in the Center. The lower level, called "Kanadu," houses automatic bowling lanes, billiard tables, dark room facilities, arts and crafts area, and a table-games lounge. These facilities are among the best in the nation for student recreational pursuits.

The expansive food service on the grand level provides the finest food available. The entrance to the large, modern, two-level bookstore is on Stadium Drive. Such facilities as the central ticket office, check cashing center, and the post office are conveniently located on the ground level.

The second floor is the student program area. An auditorium with 575 seats, a 150-seat seminar room, a music listening room, and four public lounges supplement the large ballroom and meeting rooms for any type of campus event. Large banquettes, dances, and receptions are planned and serviced in the expansive area.

Administrative offices for the building, student programs and organizations, and additional dining facilities are located on the third floor.

The meeting rooms and services of the Center are available to all approved student groups. Requests for usage are completed with the Reservations Office.

THE UNIVERSITY BOOK AND SUPPLY STORES

The main store, at the Stadium Drive entrance of the University Center, is the official store for the University. A tobacco and sundries shop at the Stadium Drive entrance is open 10 hours daily.

Used and new textbooks are bought and sold on the lower level of the two-level store. In addition to textbooks, a 110,000 paperback store selection, technical and reference books, and numerous study aids are available on this floor. The first floor offers a complete stock or engineering, art and school supplies, records, tapes, art prints, posters, and other items for student needs.

Small branch stores are located in Hess Hall, Presidential Court, and Andy Holt Apartments. These stores are open 6 days a week 9 a.m. to 9 p.m., for students, faculty, and staff as well as Campus visitors.

Office of Recreation

"Fun for Everyone" is the motto of the Office of Recreation; the primary objective is to serve students by offering many activities for their leisure time. Students are encouraged to take maximum advantage of both the program and the facilities.

STUDENT AQUATIC CENTER

The Student Aquatic Center Recreation Complex affords year-round recreation for all students. Outdoor facilities include an Olympic-size swimming pool with a diving well having two one-meter and two three-meter diving boards, and an olympic diving tower with five, seven and one-half, and ten meter platforms; three large areas with grass carpeting and outdoor furniture for sun bathing; tennis courts; basketball courts; paddleball/handball courts; football and softball fields; parallel and horizontal bars; volleyball and shuffleboard courts; soccer field; 440-yard Tartan track; and a nine-hole practice putting green. Sports equipment for these facilities is issued at no charge to the student.

Indoor facilities include an Olympic-size pool with a water polo court and a diving well with one five-meter tower, four one-meter, and three three-meter diving boards. A weight room equipped with a weight machine and stall bars is available. An exercise area in the women's locker room is equipped with exercise machines. Sun lamps and sauna baths are available. Ping pong and billiard tables (light charge for billiards) are located in the upper lobby along with a TV viewing area.

All facilities of the Student Aquatic Center except swimming are available from 8 a.m. to 9 p.m. Monday through Friday, 8 a.m. to 6 p.m. Saturday, and 12 noon to 6 p.m. on Sunday. The pool is open Monday through Friday 12-9 p.m.; Saturday 12-6 p.m.; Sunday 6-9 p.m.

Facilities of the Student Aquatic Center are available to students upon presentation of their ID card. Faculty and staff may purchase individual or family memberships for a nominal fee.
The University

UT organizations may rent the Student Aquatic Center for swim parties and dances. Numerous splash parties are held during each quarter for the students' enjoyment.

STUDENT INTRAMURAL PROGRAM

The Student Intramural Program is designed for maximum student participation and provides for extensive student involvement in the actual administration and supervision of the entire activity.

The primary basis of competition is league play in which teams participate for the fun of the game. Following league competition there are division tournaments among the league champions to determine Division Champions for Residence Halls, Fraternities, Sororities, and Independents. These Division Champions then compete for the All University Championship.

The league activities include basketball, bowling, football, golf, paddleball, racquetball, softball, swimming and diving, tennis, track and field, track relays, tug of war, turkey trot, volleyball, and water polo.

In addition to the team sports competition, open tournaments are held in individual and dual sports. In some cases individuals have the option of choosing a class of competition that best characterizes their type of play. Activities are basketball (free throw, one-on-one, three-on-three, superhoe), billiards, croquet, frisbee, golf, handball, paddleball, racquetball, skateboarding, squash, table tennis, tennis, and wrestling.

CO-RECREATION INTRAMURALS

The Intramural Office also offers co-recreational activities. All students, faculty and staff, and their non-student wives, husbands, or friends are eligible to participate. The Co-Recreational activities are organized as an informal fun program, using modified rules so that men and women can participate on an equal basis.

The activities are badminton, basketball, football, golf, paddleball, racquetball, softball, table tennis, tennis, volleyball, and water polo.

INTRAMURALS FOR FACULTY AND STAFF

The Intramural Program for Faculty and Staff is designed to provide a wide range of activities for all members of the University community. Acted on behalf of both teams and individual participants. Events include badminton, basketball, billiards, football, golf, handball, paddleball, racquetball, softball, squash, table tennis, tennis, turkey trot, and volleyball.

SPORTS CLUBS

Sports Clubs are organized when students express an interest in a certain activity or because of anticipated needs. The Sports Club Office will assist any student wishing to organize any type of sports club.

The Sports Club Office is located in the Student Aquatic Center, Room 202. The clubs are archery, badminton, baseball, badminton, bowling, equestrian, fencing, field hockey, flying, floor hockey, frisbee, gymnastics, handball, ice hockey, ice skating, juggling, judo, karate, lacrosse, racquetball, rugby, running, sailing, scuba, skateboard, snow ski, soccer, sports car, synchronized swim, table tennis, trap & skeet, volleyball, water ski, weightlifting, and women's rugby.

FREE PLAY

All recreation areas, Alumni Memorial Gym, and the Physical Education Building are open to students for free play when the areas are not otherwise scheduled. One or both of these facilities are open seven days a week during the school year to offer students an opportunity for physical exercise in their leisure time. Students may check out equipment at each facility upon presentation of their student identification cards. Guest passes are available in the Sports Club Office. All recreation facilities are for the enjoyment of students, faculty, and staff of the University of Tennessee, Knoxville.

Aquatics

The aquatic facilities are designed for year-round entertainment for those who wish to participate in free swimming and diving in one of the most outstanding physical complexes in the United States. The Aquatic Center has indoor and outdoor Olympic-size pools where one can enjoy the fellowship and relaxation that comes with aquatic sports. The poor is open Monday through Friday from 12 to 9 p.m., Saturday from 12 to 6 p.m., and Sunday from 1 to 6 p.m. Students and members can also enjoy the sun lamps and relaxed atmosphere found at poolsides.

National, regional, and state aquatic events have been held in these facilities during the past 10 years. The Aquatic Center is designed to meet the needs of all students who want to participate in aquatic skilled activities at no extra expense. The programs are informally organized at convenient hours after the school day is completed. These programs vary and provide for a more wholesome and dynamic future.

1. Skin and scuba diving is offered each quarter with NAUI certification, the most prestigious certification in the country. Equipment is furnished at no charge—safety vests, weight belts, tanks, regulators, snorkels, masks, and fins.

2. Lifesaving is offered to those students desiring American Red Cross certification. The course is taught each quarter, and books and materials are furnished.

3. The Water Safety Instructor course is offered fall, winter, and spring quarters with Red Cross certification. There is no charge for students, and instruction manuals are provided.

4. Beginning swimming is offered to students, faculty, and staff during the summer quarter. This course is for those who want to improve their swimming skills or want to learn to swim for the first time.

5. Beginning diving is offered to students, faculty, and staff during summer quarter. This course teaches coordination and skills on the springboard.

6. Water survival is offered to students each quarter. This program provides the student with the basic skills and safety measures for prolonged periods in the water. It is incorporated in the lifesaving program.

7. Varsity swim teams practice daily throughout the fall, winter, and spring quarters. Many outstanding meets are scheduled here, and the Vols consistently place high in the NCAA championships.

8. A handicapped swim program is offered one quarter each year for those students who need special care in aquatic activities. Certificates are awarded during certain phases of the program.

9. Lifeguard School is offered at the Aquatic Center each quarter for specialized training of all lifeguards to be hired.

10. Aquatics offer opportunities for beginners, intermediate, and advanced diving,

swimmer, junior lifesaving, and competitive classes are offered to faculty and staff children fall and spring quarters. A competitive swimming course is taught winter quarter.

11. A Swim For Your Life program is offered fall, winter, and spring quarters for faculty and staff.

12. A Faculty Women's swim program is offered fall, winter, and spring quarters for faculty and staff.

13. Community competitive swimming program are offered each quarter during the student's evening meal hour.

Other offerings include moonlight swim parties, water basketball, water polo, special Carousel showings of aquatic competitive swimming, trampoline, and mini-board during supervised activities.

The Aquatic Center is available after hours for private and organizational parties, community aquatic programs, etc., for a fee. This facility has been viewed by visitors, professional and non-professional from all parts of the world, who have said it is among the outstanding centers of the United States.

Student Activities Office

An extensive program of extracurricular activities is available at The University of Tennessee, Knoxville, over and above student organizations currently functioning. Students have the opportunity to initiate and develop special interests, plan and administer all-campus programs, participate in governance organizations, and augment the academic offerings of the classroom through participation in departmental clubs and scholastic and professional honorary organizations. The agency charged with the development and administration of the extracurricular program is the Student Activities Office located in the Student Services Building.

WOMEN'S CENTER

The Women's Center is the coordinating unit for women's programs over and above student organizations currently functioning. Students have the opportunity to initiate and develop special interests, plan and administer all-campus programs, participate in governance organizations, and augment the academic offerings of the classroom through participation in departmental clubs and scholastic and professional honorary organizations. The agency charged with the development and administration of the extracurricular program is the Student Activities Office located in the Student Services Building.

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writing to the Director of Women's Athletics, 115 Stokely Athletics 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 for, if taking fewer than 9 hours, paying the optional health fee). These out-patient services are available continuously throughout every quarter.

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

Virtually all medical services at the campus clinic are provided to eligible students at no additional cost while charges are made for 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 1919 Andy Holt Avenue maintains scheduled daytime hours Monday through Friday. Emergency care during evenings and weekends is available through the emergency Room Student Health at The University Of Tennessee Memorial Hospital except during the breaks after summer and fall quarters. Ambulance and transportation service for the campus is provided by the Campus 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 quarter.

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

Student Counseling Services Center

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

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. The

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 handbook, Hilltopics, is published and distributed annually so that students are aware of the University Standards of Conduct and all disciplinary regulations and procedures.

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

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

Religious Resources

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

CHURCH CENTERS

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

Student Organizations

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

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

Social Fraternities and Sororities

The University has chapters of 26 national social fraternities and 20 national social sororities on its Knoxville campus. Membership in these fraternities and sororities is by invitation only.

The Fraternities are:

ACACIA
Alpha Epsilon Pi
Alpha Gamma Rho
Alpha Phi Alpha
Alpha Tau Omega
Beta Theta Pi
Chi Phi
Delta Tau Delta
Delta Upsilon
Epsilon Theta
Farmhouse
Kappa Alpha
Kappa Alpha Psi Colony
Kappa Sigma
Lambda Chi Alpha
Omega Psi Phi Colony
Phi Delta Theta
Phi Gamma Delta
Phi Kappa Psi
Phi Kappa Tau
Phi Sigma Kappa
Pi Kappa Alpha
Pi Lambda Phi
Sigma Alpha Epsilon
Sigma Chi
Sigma Nu
Sigma Phi Epsilon
Sigma Pi
Sigma Sigma Sigma
Sigma Phi Omega
Sigma Tau Gamma
Sigma Chi
Sigma Phi Beta
Sigma Xi
Delta Chi
Delta Epsilon Delta
Delta Gamma
Delta Sigma Theta
Delta Zeta
Kappa Alpha Theta
Kappa Delta
Kappa Kappa Gamma
Phi Mu
Pi Beta Phi
Sigma Gamma Rho
Sigma Kappa
Zeta Phi Beta
Zeta Tau Alpha

Other University Services

Organizations, and Cultural Opportunities

Ombudsman Office

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

Division of International Education

The Division of International Education, established within the Office of the Vice Chancellor for Academic Affairs, serves as a central point from which the broad range of international and intercultural interests throughout the University are strengthened and related to each other. Located in 205 Alumni Hall, the Division of International Education fosters the development, expansion, and continuation of the University's basic commitment to the international dimensions of the education process.

Most UTK study abroad programs are coordinated by the Office of International Education, but any new program is planned with its assistance. Individual counseling for students and faculty by a study, work, and travel abroad consultant, a reference library containing information on all aspects of overseas opportunities, a fellowship/scholarship service, free publications, and information on special programs and projects are available in the Division.

The Division coordinates the International Student Exchange Program (ISEP) for the UTK campus. Through this experimental federally funded program, a UTK student can study at one of several outstanding academic institutions abroad for essentially the same cost as that of spending a year of study at UTK. A new publication of the Division, complementing "Fellowships, Scholarships, and Travel Grants," is available: International Experiences: A Planning Guide for UTK Faculty. It contains information on obtaining grants, locating housing and schooling for dependents overseas, and lists UTK faculty with recent international experience, and new program are planned with its assistance.

In addition to the dissemination of information through the University community relative to opportunities for students and faculty to participate in study, research, and other related experiences abroad, the Division supports on-campus international programs, and serves as a major point of contact between the University and other public and private agencies in the U.S.A. and abroad involved in international program development.

Hearing and Speech Services

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

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

Services to the Physically Disabled

Services relating to academic programs for students with physical disabilities, whether permanent or temporary, are coordinated by the Office of the Dean of Admission and Records, 305 Student Services Building. In conjunction with the Office of Handicapped Student Services, the Office of Residence Halls, the Physical Plant Office, the U.T. Bookstore, the Student Activities Office, and the academic departments, efforts are made to ensure that attendance at The University of Tennessee, Knoxville, is as convenient as possible for students with physical disabilities. These services include assistance during registration, pre-registration, collection of class schedules, payment of fees, drop and add; 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. The Office of the Dean of Admissions and Records assists students in the scheduling of special class sections in order to respond to the particular needs of the physically handicapped.

Vehicle Operation and Parking

The University of Tennessee endeavors to provide adequate traffic control and parking facilities for vehicles being operated by students and staff. Student parking areas are located on the perimeter and throughout the Main Campus and College Area Campus, and enroute, buses travel by the perimeter areas of the University. Faculty and staff parking areas are located throughout the campus. See copy of UTK parking map. Each person who operates a motor vehicle in connection with attendance or employment at the University must register that vehicle with the Traffic Section of the Security Department. THERE IS NO CHARGE FOR VEHICLE REGISTRATION; however, a parking permit is required for parking on all University lots, streets, parking structures, or leased lots with the following exceptions:

1. Staff and students with current UTK motor vehicle registration stickers on their vehicles may park in any unreserved staff parking area, even those in the academic buildings (except those around residence halls) between the hours of 10 PM and 7 AM, Monday through Friday, and 12 Noon Saturday to 7 AM Monday. If, however, general parking is permitted in staff areas around the residence halls from 5 PM to 3 AM. After this time, vehicles without permits for these areas may be towed. This is in effect at all times.

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

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

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

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

Cultural Opportunities

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

THEATRE

The UT Theatre, under the aegis of the Department of Speech and Theatre, presents several programs and plays and films in two theatre plants—the Clarence Brown Theatre, a $2 million plant containing excellent facilities for prosenium staging, open staging, standard set film presentations, and laboratory productions in a separate Studio Theatre of the Clarence Brown Theatre, and the Carousel Theatre, a unique structure specially designed for arena staging and for conversion to open-air performances in the round.

All University students are welcome to participate in plays staged in all the theatres and to participate in other aspects of play and film presentations.

FRANK H. McCULLING MUSEUM

The museum in Circle Park stands as a permanent memorial for the display, preservation, and study of archaeological, natural history, and historical objects, as well as paintings and other works of art. The purpose of the Museum is to collect, preserve, exhibit, and provide research facilities for students, faculty, and staff. Permanent and temporary exhibits interpret topics in natural history, archaeology, and the fine arts; included are exhibits in the Green Memorial Room on the history of Knoxville and East Tennessee.

Eleanor Deane Audigier Collection features paintings, furniture, decorative arts, and sculpture from various periods through the turn of the century. On exhibit in the Museum, the collection was presented to the University by Louis Bailey Audigier in memory of his wife.

ART

Art exhibitions of international, national, regional, and local artists and craftsmen are sponsored on a regular basis by the UTK Department of Art in McClung Museum Gallery. Arrowmont School of Arts and Crafts, Gatlinburg, Tennessee, displays works by faculty and students during the summer months. Christmas Art Sale is an annual event sponsored by the Department of Art and held in the Art Gallery of the Museum in early December. Students, faculty, and regional artists display handmade works for purchase in time for Christmas. Numerous art exhibitions are scheduled in the Art Gallery throughout the year.

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

MUSIC

UT Choral Groups consist of concert choir, university chorus, chamber singers, and UT...
Singers. These choirs are open to all students by audition, except university chorus which does not require auditions.

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

UT Opera Workshop presents three performances yearly. The varied program of operatic music ranges from one-act to complete three-act operas with symphonic accompaniment, and from television opera to selected scenes from the classic repertory. UT Symphony Orchestra plays several concerts on campus yearly as well as serving as orchestra for opera and choral productions.

UT Bands: UT’s marching band, celebrated as “The Pride of the Southland,” present outstanding entertainment on football Saturdays at both home and out-of-town games. During winter and spring quarters, the band is divided into two concert groups which tour the South: a variety pep band that performs at basketball games, and the laboratory group which provides valuable training for its members.

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

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

Scottish Rite Masonic Chair and Choral Art brings to the Knoxville area a distinguished conductor and/or composer in the field of choral art who serves as guest lecturer at the University workshop.

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

CONCERTS

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

Campus Entertainment Board. This student and staff committee has the exclusive responsibility to sponsor popular entertainment on campus through a small concert series, a mini-concert series, and the much smaller Guest Artist series.

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

LECTURES

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

BROADCASTING

WUOT, operating on 91.9 mhz. from Knoxville, and WUTC, operating on 88.1 mhz. from Chattanooga, serve the public radio needs and interests of people in the East Tennessee area with cultural, informational, and educational programs. WUOT broadcasts in stereo with 100,000 watts power and WUTC broadcasts with 50,000 watts power. The stations are on the air 24 hours each day with a classical, fine arts format designed to enrich and improve the quality of life for those within reception range. Programming includes: classical, folk, and jazz music; news and public affairs; drama; documentaries; discussion and exposition of current events; and other programming.

WUOT is a charter member of National Public Radio and the Southern Educational Communication Association radio division. WUTC is an associate member of both organizations.

Annual Faculty Phi Kappa Phi Lectures


Athletics

The University of Tennessee, Knoxville, encourages athletics as a part of its educational programs. Intercollegiate sports are directed by the Department of Intercollegiate Athletics, George R. Woodruff, Director. Women's intercollegiate sports are administered through the Division of Student Affairs and are under the direction of the Department of Intercollegiate Athletics for Women, Gloria Ray, Director.

There are men's teams in football, basketball, cross country, indoor and outdoor track and field, baseball, swimming, wrestling, tennis, and golf. Intercollegiate games are played according to the rules of the National Collegiate Athletic Association (NCAA) and the Southeastern Conference (SEC). Eligibility for participation is determined by the NCAA, SEC, and the University faculty.

There are women's teams in basketball, swimming, tennis, volleyball, cross country, and indoor and outdoor track and field. Intercollegiate varsity games are played according to the rules of the Association of Intercollegiate Athletics for Women (AAW) and the NCAA. Eligibility for participation is determined by AAW, NCAA, and the University faculty.

A varied intramural and sports club program is provided for all students. These programs are directed by the Office of Recreation and are housed at the Student Aquatic Center.

TENNESSEE STADIUM

Neyland Stadium, the University's football stadium, was named in memory of the late General Robert R. Neyland, longtime football coach and athletics director, Shields-Watkins Field, the football field, is named in honor of William S. Shields, former member of the University Board of Trustees, and his wife.

The stadium, built and developed by the Department of Athletics over a period of a year, can presently accommodate over 90,000 spectators.

STOKEY ATHLETICS CENTER

The hub of the University's sports program is Stokely Athletics Center, which houses a 13,000-seat basketball arena and a fine indoor track. Also located here are coaches' offices, dressing rooms for all sports, and a Hall of Fame room.

OTHER FACILITIES

The University is proud, too, of its Tom Black Track, host to regional, national meets and built to Olympic specifications. The Student Aquatic Center, with its indoor and outdoor Olympic-size pools, separate diving pools, water polo court, sauna baths, and extensive exercise facilities, is one of the best complexes in the country. Also, new tennis courts afford an excellent vantage point for spectators.

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 on campus activities, and The Phoenix, 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 sorority at the University; PC Rush Brochure, published annually by the Interfraternity Council to acquaint male students with the fraternities.

The Tennessee Engineer, published biweekly by the College of Engineering to inform students and alumni of progress in the engineering field; The Tennessee Farmer, published quarterly by the College of Agriculture Student-Faculty Council for those students and alumni interested in developments in agriculture; The Tennessee Law Review, published quarterly by students of the College of Law.

Traditions

Traditions play an important part in the life of a University student by recalling the history and heritage of the past and by setting examples for future achievements.

For instance, the Volunteer Symbol, spirit of the state and University, is ever present during the student's campus life. This traditional symbol, embroidered on the shoulder of those who hold their "torch" high, shadowing themselves to give light to others. It is this symbolic "torch" which first gives the new student a glimpse of one of the many traditions at the University.
But traditions at the University may be light-hearted as well as serious. Among the less serious traditions are the annual student productions which have become part of the University way of life. These are the noise and bustle of Homecoming, the tilt and melody of All-Sing, and the spangle and wit of Carnicus. Homecoming is a time when former students return to the campus to visit and to renew old friendships. This is also the time when alumni have an excellent opportunity to interact and see what students are saying and doing. All-Sing, begun in the early 1930s to encourage interest in harmony groups, features outstanding singing groups representing campus organizations. Carnicus, which began as a parade and presentation of a Carnival Queen, has evolved through the years to become the present form of competitive skills put on by campus organizations. This entertainment event features skits chosen for their humor, continuity, and perfection of presentation.

The Memorial Research Center and Hospital

The University of Tennessee Memorial Research Center and Hospital is a modern medical facility located just off the Alcoa Highway in Knoxville. The 520-bed general hospital provides patient care and training programs for interns, residents, medical students, nurses, dietitians, medical technologists, X-ray technicians, and ancillary health personnel. Out-patient services are furnished to both area residents and UTCHS and UTK students. A modern medical library is available for student and physician use. The Research Center conducts an active and vigorous research program that centers on hematological and oncologic problems. Excellent facilities for animal and laboratory experiments are available. Postgraduate studies are pursued in cooperation with other life-science departments of the University. Special clinical investigations and the testing of experimental drugs involve both research and hospital staff and facilities. A continuing seminar and conference program presented by hospital and research staff and visiting lecturers serves to acquaint local medical and life-science workers with the most recent scientific developments.

University Publications

The various colleges, departments, and continuing education units composing the University issue many publications dealing with their educational, research, and public service programs. In addition, several publications are issued on a University-wide basis. The University of Tennessee Record includes General Catalog, Graduate Catalog, Report on Research, Publications, and Creative Achievements, the President's Report, the Library Development Report, and other publications of a record nature. The Torchbearer, issued four times a year, contains news, pictures, and information about UT's teaching, research, and continuing education programs and is distributed to alumni, faculty and staff, and friends of the University. Other publications on programs of the institution may also be issued on a University-wide basis in response to requests of the various colleges, departments, and continuing education units. All of the publications are for free distribution.

University publications are under the general supervision of The University of Tennessee, Knoxville, Publications Committee appointed by the Chancellor of the University. The operating office for this committee is the Publications Service Bureau, located in the Communications and University Extension Building. Technical services of the Publications Service Bureau are offered to all colleges, departments, and other units of the University system needing assistance with publication design, artwork, copyreading, editing, proofreading, and preparing specifications for printers. These services assist University departments in issuing the highest quality of publications possible within their printing budgets.

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.

The University of Tennessee Press

The University of Tennessee Press is the institution's agency for the publication of scholarly books and monographs, non-fiction works of general and regional interest, and specialized textbooks for Tennessee and the Southeast. Manuscripts are solicited from University personnel and other authors. The Press imprint is controlled by an Editorial Board, to which recommendations are made by the director acting with the counsel of scholarly appraisers, and the books are distributed on a sales basis. The Press office is located in the Communications and University Extension Building.

Student Government Association

Composed of the Student Senate, the Academic Council, and the Graduate Student Council, the Student Government Association is the governing body of the students at UTK. Some objectives of the S.G.A. are to provide a vehicle for responsible and effective student participation in the organization and operation of student life and to promote the recognition of student rights and responsibilities.

The president of the student body serves as chairperson of the Student Senate while the vice president administers the student services section (including the Legislative Interest Group, communications staff program, and voter registration). Student Senate members are elected in the spring quarter to represent geographical areas of the campus as well as various student organizations. The Academic Council and Graduate Student Council representatives are elected from the academic colleges and graduate student programs, respectively. Offices of the S.G.A. are located in room 341 of the University Center.
The Graduate School

L. Evans Roth, Vice Chancellor for Graduate Studies and Research
Clarence W. Minkel, Dean for Graduate Studies
Marla P. Peterson, Dean for Research
Thomas L. Bell, Assistant Dean for Research
Mary P. Richards, Assistant Dean for Graduate Studies

The University of Tennessee, Knoxville, is the official land-grant institution for the State of Tennessee. It is a comprehensive institution offering a wide range of graduate programs leading to the Master's and doctoral degrees. The University provides Master's programs in 119 fields of knowledge and doctoral work in 49 and enrolls approximately 6,500 graduate students, both on and off campus. Administration of graduate student policies and regulations and associated record keeping is the responsibility of the Dean for Graduate Studies. In practice, much of the day-to-day administration of graduate study is conducted by department heads or faculty advisers 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 around 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. UTK offers graduate study for a variety of students, including those desiring full-time study toward the Master's and doctoral degrees or professional certification, those interested in continuing education for updating and broadening knowledge, and those pursuing postdoctoral research. Traditionally, universities have provided graduate programs primarily for full-time, degree-oriented students. Serving the needs of students engaged full-time in intensive study and pursuit of a degree continues to be a major emphasis of UTK's graduate effort; but at the same time, the University believes it has the obligation to provide graduate programs and courses to part-time students and to students who may not desire a degree. The University utilizes a variety of modes, traditional and non-traditional, in offering quality programs designed to serve students.

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

Graduate School of Biomedical Sciences
W. E. Barnett, Director
R. J. Preston, Associate Director

Full-Time Faculty

Professors:
D. Billen, Ph.D. Tennessee; D. E. Olins, Ph.D. Rockefeller.

Associate Professor:
F. H. Gaertner, Ph.D. Purdue.

Assistant Professor:
M. D. Mamrack, Ph.D. Baylor.

Research Associate Professors:

Research Assistant Professor:
C. T. Hadden, Ph.D. Washington; E. A. Hiss, Ph.D. Notre Dame.

The Graduate School of Biomedical Sciences publishes supplementary information in addition to the regular Graduate Catalog. All inquiries concerning admission should be addressed to: Director, The University of Tennessee—Oak Ridge Graduate School of Biomedical Sciences, Biology Division, ORNL, P.O. Box Y, Oak Ridge, Tennessee 37830.

Courses

5000 Thesis (1-15)
5070-80 Physical Chemistry (3,3)
5110-20 Biochemistry (3,3)
5140 Biophysics (3)
5150 General Genetics (3)
5160 Advanced Genetics (3)
5170 Molecular Genetics (3)
5180 Cell Biology I (3)
5190 Cell Biology II (3)
5200 Mammalian Physiology (4)
5230 Biochemical Concepts In Medical Sciences (3)
5310-20-30-40 Biomedical Sciences Laboratory (5,3,3,3)
5350 Biomedical Sciences Seminar (1)
5360 Biomedical Sciences Seminar (1)
5370 Biomedical Sciences Seminar (1)
5430-60-90 Graduate Research Participation (3,6,9)
5510-20-30-40 Special Topics in Biomedical Sciences (3,3,3,3)
5700 Developmental Biology (3)
5740 Statistics for Biologists (3)
5840 Bioorganic Reaction Mechanisms (3)
5860 Cryobiology (3)
5940 Classic Experiments in Genetics (3)
6000 Doctoral Research and Dissertation (3-15)
6200 Nucleic Acid Chemistry (3)
6210 Protein Chemistry and Enzyme Mechanisms (3)
6220 Enzyme Regulation and Kinetics (3)
6240 Chemistry and Metabolism of Lipids (3)
6251 Molecular Biology in RNA (3)
6252 Molecular Biology of DNA (3)
6270 Viral Carcinogenesis (3)
6280 Chemical and Physical Carcinogenesis (3)
6290 Cancer Biology and Biochemistry (3)
6300 Mutagenesis (3)
6400 Membrane Biology (3)
6410 Techniques in Cell Biology (3)
6450 Immunology (3)
### Majors and Degrees Available

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<td>College of Nursing</td>
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<td></td>
</tr>
<tr>
<td>School of Biomedical Sciences</td>
<td>M.S., Ph.D.</td>
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<tr>
<td>School of Library and Information Sciences</td>
<td>M.S.L.S.</td>
<td></td>
</tr>
<tr>
<td>School of Planning</td>
<td>M.S.P.</td>
<td></td>
</tr>
<tr>
<td>School of Social Work (Memphis, Nashville, and Knoxville)</td>
<td>M.S.S.W.</td>
<td></td>
</tr>
</tbody>
</table>
The Comparative and Experimental Medicine program (M.S. and Ph.D.) is jointly administered by the College of Veterinary Medicine, the College of Medicine/Knoxville Unit, and the UT Graduate School. The graduate program is intended to prepare students for teaching and/or research careers in the health sciences, emphasizing the comparative approach to the study of pathology, immunopathology, aberrant metabolism, oncology, genetic disorders. For complete information, refer to the Graduate Catalog.

The UTCHS College of Medicine/Knoxville Unit offers the courses listed below.

**Medical Biology**

**UNDERGRADUATE**

**4110-20-30 Undergraduate Research Participation (2,2,2)** Experience in active biomedical research projects under supervision of faculty. Students may conduct own research projects within designated areas. Prereq: Junior or senior standing; prior consent of faculty member. S/U grading only.

**4210 Introduction to the Study of Cancer (3)** Lectures, classroom discussion, and case reports surveying the major topics of oncology. Prereq: Biology 3110-20 or consent of instructor.

**4310 Introduction to Hematology (4)** Pathophysiology of the blood and the blood forming systems. Lectures, class discussions and demonstrations. Prereq: Upper division biology background to include histology and/or general anatomy.

**4430 Clinical Genetics (3)** Of human genetic disorders using case presentations. Prereq: General biology and general genetics background or consent of instructor.

**GRADUATE**

**5000 Thesis (1-15)**

**5080 Graduate Research Participation (3)**

**5220 Special Topics in Cancer (1-3)**

**5320 Special Topics in Hematology (1-3)**

**5410 Molecular Basis for Metabolic Disease (5)**

**5420 Special Topics in Metabolic Disease (1-3)**

**5430 Metabolism of Drugs (2)**

**6000 Doctoral Research and Dissertation (3-15)**

**6110 Advanced Topics in Medical Biology (2)**

**Engineering Administration**

H. L. Loveless, Coordinator (Industrial Engineering)
Life Sciences

The Graduate School of Planning offers a two-year graduate course leading to a degree of Master of Science in Planning.

Graduate School of Planning (782)
D.A. Johnson, Director

Professors:

Associate Professor:
G. E. Bowen, M.A. George Washington.

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

The Graduate School of Planning offers a two-year graduate course leading to a degree of Master of Science in Planning.

Radiation Biology (844)

Course

5000 Thesis (1-15)
5300 Graduate Research Participation (3-9)
5610-20 Foundations of Radiation Biology (4,4)
5780 Radiation Physiology (4)
6000 Doctoral Research and Dissertation (3-15)
6910 Seminar in Radiation Biology (2)

Graduate School of Social Work (905)

Ben P. Granger, Dean
Betty J. Clieckley, Associate Dean
Lori M. Beasley, Branch Director
Robert N. Hail, Branch Director
Knoxville

M. Kate Mullins, Branch Director
Memphis

Professors:
S. P. Granger (Emeritus), Ph.D. Brandeis; M. H. Bloch, M.S. Ohio State; R. C. Bonovich, D.S.W. Washington University; G. W. Fray, Ed.D. Columbia; A. M. Jarman (Emeritus), M.S.W. Tennessee; M. K. Mullins, Ph.D. New York; R. M. Noe, D.S.W. Tulane; J. B. Orchard (Emeritus), M.S. Western Reserve; S. W. Spencer (Emeritus), M.S. New York School of Social Work.

Assistant Professors:
G. W. Ayres, D.S.W. Tulane; L. M. Beasley, Ph.D. Denver; W. J. Bell, D.S.W. Tulane; B. J. Cieckley, Ph.D. Brandeis; C. T. Cruithde, D.S.W. Tulane; J. C. Eades; Ph.D. Southern Illinois; C. T. Frolund, Ph.D. Western Reserve; H. H. Bratt, Ph.D. New York; J. F. D. Murphy; Ph.D. Michigan; P. Landon, Ph.D. Denver; E. K. Marshall, Ph.D. St. Louis; A. E. M. O'Re, D.S.W. California; R. B. Rodgers, Ph.D. Arizona; G. B. Burghardt, Ph.D. Chicago; D. A. Sullivan, M.S. Simmons; N. P. Tate, Ph.D. Brandeis; H. H. Vaughn, M.S.W. Tennessee; A. R. Wachler, M.S.W. Tennessee; C. S. Wilkes, Ph.D. St. Louis; G. Zanbock, M.S.W. Wisconsin.

The University of Tennessee School of Social Work is a fully accredited two-year graduate professional school, with a program (thesis or non-thesis option) leading to the degree of Master of Science in Social Work. The full two-year curriculum is offered in all three branch locations. A special bulletin describing the facilities, admission, fees, and degree requirements is obtainable from The School of Social Work, 2014 Lake Ave., Knoxville, Tennessee 37996-3910.

Courses

5000 Thesis (1-15)
5002 Non-Thesis Graduation Completion (3-15)
5070 Social Work Research I (3)
5080 Social Work Research II (3)
5081 Evaluative Research in Social Work (3-9)
5082 Practicum in Social Work Research (3-9)
5083 Directed Readings in Research (2-4)
5090 Special Problems in Social Work (2-9)
5110 Social Welfare Policy and Services I (3)
5120 Social Welfare Policy and Services II (3)
5130 Social Policy Analysis (2-3)
5161 Social Welfare Seminar (2-3)
5210-20 Human Behavior and Social Environment I and II (3,3)

The Graduate School
Courses
5000 Thesis (1-15)
5070 Airports and the Community (3)
5080 Collection and Distribution (3)
5090 Governmental Policies for Aviation (3)
5100 Project in Aviation Systems (3)
5210-20 Experimental Flight Mechanics (3,3)
5970 Special Topics in Aviation Systems (3)

Transportation Center
Director: K. W. Heathington, Ph.D., Northwestern, P.E.
Associate Director: M. S. Bronzini, Ph.D., Pennsylvania State, P.E.
Assistant Directors: D. H. Jones, M.S., Tennessee; P. R. Tutt, M.S. Texas (Austin).

The Transportation Center is a nationally recognized leader in transportation research. The Center utilizes the combined talents of University faculty and students in a research environment which emphasizes an interdisciplinary approach to problem-solving in the transportation of both goods and people. The Center assists the academic programs of the University by involving qualified undergraduate and graduate students in a variety of research projects. This support not only provides needed financial assistance to students but also creates the environment for addressing transportation problems in a professional manner.

Water Resources Research Center
William F. Brandes, P.E., 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 programs addressing problem areas of concern to the state; (2) to provide information, dissemination and technology transfer services to state and local government bodies, academic institutions, professional groups, environmental organizations, and others, including the general public, who have an interest in water resources matters; (3) to promote education in fields relating to water resources and to encourage the entry of promising students into careers in these fields.

Aviation Systems (169)
The University of Tennessee Space Institute offers this program leading to the Master of Science with a major in aviation systems. The aviation systems program is designed for those who possess bachelor’s degrees in engineering or science and who wish to study under a “systems philosophy” toward careers in research and development or administration in various phases pertinent to aviation. The program features 18 quarter hours of major field credit in various aspects of aviation systems, six or more quarter hours of credit in each of the areas of research-development and administration, and electives which permit further specialization in either area.

Courses
5000 Thesis (1-15)
5070 Airports and the Community (3)
5080 Collection and Distribution (3)
Institute of Agriculture

W. W. Armistead, Vice President
B. H. Pentecost, Assistant Vice President

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

Agricultural Experiment Station

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

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

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

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

- **Ames Plantation** near Grand Junction includes 18,500 acres (about 10,000 acres in forest). The resources are held in trust by the Hobart Ames Foundation for use by the Institute of Agriculture. Large scale experiments involve forestry, farm management, crop production, and genetics and management of beef cattle and swine.

- **Dairy Experiment Station** near Lewisburg is operated in cooperation with USDA/SEA/AR. Major emphases are genetics, physiology, nutrition, and management of Jersey cattle. Production, handling and preservation of feed for dairy cattle are also being evaluated along with waste management systems.

- **Forestry Experiment Stations and Arboretum at Oak Ridge, Tullahoma, and Wariburg.** The 250-acre arboretum at Oak Ridge places emphasis on woody plants. Research in forestry studying genetics, species adaptation, fertilization, and other management practices are under way on the adjoining land. The Cumberland forest consists of two tracts of land in Morgan and Scott counties. Research at this location deals with many of the forest problems in the Cumberlands including strip-mine reclamation. The Highland Rim Forestry Station is located near Tullahoma. Research at this location deals primarily with tree improvement through genetics and also management problems associated with the forest of the Highland Rim.

- **Highland Rim Experiment Station** near Springfield emphasizes research on field crops and beef cattle. A major thrust is on the development and culture of improved darkfired tobacco varieties. Other research involves problems associated with other agronomic crops, horticultural crops, and forages produced on the Highland Rim and management of beef cattle.

- **Middle Tennessee Experiment Station** near Spring Hills is representative high-phosphate Central Basin soils. Research studies are underway with agronomic crops, vegetables, fruits, ornamental horticulture, beef cattle, and dairy cattle of the Holstein breed.

- **Milan Experiment Station** is located in West Tennessee. Research emphases are production problems and mechanization of corn, cotton, and soybeans. Minimum tillage and other approaches to reduce soil erosion are a major thrust at this location.

- **Plateau Experiment Station** near Crossville consists of three farms. Studies with beef cattle, and agronomic and vegetable crops provide information about results to be expected under the cooler, more humid climate and special soil conditions of the Cumberland Plateau.

- **Tobacco Experiment Station** is located near Greeneville. Extensive research on all phases of burley tobacco is in cooperation with USDA/SEA/AR. In addition, research is underway with beef cattle and other field crops.

- **UT-Martin**—The research farm, adjacent to the UT-Martin Campus, is used for both research and teaching. The research staff at Martin, jointly employed by the Experiment Station and the School of Agriculture, cooperate with other station personnel in planning and conducting research on field crops, beef cattle, dairy cattle, and swine. Emphasis is on problems of importance to the northwestern part of the State.

- **West Tennessee Experiment Station** is located at Jackson. Major emphases are all phases of production on agronomic crops produced in the western part of the State. In addition, research deals with problems associated with fruit and vegetable production and dairy production. The USDA/SEA-AR cooperates with research on the soybean cyst nematode.
Agricultural Extension Service

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

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

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

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

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

College of Agriculture

O. Glen Hall, Dean

Curricula in Agriculture

Broad opportunities for individuals to prepare for a future in agriculture, forestry, and wildlife and fisheries science are offered in the College of Agriculture. The college provides curricula leading to the degrees of Bachelor of Science in Agricultural Engineering, Bachelor of Science in Forestry, 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 for Engineering and Technology. The forestry curriculum is fully accredited by the Society of American Foresters.

A pre-professional curriculum in veterinary medicine is offered in the college. This program is designed to prepare students for admission to 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: agriculture, agricultural economics and rural sociology, agricultural education, agricultural mechanization, animal science, food technology and science, ornamental horticulture and landscape design, and plant and soil science. Specific courses required for each of these areas are given under the departmental headings in this section of the catalog. A student must complete the curriculum in 198 quarter-hour credits in which the student is majoring in order to receive a degree. In all areas of specialization, particular emphasis is placed upon the sciences as a background for agricultural instruction; other courses are required 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 major should be made with the guidance of the faculty adviser.

All academic and general requirements of the University as stated in the front section of this catalog must be met by agricultural students, and they must complete the requirements in one of the organized curricula. Students transferring into the College of Agriculture from other than the UTK campus must have a grade point average of 2.0. Each curriculum leading to the Bachelor of Science in Agriculture includes the requirements of the basic curriculum for agriculture. For this degree, the minimum requirement is 198 quarter-hour credits. A minimum of 45 hours in agricultural courses is required. For the degrees of Bachelor of Science in Forestry and the Bachelor of Science in Wildlife and Fisheries Science, the minimum requirement is 198 quarter-hour credits. For the degree of Bachelor of Science in Agricultural Engineering, the minimum requirement is 198 quarter-hour credits.

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

A minimum of 27 quarter hours of upper-division technical agriculture applicable to a specified major requirement, and approved by the major adviser, must be completed in residence to fulfill the requirements of baccalaureate degrees offered in the college.

Satisfactory/No Credit Courses

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

Graduate Study in Agriculture

MASTER OF SCIENCE PROGRAMS

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

A Winter Short Term for Agricultural Extension personnel and other professional agricultural workers is held during the last half of the winter quarter. Those attending must be accepted by The Graduate School. Students may take three courses and earn nine quarter hours of graduate credit toward the Master of Science degree. A number of courses are offered annually in agricultural education and in other departments in the College of Agriculture.

Additional information and a five-year schedule of course offerings may be obtained by writing to Professor R. S. Dotson, Head, Department of Agricultural Extension Education, College of Agriculture, Knoxville.

DOCTORAL PROGRAMS

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

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

Facilities

The College of Agriculture uses the facilities on the agricultural campus, on University farms located near Knoxville, and on the main University campus. On the agricultural campus are found 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 Hall which houses the plant science departments; and greenhouses for 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 Science 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 (2,260 acres), and Ames Plantation (8,000 acres of forested land) provide excellent facilities for field work in forestry.

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 area of special interest may select the curriculum most adaptable to their needs when they register as freshmen, and an adviser from the department will be assigned for their counseling. It is not necessary, however, that freshman students select their curriculum until the end of the first year. Those who are in doubt will be assigned a special adviser 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 adviser will be assigned from that department.

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

A very careful choice of electives enables a student with an above average academic record to complete a double major by satisfying all the requirements in each curriculum. For this purpose, the advisers for each curriculum should be consulted, the dean of the College of Agriculture should be informed, and each adviser should maintain a complete record of the student's progress.

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 24 credit hours in courses numbered 2000 and above with the majority of credit hours at the 3000 level. At least 12 of the credit hours required for the minor must be completed at UTK. 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.

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

BASIC CURRICULUM FOR AGRICULTURE
All students except those majoring in ornamental horticulture and landscape design working for a degree of Bachelor of Science in Agriculture will elect five courses in their course of study during their first year to satisfy the following minimum requirements. The sequence and the selection of courses not specified will be guided by the adviser.

- **Agriculture 1100 Introduction to Social Science** for Agriculture 4
- **Agriculture 1130 Introduction to Agricultural Engineering** 4
- **Agriculture 1300 Animal Science for Agriculture** 4

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<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
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<tr>
<td>Agriculture 1140 Plant Science for Agriculture</td>
<td>4</td>
<td></td>
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<tr>
<td>Agriculture 1150 Food Technology and Science for Agriculture</td>
<td>4</td>
<td></td>
</tr>
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<td>Agricultural Science Courses listed in department curriculum</td>
<td>26</td>
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<tr>
<td>English and Communications</td>
<td>(English 1010 or 1011; 1020; 1031 or 1032 or 1033; Speech 2311, 2312, and 5 hours technical communications)</td>
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<tr>
<td>Mathematics 1540-50-60</td>
<td>(general mathematics) 12</td>
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<tr>
<td>Biological Science</td>
<td>(entomology and plant pathology, biology, botany, microbiology, or zoology) 12</td>
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<tr>
<td>Physical Science</td>
<td>(Chemistry 1110-20-30 or 1510-20-30 and physics or geology)</td>
<td>16</td>
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<tr>
<td>Social Science and Humanities</td>
<td>(Economics 110-20 and electives, 12 hours—not more than 3 areas) 18</td>
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<tr>
<td>Other Courses or Electives Hours Specified</td>
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<td>76</td>
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<td>Total</td>
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<th>Exception</th>
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<tr>
<td>Mathematics 1540-50-60 sequence must be necessary in some courses of study.</td>
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<tr>
<td>Exception—See Agricultural Business and Agricultural Economics</td>
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</table>

The five basic courses in agriculture are not departmental, but the course outlines and content were originated by a group of experienced teachers representing the appropriate subject-matter areas. They are presented by a team of teachers who work together in preparing material in each course. The five courses are required of all agricultural students, except those majoring in ornamental horticulture and landscape design, who seek the degree of Bachelor of Science in Agriculture, and the five teaching teams coordinate their work carefully to insure a unified program. A major purpose of this basic program is to present freshman agricultural students an appropriate concept of modern agriculture, its role in our economic and social structure, the unity among its several segments, and its relation to other areas of study. Basic subject-matter concepts are presented to prepare suitable foundations for further study.

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

Agricultural Biology
Adviser: Professor Southard

No undergraduate curriculum exists in agricultural biology, but a program leading to the Master of Science degree with a major in agricultural biology is available (see Graduate Catalog). Courses in economic entomology, plant pathology, soil microbiology, and plant parasitic nematodes are available to agricultural students. The department is currently composed of two major disciplines:

- Economic entomology and plant pathology.

The primary objective of offering a major at the graduate level is to provide training in these disciplines which deal with the natural hazards that are the major causes of losses in agricultural production. The training gives such a graduate the foundation necessary for coping with the myriad of problems in plant disease, pest, and weed problems that constantly threaten Tennessee's dynamic agriculture.

Agricultural Economics and Rural Sociology

AGRICULTURAL BUSINESS CURRICULUM
Advisers: Professor Martin; Associate Professors Brooker, McLemore, Mundt, Tyre, Pardue and Whipple

This curriculum is designed to prepare students for employment in the rapidly expanding field of agricultural business. Recognition is given to the desire of many college graduates to continue to work with agriculture through many private and public services where major emphasis is in areas other than farm production. This program emphasizes particularly those capacities needed for the management phases of agricultural business. Course offerings in the College of Business Administration have been used freely in this curriculum.

Preparation is given for work in crops, livestock and poultry marketing, fertilizer and feed business, cooperative business management, agricultural credit agencies, farm real estate and appraisal services, agricultural representatives with banks, public and private market analysis, agricultural journalism, and farm information services utilizing mass communications.

<table>
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<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
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<tr>
<td>Agriculture 1110-20-30-40-50 Electives</td>
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<td>Agriculture 1210-20</td>
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<td>Sophomore</td>
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<tr>
<td>Chemistry 1110-20 or 1510-20 and Physics 1110-20-30-or Chemistry 1110-20-30-or Physics 1210</td>
<td>14</td>
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<tr>
<td>Computer Science 1410 or 1510</td>
<td>3 or 4</td>
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<td>Office Administration 2750</td>
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<td>Economics 1101-20</td>
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<td>Junior</td>
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<td>Accounting 2110-20-30</td>
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<td>Agricultural Economics 3320</td>
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<td>Agricultural economics and rural sociology elective</td>
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<td>&quot;Economics 3110&quot;</td>
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<tr>
<td>Senior</td>
<td>9</td>
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<tr>
<td>Agricultural Economics 4140, 4326, 4120 or 4610</td>
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<td>Agricultural economics and rural sociology electives</td>
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<tr>
<td>Agricultural Economics 4710 or Business Law 4110</td>
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<td>Economics 5120</td>
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<tr>
<td>Office Administration 4320</td>
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<tr>
<td>&quot;Non-departmental agricultural electives&quot;</td>
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</tbody>
</table>

Institute of Agriculture
Agricultural Education

Advisers: Professors Wiegens and Craig; Associate Professor: Todd

Agricultural Electives

AGRICULTURAL ENGINEERING CURRICULUM

Advisers: Professors Luttrell and Bledsoe

Agriculture 1110-20-30-40-50... 6

Freshman

Credits

Agriculture 1110-20-30-40-50... 6

Electives... 9 or 10

TOTAL: 198 hours

1Selected from the following: 20 or more courses

2Required admission to teacher education.

3Business administration electives... 6

4Electives... 9 or 10

TOTAL: 198 hours

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

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

The senior courses in agricultural education are taught at selected off-campus centers. These courses are scheduled concurrently each quarter during the regular school year. Students should file applications for student teaching in the agricultural education department at least two quarters prior to the quarter in which the student teaching is desired.

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

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

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

Pre Freshman

Credits

Agriculture 1110-20-30-40-50... 6

Electives... 9 or 10

TOTAL: 198 hours

1Selected from the following: 20 or more courses

2Required admission to teacher education.

3Business administration electives... 6

4Electives... 9 or 10

TOTAL: 198 hours

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

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

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

Students majoring in agricultural engineering are eligible to participate in the Engineering Cooperative Scholarship program, Engineers' Day program, and other student activities in the College of Engineering. The Councils also provide for six credits of American Agriculture and Engineering major.

The College of Agriculture, with the cooperation of the College of Engineering, offers a four-year curriculum leading to the degree of Bachelor of Science in Agricultural Engineering. The curriculum is fully accredited by the Accreditation Board For Engineering and Technology. The course requirements, research, and design work, and凡是 foreign service opportunities to agricultural engineers.

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

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

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

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

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

Freshman

Credits

Agriculture 1110-20-30-40-50... 6

Electives... 9 or 10

TOTAL: 198 hours

1Selected from the following: 20 or more courses

2Required admission to teacher education.
The agricultural mechanization curriculum is designed to prepare students for careers in agricultural extension, agricultural education, and other related fields. The curriculum is organized into several major areas: \( \text{Agricultural Extension 3110} \), \( \text{Agricultural Mechanization 4160} \), \( \text{Agricultural Mechanization 4130} \), \( \text{Senior Electives} \) (9 or 10 hours), \( \text{Social science or humanities electives} \) (6 hours), \( \text{Plant and Soil Science 3220} \) (4 hours), \( \text{Agricultural Mechanization 3510 or 3560} \) (4 or 3 hours), \( \text{Agricultural Mechanization 3110} \) (3 hours), and \( \text{Agricultural Mechanization 3100} \) (1 hour). The curriculum requires a total of 198 hours for graduation.

**Agricultural Extension Education**

Advisers: Professor Dotson, Associate Professor Carter

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

**Animal Science**

Advisers: Professors Barth, Chamberlain, Lidwall, McLaren, Montgomery, Murphree, Richardson, Shirley, Shrode, Swanson; Associate Professors Hitchcock, Holloway, Masincupp; Assistant Professors Heitmann, Robbins, and Smalling.

This curriculum is designed to prepare students for leadership careers in livestock and in related industries. Swine, poultry, sheep, dairy, and beef cattle production and management may be involved, providing the opportunity for special or additional training in the dynamic livestock and husbandry technology (production). Through course selection, the student, therefore, may prepare for general or livestock farming, management, business, or science, or elect the pre-veterinary course 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 extension services, agricultural communication, public relations, and various organizations associated with agriculture.

Students have the opportunity, through appropriate course selection, to obtain double majors by combining the animal science curriculum with another curriculum. Students majoring in both the animal science curriculum may if they desire arrange to minor in various other curricula. The requirements for these minors shall be stipulated by the department supervising that particular curriculum. Students majoring in other curricula may opt to minor in animal science. A minor in animal science consists of a minimum of 28 hours and must include: a) Animal Science 2610, 2610, 310, 310, 3140, 3150, 21 hours, b) One course from Animal Science 3560, 3620, 3630, 3640, or Food Technology and Science 3610 or 3 hrs., c) One course from Animal Science 4810, 4820, 4830, 4840, 4860 or 4860 or 4 hrs.

**Freshman**

Hours Credit

- Agriculture 1110-20-30-40-50 .................. 20
- English 1010 .......................... 4
- Math 154-50-60 .......................... 12

**Sophomore**

- Agriculture Mechanization 2110 ............... 3
- Agricultural Mechanics 2120 ................. 3
- Animal Science 2810 .......................... 3
- Chemistry 1110-20-30 or 1510-20-30 ......... 12
- Economics 2110 .......................... 6
- Journalism 2210 .......................... 3
- Physics 2120-20 .......................... 4
- Plant and Soil Science 2130 ................. 8
- Speech 2311 .......................... 3
- English or communications elective .......... 3

**Junior**

- Accounting 2110 .......................... 3
- Entomology and Plant Pathology 3210 ......... 4
- Agricultural Mechanization 3100 ............... 1
- Agricultural Mechanization 3110 ............... 3
- Agricultural Mechanization 3210-20-60 ......... 6
- Animal Science 3220-30-35 or 3600 ......... 4 or 3
- Computer Science 1410 or Office Administration 2750 .......................... 3
- Microbiology 2910-11 .......................... 4
- Plant and Soil Science 3220 ................. 4
- Social science or humanities electives ...... 6
- 3 elective electives .......................... 6
- Electives .......................... 9 or 10

**Senior**

- Agricultural Economics 3410 or 3440 or 3610 .......... 3
- Agricultural Economics 4710 ................. 3
- Agricultural Mechanization 4120 ............... 1
- Agricultural Mechanization 4130 ............... 1
- Agricultural Economics 4160 ................. 3
- Agricultural Mechanization 4210-20 .......... 7
- Agricultural Extension 3110 ................. 3
- Food Technology and Science 3020 or 3840 or 4410 .... 4 or 3
- Special science or humanities electives ...... 6
- Option electives .......................... 9
- Electives .......................... 11

**TOTAL: 198 hours**

- Or equivalent honors courses.
- In mathematics ACT is less than 28, take Mathematics 1700 prior to 1840 (see adviser for alternate course schedule).
- Credit toward graduation will not be granted for Mathematics 1700.
- Agricultural science electives from such areas as history, economics, government, literature, sociology, psychology, and fine arts (not more than three areas).
- Agricultural engineering elective group: any two of Agricultural Engineering 4610, 4620, 4630, 4640.
- The selection of technical electives must have approval of student's adviser prior to registration in the course.

**Agricultural Mechanization CURRICULUM**

Advisers: Professors Luttrell and Shelton

The agricultural mechanization curriculum is administered by the Department of Agricultural Engineering and leads to the degree of Bachelor of Science in Agriculture. The curriculum prepares students to apply principles, techniques, and systems of engineering, agricultural science, and business to the broad industry of agriculture. Agricultural mechanization courses encompass power and machinery, electrification and processing, structures and environment, and soil and water conservation. Students, with the assistance from their adviser, may structure their program to obtain either a broad or a highly specialized education. Graduates are employed in industry, government, and educational institutions generally in the areas of management, promotion, sales, and training related to agricultural products, materials, and services.

**Freshman**

Hours Credit

- Agriculture 1110, 1130, 1140 .................. 12
- Biology 1210 .......................... 8
- Chemistry 1110, 1130, or 1510-20-20 ......... 8
- English 1010 or 1011; 1020; 1031 or 1032; 1033 .......................... 9
- Mathematics 154-50-60-1840-60-60 .......... 12

**Sophomore**

- Agriculture 1120, 1150 .......................... 8
- Animal Science 2610, 2610 (core requirement) .... 7
- Chemistry 1110 or 1530, and 3211-19 or 2230, or Biochemistry 3110 .......................... 7
- Nutrition 3100 .......................... 8
- Economics 2110-20 or 2310 .......................... 6
- Microbiology 2910-11 .......................... 4
- Plant and Soil Science 2130 .......................... 4
- Physics elective .......................... 4
- Speech 2311 and communications elective ...... 7
- Electives .......................... 2

**Junior**

- Non-animal science agricultural electives ...... 6
- Animal science (core requirement) Animal Science 3210, 3220, 3320, 3330, 3410, 3420, 3510, 3610; 12
- Directed electives—evaluation .......................... 4
- Communications elective .......................... 2
- Electives .......................... 9
- Humanities-social science electives ...... 6

**Senior**

- Non-animal science agricultural electives ...... 6
- Animal Science 4910 (core requirement) .... 6
- Directed electives .......................... 27
- Humanities-social science electives ...... 6

**TOTAL: 198 hours**

- Or equivalent honors courses.

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 adviser.
PRE-VETERINARY MEDICINE OPTION CURRICULUM
Advisers: Professors Barth, Chamberlain, Lidvall, McLane, Montgomery, Murphy, Richardson, Shirley, Shrode, Associate Professors Hitchcock, Holoway, Malsing; Assistant Professors Heitmann, Robbins, Smalling.

This program is designed to guide the student in meeting the admissions requirements of The University of Tennessee College of Veterinary Medicine. The completion of specific subject matter requirements and the attainment of a satisfactory grade point average comprise the minimum requirements for entrance into the professional curriculum of the College of Veterinary Medicine. However, each year the number of applicants is much greater than the number of available spaces. Therefore, meeting or surpassing the minimum requirements does not assure acceptance by the College of Veterinary Medicine, and each pre-veterinary medical student should, early in the college career, elect a possible alternative career choice. The admission requirements listed below were established by The University of Tennessee College of Veterinary Medicine. Their completion will generally fulfill the requirements for other veterinary colleges. However, students intending to apply to schools other than The University of Tennessee should check the requirements of those specific schools. Students intending to apply to The University of Tennessee College of Veterinary Medicine must complete a minimum of 120 hours. They must complete their pre-veterinary requirements by the end of the third year, and (2) complete the requirements for the 3 and 4 years they are applying. It is strongly recommended that each interested student plan to pursue at least a three-year pre-veterinary program. Inquiries concerning possible course substitutions and combining of the pre-veterinary program with a degree program should be directed to the department's pre-veterinary advisers. It is possible for students who are accepted into the College of Veterinary Medicine at the end of their third year to receive a B.S. in Agriculture with a major in animal science after completion of the first year in the College of Veterinary Medicine.

ANIMAL SCIENCE CURRICULUM WITH A PRE-VETERINARY OPTION
This program is designed for students accepted by the UT College of Veterinary Medicine after their third undergraduate year who wish to obtain a B.S. in Agriculture with a major in animal science upon completion of the first year in the College of Veterinary Medicine.

The student will need to complete the requirements as established by the College of Veterinary Medicine. In addition, the student needs to complete the following as indicated above, including Economics 2110-20 or 2130, and, under electives, complete Agriculture 1150 or equivalent food technology and science course, Plant and Soil Science 2130, agriculture or basic social science course, six hours. (suggested: Agriculture Mechanization 4160, Food Technology and Science 3840, Entomology and Plant Pathology 3210, Plant and Soil Science 3140). In addition, the following general education requirements must be met in order to meet certain rules of UTK and the College of Agriculture in granting degrees:

- The last 45 hours of the three-year program must be taken at UTK.
- At least 18 hours of upper-division technical agriculture must be taken at UTK.
- The third year student must complete the first year in the UT College of Veterinary Medicine and with the substitution of appropriate courses from the first year and the completion of a minimum of 198 hours will be granted a B.S. in Agriculture with a major in animal science. It is the student's responsibility to complete the above requirements and to initiate the request for the degree.

**Entomology and Plant Pathology**
Adviser: Professor Southard

No undergraduate curriculum exists in agricultural biology, 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, plant pathology, soil microorganisms, and plant parasitic nematodes are available to agricultural students. The department is currently comprised of two major disciplines: economic entomology and plant pathology. The primary objective of offering a major at the graduate level is to provide training in these disciplines which deal with the natural hazards that are the major causes of losses in agricultural production. The training gives such a graduate the foundation necessary for coping with the myriad insect and plant disease problems that are constantly threatening Tennessee's dynamic agriculture.

**Food Technology and Science**
Advisers: Professors Miles, Collins, Jaynes, and C. Melton, Associate Professor S. Melton, Assistant Professor Mount.

Food technology and science is the application of the sciences and engineering to the manufacture, preservation, storage, transportation, and consumer use of food products. Processing of raw food materials into consumer products by canning, freezing, dehydration, fermenting, preserving, etc., is taught with emphasis on basic principles rather than on specific commodity procedures. Therefore, men and women who plan to enter food technology must have an interest in the sciences, particularly chemistry, biology, microbiology, and physics.

This curriculum is designed to prepare students for a professional career in positions in the food industry such as food microbiologist, food chemist, quality evaluation and control supervisor, plant foreman and manager, packing specialist, ingredients specialist, etc. The Model Curriculum of the Institute of Food Technologists was used as a guide in developing this curriculum. A special problem course provides opportunity for practical training in food processing plants and laboratories or federal and state laboratories.

**Freshman**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>Agriculture 1110-20-30</td>
<td>16</td>
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<tr>
<td>Biology 1220</td>
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<td>Mathematics 1540-50</td>
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<tr>
<td>Physics 1210-20</td>
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**Sophomore**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture 1150</td>
<td>4</td>
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<tr>
<td>Economics 2110-20</td>
<td>12</td>
</tr>
<tr>
<td>Food Technology and Science 3210</td>
<td>8</td>
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**Junior**

<table>
<thead>
<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>Agriculture 3300</td>
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<tr>
<td>Food Technology and Science 3300</td>
<td>12</td>
</tr>
<tr>
<td>Plant and Soil Science 3140</td>
<td>3</td>
</tr>
</tbody>
</table>
Upon completion of the four-year forest resource management curriculum including the recreation option, the degree of Bachelor of Science in Forestry (B.S.F.) is awarded.

**Freshman**

- Botany 1110-20 or Biology 1210-20... 8
- English 1010 or 1011; 1020; 1031 or 1032 or 1033... 9
- Forestry 1620... 3
- Forestry 3000... 2
- Mathematics 1700, 1841-51... 12
- Physics 1210 or 1220 or 2210... 8
- Speech 2311... 4
- Electives... 2-3

**Sophomore**

- Agricultural Biology 3130... 4
- Economics 2120-20-31, 3140... 9
- Forestry 3020-40-50... 9
- Forestry 3130 or Entomology and Plant Pathology 3140 or 3210... 3
- Agricultural Mechanization 2120... 3
- Speech 3141 or 3521 or Journalism 3710... 3
- Recreation 3140... 3
- Electives... 16

**Junior**

- Forestry 3210, 4210, 4230, 4240, 4320, 4440... 20
- Planning 4100... 3
- Ornamental Horticulture and Landscape Design 3610... 4
- Forestry 4450... 3
- Electives... 16-21

TOTAL: 198 hours

1. Mathematics 1400-50-60 are desirable alternatives for students wishing to elect additional courses in this area.
2. Those students preparing for employment in commercial food industry should select electives from such areas as agricultural economics, accounting, business law, management, finance and transportation. Students should consult with adviser before selecting electives.

**Forestry, Wildlife and Fisheries**

Adviser: G. Schneider

The department offers two majors. The major in forestry leads to the degree Bachelor of Science in Forestry and the major in wildlife and fisheries science leads to the degree Bachelor of Science in Wildlife and Fisheries Science.

**FOREST RESOURCE MANAGEMENT OPTION**

The major in wildlife and fisheries science includes two options, Forestry Resource Management option and Forest Recreation Option.

**FOREST RESOURCE MANAGEMENT OPTION**

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

- Forest Biology—plant physiology and morphology, ecology, genetics, tree nutrition, forest soils.
- Forest Resource Management—economics, accounting, finance, marketing, management science.
- Forest Economics—economics, business administration, social science.
- Forest Engineering—mathematics, computer science, photogrammetry.
- Forest Inventory—mathematics, statistics, computer science, photogrammetry.
- Forest Recreation—natural and social sciences.
- Wildlife Management—ecology, zoology, botany.
- Wood Utilization and Production Management—business administration, engineering, statistics, technology of wood.

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.
Human needs go beyond food, clothing, and shelter to include health, shelter, recreation, and education, for which the greater use, comfort, and efficiency are achieved in an environment that is well designed and properly maintained. Ornamental plants and their uses are recognized as part of the environment, hence a curriculum in ornamental horticulture and landscape design. The four areas of study within this curriculum are floriculture, nursery management, turfgrass management, and landscape design. The area of floriculture includes the science of producing flowering plants in field and greenhouse, and the art and science of using these plants for the benefit of human life.

Opportunities are available as greenhouse managers, floral designers, retail salespersons, garden writers, research workers, and teachers.

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

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

Landscape means modifying the outdoor environment for the greatest use, comfort, and enjoyment. It not only means the use of trees, shrubs, and other plant material to accomplish this goal, but it also means having an understanding of the requirements for working, recreation, and housing. Emphasis in the area of landscape design is on plant material and design courses. Opportunities in this area include landscape nursery operation, landscape maintenance, garden center operation, and sales of lawn and garden products.

**Plant and Soil Science**

**Advisers:** Professors Reynolds, Seatz, Coffey; Associate Professors Allen, Lessman, and Reich

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

Soil science includes studies in soil formation and classification for better understanding of our soil resources; soil management and soil fertility for the efficient production and conservation; soil fertility for utilizing fertilizers efficiently; and basic studies in chemistry, physics, and biology as they apply to the soil and to a better understanding of its properties and proper use.

The plant and soil scientist must have a knowledge of the basic physical and biological sciences and, in addition, be trained in communication skills. The scientist may be broadly trained or may specialize in a more specific phase of the subject. Regardless of interest, many good jobs are available for the well-trained plant and soil scientist. Employment opportunities differ depending upon the individual's type of training and interest. For the person who is scientifically inclined, positions are available in research with both public and private agencies. For those who wish to apply their knowledge to the solution of practical problems, positions are available with the Agricultural Extension Service as extension agents or as specialists, with the Soil Conservation Service, Forest Service, Farmers Home Administration, Production Credit Association, and other public agencies. Many plant and soil scientists are employed in nurseries or as technical specialists, supervisors, and salespersons. Banks and other financial institutions employ plant and soil scientists as appraisers and farm managers. Others may farm on their own, manage farms for others, or work in foreign agricultural programs. Certainly, plant and soil science is basic to all agriculture, and people trained in this important field will find many opportunities to serve in modern agriculture.

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

**Freshman**

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<tr>
<th>Course</th>
<th>Hours</th>
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<tr>
<td>1English 1010 or 1011; 1020; 1023 or 1032 or 1033</td>
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<tr>
<td>4Mathematics 1540-50-60</td>
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<tr>
<td>Physics 1210 or 2210 or Geology 1410</td>
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</tr>
<tr>
<td>Social science or humanities electives</td>
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<tr>
<td><strong>Sophomore</strong></td>
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<tr>
<td>Agriculture 1120...</td>
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<tr>
<td>Om. Hort., Landscaping Design 2230, 3910, 3810...</td>
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<tr>
<td><strong>Junior</strong></td>
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<td></td>
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<tr>
<td>Plant and Soil Science 2140...</td>
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</tr>
<tr>
<td>Plant and Soil Science 4120...</td>
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</tbody>
</table>

**TOTAL: 198 hours**

**Or equivalent honors courses**

**Sophomore**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>i.5 Introductory biological science</td>
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<tr>
<td>English 1010 or 1011; 1020; 1023 or 1032 or 1033</td>
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<td>Physics 1210 or 2210 or Geology 1410</td>
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</tr>
<tr>
<td>Social science or humanities electives</td>
<td>4</td>
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</tr>
<tr>
<td><strong>Sophomore</strong></td>
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<td></td>
</tr>
<tr>
<td>Agriculture 1120...</td>
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<td></td>
</tr>
<tr>
<td>Om. Hort., Landscaping Design 2230, 3910, 3810...</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td><strong>Junior</strong></td>
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<td></td>
</tr>
<tr>
<td>Plant and Soil Science 2140...</td>
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</table>

**TOTAL: 198 hours**

**Or equivalent honors courses**

**Senior**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
<td>Agriculture 1120...</td>
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<td></td>
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<tr>
<td>Om. Hort., Landscaping Design 2230, 3910, 3810...</td>
<td>11</td>
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</table>

**TOTAL: 198 hours**

**Or equivalent honors courses**

**Lower-division biological sciences**

<table>
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<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>English 1010 or 1011; 1020; 1023 or 1032 or 1033</td>
<td>9</td>
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<tr>
<td>Mathematics 1540-50-60</td>
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<tr>
<td>Physics 1210 or 2210 or Geology 1410</td>
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<tr>
<td>Social science or humanities electives</td>
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<tr>
<td><strong>Sophomore</strong></td>
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<tr>
<td>Agriculture 1120...</td>
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<tr>
<td>Om. Hort., Landscaping Design 2230, 3910, 3810...</td>
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<tr>
<td><strong>Junior</strong></td>
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<tr>
<td>Plant and Soil Science 2140...</td>
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**TOTAL: 198 hours**

**Or equivalent honors courses**

**Business**

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<tr>
<td>Accounting 10-20; Business Law 4110-20-30</td>
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<tr>
<td>Economics 2110; Finance 3110; Management 3010; Marketing 3110-20; Office Administration 4310-20</td>
<td>12</td>
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**Science**

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<tr>
<th>Course</th>
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<tr>
<td>Agricultural Economics 4120, 1410, 4330; Agricultural Mechanization 3210, 4210</td>
<td>88</td>
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<tr>
<td>Animal Science 2110, 3410, 3810, 3910</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Food Technology and Science 3840; Rural Sociology 3420</td>
<td>12</td>
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</table>
4110 Agricultural Industry Field Seminar (3) A travel study of the agricultural industry involving agricultural production, processing, marketing and services, and their interrelationships. Prereq: Junior standing and permission of instructor.

Departmental Programs
Agricultural Economics and Rural Sociology

Professors: J. A. Martin (Head), Ph.D. Minnesota; N. B. Badenhop, Ph.D. Purdue; J. R. Brooker, Ph.D. Florida; D. W. Brown, Ph.D. Iowa State; C. L. Cleland, Ph.D. Wisconsin; Irving Dubov, Ph.D. California (Berkeley); L. H. Keller and Kentucky; T. H. Klindt, Ph.D. Kentucky; F. O. Leuthold, Ph.D. Wisconsin; B. R. McManus, Ph.D. Purdue; B. H. Penecost, J. D. Tennessee; W. P. Ranney (Emeritus), Ph.D. Minnesota; C. B. Sappington, Ph.D. Illinois; T. J. Whately, Ph.D. Purdue.


Assistant Professors: W. M. Park, Ph.D. VIPS & S.U.; G. D. Whipple, Ph.D. Washington State.

Agricultural Economics (047)
2410 Economics of Food and Rural Resources (3) Analysis of contemporary problems and issues of public concern relating to food, agriculture, and rural areas using fundamental economic concepts. Farm income, food prices, world food problems, natural resources, environment, rural development.

3120 Agricultural Prices (3) Factors determining prices of farm products. Effects on price of varying degrees of quality of farm products. Sources of information on prices and related market data. Uses of price information and techniques of analysis in determining outlook for farm prices. Prereq: Agriculture 1110 and Economics 2120.

3220 Marketing Farm Products (3) American marketing system; alternative market structures, functions of marketing system, commodity marketing problems, current marketing problems, and possibilities for improvement. Prereq: Agriculture 1110 and Economics 2120.

3410 Farm Business Analysis (3) Techniques of analyzing a farm business. Factors affecting farm income and efficiency. Resource allocation, cash flow, risk, tax, and tenure consideration. Practice in decision making on simulated farm. Prereq: Agriculture 1110 and Economics 2120. 2 hrs. and 1 lab.

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

3440 Farm Income Tax Management (3) Legal and economic concepts and problems in organizing and managing a farm business within the framework of federal income tax laws. Emphasis is on recognizing problem areas, understanding tax incentives, and avoiding tax traps that may be encountered in organizing the business and operating and transferring the farm. Prereq: Junior standing. 3 hrs.

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

3710 Consumer Demand for Agricultural Products (3) Economic principles, practices, and budgeting techniques to use in purchasing of goods and services. Evaluation of advertising and other related information. Prereq: Agriculture 1110 and Economics 2120.

4120 Farm Management (3) Principles of farm organization and operation; allocating land, labor, and capital to meet changing technologies, tenure arrangements, and use of credit, risks, and measures of success. Use and analysis of records; exercises in planning farms. Field trips arranged. Prereq: Agriculture 1110 and Economics 2120. 2 hrs. and 1 lab.

4140 Introduction to Agricultural Production Economics (3) Resource allocation, production, scale of operation of agricultural firms; aggregate effects of decisions made by individual agricultural firms. Prereq: Agriculture 1110 and Economics 2120. May be repeated to a maximum of 9 credit hours.

4240 World Agriculture and Trade (3) Economic bases of world agricultural production and trade, resource location, land tenure systems, international trade, and commercial policy. Prereq: Agriculture 1110 and Economics 2120, or consent of instructor.

4250 Agricultural and Rural Planning (3) Decision-making concepts applied to design and implementation of local action programs. Case examples from the U.S. and other countries. Prereq: Agriculture 1110 and Economics 2120, or consent of instructor.

4310 Agricultural Finance (3) Nature and source of credit; credit problems of the farmer; kinds and sources of farm credit. Agricultural insurance and taxation. Prereq: Agriculture 1110 and Economics 2120.

4320 Agricultural Policies (3) Meaning of agricultural policy in democratic society; relationship of farm groups to public policy; problems giving rise to policy types of agricultural policy and appraisal of results; current policy problems. Prereq: Agriculture 1110 and Economics 2120.

4330 Land Economics (3) Problems and policies of land use, conservation, development, taxation, and tenure; population growth demand for land; principles and theories of rent, property, value, and income. Prereq: Agriculture 1110 and Economics 2120.

4410 Management of Farm Supply and Marketing Firms (3) Operations of firms selling farm supplies and merchandising agricultural products. Emphasis on accounting data and the economic theories for decision making. Prereq: Agriculture 1110 and Economics 2120.


GRADUATE
5000 Thesis
5002 Non-Thesis Graduation Completion (3-15)
5011 Special Problems in Lieu of Thesis (3)

5120 Agricultural Price Analysis (3)
5130 Advanced Agricultural Production Economics (3)

5210 Seminar: Agricultural Policies (3)
5220 Seminar: Methodology of Research (3)
5230 Seminar: Adjustments to Industrialization (3)
5310 Research (3)
5410 Agricultural Marketing Analysis (3)
5420 Advanced Land Economics (3)
5440 Economics of Agricultural Development (3)
5510 Quantitative Methods in Agricultural Economics (3)
5710 Quantitative Methods in Agricultural Economics (3)
3630 Processing and Material Handling Systems (3)

4650 Diffusion of Agricultural Technology (3) Analysis of diffusion process whereby new technology spreads from scientists to final adopters. Topics discussed include adoption process, communication behavior, mass media, role of professional change agents, opinion leadership, and twostep flow hypothesis. Prereq: Rural Sociology 3420, or consent of instructor.

GRADUATE

5340 Special Problems (3)

5470 Research Problems in Rural Communities (3)

5490 Rural Population Analysis (3)

Agricultural Engineering

Professors: D. O. Baxter, M. S. Missouri.


Admissions and Records), Ph.D. Michigan State, P. E.; H. Luttrell (Head), Ph.D. Iowa State; B. L. Bledsoe, Ph.D. North Carolina State.

Assistant Professors: D. O. Baxter, M. S. Missouri.

Agricultural Engineering (066)

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

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

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

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

3630 Processing and Material Handling Systems (4) Application of basic sciences to processing and handling of agricultural products; physical properties; thermal processing, curing, and drying, elevations, and area related to forest management problems. Credit cannot be given for both 2130 and 2140. Prereq: Math 1560, 1 hr. and 1 lab.

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

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

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

4610 Design of Water Control and Waste Utilization Systems (3) Design of water control and waste utilization systems including earth dams, irrigation, drainage, land grading, hydraulic transport of wastes, and application of wastes on agricultural land. Prereq: 3610 or consent of instructor, 1 hr. and 2 labs.

4620 Design of Structures for Production, Processing, and Environmental Control (3) Functional planning and structural design of agricultural buildings; emphasis placed on complete design of structure or system; design to include functional structural and environmental aspects. Prereq: 3620. 1 hr. and 2 labs.

4630 Design of Processing and Materials Handling Systems (3) Development of systems and components for integrated agricultural processing considering mass and energy balances, product characteristics, equipment specifications, storage, handling, and economic merit. Prereq: 3630. 1 hr. and 2 labs.

4640 Design of Agricultural Machinery (3) Functional planning and structural design of agricultural machines; emphasis placed on complete design of machine component design; synthesis of mechanisms, mechanical and hydraulic drives, team effort in completing machine design project. Prereq: 3640 or consent of instructor, 1 hr. and 2 labs.

5000 Thesis

5240 Environmental Control in Agricultural Structures (3)

5340 Hydrology of Agricultural and Forest Lands (3)

5440 Instrumentation in Agricultural Systems (3)

5540 Engineering Properties of Agricultural Materials and Products (3)

5640 Research Problems in Agricultural Engineering (3)

5710-20 Similitude in Design and Research (3,3)

6000 Doctoral Research and Dissertation

6110 Seminar (1)

6130 Engineering Systems Analysis in Agriculture (3)

6160 Selected Topics Agricultural Engineering (3)

Agricultural Mechanization (080)

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

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

2140 Forest Surveying (2) instruments, methods, and computations used in determining distances, angles,
Agricultural Extension Education (075)

Professor: R. S. Dietson (Head), Ph.D. Pennsylvania State; L. H. Dickson (Director), Ed.D. Cornell
Associate Professor: C. E. Carter, Jr., Ph.D. Ohio State.

3110 Introduction to Agricultural Extension (3) History, philosophy, organization, teaching methods; relationships with other educational agencies. 4110-20 Field Studies (3,3) Supervised work experience with county extension agents in a designated county. For senior and graduate students. Prereq: 3110 and consent of instructor. Requires living off-campus for a specified time.

GRADUATE

5000 Thesis

5100 Special Problems in Agricultural Extension (1-6)

5210 Long-Range Extension Program Planning (3)

5220 Seminar (3)

5230 Evaluation in Programs of Agricultural Extension (3)

5310 History, Philosophy, and Objectives (3)

5320 Volunteer Leadership in Agricultural Extension Programs (3)

5330 Supervision of Agricultural Extension Programs and Personnel (3)

Animal Science (113)

Professors: D. O. Richardson (Acting Head), Ph.D. Ohio State; K. M. Barth, Ph.D. Rutgers; M. C. Bell, Ph.D. Oklahoma State; J. K. Bletner (Emeritus), Ph.D. Ohio State; C. C. Chamberlin, Ph.D. Iowa State; O. G. Hall, Dean, College of Agriculture) Ph.D. Iowa State, S. S. Hansard (Emeritus), Ph.D. Florida; H. M. Jamison, Ph.D. Tennessee; E. R. Lidvall, M.S. Tennessee; J. B. McClellan, Ph.D. Auburn; M. J. Montgomery, Ph.D. Wisconsin; G. M. Merriman (Emeritus), DVM. Michigan State; R. L. Murphy, Ph.D. Wisconsin; H. V. Shidell, Ph.D. Oregon; R. J. Slocombe, Ph.D. Iowa State; E. W. Swanson, Ph.D. Missouri; R. L. Tugwell (Emeritus), Ph.D. Kansas State; C. E. Wylie (Emeritus), A.M. Missouri.


Assistant Professors: J. A. Comit (Emeritus), Ph.D. Pennsylvania State; N. N. Haslott, Ph.D. Maine; H. G. Kallest, Ph.D. VIP & SU; K. R. Robbins, Ph.D. Illinois; J. D. Smalling, Ph.D. Texas A & M.


2610 Fundamentals of Food Animal Evaluation (4) Criteria for food animal evaluation; market classes and grades of cattle, poultry, and pork products, lamb and wool, and swine; subjective and objective techniques for evaluation of beef cattle, dairy cattle, poultry, sheep, and swine. 2 hrs. and 2 labs.

2710 Integration of Biological Aspects of Animal Breeding (3) Introduction to concept of distributions. Expected values of variables as most probable values. Biomedical and normal distributions and their prevalence in biological material. Planning effective experiments. Association or relationship of variables. Assessment of validity of hypotheses. 2 hrs. and 1 lab.

2810 Farm Animal Management Practices (3) Integration of management practices and skills into cattle, horse, sheep, poultry, and swine enterprises. Practices and skills include dehorning, castrating, docking, feeding, veterinary care, shearing, age determination, identification, preparing for sale, and handling and immunizing, controlling parasites. Facilities needed in livestock management including buildings, fences, corrals, equipment, and livestock management including buildings, fences, corrals, equipment, and livestock programs. May not be used by animal science majors to meet graduation requirements. 2 hrs. and 1 lab.

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

3220 Physiology of Reproduction (3) Comparative anatomy and physiology of reproductive systems of various vertebrates; gamogenesis, fertilization, implantation, parturition, and involution of lactation; endocrine regulation of reproductive phenomena. Prereq: 3210 or consent of instructor. 2 hrs. and 1 lab.

3230 Introduction to Animal Nutrition and Feeding (3) Nutrition, ration formulation, and requirements of farm animals; animal feeds, nutrient content, and factors affecting feeding value; balancing rations for beef and dairy cattle, swine, and poultry. Not available to students with credit in 3320. Prereq: Agriculture 1130, Chemistry 1130 or 1530. 2 hrs. and 1 lab.

3310 Animal Nutrition (3) Properties, functions, utilization, and deficiency symptoms of essential nutrients; nutrient value of feed. Prereq: Agriculture 1130 and one quarter of organic chemistry.

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

3410 Heredity in Animals (3) Basic chromosomal mechanism of heredity with emphasis on Mendelian principles and as an image of cytoplasmic inheritance. Introductions to biochemical basis of heredity and to quantitative inheritance. Illustrations of principles related to species familiar to agriculture students. Prereq: Agriculture 1130. 2 hrs. and 1 lab.

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

3430 Breeds of Farm Animals (3) Study of evolution and formation of breeds of cattle, horses, poultry, sheep, and swine. Breeding structure. History, development, characteristics, and improvement programs of various breeds. Prospects for purebred industry and impact of crossbreeding programs. 2 hrs. and 1 lab.

3510 Animal Hygiene and Sanitation (4) Parasitic, viral, and bacterial organisms in farm animals; immunization; control and protection against disease; veterinary regulations and their interpretation. Prereq: Microbiology 2910-11 or 2910-19 or consent of instructor. 3 hrs. and 1 lab.

3520 Avian Diseases (3) Major diseases; characteristics, prevention and treatment, management practices and systems for domestic birds, upland game birds and water fowl. 2 hrs. and 1 lab.
economic returns. Prereq: Completion of animal science sophomore and junior core courses or consent of instructor. 3 hrs. and 1 lab.

4830 Pork Production and Management (4) Integration of principles of selection, nutrition, breeding, physiology, and marketing into complete pork production and management program. Topics will include structure of industry, enterprise establishment, systems of production, production practices, and herd improvement and management program. Alternatives evaluated in terms of production responses and economic returns. Prereq: Completion of animal science sophomore and junior core courses or consent of instructor. 3 hrs. and 1 lab.

4840 Poultry Production and Management (4) Structure of poultry industry; organization and management of poultry enterprises including rearing, housing, feeding, processing, and marketing. Prereq: Completion of animal science sophomore and junior core courses or consent of instructor. 3 hrs. and 1 lab.

4850 Light Horse Production and Management (4) Integration of principles of nutrition, physiology, and breeding into light horse management program. Topics include structure of industry, systems and practices of production; individual animal and herd improvement programs; tack, equipment, and facilities for both pleasure owners and commercial producers. Alternatives evaluated in terms of pleasure, recreation, and economic returns. Prereq: Completion of animal science sophomore and junior core courses or consent of instructor. 3 hrs. and 1 lab.

4860 Lamb and Wool Production and Management (4) Integration of principles of selection, nutrition, breeding, and marketing into complete sheep and lamb production and management program. Topics will include structure of industry, enterprise establishment, systems of production responses, and economic returns. Prereq: Completion of animal science sophomore and junior core courses or consent of instructor. 3 hrs. and 1 lab.

4910 Seminar (2) Review of literature and presentations on special topics and current research in animal science field. Prereq: Senior standing. 1 hr. and 1 lab.

Graduate

5000 Thesis

5011 Problems in Lieu of Thesis (1-6)

5110 Special Problems in Animal Science (1-6)

5210 Endocrine Relations in Animal Production (4)

5220 Advances in Mammalian Reproduction (3)

5240 Advanced Studies of the Secretion of Milk (3)

5311 Analytical Techniques in Animal Nutrition (3)

5322 Advanced Experimental Animal Nutrition (3)

5333 Nonruminant Animal Nutrition (4)

5344 Rumiant Animal Nutrition (3)

5410 Genetics of Animal Populations (3)

5510-20 Advanced Animal Physiology (5, 5)

5710 Methods of Evaluating Experimental Data in Animal Science (3)

5720 Design and Interpretation of Experiments in Animal Science (3)

5910 Seminar (1)

6000 Doctoral Research and Dissertation

6150 Topics in Milk Constituents (3)

6160 Topics in Dairy Microbiology (3)

6211 Advanced Topics in Animal Physiology (1-6)

6220 Environmental Physiology of Farm Animals (3)

6230 Animal Growth and Development (3)

6240 Physiology of the Heart (4)

6311 Advanced Topics in Animal Nutrition (1-6)

6322 Advanced Animal Nutrition (3)

6411 Advanced Topics in Animal Breeding (1-6)

6420 Animal Breeding Research Methods and Interpretation (3)

6811 Advanced Topics in Animal Products (1-6)

Seminar (1)

Entomology and Plant Pathology (341)

Professors: C. J. Southards (Head), Ph.D. North Carolina State; J. W. Hilly, Ph.D. Ohio State; L. F. Johnson, Ph.D. Louisiana State; G. D. Pless, Ph.D. Clemson.


3130 Plant Pathology (4) Principles of plant pathology illustrated by diseases of common agricultural crop plants. Prereq: Botany 1120 or Biology 1220. 3 hrs. and 1 lab. (Same as Botany 3130.)

3140 Forest Pathology (4) Etiology, recognition, economic impact, and control of forest tree diseases, including wood decay and insect-disease interactions important to urban forestry and forest nurseries. Prereq: Botany 1120 or Biology 1220 or equivalent. 3 hrs. and 1 lab. No credit if 3130 previously taken.

3210 Economic Entomology (4) Structure, live history, habits, and principles of control of important insect pests of farm, garden, orchard, and household. 3 hrs. and 1 lab.

3220 Apiculture (3) Biology of the honey bee, with emphasis on beekeeping equipment and apiary management practices relative to pollination of crops and production of honey and beeswax. 2 hrs. and 1 lab.

4010 Biology of Soil Microorganisms (4) Morphology and physiology of soil organisms, decomposition of organic matter, chemical transformations, and interactions between soil organisms and higher plants. Prereq: Botany 3130 or introductory microbiology. 3 hrs. and 1 lab. (Same as Microbiology 4010.)

4030 Forest and Shade Tree Entomology (3) Identification, biology, ecology, and control of forest and shade pests. Prereq: 3210 or equivalent. 3 hrs. and 1 lab.

Graduate

5000 Thesis

5010 Research Methods and Instrumentation in Plant Pathology and Entomology (3)

5110 Plant Disease Diagnosis (3)

5120 Insect Diagnostic Clinic (3)

5210 Plant Parasitic Nematoi (4)

5220 Plant Disease Control (3)

5230 Field Crop and Vegetable Insects (3)

5240 Plant Virology (4)

5250 Medical and Veterinary Entomology (4)

5260 Insect Pest Management (4)

5310 Special Problems in Entomology (1-6)

5320 Special Problems in Plant Pathology (1-5)

5330 Special Problems in Nematology (1-6)

5410 Seminar (1)

Food Technology and Science (390)

Professors: J. T. Miles (Head), Ph.D. Wisconsin; J. L. Collins, Ph.D. Maryland; T. H. Harrison (Emeritus), M.S.A.

Tennessee, H. O. Jaynes, Ph.D. Illinois; C. C. Melton, Ph.D. Kansas State; W. W. Overcast, Ph.D. Iowa State.

Associate Professors: B. J. Demott, Ph.D. Michigan State; S. L. Melton, Ph.D. Tennessee; R. J. Kiemann, Ph.D. Kansas State.

Assistant Professors: P. M. Davidson, Ph.D. Washington State; F. A. Draughn, Ph.D. Georgia; J. R. Mount, Ph.D. Ohio State.

Instructor: O. G. Sanders, M.S. Tennessee.

2200 Food Processing I (3) Introduction to art and sciences of manufacturing food products. 2 hrs. and 1 lab.

3020 Dairy Products I (4) Procurement, processing, and distribution of fluid milk. Manufacture of frozen and condensed dairy products. 3 hrs. and 1 lab.

3300 Food Laws and Regulations (3) State and federal laws concerning food industry. Organization and operation of regulatory agencies. Food grades and standards. Prereq: Agriculture 1150 or 2200 or equivalent.

3570 Evaluation and Grading Dairy Products (3) Market standards and grades of dairy products with practice in grading milk, ice cream, butter, cheese, and other specialized dairy products. 1 hr. and 2 labs.

3610 Meat Evaluation and Grading (3) Grading standards for quality and quantity and principles of evaluating beef, pork, and lamb. Practice in grading and judging carcasses and cuts. 1 hr. and 2 labs.

3840 Meat Science (3) Processing methods, carcass characteristics of meat animals; slaughter, cutting, selection, curing, freezing, and cooking. 2 hrs. and 1 lab.

4000 Problems in Food Technology (1-4) Research problems in student's area of interest. Required written report. Supervised experience in state or federal laboratories or approved industries encouraged. May be repeated. Maximum 9 credit hrs. Prereq: Consent of department head.

4010 Food Technology and Science Seminar (1-3) Review of literature, oral and written reports. May be repeated for a maximum of 3 credit hrs. Prereq: Junior standing and consent of instructor.

4030 Dairy Products II (4) Principles in the manufacture of butter, cheese, and special dairy products. Prereq: 3020. 3 hrs. and 1 lab.

4130 Food Chemistry I (3) Minerals, fats, oils, and vitamins in food as affected by processing and storage. Prereq: Nutrition 3320 or equivalent. 2 hrs. and 1 lab.

4140 Food Chemistry II (3) Reactions of proteins, carbohydrates, and natural food colorants in food materials. Protein structure, food enzymology, and Browning reactions. Effects of storage and processing on proteins and carbohydrates with emphasis on nutritional value and functionality. Prereq: Nutrition 3320 or equivalent. 2 hrs. and 1 lab.

4200 Food Processing II (4) Prevention of deterioration and spoilage of foods. Methods of preservation and packaging. Prereq: 2200 and Agriculture Mechanization 3510. 3 hrs. and 1 lab.

4210 Food Additives (3) Substances used in food manufacturing with emphasis on properties and functions. Prereq: Nutrition 3320 or equivalent.

4300 Food Processing III (3) Water, sanitation, and waste control as applied in food industry. Prereq: Agriculture 1150 or Microbiology 2910-19 or equivalent.

4410 Food Crop Products (3) Food products from crops with emphasis on types, manufacturing systems, quality attributes, and utility.

4420 Bakery Products (3) Baking ingredients and their interactions during production and storage of bakery products. Prereq: Food Technology and Scien-
enjoyed 130 and Chemistry 2230 or equivalents. 2 hrs. and 1 lab.

4810 Microbiology in Food Manufacturing (3) Relationship of growth of common food microorganisms in fermentative and enzymatic changes occurring during processing and manufacturing of foods. Prereqs: Microbiology 210-19 or equivalent. 1 hr. and 2 labs.

4820 Fermented Foods (3) Role of microorganisms in preparing foods with emphasis on development of certain desirable characteristics, flavor, aroma, texture, and keeping quality. Prereqs: Microbiology 38 10. 2 hrs. and 1 lab.

4840 Meat Products Manufacturing (3) Prepared meat products with emphasis on sausage making and information related to cost controls, inspection, and meat science. Prereq: 3840 or consent of instructor. 1 hr. and 2 labs.

4920 Analysis of Physical Properties of Foods (4) Physical states of food materials, water, viscosity, colloids, gels, foams, crystals, color, quantitation and changes induced by processing. Prereq: Food Technology and Science 4200 and Agricultural Mechanization 3510 or consent of instructor. 3 hrs. and 1 lab.

4940 Advanced Meat Science (3) Qualitative and quantitative characteristics of meat and poultry as related to palatability, cookery, preservation, packaging, and merchandising. Prereqs: Food Technology and Science 3840.

GRADUATE

8000 Thesis

5200 Seminar (1)

5120 Food Color (3)

5130 Food Enzymology (3)

5140 Food Flavors (3)

5150 Fats and Oils (3)

5200 Research (1-5)

5310 Food Products Development (3)

5320 Food Thermobiology (3)

5420 Advanced Food Quality Assurance (3)

5510 Meat Technology (3)

5530 Microorganisms Common in Food Products (3)

5540 Microbial Cultures in Foods (3)

Forestry, Wildlife and Fisheries

Professors: G. Schneider (Head), Ph.D., Michigan State; J. W. Barnett (Emeritus), Ph.D., Syracuse; E. R. Buchner, Ph.D., North Carolina State; J. L. Byford, Ph.D., Auburn; H. A. Core (Emeritus), Ph.D., Syracuse; R. W. Dimmick, Ph.D., Wyoming; E. Thor, Ph.D., North Carolina State; F. W. Woods, Ph.D., Tennessee.

Associate Professors: B. L. Dearden, Ph.D., Colorado State; R. L. Hays, Ph.D., Duke; R. L. Little, Ph.D., North Carolina State; D. M. Ostermeier, Ph.D., Syracuse; M. R. Pelton, Ph.D., Georgia; J. C. Rennie, Ph.D., North Carolina State; K. F. Schell, Ph.D., Duke; J. G. Warmbrod, B.S. Louisiana State; G. R. Weis, D. F. Duke; J. L. Wilson, Ph.D., Tennessee.

Assistant Professors: E. E. Dougal, Ph.D., Oregon State; W. E. Hammitt, Ph.D., Michigan; R. J. Strange, Ph.D., Oregon State.

Introduction to Forestry (3) History of forestry, establishment, care, protection, and use of forest stands; forest products industries; organization and administration of the management of forest policies; forest resources.

3000 Current Events in Renewable Natural Resources (3) Current events affecting forestry, wildlife, and fisheries management. Perspectives from other disciplines and professions which are affected by forestry and fisheries resource management. Extended views of natural resources, their allocation and management. Professional development and education for the disciplines of forestry, wildlife, and fisheries. 1 hr. may be repeated. Maximum credit 4 hrs. S/NC.

3020 Forest Environments and Ecology (3) Environments and ecosystems of forested lands; emphasis on the application of ecological principles to contemporary problems. Available for graduate credit for non-forestry majors only. Prereq: 8 hrs. of biology, botany, or zoology. 3 hrs.

3040 dendrology and Silvics of Woody Angiosperms (3) Classification, nomenclature, identification, and silvical characteristics of the more common woody angiosperms native to North America; natural ranges, distribution patterns, and habitat requirements; regeneration requirements and life history; place in succession; ecological significance and commercial importance. Weekly field trips during scheduled lab period plus one weekend field trip. Available for graduate credit for non-forestry majors only. Prereq: 6 hrs. basic biology or botany. 2 hrs. and 1 lab.

3510 Forest and Soil Science in Forest Management (3) Classification, nomenclature, identification, and silvical characteristics of the major North American conifers. Distribution patterns, habitat, and community relationships including classification, life history, regeneration, requirements, place in succession, and importance. Available for graduate credit for non-forestry majors only. Prereq: 6 hrs. basic biology or botany. 2 hrs. and 1 lab.

3100 Forest Measurements and Biometry (4) Measurements of individuals in animal and plant populations; linear sampling of forest populations; growth and potential production. Prereqs: Plant and Soil Science 3610 and Computer Science 1410 or equivalent. 1 hr. and 2 labs. Available for graduate credit for non-forestry majors only.

3120 Wood Technology (4) Wood properties; identification of commercial woods by macro and micro characteristics. Prereq: 3040, 3050 (3050 may be taken concurrently). 2 hrs. and 2 labs.

3130 Forest Protection (3) Destructive agencies; fire, insects, diseases; chemical, mechanical, and biological control; prevention and suppression.

3121 Forest Resource Economics (4) Allocation of forest resources via market and institutional systems. Application of economic principles to decision making in the private and public sector. Prereq: Economics 2120.

3220 Forest Products and Utilization (3) Harvesting, processing, marketing factors in forest conversion, intermediate and final uses. Prereq: 3120.

3240 Introduction to Forest Recreation (3) Concepts of leisure time in recreation. Historical development of forest recreation. Forest recreation resources. Development, management, and administration of forest recreation areas and systems.

3250 Ecological Problems of Forest Recreational Land (3) Examination of major forms of ecological impacts occurring on forest recreational lands; emphasis on impact to vegetation, soil, and water quality; consideration of monitoring methods and management alternatives. Weekend field trip is required. Prereq: 3220 or equivalent, or consent of instructor: Plant and Soil Science 2130 recommended. 2 hrs. and 1 lab.

3320 Principles of Silviculture (3) Influence of site factors of reproduction, growth, development, and character of forest vegetation; classification of forest structure; silvicultural laws. Prereq: 3220 or Biology 2130, 3240, Plant and Soil Science 2130. 3 hrs.

3730 Conservation (3) Forest resources of state, nation, and world; forested land and soil and water conservation; wildlife management and recreation; conservation programs.

4002 Utilization (3) Wood-using industries; processing forest products-sawmills, tree-logumber grading; pulpwood operations, flooring plants; plant layout; flow diagrams. Prereq: 3120.

4003 Field Methods of Timber Inventory (4) Field measurements of forest trees; timber cruising; determining appropriate sample design for specific purposes, tree and stand growth; site evaluation; field programs. Prereq: 3110 and Agricultural Mechanization 3140.

4004 Forest Practice (3) Management of forest lands by public and private organizations; "multiple-use" concepts; influences management decisions; impact of public pressure for outdoor recreation or management decisions; management prescriptions. Prereq: 4006. S/NC.

4016 Silvicultural Methods (4) Methods and applications of forest improvement related to silviculture; state, federal, and private forest resource policies; current policies influencing development; land preparation, planting and seeding, modifications of cutting methods to conform to desired goods and benefits. Prereq: 3320, 4000. 4001, 4004.

4020 Forest Watershed Management (3) Water as a forest resource; role of forests in the hydrologic cycle; control of water quantity, quality, and regimen; water-shed planning. Prereq: 3320 or consent of instructor. 3 hrs. Two overnight field trips.

4110-30-30 Problems in Forestry (1-6, 1-6, 1-6) Special research or individual problems in forestry. Prereq: Senior standing. Total not more than 9 hrs.

4210 Forestry Organization and Administration (3) Planning, organizing, coordinating, and controlling forest programs. Prereq: Senior standing in forestry or consent of instructor. 3 hrs. and 1 lab.

4220 Forest Resource Management (4) The forest as an integration of resource uses; review of traditional timber management concepts; the multiple-use concept; valuation of forest resources for decision making and planning; taxation of forest firm. Prereq: 4210.

4230 Forest Resource Management Plans (4) Field problems and case studies in forest-resource management; the forest as a system; management of forest enterprises as a producer of timber, recreational services, watershed services, and wildlife; producing multiple services; preparation of a complete plan based on optimizing forest uses. Prereq: 4210.

4240 Interpreting Forest Resources (3) Principles and techniques of interpreting forest resources; importance of environmental interpretation to management of forest resources; development and administration of interpretative services. Possible overnight field trips required. Prereq: 3242 or equivalent. 2 hrs. and 1 lab.

4330 Forest Policy (3) History of forestry in United States; current emphases of forest resource policies; current policies influencing development and management of forest resources; brief survey of policy implications of forest resource organizations in public and private sectors. Prereq: 4004.

4340 Aerial Photography in Forest-Resource Management (3) Use of conventional aerial photographs in forest-resource management; interpretation of aerial photographs, preparation of cover-type maps, uses of other remotely sensed imagery. Prereq: 3110 or equivalent. 1 hr. and 2 labs.

4420 Forest Tree Improvement (3) Forest tree improvement related to silviculture; nature and purposes of tree improvement and forest genetics; principles of tree cytology and population genetics, importance of seed source; variation, selection of superior phenotypes, and development of seed orchards; hybridization, selection, and breeding. Prereqs: 4000 or consent of instructor. 2 hrs. and 1 lab.

4430 Regional Silviculture of the United States (3) Factors that influence silvicultural management of important tree species in North America. Importance of forests and forestry to a region; physiography, geology, soils, climate and weather, sites and site types, ecology, problems of protection, and silvical characteristics of the more important species. Prereq: 4006 or consent of instructor.

4440 Forest Recreation (3) Forest lands as a recreation resource; interrelationships of forest recreation and other land-use management. Prereq: 3110, 4430. 4004, 4006. 4007, 4010. Forestry, land use, and/or economics. Junior standing. 2 hrs. and 1 lab.
4450 Recreational Behavior in Forest Environment (3) Review of sociological and psychological theories relevant of forest recreation planning, management, and administration. Implication and application of behavioral concepts to forest recreation problems, and review of methodologies for assessing recreational behavior. Prereq: 3240 and 6 hrs. in behavioral psychology and/or sociology, or consent of instructor. 2 hrs.

4540 Wood Drying and Preservation (3) Concepts of wood drying including wood-moisture relations, specific gravity, moisture content, density, and shrinkage. Discussion of commercial drying practices. Relationship of wood moisture content to attack by wood destroying organisms. Methods and materials used in commercial heating systems. Prerequisites: 3120, Math 1851, Physics 1220 or consent of instructor.

GRADUATE

5000 Thesis

5002 Non-Thesis Graduation Completion (3-15)

5011 Problem Analysis in Forest Resources (3)

5110 Special Problems in Forestry (1-4)

5220 Seminar in Forest Tree Biology (3)

5230 Seminar in Forest Management (3)

5240 Seminar in Forest Genetics (3)

5250 Recreation Planning for Forests and Associated Lands (3)

5260 Industrial Forestry (3)

5270 Topics in Forest Industries Management (3)

5280 Seminar in Forest Biometry (3)

5310 Seminar (1)

Wildlife and Fisheries Science (933)

3000 Current Events in Renewable Natural Resources (1) Current events influencing forestry, wildlife, and fisheries management. Perspectives form other disciplines and professions which are affected by and which influence natural resource management. Extended views of natural resources, their allocation and management. Professional development and education for the disciplines of forestry, wildlife, and fisheries. 1 hr. May be repeated. Maximum credit 4 hrs. S/N/C. (Same as Forestry 3000.)

3200 Wildlife Resources and Their Conservation (3) Wild animal resources of the United States; their interactions with forests, waters, and other plant life; contribution to economic and social development; importance and methods of conserving wildlife. One course for wildlife and fisheries science majors only.

3230 Wildlife Management (3) Lives and ecological relationships of wild animals; biological, social and economic aspects of their management. Available for graduate credit for non-forest and non-wildlife and fisheries science majors only.

4450 Game Mammals (4) Classification, identification, distribution, natural history, and management principles of game mammals in North America. Prereq: 3220 or one year of zoology. 2 hrs. and 2 labs.

4460 Game Birds (4) Biology, classification, identification, distribution, and management of game birds in North America. Prereq: 3220 or one year of zoology. 3 hrs. and 1 lab plus one weekend field trip.

4500 Problems in Wildlife and Fisheries Sciences (1-6) Special research or individual problem in wildlife and fisheries science. Prereq: Senior standing. May be repeated. Maximum 9 credit hrs.

4510 Fish Populations (4) Principles and methods of fish population estimation; sampling techniques and equipment; population dynamics; age and growth. Prereq: 3030 and 3153 or consent of instructor. 3 hrs. and 1 lab or field period.

4520 Fisheries Management (4) Methods of warm and cold water fisheries management including techniques of biological assessment, public relations, habitat modification, and stocking. Prereq: Biology 3130 or consent of instructor. 3 hrs. and 1 lab or field period.

GRADUATE

5000 Thesis

5110 Special Problems in Wildlife and Fisheries Science (1-6)

5210 Seminar in Wildlife Conservation (3)

5310 Seminar (1)

5400 Advanced Topics in Wildlife Science (3)

5450 Wildlife Diseases (3)

5460 Predator Ecology (3)

5500 Advanced Topics in Fisheries Science (3)

5550 Fish Physiology (3)

Ornamental Horticulture and Landscape Design (740)

Professors: D. B. Williams (Head), Ph.D. Pennsylvania State; L. M. Catalhan, Ph.D. Rutgers; N. O. Peacock (Emeritus), Pennsylvania State.

Associate Professors: E. T. Graham, Ph.D. Pennsylvania State; G. L. McDoniel, Ph.D. Ohio State; H. Van de Werken, GAUST, Horticulture College (Frederiksdorp, Holland).


Instructor: E. L. Abbott, MS Tennessee.

2230 Environmental Horticulture (3) An introduction to awareness and appreciation for ornamental plants and landscape design. Prereq: 6 hrs. of biological science. 2 hrs. and 1 lab.

3030 Plant Propagation (3) Physiology, methodology, and environmental requirements for propagation. Prereq: 6 hrs. of biological science. 2 hrs. and 1 lab.

3040 Floral Design (3) Principles and techniques in symmetry, proportion, color and texture in designing arrangements for home, church, and special occasions. 1 hr. and 2 labs.

3110 Greenhouse Management (3) Factors involved in management of greenhouse for production and research. Structures, soils, pest control measures, heating, ventilating, lighting, water supply, crop succession. Prereq: Junior standing and consent of instructor. 2 hrs. and 1 lab.

3210 Turfgrass Management (4) Practical turf-grass management; cultivation, identification, and establishment; basic applied fertility programs, mowing and irrigation practices, and thatch control; pest identification and control. Prereq: Plant and Soil Science 2130 and 8 hrs. biological sciences. 3 hrs. and 1 lab.

3310 Professional Practices in Ornamental Horticulture (3) Application of management and marketing practices for greenhouses, nurseries, flower shops, garden centers, plant stores, and landscaping firms. Investigating of practices and the solution of problems as they relate to the students' areas of interest in the establishment and operation of floricultural nurseries. Prereq: 3620, 3630. 1 hr and 2 three-hour labs. 1 hr and 2 three-hour labs.

3410 Basic Floriculture (3) Principles and practices employed in producing major cut flowers and potted plant crops. Application of principles of plant physiology as they relate to the control of flowering, harvesting schedule, and post-harvest quality. Prereq: 3110, and Plant and Soil Science 3840 or equivalent. 2 hrs. and 1 lab.

3510 Grounds Maintenance and Management (4) Identification of landscape maintenance tasks; growth control, irrigation, soil amendments, transplanting, clipping, disease, pest control, pruning, planting, and use of equipment; schedules and management practices. Prereq: 2230. 2 hrs. and 2 labs.

3610 Fundamentals of Landscape Design (4) Development of basic graphic skills and techniques of plan delineation. Fundamentals of the process of theory of design, site analysis, program development, design synthesis, introduction to geographic interpretation, landscape construction materials and landscape structures. Development of awareness and sensitivity to landscape elements. 1 hr and 2 three-hour labs.

3620 Intermediate Landscape Design (4) Application of skills and knowledge acquired in 3610 to a variety of landscape projects. Refinement of graphic skills. History of landscape design as it relates to contemporary applications. Technical aspects of plant design and implementation. Use of plant materials in designing small and moderate scale landscape situations. Prereq: 3610, 3810 or equivalent. 1 hr and 2 three-hour labs.

3630 Landscape Construction and Contracting (4) Application of concepts and techniques learned in landscape design practice concerned with landscape installation and contracting. Site layout procedures, earthenwork and drainage, landscape construction materials; application and use of construction drawings and scale model projects. Landscape contracts, specifications and bidding procedures. Prereq: 3610, Ag. Mech. 2130. Recommended 1 hr and 2 three-hour labs.

3680 Supplementary Landscape Plants (3) Identification, classification, adaptation, culture, and landscape design uses for basic ornamental trees, shrubs, and vines. Prereq: 8 hrs. of botany or biological science and Agriculture 1140. 2 hrs and 2 labs.

3820 Interior Plants (3) Identification, classification, adaptation, culture, and landscape design uses for foliage and flowering plants. 1 hr. and 2 labs.

4150 Nursery Production (4) Modern methods of producing liners, field and container grown woody ornamental plants. History and evolution of nursery industry and modern production recommendations for woody ornamental nursery. Prereq: Plant and Soil Science 2130. 2 hrs and 2 labs.

4160 Nursery Management (3) Modern management methods for wholesale and retail nurseries, garden centers, and landscape contractors. Prereq: 3310. 2 hrs. and 1 lab.

4180 Park Design (4) Design criteria for parks and outdoor recreation systems. Site selection, analysis, planning, and management as related to needs and natural and economic resources. Evaluation of aesthetic and functional quality of parks and their impact on environmental quality of rural and suburban communities. Prereq: 3620. 2 hrs. and 2 labs.

4190 Advanced Landscape Design (4) Comprehensive application of landscape design skills and knowledge through the development of a major project. Analysis, programming, planting design, construction detailing, estimating, record keeping, contracts and bidding included in total package project. Prereq: 3510, 3620, 3630. 1 hr and 2 three-hour labs.

4220 Advanced Turfgrass Management (4) Principles and scientific basis of turfgrass management; turfgrass ecology, physiology, soil fertility, and grass nutrition; climatic influences on grass culture; physiology of clipping and water management; traffic effects and compaction; and the physiological influences of pest infestations and control measures. Prereq: 3210. 3 hrs. and 1 lab.

4320 Specialty Floriculture (3) Specific practices in the application of minor cut flowers and potted plant crops. Production methods for scheduling flowering or
vegetative growth of specialty forest crops in controlled environments. Prereq: 3140. 2 hrs. and 1 lab.

4400 Individual Problem Study (1-5) May be repeated to maximum of 10 credit hrs.

4610 Seminar (1) Current problems in ornamental horticulture and landscape design. Prereq: Junior standing and consent of instructor.

GRADUATE

5000 Thesis

5100 Special Problems in Ornamental Horticulture and Landscape Design (3)

5210 Golf Course Design, Development, and Management (4)

5310 Park and Public Grounds Management Systems (4)

5410 Histological Microtechnique (4)

5500 Seminar (1)

Plant and Soil Science (792)

Professors: L. F. Beattie (Head), Ph.D. North Carolina State; F. J. Belin, Ph.D. Iowa State; D. L. Colley, 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. Perkins, Ph.D. Purdue; B. S. Pickett (Emeritus), Ph.D. Michigan State; J. H. Reynolds, Ph.D. Wisconsin; L. N. Skold, M.S. Kansas State; M. E. Springer (Emeritus), Ph.D. California (Berkeley); H. D. Swinglé (Emeritus), Ph.D. Louisiana State.


Assistant Professors: D. E. Dayton, Ph.D. North Carolina State; W. J. McLaurin, Ph.D. Louisiana State; R. J. Miles, Ph.D. Texas A&M; D. H. West, Ph.D. Nebraska; J. D. Wolff, Ph. D. Auburn.

*Olcott Clyde B. Austin Distinguished Professor.

2130 Soils (4) Nature and properties of soils. Physical, chemical, biological processes in soils and their influence on plant growth. Prereq: Chemistry 1120 or 1250 or 1620. 3 hrs. and 1 lab.

3020 Crop Ecology (3) Crops and environment; geographic location, site, heat, light, water, and interplant relationships as a basis for judgment of cultural practices used to modify environmental factors. Prereq: 8 hrs. biological science. 2 hrs. and 1 lab.

3040 Crop Physiology (3) Physiology of crop plants; growth phenomena related to crop production; use of general theories of physiology, effects of season, growth regulating substances, functions of light, heat, air, minerals, and water. 2 hrs. and 1 lab. Prereq: 8 hrs. biological science.

3110 Soil Fertility and Fertilizers (4) Properties of soils in relation to plant nutrient availability and uptake. Methods of soil fertility evaluation and principles of fertilizer use; manufacture and properties of fertilizers. Prereq: 2130. 3 hrs. and 1 lab.

3120 Grain and Oil Crops (3) Distribution, improvement, management, and utilization of grasses and legumes for pastures, hay, and silage. Prereq: 2130. 8 hrs. biological science. 2 hrs. and 1 lab.

3140 Forage Crops (4) Characteristics, adaptation, improvement, management, and utilization of grasses and legumes for pastures, hay, and silage. Prereq: 2130. 8 hrs. biological science. 3 hrs. and 1 lab.

3160 Cotton and Tobacco (4) Characteristics, adaptation, improvement, culture, harvesting, and marketing of cotton and tobacco. Prereq: 2130; 8 hrs. biological science. 3 hrs. and 1 lab.

3180 Fruit Crops Management (4) Soils, planting, cultivation, development of fruit crop plantations; pest control, harvesting, packing, storage and pruning. Prereq: Ent. & Ph. Path. 3210, 3130. 3 hrs. and 1 lab.

3220 Soil Management (4) Soil management for crop production including cropping systems, fertilizer use, and tillage operations for specified soil and farming conditions. Prereq: 2130. 3 hrs. and 1 lab.

3250 Soils in Forestry (3) Soil as a medium for tree growth; relation of physical, chemical, and biological properties of soils to tree growth and management of forest stands. Soil properties of importance in road location, recreational development, and watershed management. Prereq: 2130. forestry 3320. 2 hrs. and 1 lab.

3510 Commercial Production of Cool Season Vegetables (3) Characteristics, economic importance, adaptability, and production for fresh and processing markets; emphasis on greens, salad, cole, root, bulb crops, perennials and Irish potatoes. Prereq: 8 hrs. biological science. 2 hrs. and 1 lab.

3520 Commercial Production of Warm Season Vegetables (3) Characteristics, economic importance, adaptability, and production for fresh and processing markets; emphasis on sweet potatoes, beans, tomatos, pepper, cucumbers, sweet corn, and okra. Need not have 3510 as prereq. Prereq: 8 hrs. biological science. 2 hrs. and 1 lab.

3610 Interpretation of Agricultural Research (3) Statistics as applied to agriculture. Statistical methods and principles of design of experiments used in agricultural research and their interpretation. Prereq: Math 1550.

3710 Principles of Weed Science (4) Basic principles of weed science, history, ecology, economic losses, means of control, types of herbicides, and specific recommendations for control of non-crop and crop weeds. Prereq: 8 hrs. biological science and 3 hrs. organic chemistry. 3 hrs. and 1 lab.

4110 Soil Chemistry (4) Colloidal systems; properties and behavior of colloidal soil materials; relations of chemical properties to plant nutrient availability. Prereq: 2130. physiology 1210. 3 hrs. and 1 lab.

4120 Principles of Crop Breeding (4) Genetic principles and techniques used in crop improvement. Prereq: 8 hrs. biological science or consent of instructor. 3 hrs. and 1 lab.

4250 Agricultural Chemicals and the Environment (4) Characteristics, use, mode of action, degradation, and environmental impact of chemicals used in agriculture. Prereq: 2130; one year biological science and one year chemistry. 3 hrs. and 1 lab.

4320 Soil Formation, Morphology, and Classification (4) Soil formation; properties, distribution, and classification of soils; interpretation of morphology, use of soils surveys. Prereq: 2130. 3 hrs. and 1 lab.

4400 Problems In Plant and Soil Science (1-6) Special research or library problems in some phase of plant and soil science. May be repeated. Maximum credit 9 hrs.


GRADUATE

5000 Thesis

5100 Special Problems In Plant and Soil Science (1-6)

5200 Soil-Crop Relationships (3-6)

5240 Soil Productivity and Management (3)

5250 Pedology (4)

5310 Design and Interpretation of Experiments (4)

5340 Soil Physica (3)

5370 Advanced Soil Fertility (3)

5390 Soil Physical Chemistry (3)

5500 Seminar (1)

5710 Advanced Plant Genetics (3)

5720 Quantitative Genetics (3)

5750 Advanced Plant Breeding (4)

5810 Crop Climatology (4)

5820 Advanced Crop Physiology and Ecology (4)

5850 Mechanisms of Herbicide Action (3)

6000 Doctoral Research and Dissertation

6100 Special Topics In Soil Science (3)

6200 Special Topics Plant Breeding (3)

6300 Special Topics In Crop Physiology and Ecology (3)

6410 Experimental Designs (3)

6510 Growth Control with Chemicals (3)

6600 Seminar (1)

College of Veterinary Medicine

Hyram Kitchen, Dean
C. F. Reisch, Jr., Associate Dean
W. H. Grau, Jr., Associate Dean

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

The College is organized into six academic departments: Animal Science (jointly with the College of Agriculture), Environmental Practice, Microbiology (jointly with the College of Liberal Arts), Pathobiology, Rural Practice, and Urban Practice.

Primary objective of the College is to educate veterinarians for private practice. However, the professional curriculum provides an excellent basic medical education, in addition to training in diagnosis, disease prevention, medical treatment, and surgery. Graduates are qualified to pursue careers in many facets of veterinary medicine and related health professions.

Most veterinarians are engaged in private practice. The majority of these are in general practices which deal with the diseases of all kinds of animals. About one-fourth of the veterinarians in the United States are engaged exclusively in pet or companion animal practice. A growing number are concerned with the health problems of zoo animals, laboratory animals, wildlife, and aquatic species.

Veterinarians also find rewarding careers in the U.S. Public Health Service, the U.S. Army and Air Force, and in state, county, or local health agencies. A large number of veterinarians are employed by the U.S. Department of Agriculture and by state departments of agriculture for important work in livestock disease control, meat and poultry inspection, serum and vaccine production, and the protection of our country against the importation of foreign animal diseases.

Institute of Agriculture
Excellent opportunities exist for veterinarians interested in research both for the direct benefit of animals and for the benefit of humans. Such opportunities are available at colleges and universities, and with governmental agencies, private research institutions, and biological and pharmaceutical companies.

**Facilities**

Administrative offices of the College of Veterinary Medicine are located at Morgan Hall on the Agricultural Campus. The Department of Animal Science is housed in Brehm Animal Science Building, also on the Agricultural Campus, and the Department of Microbiology is located in Watters Life Sciences Building on "The Hill" of The University of Tennessee, Knoxville.

The Veterinary Medicine Building on the Agriculture Campus houses the Departments of Environmental Practice, Rural Practice, Urban Practice, and Pathobiology. Additionally, the Veterinary Hospital, clinics, and the Agriculture/Veterinary Medicine Library are contained within this modern structure of 246,000 square feet. The College has research facilities on Cherokee Farm adjacent to the UT Hospital.

The College of Veterinary Medicine is located at Morgan Hall.

The college has research facilities and an extensive teaching-research program. The veterinary medical education is conducted with animals but for the benefit of the animals and research.

The opportunity to participate in off-campus learning experiences may be available for a limited number of students during the elective portion of the third year of the professional curriculum. Selection of an extramural learning experience will require approval by the department concerned and the College of Veterinary Medicine Committee five weeks prior to registration. The extramural program identified by the student must represent a learning experience not available within the College of Veterinary Medicine.

**Extramural Programs**

The professional curriculum in veterinary medicine is an 11 academic quarter, year-round program, including summers. The first year (three quarters) consists mostly of pre-clinical subjects such as anatomy, physiology, microbiology, parasitology, and general pathology. The second year (four quarters) includes the study of diseases, their causes, diagnosis, treatment, and prevention. The final year (four quarters) is devoted to intensive training in the solving of animal disease problems, including extensive clinical experience in the teaching hospital. The curriculum also provides for education in the science and art of veterinary medicine and in perinatal medicine. The curriculum will include a Bachelor of Science degree in Animal Science upon completion of the first year (three quarters) of the professional veterinary medicine curriculum. (For the specific description see Pre-veterinary Medicine Curriculum, College of Agriculture.)

**Admission Procedure**

Admission of new students will be for the fall quarter each year. Applicants will be screened carefully by a faculty committee to determine those best qualified for admission within the College enrollment quota.

**Course Load**

The professional curriculum of the College of Veterinary Medicine requires a specific number of hours of each quarter. A student may enroll for fewer or more than that number only with the permission of the dean. Because of the sequential and highly integrated character of the professional curriculum, all courses in a given quarter are considered prerequisite to those in the succeeding quarter.

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### Animal Science (114)- Veterinary Medicine

**Professors:**
- D. C. Richardson (Acting Head), Ph.D., Ohio State; K. M. Barth, Ph.D., Rutgers; M. C. Bell, Ph.D., Oklahoma State; J. K. Bieitat, Ph.D., Ohio State; C. C. Chamberlain, Ph.D., Iowa State; S. L. Hansard, Ph.D., Florida; H. M. Jamison, Ph.D., Tennessee; B. J. McLure, Ph.D., Auburn; J. M. Montgomery, Ph.D., Wisconsin; D. L. Moulton, Ph.D., Wisconsin; J. W. Oliver, D.V.M., Ph.D., Purdue; H. V. Shirey, Ph.D., Illinois; R. R. Shrode, Ph.D., Iowa State; E. W. Swanson, Ph.D., Missouri; R. L. Tugwell, Ph.D., Kansas State; C. E. Wylie (Emeritus), A.M., Missouri.

**Associate Professors:**

**Assistant Professors:**
- J. A. Corrick, Ph.D., Tennessee; D. G. Doyle, Ph.D.; R. A. Dore, Ph.D.; H. Heimett, Ph.D., Maine; K. Robbins, Ph.D., Illinois; J. D. Smiling, Ph.D., Texas A & M.

**Instructors:**

In addition, academic expertise of staff members at CARR, and Oak Ridge is used on appropriate occasions.

8240-50 **Veterinary Physiology (5,4)** Introduction to concepts and problems in physiology which form a base for clinical applications and for formal training in pharmacology, medicine, pathology, and surgery. Order of sequence: Cellular, cardiovascular, renal, respiratory, neural and endocrine physiology. 8240: three lectures and 1 demonstration. 8250: 4 lectures and 1 demonstration.

8510-20 **Veterinary Histology/Embryology (5,4)** The cytology, histology and organology of animal body systems, emphasizing structural and functional interrelationships. Embryonic development from fertilization and the origin of congenital defects. Correlated with 8240-50 and 8250-50. 8510: three lectures and 2 labs. 8520: two lectures and 2 labs.

8540-50 **Veterinary Gross Anatomy (5,5)** Laboratory courses covering gross and applied anatomy of common domestic animals (dog, cat, horse, cow). Methods include dissection of embalmed specimens; study of preparations, slides, models, and living animals. Sequence of organ system study correlated as much as possible with 8510-20.

8570 **Special Problems in Animal Science (2-20)** Specially designed study for students interested in certain topics in anatomy, histology and physiology. May be repeated.


### Environmental Practice (346)

**Professor:**
- J. B. Jones (Head), D.V.M., Illinois; J. W. Oliver, D.V.M. Ph.D. Purdue.

**Associate Professors:**

**Assistant Professors:**

**Residents:**
- S. L. Huntress, D.V.M. Oklahoma State.

8600 **Basic Clinical Rotation In Environmental Practice (2)** Introductory clinical experience in laboratory animal and zoo animal medicine, epidemiology, and other related disciplines. May be repeated.

8611-12 **Pharmacology (2,5)** Consideration of principles of pharmacokinetics as well as pharmacodynamic properties of veterinary drugs including modes of action, pharmacologic effects, chemical and physical properties, metabolism, toxicities, important idiosyncrasies, and clinical application. Correlated with 8620, 8625, and 8311. Two hours of lecture for 8611; five for 8612.

8660 **Environmental Clerkships (2-20)** Advanced clinical experience and training in practice of laboratory and zoo animal medicine. Prereq: Environ. Prac. 8660, Pathobiology 8700, Rural Practice 8800, and Urban Practice 8800. May be repeated.

8670 **Special Problems In Environmental Practice (2-10)** Special problems in public health and epidemiology. May be repeated.

8675 **Advanced Seminar in Environmental Practice (1-4)** Advance seminars in various topics such as comparative medicine, public health, epidemiology. Prereq: Environ. Prac. 8600, Pathobiology 8700, Rural Prac. 8900, and Urban Prac. 8900. May be repeated.

**Graduate:**

5000 **Thesis (1-15)**

5010 **Special Topics In Environmental Medicine (1-3)**

5610 **Pharmacology (1-5)** Consideration of principles of pharmacokinetics as well as pharmacodynamic properties of veterinary drugs including modes of action, pharmacologic effects, chemical and physical properties, metabolism, toxicities, important idiosyncrasies, and clinical application. Correlated with 8620, 8625, and 8311. Two hours of lecture for 8611; five for 8612.

8760 **Advanced Pathobiology (1-20)** Provides advanced clinical experience and training in laboratory and zoo animal medicine. Prereq: Environ. Prac. 8660, Pathobiology 8700, Rural Practice 8800, and Urban Practice 8800. May be repeated.

8770 **Special Problems In Pathobiology (3-10)** Provides special problems in pathobiology such as serologic diagnosis, clinical immunology, and the role of the immune response in preserving the integrity of the body as well as in causing disease. Two hours lecture and 2 labs.

### Pathobiology (742)

**Professors:**

**Assistant Professors:**
- D. F. Edwards, D.V.M., Georgia; S. Patton-McCord, Ph.D., Kentucky; R. G. Russell, M.Sc. Melbourne (Australia); Ph.D. Saskatchewan (Canada); R. M. Shull, D.V.M., Cornell; R. D. Walker, Ph.D., Ohio State.

**Instructor:**

**Residents:**

8760 **Basic Pathobiology Rotation (2) Rotation through Laboratory and Urban Practice**. Department of Pathobiology, Practice and/or demonstrations in laboratory diagnostic techniques including postmortem pathology, clinical pathology, parasitology, and microbiology. May be repeated.

8710 **Veterinary Pathology (5)** Principles of pathology including causes of disease, disturbances of cell growth, inflammation, and neoplasia. 3 hrs. of lecture and 2 labs.

8730 **Veterinary Parasitology (4)** Basic principles of parasitology (protozoology, helminthology, and entomology) and their relation to disease in animals. 3 hrs. of lecture and 1 lab.

8760 **Advanced Pathobiology (1-20)** Provides advanced clinical experience and training in laboratory and zoo animal medicine. Prereq: Environ. Prac. 8660, Pathobiology 8700, Rural Prac. 8900, and Urban Prac. 8900. May be repeated.

8770 **Special Problems in Pathobiology (3-10)** Provides students with opportunity to design and execute research project. May be repeated.

8775 **Advanced Seminar In Pathobiology (1-4)** Advanced seminars in various diagnostic topics such as serology, electron microscopy, histologic techniques. Prereq: Environ. Prac. 8600, Pathobiology 8700, Rural Prac. 8900, and Urban Prac. 8900. May be repeated.

8800 **Basic Pathobiology Rotation (2) Rotation through Laboratory and Urban Practice**. Department of Pathobiology, Practice and/or demonstrations in laboratory diagnostic techniques including postmortem pathology, clinical pathology, parasitology, and microbiology. May be repeated.

8800 **Environmental Practice (2)** Introductory clinical experience in laboratory animal and zoo animal medicine. May be repeated.

8800 **Basic Pathobiology Rotation (2) Rotation through Laboratory and Urban Practice**. Department of Pathobiology, Practice and/or demonstrations in laboratory diagnostic techniques including postmortem pathology, clinical pathology, parasitology, and microbiology. May be repeated.

### Microbiology (685) — Veterinary Medicine

**Professors:**
- A. Brown (Head), Ph.D., Chicago; R. W. Beck, Ph.D., Wisconsin; J. H. Colling, Jr., Ph.D., Chicago; D. F. Hoffman (Emeritus), Ph.D., Ohio State; A. Girard, Ph.D., Pennsylvania; J. D. Mundi, Ph.D., Michigan State; B. T. House, B.V.S. University of Bristol (England); Ph.D., University of Guelph (Canada); J. M. Woodward, Ph.D., Kansas State; C. J. Wust, Ph.D. Indiana.

**Associate Professors:**
- J. M. Becker, Ph.D., Cincinnati; D. A. Brain, D.V.M., Ph.D., Michigan State; T. C. Monte, Ph.D., Maryland; W. S. Riggsby, Ph.D., Yale.

**Assistant Professors:**
- D. A. Bernis, Ph.D., Cornell; R. V. Miller, Ph.D., Illinois; G. S. Sayler, Ph.D., Idaho.

1801 **Veterinary Bacteriology and Mycology (5)** An introduction to the pathogenesis of bacterial and fungal diseases. Organized as a taxonomic study relating microbial structure, metabolism, and genetics to the patterns of disease and the mode of action of antimicrobials. Three hours lecture and 2 labs.

1802 **Veterinary Virology (4)** Structure and replication of animal viruses, classification of viruses, mechanisms of viral pathogens. Techniques for quantitating viruses, viral antigens, and antiviral antibodies. Fundamental understanding of the best approaches to viral diagnosis and immunophrophaxis. Two hours lecture and 2 labs.

1803 **Veterinary Immunology (4)** Basic concepts of immunobiology, mechanisms of immune reaction, diag-
Interdepartmental Offerings

Veterinary Medicine (987)

8010 Client Relations and Communication Skills (1) Interpersonal skills as they apply to client relations and communication with colleagues, employees, and the general public. 1 lab. S/NC.

8311 Introduction to Veterinary Medical Practice (2) Animal species, breed identification, basic care, feeding, restraint, and handling. Introduction to physical examination, interpretation of pathologic features, etc. 1 hr lecture and 1 lab.

8311 Introduction to Veterinary Medical Practice (2) Physical diagnosis, history taking, and client relations; anesthetic principles, agents, and techniques. 1 hr lecture and 1 lab.

8512 Introduction to Veterinary Medical Practice (3) Basic surgical principles; preparation for surgery, wound healing and suturing; fundamentals of radiology. Correlated with 8320. 2 hrs. of lecture and 1 lab.

8320 Medical Science Interaction Laboratory (2) Multispecies laboratory designed to provide foundations and reinforcement of concepts in the disciplines of physiology and pharmacology. Application of anesthetic and surgical principles, humane handling of animals, clinical chemistry technique, and introduction to instruments used to measure physiologic processes. Correlated with 8324, 8250, 8611 and 8612. 1 laboratory and 1 demonstration.

8340 Integumentary System (4) Diseases of integumentary system of animals, with emphasis on laboratory examination, interpretation of pathologic features, diagnosis, and treatment.

8341 Hematopoietic System (3) Pathogenesis, diagnosis, and clinical management of diseases of hematopoietic and lymphoid organs and tissues.

8342 Alimentary Tract (8) Physiological basis, pathology, diagnosis, and treatment of diseases of alimentary tract and digestive organs.

8343 Patterns of Disease (5) Host - agent relationships in diseases of animals, pathology, laboratory diagnosis, control and public health significance. Principles of epidemiology and their application in the study of diseases in animal populations.

8344 Focal Problems (1) Considers specific diagnostic problems or paramedical subjects important to veterinary medical practice: differential etiology, diagnosis, treatment of certain disease signs or symptoms; implications for veterinarians of medical jurisprudence and ethics, practice economics, and veterinary history. May be repeated. S/NG.

8350 Reproductive System (6) Diagnosis, therapy and prevention of those conditions causing a reduction of the reproductive efficiency of domestic animals. Abnormal conditions of the mammary gland with emphasis on prevention and treatment of mastitis.

8351 Urinary System (4) Integrated approach to understanding urogenital system of animals in health and disease.

8352 Cardiovascular System (3) Pathology, diagnosis, and management of cardiovascular diseases of animals. Emphasizes the anatomic, physiologic, and pharmacologic principles which provide the basis for medical and surgical treatment.

8353 Endocrine, Metabolic and Nutritional Diseases (4) Biochemical and pathophysiologic mechanisms of endocrine, metabolic and nutritional diseases of animals; diagnosis, therapy and prevention.

8360 Musculoskeletal System I (6) Pathology, diagnosis, and treatment of muscular and skeletal diseases of small animals. Emphasizing pathologic changes, interpretation of radiographs and surgical procedures.

8361 Musculoskeletal System II (5) Pathology, diagnosis, prognosis, and management of musculoskeletal diseases of large animals with emphasis on functional anatomy, radiographic interpretation, surgical procedures and medical therapy applicable to equines and ruminants.

8362 Veterinary Toxicology (3) Basic concepts of toxicology with emphasis on the molecular mechanisms and the pathologic and clinical features of animal diseases caused by common toxic agents.

8363 Public Health (2) Public health aspects of veterinary medicine and nature of related laws, ordinances, and regulations. Veterinarian's role in the protection of environment, ecology, and quantity and quality of food.

8364 Animal Diets (1) Applied nutrition of cattle, swine, horses, dogs and cats for the veterinarian. Dietary and metabolic needs of normal and specialized situations.

8365 Radiology (3) Advanced and special techniques in radiology; interpretation and use of radiology in diagnosis of clinical cases in medicine and surgery.

8366 Respiratory System (4) The detection and diagnosis of upper and lower respiratory diseases of domestic animals. Includes the pathophysiology and pathology of infectious and noninfectious diseases. Lectures and laboratories with live and simulated case studies.

8370 Neurosciences (9) Normal and abnormal neural structure and function in animals, with emphasis on clinical neurology and neuropathology.

8371 Visual and Auditory Systems (3) Methods of examination and treatment of diseases involving eyes and ears of animals, with emphasis on anatomic, physiologic, and pathologic features.

8372 Comparative Medicine (4) Diagnosis, prevention, and treatment of diseases of laboratory animals, avian species, and marine mammals seen most commonly by practicing veterinarians.

8375 Principles of Medicine (3) Physiologic and pathologic principles underlying mechanisms of disease. Selected examples of human and animal diseases with particular emphasis on recent scientific advances and their effects on veterinary medicine.

8460 Extramural Programs (2-20) Supervised off-campus educational program with an approved institution. Limited enrollment. Prereq: Consent of department and the College of Veterinary Medicine Curriculum Committee.

GRADUATE

5000 Thesis (1-15)

6000 Doctoral Research and Dissertation (3-15)

Urban Practice (986)

Professor: D. E. Gage (Head), D.V.M. Texas A & M; D. J. Krahmholz, D.V.M. Auburn; A. A. Legende, D.V.M. Auburn; R. E. Roberts, D.V.M. Texas A & M.


8870 Special Problems in Urban Practice and Small Animal Clinic (2-10) Pursuit of special problems in anesthesiology, medicine, radiology and/or surgery in various specialty areas related to diseases of small companion animals. Prereq: Envr. Prac. 8600, Pathobiology 8700, Rural Prac. 8900, and Urban Prac. 8800. May be repeated.

8875 Advanced Seminar in Urban Practice and Small Animal Clinic (1-5) Advanced seminars in various specialty disciplines, such as medicine, surgery, ophthalmology, Prereq: Envr. Prac. 8600, Pathobiology 8700, Rural Prac. 8900, and Urban Prac. 8800. May be repeated.
School of Architecture

Roy F. Knight, Dean
William J. Lauer, Associate Dean, Administration

The School of Architecture offers a program of professional studies which prepares its graduates for the practice of Architecture. While emphasizing knowledge and skills required by architects in guiding the processes of building, the School is especially concerned that its students learn that kind of good judgment which particularly distinguishes the architect from all other professionals who serve the building industry. Therefore, the student is regularly called upon to pay attention to cultural, philosophical and ethical issues that appropriately concern the architect in performance of the arts of building. The student is also required to discover and understand the principles by which our physical universe appears to operate in order to know the sciences of building as fully as possible. It is important for the student to learn the characteristics of the natural environment while learning the physical behavior of materials in structures. Furthermore, the program of the School is concerned with preparing the student to be adaptable to change. An understanding of society is important as we see it developing in sometimes surprising ways. This places special demands upon the professionals. Consequently the program of the School emphasizes the process of learning with the intent of enabling its graduates to adapt to the changing circumstances of our world. How to learn about architecture is as important a matter for the student as learning itself.

Facilities

In the Spring of 1981, a new building housing the School of Architecture and shared by the Art Department was completed. The Art and Architecture Building contains all the primary activities of the School. Expressly designed for the School in an open architectural competition, the building has already received widespread recognition and has become one of the models sought out by other schools. The building was designed by the Knoxville architectural firm of McCarty Bullock Holsaple, Inc. It contains as its major feature a large interior mall or street. Opening off this large gathering space with serves as a campus focal point, are amply designed classrooms, a reference library which contains extensive slide collections and other reference materials, computer rooms, faculty offices, lecture rooms, administrative offices, an elaborate darkroom, workshop, and a gallery in which architectural as well as art exhibits are mounted.

The principal library holdings of the School are located in the James D. Hoskins Library, and additional volumes in the Undergraduate Library.

Financial Assistance for Students

A number of $500 sponsorships are made available each year by architectural firms, manufacturers of building materials, and other construction related industries. These grants are used to cover tuition, books and equipment. Sponsorships are also available through the national headquarters of the American Institute of Architects. Honor students in all the upper four years are eligible for this aid, but it is primarily awarded to student's of third-and fourth-year standing.

Lecture Program

Throughout the academic year, the School organizes an extensive series of special lectures by experts in architecture and related subjects. Students are expected to attend regularly and benefit from this opportunity to hear the leading people of the field. The lectures are open to the University community and the public as well.

Included in the series is the ROBERT B. CHURCH MEMORIAL LECTURESHIP. Named for the School's second dean, it has become widely respected by the field as an honor to be appointed to this lecturership. The most prominent architects from around the world are brought to the School with income from the endowment.

Other important lectures are sponsored by the General Shale Corporation and the Architectural Branch of the Tennessee Valley Authority. Annually in the Spring Quarter a special program called TAAST is arranged.

Within a period of one week the entire School participates in special lectures, seminars, exhibits, and informal gatherings. Featured are discussions by a series of visiting experts. TAAST is a student organized event.

Publications

Students in the School each year publish a journal of architecture, Portfolio. Continuing several years of excellent publications covering work of the School and current thinking in the field, this journal has become a widely recognized part of the School's participation in the profession.

Foreign Studies Program

Each year the School offers at least two opportunities for foreign study to its students. In cooperation with the Danish International Student Committee a program is regularly offered in Copenhagen taught by outstanding Danish architects and educators. Within the School faculty, a person is assigned responsibility to lead a program in Europe each year at varied locations. These are designed to include visits to prominent new architectural sites and major historic locations.

Studies abroad are arranged to include a full quarter's credit for advanced students and includes design, history, and theory of architecture.

General Information

Students are advised to consult the University's general requirements as stated in the front section of this catalog as well as the requirements described in the School of Architecture's Student Handbook. Self advising will not be permitted in the School of Architecture. Students must plan their schedule by consulting with an assigned adviser. Electives will be chosen with the concurrence of the adviser and with full consideration of the necessary prerequisites.

Freshman Admission Requirements

The School of Architecture, being a professional program and having limited resources, has a restricted enrollment based on the following criteria:
(1) Admit applicants with an ACT composite score of 27 or above.
(2) Admit 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 is required.
(3) Refuse all applicants with an ACT score of 16 or below.
(4) Refer applicants not falling into items 1, 2, or 3 to the Committee on Admissions. The Committee meets during the second week of March.

Deadlines for Applications
Applications for the School of Architecture must be received no later than March 1 for admission into the Summer or Fall Quarter. November 1 is the deadline for applications for the Spring Quarter; enrollment is closed for the Winter Quarter.

Requirements for Admission to Second-Year Architecture
(1) Satisfactory completion of first-year architecture program with grade point average at least 2.3; exceptions may be made by petition only;
(2) a personal interview and evaluation of applicant's work by a designated member of the School of Architecture;
(3) application to the School of Architecture no later than June 15 preceding the start of the second year.

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

Third-Year Prerequisites
Students are required to have all first- and second-year courses satisfactorily completed before entering the third-year design courses, Architecture 3001-02-03. Students who register for a third-year design course holding first- or second-year deficiencies may be required to drop the course at any point during the quarter.

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 18 hours. Persons interested must obtain the consent of the School of Architecture Current Curriculum Committee and dean of the School of Architecture, who will approve specific programs of study proposed by students.

Course Load
The average course load in any quarter is 16 credit hours. The minimum which may be taken by full-time students is 12 hours; the maximum which may be taken without approval of the dean is 19 hours.

Satisfactory/No Credit Courses
These courses, if successfully completed, will count as hours for graduation, although neither S nor NC grades will be calculated in the student's grade point average. Satisfactory is defined as C or better work on the traditional grading scale, and no credit is defined as less than C. The following regulations apply: (1) S/NC courses may not count for required courses or approved electives; (2) a student who desires to take a course S/NC should indicate this intention at the start of registration. A change from S/NC grading to regular grading or from regular grading to S/NC will not be permitted beyond the add deadline for each quarter. Exception: students who register for a course S/NC in a restricted area will be required to change to regular grading when the error is discovered.

Program Description
The undergraduate curriculum leads to the Bachelor of Architecture degree. It provides for a balanced education consisting of liberal arts and science studies and a program of professional studies. A professional study emphasizes design excellence through encouragement of imagination and creativity. Included are courses which prepare the student for leadership in the architecture profession. The student is also given opportunities to explore fields of knowledge beyond architecture through a program of elective areas and emphasis, some of which prepare the student for more advanced studies at the graduate level.

General Studies
General courses are required of all students. They provide the knowledge of fundamental principles required for the practice of architecture. Broad in scope and addressing non-technical matters, these courses are also suitable for enrolment of students from other departments of the University. Courses, in addition to English, mathematics, and physics, fall into the following areas:

- Basic Design and Visual Studies
- Analytical Studies
- Man-Environment Systems
- Physical Systems
- Historical Studies

Professional Studies
Professional studies constitute courses which cover subjects fundamental to the competent professional practice of architecture. These include courses in:

- Architecture Design
- Professional Practice
- Structural Analysis and Design
- Materials of Construction
- Energy and Environmental Design

Through careful selection of approved electives, the student can express a technical knowledge and skills useful in practice.

ACCELERATED STUDIES
Students demonstrating an exceptional facility in any of the professional subjects may be approved for selected accelerated studies, thereby reducing the time needed to complete study requirements and allowing more time for concentration in the student's chosen area. Formal review and approval by the school is required of all candidates for accelerated studies.

Curricula for Architecture
All students studying for a Bachelor of Architecture degree will include the following:

required courses in their first three years of study. During the fourth and fifth years, the student's work will be concentrated in one of the following options: design, history, criticism, restoration/preservation, management, production, development, structure, systems building, or environmental controls. Refer to numbers in the 4300 sequence for architecture design course electives. Any exceptions to the curriculum outline have been footnoted. For any additional specialized requirements, the student should refer to the Student Handbook of the School of Architecture and the student's adviser.

SERVICE PRACTICUM REQUIREMENT
A three-month, non-credit internship in an architect's, engineer's, or contractor's office or related work may be approved by the school. This must be evidenced by a letter from the employer indicating type and quality of student's work and time of employment prior to graduation. It must be completed before entry to senior standing, fifth year.

OPTIONS

ARCHITECTURAL DESIGN

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HISTORY

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THE UNIVERSITY OF CHICAGO

April 2004

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**CRITICISM**

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2013 Structural Analysis II (4) Behavior of wool, steel, and concrete in response to structural loading. Introduction to analysis, design, and member selection based upon specific task/application. Use of construction and building codes, handbooks, and design tables. Prereq: 2012.

2014 Analytical Studies II (4) Introduction to basic research methods and to environmental problem solving: information and skills necessary for collecting, ordering, manipulating, and displaying (communicating) a wealth of diverse data for research and evaluation purposes. Course objective is to qualify students with contemporary and cultural systems, and their ability to communicate information and create legible visual systems.


2017 Pre-modern Survey I (4) Classical tradition in architecture—Greek and Roman architecture; Renaissance and neoclassical revivals.

2018 Pre-modern Survey II (4) Medieval and Byzantine architecture.

2001 Architectural Design Lab I (4) Controlled exercises designed to demonstrate integration and application of design theory and methodologies into design process. Exercises directed to aspects of architectural issues such as site analysis, and planning, facility programming and program analysis, and integration of multiple complex architectural systems in comprehensive architectural resolutions.

2002 Architectural Design Lab II (4) Experimental exercises designed to demonstrate integration and application of design theory and methodologies into a creative design process. Exercises directed to aspects of architectural issues such as site analysis and planning, facility programming and program analysis, and integration of multiple complex architectural systems in comprehensive architectural resolutions. Prereq: 2001.

2003 Architectural Design Lab III (4) Advanced exercises designed to refine fundamental abilities in problem solving, problem solving, and communication and to provide overview of comprehensive architectural design process. Exercises directed to aspects of architectural issues such as site analysis and planning, facility programming and program analysis, and integration of multiple complex architectural systems in comprehensive architectural resolutions. Prereq: 2002; coreq: 3016.


2007 Historical Studies II (4) Relationship of historical and cultural developments to the built environment from the prehistoric period through the postmodern period. Applications to present-day design issues. Study of historical methods and analysis. Prereq: 1007.

2101 Pre-modern Survey II (4) Medieval and Byzantine architecture.

2102 Pre-modern Survey II (4) Medieval and Byzantine architecture.

3001 Architectural Design Lab I (4) Controlled exercises designed to demonstrate integration and application of design theory and methodologies into design process. Exercises directed to aspects of architectural issues such as site analysis and planning, facility programming and program analysis, and integration of multiple complex architectural systems in comprehensive architectural resolutions.

3002 Architectural Design Lab II (4) Experimental exercises designed to demonstrate integration and application of design theory and methodologies into a creative design process. Exercises directed to aspects of architectural issues such as site analysis and planning, facility programming and program analysis, and integration of multiple complex architectural systems in comprehensive architectural resolutions. Prereq: 2001.

3003 Architectural Design Lab III (4) Advanced exercises designed to refine fundamental abilities in problem solving, problem solving, and communication and to provide overview of comprehensive architectural design process. Exercises directed to aspects of architectural issues such as site analysis and planning, facility programming and program analysis, and integration of multiple complex architectural systems in comprehensive architectural resolutions. Prereq: 2002; coreq: 3016.

3007 Historical Studies II (4) Historical and cultural events from mid-eighteenth century to the present including a study of the roots of the modern movement. Applications to present-day issues, changing concepts of ethics, aesthetics, and architectural theory. Prereq: 2007 and second-year standing.

3013 Professional Practice I (4) Survey of legal responsibilities of architect in servicing contractual arrangements; contract documents, contract administration, codes and zoning regulations, liability, and insurance factors in building delivery. Prereq: Third-year standing.

3014 Professional Practice II (4) Principles and methodologies of economics and management; project production and management, codes and zoning requirements, budgeting, programming, and construction management. Prereq: 3013.

3016 Structural/ Mechanical Applications to a Built Environment (4) Introduction to analysis, study of the built environment with emphasis on applications of structural and mechanical systems. Analysis and selection of components with an emphasis on the analysis of the technical educational experiences into a unified design solution. Includes individual and group participation, technical analysis and oral presentation; Prereq: 2005, 2013, 2016.

3102 History of the City (4) Evolution of town planning theories; modern theory; city of today and tomorrow.

3103 American Architecture I (4) The development of North American architecture, from the arrival of the immigrants in 1607, until 1860. Architecture and settlement patterns will be discussed in relationship to the changing cultural conditions that emerged as America changed from a colony to a republic, and expanded westward to the Pacific Ocean.

3104 American Architecture II (4) Stylistic periods of the Victorian era from the Gothic Revival and the literature of the Romantic and the Age of Re- vival, and Beaux-Arts Classicism. In the twentieth century, the Progressive Work, California School, and International Style will be emphasized.

3110 Oriental Survey (4) The eastward expansion of the Fertile Crescent to the Indus Valley, Hindu, Buddhist, and Mughal architecture in India. Architecture in China and Japan from the earliest beginnings.

3113 Contemporary Architecture (4) Styles and theories from 1965 to present; design and technology; definition of architecture.

3115 Latin American Survey (4) Native and colonial architecture in Central and South America.

3120 Indigenous Traditions (4) Study of worldwide "anonymous" architecture reliant upon climatic conditions, availability of materials, and economic levels of the people. Prehistoric structures; residential, defensive, and provincial examples of architecture. The vernacular as a microcosm of colonial contact and its stylistic reflections in the eighteenth and nineteenth century expression of the modern movement.

3125-26 History of Architectural Technology I, II (4, 4) History of construction techniques, hardware, materials, and systems: before 1850; II: 1850 to present.

3130 History of Architectural Theory (4) Philosophies of science, the emergence of technology, and theories of design since 1500.

3135 Tennessee Architecture (4) Immigrant traditions, regional developments, national styles, contemporary architecture.

3137 Architecture Since 1845 (4) New directions and views of the future.

3140 Studies of Architectural Writing (4) Survey of European architectural writers from Pugin to the present; the relation between literature and design. May be repeated. Maximum credit 8 hrs.

3701-02 Application of Computer in Architecture I, II (4, 4) Survey of computer applications in the architectural profession. Computer graphics; use of commercial programs and systems; program planning and implementation. Prereq: 3701 for 3702.

3712 Mathematical Models in Architecture (4) Illustrates the development of mathematical models in architecture. Survey and classification of mathematical models in architectural design, including numerical methods and use of digital computer.


3910 Research Methods for Designers (4) General introduction to variety of research methods and techniques available to designer and appropriate for uncovering basic user requirements during design process. Prereq: 2000.

3920 Environmental Design Education: Problems, Practice, and Structures (4) Focus directed at surveying current models and educational approaches to solving the educational and curricular, curricula goals, objectives and implementation formats, and methods of program evaluation. Role of experiencing architectural cultures and contemporary education to design education explored. Required for teaching assistants in architecture. Prereq: Consent of instructor.

3930 Behavioral Approaches to Environmental Design (4) Major concern in the lecture content of this...
course is the effect of the built environment on human behavior. Particular emphasis will be placed upon the role of environmental factors in human development, learning, adaptation, stress and satisfaction, recreation behavior, and life-cycle functions. Studio problems will explore the impact of environments for children and environmental supports for various types of physical disabilities. 1 credit for lecture and 4 credits for lab. Prereq: Consent of instructor.

3940 Behavioral Approaches to the Design of Prosthetic Environments (6) Many standard features of the built environment are unsuitable to the everyday functioning of various types of physical disability; study of architectural barriers in relation to the physically handicapped constitutes the course lecture content. Site problems explore design of barrier-free environmental features and design of disability-specific environments and behavioral supports. 2 credits for lecture and 4 credits for lab. Prereqs: 3930 for non-architecture students.

4110 Aesthetics in Architecture (4) Architecture among the arts, theory and philosophy of space, imagination, design, and materials.

4111 Special Topics in Architectural History, Criticism, and Preservation (1-4) Special topics offered under direction of History/Humanities faculty. Course content and credit vary. May be repeated. Maximum credit 8 hrs.

4115 Research Methods in Architectural History (4)

4120 Treatises (6) Vitruvius; Renaissance and neoclassical treatises.

4125 Eastern European Architecture (4) Twentieth-century architecture in Russia, Czechoslovakia, Poland, Hungary, East Germany, Rumania, Bulgaria, Yugoslavia.

4130 Medieval Architecture (4)


4137 Forms of Utopia (4) Ideals, spaces, and places; proposals and programs which have formed Utopian tradition; successes and failures of its architectural forms.

4140 Criticism Seminar (4) Theories, function, and techniques of architectural criticism.

4150 Advanced Reading (4) Advanced studies in special topics of architectural history.

4160 Architects in Social Criticism (4) Writings which illustrate technological, political, and anthropological assumptions of some 19th-and 20th-century architects.

4170 Introduction to Preservation and Restoration (4) History and theory of restoration and preservation.

4175 Technology of Preservation (4) History of technology and materials, methods analysis and dating, techniques of preservation.

4180 Descriptive Analysis of Historic Buildings (4) Identification and analysis of characteristic elements of buildings from various architectural periods, with emphasis on American architecture. Survey techniques.

4185 Contemporary Preservation Practice (4) History and theory of contemporary practice, preservation law.

4311 Historic Preservation Laboratory (8) Directed studies for buildings of historic significance. Techniques of preservation; research of historic methods of construction; and studies of viable uses. Rehabilitation, restoration, preservation, and adaptive uses. May be repeated. Maximum credit 24 hrs.

4312 Foreign Studies Laboratory (16) Travel, research, and laboratory projects conducted in various location abroad. The programs may include service to less-developed countries; research and design projects related to program locations; lectures, seminars, and critiques by distinguished individuals in the host country. Programs will vary.

4313 Media Laboratory (8) Special projects related to print, electronic and other media and applications under the direction of faculty members. May be repeated. Maximum credit 16 hrs.

4320 Introduction to Site Planning (5) Analysis of site form and ecology, environmental assessment, social and psychological aspects of site locations and development, study of movement systems, project development, site design, including locations and layout of streets and utilities; earthwork, site management and development.

4330 Architecture Research Laboratory (6) Research projects on specific architecture subjects under the direction of faculty members.

4331-33-35 Micro Studies Laboratory I, II, III (8, 8, 8) Series of design exercises to demonstrate range of human response to varied composition of micro environmental elements and systems. Prereq: 3003.

4340 Independent Studies Lab (1-8) Individual architectural or related projects under direction of faculty members. Credit adjusted to nature of problems and level of effort. May be repeated. Maximum credit 24 hrs.

4350 Visiting Lecturers Laboratory (8) Architectural or related projects under the direction of visiting lecturers. Nature of project to be determined by visiting lecturer in charge. May be repeated. Maximum credit 16 hrs.

4351 Build Laboratory (8) Design and construction under the direction of faculty member of small scale building project for a public service agency or organization. Work involves research, design, cost and analysis, material specification and ordering, subcontracting, and onsite construction.

4352 Architectural Service Laboratory (8) Off-campus studies conducted under direction of architect or related professional on the staff, member or public service organization or agencies of government. Subject of study varies but is directly related to problem-solving process.

4353 Development Laboratory (8) Directed studies in development of real property. Studies of use feasibility, economics, finance and marketability, environmental impact, social considerations and consequences.

4360 Remote Centers Laboratory (8) Program extension in remote locations of various tenure.

4370 Architecture-Engineering Laboratory (8) Directed research application in new structural concepts. Architectural projects of large scale and complex nature with emphasis on the engineering systems considered, codes, economics, urban design, utility services, structure, environmental controls, and construction.

4381-82-83 Macro Studies Laboratory I, II, III (8,8,8) Design studies of a large scale and complex nature with emphasis on reinforcing application of architectural design process and introducing techniques and principles used in urban and regional design and planning process. Prereqs: 4381-82-83.

4390 Interdisciplinary Laboratory (8) Action-oriented joint studies laboratory in environment-related problems utilizing interdisciplinary resources and undertaken by students and faculty both in and out of the School of Architecture.

4501 Management Design I (8) Using the lab situation and project simulation, study aspects of project management and construction management, the process of making decisions, the understanding of their ramifications, the concept of decisions, design, and the process of delivery.

4502 Administrative Design I (8) Lab simulation of office experience in project planning and control, programming, and preparation of contract documents.

4503 Management Design II (8) Advanced work in lab situation of the management aspects of architecture. Use of computer as a management tool and simulation of an office situation is conducted in the lab. Prereq: 4501.

4504 Administrative Design II (8) Lab simulation of project with emphasis on production, specifications, estimating, materials, and codes. Prereq: 4502.

4510 Project Management (4) Principles, methods, and application of project management to the total building process. Project manager, his function, responsibilities, and activities investigated through case studies, job history reviews, and project simulation.

4515 Construction Management (4) Principles, methods, and application of project management to the total building process. Project manager function, responsibilities, and activities investigated through case studies, job history reviews, and project simulation.

4520 Professional Services (4) Marketing of architectural practice by study of cases, theories, public relations procedures, and understanding sales of architectural services, fees, fees and benefits.

4525 Personnel Relations (4) History of practice of architectural emphasizing the role of architects in the dynamics of personnel relations, benefits, and unionization.


4531 Architectural Practice I (4) Analysis, survey, and study of the practice of architectural organization of practices and financial arrangement of office structure.

4532 Architectural Practice II (4) Analysis and study of contracts, insurance, and the legal position and liabilities of architect.

4535 Advanced Contracts (4) Study of contractual problems relating to architect, owner, contractor, and subcontractor.

4540 Design Process, Decision Determination (4) Principles and theories of making decisions in relation to scheduling of architectural activities during building process.

4545 Architectural Programming (4) A study of architectural problem definition and its relationship to the design process, covering current techniques and practices.

4550 Codes and Zoning (4) Theory, review, and research of city, county, state, region, and national codes and zoning. History and development of fire safety and building codes; history and development of zoning emphasizing architect's responsibility as related to specific project application.

4555 Cost Analysis (4) Methods and theories of estimating project costs related to progress with reference to present techniques. Research in new techniques of cost analysis.

4580 Specifications (4) Theory, analysis, and methods of specifications. Emphasis placed on development and research of specifications.

4585 Supervision (4) Theories, methods, and site study of job inspection during construction phase and construction administration.

4701-02 Contract Documents/Working Drawings (8) Contractual roles in the production of architectural design, preparation and presentation of detailed working drawings, specifications, and other documents for typical project. Prereq: Consent of instructor.


4711-12 Structural Design I, II, (4, 4) Provides understanding of behavior, analysis, and design of basic building structures. Structural and constructional aspects of building, including the structural design of building, in steel, concrete, masonry, and timber to satisfy loading and building code requirements. Prereq: 2013 or equivalent.

4715 Construction Economics (4) Construction economics of small, medium, and large projects. Interest, annuity, sinking funds; depreciation and replacement consideration; mortgage and amortization schedules; real estate investment and speculation; syndicate loans, purchasing power, and liquidity.

4721-22 Advanced Architectural Structures (4, 4) Philosophy of structural design in relation to material...
purpose and form. Advanced mathematical and experimental analysis of structures, including use of computer programs. Prereq: 3702 or equivalent.

4725-26-27 Structural Innovation and Design Research (2-4, 6-8 credit hours) Survey of current applications of building utilizing innovative structural configurations and techniques. Basic structural concepts, space and solid properties, and economic factors such as costs systems and materials and process optimization are emphasized. Students' activities will involve prototyping of innovative systems. Acceptable for design credit in 4th and 5th year or last quarter of 3rd year with consent of instructor.


4733 Structural Design for Protection Against Extreme Events (3) Hazards, risk, and utilization of insurance. Survey of possible hazards: flood, fire, hurricanes and tornadoes, earthquakes, nuclear effects, and internal and external explosions. Building code and engineered design of steel, masonry, concrete, and wood structures. Protective construction for human and system needs. Fire protection engineering, fire phenomena, life safety analysis, high-rise building fires.


4735 Advanced Design of Concrete Buildings (4) Precast and on-site concrete construction and maintenance, foundations, floor and wall systems. Domes and shell roofs. Prereq: 3702 or equivalent.


4739 Aesthetics of Engineering Structures (4) Architecture in engineering theory, history, and utilization of space, design, and materials in large structures. Bridges, exhibition halls, power plants.

4741 System Theory, History, and Methodology (4) Investigation of general system theory and system research methodology. Development of analysis of systems on an international historic basis.


4744 Accelerated Visual Studies (4) Identification and applied research on the new uses of materials, and innovative approaches to design, architecture, and structural systems; development of effect design drawings, detailing, contract documents, and specifications. Study of component assembly, panel, and box systems; wood, steel, concrete, plastic, composite materials, computers, structurally and architecturally. Prereq: 4743.

4745 Mechanical Innovations (4) New technological concepts and techniques for heating, ventilating, air conditioning, plumbing, and electrical systems. Concepts and new applications of factory, and mechanical connections at the site, their application and cost. Coreq: 4751.

4750 Construction and Manufacturing Innovations (4) Comprehensive analysis of new technology and innovations in manufacturing and construction with emphasis on production, transportation, erection, distribution, precasting equipment, unions, codes, computer regulatory agencies, robotics, factory assembly lines, and site construction methods. Understanding of the use of computerization, machine, automation, computers, CPM, fasttracking, prefabrication, and industrialization. Prereq: 4751 and 4752.

4751-62 Systems Design Laboratory I, II, III, IV, V, VI (4, 4, 4, 4, 4, 4) A vertical multi-disciplinary design and research laboratory in building systems, including simultaneously under-graduates, professionals, in- and extra-professionals. Total systems ("software" and "hardware") approach to individual and group problems. 4761: Defining, researching, probing, and analyzing the problem and the system process. Application of new ideas and methods to new design and systems. 4762: Experimenting with new prototype forms, architecturally and with design systems, three dimensionally and in mock-ups, using new materials and techniques. Coordination of the total systems process.

4755 Thesis/Systems Laboratory (10) Independent problem undertaken by individuals or groups which makes a significant contribution to the art and/or science of systems building, design, and architecture. Prereq: Approval of the systems building coordinator and the completion of the systems building core.


4780 Fire Protection in Structure (4) Fire protection aspects of buildings and their occupants. Characteristics of fires; fire codes; building evacuation. Sprinkler and other fire protection systems; emergency power and lighting; fire resistant materials and construction.

4785 Sound, Noise, and Vibration Control in Building (4) Proven sound and vibration control techniques. Specific methods, procedures, and materials most effective in solving acoustical problems. Prereq: Audio & Speech Path. 4750 or Mechanical Eng. 4220.

4850 Elementary Structural Matrix Methods (4) Introduction to the methods of analyzing structural systems of simple structures. Review of matrix algebra and vectors; development of member stiffness and flexibility matrices; accounting for member flexibility matrices. Prereq: Consent of instructor. (Same as Civil Engineering 4850 and Engineering Science and Mechanics 4850.)

4900 Aspects of Urban Environment (4) Interdisciplinary course in urban problems. Prereq: Consent of one of the instructors. (Same as Urban Studies 4900.)

4910 Architectural Photography (4) Photography as a design, research, and presentation medium. Emphasis on architectural photography using black and white media.

4920 Advanced Architectural Photography (4) Application of special photographic techniques with emphasis on color printing and processing. Prereq: Consent of instructor.

4940 Proxemics (4) Seminar for graduate students in architecture and urban planning. Introduction to proxemic research. Definition of proxemic variables. Proxetic notation exercises. Analysis of etic data and the identification of etic categories. Observer bias and methods and bias reduction. Members of seminar required to design, construct, and present original proxemic research. Prereq: 5000 or consent of instructor.

4950 Environment as Code (4) For a graduate student and upper-division students. Introduction to proxemic research. Design of proxemic variables. Proxetic notation exercises. Analysis of etic data and the identification of etic categories. Observer bias and methods and bias reduction. Members of seminar required to design, construct, and present original etic research. Prereq: 5000 or consent of instructor.

4990 Senior Thesis (4) Exploration of topic and selection of thesis committee for 4995. Report must include objective to be pursued, principal hypotheses and assumptions, research methods, data acquisition, and analysis. Prereq: 3.0 cumulative G.P.A., fifth-year status, and approval of preliminary abstract by thesis coordinator.

4995 Senior Thesis (8-12) Independent problem under direction of thesis committee. Aim of thesis is to demonstrate competence in dealing with conceptual and theoretical issues within chosen subject area, and ability to develop program at scale of major project, and proficiency in solving and documenting process and resolution. Prereq: 4990.

ACCELERATED CORE COURSES

4020 Accelerated Visual Studies (4) Identification and application of theories and methodologies of graphic analysis and communication principles, i.e., principles of visual coding and ordering applicable to behavioral analysis. Design of the environment and behavioral properties of elements of visual environment. Selected exercises shall demonstrate manipulation of both static and dynamic properties to present selected concepts and/or experiences. Prereq: Admission to accelerated core program; coreq: 4022.

4021 Accelerated Basic Design and Analysis I (4) Investigation of elements and behavior of complex physical systems. Theoretical and practical issues. Conceptualization applicable to design decision-making and problem solving are investigated through controlled and experimental methods. Prereq: 3702 or equivalent. Prereq: Admission to the accelerated program; coreq: 4020.

4022 Accelerated Analytical Studies I (4) General systems theory and scientific methods of analysis applicable to design decision-making processes and design methodologies. Contextually, studies trace emergence of organizational architecture through the evolution of design theory, building technology, and processes of developmental change. Prereq: Admission to the accelerated program; coreq: 4020.

4023 Accelerated Basic Design and Analysis II (4) Investigation of human responses of varied configurations of built environments. Knowledge of response to human behavior and activity patterns applied through design process to create new environmental forms subjected to performance evaluation measured to architectural analysis. Prereq: 4022. Prereq: Admission to the accelerated program; coreq: 4022.

4024 Accelerated Analytical Studies II (4) Basic research methods and applications in the human environment. Presentation of information and skills necessary for collecting, ordering, manipulating, and displaying data. Research design and evaluation purposes. Objective is to be qualified with fundamental concepts and techniques to utilize potential of electronic data processing technologies as a research tool. In addition to the regular lecture series of 2014, students are required independently to research aspects of study area for presentation to an accelerated seminar supplement. Prereq: 4022; coreq: 4023.

4027 Accelerated Man-Environment Systems (4) Study of casual, descriptive, behavioral, and predictive properties of human problems and their transactions. Selected examination of cultural response variables of eco/sociophysical change illustrate interdisciplinary of human systems, activity systems, and physical systems. In addition to the regular lecture series of 2000, students are required to independently research aspects of study area for presentation to an accelerated seminar supplement. Prereq: Admission to the accelerated core program.

4029 Accelerated Professional Practice (4) Examination of social, historical, and intellectual problems of architecture, engineering, and management; project production and management, cost analysis, budgeting, programming, and construction management. Prereq: Admission to accelerated core program.
4031 Accelerated Historical Studies I (4) Introduction to evolution of architectural periods with selected illustrations from local examples. Advanced examination of relationship of historical and cultural developments to the built environment from antiquity through Byzantine period with applications to present-day design issues. Independent student projects on topics related to course materials. Prereq: Admission to accelerated core program.

4032 Accelerated Historical Studies II (4) Advanced examination of relationship of historical and cultural developments to the built environment from Romanesque period through neoclassicism with applications to present-day design issues. Study of historical research methods and analysis. Independent student projects on topics related to course material. Prereq: 4031.

4033 Accelerated Historical Studies III (4) Advanced examination of historical and cultural events of Industrial Revolution which gave rise to modern movement in architecture and design with applications to present-day design issues. Changing concepts of ethics, aesthetics, and architectural theory. Independent student projects on topics related to course material. Prereq: 4031 and 4032.
Power.

The future executive and enlightened wielder of the ever-changing technological world; and a firm business; an understanding of the scientific, student leave school with a reasonably

four years in the college as the initial step to a

develop in its students the ability to see their

from psychology, sociology, and other areas

related to the behavior of people; (d) to

acquire instruction in professional fields so that they may understand the business process as a whole and the function of specific areas of business in particular; (c) to associate closely with other colleges of the University in order to enrich the understanding of its students by offering an opportunity to learn from psychology, sociology, and other areas related to the behavior of people; (d) to develop in its students the ability to see their four years in the college as the initial step to a lifetime commitment to personal growth and intellectual maturity through continuing education.

The college centers its teaching, subject matter, and research activity around two themes: the manager as a planner, decision maker, implementer, and controller of operations in a business firm; and the manager as an analyst of and an adapter to the larger social, economic, and political environment in which the firm exists.

The college has one goal: to have each student leave school with a reasonably articulate and coherent, though flexible and ever-developing, personal philosophy of business; an understanding of the scientific, ever-changing technological world; and a firm awareness of their social responsibility as a future executive and enlightened wielder of power.

The nationally recognized body which accredits programs in business administration is the American Assembly of Collegiate Schools of Business (AACSBo). The college has been a member of AACSBo since 1941, and both its undergraduate and graduate programs are fully accredited.

Association and Progression

Students wishing to receive a degree in business administration must seek association with the College. Details of the requirements for association are found on page 28 of this catalog.

Students Advising Center

The College of Business Administration maintains a Student Advising Center. The center is staffed with full-time academic advisers to assist the freshman and sophomore student on a individual basis with their programs. Junior and senior students are assigned to advisers from the faculty of the student's selected major. The objective of working with students individually is to assist them in their own particular needs for academic information and to prepare them to answer their own questions and concerns.

Center for Business and Economic Research

The Center for Business and Economic Research engages in studies of the business and economic environment in Tennessee, the Southeast, and the nation. The center serves the business community, state government, individuals, and the University through dissemination of information, and aids the faculty in preparing research proposals. Staff members conduct research in regional economics, public finance, demography, and related socio-economic problems. The center publishes results of its research and that of others, in monograph form, so that significant developments in the various business disciplines can achieve widespread exposure. In addition, the center staff does contract research on business and economic problems for governmental organizations and private industry. As periodicals, the center publishes the Tennessee Statistical Abstract and the Survey of Business.

The center is a member of the Southeastern Economic Analysis Conference and the Association for University Business and Economic Research.

Management Development Programs Department

The Management Development Programs Department offers a wide variety of programs ranging from two-to-three-day public seminars and customized "in plant" programs to the four-week University of Tennessee Executive Development Program.

The University of Tennessee Executive Development Program (TEDP) is designed to provide executive education for executives from firms and organizations in Tennessee, the South, and nationally. The major objectives of the program are to prepare and develop executives for increasingly higher levels of management responsibility and to sharpen existing executive skills needed for comprehensive decision making and leadership. Other major aims of the TEDP are to teach the fundamentals of analytical thinking and the use of the decision tools, and to examine the economic, political, technological, and other environmental factors affecting the firm's operations.

The TEDP limits enrollment and participants live on campus for a total of four weeks spread over a three-month period. The fall Executive Seminar brings participants and spouses of all TEDP classes back to campus for sessions on relevant topics and current key issues. The Executive Seminar offers a continuing opportunity for personal growth and professional development. This arrangement provides executives with extensive opportunities to exchange ideas and operational concepts with contemporaries in other business areas and with TEDP faculty as well.

The faculty for the TEDP consists of senior professors who teach business-related subjects in the University's graduate programs and nationally recognized professors of other institutions. Each participating faculty member has deep experience in either consultation with...
or actual operations in business and industry. The TEDP faculty is augmented by outstanding practitioners in their fields of business and industry.

**Cooperative Program in Business**

The College of Business Administration offers qualified students, who have completed at least one year of work at the University and whose grades conform to the standards set by the college, the opportunity to participate in the Cooperative Program in Business which, under the direction of a coordinator, combines classroom study with practical experience. Effort is made to place students in jobs which offer maximum educational and financial advantages. Students alternate quarterly between work in business or industry and study at the University.

The Cooperative Program gives the student an opportunity for practical experience, develops a sense of responsibility and cooperation, helps in selecting a vocation, creates greater interests and incentive in studies, enables the earning of expenses, and may lead to permanent employment after graduation.

Students may earn a maximum of nine hours of elective credit for field work but must do a satisfactory job as determined by the employer and coordinator, including reports covering job experiences.

All students interested in the program are referred to the Center for Extended Learning, Student Services Building.

**Preparation for Teaching**

Students desiring to teach business, economics, or distributive subjects in the secondary schools of Tennessee may follow majors in accounting, office administration, or marketing and also meet the requirements for certification by the State Department of Education.

Students should consult an adviser in business or distributive education regarding the proper courses.

Master's and doctoral degree programs leading to teaching in junior and senior colleges or universities are available.

**Business Minor for Non-Business Majors**

Students who are non-business majors, but who wish to attain a minor in business, must successfully complete 21 hours of the following required courses: Accounting 2110-20-30, Economics 2110-20-30, and Statistics 2100. Also, 15 hours of upper-division business electives must be taken at UTK. Not more than six upper-division hours of accounting, economics, or statistics may be used for this minor. Students are responsible for meeting prerequisites listed for any upper-division courses taken in a particular concentration. Acceptance of the minor must have approval of the student's college of enrollment. Minors are unavailable to College of Business Administration students.

**Course Load**

The normal course load for a quarter is 15-17 hours. The maximum number of hours which may be taken by a freshman is 18. Other students may take 19. In unusual circumstances permission to take a course load in excess of these maximums may be granted by the Assistant Dean for Undergraduate Programs in Business Administration.

**Requirements for All Curricula**

In order to qualify for the Bachelor of Science in Business Administration degree a student must have been accepted for association with the College at the upper division level to complete the curriculum outlined by the major department. Where no course number is indicated or where a choice is allowed, the student will fulfill the requirement by selecting from specified courses. Where electives are provided, the courses taken must meet the approval of the adviser. Non-departmental electives are considered as courses outside the student's major department. No more than 42 hours are permitted in any one subject area.

A maximum of 30 credit hours of unconditionally graded (S/NC, P/F, P, etc.) courses may be applied to the total credit hours required for a degree of Bachelor of Science in Business Administration. Such credit hours may be used to meet only the requirements identified in the curriculum as "non-business electives," "non-departmental electives," "business and/or non-business electives," and "business electives."

A Management Science Option is available for students who wish to participate in the general education applications to business. See page 87.

**NATURAL SCIENCE REQUIREMENT**

The following core courses are required in all business curricula: Accounting 2110-20-30 (2110-20, 3210 for accounting and management majors); Business Administration 4340; Business Law 4110 and 4120; Economics 2110-20-30; Finance 3510 (Political Science 4370 for public administration majors), 3120-30; Management 2010 (2011 for management majors); Marketing 3110-20; Office Administration 2750 or Computer Science 1410 (3150 for Management Science Option); and Statistics 2100 and three hours of upper-division science electives or as designated by the curriculum (3450-60 for Management Science Option).

**ENGLISH REQUIREMENT**

The English requirement can be fulfilled by either English 1010 or 1011; 1020 and either 1031, 1032, or 1033, as well as hours selected from English 2100-20-30, 2540, 2560-70, 2660-70-80. Speech 2311, unless specifically required by a curriculum, may be used to satisfy four of the elective English hours required. English courses beyond 1000 level may be taken in any order. Students making a B average in freshman English are permitted to substitute for the 2000-level courses listed above any upper-division courses which the Department of English will allow them to take.

**SOCIAL SCIENCE REQUIREMENT**

The social science requirement can be fulfilled by selecting from the following courses: Anthropology 2510-20-30; Geography 1610-20, 2110-30, 2120-30, 2140-30; History 2100-20, 1610-20, 1950-60, 2510-20 (2518-28); Honors 1138; Human Services 2690; Philosophy 1510-20, 2310, 2510-20; Political Science 2020, 2510-20 (2518-28); Psychology 2500 (2518), 2530-20; Religious Studies 2610 (2611), 2620, and Sociology 1510-20. Students who have not completed a year of American history in high school must select American History 2510-20 (or 2518-28) and 2511 or 2521 as part of the 16 hours of social sciences.

**COMPUTER SCIENCE REQUIREMENT**

A computer programming course satisfies this requirement: Computer Science 1410 or Office Administration 2750 is recommended.

**Accounting**

The curriculum provides preparation for professional accounting careers in public accounting, industry, and government.

Graduates are eligible for the CPA examination in Tennessee.

**Transfer Students**

A minimum of 30 quarter hours of required upper-division College of Business Administration courses must be completed in residence at The University of Tennessee Knoxville. These courses must include a minimum of 15 hours of accounting courses numbered 3000 or above and must include Accounting 4110, 4140, 4430, and 4630. Transfer students with nine quarter hours of introductory accounting will receive six hours of credit in Accounting 210-20 and three hours of lower division accounting credit.

**Freshman**

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<th>Course</th>
<th>Hours Credit</th>
<th>1st Year</th>
<th>2nd Year</th>
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<td>English 1010 or 1011; 1020; 1031 or 1032</td>
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<tr>
<td>Mathematics 1540-50-60 or 1940-50-60</td>
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<tr>
<td>'Social science electives'</td>
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<td>Non-business electives</td>
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<tr>
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<tr>
<td><strong>Sophomore</strong></td>
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<td>Speech 2311</td>
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<td>Economics 2110-20-30</td>
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<td>Accounting 2110-20</td>
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<td><strong>Statistics</strong></td>
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<td>Management Science 2110-20</td>
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<td>Finance 330</td>
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**TOTAL:** 193 hours

*See Requirements for All Curricula.

**8** is strongly recommended that accounting majors select one of their English electives from English 3840 or 440.

**8** is maximum of 6 hours may be taken in accounting courses. Students who plan to enter the Master of Accounting program are encouraged to take Accounting 3590 and 4820 and Business Law 4350.
### Banking

Students planning careers in management of commercial banks and branches, or as trust officers, investment or loan officers, or in savings or industrial banks, the Federal Reserve System, international monetary institutions, or state and federal bank regulatory agencies may major in banking.

Transfer Students: A minimum of 30 quarter hours of required upperdivision College of Business Administration courses must be completed in residence at The University of Tennessee, Knoxville. These must include a minimum of 12 hours of finance courses.

#### Hours Credit

<table>
<thead>
<tr>
<th>Semester</th>
<th>Hours</th>
<th>Freshman</th>
<th>Sophomore</th>
<th>Junior</th>
<th>Senior</th>
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<td>II</td>
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<td>III</td>
<td></td>
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</table>

### Business Administration

<table>
<thead>
<tr>
<th>Hours Credit</th>
<th>I</th>
<th>II</th>
<th>III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman</td>
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<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Sophomore</td>
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<td>1</td>
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</tr>
<tr>
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</tr>
<tr>
<td>Senior</td>
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</tbody>
</table>

B. Banking requirement courses are listed below.

1. **Mathematics**: Include a minimum of 12 hours of mathematics, including at least 3 hours of advanced mathematics.
2. **Business Administration**: Include a minimum of 30 quarter hours of upperdivision College of Business Administration courses.
3. **Social Science**: Include a minimum of 12 hours of social science courses.
4. **Economics**: Include a minimum of 12 hours of economics courses.
5. **English**: Include a minimum of 12 hours of English courses.
6. **Computer Science**: Include a minimum of 12 hours of computer science courses.

### Economics

The Department of Economics offers specialized courses for those who desire to serve as economic analysts and specialists in business, education, government, and various international agencies. The curriculum requirements for an economics major in the College of Business Administration are listed below with an additional explanation given on page 90.

Freshman students may also elect to major in economics in the College of Liberal Arts or to become certified to teach economics in the secondary schools through the College of Education. See page 104 for further details.

Transfer Students: A minimum of 30 quarter hours of required upperdivision College of Business Administration courses must be completed in residence at The University of Tennessee, Knoxville. These must include a minimum of 15 hours of economics courses.

#### Hours Credit

<table>
<thead>
<tr>
<th>Semester</th>
<th>Hours</th>
<th>Freshman</th>
<th>Sophomore</th>
<th>Junior</th>
<th>Senior</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
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</table>

### Business and/or non-business electives

1. **Business Administration**: Include a minimum of 30 quarter hours of upperdivision College of Business Administration courses.
2. **Economics electives**: Include a minimum of 12 hours of economics courses.
3. **Non-business elective**: Include a minimum of 12 hours of non-business courses.

TOTAL: 187 hours

### Business Education

This major is offered in cooperation with the Department of Vocational Technical Education in the College of Education. The program meets requirements for certification in business subjects as approved by the State Department of Education. At least a C average must be made in each endorsement area in business for which a student is to be recommended.

Additional information is available from Dr. Betty J. Brown, Business Education Coordinator.

#### Hours Credit

<table>
<thead>
<tr>
<th>Semester</th>
<th>Hours</th>
<th>Freshman</th>
<th>Sophomore</th>
<th>Junior</th>
<th>Senior</th>
</tr>
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</table>

### Finance

Curricula in the finance department include those in finance, banking, insurance and real estate and urban development. The finance curriculum offers courses in the following areas: business finance, financial management, investment analysis, and monetary theory and policy.

Transfer Students: A minimum of 30 quarter hours of required upperdivision College of Business Administration courses must be completed in residence at The University of Tennessee, Knoxville. These must include a minimum of 12 hours of finance courses.

#### Hours Credit

<table>
<thead>
<tr>
<th>Semester</th>
<th>Hours</th>
<th>Freshman</th>
<th>Sophomore</th>
<th>Junior</th>
<th>Senior</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
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<td>1</td>
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<td>1</td>
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</tbody>
</table>

### General Business

This major is for those who desire a broad business background without extensive concentration in any single business field. To that end it includes advanced work beyond the introductory courses in accounting, economics, finance, personnel management, marketing, statistics, and transportation as specified below.

Transfer Students: A minimum of 30 quarter hours of required upperdivision College of Business Administration courses must be completed in residence at The University of Tennessee, Knoxville. These must include a minimum of 12 hours of accounting, economics, and finance courses.

#### Hours Credit

<table>
<thead>
<tr>
<th>Semester</th>
<th>Hours</th>
<th>Freshman</th>
<th>Sophomore</th>
<th>Junior</th>
<th>Senior</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
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<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>II</td>
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<td>1</td>
<td>1</td>
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<tr>
<td>III</td>
<td>1</td>
<td>1</td>
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</tr>
</tbody>
</table>
Management

This major is designed for students interested in management. All students complete a set of courses designed to provide a basic understanding of management of business organizations and also complete one of the following concentrations:

Operational Management—designed for students who wish to prepare for careers in operations in manufacturing and service industries, including the specific fields of materials management, scheduling and control, work measurement, quality assurance, and supervision.

Personnel Management—designed for students who wish to prepare for careers in personnel management, including the specialized fields of employment, wage and salary administration, job evaluation, training, and human resources management.

General Management—designed for students who do not wish to specialize in operations or personnel. This concentration allows flexibility so that students tailor their programs of study to fit their career goals by selecting from a set of departmental and nondepartmental courses.

Transfer Students: A minimum of 30 quarter hours of required upper division College of Business Administration courses must be completed in residence at The University of Tennessee, Knoxville. These must include at least 15 hours of management courses including 4210, 4320, 4460.

## Hours Credit

### Freshman

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<tr>
<th>Course</th>
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<tr>
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<tr>
<td>Nonbusiness elective</td>
<td>3</td>
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<tr>
<td>Social science electives</td>
<td>3</td>
</tr>
<tr>
<td>Economics 2110</td>
<td>3</td>
</tr>
<tr>
<td>Sociology elective</td>
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<tr>
<td>Accounting 2110-20-30</td>
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<tr>
<td>Statistics 1200</td>
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<tr>
<td>Nonbusiness elective</td>
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### Sophomore

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>English elective</td>
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<tr>
<td>Speech 2311</td>
<td>3</td>
</tr>
<tr>
<td>Accounting 2110-20-30</td>
<td>3</td>
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<tr>
<td>Economics 2120-30</td>
<td>3</td>
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</tr>
<tr>
<td>Operations or Personnel Concentration</td>
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<tr>
<td>General Concentration</td>
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<td>Business elective</td>
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### Junior

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<tbody>
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<td>Finance 3120-30</td>
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<tr>
<td>Marketing 3110-20</td>
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<td>Accounting 3110-20</td>
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### Senior

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<th>Course</th>
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<td>Business Law 4110-20</td>
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<td>PERSONNEL CONCENTRATION</td>
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<tr>
<td>General Concentration</td>
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## Hours Credit

### Freshman

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<tr>
<th>Course</th>
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<td>Mathematics 1540-50-60 or 1840-50-60</td>
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<td>Social science electives</td>
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<td>Economics 2110</td>
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<tr>
<td>Accounting 2110-20</td>
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<td>Economics 2120-30</td>
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<tr>
<td>Nonbusiness elective</td>
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### Sophomore

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<th>Course</th>
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<tbody>
<tr>
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<tr>
<td>Speech 2311</td>
<td>3</td>
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<tr>
<td>Accounting 2110-20</td>
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<td>Economics 2120-30</td>
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<tr>
<td>Operations or Personnel Concentration</td>
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<tr>
<td>General Concentration</td>
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<tr>
<td>Business elective</td>
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### Junior

<table>
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<th>Course</th>
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<td>Finance 3120-30</td>
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<tr>
<td>Marketing 3110-20</td>
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### Senior

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<th>Course</th>
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</thead>
<tbody>
<tr>
<td>Business Administration 4430</td>
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<td>Business Law 4110-20</td>
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<tr>
<td>General Concentration</td>
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<tr>
<td>TOTAL: 18 hours</td>
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</table>

## Marketing

This major is designed to prepare students for careers in marketing with companies engaged in the marketing of consumer and industrial goods and their distribution by manufacturers, wholesalers, and retailers. The curriculum trains students for positions in sales, advertising, promotion, research, and marketing management. The integrated sequence of courses enables students to obtain broad training in the analysis of marketing decision problems.

Transfer Students: A minimum of 30 quarter hours of required upper division College of Business Administration courses must be completed in residence at The University of Tennessee, Knoxville. These must include the following required marketing courses: 3210, 4210, 4510, 4650, 4710.

## Hours Credit

### Freshman

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<th>Course</th>
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<tbody>
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<td>English 1010-20; 1031 or 1032</td>
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<td>Mathematics 1540-50-60 or 1840-50-60</td>
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### Sophomore

<table>
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<th>Course</th>
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<tbody>
<tr>
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<tr>
<td>Economics 2120-30</td>
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<td>Speech 2311</td>
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### Junior

<table>
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<tbody>
<tr>
<td>Accounting 3110-20</td>
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<td>Economics 3120</td>
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<td>Nonbusiness elective</td>
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<tr>
<td>TOTAL: 18 hours</td>
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### Senior

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Business Administration 4430</td>
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<tr>
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<td>General Concentration</td>
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## See Requirements for All Curricula.

1. To be taken when topic is insurance.
2. See Requirements for All Curricula.
Business and/or non-business electives 3 - 3
Non-business electives 3 - 3
Nondepartmental electives 3 - 3

TOTAL: 187 hours

Office Administration

Students entering the field of office administration may choose a specialized program to prepare for supervisory, administrative, or managerial positions in the office. Students following the office administration major may meet teacher certification requirements by taking the appropriate education courses in consultation with the faculty advisor. Each major in office administration will select an option area of 12 hours from one of these areas: accounting, banking, bilingual, computer science, insurance, logistics, marketing, management, political science, real estate, secretarial, statistics, and transportation.

Transfer Students: To graduate with a major in office administration, a minimum of 30 quarter hours of required upper-division College of Business Administration courses must be completed in residence at the University of Tennessee, Knoxville. A minimum of 12 hours must be in office administration.

<table>
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<tbody>
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<td>English 1010 or 1011; 1020, 1031 or 1032 or 1033</td>
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<td></td>
<td>Mathematics 1540-50-60 or 1840-50-60</td>
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<td></td>
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<td>Nondepartmental electives</td>
</tr>
<tr>
<td></td>
<td>Non-business electives</td>
</tr>
<tr>
<td>Sophomore</td>
<td>English electives ...</td>
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<tr>
<td></td>
<td>Accounting 2110-20-30</td>
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<tr>
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<td>Nondepartmental electives</td>
</tr>
<tr>
<td></td>
<td>Non-business electives</td>
</tr>
<tr>
<td>Junior</td>
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<td>Marketing 3110-20</td>
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<td>Statistics upper-division electives</td>
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<td>Economics elective</td>
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<td>Course from option area</td>
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<td>Non-departmental electives</td>
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<td>Office Administration 4310</td>
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<td></td>
<td>Office Administration 4640, 4650</td>
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<td>Non-business electives</td>
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<tr>
<td></td>
<td>Courses from option areas</td>
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<tr>
<td>TOTAL: 187 hours</td>
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Real Estate and Urban Development

This major is designed for students who are interested in the many fields of business and government where real estate is of significance. Such fields include real estate brokerage, appraising, taxation, law, property management, real estate development, mortgage lending and mortgage banking, construction, government loan guarantees, and insurance.

Transfer Students: A minimum of 30 quarter hours of required upperdivision College of Business Administration courses must be completed in residence at the University of Tennessee, Knoxville. These must include a minimum of 12 hours of real estate and urban development courses.

<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
<td>Freshman</td>
<td>English 1010 or 1011; 1020, 1031 or 1032 or 1033</td>
</tr>
<tr>
<td></td>
<td>Mathematics 1540-50-60 or 1840-50-60</td>
</tr>
<tr>
<td></td>
<td>Economics 2110</td>
</tr>
<tr>
<td></td>
<td>Accounting 2110-20-30</td>
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<tr>
<td></td>
<td>Computer science elective</td>
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<tr>
<td></td>
<td>Management 3010, 3110</td>
</tr>
<tr>
<td></td>
<td>Political Science 2550-60</td>
</tr>
<tr>
<td></td>
<td>Business and/or non-business electives</td>
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<tr>
<td></td>
<td>Social science electives</td>
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<td>TOTAL: 187 hours</td>
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</tbody>
</table>

Transportation and Logistics

A major in transportation and logistics is recommended for students who plan careers with: (1) transportation-related companies that supply freight and/or passenger services; (2) industrial and marketing organizations that coordinate traffic, warehousing, and related distribution activities to achieve optimal business logistics systems; or (3) transport regulatory and planning agencies at all levels of government. The program prepares students for the examinations of the American Society of Traffic
and Transportation. A number of scholarships for transportation and logistics majors are available.

To graduate with a major in transportation and logistics, a minimum of 30 quarter hours of required upper-division College of Business Administration courses must be completed in residence at The University of Tennessee, Knoxville. These must include a minimum of 21 hours of transportation and logistics courses in residence.

### Management Science Option

The increasing use of electronic computers and modern management methods by industry and business has created a rapidly growing demand for persons capable of using mathematics, statistics, and computer methods for the use of quantitative techniques in solving management problems. In response to this growing demand, the College of Business Administration has established a Management Science Option which is available to qualified students who wish to prepare themselves for careers involving this type of work.

The Management Science Option is designed for students who have demonstrated a high level of ability in mathematics and who are interested in applying this ability toward solving management problems. The Management Science Option is available to students majoring in accounting, finance, general business, industrial management, marketing, personnel management, real estate, and urban development, statistics, and transportation.

### Accounting M.S.O.

Transfer students with nine quarter hours of introductory accounting will receive six hours of credit in Accounting 2110-20 and three hours of lower-division accounting credit. These students must take one of their technical electives an upper-division course approved by the accounting department adviser, and it must not be an accounting course.

Transfer Students: An option in Accounting M.S.O. requires a minimum of 30 quarter hours of required upper-division College of Business Administration courses which must be completed in residence at The University of Tennessee, Knoxville. These must include a minimum of 15 hours of accounting courses numbered 3000 or above and must include Accounting 4110, 4630, and either 4140 or 4430.

### General Business M.S.O.

Transfer Students: An option in General Business M.S.O. requires a minimum of 30 quarter hours of required upper-division College of Business Administration courses which must be completed in residence at The University of Tennessee, Knoxville. These must include a minimum of 12 hours of accounting, economics, and finance courses.

### Finance M.S.O.

Transfer Students: An option in Finance M.S.O. requires a minimum of 30 quarter hours of required upper-division College of Business Administration courses which must be completed in residence at The University of Tennessee, Knoxville. These must include a minimum of 12 hours of finance courses.

### Management M.S.O.

Transfer Students: An option in Management M.S.O. requires a minimum of 30 quarter hours of required upper-division College of Business Administration courses which must be completed in residence at The University of Tennessee, Knoxville. These must include a minimum of 12 hours of management courses.
### Marketing M.S.O.

Transfer Students: An option in Marketing M.S.O. requires a minimum of 30 quarter hours of required upper-division College of Business Administration courses which must be completed in residence at The University of Tennessee, Knoxville. These must include the following required marketing courses: 3210, 4210, 4510, 4650, 4710.

#### Freshman
- English 1010 or 1011; 1020; 1031 or 1032 or 1033
- Mathematics 1840-50-60
- Non-business elective

#### Sophomore
- Accounting 2110-20
- Economics 2120-30-40
- English elective
- Mathematics 2640-50-60
- Philosophy 3110
- Statistics 3450-60
- Social science elective

#### Junior
- Accounting 3210
- Accounting 3110 or 3220 or 3430
- Computer Science 3150
- Economics 3110
- Economics 3120 or 3210 or 3340 or 3410
- Finance 3120-30
- Microeconomics 3100
- Management 3100
- Management 3110-20
- Marketing 3210
- Marketing 4510
- Statistics 3550
- Transportation 3110

#### Senior
- Business Administration 4430
- Business Law 4110-20
- Management 4610-20
- Marketing 4210
- Marketing 4650
- Business electives (9 hours from Marketing 4140, 4150, 4230, 4240, 4520, 4808, 4818-28, Transportation 4720, Business Administration 4610)

### Statistics M.S.O.

<table>
<thead>
<tr>
<th>Hours Credit</th>
<th>I</th>
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<tbody>
<tr>
<td>Freshman</td>
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<tr>
<td>English 1010 or 1011; 1020; 1031 or 1032 or 1033</td>
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<tr>
<td>Mathematics 1840-50-60</td>
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<tr>
<td>Non-business elective</td>
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<tr>
<td>Sophomore</td>
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<tr>
<td>Accounting 2110-20</td>
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<tr>
<td>Economics 2120-30-40</td>
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<tr>
<td>English elective</td>
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<tr>
<td>Mathematics 2640-50-60</td>
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<td></td>
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<tr>
<td>Philosophy 3110</td>
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<tr>
<td>Statistics 3450-60</td>
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<tr>
<td>Social science elective</td>
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<tr>
<td>Junior</td>
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<tr>
<td>Management 3010, 3110</td>
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<tr>
<td>Marketing 3120-20</td>
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<tr>
<td>Marketing 3210</td>
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<tr>
<td>Marketing 4510</td>
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<tr>
<td>Statistics 3550</td>
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<tr>
<td>Transportation 3110</td>
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</tbody>
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### Real Estate and Urban Development M.S.O.

#### Freshman
- English 1010 or 1011; 1020; 1031 or 1032 or 1033
- Mathematics 1840-50-60
- Non-business elective

#### Sophomore
- Accounting 2110-20
- Economics 2120-30
- English elective
- Economics 2640-50-60
- Non-business elective

#### Junior
- Management 3010, 3110
- Marketing 3120-20
- Real Estate 3610, 3615, 3630
- Non-business elective

#### Senior
- Real Estate 4110-20
- Business Administration 4430
- Business Law 4110-20
- Business and/or non-business electives

### Departments of Instruction

#### Accounting and Business Law

Professors:
- J. E. Kiger (Head), Ph.D. Missouri, C.P.A.
- J. S. Costa (Emeritus), S.J.D. George Washington, N. E. Dittrich, Ph.D. Ohio State, C.P.A.
- C. D. Fisher, LL.M. George Washington; H. G. Meyer (Emeritus), A.M. Wisconsin;
- W. J. Morse, Ph.D. Michigan State, C.P.A.; W. H. Read (Emeritus), MBA; C. P. A.

#### Graduate Studies

The College of Business Administration offers advanced programs in economics leading to the Master of Arts, the Master of Science, the Master of Arts in College Teaching, and the Doctor of Philosophy degrees. The Master of Business Administration degree program is offered in the fields of accounting, economics, finance, forest industries management, governmental financial administration, management, management science, marketing, real estate and urban development, statistics, and transportation and logistics. The Master of Accountancy is offered in accounting. The Doctor of Business Administration degree program is offered in the fields of accounting, finance, management, marketing, and transportation and logistics.

Advanced programs in management science lead the M.S. and the Ph.D. degrees. The M.S. degree in statistics is also available. The M.S. and the Ph.D. degrees are granted in industrial and organizational psychology jointly with the Department of Psychology. This college and the College of Law offer a coordinated dual program leading to the conferred of both the Doctor of Jurisprudence and the Master of Business Administration degrees. See the Graduate Catalog for detailed information.

Students applying for the MBA, M.Acc., and DBA programs are required to take the Graduate Management Admission Test (GMAT). Applicants for the M.A., M.A.C.T., M.S., and Ph.D. programs take or the Graduate Record Examination (GRE).

Applicants whose native language is other than English must submit results of the Test of English as a Foreign Language (TOEFL) unless a degree has been earned at an accredited U.S. institution attended by the applicant for four academic years within five years prior to date of application. Scheduled dates and locations for taking these examinations may be obtained from Educational Testing Service, P. O. Box 966, Princeton, New Jersey 08540, and from most colleges and universities.

Application requirements vary with different graduate programs. Inquiries should be addressed to the Assistant Dean for Graduate Programs, College of Business Administration, The University of Tennessee, Knoxville, Tennessee 37996-0570.
Accounting (009)

2110-20 Fundamentals of Accounting (3,3) Introducory courses in financial accounting theory and practice with emphasis on preparation, reporting, and analysis of financial information. Prereq to all other courses in accounting except for engineering majors. Courses must be passed in sequence. Prereq: For 2110, Math 1550 or equivalent.

2130 Survey of Managerial Cost Accounting (3) User-oriented survey of managerial cost accounting topics related to cost planning and control. Topics include product costing, cost behavior analysis for decision making, standard costing, and budgeting. Prereq: 2110.

3110-20-30 Intermediate Financial Accounting (3, 3, 3) Indepth study of theory, principles, and procedures related to the valuation of assets, liabilities and equities; measurement of periodic income; preparation and analysis of financial statements. Prereq: 2120 for 3110; 3110 with a grade of C or better for 3120; and 3120 with a grade of C or better for 3130.

3158 Honors: Intermediate Accounting (3) Intermediate financial accounting theory designed for increased enrichment of student with superior ability and interest. Prereq: Same as for 3130 and consent of department head. Substitutes for Accounting 3150 in student's program.

3210-20-30 Managerial Cost Accounting (3, 3, 3) An in-depth analysis of the use of cost data for external reporting and cost planning and control. Cost topics include product costing, budgeting, performance evaluation, and the role of cost data in decision models. Prereq: 3210 or 3220. Credit not given for both 3210 and 3220. Prereq: for 3220: 3210 and Statistics 2100 or 3430. Prereq: for 3230: 3220 with a grade of C or better and Statistics 3220 or 3460.

3238 Honors: Managerial Cost Accounting (3) Designed for increased enrichment of student with superior ability and interest. Prereq: Same as for 3220 and consent of department head. This course substitutes for accounting 3230 in student's program.


3510 Not-for-Profit Accounting (3) Theory and practice of budgeting, financial and managerial accounting and reporting, planning-programming, budgeting, and auditing for not-for-profit entities. Prereq: 3510 or equivalent.

4110 Principles of Auditing (3) Role of auditing in society, professional auditing standards, auditor's legal responsibility, preparation of written report, use of statistical sampling, analytical procedures, and reporting. Prereq: 3310 with a grade of C or better; Computer Science 3910. Prereq or coreq: Statistics 3410.

4118 Honors: Principles of Auditing (3) Introductory course in auditing designed for increased enrichment of student with superior ability and interest. Prereq: Same as for 4110 and consent of department head. Substitutes for accounting 4110 in student's program.

4120 Advanced Auditing (3) Case-oriented course including audit of specific asset, liability, revenue, and expense accounts, with emphasis on reporting, data processing, statistical sampling, and internal auditing. Prereq: 4110 with a grade of C or better.

4140-50 Advanced Financial Accounting (3,3) Analysis of issues and alternatives in advanced problem areas including business combinations, partnerships, foreign operations, segment reporting, pricing, income and current value accounting, interim reporting, pensions, leases, and selected other current topics. Courses are not required to be taken in sequence. Prereq: for either: 4130 with a grade of C or better.

4148 Honors: Accounting for Business Combinations (3) Designed for increased enrichment of student with superior ability and interest. Prereq: Same as for 4140 and consent of department head. Substitutes for Accounting 4140 in student's program.

4158 Honors: Advanced Accounting (3) Designed for increased enrichment of student with superior ability and interest. Prereq: Same as for 4450 and consent of department head. Substitutes for Accounting 4150 in student's program.

4430 Advanced Federal Taxes (3) Fundamental problems of federal taxation with emphasis on alternatives available for reporting taxable income. Prereq: 3130 and 3430.

4438 Honors: Advanced Federal Taxes (3) Designed for increased enrichment of student with superior ability and interest. Prereq: Same as for 4450 and consent of department head. Substitutes for Accounting 4430 in student program.

4440 Taxation of Estates and Gifts (3) Topics include transfers at death, inter vivos transfers, life insurance, annuities, and employer death benefits, marital and other deductions and exemptions, and estate and gift tax returns. Prereq: 4430.

4630 Analysis and Design of Information Systems (3) General systems concepts, flow charting, planning and systems studies, determination of systems objectives, development and evaluation of design alternatives, implementation, documentation, and control. Prereq: Computer Science 3910.

4638 Honors: Analysis and Design of Information Systems (3) Designed for increased enrichment of student with superior ability and interest. Prereq: Same as for 4630 and consent of department head. Substitutes for Accounting 4630 in the student's program.

4950 Individual Research in Accounting (3) Special projects undertaken by undergraduate majors in accounting under direction of faculty members of professional rank. Prereq: 3130 with a grade of C or better.

4990 Accounting Theory (3) Theory and conceptual framework underlying measurement of income and financial position as related to the resolution of key reporting problems. Prereq: 3130 with a grade of C or better.

GRADUATE See page 88 for information on graduate programs.

5002 Non-Thesis Graduation Completion (3-15)

5010 Financial Accounting (3)

5020 Corporate Reporting Problems (3)

5030 Managerial Accounting (3)

5110 Seminar in Accounting Theory (3)

5120 Seminar in Advanced Auditing (3)

5130-40 Seminar in Current Accounting Topics (3, 3)

5160 Graduate Internship in Accounting (3)

5210-20 Seminar in Advanced Managerial Cost Accounting (3, 3)

5310 Auditing Concepts (3)

5320 Advanced Auditing (3)

5330 Advanced Income Tax (3)

5340 Consolidations and Business Combinations (3)

5420 Tax Research (3)

5430 Tax Planning (3)

5440 Taxation of Estates and Gifts (3)

5510 Not-for-Profit Accounting (3)

5630 Accounting Systems and EDP Concepts and Control (3)

5640 Seminar in Accounting Information Systems (3)

5950 Seminar in Accounting Research (3)

5990 Individual Research in Accounting (3)

6000 Doctoral Dissertation and Research

6110-20-30 Doctoral Seminar in Accounting (3, 3, 3)

Business Law (216)

4110 Environmental Business Law (3) Principles of law comprising legal environment appropriate to common business transactions. Strongly integrated with basic political and economic concepts. Review of U.S. legal system and business-related law.

4120 Law of Business Organizations and Regulation (3) General principles of law as these pertain to business and partnerships and corporations, affect taxation and treat agencies regulating business. Prereq: 4110.

4130 Administrative Regulation of Business (3) Analyzes nature and extent to which business operations are controlled by administrative agencies operating at federal, state, and local levels. Includes nature of administrative agencies, jurisdiction, administrative procedures, and significant laws administered by such agencies. Prereq: 4120.

4330 Business Law (3) Fundamentals of business law designed for professional examination required for licensing or certification in fields of public accounting, certified public accounting, chartered property and casualty underwriters, chartered life underwriters, and certified professional secretaries.

GRADUATE

5010 Legal and Social Environment of Business (3)

Economics (283)

Professors: P. D. Qualls (Head), Ph.D. California (Berkeley); R. L. Bowly, Ph.D. Texas; S. J. Carroll, Ph.D. Harvard; W. E. Cole, Ph.D. Texas; G. R. Feiwel, Ph.D. McGill; C. B. Garrison, Ph.D. Kentucky; J. F. Holly (Emeritus), Ph.D. Clark; H. E. Jensen, Ph.D. Texas; F. Y. Lee, Ph.D. Michigan State; A. Mayhew, Ph.D. Texas; J. R. Moore (Associate Dean), Ph.D. Cornell; W. C. Neale, Ph.D. London School of Economics; G. A. Spiva, Jr., Ph.D. Texas.

Associate Professors: H. S. Chang, Ph.D. Vanderbilt; E. Glustoff, Ph.D. Stanford; H. W. Herzog, Jr., Ph.D. Maryland; D. L. Karsen, Ph.D. Florida; K. E. Phillips, Ph.D. Washington (Seattle); A. M. Schlotman, Ph.D. Washington (St. Louis).

Assist Professors: D. P. Clark, Ph.D. Michigan State; C. B. Doros, Ph.D. Newberry; D. R. Peters, Ph.D. Indiana; R. A. Hofler, B.A. Old Dominion; J. W. Mayo, M.A. Washington (St. Louis); N. C. Modeste, Ph.D. Florida; K. Murphy, Ph.D. Michigan State; H. L. Thompson, Ph.D. Houston; E. D. Wickham, (parttime) Ph.D. Rochester.

Volume Distinguished Service Professor.

Requirements for a major in economics consist of: (1) Economics 2110, 2120, and 2130 or equivalent honors courses; and (2) a minimum of 33 additional hours in upper-division economics courses. Economics 3110 (or 3111 and 3112) and 3120 are required as a part of the upper-division work and should be taken as early in the upper-division program as possible.

2001 Current Economics Problems (3) Discussion of selected economic policies and events. Several topics including controversial problems of current or continu
ing interest will be considered. Emphasis will be on non-
technical treatment. Designed for non-economics and non-
College of Business Administration majors. May not be
used for degree requirements in business admin-
stration, and may not be substituted for Economics
2110 or 2120 or 2130.

2110-20-30 Introductory Economics (3, 3, 3) 2110—
Basic economic concepts introduced through study of
evidence of production and trade in the United States and the
economic problems of major economic systems; organization of
the U.S. Economy. 2120—Macroeconomics; national income, money and bank-
ings sector, fiscal policy, monetary policy, inflation and deflation,
trade and balance of payments, supply and demand, competition, monopoly. Prereq:
2110 for both 2120 and 2130. Third-quarter standing
required for admission to 2110.

2118-28-38 Honors: Introductory Economics (3, 3, 3)
Honors course designed for students of superior ability and interest.
Entrance into 2118 requires a B average; selected third-quarter freshmen will be ac-
ccepted on basis of high school record, American College
Testing Program scores, and grade record during first two quarters. Grade of B in 2118 is necessary for
entrance into 2128. An A or B in 2128 automatically
gets credit for 2138 also, with same grade. Students
making C or D in 2128 must take 2130 in order to
receive nine hours' credit.

3110 Intermediate Micro Theory (3) Allocation of
resources and price determination; market demand, price
structure, business behavior, and economic perform-
ance and their interrelationships. Prereq: 2120.

3111 Intermediate Micro Theory I (3) Theory of
cost and price: factor or demand; preferences, utility,
and constrained utility maximization. Theory of ex-
change. Introduction to welfare economics. Theory of
production. Students may not receive credit for both 3110 and 3111. Prereq: 2110-20.

3112 Intermediate Micro Theory II (3) Theory of cost:
short run and long run. Theory of the firm and industry.
Derived demand and distribution theory. Introduction to
general equilibrium analysis. Selected topics. Prereq:
3111.

3120 Intermediate Macro Theory (3) Aggregate de-
mand, output, and level of employment; price level,
inflation, and deflation; economic growth. Prereq: 2110-
2120.

3120 International Economics I (3) Balance of pay-
ments, exchange rates, and the adjustment process.
Prereq: 2110-20.

3121 International Economics II (3) Theory of inter-
national trade, barriers to trade, regional trade associa-

3220 Principles of Economic Development (3) The-
ory of economic development with application to prob-
lem areas on local, regional, national, and international
levels; theoretical and empirical aspects of economic growth.
Prereq: 2110-20.

3230 Regional Economics (3) Overview of regional
differences; theory of industrial, agricultural, and resi-
dential location; the economic basis for land use pat-
terns and central places; regional structure, growth and
methods of analysis; national assistance for regional
economic development. Prereq: 2120 and 2130.

3240 Economic History of the United States (3) His-
torical developments in agriculture, industry, com-
munications, transportation, banking, and trade, and
changes in governmental economic policy. Prereq: 2110-
2120.

3620 Economic History of Europe (3) Beginnings of
capitalism in medieval Europe, expansion of Europe
and dominance of mercantilism in early modern times,
market revolution, industrialization, changes in agricultural orga-
nization, and growing importance of commerce in the
19th century; two world wars and their economic con-

3310 Comparative Economic Systems (3) Descrip-
tion and analysis of economic goals, institutions and
policies in different countries with emphasis on alterna-
tive organizational principles and structure. Systems examined include mixed and market econ-

3340 Government and Business I (3) Microeconomic
objectives and alternative public policies for their
achievement; prevention of monopoly and concentra-
tion through the antitrust laws; direct regulation of

3341 Government and Business II (3) Topics in
antitrust policy, direct regulation, and other forms of
social control over business; pollution, product and man-
egerial responsibility; government-business relations,
selected cases. Prereq: 3340.

3410 Principles of Labor Economics I (3) Supply of
and demand for labor, market wage determination,
application of analysis to issues such as minimum wage,
laws, discrimination, unemployment, inflation, collective
bargaining, income distribution and human resources
policy. Prereq: 210300.

3420 Principles of Labor Economics II (3) American
labour history, structure and philosophy of contemporary
unions, nature of collective bargaining, and dispute

4000 Special Topics (3) Student-generated course
offered at convenience of department upon student
initiative. Subject matter and contents determined by
students and instructor with approval of department.
Prereq determined by department each time course is
offered. Numerical grade is given to law students. May
be repeated for credit.

4110 Managerial Economics (3) Application of eco-
nomic theory to business decision making, emphasis
on profit objectives, measurement and forecasting de-
dand and costs, and capital budgeting. Prereq: 2110-
20-30.

4130 Business Cycles (3) Fluctuations in income,
employment, prices, and output in the economic sys-
tem; subjects discussed are historical facts concerning
booms and depressions, statistical methods for analyz-
ing business fluctuations, theoretical explanations of
cycles, and policies that have been proposed to combat
them. Prereq: 3120 or consent of instructor.

4150 History of Economic Thought (3) Development
of economic thought, tools of analysis, and economics
as a social science, behavior with an analysis of social
economic conditions which influenced this develop-
ment. Period covered: 1776 through 1936. Prereq:
2110, 2120, 2130, and consent of instructor.

4170-90 Introduction to Mathematical Economics
(3) Application of mathematical methods in theoretici-
cal study of micro and macro economic phenomena.
Designed for undergraduate students who have limited
training in analytic geometry and calculus. Must be
taken in sequence. Prereq: Economics 3110 and Math-
ematics 1840-50, or equivalent.

4220 Problems in International Trade and Econom-
ic Development (3) Problems of or problem areas of
current importance in fields both of international eco-
nomics and economic development. Prereq: 3210 or
3220.

4231 The Political Economy of Latin America (3)
Description, analysis, and comparison of major econ-
omic problems and policies of various Latin American
countries.

4232 The Political Economy of Asian Development
(3) Description, analysis, and comparison of major econ-
omic problems and policies of India, China, and
Southeast Asian countries.

4233 The Political Economy of the Soviet Union
and Eastern Europe (3) Analysis of the major eco-
nomic strategies, policies, and problems of the Soviet
Union and Eastern Europe.

4260 Economics of Resources and Environmental
Policy (3) Economic analysis of environmental policy
and examination of policies aimed at solving the
problems of natural resources and impacts of growth
on environment. Prereq: 2130.

4350 Industrial Organization Analysis (3) Monopoly
and competition in the United States economy, market
structure, business behavior, and economic perform-
ance and their interrelationships. Prereq: 2130.

4420 Economics of Human Resources (3) Analysis
of current problems in human resource development
and examination of policies aimed at solving these
problems. Discussion might include unemployment,
education and training, poverty and income redistribu-
discrimination based on sex or ethnicity, or others.
Prereq: 3410.

4430 Labor Legislation (3) Economic background
and effects of governmental regulation of labor rela-
tions, with emphasis on detailed examination of Na-
tional Labor Relations Act as amended. Prereq: 3420.

4440 Labor Legislation (3) Social insurance, welfare
and governmental regulation as remedies for the prob-
lem of economic insecurity. Economics of the Social
Security Act, unemployment insurance, worker's com-

4470 Collective Bargaining (3) Legal framework of
bargaining, structure of bargaining, strategy and tac-
tics, subject matter of bargaining, industrial conflict,
dispute settlement and public sector bargaining. Stu-
dents will participate in a simulated bargaining exer-
cise. Prereq: 3420.

4990 Independent Study (1-4) Offers qualified stu-
dent opportunity to pursue topics or projects of special
interest. Prereq: Senior standing, 3.0 GPA in econom-
ics courses, and consent of instructor. May be re-
peated. Maximum total credit 4 hrs.

GRADUATE
See page 88 for information on graduate programs.

Economic Theory

5010 Introduction to Economic Analysis (3)

5020 Managerial Economics (3)

5030 Economic Fluctuations, Forecasting, and Sta-
bilization (3)

5090 Workshop in Economics (3-6)

5110 Fundamentals of Microeconomics (3)

5111-12 Microeconomic Theory I, II (3, 3)

5120 Fundamentals of Macroeconomics (3)

5121-22 Macroeconomic Theory I, II (3, 3)

5150 History of Economic Thought (3)

5180-90 Mathematical Methods in Economics (3, 3)

5510 Quantitative Methods in Economic Research
(3)

5520 Introduction to Econometrics (3)

5710 Public Finance: Revenues (3)

5720 Public Finance: Expenditures (3)

5740 Seminar In Public Finance (3)

5810 Financial Markets and Intermediaries (3)

5820 Monetary Theory and Policy (3)

5830 Commercial Bank Management (3)

6111 Advanced Microeconomic Theory (3)

6121 Advanced Microeconomic Theory (3)

6150-60 History of Economic Doctrines (3, 3)

6170-80-90 Econometric Methods (3, 3, 3)

6710-20 Seminar: Fiscal Theory and Public Finance
(3, 3)

International Trade and Development

5210 Seminar in International Trade Theory (3)

5220 Seminar in Economic Development (3)

5250 Economic History of Europe (3)

5260 Economic History of U.S. (3)

5610 Location and Regional Development Theory
(3)

5620 Methods of Regional Analysis (3)

6211-12, 6221-22 Seminar in International Econom-
ics (3, 3, 3)
6221-32, 6241-42 Seminar in Economic Development (3, 3, 3)
6250 Seminar in European Economic History (3)
6260 Seminar in American Economic History (3)
6270 Seminar in Economic History of the Third World (3)
9610 Seminar in Regional Analysis (3)
6650 Seminar in Environmental and Resource Economics (3)
   Industrial Organization
9340 Seminar in Private Enterprise and Public Policy (3)
8351-52 Seminar in Industrial Organization (3, 3)
8361-62 Seminar in Industrial Organization (3, 3)
Economics of Centrally-Planned Economies
5310 Economic Systems (3)
5331 Theory and Practice of Economic Planning (3)
Economics of Labor and Manpower
5410 Seminar in Labor Manpower Economics (3)
5420 Seminar in Wage and Employment Theory (3)
5411-12, 6421-22 Seminar in Labor Economics (3, 3, 3, 3)
Other Economics Courses
5000 Thesis
5002 Non-Thesis Graduation Completion (3-15)
5011-12 Problems in Life of Thesis (3, 3)
5910-20 Economics Seminar (1, 1, 1)
6000 Doctoral Dissertation and Research

Finance
Professors:
R. M. Duval (Head), Ph.D. North Carolina; L. P. Anderson, Ph.D. Wisconsin; R. A. Bohm, Ph.D. Pennsylvania (St. Louis); W. W. Dotterweich, Ph.D. Pennsylvania; D. S. Kidwell, Ph.D. Oregon; E. W. Lambert, Jr., Ph.D. Alabama; C. G. Philippatos, Ph.D. New York; R. E. Shriever, Ph.D. California (Los Angeles); K. E. Quindry, Ph.D. Kentucky; C. P. White (Emeritus), Ph.D. Pennsylvania.
Associate Professors:
Assistant Professors:

4130 Topics in Investments (3) Portfolio management policies of institutions, efficient market hypotheses and evidence, options and commodities. Prereq: 4120.
4150-60 Evolution and Function of Financial Institutions (3) Financial system of the United States; emphasis on historical role and functions of financial institutions.
4350-60 Public Finance (3, 3) Public expenditures, federal and state revenue systems, financial administration, budgeting, and public debt management.
4370 State and Local Finance (3) Emphasis on revenue systems and division of tax sources.
4510 Monetary Theory and Policy (3) Role of money in the economy. Emphasis upon factors that affect demand for the supply of money. Evaluation of current policy.
4520 Commercial Banking (3) Operations of commercial banks; emphasis on asset and liability management. Prereq: 3110.
4660 Problems in Financial Management (3) Financial decision-making, a case approach. Prereq: 4650.
4800 Business Executive in Residence (3) Develops practical areas of finance curriculum. Leading financial executives, bankers, insurance executives, and realtors will conduct classes. May be repeated. Maximum credit 4 hrs. Prereq: Consent of department.
4990 Senior Seminar (3) Intensive investigation of specific topic in student's area of concentration. Taken last quarter of senior year. Required of all students majoring in finance, or real estate.

GRADUATE
See page 88 for information on graduate programs.
5002 Non-Thesis Graduation Completion (3-15)
5010 Financial Management and Asset Valuation (3)
5020 Financial Decision Making and Analysis (3)
5120 Quantitative Techniques in Financial Management (3)
5130 Financial Administration (3)
5140 Seminar: Managerial Finance (3)
5420-30 Investments (3, 3)
5440 Commodity Futures and Stock Options (3)
5170 Public Finance: Revenues (3)
5720 Public Finance: Expenditures (3)
5730 Finance Administration of Government (3)
5740 Seminar in Public Finance (3)
5800 Executive-In-Residence Seminar for M.B.A. (3)
5810 Financial Markets and Intermediaries (3)
5820 Monetary Theory and Policy (3)
5830 Commercial Bank Management (3)
5990 Research in Finance (3)
6000 Doctoral Dissertation and Research
6110-20 Seminar in Monetary Theory (3, 3)
6410 Analysis for Financial Decisions (3)
6420 Theory of Finance (3)
6510 Seminar in Financial Management (3)
6710-20 Seminar: Fiscal Theory and Public Finance (3, 3)
6810 Financial Institutions and Markets (3)
Insurance (580)
3220 Business Risk Management (3) Principles of risk bearing and risk analysis, economics of risk and insurance.
4710 Life Insurance and Estate Planning (3) Coordination of life an health insurance with protection, conservation, and distribution of estate assets.
4720 Employee Benefit Plans (3) Pan design, cost factors, and funding media for employee benefits, including business life insurance, group insurance, pensions, profit sharing, and other forms of deferred compensation.
4740-50 Property-Casualty Insurance Planning (3, 3) Property and casualty contracts and forms and their application to business and personal risks. Must be taken in sequence.

GRADUATE
5110 Theory of Risk Management (3)

Real Estate and Urban Development (849)
2610 Introduction to Real Estate (3) Basic concepts, tools, and analysis of real estate. May not be used for degree requirements in business administration.
3610 Principles of Real Estate and Urban Development (3) Introduction to real estate value. Prereq: Economics 3110.
3615 Real Estate Appraisals (3) Theory and practices of determining real estate value. Prereq: 3610.
3620 Real Estate Finance (3) Institutional and governmental procedures and techniques for financing real estate transactions. Prereq: 3610.
4120 Urban Growth and Land Use (3) Analysis of urban growth processes and land use patterns. Prereq: 3610.
4130 Problems of Urban Development (3) Current problems of land use and urban developments. Prereq: 3610.
4640 Management and Development of Real Property (3) Real estate investment analysis and taxation. Prereq: 3630.
4810 Analytical Methods in Real Estate (3) Applications of regression, correlation, and computer based models to real estate investment decisions. Prereq: 3615 and Statistics 4310.

GRADUATE
5002 Non-Thesis Graduation Completion (3-15)
5110 Urban Economic Analysis (3)
5120 Real Estate Analysis (3)
5130 Housing and Urban Land Markets (3)
5140 Real Estate Investment and Taxation Analysis (3)

Management
Professors:
H. D. Dewhirst (Head), Ph.D. Texas; R. W. Boling, Ph.D. Stanford; M. E. Gordon, Ph.D. California
Junior standing is prerequisite to all management courses.

3010 Principles of Management (3) Analysis of basic management functions of planning, organizing, and controlling.

3110 Production Management (3) Analysis of production function. Prereq: Statistics 2100 or 3450. Not available for management majors with concentrations in operations or personnel.

3111 Operations Management (3) Analysis and synthesis of concepts and techniques for decision making in the operations function. Integration of the operations function with other business functions. Prereq: Management Science 2110-20. Cannot be taken for credit by students who have credit for Management 3110.


3330 Experiences in Organizational Behavior (3) General concepts and personal experiences, interpersonal and organizational communication, practice and evaluation.

3460 Personnel and Human Resources Management (3) Processes of effective planning for recruitment, selection, development, and maintenance of human resources. Emphasizes universality of personnel function. Not available for management majors. Cannot be taken for credit by students who have credit for Management 4460.

4210 Managerial Strategy and Tactics Applications (A) A general business simulation is used for information processing to provide experience in organization and analysis of managerial data. Emphasis on skills related to oral and written justification of results. Prereq: Senior standing or consent of instructor.

4230 International Business Management (3) Analysis of factors significant to the manager in international business activities.

4320 Organization of Structure and Behavior (3) Organization of production function. Prereq: 3110-20 or approval of instructor.

4410 Operations Control (3) Analysis of the operations control function. Techniques of short-term forecasting; material and capacity requirements planning; integration of scheduling and operations flows into the total operations function. Prereq: 3111.

4420 Advanced Industrial Problems (3) Cases in production management. Prereq: 15 hrs. in major including 4410.

4460 Organizational-Industrial Psychology (3) An analytical and empirical approach to application of psychological tools and knowledge to organizations. Prereq: Statistics 3110 or Statistics 3310 with consent of instructor. Cannot be taken for credit by students who have credit for Management 3460. (Same as Psychology 4460.)

4470 Job Analysis and Evaluation (3) Job evaluation as basis for control of wages and salaries. Prereq: 4460.

4520 Evaluation of Personnel Programs (3) Methodologies for criterion development analyzed in areas of selection, training, job evaluation, safety, and labor relations. Performance evaluation emphasized. Prereq: 4460-70; Statistics 3110.

4530 Personnel Problems Seminar (3) Case problems in personnel analyzed, applying experimental method and conclusions from personnel research as reported in professional journals. Prereq: 4460-70; Statistics 3110.

4510-20 Management Science (3, 3) Applications of mathematical and statistical techniques to problems of production management. Prereq: 30 hrs. of mathematics and statistics, and consent of instructor.

4710 Enterprise Planning and Control (3) Concepts and cases on managerial functions of planning and control in business firm or not-for-profit organization. Emphasis on formal long-range strategic planning in changing environment. Team project to develop long-range plan for hypothetical enterprise.

4801-02-03 Readings and Research in Personnel Management (1, 2, 3) Prereq: 4460, Statistics 4310, and consent of instructor.

GRADUATE
See page 88 for information on graduate programs.

5500 Thesis

5502 Non-Thesis Graduation Completion (3-15)

5510 Quantitative Analysis for Management Decisions (3)

5310-20-30 Management Science Methods (3, 3, 3)

5335 Mathematical Programming Computational Systems (2)

5340 Application of Management Science Methods (3)

5810 Special Topics in Management Science (3)

5910 Management Science Problems (1-6)

6000 Doctoral Research and Dissertation

6110-20-30 Models for Production Systems (3, 3, 3)

6210-20 Network Flows (3, 3)

6310 Integer Programming (3)

6410 Large Scale Mathematical Programming (3)

6510 Nonlinear Optimization (3)

6610 Markovian Decision Models (3)

6620 Queuing Models (3)

6710 Location Models (3)

6810 Special Topics (3)

6910-20-30 Management Science Seminar (1-3, 1-3, 1-3)

Marketing and Transportation


Associate Professors: E. R. Caddock, Ph.D. Ohio State; J. H. Foggins, Ph.D. Indiana; R. L. Jenkins, Ph.D. Ohio State; C. J. Langley, Jr., Ph.D. Pennsylvania State; J. R. McMillan, Ph.D. Ohio State; R. A. Mundy, Ph.D. Pennsylvania State; R. C. Reizenstein, Ph.D. Cornell; G. D. Sertell, DBA Indiana; L. R. Spick, Ph.D. Georgia.

Assistant Professors: F. L. Barbours, Ph.D. Illinois; L. D. Dukus, Ph.D. Purdue.

Marketing (632)

Economics 2110-20-30 or the equivalent are prerequisites to all courses in Marketing. Marketing 3110-20 or the equivalent are prerequisites to all 4000 level marketing courses.

3110 Introduction to Marketing (3) Marketing in our economy. Influence of environment: social, economic, ethical, legal, and technological forces on marketing
activities. Assessment of dimensions of the firm’s marketing program. Prereq: Economics 2110-20-30.

3120 Marketing Management (3) Analysis of marketing management, identifying market opportunities, planning marketing program, and implementing competitive strategies. Prereq: 3110.

3210 Marketing Systems (3) Macromarketing systems approach from viewpoint of decision maker. Examination of inputs, outputs, organizations, and goals of marketing systems. Consideration of comparative marketing systems. Prereq: 3110. Prereq or coreq: 3120.

4140 Marketing Communications I (3) Examination of firm’s personal communications function. Managing sales force, including personal selling concepts. Particular emphasis on role of sales organization in marketing program.

4150 Marketing Communications II (3) Mass communications theories and concepts. Advertising and its relationship to marketing program of firm.

4210 Buyer Behavior (3) Industrial and ultimate consumer purchasing behavior. Theories underlying buying decision processes, marketing management and pivotal concepts in behavioral sciences.

4230 International Marketing (3) Management of international marketing activities of the firm. Marketing strategiesiad in international business. Prereq of consent of Business Administration 3110 or consent of instructor.

4310 Retailing Management (3) Structure and environment of retailing and its relationship to other parts of the economy. Research and decision making in selecting and analyzing store management.

4440 Environmental Issues in Marketing (3) Environmental forces which serve as constraints on business decision maker. Emphasis is placed upon current issues and social and ethical implications of marketing decisions.

4510 Marketing Information Planning (3) Planning and obtaining information for marketing decision making. Information needs, data collection process, methods of analysis, and interpretation procedures are integrated to serve the decision maker. Prereq: Statistics 4310 or 3220 or 4250.

4650 Market Opportunity Analysis (3) Developing understanding of various approaches available for evaluating opportunity that may exist within a market. Emphasis on relationship between analysis of markets and marketing decision making. Topics covered will include basic consumer behavior concepts, alternative sources of market information, information analysis techniques, interpretation of marketing information, and forecasting. Prereq: 4510.

4710 Marketing Decisions and Strategies (3) Pragmatic orientation to application of advanced, analytical concepts and skills within marketing environment. Emphasis on integration of knowledge from the component areas of marketing into cohesive, well-organized marketing program. Prereq: 24 hrs. of marketing including 4210, 4510 and 4650 or consent of instructor. Course should be taken as close to graduation as possible.

4808 Honors: Executive-in-Residence Seminar (3) Student interaction with top-level marketing executives is used as a primary vehicle to show how conceptual marketing knowledge is applied in the business world in a major marketing subject area (e.g., promotion, consumer behavior, marketing strategy, etc.). Prereq: Marketing 3210, 4210, 4510, and consent of instructor.

4818-28 Honors: Marketing (3, 3) Introduction to the ocean shipping and international air service, import-export traffic management, international distribution strategy, government policy, and management of transportation systems in other countries. Courses must be taken in sequence. Prereq or coreq: Business Administration 3110 or consent of instructor.

4820 Current Topics in Transportation and Logistics (3) Seminar designed to study specific current problem areas in transportation and distribution. Topic announced prior to offering. May be repeated once for credit. Prereq: Consent of instructor.

4830 Supervised Reading in Transportation and Logistics (3) Directed readings and research on subject of mutual interest to student and staff member. Prereq: Senior standing with minimum of 18 hours of transportation.

4810 Carrier Liability and Claims (3) Rights and liabilities of carriers, consignors, and consignees; claim procedures and claim prevention.

4920 Transportation Law and Procedures (3) Analysis of interstate Commerce Act and related statutes, practices, and procedures before regulatory agencies.

4930 Transportation Policy (3) Analysis of regulatory, promotional and planning policies of federal, state, and local governmental units.

GRADUATE
See page 88 for information on graduate programs.

5002 Non-Thesis Graduation Completion (3-15)

5010 Marketing and Distribution Management (3)

5020 Marketing Strategy and Decision Making (3)

5210 Sales Force Management (3)

5220 Promotion Management (3)

5230 Analysis and Design of Marketing Systems (3)

5300 Marketing Research (3)

5350 Buyer Behavior Analysis for Marketing (3)

5400 Analyzing Market Opportunity for Marketing Decisions (3)

5410 Advanced Marketing Strategy (3)

5450 International Marketing Management (3)

5990 Research in Marketing (3)

6000 Doctoral Dissertation and Research

6050 Theoretical Foundations of Marketing (3)

6100 Design and Measurement in Marketing Research (3)

6150 Marketing Research Applications (3)

6200 Buyer Behavior (3)

6250 Selected Problems in Consumer Behavior (3)

6300 Marketing Decision Models (3)

6350 Current Topics in Marketing (3)

Transportation (981)

Nine quarter hours in general economics are prerequisite to all courses in transportation. Transportation 3110-20 or consent of instructor are prerequisite to all courses numbered above 4000.

3110 Introduction to Transportation (3) Survey of the demands made by society upon the nation’s transportation system and the problems facing carriers and government in meeting these demands.

3155 Introduction to Logistics (3) Business logistics as a functional area within the firm. Discussion of logistical system components and their interrelationships. Prereq: 3110. Statistics 2100.

3120 Traffic Management (3) Problems and opportunities in shippers’ utilization of carrier services with emphasis on classification and tariff systems analysis; rate determination and selection procedures. Prereq or coreq: 3115.

4410-15 Surface Transportation (3, 3) Analysis of organizational structures, operational characteristics, managernental policies of railroads, motor carriers, and domestic barge lines. Courses should be taken in numerical sequence.

4420 Air Transportation (3) Analysis of economic characteristics, regulatory provisions, and organizational patterns of commercial aviation.

4510 Urban Transportation (3) Analysis of economic characteristics, regulatory provisions, and management of transportation firms operating in urban areas.

4610 Carrier Pricing Strategy (3) Historical development of carrier pricing systems and analysis of current strategy.

4620 Carrier Management Seminar (3) Senior seminar in applications of management decision making in transportation. Prereq: Minimum of 16 hours in transportation/logistics Transportation 4410-15 recommended.


4730 Transportation and Logistics Research (3) Identification and analysis of methods of research in transportation and business logistics. Application of quantitative techniques, model building, and simulation to solution of problems. Prereq: 4720.

4810-15 International Transportation and Logistics (3, 3) Introduction to the ocean shipping and international air service, import-export traffic management, international distribution strategy, government policy, and management of transportation systems in other countries. Courses must be taken in sequence. Prereq or coreq: Business Administration 3110 or consent of instructor.

4820 Current Topics in Transportation and Logistics (3) Seminar designed to study specific current problem areas in transportation and distribution. Topic announced prior to offering. May be repeated once for credit. Prereq: Consent of instructor.

4830 Supervised Reading in Transportation and Logistics (3) Directed readings and research on subject of mutual interest to student and staff member. Prereq: Senior standing with minimum of 18 hours of transportation.

4810 Carrier Liability and Claims (3) Rights and liabilities of carriers, consignors, and consignees; claim procedures and claim prevention.

4920 Transportation Law and Procedures (3) Analysis of interstate Commerce Act and related statutes, practices, and procedures before regulatory agencies.

4930 Transportation Policy (3) Analysis of regulatory, promotional and planning policies of federal, state, and local governmental units.

GRADUATE
See page 88 for information on graduate programs.

5002 Non-Thesis Graduation Completion (3-15)

5010 Survey of Transportation and Logistics (3)

5110 Theory and Functions of Economic Regulation (3)

5120 Management and the Pricing Problem (3)

5130 Carrier Transportation Management (3)

5220 Logistics Systems Management (3)

5510 Urban Transportation Policy (3)

5810 International Transportation Policy (3)

5910 Advanced Law and Regulation (3)

5950 Independent Study in Transportation and Logistics (3)

6000 Doctoral Dissertation and Research

6110 National Transportation Policy (3)

6210 Seminar in Transportation and Logistics (3)

6220 Research Methodology in Transportation and Logistics (3)

Office Administration (735)

Professors:
J. J. Stallard (Program Director), Ph.D. Ohio State University, E. W. Davis (Emeritus), M.A. New York; D. Reese, Ph.D. Iowa; E. H. Smith, Ph.D. Ohio; G. A. Wagner (Emeritus), M.S. Indiana.

Associate Professor:

Assistant Professors:
P. G. Campbell, M.S. Austin Peay State; H. C. Petree, M.S. Tennessee.

Junior standing or the approval of the department head is required for registration in courses numbered 3000 or above.

2110 Beginning Typewriting (3) Development of typewriting skills, straight-copy speed stressed. Introduction to letters, tabulations, and manuscripts. For students with no previous training or with one-half unit
of high school credit. Students with one unit of high school typewriting may not receive credit for 2110.

2130 Advanced Typewriting (3) Building of advanced skill in a specific production type: keyboarding, positioning, and how they fit into an information-processing network. Some hands-on experience with magnetic typewriters and dictating equipment. Passed minimum grade of C in 2130 and sophomore standing.

2180 Word Processing (3) Introductory understanding of word processing concepts and how they fit into an information-processing network. Some hands-on experience with magnetic typewriters and dictating equipment. Passed minimum grade of C in 2130 and sophomore standing.

2310 Beginning Shorthand (3) Theory of a shorthand system; development of dictation and transcription skills. For students with no previous shorthand training. Prereq: One unit of high school typewriting or minimum grade of C in 2110 or equivalent.

2320 Intermediate Shorthand (3) Development of dictation and transcription skills; students with one year of high school shorthand can enroll. Prereq: 2310 or equivalent.

2750 Electronic Data Processing (3) Development of skills in word processing and on business applications. Prereq: Mathematics 1560 or 1860 or equivalent. Cannot receive credit if credit has been received in Computer Science 1410.

3110 Survey of Administrative Services (3) Study of administrative services in modern office that support administrative management. Includes purchasing and maintaining variety of office equipment, methods for training equipment users, supervision, and information dissemination.

3180 Word Processing Management (3) Develops ability to recognize when and how to use word processing materials. Study of management problems in establishing and implementing word processing systems. Hands-on experience in word processing. Prereq: 2130 with minimum grade of C or proficiency and 2750.

3310 Records Management (3) Application of systematic analysis and scientific control of business records from their creation through processing, maintenance, protection, and final disposition; management science of controlling quantity, quality, and cost of records. Required of students majoring in business. Prereq: 2110 with a minimum grade of C or proficiency and 2750.

4310 Business Letter Writing (3) Principles, practices, and mechanics of effective business letters and memoranda; principles applied by solving communication cases; emphasis placed on letters and memos as instruments of ideas in communications system of the business firm.

4320 Business Report Writing (3) Basic principles and procedures of originating and disseminating business reports; the role of the informal report; basic writing techniques for short and long reports; graphic presentation and interpretation; use of primary and secondary data for reports.

4410 Advanced Shorthand and Transcription (3) Improvement of ability to take dictation and transcribe mailable copy. Prereq: 2320 or equivalent.

4420 Advanced Transcription (3) Improvement of ability to transcribe mailable copy from dictation of a wide variety of correspondences; emphasis on competence needed to meet occupational standards. Prereq: 4410.

4510 Office Management (3) Strategic and operational planning of the office objectives; relating the tasks and human resources to the objectives; recruiting, selecting, training, and developing office staff; directing of office staff through leadership, motivation, communication; measuring office performance, comparison to standards, and corrective actions; and applications of decision making in office operations.

4520 Office Systems (3) Synthesis of systems and subsystems applicable to the centralized and decentralized office functions. Emphasis placed on cost analysis in considering office environment, technology, and search analysis.

4640 Seminar (3) Integration of knowledge and skills acquired in previous courses in office administration. Emphasis on logical thinking, problem solving, and decision making in office management, and synthesizing previous learning. Taken as a capstone experience during senior year. Prereq: 3110, 3180, and 3310, 4510 or 4520.

4810-20-30 Problems in Office Administration (1-3, 1-3, 1-3) Subject and title vary each quarter. May be repeated. Maximum credit 3 hrs. for each course.

GRADUATE

5011 Problems in Lieu of Thesis (3)

5050 Data Processing in Business (3)

Statistics (962)

Professors: C. C. Threag (Head); Ph.D. Virginia Polytechnic; D. S. Chambers (Emeritus); MBA Texas; R. A. McLean, Ph.D. Purdue; J. W. Philpot, Ph.D. Virginia Polytechnic.

Associate Professors: H. A. Lashier; Ph.D. Rutgers; P. D. Sanders, Ph.D. Texas; D. J. Wheeler, Ph.D. Southern Methodist; M. S. Younger, Ph.D. Virginia Polytechnic.

Assistant Professors: G. B. Rainey, Ph.D. North Carolina State (Raleigh); S. W. Ward, Ph.D. Virginia Polytechnic.

Undergraduate courses numbered 4000 and above presuppose familiarity with the basic probability distributions in statistics and with the general concepts of statistical estimation and hypothesis testing. Students intending to take 2100 and one additional undergraduate course are advised to select the latter from among 3000-level courses.

2100 Probability and Statistics (3) Elementary theory of probability, frequency and density functions; expected values and variances; fundamental concepts of statistical inference. Cannot be taken for credit by students who have credit for 3450. Prereq: Mathematics 1560 or 1650.

3110 Regression and Correlation Methods (3) Methods of linear and multiple-linear regression and correlation; nonparametric measures of association; rank correlation. Cannot be taken for credit by students who have credit for 4310. Prereq: 2100 or 3450.

3220 Analysis of Time Series (3) Some statistical methods applicable to analysis of trends and time series; graphic presentation and analysis, index numbers, curve fitting, correlation, trends, analysis seasonal and cyclical variation. Prereq: 2100 or 3450.

3310 Industrial Statistics (3) Shewhart Control Charts, acceptance sampling by attributes, Military Standard sampling plans. Special applications of control charts, acceptance sampling theory and procedures. Prereq: 2100 or 3450.

3410 Sampling Methods Useful for Surveys (3) Expository treatment of various types of probability sampling methods illustratively developed. Emphasis on procedures for selection of sample and calculation of estimates of parameters. Not available for credit to students with credit for 4415. Prereq: 2100 or 3450.

3450 Statistics for Engineering (3) Survey of statistical methods and their application to engineering students; frequency distributions, selected sampling distributions, some tests of significance. Cannot be taken for credit concurrently with 2110. Prereq: Mathematics 2840.

3460 Statistics for Engineering (3) Continuation of 3450 with emphasis on chi-square statistic, analysis of variance, and multiple regression analysis. Prereq: 3450; Mathematics 2850.


4250 Nonparametric Methods (3) Measures of association, two-sample tests, analysis of variance, ranked data, paired and multiple comparisons in preference testing, questionnaire evaluation.

4310 Regression Analysis (3) Linear regression and correlation, multiple regression, stepwise methods, polynomial regression, use of dummy variables. Use of standard regression computer programs. Elementary theory and applications.

4410 Design of Experiments (3) Principles and procedures for experimental design. Randomization, choice of size and number of experimental units, utilization of blocking arrangements. Interpretation of experimental data.

4415 Sampling Techniques and Theory (3) Procedures used in probability sampling for a variety of arrangements of statistical universes and development of estimators and standard errors associated with sampling schemes. Some properties of estimators. Determination of sample size. Not available for credit to students with credit for 3410.

4750 Statistical Problems in Business (3) Case study course of statistical problems in various of business management. Prereq: 15 hours in statistics and consent of instructor.

GRADUATE

Prerequisites for a major: Mathematics 2840-50-60, Statistics 3450 or equivalent.

5002 Non-Thesis Graduation Completion (3-15)

5010 Probability and Statistics Inference (3)

5020 Statistical Methods (3)

5050-60-70 Statistical Analysis for the Behavior Sciences (3, 3, 3)

5110 Introduction to Probability Theory (3)

5120-30 Theory of Statistical Inference (3)

5210 Stochastic Processes (3)

5211 Elementary Statistics (3)

5250-60-70 Applied Statistics for Engineering and Natural Sciences (3, 3, 3)

5610 Special Topics in Statistics (3)

6060 Applied Multivariate Analysis (3)

6070 Factor Analysis (3)

6210 Stochastic Processes II (3)

Interdepartmental Unit

Business Administration (205)

1110 Business Administration (3) Introduction to business. Not open to students with more than 3 credit hrs. of economics.

3110 Introduction to International Business (3) A survey of the strategic implications of conducting business operations in an international context. Emphasis on the analysis of relevant cross-national environments including cultural, political, economic and legal characteristics. Prereq: Economics 2120 or consent of instructor.

4430 Business Policy (3) Analysis of business problems and managerial decision making through case study method and written reports. Prereq: Core requirements or consent of instructor.

4610 Seminar in Small Business Assistance (3) Application of classroom learning to problems of small
business in the community. Student is given opportunity to apply business concepts and develop analytical skills. Upon completion of selected readings relevant to small or minority enterprise, students are assigned a project on basis of interest, ability, and experience. Students work in teams under supervision of a participating professor within the College of Business Administration. Approval for enrollment must be secured from instructor. May be repeated. Maximum credit 9 hours.

GRADUATE

See page 88 for information on graduate programs.

5310 Business Policy (3)
5410 Business and Its Societal Environment (3)
5610 Seminar in Applied Business Analysis (3)

Center for Business and Economic Research

STAFF
D. A. Hake (Director), Research Associate Professor, Ph.D. Tennessee
J. J. Kirchenstein, Assistant Director, M.S. Tennessee
K. E. Quindry, Research Professor, Ph.D. Kentucky
W. F. Fox, Research Associate Professor, Ph.D. Ohio State
R. A. Hoffer, Research Assistant Professor, B.A. Old Dominion
J. W. Mayo, Research Assistant Professor, M.A. Washington University (St. Louis)
P. A. Price, Research Associate, B.S. Tennessee
P. D. Postma, Research Assistant Professor, Ph.D. Tennessee
N. C. Schoening, Research Associate, M.S. Ohio State
College of Communications

Donald G. Hileman, Dean
Paul Ashdown, Assistant Dean for Undergraduate Studies
Herbert H. Howard, Assistant Dean for Graduate Studies

Communication has become increasingly significant in today's complex society. The growth of specialization, the widening gaps among segments of society, and the inescapable nature of world conflict point up the need for a greater understanding of communication processes and for the education of young men and women capable of perceptive understanding of the communications media.

The College of Communications offers programs designed to acquaint students with the nature of communication and to prepare them for professional work in a variety of communications fields. The college is composed of the School of Journalism and the departments of Advertising and Broadcasting. The curricula of these three academic divisions have a common base of courses beyond which choices will permit the student to develop special interests.

The American Council on Education for Journalism has accredited the Advertising, News-Editorial, Public Relations and Professional Master's programs. The college is a member of the American Association of Schools and Departments of Journalism and the Broadcast Education Association.

Admission Requirements

Association with the College of Communications may take place at any time. Those interested in this college should obtain a copy of the Program Planning Guidebook of the College of Communications.

Freshman admitted to the College of Communications are temporarily classified as premajors. They may apply for admission to a major degree program after they pass typing and spelling proficiency tests and complete, with at least a 2.0 cumulative average, the following courses:

English 1010 or 1011; 1020; 1032 (with a minimum grade of C in each course).
12 hours of natural science
History 1510-20
Communications 1110-1118
9 hours of foreign language
Arts 1101-1108

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

The core courses by major are:
Advertising — Communications 1110 or 1118, Journalism 2215, Advertising 3000
Broadcasting — Journalism 2215, Advertising 3000, Broadcasting 2750
Journalism — Journalism 2215, Journalism 2220, Journalism 2230

Transfer students may apply for admission into the College of Communications after they have completed all the premajor requirements including the core courses and attained at least a 2.0 average in all work attempted.

Curriculum

The college curriculum offers academic majors in advertising, broadcasting, journalism, and public relations. Through core introductory courses, students receive a basic view of the nature of communications.

The freedom of electives provided within the programs permits students to develop specialized interests in a variety of fields. In consultation with an adviser, they may plan individual programs leading to newspaper, magazine, radio, television, public relations, or advertising work. They may prepare for careers in agricultural or industrial journalism. They may select related courses to develop a specialty in writing news of science, government, and business. Others may elect courses to prepare themselves as writers on foods, fashions, and home interests, or they may combine training in communications with work in secretarial science.

Students in other divisions of the University may take certain courses for training in effective communication or for an understanding of the social role of the mass media.

Students who have completed the basic courses in the college may earn practicum credit for professional work in the field. Approval of the adviser and the departmental head must be obtained before such work is begun.

Upper Division

Consent of instructor is prerequisite for all 3000-and 4000-level courses, with the exception of Advertising 3000, in the College of Communications.

Satisfactory/No Credit Option

The purpose of this option is to encourage students to venture beyond those courses in which they usually do well and, motivated by their own intellectual curiosity, to explore subject matter in which performance may be somewhat less outstanding than work in preferred subject fields.

This option applies only to general elective courses. No course that is a part of the specific requirements of the College of Communications or the student's major department can be taken under this option. For example, social science, humanities, and speech electives required by the various departments cannot be taken under this option.

Courses earning a "satisfactory" grade will count as hours for graduation but not for calculating the grade point average. A student who wishes to take a S/NC course must indicate this at the time of registration. Under no circumstances may the student change from S/NC to regular credit or from regular credit to S/NC after the deadline for adding courses.

Course Load

The maximum number of hours an undergraduate can take without special
permission is 17 hours. Permission to take 18 or more hours must be obtained from either the dean or the assistant dean for undergraduate studies with the recommendation of the student's adviser and department chairman or school director.

Cooperative Program

The college, in cooperation with the University-wide Undergraduate Cooperative Education Program, has developed a cooperative program with the media, advertising and public relations agencies, and the communications departments of business organizations where interested students might combine their education with a productive work experience. At present, only a limited number of such opportunities are available. Although other arrangements can be made, a student will enter the program only after completing one or two quarters at the University. A student will alternate with another student, with one working full-time for the employer for one quarter while the other person is in school, etc. The typical program is arranged for a five-year period, with the student spending the final three quarters of the senior year on campus.

The Cooperative Program gives the student an opportunity to gain practical experience. It also helps to develop a sense of responsibility and cooperation, creates greater interest and incentive in academic studies and provides part of the student's expenses. It also may lead to permanent employment after graduation.

Information concerning this program may be obtained by writing to the Undergraduate Cooperative Education Program, Division of Continuing Education, 415 Communications and Extension Building, The University of Tennessee, Knoxville, Tennessee 37996-0332.

The Edward J. Meeman Distinguished Professorship

As a result of a $200,000 grant to the School of Journalism in 1970 by the Edward J. Meeman Foundation, outstanding journalists and journalism educators are brought to the campus as distinguished professors. The professorship is named for the late editor of The Memphis Press-Scimitar and founding editor of The Knoxville News, which later became the News-Sentinel.

Kelly Leiter, former columnist, feature writer and assistant city editor of The Chicago Daily News and the Indianapolis News, is the first permanent fulltime faculty member to hold the position.

Tuttle Catledge, former executive editor of The New York Times, and John Hohenberg, longtime administrator of the Pulitzer Prizes and outstanding teacher at the Columbia University Graduate School of Journalism, have held this professorship.

Equipment and Facilities

The Communications and Extension Building provides extensive facilities for communications instruction. The college has laboratories with special equipment for instruction in writing, editing, photography, advertising, and broadcasting. In addition, advanced students gain experience through summer internships or through the University's general program of publishing and broadcasting. The Office of Public Relations, campus publications such as the Daily Beacon, the college radio station WUTK, and the University radio station WUOT provide practice for communications majors. The Tennessee Press Association and Tennessee High School Press Association, centered at the University, present opportunities for special work and study.

Requirements for Graduation

The Bachelor of Science in Communications is awarded to majors who complete a program of 194 hours prescribed under departmental requirements listed below. At least 140 of these hours must be taken in courses other than the major and related communications fields. At least 27 of the hours in the major must be taken at The University of Tennessee. Normally, more than 22 transfer credits in the major will be applied to the 194 hours. Journalism 2210 is the only course in the college that may be taken by correspondence.

AMERICAN HISTORY

Students lacking a high school credit of American history must take nine quarter hours of American history in addition to History 1510-20. Three hours may be applied to the general electives requirement.

FOREIGN LANGUAGES

One year of foreign language on the college level is required unless two units of high school credit are presented in which case students may substitute eight or nine hours of courses listed below by majors.

Advertising and broadcasting majors may substitute the following courses (unless otherwise required in the student's major): Anthropology 2510-20-30; Geography 1810-20, or 2110-20-30; Mathematics 1540-50-60, or 1840-50; Philosophy 1510-20-30, or 3111-21-31-41; Psychology 2500; 2610-12; Religious Studies 2610-11-12.

Journalism majors in the news-editorial sequence must take either Mathematics 1540-50-60 or Accounting 2110-20-30.

Journalism majors in the public relations sequence may substitute any of the courses listed above for the advertising and broadcasting majors. All courses required (except those mentioned in the sequence) and in addition may substitute any of the following courses: Art 1810-25; any Black Studies course; Music 1210-20; Theatre 1310 and any Women's Studies course.

The student may also fulfill the requirement with a foreign language.

NATURAL SCIENCE

You may take 12 hours of the following in any combination: Astronomy 2110-20-30; Biology 1210-20-30; Botany 1110-20; Chemistry 1510-20-30; Geology 1410-20-30; or Physics 1410-20-30 or 1210-20-30.

This requirement is fulfilled by English 1010-11; 1020 or 1032 or appropriate honors courses. The eight hours of literature may be selected from: English 1510-20-30 or 4510-20-40 and 2760-70-80 (and Comparative Literature 2010 for journalism majors). Upper-division literature courses may be substituted by students with a B+ average in freshman English at UTK.

PROFESSIONAL COURSES

The advertising major requires certain professional courses which may be selected from the following: Accounting 2110-20; Advertising 3470, 4510-20-30, 5310, 5350; Art 2510, 3515; Broadcasting 2750, 3960, 4020-30, 4670-80, Educational Curriculum and Instruction 4750; English 1033; Journalism 3120, 3410, 3710-20, 4710, 3810, 3910, 3990, 4410-20, 4950; Marketing 4140, 4230, 4310, 4440, 4510-20, 4710; Mathematics 3000; Office Administration 2750, 4310-20; Psychology 3120, 4640; Speech 3011; Statistics 3410.

SCHOLARSHIP AND HUMANITIES

Social science electives may be selected from geography, economics, political science, psychology, history, sociology, anthropology, classics (except grammar and composition courses), and upper-division philosophy and religious studies courses. Journalism majors may also take some black studies and women's studies courses as social science electives with consent of their adviser. Humanities electives may be selected from English, speech and theatre (not performance courses), music (except applied music), art (except applied art), classics (except grammar and composition), language culture courses (not grammar and composition), and upper division philosophy and religious studies.

GENERAL ELECTIVES

All electives are subject to the adviser's consent. Students are advised to consult the University's degree requirements as stated in the front section of this catalog as well as the requirements for the college or department.

Undergraduate Curriculum

Advertising

<table>
<thead>
<tr>
<th>Hours</th>
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<tr>
<td>1010-20</td>
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<tr>
<td>Natural science electives</td>
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<tr>
<td>History 1510-20</td>
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<td>Foreign language electives</td>
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<tr>
<td>Sociology 1110 or 1118</td>
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<td>Communications 1110</td>
<td>3</td>
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<td>Economics 2110-20</td>
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Sophomore

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<tr>
<td>Sociology 1520</td>
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<tr>
<td>Spanish 2311</td>
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<tr>
<td>Economics 2120</td>
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<tr>
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<tr>
<td>Mathematics 1540</td>
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<tr>
<td>Marketing 3110-20</td>
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<td>Psychology 2500, 2530</td>
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<tr>
<td>Journalism 2211</td>
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<tr>
<td>Art 2516</td>
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Junior

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<td>Advertising 3000</td>
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Senior

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<td>Computer Science 3010</td>
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*See Requirements for Graduation.

Broadcasting

LOWER-DIVISION CURRICULUM

(Required of all broadcasting majors)

<table>
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<td>English 1010-20</td>
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College of Communications
Sophomore
- English literature electives... 8
- Economics 2110-20-30... 9
- Journalism 4410... 3

Junior
- Communications electives... 9
- Journalism 2110... 4
- Sociology 1510-20... 8
- Speech 2311... 4

Senior
- Communications 1110 or 1118... 3
- Journalism 2220, 3110, 3410... 10
- Journalism 3110, 3410... 6
- Journalism 3220... 3
- Journalism 3410... 3

NEWS AND PUBLIC AFFAIRS SEQUENCE
Junior
- Broadcasting 3610, 3670... 6
- Marketing 3110-20... 6

Senior
- Accounting 2110... 3
- General electives... 6

MANAGEMENT SEQUENCE
Junior
- Broadcasting 3610, 3670... 6
- Marketing 3110, 3410... 6

Senior
- General electives... 6

MANAGEMENT SEQUENCE (259)
Professors:
- J. A. Crook, Ph.D. Iowa State; A. D. Fletcher, Ph.D. Illinois; J. B. Haskins, Ph.D. Minnesota; D. G. Hileman, Ph.D. Illinois; D. W. Holt, Ph.D. Northwestern; H. H. Howard, Ph.D. Ohio; B. K. Leiter, Ph.D. Southern Illinois; D. D. Nimmo, Ph.D. Vanderbilt.

Associate Professors:
- G. A. Everett, Ph.D. Iowa; M. Miller, Ph.D. Michigan State; M. W. Singletary, Ph.D. Southern Illinois.

1110 Introduction to Communications (3) Nature, functions, responsibilities of mass communications media and agencies. Survey of newspapers, magazines, radio, television, film, advertising, public relations, press associations, and specialized publications. Open to majors who have had no communications courses and to non-majors below junior level.

1118 Honors: Introduction to Communications (3) nature, functions and responsibilities of mass communications media and agencies, with depth study of special problems. Open only to those majors selected on the basis of placement scores and high school record.

GRADUATE
5000 Thesis
5100 Introduction to Graduate Studies (3)
5120 Communications Research Design (3)
5121 Communications Research Methods (3)
5130 Advanced Principles of Mass Communications (3)
5140 Mass Communication Theory I (3)
5150 Seminar in Communications Issues (3)
5200 Seminar in Communications Education (3)
5410 Seminar in Communications Law (3)
5420 Seminar in Communications History (3)
5470 Seminar in Media Economics and Management (3)
5970 Independent Study (3)

6000 Doctoral Research and Dissertation
6100 Introduction to Doctoral Studies (1)
6140 Mass Communication Theory II (3)
6141 Mass Communication Theory III (3)
6200 Seminar in Communication Topics (3)
6300 Seminar in Newspaper History (3)
6310 Experimental Research Methods in Communications (3)
6320 Seminar in Historical Research Methods in Communications (3)
6330 Content Analysis (3)

Advertising (012)
Professors:
- R. Jost (Head), M.A. Wisconsin; A. D. Fletcher, Ph.D. Illinois; D. G. Hileman, Ph.D. Illinois,
**3000 Advertising Principles (3)** Advertising in business and society. Types and functions of advertising. Fundamentals of broadcast and publications advertising. Stress on communications aspects of advertising. Prereq: Sophomore standing or higher. *Prep: Communications 1110 or 1118 for communications majors only.*

**3630 Advertising Copy and Layout (4)** Ideas and their translation into persuasive words and pictures. Principles and techniques of copy and layout. Lecture and labs. *Prep: 3000 with grade of C or better or consent of instructor.*

**3650 Basic Advertising Research (3)** Use of research in solving media, creative, and managerial problems in advertising. Introduction to secondary information sources and primary research methodology. *Prep: 3000 with grade of C or better or consent of instructor.*

**3740 Retail Advertising and Promotion (3)** Planning of retail advertising and promotion; practice in retail copy and layout; selecting media; research. *Prep: 3000 or Marketing 4150.*

**4000 Advanced Advertising Copy and Layout (4)** Creative strategy and execution of advertisements for mass media. Problems in ideas creation for advertisers. Lecture and labs. *Prep: 3630 with grade of C or better or consent of instructor.*

**4380 Advertising Media (3)** Media markets and audiences. Evaluation of media in relationship to communications needs of advertisers. *Prep: 3000 with grade of C or better or consent of instructor.*

**4460 Cases and Problems (3)** Case approach to study of advertising problems. Analysis of campaigns and trends. *Prep: 3630, 3650, and 4360 with grades of C or better, or consent of instructor.*

**4470 Advertising Campaigns (4)** Application of theory in planning and execution of campaigns. Market and consumer research; development and allocation of budgets. Choice of appeals and approaches; media selection; preparation of advertisements. *Prep: 3650, 4000 and 4360 with grades of C or better, or consent of instructor.*

**4510-20-30 Practicum (1, 1, 1)** *Prep: 3000. May be repeated. Maximum credit 6 hrs. S/NC.*

**GRADUATE**

**5310 Current Issues in Advertising (3)**

**5330 Advertising Management (3)**

**5350 Advanced Advertising Research (3)**

**5510 Creative Projects (3)**

**5970 Independent Study (3)**

### Broadcasting (202)

**Professor:** D. W. Holt (Head), Ph.D. Northwestern; H. H. Howard, Ph.D. Ohio.

**Associate Professors:** P. G. Ashdown, Ph.D. Bowling Green; I. G. Simpson, M.S. Synctex; M. W. Singletary, Ph.D. Southern Illinois.

**Assistant Professors:** F. A. Lester, M.A. Tennessee; Certificate NBC Television Institute, Northwestern; B. A. Moore, Ph.D. Ohio; R. A. Shirley, M.A. Tennessee; M. K. Sidel, Ph.D. Northwestern.

**2750 Introduction to Broadcasting (3)** Theory, history, and economic aspects of broadcasting industry and its functions in society. *Prep: Communications 1110 or 1118 for communications majors only.*

**3580 Television and Radio Advertising (3)** Principles of successful radio/television advertising; emphasis on media research, rate structure, programming, creativity; television commercials.

**3610 Radio-Television News (3)** Theory and techniques of writing news releases for broadcast media. Editing and rewriting press association dispatches, gathering local news, recording interviews, and preparing newscasts and feature programs. 2 hrs. and 1 lab. *Prep: Journalism 2220 or consent of instructor.*

**3650 Radio-Television Writing (3)** Theory and technique of writing broadcasting scripts except news and dramatics. Special events, interviews, musical scripts, radio talks, documentaries, and promotion material.

**3670 Television News (3)** Theory and techniques of portable video tape and film production for television. Ethical considerations and editing techniques. Emphasis on news and information programs. 2 hrs. and 1 lab. *Prep: 3650 or consent of instructor.*

**4010 Speech for Broadcasting (3)** Fundamental broadcast conditions affecting the announcer: pronunciation and oral interpretation of general American speech, Spanish, Italian, German, and French pronunciation. *Prep: Speech 2311.*

**4020 Radio Production (3)** Study of radio production, past and present. Familiarization with production tools and techniques. Group and individual production activities. *Prep: 2750 or consent of instructor.*

**4021 Advanced Radio Production (3)** Application of the theories, techniques, and tools of radio production to create programming of a professional level of sophistication and quality. *Prep: 4020 or consent of instructor.*

**4030 Television Production (3)** Overview of elements of television production: cameras, sound, lighting, film videotape recording, optics, and studio control centers. Presented with the rules and regulations of the professional broadcast student in mind. *Prep: 4020 or consent of instructor.*

**4040 Advanced Television Production (3)** A semi-independent course in program origination, production, directing, and performing with orientation to the professional broadcast student. *Prep: 4030 or consent of instructor.*

**4510-20-30 Practicum (1, 1, 1)** *Prep: Consent of instructor. S/NC.*

**4610 Broadcast News Operation (3)** Theory and practice in covering local news and public affairs events for radio and television. Gathering and production of news broadcasts, using tools of broadcast newspaper, 2 hrs. and 1 lab. *Prep: 3610 and 3670 or consent of instructor.*

**4670 Radio-Television Management (3)** Business policies and practices of networks and stations. Departmental functions; personnel; public relations; marketing; sales techniques, promotion, advertising agencies, and government regulations. Lectures by commercial broadcasters. *Prep: 2750 or consent of instructor.*

**4680 Broadcast Sales Management (3)** Problems and practices of televion and radio sales, case studies in sales development, pricing, promotion, and other areas of sales management. *Prep: 2750 or consent of instructor.*

**GRADUATE**

**5410 Educational Broadcasting (3)**

**5510 Creative Projects (3)**

**5610 Public Affairs Broadcasting (3)**

**5620 Broadcast Law and Regulations (3)**

**5630 Broadcast Documentary Writing (3)**

**5650 Radio-Television Program Development (3)**

**5970 Independent Study (3)**

### School of Journalism (594)

**Professors:** J. A. Crook (Director), Ph.D. Iowa State; J. B. Hawkins, Ph.D. Minnesota; B. K. Leiter (Memean Distinguished Professor), Ph.D. Southern Illinois; D. D. Nimmo, Ph.D. Vanderbilt.

**Associate Professors:** J. B. Adamson, M.S. Tennessee; P. G. Ashdown, Ph.D. Bowling Green; J. C. Bateman, M.A. New York; G. A. Everett, Ph.D. Iowa; M. Miller, Ph.D. Michigan State; S. L. Puett, M.S. Tennessee; M. W. Singletary, Ph.D. Southern Illinois; F. B. Thornburg, Jr., M.A. Florida.

**Instructors:** M. L. Kern, M.S. Florida State; A. R. Paddock, M.S. Columbia.

**GRADUATE**

**2210 Writing for Media Science (3)** Principles and practice of writing for major types of media communications media. Not available to majors in the College of Communications. *Prep: English 1010 or 1011; 1020; 1031 or 1032 or 1033.*


**2220 Reporting (4)** Methods of gathering and writing news for mass media. Emphasis on news and news features. *Prep: 2210 or 2215.*

**2230 Editing for Mass Media (3)** Methods and practice in judging news, editing copy, and writing headlines. Introduction to newsroom terminals. Emphasis on precise word use. *Prep: 2220.*

**3110 Communications History (3)** Development of newspapers, magazines, broadcasting, photography, film, and book publishing in America and their relationship to society.

**3120 Writing Feature Articles (3)** Selection of topics and practices in writing feature articles for newspapers, magazines, and company publications. *Prep: 2220 or consent of instructor.*

**3120 Advanced Reporting (3)** Gathering and writing news in depth on current issues and concerns under deadline. Special emphasis on business news. Use of video display terminals. *Prep: 2230.*


**3310 Graphic Arts in Journalism (3)** Survey of printing processes and associated technologies. Emphasis on publication design, offset techniques, and computer technology.

**3410 Communications Law (3)** Statutory law and judicial precedents affecting mass communications media. Libel, contempt of court, invasion of privacy, copyright, broadcasting, advertising, and postal regulations.

**3510 Practicum in Journalism, (1-3)** Supervised experience in news writing and editing. May be repeated for credit. *Prep: 2230. Maximum 3 hours.*

**3710 Public Relations (3)** Theories and principles of public relations. Overview of PR as a management tool of business, government, institutions, and organizations.

**3720 Advanced Public Relations (3)** Preparation of communications materials to gain support from various publics; planning public relations programs. *Prep: 3710.*

**3900 Specialized Publications (3)** Editorial and design considerations for company publications and small magazines. *Prep: 2236 and 3310 or consent of instructor.*

**3990 Basic News Photography (3)** Principles of photojournalism including historical perspectives and special techniques. Medium and small format reflex cameras used. Darkroom techniques for black-and-white photography. *Prep: Consent of instructor.*

**3990 Journalism Research Methods (3)** Use of social science research methods in journalism with em-
phasis on survey techniques, interpretation and communication of research findings to public.

4130 Editorial Writing (3) Analysis of editorial policies, practices, pages. Writing of editorials and columns, with emphasis on study and use of rhetorical devices and logic.

4150 Issues in Journalism (3) Topics vary. May be repeated. Maximum credit 6 hrs.

4310 Reporting Public Affairs (3) Reporting news of courts, politics, and government. State, county, and local coverage. Prereq: 2230 and senior standing.

4410 Mass Media and Society (3) Roles and responsibilities of mass media in society. Critique of mass media performance. Media codes and controls on the media.

4420 Newspaper Management (3) Daily and weekly business operations. Developments in newspaper management.

4510 Practicum in Journalism (1-3) Supervised experience in news writing and editing. May be repeated for credit. Prereq: Senior standing or consent of instructor. Maximum 3 hours.

4560 Investigative Reporting (3) Investigative and interpretive reporting of complex or specialized subjects to place news in perspective or to clarify situations. Emphasis on writing for publication. Prereq: 2220.

4710 Public Relation Cases (3) Case studies and application of public relations principles to problems in business and industry, government, institutions, trades, and professions; solving problems in public relations situations. Prereq: 3720.

4810 Journalism in the High School (3) Functions and methods of publications. Staff organization, writing, and editing techniques, editorial problems, and business management.

4910 News and Feature Photography (3) Advanced principles and methods in black-and-white photography. Emphasis on news and feature photographs and picture stories. Prereq: 3910 or consent of instructor.

4950 International Communications (3) Communication of news and opinion among nations and under varying types of political and economic systems; world news organizations; the press as a factor in international affairs; barriers to the flow of information; comparison of world press systems.

4970 Independent Study (3) May be repeated. Maximum credit 6 hrs.

GRADUATE

5210 Government and the Press (3)

5250 Public Opinion and Mass Media (3)

5510-20-30 Writing and Editing Projects (3,3,3)

5560 Magazine Article Writing (3)

5710 Studies in Public Relations Communications (3)

5950 Communications and International Development (3)

5970 Independent Study (3)
The Division of Continuing Education at Knoxville, the administrative unit of UTK that extends academic courses, educational services, and other programs to the non-traditional student. While most people who participate in the programs are adults, persons of all ages and academic levels can be counted among the people who enroll in the credit and non-credit offerings of the Division.

Programs and courses are based upon student needs and desires, whether for self-motivated learning; for leisure and recreational programs; or for professional promotion, certification, licensure, relicensure, or mid-career changes. The Division provides these educational opportunities through program coordination and development of the four departments: Conferences, Non-Credit Programs, University Evening School, and Workshops and Off-Campus Credit Programs. Specific programs and services of each department are described on the following pages.

Conferences
Director:
W. L. Whelan, Ed.D.
Assistant Director:
S. R. Martin, B.A.
Coordinators:
J. H. Gillespie, M.S.; M. R. Davis, M.S.

It has become evident that learning can take place for an extended period of time in a variety of modes, settings, and circumstances other than in the traditional classroom. To bring this fact to its reality, The University of Tennessee, Knoxville continuing education conference program has been designed and staffed to bring together under University auspices groups of participants and qualified resource persons to share new learning and ideas, to develop new insights, to address current problems, or to impart new skills and techniques. This thrust can embrace virtually all disciplines, professions, vocations, and avocations.

The Department of Conferences is staffed and equipped to advise, assist, and provide administrative support in the delivery of a successful conference or workshop. Acting in these roles, the department can follow through with an initial tentative budget; secure appropriate setting; devise an attractive format; arrange for auxiliary services such as lodging, meal, and banquet events, extra excursions and tours, and complete registration procedures; design, print, and mail the conference brochure; and handle registration fee collection and payment of honoraria and other conference expenses.

Depending on the time of year, the academic calendar of the University, and the desires of the conference sponsor, the program and participants may be housed in campus facilities or off-campus commercial settings.

Among the unique advantages offered by the Department of Conferences programs are that: programs are designed to meet specific needs of the greatest practical value to the participants; the knowledge and expertise of the UTK faculty and staff can be matched with the specific needs of the participants; the programs encourage informal contacts and interaction among colleagues with similar interests with the resource persons; program fees are kept reasonable by using University facilities and services whenever possible; an experienced Conference staff is available to plan, coordinate, and facilitate delivery of programs of virtually any size or duration; by using conference services, the activity initiator is free to concentrate fully on program content; programs can be conducted "inhouse" on the campus, anywhere in the state of Tennessee, or wherever an appropriate meeting site can be arranged; Continuing Education Units (CEU's) may be awarded to program participants if the program is designed to satisfy the criteria necessary for CEU credit.

Additional information may be obtained from the Department of Conferences, 2019 Terrace, telephone 974-5261.

Non-Credit Programs
Director:

Assistant Director:
Coordinator:
K. J. Reagan, M.S. Tennessee.

The Department of Non-Credit Programs offers experiences to meet the personal and professional needs of individuals and groups on campus, in Knoxville, and in surrounding communities. Non-credit courses are administered by the department, often in the cooperation with other academic and service units of the University and/or non-university agencies. General interest courses in areas such as personal and professional development, business, aviation, dance, health and fitness, art, foreign languages, real estate, music, photography, etc. are offered in addition to remedial and in-service training programs. Ongoing programs of special interest include the English Language Institute for native speakers of other languages and the Smoky Mountain Field School, offering specialized study in emphasizing outdoor exploration in the National Park.

Continuing Education Units (CEU's) are awarded to students satisfactorily completing courses described in the non-credit quarterly class schedule. A CEU is defined by the Southern Association of Colleges and Schools as "ten contact hours of participation in an organized continuing education experience under responsible sponsorship, capable direction, and qualified instruction." A permanent record of CEU's is maintained by the department. A letter of completion of all CEU's earned at The University of Tennessee, Knoxville, may be obtained upon written request.

Recent statewide legislation gives Tennessee citizens who are 60 years of age or older, or those who are totally disabled, the opportunity to audit courses at UTK free of charge according to available space. Legal verification of either of these conditions is required for enrollment. Additional information may be obtained at 2016 Lake Avenue.
University Evening School

Director:

Associate Director:
J. C. Sekula, Ph.D. Tennessee.

Assistant Director:

Assistant Professors:

Instructor:
A. J. MacCabe, M.S. SUNY at Albany.

The University Evening School, with the cooperation of academic colleges and departments, administers credit classes and supports activities for those students attending in the late afternoon and evening. Programs and services are offered enabling working adults to pursue their educational interests and goals.

Undergraduate Degree Programs

The following degrees are available for evening students:

College of Business Administration Bachelor of Science in Business Administration with a major in Accounting, General Business, Economics, Management, or Office Administration; College of Liberal Arts Bachelor of Arts with a major in Anthropology, Economics, History, Mathematics, Political Science, Psychology, or Sociology.

Graduate Degree Programs

Some departments within the Colleges of Business Administration, Education, and Engineering offer all courses required for an advanced degree during the evening. For a specific major consult the appropriate department. In the College of Business Administration, all courses required for the MBA degree with a concentration in management are offered during the evening.

Nursing Education Program

The Nursing Education Program is conducted through contractual agreement with three area Knoxville hospitals. The diploma program is run through each hospital's independent School of Nursing. Academic courses are provided by the University Evening School in support of this program.

Special Mini-Term Programs

The University Evening School offers two special Mini-Terms a year-one during the month of September and one during the month of December. Students may enroll in one concentrated credit course during the ten-day Mini-Term period.

Courses and instructors listed for the Mini-Term are carefully selected to reflect a broad academic base of individualized offerings suited to an intensive program of study. Courses cover traditional material and information included in regular quarterly offerings; however, many are supplemented with films, team teaching, field trips, independent research projects, and specialized areas of study. Thus, each offering will afford students an opportunity to immerse themselves in the discipline selected.

Student Services

A comprehensive program of services is provided by the Evening School for the adult part-time student.

REGISTRATION

Quarterly registration by mail or on campus is offered as a convenience for former Evening School students.

ADVISING

An advising-counseling program is available for the benefit of all evening students who need assistance with academic and/or personal matters. This program can accommodate students during regular daytime hours (8:30-5:30) and in the evenings by appointment. In addition, advisers from the various colleges are on hand for academic consultation during evening preregistration days. A full-time veteran adviser assists evening students who receive educational benefits under the G.I. Bill with their academic planning.

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. In addition, interested students may obtain applications for the Basic Educational Opportunity Grant Program in the Evening School Office.

Elderly and Disabled Persons

Recent statewide 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 are totally disabled and who desire to receive UT credit for their courses, may pay a reduced charge of $5 per credit hour to a maximum of $50 per fulltime load. Registration for day and evening classes is handled by the Evening School.

Workshops and Off-Campus Programs

Workshops also offer flexibility of timing, location, and content. Summer workshops are particularly popular with teachers and school administrators. Although most workshops are held on the UTK campus, geography is not a limiting factor.

The department provides students services at the off-campus sites by conducting registration and scheduling counseling/advising at the locations where classes and workshops meet.

Division of Continuing Education, Knoxville
College of Education

William H. Coffield, Dean
C. Glennon Rowell, Associate Dean for Instructional Programs
Thomas W. George, Acting Assistant Dean for Support Services

Teacher education is historically a major function of The University of Tennessee. Beginning in 1903, when the first courses for teachers were offered, the University has increasingly fulfilled its responsibility to provide schools with competent teachers and service personnel and to improve the teaching profession by continually upgrading its membership. The College of Education was established in 1926, and all teacher preparation programs at The University of Tennessee are now coordinated within its seven departments and its School of Health, Physical Education, and Recreation.

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 contains many modern and functional facilities for the professional training of teachers. Classrooms, laboratories, seminar rooms, faculty and administrative offices, the instructional materials center, the Bureau of Educational Research and Service, the School Planning Laboratory, and facilities for special activities such as observation and experimentation are located in this air-conditioned building.

Teacher Placement Service

The College of Education, cooperating with the University Placement Service, assists qualified students and alumni in securing positions. School and college administrators are cordially invited to make full use of these services in their efforts to employ competent personnel.

General Information

Admission to the College

Application for association with the College of Education may be made at any time. Freshmen are required to have at least 16 units of high school credits.

For transfer into the College of Education after completion of the freshman year, a minimum grade average of 2.0 (C) is required.

Course Load—Permission for more than 19 hours in a quarter must be obtained from the Assistant Dean for Support Services. A normal course load in the college is 16-19 hours.

Admission to Teacher Education

Students desiring certification to teach must gain admittance into Teacher Education before enrolling in various required upper division Education courses. Applicants are encouraged to (1) begin the multiphase admission process during their first quarter of full-time attendance and (2) complete the process of approximately the 60th quarter hour.

Applicants must complete the following requirements (recommended sequence for completion):

1. Basic Skills Tests. The State Board of Education requires all applicants to pass tests of reading comprehension, mathematics computation, and language. Applicants with a minimum ACT composite score of 17 are exempt from this requirement. (Transfer students having a minimum ACT composite score of 765 of 17 or a combined score score of 765 (Verbal/Quantitative) on the SAT or CEEB must supply the Assistant Dean's Office with an official record of their score(s).)

Students, except for Junior-Senior transfer students, are encouraged to take the basic skills tests during their second quarter of full-time attendance, using time during their first quarter of attendance for test preparation. (Details on preparation are available through the Assistant Dean's Office.)

2. Socio-Emotional Evaluation. Applicants are required to undergo a socio-emotional (personality) evaluation. Students whose scores on selected scales represent extreme variations from established norms will be required to undergo further evaluation.

Students, except for Junior-Senior transfer students, should take the personality test during their third quarter of full-time attendance.

3. Field Experience. Applicants to Teacher Education must provide evidence of having successfully completed a field experience in a public school setting. (Refer to program area curriculum for specific required experiences.)

Students, except for Junior-Senior transfer students, should complete the field experience requirement during their fourth quarter of full-time attendance.

4. Speech and Hearing Evaluations. Applicants are required to undergo speech and hearing evaluations.

Students, except for Junior-Senior transfer students, should undergo the Speech and Hearing Evaluations during their fourth quarter of full-time attendance.

Applicants to Teacher Education are required to have a minimum of 2.2 UTK grade point average. Furthermore, transfer students must, also, have a minimum of 2.2 cumulative...
grade point average. (No applicant's grade point average will be considered until the completion of at least 60 quarter hours.) Applicants to Teacher Education will be reviewed by the Office of Student Conduct. Any applicant who has established a record of misconduct will be reviewed by the College's Admission and Retention Committee.

Graduate students, except for those previously admitted to the College's Teacher Education Program, must gain admittance to Teacher Education before receiving the College's recommendation for certification.

Students interested in complete details on admission to Teacher Education should contact the Assistant Dean for Support Services, 212 Claxton Education Building.

Admission to Student Teaching

Application for all student teaching programs must be filed no later than the quarter preceding the actual experience. For example, if a student plans to student teach during the 1983-84 academic year, application must be made by January 1, 1983. Applications for student teaching may be completed on approximately four occasions each quarter. A schedule of the application meetings is available in the Office of the Director of Student Teaching, 212 Claxton Education Building.

Making application for student teaching is not contingent upon admission to the Teacher Education Program. Students should apply for student teaching at the time of application for admission to the Teacher Education Program. Following are the general prerequisites to student teaching. Student teaching prerequisites for specific program areas (art, elementary, P.E., etc.) are available in the student teaching office or from the academic advisor.

(1) Full admission to the Teacher Education Program no later than the quarter preceding student teaching.

(2) Completion of the professional core courses (Education 3010, 3020, 3030 and Educational Psychology 2430 or 3810).

(3) Completion of field experiences required in the program curriculum.

(4) Completion of the special methods courses at The University of Tennessee.

(5) Completion of the Pre-Student Teaching Seminar and the September Experience.

(6) Senior standing and a minimum grade point average of 2.2 on work completed at The University of Tennessee, and a cumulative grade point average of 2.2.

In addition, any record established by the student in the Office of Student Conduct will be reviewed by the Admissions and Retentions Committee.

The 15-quarter hour student teaching experience is evaluated on a satisfactory-no credit basis and the hours are included in the University policy requiring a 2.0 in the last 45 hours worked at the University. The most important criterion in placing student teachers in the public schools is the value of the experience for preparing for teaching. The University cannot guarantee the geographic locale desired by the student though effort will be made to follow the student's wishes. Student teaching centers are maintained in East Tennessee communities, some of which are at a considerable distance from Knoxville. Married students will be placed as near their homes as possible in order to preserve family life.

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 of whether a substitution would be appropriate is "does the course you wish to substitute meet the spirit of the course requirement?" That is "is the content similar or perhaps more appropriate to your needs?"

To initiate a substitution request the student should visit with the adviser first. If they agree that the substitution is an appropriate one, the substitution request form should be forwarded to the Office of the Assistant Dean for Support Services, 212 Claxton Education Building. Approved petitions are forwarded to the Dean of Admissions for further approval, and for filing in the Records Office.

Courses taken at junior or community colleges may be substituted for lower division (0000/2000 level) courses or may be used as electives. These courses may not be substituted for upper division (3000/4000 level) courses.

Recommendation for Certification

The application for a professional teacher's certificate should be completed early in the final undergraduate quarter. Application forms may be obtained in the Registrar's Office, 212 Claxton Education Building. Tennessee state regulations stipulate that the applicant for a teaching certificate must be recommended by the teacher-training institution. The dean of the College of Education is the official designated to recommend University of Tennessee graduates for teacher certification. To receive this recommendation, the applicant must have fulfilled the following requirements:

(1) A minimum cumulative grade point average of 2.0.

(2) Satisfactory performance of the student teaching experience.

(3) A minimum grade point average of 2.0 in the teaching field(s).

(4) Completion of a methods course in each area of endorsement.

(5) Fulfillment of all special recommendations of the Admissions and Retention Committee.

(6) Successful completion of at least one quarter hour course dealing with the learning and behavioral characteristics of handicapped students.

(7) Effective January 1, 1981, the Tennessee State Board of Education requires all persons seeking Tennessee teaching certification to take the National Teacher Examinations. Students may obtain further information in the Advising Center, 212 Claxton Education Building.

Graduate Programs

The College of Education, through the Graduate School, offers programs leading to the Master of Science degree, the Master of Education degree, the Master of Arts in College Teaching degree, the Master of Public Health degree, the Specialist in Education (advanced graduate) degree, the Doctor of Education, and the Doctor of Philosophy degrees. For further information, see the Graduate Catalog.

Undergraduate Curricula

The College offers courses of study leading to the Bachelor of Science in Education and to eligibility for teacher certification in Tennessee and in those states which grant reciprocally privileges to graduates of institutions accredited by the National Council for Accreditation of Teacher Education (NCATE). A core of studies provides the foundation for specialization in all teacher education curricula. In addition, approved concentrations must be completed in subject fields specifically related to the public school curriculum. A choice is to be made among programs leading to recommendation for certification at one of three levels: elementary, Kindergarten-9, secondary (grades 7-12), or special subjects in grades 1-12.

Courses in library science are available to students who are interested in beginning positions in any library or in preparation for further graduate study in professional librarianship. The minimum requirements for full-time librarianship in any size school in Tennessee can be met through completion of the basic library science (3510, 3520, 3550, 4140, 4150, 4270, 4330, 4750). Endorsement as a librarian requires 27 quarter hours in library science. At the undergraduate level, only a minor of library science is available. Students in the college will select an appropriate curriculum from those outlined under the Undergraduate curriculum section. Students interested in this program should consult with a member of the faculty of the Graduate School of Library and Information Science.

Students should work closely with faculty advisers in planning programs of study. The chosen curriculum must be followed as outlined to assure graduation and certification. Any proposed substitution for a required course should be filed for approval before the end of the junior year.

Satisfactory/No Credit Courses

For the curricula listed under Roman numerals I, II, and III only, a student may include a maximum of 30 hours in non-directed electives taken on a Satisfactory/No Credit basis in the total hours required for graduation. S/NC may not be used in required courses or controlled electives, except where the course is offered on an S/NC basis (such as student teaching and field experiences). An area of concentration will be considered as non-directed electives except where specific courses or controlled electives are required.

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

I. Curricula for Elementary Teachers

A. Grade 1 through Grade 8 (certification for grades 1-8)

GENERAL EDUCATION...........................89 hours

Communications (12 hours)

English 1010 or 1011; 1020; 1031 or 1032 or 1033 (English 1019 may be required for some students); Speech 2021 or 2311 or any speech elective.
**Health and Physical Education** (18 hours)

P.E. 3450 (3), School Health 3610 (3), Psychology 2500 (4), P.E. and health electives (8 hours) must include minimum of 3 hours in each area.

**Humanities** (12 hours)

Literature 8 hours; the remaining four hours must be chosen from foreign language (above introductory level), philosophy, religious studies, Art 1815 or 1825, or Music 1210 or 1220, or Art 1815 or 1825.

**Mathematics** (9 hours)

Mathematics 2110, 2120, 2130.

**Natural Science** (20 hours)

8 or 12 hours in biological science. Recommended series are Biology 1210, 1220 (1230 or Botany 1110, 1120). 8 or 12 hours in physical science. Recommended series are Physics 1410, 1420 (1430), or Geology 1410-20-30 or Astronomy 2110, 2120, 2120 (2130), or Chemistry 1110, 1120 (1130).

**Social Studies** (18-20 hours)

History (4 hours—it is recommended that the course history be taken at the sophomore level). Electives (14-16 hours) from anthropology, economics, geography, human services, political science, and sociology. Minimum of 3 areas are required.

**Elementary Education Courses** 36 hours

Educ. C & I 3010, 3020, 3030.

**Elementary Education Courses** 36 hours


**Specialized Courses** 21 hours

Educational Psychology 2430; Art Education 2100, 2110; Music Education 2100, 2110, Educ. C & I 3910; Special Education 3333.

**Areas of Concentration** 15-16 hours

One or more areas of specialization are to be chosen from the following:

- **Art** requirements plus 15-16 hours from art, IDH, art education.
- **Black Studies** Courses from at least 3 different fields must be included. See Black Studies for specific course possibilities.
- **Child Studies** Requirements plus 15-16 hours from child development, psychology, educational psychology.
- **Humanities** Requirements plus 15-16 hours from anthropology, economics, geography, humanities, psychology.
- **Language Arts** Requirements plus 15-16 hours in English, Speech, Journalism.
- **Library and Information Science** Requirements 15-16 hours. If certification is desired in library service, the student must complete 24 hours in Library and Information Science 3520-30, 4140, 4150, 4270, 4330, 4750.
- **Mathematics** Requirements plus 15-16 hours.
- **Middle Schools** 15-16 hours, to include Educ. C & I 15570; Ed. Psychology 3810; Educ. C & I 3520 or 4280; Educ. C & I 3462 or 3653, or 3654 or 3657 or 3658 (a second methods course); Educ. C & I 4350 or 4351 or 4522; lab experience in middle school.
- **Music** Requirements plus 15-16 hours.

**Science** Requirements plus 15-16 hours.

Economics (12 hours)

*Requires admission to the Teaching Education Program.

**B. Kindergarten through Grade 8**

(=certification for Kindergarten - Grade 8)

**General Education** 89 hours

**Communications** (12 hours)

English 1010 or 1011; 1020; 1031 or 1033, English 1019 may be required for some students; Speech 2021 or 2311 or any speech elective.

**Health and Physical Education** (18 hours)

P.E. 3450 (3), School Health 3610 (3), Psychology 2500 (4), P.E. and health electives (8 hours) must include minimum of 3 hours in each area.

**Humanities** 12 hours

Literature 8 hours; the remaining four hours must be chosen from foreign language (above introductory level), philosophy, religious studies, Art 1815 or 1825; or Music 1210 or 1220, or Art Ed. 4160.

**Mathematics** (9 hours)

Mathematics 2110-20-30.

**Social Sciences** (18 hours)

History (4), Child and Family Studies 4610; Economics 2110; Anthropology 2530 or 3410 or Human Services or Sociology 4320 or 4510; Electives (from anthropology, economics, geography, human services, political science, sociology).

**Interdisciplinary Studies**

**In Home Economics** (16 hours) H.E. 1510, 1520, 2510, 3510.

**Specialized Courses** 34 hours

P.E. 3450, 3660; Pub. Health 3210; health electives; Art Ed. 2100, 2110; Music Ed. 2100, 3110, Educ. C & I 4303; CFS 3120; C & I 3510.

**Foundations Courses** 15 hours

CFS 1500, 3210; Select one: CFS 3220, 4230 or 4350; Music 1201 or 1220, Art Ed. 4160.

**Mathematics** (9 hours)

Mathematics 2110, 2120, 2130.

**Natural Sciences** (20 hours)

8 or 12 hours in biological science. Recommended series are Biology 1210, 1220 (1230 or Botany 1110, 1120). 8 or 12 hours in physical science. Recommended series are Physics 1410, 1420 (1430), or Geology 1410-20-30 or Astronomy 2110, 2120 (2130), or Chemistry 1110, 1120 (1130).

**Social Studies** (18-20 hours)

History (4 hours—it is recommended that the course history be taken at the sophomore level). Electives (14-16 hours) from anthropology, economics, geography, human services, political science, sociology. Minimum of 3 areas are required.

**College of Education**

**Electives** 8-11 hours

TOTAL MINIMUM REQUIRED... 191 hours

*Requires admission to the Teacher Education Program.

**C. Nursery School through Grade 3**

(=certification for Kindergarten - Grade 3)

**General Education** 83 hours

**Communications** (12 hours)

English 1010 or 1011; 1020; 1031 or 1032 or 1033; Speech 2021 or 2311.

**Humanities** (12 hours)

Literature (4); Music 1210 or 1220 or Art 1815 or 1825; philosophy or religious studies (4).

**Natural Science** (16 hours)

Biological science (in series or combination) (8); physical science (in series or combination) (8).

**Mathematics** (9 hours)

Mathematics 2110-20-30.

**Social Sciences** (18 hours)

History (4); Child and Family Studies 4610; Economics 2110; Anthropology 2530 or 3410 or Human Services or Sociology 4320 or 4510; Electives (from anthropology, economics, geography, human services, political science, sociology).

**Interdisciplinary Studies**

**In Home Economics** (16 hours) H.E. 1510, 1520, 2510, 3510.

**Specialized Courses** 34 hours

P.E. 3450, 3660; Pub. Health 3210; health electives; Art Ed. 2100, 2110; Music Ed. 2100, 3110, Educ. C & I 4303; CFS 3120; C & I 3510.

**Foundations Courses** 15 hours

CFS 1500, 3210; Select one: CFS 3220, 4230 or 4350; Select two: Educ. C & I 3010*, 3020*, 3030*.

**Teaching and Theory Courses** 54 hours


**Electives** 6 hours

TOTAL MINIMUM REQUIRED... 192 hours

*Requires admission to Teacher Education Program.

**II. Joint Elementary-Mathematics Education Certification**

**Mathematics** (9 hours)

Mathematics 2110, 2120, 2130. Students with at least 3 years high school mathematics (e.g. Algebra I, Geometry, and Algebra II) and ACT Mathematics score of at least 22 may replace the 9 hours of Mathematics 2110-20-30 with the following six hours of mathematics courses: 3 hours credit in courses selected from Mathematics 3330, 3320, 3330, 3 hours credit in courses selected from Mathematics 3110, 3110, 3720.

**General Education** 90 hours

**Communications** (12 hours)

College of Education 105
### C. Mathematics Education

#### 1. Area Majors in Mathematics

<table>
<thead>
<tr>
<th>Major</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Mathematics and Physical Sciences</td>
<td>(75 hours)</td>
</tr>
<tr>
<td>(1) Mathematics</td>
<td>(27 hours) must include at least a one-year sequence in calculus or analytic geometry and calculus and at least 12 quarter hours in courses numbered 3050 or above with at least one course in algebra and one in geometry.</td>
</tr>
<tr>
<td>(2) Physical Sciences</td>
<td>12 hours in each of the following: Chemistry, geology, botany, chemistry, geology, microbiology, zoology.</td>
</tr>
<tr>
<td>(3) Electives</td>
<td>12 additional hours in physical sciences and/or mathematics.</td>
</tr>
<tr>
<td><strong>Endorsements:</strong> Mathematics and Physical Science, General Science</td>
<td></td>
</tr>
<tr>
<td>b. Mathematics and Related Sciences</td>
<td>(72 hours)</td>
</tr>
<tr>
<td>(1) Mathematics</td>
<td>(36 hours)—must include at least a one-year sequence in calculus or analytic geometry and calculus and at least 12 hours in courses numbered 3050 or above with at least one course in algebra and one in geometry.</td>
</tr>
<tr>
<td>(2) Related Sciences</td>
<td>12 hours in physics and 12 hours in each of the following subjects: astronomy, biology, botany, chemistry, geology, microbiology, zoology.</td>
</tr>
<tr>
<td><strong>Endorsements:</strong> Mathematics, General Science</td>
<td></td>
</tr>
<tr>
<td>c. Mathematics and Computer Sciences</td>
<td>(72 hours)</td>
</tr>
<tr>
<td>(1) Mathematics</td>
<td>(36 hours)—must include at least a one-year sequence in calculus or analytic geometry and calculus and at least 12 hours in courses numbered 3050 or above with at least one course in algebra and one in geometry.</td>
</tr>
<tr>
<td>(2) Computer Science and Physics</td>
<td>24 hours in computer science and 12 hours in physics</td>
</tr>
<tr>
<td><strong>Endorsement:</strong> Mathematics</td>
<td></td>
</tr>
<tr>
<td>2. Mathematics major with a minor (72 hours)</td>
<td></td>
</tr>
<tr>
<td>a. Mathematics</td>
<td>(45 hours)—must include at least a one-year sequence in calculus or analytic geometry and calculus and at least 12 hours in courses numbered 3050 or above with at least one course in algebra and one in geometry.</td>
</tr>
<tr>
<td>b. 27 hours in another subject used as a minor.</td>
<td></td>
</tr>
<tr>
<td><strong>Endorsement:</strong> Mathematics</td>
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</tr>
</tbody>
</table>

#### D. Psychology Education

1. A concentration and endorsement in psychology shall require a minimum of 30 quarter hours—12 hours upper division distributed as follows:

<table>
<thead>
<tr>
<th>Core</th>
<th>16 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychology</td>
<td>2500</td>
</tr>
<tr>
<td>Psychology</td>
<td>3120</td>
</tr>
<tr>
<td>Psychology</td>
<td>3150</td>
</tr>
<tr>
<td>Psychology</td>
<td>3210</td>
</tr>
<tr>
<td>Electives</td>
<td>14 hours selected from:</td>
</tr>
<tr>
<td>Psychology</td>
<td>2520, 2530, 2540, 3199, 3210, 3220, 3310, 3430, 3550, 3650,</td>
</tr>
</tbody>
</table>
Certification includes economics, geography, history, political science and sociology.
a. 28 quarter hours in history, including 1510-20 and 2510-20, and 12 hours in World and/or American history.
b. 8 quarter hours in each of the following: geography, political science, and sociology.
c. 4 quarter hours in anthropology.
d. 9 quarter hours in economics, including 2110-20 and an elective.
e. 7-8 additional quarter hours in the above-listed or related fields.

Program II
Specific subject major (45 hours plus 27 hours for a minor).

Minors. A minor is defined as 27 quarter hours in a single subject area, i.e., biology, history, French, psychology, speech, etc. A minor does not meet certification requirements in all cases.

IV. Art and Music Education

A. Art Education

GENERAL EDUCATION ..................68-70 hours
Communications (12-13 hours)
English 1010-20 and 1031 or 1032 or 1033; and 3-4 hours in speech.

Health and Physical Education (9 hours)
Activities courses in physical education plus School Health 3510.

Humanities (15-16 hours)
Art History 1815 and 1825, one literature course, and one elective from anthropology, history, philosophy, or religious studies.

Mathematics (4 hours)
Natural Science (12 hours)
Any twelve hours from the biological and/or physical sciences.

Psychology (4 hours)
Psychology 2500.

Social Studies (12 hours)
Any twelve hours from at least two areas.

B. Minor (24 hours)

CAREER OPTIONS FOR MUSIC MAJORS

Concentration in Vocal Music (Voice Principal)
a. 25 quarter hours in Music Education: 1010-20; 2110; 2411; 2421; 2431; 3130; 3150; 4420; 4510.
b. 60 hours in music: 1111-21-31; 113-23-33; 2111-21-31; 2113-23-33; 2340; piano 22 hours; required ensemble 11 hours plus piano proficiency.

Concentration in Vocal Music (Piano or Organ Principal)
a. 25 quarter hours in Music Education: 1010-20; 2110; 2411; 2421; 2431; 3130; 3150; 4420; 4510.
b. 60 hours in music: 1111-21-31; 113-23-33; 2111-21-31; 2113-23-33; 2340; piano or organ 22 hours; voice 6 hours; required ensemble 11 hours.

Concentration in Elementary Music Education (Voice Principal)
a. 31 quarter hours in Music Education: 1010-20; 2110; 2411; 2421; 2431; 3141-42; 3150; 4420; 4441-42-43; 4450.
b. 60 hours in music: 1111-21-31; 113-23-33; 2111-21-31; 2113-23-33; 2340; voice 22 hours; piano proficiency; required ensemble 11 hours.

Concentration in Elementary Music Education (Piano or Organ Principal)
a. 31 quarter hours in Music Education: 1010-20; 2110; 2411; 2421; 2431; 3141-42; 3150; 4420; 4441-42-43; 4450.
b. 60 hours in music: 1111-21-31; 113-23-33; 2111-21-31; 2113-23-33; 2340; piano or organ 22 hours; voice 6 hours; required ensemble 11 hours.

Concentration in Instrumental Music Education
a. 35 quarter hours in Music Education: 1010-20; 2110-22-23; 2421-22-23; 3130-31-32; 3130-31-32; 3141-42; 3150; 4420; 4441-42-43; 4450.
b. 72 hours in music: 1111-21-31; 113-23-33; 2111-21-31; 2113-23-33; 2340; principal instrument 22 hours; secondary instrument 6 hours; piano proficiency; required ensemble 11 hours.

Concentration in Instrumental Music Education
a. 35 quarter hours in Music Education: 1010-20; 2110-22-23; 2421-22-23; 3130-31-32; 3130-31-32; 3141-42; 3150; 4420; 4441-42-43; 4450.
b. 72 hours in music: 1111-21-31; 113-23-33; 2111-21-31; 2113-23-33; 2340; principal instrument 22 hours; secondary instrument 6 hours; piano proficiency; required ensemble 11 hours.

Music 4460 is required for all students whose principal instrument is wind or percussion.

TOTAL MINIMUM REQUIRED........182-209 hours

GENERAL REGULATIONS FOR ALL MUSIC EDUCATION STUDENTS
A. Required participation, with credit or as a registered auditor, in a major instrumental...
or vocal organization each quarter in residence (on-campus) as a music education major, as approved by the student's adviser and the directors of the organizations concerned. Students preparing to be band directors are expected to enroll in Marching band unless officially excused.

Instrumental Major. Concert Band; University Marching Band; or University Orchestra.

Vocal Major. Concert Choir; University Chorus; Chamber Singers.

Elementary Music Education Major.

Same as Vocal Major.

B. Transfer students must take proficiency examinations in applied music, music theory, sight singing and dictation prior to registration in music education curricula.

*Requires admission to Teacher Education Program.

V. Health, Physical Education, Recreation, and Safety

A. Concentration in Elementary Physical Education (1-9)

GENERAL EDUCATION..................90 hours

Communications (12 hours)

English 1010 or 1011; 1020 and 1031 or 1032 or 1033; 3650, 3660, 3670; 3680, 4110, 4150, 4330, 4440, 3260, and 4 hours of P.E. activities electives.

Social Studies (16 hours)

Sociology 1510 plus 12 hours of electives.

Natural Science (24 hours)

Chemistry 1510-20, Physics 1450, and Zoology 2920-30 and 4940.

Mathematics (4 hours)

Psychology (4 hours)

Psychology 2560.

Health and Physical Education (14 hours)

School Health 3000 and 3420; physical education activities (8 hours) including P.E. 1000, 3510, 3540, 3550, 3560, 3570, 3330, 4110 or 4110; 4120; 4230; 3220 or 3170; 4310; 4440 or 4450; 3330; 4410 or 3010; 3180; 3240; and 13 hours of electives from any upper-division P.E. course.

ELECTIVES...................20 hours

Hours to be used for minor, endorsement, or electives (None of the 20 hours may be taken in lower-division physical education.)

TOTAL MINIMUM REQUIRED..............197 hours

*Requires admission to Teacher Education Program.

D. Minor in Secondary Physical Education (27 hours)

(Open only to students with a concentration in elementary physical education.)

P.E. 4120; 4140; 4230; 3210; 3170 or 3220; 4310; 4440 or 3010; 3180; 4032; P.E. electives (2 hours).

E. Minor in Coaching (28-31 hours)

Zoology 2920-30 or 3080; Zoology 4940; Physical Education 3320, 3250, 3910, 3000, 4180. Two courses in the area of coaching to be chosen from the following: Physical Education 3110, 3120, 3130, 3200, 4460.

†Consult catalog regarding prerequisites.

F. Major in Dance

GENERAL EDUCATION..................91 hours

Communications (13 hours)

English 1010 or 1011; 1020 and 1031 or 1032 or 1033; Speech 2311.

Mathematics (4 hours)

Natural Science (8 hours)

Any electives selected from biological and/or physical sciences.

Psychology (20 hours)

Psychology 2500 plus 4 hours of electives.

Social Sciences (8 hours)

Sociology 1510 or 1520 plus 4 hours of electives.

Health and Safety (3 hours)

School Health 3210.

Cultural Arts (32 hours)


DANCE......................70 hours


CONCENTRATION AREAS................12 hours

Ballet: Physical Education 4000, 4005; or

Modern: Physical Education 3030, 410.

ELECTIVES...................20 hours

TOTAL MINIMUM REQUIRED.............193 hours

G. Minor In Dance (27-28 hours)

Option I. Physical Education 2070, 3040, 3070, 3090, 3151; 2040-50-60 or 3060-61-62; 4 hours selected from 3010 and/or 3020; 6 hours selected from 3075 or 4000 or 4005.

Option II. Physical Education 2070, 3010, 3040, 3090, 3151; 2040-50-60 or 3060-61-62; 4 hours selected from 3070 and/or 3075; 6 hours selected from 3020 or 3030 or 4010.

Option III. Physical Education 2070, 3010, 3070, 3090, 3151, 4150, 4310, 4550, 3060-61-62; 4 hours selected from 3075 or 4000 or 4005 or 4 hours selected from 3020-3030-4010.

H. Major in Recreation

GENERAL EDUCATION..................98 hours

Selection of specific courses in each area below dependent on career goals in recreation. Consult advisor.

Natural Science (16 hours minimum)

4 hours selected from chemistry, physics, geology, astronomy, and Geography 1810, 1820, 3530. 4 hours selected from: biology or botany, zoology, the areas of anatomy or physiology. At least 8 additional hours selected from any or a combination of the above.

Mathematics (3-4 hours)


Social Science (16 hours minimum)

Sociology 1510 and 4550; at least 8 additional hours selected from Sociology 1520, 3130, 3410, 3420, 3690, 4330, 4560, or Rural Sociology 3420 or Human Services 2680, 4690, 3380 or Political Science 2530, 2020, 2510-20, 3566-66, 3710-20, Economics 2110-20, 2001, 3220, 3240.

Behavioral Sciences (16 hours minimum)

Psychology 2560, at least 12 additional hours selected from Psychology 2540, 3540, 3550, 3650, 3616-26 or Educ. Psych. 2430, 2510-20, 4130, 4800, or CFS 2110, 3210-20, 4260, 4610, 4810.

Communications (16 hours minimum)

English 1010 or 1011; 1020 and 1032; Speech 2311 and Journalism 3710.

Health and Safety (3 hours minimum)

School Health 2110, Public Health 3210 or Safety 3520.

Humanities (16 hours minimum)

At least 4 hours selected from English 2000 level and above; at least 3 hours selected from history; at least 2 additional hours selected from English 2000 level and above, History 1510-20, 1950-60, 2510-20, 2350, Anthropology 2530, Geography 3660, Classics 2810-20, 3910-20, 3210-20, 3310-30-20, 4010, Philosophy 1510-20, 2310, 2410, 3315, 3630, 3910, Religious Studies 2610, 2611.

Cultural Arts (12 hours minimum)

4 courses from at least 2 of the following arts: Music 1210-20, 3210-11-12, 3350, 4230,
PROFESSIONAL RECREATION EDUCATION: 24 hours
Recreation 1100, 3140, 3100, 3200, 3220, 4130, 4200, 3880.

FIELD STUDY: 21-24 hours
Recreation 1000, 2000, 3000, 4000.

SKILLS AREAS: 18-24 hours
Student selects two of the following skill areas and completes at least 3 courses (9-12 hours) in each:

- **Arts and Crafts**: Art 1115-25-35, 2105, 2115, 2205, 2215, 2250-60, 2275, 2315, 2450-60, 2515-16, 2545-55-65, 2615, 2617, 2950-60-70, 3260, 3710, 4150; Art Education 2100, 2210-20, 3110, 3920-30, 4130, 4150 4410.


- **Dramatics**: Theatre 1310-20-30, 2111, 2121, 2121-21, P.E. 4070.

- **Sports**: Physical education—2 team sports, 3 individual sports.

FREE ELECTIVES: to be added to above requirements to total minimum of 192 hours for the degree.

TOTAL MINIMUM REQUIRED: 192 hours

**I. Major in Public Health**

GENERAL EDUCATION: 87 hours

- **Communications** (13 hours)
  - English 1010 or 1011; 1020 and 1032; Speech 2311.

- **Health and Physical Education** (11 hours)
  - Public Health 3000
  - Public Health 3210
  - Physical education electives.

- **Humanities** (16 hours)
  - English—any 4 hours from literature
  - Anthropology 2530
  - Philosophy or religious studies elective (4)
  - Art or music elective (4)

- **Mathematics** (4 hours)
  - Natural Science (20 hours)
  - Chemistry or physics sequence (4, 4, 4), Biology 1210-20 or Zoology 2920-30.
  - Psychology (4 hours)
    - Psychology 2500.
  - Social Studies (19 hours)
    - Economics 2110
    - Geography or Political Science 2510 or 2520
    - History 1510-20 or 2510-20
    - Sociology 1510.

- **Specialized Professional Education**: 25 hours
  - Education C & I 4750
  - Education C & I 4720 and Public Health 4700-10-20 or
  - Public Health 4100, 4700-10-20 or
  - Public Health 4740
  - (6) - Non-Teacher Certification
    - School Health 3650
    - Educational Psychology 3810.
    - Special Education 3333

- **Teaching Areas and Electives**: 66 hours
  - Public health required courses (12): 3310, 3330, 3330, and 4220.
  - Public health electives (6)
    - School health required courses (9): 3410, 3420, 3650.
    - School health elective courses (3): 3520
    - Biology 1230
    - Microbiology 2910-19
    - Psychology 3150
    - Sociology 1520
    - Sociology 3130
    - Nutrition 1230
    - Electives (12)

Special Note: If some of the specific courses cited above are dropped or changed, they may be substituted with an equivalent course.

TOTAL MINIMUM REQUIRED: 190 hours

**K. Minor in Driver and Traffic Safety Education** (28 hours)

- **Required Courses**: 17 hours
  - Safety 3520, 4410, 4420; Public Health 3210.

- **Electives**: 11 hours
  - At least nine hours selected from: Public Health 4120; Educ. C & I 4750; Educ. Psychology and Guidance 2520; School Health 3650.

**L. Minor in School Health Education** (30 hours)

- School Health 3000, 3210, 3410, 3650, 3420; Safety 3520; Public Health 3310, 3320, 4410; Nutrition 1230 or Public Health 4420 or School Health 3620.

**VI. Special Education**

- **A. Concentration in General Special Education**

  - **Core General Special Education**: 74 hours
    - **Communications** (9 hours)
      - English 1010-20 and 1031 or 1032 or 1033.
      - (Some students may be required to take English 1019 based on placement scores.)
    - **Health and Physical Education** (18 hours)
      - P. E. 3450, School Health 3510, P. E. 4110, 3430, Psychology 2500, P. E. activities electives (4 hours).
    - **Humanities** (12 hours)
      - Literature (4 hours); electives from anthropology, art, literature, library and information science, upper-division history, music, philosophy, religious studies, or foreign language above the introductory level (6 hrs.).
    - **Mathematics** (3 hours)
      - Elective (Math 2110 recommended).
    - **Natural Science** (16 hours)
      - Biological science (12 hours); Physical science (4 hours).
    - **Social Studies** (16 hours)
      - History 2510, 2520 and electives from anthropology, economics, geography, political science or sociology (6 hours).

- **Core Professional Education**: 6 hours
  - Educ. C & I 3010* and 3030*

- **Specialized Professional Education**: 6 hours
  - Educ. C & I 3010* and 3030*

- **Language Arts** (12 hours):
  - Educ. C & I 3260, 3280, 3281 and three elective hours.

- **Mathematics Methods** (3 hours):
  - Educ. C & I 3350.

- **Psychology or Educational Psychology** (9 hours):
  - Ed. Psych. 2430 or 3810 and six elective hours.

- **Child Development** (9 hours):
  - Nine elective hours.

- **Student Teaching in Elementary Schools** (9 hours):
SPECIAL EDUCATION COURSES...39 hours Special Education 3333, 4520, 4110, 4120, 4130, 4150, 4351, 4361, 4440, 4610, 4740, 5260, 5620.

SPECIAL EDUCATION STUDENT TEACHING...15 hours Special Education 4880, 4881, 4882.

ELECTIVES...13 hours

TOTAL MINIMUM REQUIRED...189 hours

*Required admission to Transfer Education Program.

B. Concentration in Combined General Special Education and Elementary Education

GENERAL EDUCATION........................89 hours

Communications (12 hours) English 1010-20 and 1032 or 1033; Speech 1211 or 2021 or 2311 or any speech elective. (Some students may be required to take English 1019 based on placement scores.)

Health and Physical Education (20 hours) P. E. 3450, School Health 3510, School Health 360, Psychology 2500, P. E. 480 and 3430, and four elective hours.

Humanities (12 hours) Literature (8 hours); elective from foreign language above the introductory level, philosophy, religious studies, art, or music (4 hours).

Mathematics (9 hours) Math 2110, 2120, 2130.

Natural Science (20 hours) Biology 1210, 1220, 1230 and Physics 1410, 1420.

Social Studies (18-20 hours) History 2510; elective from anthropology, economics, geography, political science and sociology. Minimum of three areas to be represented (14-16 hours).

CORE PROFESSIONAL COURSES...9 hours Educ. C & I 3010*, 3020*, 3030*.

ELEMENTARY EDUCATION COURSES...36 hours Educ. C & I 3260, 3270, 3280, 3281, 3350, 3391, 3720, 3711-12-13 or Special Education 4361, 4810*, 4820*.


SPECIAL EDUCATION COURSES...42 hours Special Education 3333, 4520, 4110, 4120, 4130, 4150, 4351, 4440, 4740, 5260, 5620, and 6 hours psychology or educational psychology electives.

STUDENT TEACHING WITH EXCEPTIONAL CHILDREN.........................15 hours Special Education 4880, 4881, 4882.

TOTAL MINIMUM REQUIRED...209 hours

*Requires admission to Teacher Education Program.

1. File application for admission to the program.
2. The Program Screening Committee will review all applications quarterly. The following criteria will be considered:
   a. cumulative grade point average;
   b. completion of these courses: Special Education 2110-20, 3333 and 9 additional hours of course work in the major field (AREA OF CONCENTRATION);
   c. advisor's recommendations (based on personal interview and career planning);
   d. instructor's recommendations (from the courses in Special Education listed above);
   e. the candidate's personal aptitude for teaching in Special Education as indicated by practice experiences;
   f. writing sample;
   g. the Committee will grant full, or provisional, admission or will deny admission. A candidate may appeal the decision to the Departmental Appeals Committee and the College Appeals Committee.
3. Special Education admission to the Program will be granted after the Program Screening Committee reviews applications and the above criteria are considered.
4. A comprehensive examination in Sign Language and Finger-Spelling must be taken at least two quarters before student teaching. A remedial course in Sign Language and Finger-Spelling will be offered each quarter.
5. Transfer students will follow the same admission procedures.

1. Specialization in Early Childhood Development

GENERAL EDUCATION..........................74 hours

Communications (9 hours) English 1010-20 and 1032 (Some students may be required to take English 1019 based on placement scores.)

Health and Physical Education (10 hours) School Health 3510, Physical Education 3450; physical education electives.

Psychology (4 hours) Psychology 2500.

Humanities (11-12 hours) English literature 7-8 hours (choose 2 areas); anthropology, art, history, philosophy, foreign language (above introductory level), religious studies, music, library and information science.

Mathematics (3 hours) Mathematics 2110.

Natural Sciences (20 hours) Biology 1210-20, 3333, 4520, 4110, 4120, 4130, 4150, 4351, 4440, 4740, 5260, 5620, and 6 hours psychology or educational psychology electives.

STUDENT TEACHING WITH EXCEPTIONAL CHILDREN.........................15 hours Special Education 4880, 4881, 4882.

TOTAL MINIMUM REQUIRED...189 hours

*Requires admission to Teacher Education Program.

C. Concentration in the Hearing Impaired Admission to the Program for Teachers of the Hearing Impaired
In addition to the college requirements for Admission to Teacher Education, Special Education students in the program for teaching the hearing impaired will follow these procedures:

1. File application for admission to the program.
2. The Program Screening Committee will review all applications quarterly. The following criteria will be considered:
   a. cumulative grade point average;
   b. completion of these courses: Special Education 2110-20, 3333 and 9 additional hours of course work in the major field (AREA OF CONCENTRATION);
   c. advisor's recommendations (based on personal interview and career planning);
   d. instructor's recommendations (from the courses in Special Education listed above);
   e. the candidate's personal aptitude for teaching in Special Education as indicated by practice experiences;
   f. writing sample;
   g. the Committee will grant full, or provisional, admission or will deny admission. A candidate may appeal the decision to the Departmental Appeals Committee and the College Appeals Committee.
3. Special Education admission to the Program will be granted after the Program Screening Committee reviews applications and the above criteria are considered.
4. A comprehensive examination in Sign Language and Finger-Spelling must be taken at least two quarters before student teaching. A remedial course in Sign Language and Finger-Spelling will be offered each quarter.
5. Transfer students will follow the same admission procedures.

AREA OF CONCENTRATION..........................67 hours

Audiology and speech pathology elective (3050 recommended). Audiology and Speech Pathology 3010, 3710, 4390 (or 5950), Special Education 2110-20, 3333, 4190, 4200, 4210-20, 4250, 4290-90, 4531-61-71, 4870, 4871, and pre-student teaching seminar.

TOTAL MINIMUM REQUIRED...189 hours

*Requires admission to Teacher Education Program.

2. Specialization in Elementary Education

GENERAL EDUCATION..........................77 hours

Communications (9 hours) English 1010-20 and 1032. (Some students may be required to take English 1019 based on placement scores.)

Health and Physical Education (15 hours) Physical Education 3450; School Health 3510, 3610; physical education electives.

Psychology (4 hours) Psychology 2500.

Humanities (12 hours) Literature (6); elective from philosophy, art, religious studies, or music.

Mathematics (3 hours) Mathematics 2110.

Natural Sciences (16 hours) 8-12 hours in biological science (choose one series): Biology 1210-20-30, Botany 1110-20. 8-12 hours in physical science: Physics 1410-20-30, Astronomy 2110-20-30, Chemistry 1110-20-30.

Social Studies (18 hours) History 1510-20 or 2510-20. Choose 3 areas: anthropology, economics, geography, political science, sociology.

CORE PROFESSIONAL COURSES...9 hours Educ. C & I 3010, 3020, 3030.

ELEMENTARY EDUCATION COURSES...18 hours Educ. C & I 3260, 3270, 3280, 3281, 3350, 3391, 3720, 3711-12-13 or Special Education 4361, 4810*, 4820*.

SPECIALIZED COURSES...12 hours Educational Psychology 2430, Art Education 2100, Music Education 2100, Educ. C & I 3510.

SPECIALIZED COURSES...12 hours Educational Psychology 2430, Art Education 2100, Music Education 2100, Educ. C & I 3510.

AREAS OF CONCENTRATION..........................67 hours

Audiology and speech pathology elective (3050 recommended). Audiology and Speech Pathology 3010, 3710, 4390 (or 5950), Special Education 2110-20, 3333, 4190, 4200, 4210-20, 4250, 4280, 4290, 4351, 4361, 4371, 4870, 4871, and pre-student teaching seminar.

TOTAL MINIMUM REQUIRED...189 hours

*Requires admission to Teacher Education Program.

3. Specialization in Secondary Education

GENERAL EDUCATION..........................75 hours

Communications (9 hours) English 1010-20 and 1032. (Some students may be required to take English 1019 based on placement scores.)

Health and Physical Education (9 hours) School Health 3510 and physical education electives.

Humanities (11-12 hours) English literature, 7-8 elective hours (choose from two areas): anthropology, art, history,
philosophy, foreign language (above introductory level), religious studies, music, library and information science.

Mathematics (4 hours)
Mathematics 2102

Natural Science (20 hours)
(If major is in science education, student must take 12 hours in biological sciences.) 8-12 hours in the biological sciences: (choose one series) Biology 1210-20-30, Botany 1110-20, microbiology, zoology. 8-12 hours in physical science: Physics 1410-20-30, Astronomy 2110-20-30. Chemistry 1110-20-30, Geology 1510-20.

Psychology (4 hours)
Psychology 2500.

Sociology (18 hours)
History 1510-20 or 2510-20. Choose 3 areas from: anthropology, economics, geography, political science, sociology.

CORE PROFESSIONAL COURSES .......................... 9 hours Educ. C & I 3010, 3020, 3030.

SPECIALIZED PROFESSIONAL EDUCATION...6 hours Educational Psychology 3810 and appropriate methods course for major area.

AREA OF CONCENTRATION ..........67 hours Audiology and speech pathology elective (3050 recommended), Audiology and Speech Pathology 3010, 3110 (or Sp. Ed. 4240), 4930 (or 5950). Special Education 2110-20, 3333, 4190, 4200, 4210-20-30, 4250, 4280, 4290, 4351, 4361, 4371, 4870, 4871, and pre-student teaching seminar.

MAJOR AREAS ........................................... 30-45 hours

NOTE: 30 quarter hours are required for graduation and Council on the Education of the Deaf Certification. For Tennessee State Certification for Teaching Non-handicapped Students, additional credit hours are required.

TOTAL MINIMUM REQUIRED ................. 187 hours

4. Specialized in Multiple Handicapped

GENERAL EDUCATION ............................... 75 hours Communications (9 hours) English 1010-20 and 1032. (Some student may be required to take English 1019 based on placement scores)

Health and Physical Education (10 hours) School Health 3510; Physical Education 3450 and physical education electives.

Psychology (4 hours)
Psychology 2500.

Humanities (11-12 hours)
English literature; 8 hours electives (choose 2 areas): anthropology, art, history, philosophy, foreign language (above introductory level), religious studies, music, library and information science.

Mathematics (3 hours)
Mathematics 2110

Natural Science (20 hours) 8-12 hours in biological science: (choose one series) Biology 1210-20-30; Botany 1110-20. 8-12 hours in physical science: Physics 1410-20-30; Geology 1510-20; Astronomy 2110-20-30. Chemistry 1110-20-30. Social Studies (18-20 hours) History 1510-20 or 2510-20.

Choose 3 areas: anthropology, economics, geography, political science, sociology.

CORE PROFESSIONAL COURSES .......................... 9 hours Educ. C & I 3010, 3020, 3030.

AREA OF CONCENTRATION ..............67 hours Audiology and speech pathology elective (3050 recommended), Audiology and Speech Pathology 3010, 3110 (or Sp. Ed. 4240), 4930 (or 5950). Special Education 2110-20, 3333, 4190, 4200, 4210-20-30, 4250, 4280, 4290, 4351, 4361, 4371, 4870, 4871, and pre-student teaching seminar.

AREA OF SPECIALIZATION .............30 hours Selected from the following: Spec. Ed. 3210-20-30, 4740, 3910, 3520, 4110-20-30, 4150-60, 4440, 4610-20, 4840, 5400, 5401, 5620, and special education electives.

TOTAL MINIMUM REQUIRED ..........181 hours

D. Concentration in Speech and Hearing

GENERAL EDUCATION ............................... 8-12 hours Communications (12 hours) English 1510-20, Speech 2311.

Health and Physical Education (6 hours) Activities courses recommended plus health and physical education electives (both areas must be represented).

Humanities (16 hours) English (4 hours from 2000-level literature). Electives representing two areas from the following: anthropology, art, English (literature), foreign language (above introductory level), history (upper division), Library and Information Science 3510-20-30, music, philosophy, and religious studies.

Mathematics elective (4 hours).

Natural Sciences (16 hours) 8 hours biological sequence; 8 hours physical sequence.

Psychology 2500.

Social Studies (20 hours) History electives (8 hours) plus 12 hours representing three areas from anthropology, economics, geography, political science, sociology.

General Electives (6 hours).

CORE PROFESSIONAL EDUCATION ..........9 hours Education C & I 3010*, 3020. Special Ed. 4030.

SPECIALIZED PROFESSIONAL EDUCATION ..........19 hours Psychology 2520 or 2530, Psychology 3550 or 2540 or Ed. Psych. 2430 or 3810, 11-12 hours upper-division psychology or educational psychology including Psychology 3150. (Ed. Psych. 3110, 4800, 4640 recommended.)

TEACHING AREAS AND ELECTIVES ....69 hours Special Education 3333, three-hour elective (4110 or 4130 recommended). Audiology and Speech Pathology (or Special Education 3310, 3710, 4040, 4510, 4400, 4720, 4930. Audiology and Speech Pathology 3010, 3050, 3065, 3200, 4610, 4650. Clinical Pracitcnum Courses (12-15 hours)* Audiology and Speech Pathology (or Special Education 4320-30-40: Special Education 4341, 4342.

TOTAL MINIMUM REQUIRED ..........181 hours

*Requires admission to Teacher Education Program.

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The following area of endorsement requires completion of requirements of Elementary (K-9) or secondary education curriculum.

E. Concentration in Partially Seeing

a. Completion of requirements of Elementary (K-9) or Secondary Education Curriculum;

b. Special Education and Rehabilitation 333, 4160, 4850, 4923;

c. Six quarter hours selected from the following: Special Education and Rehabilitation 3520, 4110, 4120, 4150, 4250, 5850.

d. Office Administration 2110 (for those lacking high school credits in typewriting).

TOTAL MINIMUM REQUIRED: Total hours required for endorsement in the above Special Education program appear on curriculum sheets available from the faculty advisers.

VI. Vocational-Technical Education

A. Business Education

See curricula for Secondary Education (7-12) p. 104 for General Education and Professional Education requirements.

63 quarter hours in business and economics to meet five business endorsement areas approved by the department advisor. A statement of requirements and alternative programs may be obtained from the coordinator of business education.

B. Distributive Education

GENERAL EDUCATION ............................... 71-73 hours Communications (12 hours) English 1010 or 1011; 1020; 1031 or 1032; 1033; speech elective.

Health and Physical Education (9 hours) Physical education or health electives.

Mathematics (3-4 hours) Mathematics elective.

Humanities (16 hours) Literature elective (4) plus 12 hours humanities electives.

Natural Sciences (12 hours) Natural science electives.

Psychology (7-8 hours) Psychology 2500, Psychology 2620 or Educ. Psych. 3110.

Social Studies Electives (12 hours) Economics 2110-20-30; plus 3 additional hours in any social studies other than economics.

PROFESSIONAL EDUCATION ..........42 hours Ed. C & I 3010*, 3020, 3030; Bus. Ed. 4010. Educ. Psych. 3810; Dist. Ed. 4310-20-30; 4130, 4110-20-30; Office Adm. 4310 or 4530 (3 hours); Ed. C I 4750; Special Education 3333.

SPECIALIZED COURSES ..................42 hours Business Adm. 1110, Office Adm. 4310 or 4320, Accounting 2110; Marketing 3110-20, 4140, 4310, 4150; Finance 3120, Management 3010; Business Law 4110; Voc. Tech. Ed. 4440; Textiles and/or Advertising electives (6 hours).

ELECTIVES ........................................... 23 hours

TOTAL MINIMUM REQUIRED ..........163 hours

*Requires admission to Teacher Education Program.

C. Industrial Education

Option 1. Concentration in Trades and Industries.
GENERAL EDUCATION.................67 hours
Communications (12 hours)
English (9 hours); speech elective (3 hours).
Health and Physical Education (9 hours)
Health and P.E. electives. (Both areas must be represented.)

Humanities (15 hours)
Literature elective (4 hours). Two additional areas taken from the following: philosophy, anthropology, art or art education, literature, foreign language, music or religious studies.

Mathematics (3 hours).
Natural Science (12 hours).
Psychology (4 hours)
Psychology 2500.

Social Studies (12 hours)
Two areas from the following must be represented: history, anthropology, economics, geography, political science, sociology.

PROFESSIONAL EDUCATION...........12 hours
Edu. C & I 3010, 3020, 3030* (select any two); Special Education 3333; Ed. Psych. 3810.

PROFESSIONAL INDUSTRIAL EDUCATION...42 hours
Vo. Tech. Ed. 3830, 3850, 3860, 3870, 4010, 4810, 4830, 4840, 4850, 4870, 4795.

OCCUPATIONAL COMPETENCY...........45 hours
Vo. Tech. Ed. 3810, 3811, 3812.

ELECTIVES................................20 hours
TOTAL MINIMUM REQUIRED........186 hours

*Requires admission to Teacher Education program.

Option 2. Concentration in Industrial Arts

GENERAL EDUCATION.................67 hours
Communications (12 hours)
English (9 hours); speech (3 hours).
Health and Physical Education (9 hours)
Health and P.E. electives. (Both areas must be represented.)

Humanities (15 hours)
Literature elective (4 hours); art or art education (6 hours); Additional hours taken from the following: history (upper division), philosophy, anthropology, foreign language (beyond introductory level), music or religious studies.

Mathematics (3 hours).
Natural Science (12 hours).
Psychology (4 hours).

Social Studies (12 hours).
Two areas from the following must be represented: history, anthropology, economics, geography, political science, sociology.

PROFESSIONAL EDUCATION...........10 hours
Edu. C & I 3010, 3020, 3030* (select one); Special Education 3333; Ed. Psych. 3000, 3810.

PROFESSIONAL INDUSTRIAL EDUCATION...30 hours
Vo. Tech. Ed. 3830, 3850, 3860, 4840, 4810, 4811.

TEACHING AREAS.......................63 hours
Communication (Drafting, Graphic Arts)
Vo. Tech. Ed. 1620, 2620, 3620, 3672, Journalism 3910.

Power and Transportation (Prime Movers, Electricity/Electronics)

Vo. Tech. Ed. 1610, 1630, 2611, 2630, 3630.

Construction and Manufacturing
Vo. Tech. Ed. 1640, 1661, 2641, 2652, 2660, 3640, 3651, 3662, 4660, 4662, 4670.

ELECTIVES..............................16 hours

TOTAL MINIMUM REQUIRED...........186 hours

*Requires admission to Teacher Education Program.

D. Agricultural Education
See page 60 for this program.

E. Home Economics Education
See page 163 for this program.

Departments of Instruction

Art and Music Education

Professors:
C. H. Ball (Head); Ph.D. Peabody; A. W. Humphreys (Emeritus), Ed.D. Illinois; J. H. Jones (Emeritus), Ed.D. Columbus; W. J. Julian; Ph.D. Northwestern; J. W. Robertson, Ed.D. Columbus.

Associate Professors:

Assistant Professors:

Art Education (141)

1511 Field Experiences in Teaching Art (1) Field experiences in which students perform tasks related to teaching and to teacher roles. S/NC. May be repeated for credit.

2100 Introduction to Art Education in the Schools (3) Art grades 1 through 12; growth and development, objectives, motivation, evaluation. Experiences with school media. 1 hour and 2 labs.

2110 Drawing Painting, and Design Activities in Elementary School (3) Prereq: 2100. 1 hour and 2 labs.

2120 Drawing Painting, and Design Activities in Junior and Senior High School (3) Prereq: 2100. 1 hour and 2 labs.

3110 Crafts in the Elementary School (3) Prereq: 2110. 1 hour and 2 labs.

3210 Art in Secondary School Program (3) Program planning; materials and equipment; relation to other school experiences. Classroom observation. Prereq: 9 hours in art education. 1 hour and 2 labs.

3511 Field Experiences in Teaching Art (1) Field experiences in which students perform tasks related to teaching and to teacher roles. S/NC. May be repeated for credit.

3920 Clay in School Program (3) Exploring methods of hand-built forms; glazing and firing procedures. Prereq: 2100. 1 hour and 2 labs.

3930 Textiles in School Program (3) Exploration of processes of weaving, stitching, batik, and silk screen. Prereq: 2100. 1 hour and 2 labs.

4100 Pre-Student Teaching Seminar (1) Orients student teachers to the off-campus centers and the student teaching program; describes the objectives and policies of the student teaching program; meets special needs of student teachers; and raises awareness of professional liability. The pre-student teaching seminars must be completed the quarter immediately preceding student teaching. Fall quarter student teachers complete pre-student teaching seminars spring quarter. Prereq: full admission to the Teacher Education Program. Undergraduate credit only. May not be repeated for credit. S/NC only.

4120 Designing of Teaching Aids for Art in School Program (3) Design and preparation of charts, exhibits, slides, films, and other teaching aids for art grades one through twelve. Prereq: 2100 or consent of instructor. 1 hour and 2 labs.

4130 Three-Dimensional Design in School Program (3) Exploration of wood, wire, plastic, and other sculptural materials. Prereq: 2100 or consent of instructor. 1 hour and 2 labs.

4150 Lettering, Posters, and Displays in the School Program (3) Design and layout, techniques and procedures. Prereq: 2100 or consent of instructor. 1 hour and 2 labs.

4160 Appreciation of the Arts in School Program (3) Prereq: 2100 or consent of instructor. 1 hour and 2 labs.

4355-50-70 Problems in Art Teaching (3, 3, 3) Prereq: consent of instructor.

4410 The Administration and Organization of Recreational Arts and Crafts Programs (3) Purpose of art activity in recreation; scope of activities, organizational procedures, resources, and coordination required in community arts and crafts programs.

GRADUATE

5000 Thesis

5002 Non-Thesis Graduation Completion (3-15)

5210 Organization, Administration, and Supervision of Art in the School Program (3)

5310 Art of Education (3)

5320 Program Development in Art Education (3)

5850-60-70 Problems in Art Education (3, 3, 3)

Music Education (707)

The curricula in music education provide for five areas of concentration; vocal music (voice principal); vocal music (piano or organ principal); elementary music education (voice principal); elementary music education (piano or organ principal); and instrumental music.

1019-20 Choral Laboratory (1,1) Choral conducting; methods and materials required of all music education majors. Prereq: Consent of instructor.

1511 Field Experience in Teaching Music (1) Field experiences in which students perform tasks related to teaching and to teacher roles. S/NC. May be repeated for credit.

2100 Basic Experiences in Classroom Music (3) Vocal, instrumental, rhythmic, listening, music reading, and creative activities. Prereq: Major in elementary of special education. 5 hours.

2110 Experiences in Classroom Music (3) Vocal, instrumental, rhythmic, listening, music reading, and creative activities. For music education majors. Prereq: Approval of instructor, one year of music theory. 2 hours and 1 lab.

2411-12-13 Methods, Materials, and Techniques of String Class Instruction (2, 2, 2) Structure, use, techniques of playing, care, and repair of principal instruments in school instrumental organizations. Emphasis on techniques necessary for basic understanding and effective teaching of the instruments. Practical use of current instrumental materials. 2 hours per week.

2421-22-23 Methods, Materials, and Techniques of Woodwind Class Instruction (2, 2, 2) Structure, use, techniques of playing; care and repair of principal instruments in school instrumental organizations. Emphasis on techniques necessary for basic understanding and effective teaching of the instruments. Practical use of current instrumental materials. 2 hours per week.
2431-32 Methods, Materials and Techniques of Band Class Instruction (2, 2) Structure, use, techniques of playing, care and repair of principal instru-
ments in school instrumental organizations. Emphasis on techniques necessary for basic understanding and effective teaching of the instru-
ments. Practical use of current instructional materials. 2 hours per week.

2433 Methods, Materials, and Techniques of Per-
cussion Class Instruction (2, 2) Structure, use, tech-
niques of playing, care and repair of principal instru-
ments in school instrumental organizations. Emphasis on techniques necessary for basic understanding and effective teaching of the instru-
ments. Practical use of current instructional materials. 2 hours per week.

3110 Teaching Music in the Primary Grades (3) Singing, rhythmic, instrument, listening, creative, and music reading activities; evaluation; materials appropriate for Grades K-3. For elementary education majors only. Prereq: 2100 or 2110; Educ. Psych. 2430, upper-
division standing.

3120 Teaching Music in the Intermediate and Upper Grades (3) Singing, rhythmic, instrumental, listening, creative, and music reading activities; evaluations; materials appropriate for grades 4-6; Primarily for elementary education majors. Prereq: Music 2100 or 2110; Educ. Psych. 2430 and upper-
division standing.

3130 Teaching Music in the Elementary School (3) Singing, rhythmic, instrument, listening, creative, and music reading activities; evaluation; materials appropriate for grades 4-6; Primarily for elementary education majors only. Prereq: Music 2110, Educ. Psych. 2430 or 3810, and two years of music theory.

3150 Teaching Music in Junior and Senior High School (3, 3) Procedures, techniques, curriculum, scheduling, administration, evaluation, materials and equipment, community relations. Prereq: Two years of music theory; coreq: 3511.

3410 Teaching Instrumental Music (3) Problems and techniques, materials, instrumentation and equipment selec-
tion. Prereq: 6 hours of credit from 2411-21-31 series; coreq, for 3410: 3511.

3511 Field Experiences in Teaching Music (1) Field experiences in which students perform tasks related to teaching and to teacher roles. S/N/C: May be repeated for credit.

4100 Pre-Student Teaching Seminar (1) Orients stu-
dent teachers to the off-campus centers and the student teaching program; describes the objectives and poli-
cies of the student teaching program, meets special needs of student teachers; and raises awareness of professional liability. The pre-student teaching seminar must be completed the quarter immediately preceding student teaching. Fall quarter student teachers complete pre-student teaching seminars spring quarter. Prereq: B.Ed. or Teacher Education Program. Undergraduate credit only. May not be repeated for credit. S/N/C only.

4350-40-70 Problems in Music Teaching (3, 3, 3) 4220-30 Choral and Instrumental Conducting (3, 3) Reading, conducting, and interpretation of vocal and instrumental music; suitable for school, church, and community groups. 4420—vocal music. 4430—instru-
mental music. Prereq: 1010-20 and 3 hours of credit from 2411-21-31 series and two years of music theory. Must be taken in sequence. 2 hours and 1 lab.

4441-42-43 Teaching Class Piano (1, 1, 1) For majors in music, music education, or elementary education. Prereq: music theory.


4460 Marching Band Techniques (3) Functions, or-
ganization, and direction of a school marching band. Prereq: Senior standing and approval of instructor; coreq: 3511.

4510 Choral Methods and Materials (3) Organization and administration, teaching techniques, choral litera-
ture, and interpretation. Prereq: 1010-20, 4420; one year of voice instruction; roles of music teacher; lecture hours and 2 one-hour labs; labs meet with 1010-20.

GRADUATE

5000 Thesis

5002 Non-Thesis Graduation Completion (3-15)

5150 Studies in Secondary School Music (3)

5210 Psychological Foundations in Music (3)

5220 Administration and Supervision of School Music (3)

5230 Comparative Teaching Procedures in Music Education (3)

5240 Evaluation Procedures in Music Education (3)

5250 Role of Music in Education (3)

5260 Music for Early Childhood (3)

5270 Studies of Music for Children in Primary Grades (3)

5320 Advanced Choral Literature and Conducting (3)

5350-60-70 Special Problems in Music Education (3, 3, 3)

5410 Advanced Band Literature and Conducting (3)

5410-20-30 The Talent Education Program of Shintichi Suzuki (2, 2, 2)

5710 Research in Music Education (3)

5820-20-30-40 Seminar, (3, 3, 3, 3)

Continuing and Higher Education (267)

Graduation Requirements

2010-20-30 Field Study in Education (3, 3, 3) 2150 Studies in Secondary School Music (3) 2420 Administration and Supervision of School Music (3) 2520 Comparative Teaching Procedures in Music Education (3) 2540 Evaluation Procedures in Music Education (3) 2560 Role of Music in Education (3) 2570 Music for Early Childhood (3) 2580 Studies of Music for Children in Primary Grades (3) 2590 Advanced Choral Literature and Conducting (3) 2550-60-70 Special Problems in Music Education (3, 3, 3) 25410 Advanced Band Literature and Conducting (3) 2510-20-30 The Talent Education Program of Shintichi Suzuki (2, 2, 2) 25710 Research in Music Education (3) 25820-20-30-40 Seminar, (3, 3, 3, 3)

Continuing and Higher Education (267)

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Continuing and Higher Education (267)

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methods of teaching, curriculum materials, school-community relationships, and school organizations.

3010 History and Philosophy of Education (3) Role of philosophy in education; realism, Neo-Thomism, pragmatism, existentialism, theories of maturational, perceptual, logic, and humanistic knowledge of major ideas, historical roots, and modern applications. Undergraduate credit only.

3020 Principles and Organization of Education (3) Relation to current educational problems and practices; organizing principles of content, process, and evaluation; socialization of professionalization of teaching. Undergraduate credit only.

3030 Social Foundations and Curriculum (3) Culture and psychology and societal factors on curriculum; principles, problems, and procedures of subject matter selection, sequence, grade placement, and time allotment; curriculum issues; state curriculum policies and practices. Undergraduate credit only.


3150 Analysis of Teaching (3) Use of interaction analysis to describe and classify verbal interchanges between teacher and student related non-verbal behavior; related non-verbal behavior. Consent of instructor.

3180 Microteaching (3) Emphasis upon the development of instructional skills. Students teach a series of lessons to small groups of students in elementary or secondary school. Lessons are videotaped, and the students and instructor evaluate the teaching behaviors recorded on the tape. Prereq: Consent of instructor.

3260 Teaching Language Arts in the Elementary School (3) Methods and materials in teaching writing, spelling, and language. Undergraduate credit only. Should be taken prior to or concurrently with C & I 3280. Prereq: Educ. Psych. 2430 or equivalent, admission to Teacher Education.

3270 Teaching Social Studies in the Elementary School (3) Methods and materials. Undergraduate credit only. Prereq: Educ. Psych. 2430 or equivalent admission to Teacher Education.

3280 Teaching Developmental Reading in the Elementary School (3) Beginning course in sequence designed to enable preservice teachers to develop skills and understandings necessary for operation of successful developmental reading program in the elementary school. Prereq: Educ. Psych. 2430 or equivalent admission to Teacher Education.

3281 Teaching Developmental Reading in the Elementary School (3) Second course in sequence designed to enable preservice teachers to develop skills and understandings necessary for operation of successful developmental reading program in the elementary school. Prereq: Educ. Psych. 2430 or equivalent admission to Teacher Education.

3310 History of Education (3)

3320 History of Education in the United States (3)

3350 Teaching Elementary School Mathematics (3) Emphasis on development and understanding necessary for operation of successful mathematics program in the elementary school. Prereq: Educ. Psych. 2430 or equivalent; Mathematics 2110-26-30; admission to Teacher Education. Must be taken prior to student teaching.

3351 Teaching Elementary School Mathematics (3) Methods of teaching elementary school mathematics. Prereq: MATH 2150-2151.

3510 Books and Related Materials for Children (3) (Same as Library and Information Science 3510.)

3511-12-13 Field Experiences in Teaching: Elementary (1, 1, 1) Field experiences in which students perform tasks related to teaching and to teacher roles. Must be taken before student teaching. Prereq or coreq: 3511-12-13; Educ. Psych. 2430 to be taken before or concurrently. Prereq: 3511-12-13; Educ. Psych. 2430 to be taken before or concurrently. Prereq: Consent of Ed. C & I 3511 and Admission to Teacher Education. Prereq: Consent of Ed. C & I 3511, 3512, and Admission to Teacher Education. S/N.C.

3520 Books and Related Materials for Young People (3) (Same as Library and Information Science 3520.)

3531-22-23 Field Experiences in Teaching: Secondary (1, 1, 1) Field experiences in which students perform tasks related to teaching and to teacher roles. Must be taken before student teaching. Must be taken in sequence. Prereq: and 3520 and 3522 and 3523 and 3531 and 3532 and Admission to Teacher Education. S/N.C.

3531-32-33 Field Experiences in Teaching: Social Foundations (1, 1, 1) For description, see 3521-22-23. S/N.C.

3561 Teaching of Speech and Drama, Grades 7-12 (3) For description, see 3563.

3562 Teaching of Modern Foreign Languages: Oral Communication Skills, Grades 7-12 (3) For description see Educ. C & I 3565. This course and Educ. C & I 3563 are required for certification in foreign languages. Must be taken concurrently with 3563.

3563 Teaching of Modern Foreign Languages: Reading, Literature, Grammar, and Composition, Grades 7-12 (3) For description see Educ. C & I 3565. This course and Educ. C & I 3562 are required for certification in foreign languages. Must be taken concurrently with 3562.

3565 Teaching of Social Studies, Grades 7-12 (3) Purposes, techniques, materials, and evaluation; directed observation in public schools; preparation of teaching plans and materials. Undergraduate credit only. Prereq: Educ. Psych. 3810 or equivalent.

3564 The Teaching of Science, Grades 7-12 (3) For description, see 3563.

3566 The Teaching of Latin, Grades 7-12 (3) For description, sees 3563. (Same as Classics 4270.)

3567 Teaching Language, Composition, and Speaking, Grades 7-12 (3) For description, see 3565. Both this course and Educ. C & I 3565 are required for certification in English.

3568 Teaching Reading, Literature, and Listening, Grades 7-12 (3) For description, see 3563. Both this course and Educ. C & I 3567 are required for certification in English.

3720 Teaching Science in the Elementary School (3) Methods and materials, undergraduate credit only. Prereq: Educ. Psych. 2430 or equivalent, admission to Teacher Education.

3751 Teaching of Mathematics: Numerical and Algebraic Concepts, Grades 7-12 (3) For description, see Educ. C & I 3563. Both this course and 3752 are required for certification in mathematics.

3752 Teaching of Mathematics: Geometry and Analysis, Grades 7-12 (3) For description, see Educ. C & I 3563. Both this course and 3751 are required for certification in mathematics.

3753 Teaching Strategies and Issues in Social Studies Education (3) Emphasis on current curricular approaches and issues with practical learning-activities in Social Studies Education. Both this course and Education 3653 are required for certification in Social Studies. Prereq: 3563.

4010 International Education: Europe and the Americas (3) Historical, philosophical, and sociological foundations; special reference to England, USSR, France and Germany.

4100 Pre-Student Teaching Seminar I (1) Orients student teachers to the off-campus centers and the student teaching program; describes the objectives and policies of the preservice teacher program, meets special needs of student teachers; and raises awareness of professional liability. The pre-student teaching seminar must be completed the quarter immediately preceding the student teaching. Fall quarter student teachers complete pre-student teaching seminars spring quarter. Prereq: Full admission to the Teacher Education Program. Undergraduate credit only. May not be repeated for credit. S/N.C.

4090 Special Topics (1-6) Topics to be assigned. May be repeated. Will be offered for letter grade or S/N.C.

4091 Independent Study (1-6) Topics to be assigned. May be repeated. Will be offered for letter grade or S/N.C.

4092 Supervised Readings (1-6) Topics to be assigned. May be repeated. Will be offered for letter grade or S/N.C.

4111 Non-Western Education: Anthropological Approaches (3) (Same as Anthropology 4150.)

4150 School Library Administration (3) (Same as Library and Information Science 4150.)

4210 Curriculum in Elementary School Social Studies (3) Survey of current curricular approaches and trends in elementary school social studies. Prereq: Teaching experience or student teaching.

4215 Teaching Elementary School Science I (3) Methods and materials used in teaching of science in elementary school, development of diagnostic/corrective programs. Not open to students with recent course or background in teaching of elementary school science.

4216 Teaching Elementary School Science Mathematics (3) Methods and materials used in teaching of mathematics in elementary school. Developmental and diagnostic/corrective programs. Not open to students with recent course or background in teaching of elementary school mathematics.

4217 Teaching Elementary School Language Arts (3) Methods and materials used in teaching of elementary school language arts. Development of functional relationships with other curriculum areas, diagnostic procedures, and corrective work. Not open to students with recent course or background in teaching of elementary school language arts.

4230 Introduction to Diagnosis and Correction of Classroom Arithmetic Difficulties (3) Classroom strategies for diagnosing and correcting arithmetic difficulties, focusing upon content typically presented from grades 1-8. Prereq: 3350 or 3371 or equivalent.

4240 Classroom Instructional Organization (3) Developing understandings and skills relating to group, individualization, space utilization, organization, grading, integration, and achieving an effective social environment. For elementary classroom teacher. Prereq: Senior standing.

4250 Initiating the Activities Program (3) Prereq: Educ. Psych. 2430, six quarter hours of methods of teaching in the elementary school, and junior or senior standing.

4280 Orientation to Corrective Practices for Classroom Reading Problems (3) An orientation to the basic practices in diagnosing and correcting reading problems in the regular classroom. The inexperienced or beginning teacher deals with the collection and interpretation of reading behavior information and the prescription of corrective teaching. Prereq: A course in the reading of regular readers.

4300 Developmental Reading in Secondary School and Community College (3) An introductory course covering approaches and materials for teaching basic reading skills and strategies for solving classroom arithmetic problems and/or laboratories at the middle school, secondary school, and community college level.

4304 Developing Reading Skills in Content Fields (3) Study of approaches and techniques for the teaching of reading skills in content areas of the school program. Emphasis on middle school and secondary school program.

4400 Problems in improvement of instruction (1-9) Special conferences and workshops, or inservice programs designed for improvement of instruction. May be repeated. Maximum credit 9 hours. S/N.C.

4410 Educational Sociology (3) (Same as Sociology 4410.)

4430 Practicum in Teaching in the Elementary School (3) Experience in elementary school classroom teaching designed for students seeking elementary certification who have obtained degrees in areas other than elementary education and who have obtained degrees and certification in areas other than this. Application must be filed with student teaching office at least one quarter prior to registration for practicum. Prereq: 3260-70-80, 3350, 3720 or equivalent and admission to Teacher Education.
Graduate instruction in the Department of Curriculum and Instruction provides opportunities to improve the effectiveness of educational service in a number of areas.

5000 Thesis
5002 Non-Thesis Graduation Completion (3-15)
5040 Studies and Theory in Language Development (3)
5070 Seminar in Intercultural Education (3)
5090 Special Topics (1-6)

5091 Independent Study (1-6)
5092 Supervised Readings (1-6)
5100 History of European Education (3)
5111-12 History of American Education (3,3)
5120 Principles of Education (3)
5140 Comparative Philosophies of Education (3)
5141 Pragmatism in Education (3)
5142 The Existent Student (3)
5150-60-70 Seminar (1-3, 1-3, 1-3)
5180-90-5200 Educational Specialist Research and Thesis (3, 3, 3)
5210 Seminar in International Education: Asia and Africa (3)
5211 Instructional Strategies in Elementary School Social Studies (3)
5212 Programs and Materials in Teaching Elementary School Social Studies (3)
5230 Advanced Study and Practicum in Diagnosis and Remediation of Arithmetic Difficulties (3)
5240 Creative Thinking and Expression in Elementary School (3)
5250 Secondary School Instruction (3)
5260 Philosophy of Education (3)
5261 Educational Classics (3)
5270 The Elementary School Curriculum (3)
5280 Teaching Language Arts in the Elementary School (3)
5281 Teaching Social Studies in the Elementary School (3)
5282 Teaching Science in the Elementary School (3)
5283 Programs and Materials in Teaching Elementary Science (3)
5284 Seminar in Teaching Elementary Science (3)
5290 Teaching of Mathematics in the Elementary School (3)
5291 Programs and Materials in Elementary School Language Arts (3)
5292 Seminar in Research and Theory in Teaching Mathematics in the Elementary School (3)
5301 Developmental Reading in the Elementary and Middle School (3)
5302 Psychology of Reading (3)
5303 Methods and Materials for Teaching Critical Reading (3)
5304 Programs and Materials for Reading Instruction (3)
5305 Trends and Issues in Teaching Reading (3)
5306 Teaching Reading to the Linguistically Different Learner (3)
5307 Assessment and Correction of Classroom Language Arts Difficulties (3)
5350 Curriculum Development and Evaluation (3)
5360 Curriculum Development at the Local Level (3-9)
5365 Mathematics Laboratories in Elementary School (K-8) (3)
5379 Diagnosis and Correction of Classroom Reading Problems (3)
5380 Practicum in Diagnosis of Reading Problems (3)
5381 Practicum in Remediation of Reading Problems (3)
5382 Developmental Reading Practicum (3)
5460 Problems in Improvement of Instruction (1-3)
5410 The High School Curriculum (3)
5510 Education in Cultural Perspective (3)
5570 The Junior High and Middle School Curriculum (3)
5580 Curriculum Planning and Development (3)
5610 Educational Statistics (3)
5620 Direction and Supervision of Student Teaching (3)
5630 Individualization of Instruction (3)
5640 Newer Trends in Elementary Education (3)
5650 Curriculum Laboratory for Elementary Schools (3-6)
5670 Curriculum for Early Childhood (K-3) (3)
5680 Teacher-Parent-Community Relations (3)
5690 Design of Instructional Media (3)
5691 Advanced Production of Audiovisual Software
5692 Evaluation of Instructional Media (3)
5693 Administering Instructional Media Programs (3)
5694 Utilization of Educational Television and Radio (3)
5695 Research in Instructional Media (3)
5696 Practicum Experiences in Instructional Media (3)
5697 Application of Instructional Media (3)
5710 Techniques of Research in Education (3)
5720 Observation and Analysis of Instruction (3)
5790 Career Development: Workshop (1-6)
5800 Seminar in Cooperative Curriculum Research (3)
5810 Introduction to Data Processing in Education (3)
5820 Seminar in the Teaching of Mathematics (3)
5825 Teaching Mathematics in the Middle and Junior High School (3)
5830 Seminar in Mathematics Education (3)
5835 Teaching Mathematics in the Senior High School and Community/Junior College (3)
5841 Trends and Issues in Early Childhood (3)
5842 Applications of Theory in Early Childhood Education (K-3) (3)
5843 Seminar in Early Childhood Education (3)
5844 Mathematics in Early Childhood Education (K-3) (3)
5845 Social Studies and Science in Early Childhood Education (K-3) (3)
5846 Language Arts in Early Childhood Education (K-3) (3)
5899 Field Experience (1-6)
5900 Seminar in the Teaching of English in the Secondary School (3)
5901 Linguistics and the Teacher of English (3)
5902 Teaching Composition in the High School (3)
## Educational Administration and Supervision (292)

**Graduate Courses**

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<td>6710 Advanced Educational Statistics (3)</td>
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<td>6720 Interpretation of Data (3)</td>
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<tr>
<td>6730 Evaluation in Curriculum Planning: Theory and Application (3)</td>
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<td>6731 Advanced Studies in Curriculum (3)</td>
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<td>6830 Studies in Mathematics Education (3)</td>
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<td>6850 Principles of Educational Leadership (3)</td>
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<td>6889 Internship (1-4)</td>
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<td>6960 Advanced Studies in Secondary Science and Environmental Education (3)</td>
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**Education (289)**

**Graduate Courses**

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<tr>
<td>6001 Trans-College Seminar (1)</td>
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<tr>
<td>6010 Doctoral Research and Dissertations</td>
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<td>6010 Seminar in Teaching the Social Studies (3)</td>
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<td>6020 Research and Theory in Teaching Reading (3)</td>
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<td>6030 Seminar in Reading and Language Arts (3)</td>
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<td>6032 Organization and Administration of Reading Programs (3)</td>
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<td>6040 Seminar in Curriculum and Instruction (1, 1, 1)</td>
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<td>6060 Advanced Studies in Elementary Education (3)</td>
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<td>6080 Advanced Seminar in Philosophy of Education (3)</td>
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<td>6081 Phenomenology and Education (3)</td>
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<td>6082 Philosophical Analysis and Education (3)</td>
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<td>6150 Education as Social Policy (3)</td>
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<td>6201 Seminar in Elementary School Social Studies Research (3)</td>
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<td>6230 Programs for Curriculum Improvement (3)</td>
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<tr>
<td>6240 Interpretation of Research in Curriculum and Instruction (3)</td>
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<tr>
<td>6250 Seminar in History of Education (3)</td>
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<tr>
<td>6252 Advanced Studies in Elementary School Science (3)</td>
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<td>6350 The Professional Education of Teachers (3)</td>
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<td>6400 The Dynamics of Educational Change (3)</td>
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<td>6500 Advanced Studies in Early Childhood Education (3)</td>
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<td>6510 Advanced Studies in Elementary School Language Arts (3)</td>
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<td>6511 Advanced Studies in Education Anthropology (3)</td>
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<tr>
<td>6610-20-30 Seminar in Dissertation Proposal Writing (2,2,2)</td>
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</table>

**Associate Professors:**

H. F. Atkinson, Ed.D. Tennessee (Vice Chancellor for Student Affairs); G. W. Harris, Jr., Ph.D. Michigan; P. M. Hussen, Ed.D. Stanford.

## Education Supervision (292)

**Graduate Courses**

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>6710 Advanced Educational Statistics (3)</td>
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<td>6720 Interpretation of Data (3)</td>
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<tr>
<td>6730 Evaluation in Curriculum Planning: Theory and Application (3)</td>
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<tr>
<td>6731 Advanced Studies in Curriculum (3)</td>
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<tr>
<td>6830 Studies in Mathematics Education (3)</td>
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<td>6850 Principles of Educational Leadership (3)</td>
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<td>6889 Internship (1-4)</td>
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<tr>
<td>6960 Advanced Studies in Secondary Science and Environmental Education (3)</td>
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</tbody>
</table>

Associate Professors:


## Education Supervision (292)

**Graduate Courses**

<table>
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<tr>
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<td>5000 Thesis</td>
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<td>5002 Non-Thesis Graduation Completion (3-15)</td>
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<tr>
<td>5100 Internship in Educational Administration (3)</td>
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<td>5130 Introduction to Educational Administration (3)</td>
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<tr>
<td>5180-90-5200 Educational Specialist Research and Thesis (3, 3, 3)</td>
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<td>5220 Philosophy and Theory in Educational Administration (3)</td>
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<td>5230 Seminar In The Behavioral Sciences for Educational Administration (3)</td>
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<td>5290 The Politics of Education (3)</td>
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<td>5310 School Administration and Civil Rights issues (3)</td>
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<td>5420 District Level Administration (3)</td>
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<td>5430 Building Level Administration (3)</td>
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<td>5440 Introduction to Law, Finance, and Business Management at the Building Level (3)</td>
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<td>5450 Organization of the School Program (3)</td>
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<td>5460 Personnel Administration: Local School (3)</td>
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<td>5470 Introduction to School Facility Planning (3)</td>
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<td>5480 Instructional Supervision—Local School (3)</td>
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<td>5530 Introduction to Educational Planning (3)</td>
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<td>5540 Tennessee School Law (3)</td>
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<td>5560 Research for Educational Administrators (3)</td>
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<td>5580 Seminar in Communication Skills for Educational Administrators (3)</td>
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<tr>
<td>5711 Problems in Educational Administration and Supervision: School Operation (3)</td>
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<td>5712 Problems in Educational Administration and Supervision: Higher Education (3)</td>
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<td>5713 Problems in Educational Administration and Supervision: Preparation Programs (3)</td>
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<td>5716 Problems in Educational Administration and Supervision: Community Education (3)</td>
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<td>5751 Problems in Educational Administration and Supervision: Theory (3)</td>
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<td>5753 Problems in Educational Administration and Supervision: Transportation (3)</td>
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<td>5754 Problems in Educational Administration and Supervision: Business Management (3)</td>
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<td>5756 Problems in Educational Administration and Supervision: School Plant (3)</td>
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<td>5758 Problems in Educational Administration and Supervision: School Law (3)</td>
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<td>5759 Problems in Educational Administration and Supervision: Suspension (3)</td>
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<td>5770 Maintenance of School Plants (3)</td>
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<td>5810 Survey Research Methods (3)</td>
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<td>5850-60-70 Independent Study In Educational Administration (3, 3, 3)</td>
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<td>5890 Decision Making and Decision Theory In Educational Organizations (3)</td>
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<td>5900 Special Topics (3)</td>
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<td>5910-20-30 Problems In Lieu of Thesis (3, 3, 3)</td>
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<td>5950 Elementary Administrators Seminar (3)</td>
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<td>5960 Middle School Administrators Seminar (3)</td>
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<td>5970 Secondary Administrators Seminar (3)</td>
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<td>6000 Doctoral Research and Dissertation</td>
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<td>6040 Seminar in Educational Administration and Supervision (1, 1, 1)</td>
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<td>6100 Internship in Educational Administration (3)</td>
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<td>6110 Administrator Update (3)</td>
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<td>6190 Administration in Higher Education (3)</td>
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<td>6220 Programs for the Professional Preparation of Educational Administration and Supervision (3)</td>
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<td>6340 Current Trends in School Law (3)</td>
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<td>6380 Instructional Supervision—School District (3)</td>
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<td>6420 School Board/Superintendency Relationships (3)</td>
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<td>6440 School Business Management (3)</td>
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<td>6450 Grant and Contract Proposal Preparation (3)</td>
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<td>6460 School Personnel Administration (3)</td>
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<td>6480 Special Topics in School Personnel Administration (3)</td>
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<td>6530 Futuristic Educational Planning Methods (3)</td>
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<td>6540 Contemporary Economics and Educational Finance (3)</td>
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<td>6550 State-Federal Relations in Education (3)</td>
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</table>
2220 Career Development (3) Vocational opportunities and aspirations, including self-appraisal, career planning, decision making, occupational exploration, and vocational development.

2299 Developmental Laboratory (1) Repeatable to three credit hours. Specialized laboratory experiences in the improvement of skills related to academic, personal, or career development.

2450 Child Study (3) Child learning and development: study of individual children, ages 5-12. Prereq: Psychol. 2500 or equivalent; coreq: either Educ. Psych. and Guidance 2000 or a 2 hr/week field experience.

3000 Field Experience (1) Field experiences in working with children and youth and their teachers. Students will perform various teaching tasks and be given opportunity to act in teaching roles. May be repeated for a total of 6 hours.

3100 Application of Learning Theory to Classroom Teaching (4) Overview of learning theories such as contiguity theory, reinforcement theory, cognitive theory, and statistical models with particular emphasis on concepts applicable to classroom teaching. Two-hour lab and/or field experience required. Prereq: Psychol 2500.

3110 Classroom Behavior Management (4) Student will develop understanding of behavior management procedures and skill in utilizing behavior management procedures in shaping pupil classroom behaviors. Prereq: Psychol 2500.

3550 Child Psychology (4) (Same as Psychology 3500.)

3560 Individual Skills for Campus Leaders (3) Knowledge and skills for effectively managing leadership and administrative roles in campus organizations.

3810 Educational Psychology: Adolescence (3) Physical, emotional, intellectual, social, career, and ethical dimensions of adolescent development; major emphasis given to effective communication with adolescents within the educational setting. Prereq: Psychol 2500 or equivalent; coreq: either Educ. Psych. and Guidance 3000 or a 2-hour/week field experience.

4100 Pre-Student Teaching Seminar (1) Orients student teachers to the off-campus centers and the student teaching program; describes the objectives and policies of the student teaching program, meets special needs of student teachers, and raises awareness of professional liability. The pre-student teaching seminars must be completed the quarter immediately preceding student teaching. Fall quarter student teachers complete prestudent teaching seminars during quarter. Prereq: full admission to the Teacher Education Program.

4110 Psychology of Sex Role Development (3) Examination of both a theoretical and research base, of factors which contribute of sex role development with attention to changes in sex role definition in society and role of education in these changes. Aimed at the undergraduate or graduate student with minimal background in behavioral sciences. (Same as Psychology 4110.)

4130 Mental Health (3) Studies and exploration of positive mental health. Application of mental health criteria to study of one's self based on a battery of personality assessment instruments.

4350-60-70 Special Topics and Problems (1-3, 1-4, 1-6) May be offered for letter grade or S/N only and may be repeated.

4440 General Evaluation Procedures for Public Schools (3) Prereq: 2430 or equivalent.

4551-52-53 Student Leadership Workshops (1, 1, 1) Series of small group and individualized experiences to prepare student leaders to the off-campus centers and the student teachers to the student teaching program; teaches knowledge and skills required of students in leadership roles. Sections are designed for resident student teachers and raises awareness of their needs of student teachers; and raises awareness of private intervention approaches.

4550) The Construction of Classroom Tests (3) Concerned with teacher-made classroom tests: instructional objectives, principles of test construction, item analysis, evaluating a test's reliability and validity, interpretation of test scores, relationship between testing and grading.

4700 Assertiveness Training (1) Readings and group exploration of the principles of assertiveness and the application of assertive behavior in a variety of settings.

4780 Advanced Child Study (3) Prereq: 2430 or S810 or consent of instructor.

4800 Psychology of the Disadvantaged Child (3) Significant behavioral differences and causes; appropriate intervention approaches.

4810 Psychoeducational Aspects of Appalachian People (3) Exploration of psychology of people of Appalachian region through an examination of history, culture, and role of education.


4890 Differential Psychology (3) Nature and sources of individual differences in behavioral characteristics, and differences between racial, ethnic, socioeconomic, sex, and other groups.

GRADUATE

5000 Thesis

5002 Non-Thesis Graduation Completion (3-15)

5040 Guidance and Pupil Personnel Services in Education (3)

5050 Children and Adolescents (3)

5060 Group Approaches with Students (3)

5070 Seminar in Elementary School Guidance (2)

5099 Field Work in School Psychology (1-6)

5100 Developmental Psychology (3)

5101 Advanced Psychology of Adolescence (3)

5110 Psychology of Women (3)

5111-12-13 Seminar in Current Issues in School Psychology (1, 1, 1)

5120 Seminar in Bias-Free Counselling (3)

5140-50-80 Psychoeducational Assessment (3, 3, 3) Coreq: Guidance 2500 or equivalent; coreq: either Educ. Psych. and Guidance 3000 or a 2-hour/week field experience.

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

5180-90-5200 Educational Specialist Research and Thesis (3, 3, 3)

5210 Interpreting Published Articles: Statistics (3)

5220 Interpreting Published Articles: Research Design (3)

5310 Diagnostic and Corrective Teaching (3)

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

5320 Advanced Classroom Behavior Modification (3)

5330 Theory and Research in Human Learning (3)

5331 Current Developments in Human Learning (3)

5340 Group Dynamics (3)

5350 Educational Applications of Cognitive Theories (3)

5560 The College Student (3)

5720 Evaluation in Education (3)

5780 Career Development: Theory and Research (3)

5785 The Construction of Classroom Tests (3) Concerned with teacher-made classroom tests: instructional objectives, principles of test construction, item analysis, evaluating a test's reliability and validity, interpretation of test scores, relationship between testing and grading.

6560 Legal Foundations of Public Education (3)

6580 Seminar in Managing Conflict (3)

6750-60-70 Independent Studies in Educational Administration and Supervision (3, 3, 3)

6800 Administration of Complex Educational Organizations (3)

6870 Advanced Study in School Facility Planning (3)

6900 Special Topics (3)

6981 Specialized Seminar: School Operation (3)

6982 Specialized Seminar: Higher Education (3)

6983 Specialized Seminar: State School Administration (3)

6984 Specialized Seminar: Preparation Programs (3)

6990 Specialized Doctoral Seminar in Politics of Education (3)

6992 Specialized Seminar: Finance (3)

6994 Specialized Seminar: Business Management (3)

6995 Specialized Seminar: Personnel (3)

6996 Specialized Seminar: School Plant (3)

6997 Specialized Seminar in Organization and Structure (3)

6998 Specialized Seminar: School Law (3)

6999 Specialized Seminar: Supervision (3)

Evaluating the construct validity and reliability of the Global Self-Efficacy Scale.
School of Health, Physical Education, and Recreation
Madge M. Phillips, Director

At the undergraduate level, professional preparation programs are offered in health, physical education, dance, and recreation. For information on graduate programs leading to the Master of Science, the Master of Public Health, Educational Specialist, the Doctor of Education, or the Doctor of Philosophy degrees, see the Graduate Catalog. The School of Health, Physical Education, and Recreation also provides activities programs for all students in physical education and service courses in health and safety.

Health and Safety

Professors:

Associate Professors:

Assistant Professors:
- M. D. Brinton, Re. D. Indiana.

Instructors:
- D. S. Holloway, M.S. Tennessee.

Public Health (839)

1119 Principles in Personal Health (3) To develop ability to approach health scientifically and to develop justified confidence in judgments affecting personal health.
2040 Seminar in Human Sexuality (2) Problems and responsibilities of being male and female. S/NC.
2050 Seminar in Drug Use and Abuse (2) Intensive look at problems related to use and abuse of drugs. S/NC.
3000 Foundations of Health Science (3) In-depth study of content areas relating to personal health and contemporary health problems, i.e., mood modifying substances, consumer health, international health, personal health practices, reciprocal relationships involving man, disease, and environment. (Same as School Health 3000.)
3210 First Aid and Emergency Care (4) Theory and practice of first aid and emergency care. Instruction in medical self-help. Course leads to Red Cross Certification in Advanced First Aid and Emergency Care. (Applicant must be at least 18 years of age for certification.) (Same as School Health 3210.)
3310 Communicable and Noncommunicable Diseases (3) Modern concepts of diseases; etiology of common communicable and chronic disease problems including prevention and control. Prereq: One year of biological science and one course in bacteriology.
3320 Sanitation (3) History of sanitary awakening; disease-producing relationships and controls of water, sewage, refuse, milk, meat and other foods, air, insects, and soil; sanitation of homes, swimming pools, industrial plants, markets, restaurants, camps, and public bathing places. Healthful school living as affected by buildings and grounds, lighting, acoustics, thermal control, and safety of Student Services. Prereq: one year of biological science, one course in microbiology. 2 hours and 1 lab.
3330 Introduction to Public Health (3) Philosophy, organization, and functions of federal, state, and local official and voluntary public health agencies. Includes periodic field trips.
4100 Pre-Student Teaching Seminar (1) Orient students to the off-campus centers and the student teaching program; describes the objectives and policies of the student teaching program, meets special needs of student teachers; and raises awareness of professional liability. The pre-student teaching seminars must be completed the quarter immediately preceding student teaching. Fall quarter student teachers complete pre-student teaching seminars during spring quarter. Prereq: Admission to the Teacher Education Program. Undergraduate credit only. May not be repeated for credit. S/NC only.
4120 Community Health Problems—Alcoholism (3) Explores problems of alcoholism regarding overall health of community. Emphasis placed on factors making alcoholism a serious public health problem. Various types of educational programs to control the disease covered.
4130 Community Health Problems—Suicide (3) Explores problems of suicide regarding overall health of community.
4140 Community Health Problems—Death Education (3) Explores ramifications of health and dying as related to personal and community health.
4210 Urban and Industrial Health (3) Health problems created by a burgeoning population and the megalopolis, industrial health problems of concern to management, supervisor, and industrial worker, control of occupational diseases and accidents, and other conditions incidental to industry.
4220 Communications for Better Health (3) Selective study of communications in health enterprise. Consideration in logical progression the problems of transmitting current and new information to practitioners; communications among members of modern health teams, among health information.
4410 Consumer Health and Safety Education (3) Survey major consumer health and safety problems; selecting, purchasing, and financing of safety and medical services.
4411 Instructor’s Advanced First Aid and Emergency Care (3) Designed to teach First Aid. Satisfactory completion qualifies one for American National Red Cross Certification as an Advanced First Aid for Emergency Care Instructor. (A requirement for this certification is that an applicant must be at least 21 years of age.) Prereq: 3210 or valid Advanced First Aid and Emergency Care Certificate.
4412 Cardiopulmonary Resuscitation (2) Theory and techniques necessary 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 will be stressed. (Same as School Health 4412.)
4420 Drug Abuse Education (3) Drug abuse problem and suspected causes; pharmacology of drugs and effects on society and methods of drug abuse education.
4430 Women’s Health (3) Study of factors influencing women’s health and women as consumers of the nation’s health service delivery systems.
4700-10-20 Field Practice in Public Health (3, 3, 3) Field practice in public health under supervision of public health profession. S/NC.
4730 Workshop in Public Health Education (3) For teachers, nurses, case workers, sanitarians, and other voluntary and public health agency personnel; emphasizes the problem-solving approach through small group interaction, case method, and critical incident technique. May be repeated for credit.
4740 Public Health Fieldwork (6) Field practice in public health under the supervision of public health profession. S/NC.
4800-50-60 Problems in Public Health Education (1, 1) Individual identification and study of current problems in public health education. Extensive reading of literature required.

Graduate:
5002 Non-Thesis Graduation Completion (3-15)
5010-20-30 Workshop in Public Health (3-6, 3-6, 3-6)
5070-60-90 Field Practice and Seminar in Public Health (3-5, 3-5, 3-5)
5110 Environmental Health (3-5)
5120-30 Occupational Health and Safety (5, 5)
5150 Industrial Toxicology (3)
5220 Health and Sickness (3)
5410 Epidemiology (3)
5420 Administration of Public Health (3)
5430 Vital and Medical Statistics (4)
5440 Methods and Materials in Public Health Education (4)
5540 Factors in Problem Solving for Community Health (5)
5550 The Public Health Educator in Community Organization and Development (4)

College of Education
5560 Functions and Roles of the Public Health Educator (3)
5580 Physical Activity and Health (5)
5705 Advanced Professional Health Education: Health Planning I (3-5)
5710 Advanced Professional Health Education: Health Planning II (3-5)
5715 Advanced Professional Health Education: Health Planning III (3-5)
5730 Dental Health Education (3-5)
5735 Emergency Medical Services (3-5)
5745 Family Health Unit (3-5)
5750 Health and Medical Care Legislation and Law (3-5)
5755 Health Facilities Administration (3-5)
5760 Health Services Administration (3-5)
5785 Occupational Health Unit (3-5)
5790 Self-Care Unit (3-5)
5795 The Training of Paramedical Personnel (3-5)
5840-50-60 Problems in Public Health Education (1-3, 1-3, 1-3)
6000 Doctoral Research and Dissertation
6030 Critical Analysis of Writing and Research in Health Education (3)
6050-60 Seminar in Health Education (3, 3)
6210 Health Aspects of Gerontology (3)
6220 Seminar on the Nation's Health (3)
6230 International Health (3)

Safety (890)
3520 Principles of General Safety (3) Deals with principles, practices and procedures in general safety. Covers safety problems in school traffic, recreation, industry, home, and other public areas.
4410 Driver and Traffic Safety Education (5) Preparation of teachers of driver education in schools and colleges. Students are required to teach at least one non-driver. Valid driver's license required. 3 hours and 2 labs.
4412 Cardiopulmonary Resuscitation (2) (Same as Public Health 4412).
4420 Advanced Driver and Traffic Safety Education (5) Development of competency in teaching of driver education through use of simulation, multimedia and multiple-car driving range. Emphasis placed on teaching skills and supervision. Prereq: 4410.
4430 Sports Safety (5) Accident prevention and injury control in sports activities; philosophy of sports safety; human environmental factors and their interactionships in sports injury and their control; risk-taking and decision solution strategies; and contributions of sports medicine to safety. 3 hours of lecture and 2 hours of lab.
4720 Workshop In Safety Education (3-6) Deals with special safety education problems. For advanced undergraduates, graduate students, teachers, supervisors, and administrators. May be repeated for credit.

GRADUATE
5000 Thesis
5002 Non-Thesis Graduation Completion (3-15)
5320 Behavioral Problems in Safety Education and Accident Prevention (3)
5330 Problems and Research in Accident Prevention (3)
5340 Organization, Administration and Supervision of Safety Programs (3)
5350 Civil and Defense Education (3)
5720-30-40 Graduate Workshop in Safety (3-6, 3-6, 3-6)
5810-20-30 Problems In Safety (1-3, 1-3, 1-3)
5870-80-90 Current Issues in Safety Education (1, 1, 1)
6010-20-30 Internship and Research in Safety Education (3, 3, 3)

School Health (898)
3000 Foundations of Health Science (3) (Same as Public Health 3000.)
3210 First Aid and Emergency Care (4) (Same as Public Health 3210.)
3410 School Health Instruction (3) Selection of health content in school curriculum.
3420 School Health Services (3) Development, maintenance, and protection of health of students including examination, screening, special services, communicable disease control, emergency care, and school health records.
3510 The School in Community Health (3) Role of teacher in community health education; school's responsibility in promoting healthful living and the place of existing media and agencies in program. Not open to health and physical education majors.
3610 Methods in Elementary Health Instruction (3) Preparation and presentation of health topics. Teaching method is emphasized and student participation stressed. Required for elementary teachers. Prereq: 3510 or Public Health 1110 or Nutrition 1230.
3620 The Teaching of Sex Education (3) Trends, content, methods, and materials.
3650 Methods in Secondary Health Instruction (3) Preparation and presentation of health topics. Teaching method is emphasized and student participation is stressed. Prereq: 3140.
4100 Pre-Student Teaching Seminar (1) Orientates student teachers to the off-campus centers and the student teaching program; describes the objectives and policies of the student teaching program, meets special needs of student teachers; and raises awareness of professional liability. The pre-student teaching seminar must be completed the quarter immediately preceding student teaching. Fall quarter student teachers complete pre-student teaching seminars spring quarter. Prereq: full admission to the Teacher Education Program. Undergraduate credit only. May not be repeated for credit. 5/NC only.
4710 Workshop In School Health Education (3-6) For advanced students, teachers, school administrators, nurses, and other paramedical school personnel. Lectures, demonstrations, films, field trips, and supervised research in special health problems. May be repeated for credit.
4810-20-30 Problems In School Health Education (1-3, 1-3, 1-3) Individual identification and study of current problems in school health education. Extensive reading of literature required.

GRADUATE
5000 Thesis
5002 Non-Thesis Graduation Completion (3-15)
5010 Problems and Practices in School Health (3)
5020 Teaching of Sex Education and Human Sexuality (3)
5510 Curriculum Construction In School Health Instruction (3)
5520 Evaluation In School Health Instruction (3)
5530 School Health Program Surveys (3)
5620 School Health Administration and Supervision (3)
5630-40 Workshop In School Health Education (3, 3)
5720-30-40 Graduate Workshop in Health Education (3-6, 3-6, 3-6)
5810-20-30 Problems In School Health Education (1-3, 1-3, 1-3)
6000 Doctoral Research and Dissertation
6030 Critical Analysis of Writing and Research in Health Education (3)
6050-60 Seminar in Health Education (3, 3)

Physical Education (764)

Instructors:

1000 Introduction to Physical Education (2) Special emphasis on theoretical and practical aspects of physical education. S/NC.
1020 Physical Education: Swimming (2)
1021 Physical Education: Bowling (2)
1022 Physical Education: Basketball (2)
1032 Physical Education: Tennis (2)
1021 Physical Education: Soccer-Speedball (2)
1022 Physical Education: Volleyball (2)
1023 Physical Education: Golf (2)
2040 Dance Production (2) Preparation and presentation of public performances. May be repeated. Maximum credit 4 hours. Prereq: Consent of instructor.
2050 Dance Production (2) Preparation and presentation of public performances. May be repeated. Maximum credit 4 hours. Prereq: 2040 or consent of instructor.
2060 Dance Production (2) Preparation and presentation of public performances. May be repeated. Maximum credit 4 hours. Prereq: 2050 or consent of instructor.
2070 Orientation in Dance—Appreciation (3) History, aesthetic principles, and current trends in dance.
3000 Administration of Athletics (2) Conduct of program of athletic sports in high schools and colleges.
3010 Elementary Modern Technique (2) Analytical and practical study of modern dance techniques. May be repeated. Maximum credit 6 hours.
3020 Intermediate Modern Technique (2) Theoretical, technical, and improvisational study of modern dance techniques.
3320 Physical Fitness Activities (3) Teaching of calisthenics, conditioning activities, and weight training with emphasis on the basic fitness concepts including muscular development of the body.

3240 Team Sports (2) Instruction, practice, and student teaching in selected team sports.

3250 Athletic Training Techniques (3) Theory and practice in the prevention and care of basic athletic injuries.

3280 Practicum for Physical Education Majors (1-10) Observation and limited teaching; coaching; and leadership experiences in physical education programs. Experiences intended to cover the last three years of professional preparation. May be repeated. Maximum credit 10 hours. S/NC.

3320 Applied Anatomy and Kinesiology (3) Bones, joints, ligaments, and muscles involved in movements; reaction to joints and muscular mechanism to bodily development and efficiency.

3330 Stunts and Tumbling (2) Instruction and practice; student teaching and lesson planning stressed with focus upon safety techniques.

3430 Adapted Physical Education Laboratory (1) Practical work, including student teaching, supplementing 4110.

3450 Physical Education in the Elementary School (3) Movements and activities for elementary school children; planning and teaching a developmental program.

3510 Conceptual Bases for Study of Human Movement Behavior (2) Biophysical, percepto-cognitive, and psycho-social factors in humankind to those they do. Prereq: 1011 or 1012.

3530 The Teaching of Swimming and Lifesaving (2) Certification in ARC Water Safety Instructor Training or Junior Lifeguard with additional practice in teaching of swimming.


3560 Human Growth and Motor Development (3) Structural and functional changes in man from birth to old age, and the principles of adapting physical to physical performance and skill development.

3570 Developmental Trends in Movement Performance of Children (2) Motion characteristics of basic movement patterns evolving in children with an emphasis upon understanding movement performance as a product of interaction to biophysical, percepto-cognitive, and psycho-social variables. Prereq: 3540-50-60.

3610-20 Individual and Dual Sports (2, 2) Instruction, student teaching, and practice in organizing adult sports and recreational activities suitable for schools, churches, or community recreation centers.

3650 Teaching Strategies and Program Implementation (3) Emphasis on planning and organizing elementary physical education, and study of program content and implementation. Prereq: 3570.

3680 Basic Movement Sequences for Children (3) Movement patterns and skills which are fundamental to movement activity, with emphasis upon designing and presenting sequential learning tasks and creative activity experiences. Prereq: 3570.

3670 Practicum in Developmental Movement for Early Childhood (3) Experiences in designing and presenting developmental movement tasks to preschool children. Prereq: or coreq: 3660.

3680 Structured Movement Activities in Elementary Physical Education (4) Self-testing, games and sports, and dance activities included in elementary school physical education program, with emphasis upon designing and presenting sequential learning experiences. Prereq: 3670.

3720 Philosophy of Physical Education and Sport (3) Introduction to form and content of philosophy of physical education and sport. Specific emphasis upon development of mental, physical, and emotional status of philosophy of physical education and sport.

3910 Principles and Problems of Coaching (3) Examination of practical problems and situations which pre烹 students to make judgments and decisions in a coaching environment. Prereq: At least sophomore standing.

4000 Intermediate Advanced Ballet Technique (2) Emphasis on basic ballet techniques and expressiveness. May be repeated. Maximum credit 6 hours. Prereq: 3075. Available to dance majors and minors or with consent of instructor.

4100 Pre-Student Teaching Seminar (1) Orient student teachers to the off-campus centers and the student teaching program; describes the objectives and policies of the student teaching program, meets special needs of student teachers, and raises awareness of professional liability. May be repeated.

4110 Practicum in Dance Production (2) Prereq: Consent of instructor.

4200 Practicum in Dance Production (2) Emphasis on classical variations and partnering. May be repeated. Maximum credit 6 hours. Prereq: 4000. Available to dance majors and minors or with consent of instructor.

4300 Pre-Student Teaching Seminar (1) (Same as Education 4100). Must be repeated. Maximum credit 6 hours. Prereq: 4000. Available to dance majors and minors or with consent of instructor.

4310 Advanced Modern Technique (2) Development, integration, and synthesis of previous vocabularies, emphasizing dance and practical problems. May be repeated. Maximum credit 6 hours. Prereq: 3030. Available to dance majors and minors or with consent of instructor.

4605 Advanced Ballet Technique (2) Emphasis on classical variations and partnering. May be repeated. Maximum credit 6 hours. Prereq: 4000. Available to dance majors and minors or with consent of instructor.

4610 Advanced Composition (4) Application of compositional, production, and administrative skills culminating in the presentation of two complete chorographic works. Prereq: 3062, 4020.

4670 Stagecraft for Dance Production (2) Equipment, light design, properties, sets, and stage management.

4710 Pre-Student Teaching Seminar (1) (Same as Curriculum and Instruction 4100, Art Education 4100, Music Education 4100, Counseling Psychology 4100, School Health 4100, Public Health 4100, and Business Education 4100.)

4710 Adapted Physical Education (3) Classification of atypical students who require modified programs in physical education, activities and class organization suitable for required or special physical education classes.

4720 Administration of Physical Education (3) Selected topics in organization and administration problems related to physical education programs in schools. Emphasis placed on human relations approach to solving problems in administration.

4740 Measurement and Evaluation in Physical Education (3) Relationship of measurement and evaluation in physical education. Administration and critique of appropriate measures of physical fitness, sports skills, and knowledge.

4750 Creative Rhythms for Children (3) Methods and materials for grades 1-6. 3 hours and 1 lab.

4760 Athletic Coaching Field Experience (2) Practical experience in coaching and related responsibilities. Must be repeated. Maximum credit 4 hours. Prereq: Approval of instructor.

4770 Program Planning in Physical Education (3) Curriculum building, course construction, and lesson planning for public schools and colleges.

4780 Folk and Square Dance (2) Materials and methods for public schools, colleges and recreation centers.
### 4320 Tap Dance (2)
Instruction, practice, and student teaching.

### 4330-40-50 Specialization Study in Physical Education (1-3, 1-3, 1-3)

### 4410 Wrestling (2)
Theoretical and practical work for prospective teaching; emphasis on safety procedures.

### 4430 Women's Gymnastics (2)
Development of skills on balance beam, uneven parallel bars, and side horse vaulting; special emphasis on progression, safety, and teaching techniques. Open to men and women. Prereq: 3330.

### 4440 Men's Gymnastics (2)
Development of skills on pommel horse, parallel bars, and low horse vaulting. Special emphasis placed on safety, progression, and teaching techniques. Open to men and women.

### 4450 Men's Gymnastics II (2)
Development of skills on still rings, horizontal bar, trampoline, and exhibition gymnastics. Special emphasis placed on safety, progression and teaching techniques. Open to men and women. Prereq: 4440.

### 4460 The Coaching and Judging of Women's Gymnastics (3)
Appreciation of women's gymnastics according to the rules of the United States Gymnastics Federation. National tests and ratings will be given. Both men and women are encouraged to take this course. Prereq: 2734 or 4440.

### 4550 Methods of Teaching Dance (2)
Individual work with analysis and criticism. Prereq: Senior standing and approval of instructor.

### 4880 Motor Behavior: A Theoretical Perspective (4)
Examines motor behavior from an information processing perspective and applies current research to support theoretical base. Prereq: Senior standing and present and future needs and interests.

### 4890 Motor Behavior Laboratory (2)
Provides a beginning experience in methodology and instrumentation for assessing factors related to or affecting motor learning/performance. Prereq: Coreq: PE 4880 or consent of instructor. Prereq: PE 4140 and/or PE 5320 or consent of instructor.

### GRADUATE

#### 5000 Thesis

#### 5002 Non-Thesis Graduation Completion (3-15)

#### 5110 Administrative Problems in Physical Education (3)

#### 5130 Methods in Physical Education (3)

#### 5140 Advanced Philosophy of Sport (3)

#### 5150 Systematic Philosophic Analyses of Sport (3)

#### 5210 Principles and Philosophy of Physical Education (3)

#### 5220 Readings in Physical Education (3)

#### 5230 Supervisory Problems in Physical Education (3)

#### 5310 Analysis of Basic Motor Skills (3)

#### 5320 Seminar in Research Techniques in Physical Education (3)

#### 5330 Psychology of Sport (3)

#### 5340 Motor Behavior and Skill Acquisition (3)

#### 5410-20-30 Specialization Study in a Selected Physical Education Area (1-3, 1-3, 1-3)

#### 5500 Advanced Kinesiology (3)

#### 5510 Selected Topics in Anatomy (3)

#### 5550 Advanced Adaptive Physical Education (3)

#### 5560 Physical Activity and Health (5)

#### 5600 Applied Physiology (3)

#### 5610 Advanced Exercise Physiology (4)

#### 5620 Experimental Techniques in Applied Physiology (3)

### 5650 Social-Psychological Dimensions of Physical Activity (3)

### 5610-20-30 Seminar in Physical Education (1, 1, 1)

### 5610-20-30 Problems and Projects in Physical Education (1-3, 1-3, 1-3)

### 6000 Doctoral Research and Dissertation

### 6010 Seminar in Physical Education (1)

### 6220 Independent Research (3)

### 6330 Advanced Motor Behavior (3)

### 6410 Practicum in Kinesiology (3)

### 6510-20 Issues and Problems in Physical Education (3, 3)

### 6610 Seminar in Applied Physiology (2)

### 6640 Research Participation in Applied Physiology (1-6)

### 6810-20 Practicum (2, 2)

### Service Program in Physical Education
The service program in physical education provides all students a program of physical education planned in accordance with their present and future needs and interests.

#### 2701 ARC Advanced Life Saving (2)

#### 2702 ARC Water Safety Instructor Training (2)

#### 2703 ARC Water Safety Instructor for Handicapped (2)

#### 2705 Archery (2)

#### 2707 Badminton Elementary (2)

#### 2708 Badminton Intermediate (2)

#### 2711 Ballet Elementary (2)

#### 2712 Ballet Intermediate (2)

#### 2713 Ballet Advanced (2)

#### 2714 Basketball (2)

#### 2715 Bowling Elementary (2)

#### 2716 Bowling Intermediate (2)

#### 2717 Bowling Advanced (2)

#### 2719 Equitation Elementary (2)

#### 2725 Field Hockey (2)

#### 2727 Flag Football (2)

#### 2728 Folk and Square Dance (2)

#### 2730 Foundations of Physical Fitness (Lecture, Lab, Activity) (2)

#### 2731 Golf Elementary (2)

#### 2732 Golf Intermediate (2)

#### 2734 Women's Elementary Gymnastics (Coed) (2)

#### 2735 Women's Intermediate Gymnastics (Coed) (2)

#### 2736 Women's Advanced Gymnastics (Coed) (2)

#### 2737 Handball Elementary (2)

#### 2738 Handball Intermediate (2)

#### 2739 Handball Advanced (2)

#### 2741 Ice Skating Elementary (2)

#### 2742 Ice Skating Intermediate (2)

#### 2743 Ice Skating Advanced (2)

#### 2745 Lacrosse Elementary (2)

#### 2747 Modern Dance Elementary (2)

#### 2748 Modern Dance Intermediate (2)

#### 2749 Modern Dance Advanced (2)

#### 2750 Modern Jazz (2)

#### 2752 Paddleball Elementary (2)

#### 2753 Paddleball Intermediate (2)

#### 2755 Racquetball Elementary (2)

#### 2756 Physical Fitness (Conditioning Program) (2)

#### 2757 Men's Elementary Gymnastics (Coed) (2)

#### 2758 Personal Safety and Defense for Women (2)

#### 2759 Men's Intermediate Gymnastics (Coed) (2)

#### 2760 Soccer (2)

#### 2761 Men's Advanced Gymnastics (Coed) (2)

#### 2762 Social Dance (2)

#### 2764 Softball (2)

#### 2765 Sport in Society (2)

#### 2766 Racquetball Intermediate (2)

#### 2770 Racquetball Advanced (2)

#### 2771 Swimming Elementary (2)

#### 2772 Swimming Elementary II (2)

#### 2773 Swimming Intermediate (2)

#### 2774 Swimming Advanced (2)

#### 2775 Synchronized Swimming Elementary (2)

#### 2776 Synchronized Swimming Intermediate (2)

#### 2778 Tap Dance Elementary (2)

#### 2779 Tap Dance Intermediate (2)

#### 2781 Tennis Elementary (2)

#### 2782 Tennis Intermediate (2)

#### 2783 Tennis Advanced (2)

#### 2784 Track and Field (2)

#### 2785 Tumbling Elementary (2)

#### 2786 Tumbling Intermediate (2)

#### 2787 Tumbling Advanced (2)

#### 2789 Volleyball Elementary (2)

#### 2790 Volleyball Intermediate (2)

#### 2791 Volleyball Advanced (2)

#### 2792 Weight Control and Figure Improvement (2)

#### 2794 Weight Training Elementary (2)

#### 2795 Weight Training Intermediate (2)

#### 2797 Wrestling Elementary (2)

#### 2798 Wrestling Intermediate (2)

### Recreation (853)

**Professor:** M. L. Peters (Chairman), Ph.D. Illinois

**Assistant Professor:** K. L. Krick, Re.D. Indiana.

**1000-2000-3000 Field Practice (2-3, 2-3, 2-3)**
Supervised practice in an approved agency offering leisure services. Each hour's credit requires 25 hours of work in field agency. For recreation students only. Must be taken in sequence.

**1100 Orientation to Recreation Profession (3)**
Overview of types, functions, and interrelationships of delivery systems for recreation and park services.

3301 Outdoor Recreation Skills and Techniques I (3) Fundamentals necessary for safe participation in outdoor recreation activities such as skill shooting, hunting, casting and angling, power boating, rappelling, and backpacking. Emphasis: enjoyment of natural environment without disturbance or destruction of plant and animal habitats. Prereq: Consent of instructor.

3302 Outdoor Recreation Skills and Techniques II (3) Instruction in safe conduct of outdoor recreational activities such as sailing, skin diving, caving, orienteering, and nature interpretation without disturbance of environment. Provision of outdoor recreation experiences for the handicapped. Two 1-hr. lectures and 1-2 hr. lab each week. Prereq: Consent of instructor.

3710 Camp Counseling (3) History and philosophy of camp administration, leadership and program planning and skills and outdoor living skills.

3880 Social Recreation (3) Principles and practice of social recreation suitable for all age groups and appropriate to a variety of settings. Content includes methods of conducting low-organized and social-interaction activities for special events and programs.


4130 Recreation Administration (3) Introduction to recreation administration, including planning, personnel, areas and facilities, program services, finances, and public relations. Prereq: 3140, 3290, 3880 or consent of instructor.

4200 Survey of Recreation for Special Populations (3) Responsibility of recreation profession to minority groups whose leisure opportunities and needs may require special servicing. Prereq: 3140, 3290, 3880 or consent of instructor.

4310 Camp Administration (3) Program planning and organization, personnel management, camp site development and maintenance and camp operation for administrators and supervisors of organized camps.

4500 Specialized Study in A Selected Area of Recreation (1-9) Comprehensive study in a selected specialized area within the broad field of recreation. For recreation students only. May be taken for variable credit up to 9 hours. May be repeated for a maximum credit of 9 hours with consent of the division. Prereq: Consent of instructor.

GRADUATE

5000 Thesis (9)

5002 Non-Thesis Graduation Completion (3-15)

5130 Interpretation of Leisure (3)

5140 Leisure Service Delivery Systems (3)

5150 Current Issues in Recreation (3)

5240 Therapeutic Recreation (3)

5250 Implementations of Recreation Services for the Ill or Disabled (3)

5260 Leisure and Mental Health (3)

5300 Seminar in Recreation (1)

5340 Administration of Recreation Funds (3)

5350 Organizational Policies for Recreation (3)
planning to enter field of teaching the deaf and hard-of-hearing. Review of history of education of the deaf. Research studies relating to psychology, social adjustment, and learning of the deaf. Survey of professional literature in areas of deaf child and adult. (Same as Audiology and Speech Pathology 4250.)

4280 Curriculum Development in Elementary and Secondary Schools for the Hearing Impaired (3) Adaptation of curriculum development and methods in public school education to meet needs of deaf and hard-of-hearing students in residential and integrated settings.

4290 The Teaching of Reading to Hearing Impaired Children (3) Readiness activities, developmental approaches, theories, information, and specialized materials for curricula in reading teaching.

4310 Stuttering (3) (Same as Audiology and Speech Pathology 4310.)

4320 Introduction to Clinical Practice in Speech Pathology (3) (Same as Audiology and Speech Pathology 4320.)

4330 Clinical Practice in Speech Pathology (1-6) (Same as Audiology and Speech Pathology 4330.)

4340 Clinical Practice in Speech Pathology (1-6) (Same as Audiology and Speech Pathology 4340.)

4341 Clinical Practice in Communication Disorders In Schools (3) Prereq: Audiology and Speech Pathology 4320-30-40, Special Ed. 4030, and consent of instructor. S/NC.

4342 Seminar in Communication Disorders In Schools (3) Prereq: Audiology and Speech Pathology 4320-30-40, Special Ed. 4030, and consent of instructor.

4350-60-70 Problems in the Education of Exceptional Children (3, 3, 3) Prereq: Consent of instructor.

4351-61-71 Practicum in Special Education (3, 3, 3) Students prepare and deliver units of instruction in special education programs. S/NC.

4400 Voice Disorders (4) (Same as Audiology and Speech Pathology 4400.)

4440 High School Program for the Mentally Retarded (3) Trends, issues, and research relating to core and work study programs.

4520 Language-Speech Handicapped Child in the Classroom (3) Recognition, understanding, observation of communication disorders and referral procedures, agencies, legislation, incorporation of speech improvement and language development activities into daily curriculum. For students not majoring in speech-language pathology or audiology.

4610 Nature and Characteristics of Learning and Behavior Disorders (3) Forms of academic and social problems, the degrees of severity, possible causes, and relationships to each other. Relationships with respect to personality characteristics and developmental factors interpreted through behavioral and psychodynamic theory as well as practical situations in which learning and behavior disorders may occur.

4620 Education of the Emotionally Disturbed Child (3) Managing behaviors, models for instruction, teaching techniques and materials, and teacher-pupil-family interpersonal relationships as basic to academic achievement for the pupil. Prereq: 4610.

4630 Practicum in Residential Settings Serving Children with Disturbing Behavior (3) Practice scientifically identifying, observing, and recording disturbing behaviors. Initiating behavior changes regarding academic and social behaviors. To perform in a tutorial capacity within a residential classroom, and to take part in discussion and evaluation of relevant academic curriculum and reinforcement schedules. Prereq: 4610 and 4620 or consent of instructor.

4640 Practicum in Public School Systems Serving Children with Learning and Behavior Problems (6) Academic instruction in areas of teacher aide capacity within regular classrooms. Particular emphasis and practice in individualizing instruction for learning and behavior problem children within the regular classroom setting. Discussion and evaluation of relevant methods and materials unique to each teaching situation. Prereq: 4610 and 4620 or consent of instructor.

4720 Audiology II (4) (Same as Audiology and Speech Pathology 4720.)

4740 Evaluating Exceptional Students (3) Explores and evaluates relative to evaluations, examines theoretical considerations and methods of evaluating exceptional students; introduces basic statistical concepts relative to norm-referenced and criterion-referenced testing. Prereq: Special Ed. & Rehab. 3333 or consent of instructor.

4810 Student Teaching Mental Retardation (3) Prereq: Major in education of mental retardation. S/NC.

4811 Student Teaching Mental Retardation (9) Prereq: Major in education of mental retardation. S/NC.

4840 Educational Problems of the Cerebral Palsied Child at Home and School (3) Physical, social, and psychological needs of cerebral palsied; evaluative techniques; related services.

4850 Eye Problems Encountered by the Teacher (3) Eye anatomy and hygiene; common diseases and defects; testing and treatment; educational adjustments for specific eye conditions; related service resources.

4870 Student Teaching with Hearing Impaired Children (9) Supervised practicum with preschool, day school, and residential pupils. S/NC.

4871 Practicum with Hearing Impaired Children (6) S/NC.

4880 Student Teaching in Special Education (1-6) Application for student teaching must be filed not later than January 1 of the academic year preceding the actual experience. Prereq: 4110, 4120, 4130, 4150, 4351, 4351, 4361, 4740. S/NC.

4881 Student Teaching in Special Education (1-6) Application for student teaching must be filed not later than January 1 of the academic year preceding the actual experience. Prereq: 4110, 4120, 4130, 4150, 4351, 4351, 4740. S/NC.

4882 Student Teaching in Special Education (1-6) Application for student teaching must be filed not later than January 1 of the academic year preceding the actual experience. Prereq: 4110, 4120, 4130, 4150, 4351, 4351, 4740. S/NC.

4921 Student Teaching in Crippling and Special Health Conditions (3-15) Observation and supervised practicum in home, hospital, and classroom. S/NC.

4922 Student Teaching of the Edubably Retarded (3) Observation and supervised practicum. S/NC.

4923 Student Teaching of the Partially Seeing (3) Observation and supervised practicum in special and regular classes. S/NC.

4924 Student Teaching of the Emotionally Disturbed (3-9) Individual tutoring and classroom observation and teaching. Prereq or coreq: Educ. C & 4720 or 4820. S/NC.

4930 Aural Rehabilitation: Speechreading and Auditory Training (3) (Same as Audiology and Speech Pathology 4930.)

4940 Introduction to the Verbo-Tonal System (4) (Same as Audiology and Speech Pathology 4940.)

GRADUATE COURSES

5000 Thesis

5002 Non-Thesis Graduation Completion (3-15)

5040 Advanced Clinical Practice in Audiology (1-6)

5100 Orientation to Rehabilitation (3)

5110 Medical Aspects of Rehabilitation Counseling (3)

5111 Psychology of Mental Retardation (3)

5112 Psychology of the Severely Mentally Retarded (3)

5113 Advanced Curriculum for the Mentally Retarded (3)

5115 Caseaid Management in Rehabilitation (3)

5120 Psycho-Social Aspects of Disability (3)

5121 Job Development and Placement in Rehabilitation (3)

5130-40 Seminar in Rehabilitation (3, 3)

5141 Diagnostic Vocational Evaluation in Rehabilitation (3)

5142 Prognostic Vocational Evaluation in Rehabilitation (3)

5143 Interpretation of Vocational Evaluation Data in Rehabilitation (3)

5144 Development and Supervision of Client Evaluation Programs (3)

5145-46-47 Practicum in Rehabilitation (3, 3, 3)

5150-60 Internship in Rehabilitation (6, 9)

5170 Systematic Human Relations Training I (3)

5180 Approaches to Rehabilitation Counseling (3)

5220 Linguistics in the Education of the Hearing Impaired (3)

5240 Seminar in Language Remediation for the Hearing Impaired (3)

5260 Education of Gifted Children (3)

5280 Seminar on Educational Implications of Language Deficiency (3)

5310-20-30 Manual Communication (2, 2, 2)

5380 Cerebral Palsy (3)

5390 Cleft Palate (3)

5400 Assessment and Remediation of Learning Disabilities (3)

5401 Prescriptive Teaching for Children with Learning Disabilities (3)

5402 The Exceptional Child In the Regular Classroom (3)

5403 Resource Teachers for the Handicapped (3)

5410 Instructional Media for the Handicapped: Design, Production, and Evaluation of Prototypical Curriculum Materials for the Deaf (6)

5450-60-70 Experience in Teaching and Supervision of Exceptional Children (1-6, 1-6, 1-6)

5490 Educational Vocational Guidance of the Deaf and Hard-of-Hearing (3)

5510-20-30 Administrative Practicum or Problems in Institutional Care of Children (3, 3, 3)

5540 Seminar in Language Pathology (3)

5550-60-70 Problems in the Education of Exceptional Children (3, 3, 3)

5555-65-75 Special Topics (1-3, 1, 1, 1, 1, 1)

5620 Counseling Parents of Exceptional Children (3)

5630 Psychology of the Exceptional Child (3)

5700 Evaluation and Mobilization of Community Resources (3)

5710 Medical Aspects of Disability I (3)

5720 Medical Aspects of Disability II (3)

5730 Vocational Assessment in Disability Evaluation (3)

5740 Disability and Work in Society (3)

5750 Principles and Problems of Disability Evaluation (3)

5760 Seminar: Functional Capability Assessment (3)
Vocational-Technical Education (988)


Instructors: R. Pierce, M.A.; East Tennessee State.

GENERAL

2010-20-30 Field Experience in Vocational Education (1,1,1) Field experience in public school programs in agriculture, business, distributive, home economics, trade, and industrial arts education. S/NC only.

3000 Introduction to Vocational Education (1)Introductory and exploratory experiences concerned with teaching careers in all areas of vocational education. Includes visits within a vocational setting.

4010 Development and Utilization of Advisory Committees (3) Philosophy and rationale for use of craft advisory committees. Their selection, organization, implementation, and utilization.

4140 Individual Study in Vocational-Technical Education (1-3) Individual study must be approved by supervising instructor and the service area coordinator or department head. Approval form must be filed in the Office of the Department Head. May be repeated.

4750 Utilization of Instructional Media (3) (Same as Educ. C & 14750 and Information Science 4750.)

GRADUATE

5000 Thesis

5002 Non-Thesis Graduation Completion (3-15)

5005 Problems in Lieu of Thesis (3)

5010 History and Organization of Vocational-Technical Education (3)

5015 Issues and Trends in Vocational-Technical Education (3)

5020 Placement, Follow-up, and Evaluation Procedures in Occupational Education (3)

5040 Guidance and Pupil Personnel Services in Education (3)

5050 Supervision of Vocational-Technical Education (3)

5070 Competency Based Vocational Education (3)

5080 Continuing Education in Vocational-Technical Education (3)

5100 Occupational Program Development for Disadvantaged Persons (3)

5110 Principles and Objectives of Vocational-Technical Education (3)

5130-31-32 Problems in Vocational-Technical Education (1,1,1,1,1)

5140 Individual Study in Vocational-Technical Education (1-3)

5155 Software Design for Microcomputers in Education (3)

5180-90-5200 Educational Specialist Research and Thesis (3, 3, 3)

6000 Doctoral Research and Dissertation

6010 Curriculum Planning in Vocational-Technical Education (3)

6020 Program Planning and Development in Vocational-Technical Education (3)

6030 Evaluation of Vocational-Technical Education Programs (3)

6040 Seminar in Vocational-Technical Education (1, 1, 1)

6050 Administration of Vocational-Technical Education (3)

6111-12-13 Internship in Vocational-Technical Education (3, 3, 3)

Agricultural Education (056)

3450 Agricultural Experience and Future Farmers of America Programs (3) Prereq: Consent of instructor.

3460 Methods in Teaching Agriculture (3) Prereq: Consent of instructor.

3470 Program Development and Adult Education in Agriculture (3) Prereq: Consent of instructor.

4110 Organizing and Teaching Agricultural Mechanic (3) Methods of teaching agricultural mechanics to vocational agricultural students. Emphasis on special competencies needed for planning, conducting, and evaluating agricultural mechanics programs. Prereq: Agriculture 1120, Agricultural Mechanization 3110, and/ or consent of instructor. 2 hours and 2 labs.

4230-31-32 Problems in Agribusiness Education (1, 1, 1, 1) Total not more than 9 hours.

4240-41-42 Seminar in Agricultural Education (1, 1, 1) Prereq: 4350 or consent of department head.

4350-60 Student Teaching in Agricultural Education (4-6) Offered in on- and off-campus centers. Application must be filed not later than final quarter of junior year. Courses must be taken concurrently. Prereq: 3450, 3460, 3470, consent of instructor. Undergraduate credit only. S/NC.

4520 Improvement of Instruction in Basic Business Education (3)

4530 Improvement of Instruction in Typewriting and Clerical Programs (3)

4540 Improvement of Instruction in Short-hand/Secretarial Subjects (3)

4550 Improvement of Instruction in Accounting and Data Processing Programs (3)

4560 Improvement of Instruction in Business Communications and Word Processing (3)

4580-85 Problems and Projects in Business Education (3, 3)

4590 Problems in Business Education (1-3)

6300-10-20 Current Issues in Business Education (3, 3, 3)

6330-40 Advanced Studies in Business Education (1-3, 3)

6350 Advanced Studies in Business Education (3)

6360 Higher Education for Business (3)

Distributive Education (273)

4410 Student Teaching in Distributive Education (1) Full-time, supervised experience in classroom.
teaching, coordination, club work, and adult education. Prereq: 4460, 4478; Education 3050, Educ. Psych. 3810; 4140 or equivalent. Undergraduate credit only. S/NC.

4490 School and Community Relationships for the Teacher Coordinator (6) Content dependent upon teaching assignment; human relations evolving from school, parent, business, and other community contacts. May be taken with 4410. Undergraduate credit only. S/NC.

4430-31-32 Problems in Distributive Education (1-3, 1-3, 1-3) Selected research problems in teaching and coordinating distributive education programs. May be repeated. Maximum credit 6 hours each.

4440 Supervised Distributive Experience (3) Minimum 200 hours experience for each 3 credit hours in approved distributive business; concurrent analytic project. May be repeated.

4450 Areas of Distribution (3) Marketing, product or service technology, social skills, basic skills, and distribution as these areas affect the distributive education curriculum in secondary and post secondary programs.

4460 Organization and Operation of Distributive Education Programs (3) Background and development needs, federal and state legislation; curriculum implications, establishing, evaluating, reporting, and improving the program.

4470 Methods and Materials in Distributive Education (3) Prereq: 4460 or consent of instructor.

4480 Coordination Techniques in Distributive Education (3) Selecting training agencies; job analysis; selecting and briefing the training supervisors; advisory committees; adult education and other community services. Prereq: 4460 and 4470.

GRADUATE

5410 Administration and Supervision of Distributive Education (3)

5416-26-36 Problems in Distributive Education: Retailing (3, 3, 3)

5420 Organizing and Teaching Adult Distributive Education (3)

5430-31-32 Special Problems in Distributive Education (3, 3, 3)

Home Economics Education (490)

2240 Introduction to Teaching Vocational Home Economics (3) Introductory and exploratory experiences concerned with a teaching career in vocational home economics. Includes observation and participation within various educational and vocational settings.

2340 Strategies of Teaching Home Economics (4) Teaching strategies, methods, techniques, and use of media. Field experience included. Prereq: 2240.

2420 Curriculum Development in Vocational Home Economics (4) Includes observation and design of instruction for the classroom. Prereq: 2240, 3420. To be scheduled one of the two quarters immediately preceding student teaching.

3410 Student Teaching (8) Underlying philosophy, techniques, and materials: relation to school program and community. S/NC.

4460 Teaching in Community-Based Home Economics Programs (4) Planning and implementing community-based home economics education programs: methods, curriculum, delivery systems, evaluation. Includes a field experience. Senior standing required.

4500 Field Experience in Home Economics Community-Based Programs (8) Supervised field experience in appropriate related community-based programs. Prereq: Consent of instructor. S/NC. May be repeated.

4610 Student Teaching (9) Open to seniors or graduate students who have successfully completed one year's study at The University of Tennessee. Off-campus teaching centers (minimum of eight weeks). Prereq: 2240, 3420, 4240, coreq: 4310. S/NC.

4718-28-38 Honors: Home Economics Education (3, 3, 3) For juniors and seniors showing special ability and interest in home economics education. Prereq: Consent of department head.

GRADUATE

5510 Organization of the Homemaking Curriculum in Secondary Schools (3)

5515 Evaluation in Home Economics Education (3)

5530-31-32 Problems in Home Economics Education (1-3, 1-3, 1-3)

5540 Curriculum Development and Implementation in Family Relationships Instruction (3)

5545 Wege Earning Programs in Home Economics (3)

5550 Advanced Methods of Teaching Homemaking Classes to Adults (3)

5555 Supervision of Home Economics in the Public Schools (3)

5570-75 Seminar in Home Economics Education (3, 3)

5580 The Teaching of Home Economics in College (3)

5581 The Problem Method of Teaching Home Economics (3)

5582 Furthering Good Human Relationships in the Classroom (3)

Industrial Education

1610 Engine Analysis (3) Designed to give experimental laboratory experience in automotive technology. Engine tune-up and engine overhaul techniques and procedures are studied and practiced.

1620 Graphic Communications (3) Drafting as an art of communication in technology. Orthographic and multi-view drawing, conventional practices, pictorial techniques, and applications of photography.

1630 Basic and Applied Electricity (3) Operation and characteristics of electrical systems and devices. Construction of demonstration apparatus and various electrical projects involving function of different types of circuits.

1640 General Metals (3) An introductory course dealing with processes, equipment, materials, products, and organization of metal-working industries. Involves processes in basic machining, foundry, sheetmetal, forging, heat treatment, arc and gas welding, fabricating and the use and care of common metalworking tools.

1642 Welding and Cutting Practices (3) Prereq: 1640.

1641 General Woodworking (3) Basic course dealing with processes, tools, equipment, products, organization of woodworking industry. Stressing importance in safety and using hand tools and basic machinery.

2511 Power Mechanics (3) Includes various prime movers, methods of utilization, distribution and transmission of power with internal combustion engines. Maintenance and repair of small engines is stressed.

2620 Industrial Graphics (3) Auxiliary views, sections, conventional practices, fasteners, dimensioning, working drawings, and machine drafting. Prereq: 1620.

2630 Fundamentals of Applied Electronics (3) Electrical circuit analysis and introduction to semi-conductor and IC applications, including amplifiers, switching and timing circuits, and oscillators. Prereq: 1630.

2532 Electronics Technology (3) Basic principles and application of electronics. Undergraduate credit only.

2641 Machine Tool Processes (3) Introductory course of the function, care, setup, operation, and theory of basic machine tools. Prereq: 1640.

2652 General Plastics (3) Characteristics of thermoplastics and thermosetting materials, methods of determination, and resin conversion to finished product.

2660 Furniture and Cabinet Construction (3) Comprehensive study of cases and carcass construction with emphasis placed upon furniture and built-ins. Prereq: 1661.

2600-01-02 Basic Experiences in Trade and Industrial Education (3,3,3) Methods and materials of instruction. 3 periods.

3601 Architectural Graphics (3) Introduction to fundamentals of graphic representation and architectural residence. Light construction principles are stressed and working drawings for a residential building are developed. Prereq: 1620.

3630 Digital Electronics Technology (3) Basic principles and application of digital electronics. Prereq: 2626 or permission of instructor.

3640 Advanced General Metals (3) Provides experiences in areas of welding, metal forming, metal cutting, molding and metal finishing, tool grinding, heat treatment, fabrication, and precision measurement. Prereq: 2624.

3650 Welding, Brazing, Cutting, and Related Processes (3) Various types of welding equipment and fundamental techniques of welding. Undergraduate credit only.

3651 Plastic Processing (3) Plastics production equipment and related product design and processing of plastics. Prereq: 2652 and 1661.

3662 Construction Methods and Materials (3) Materials, methods, and equipment used in residential construction, including location and evacuation, foundry, framing, roofer, interior and exterior finishes, installation, and acceptable practices in assembly. Prereq: 1661.

3672 Graphic Arts Reproduction Processes (3) Graphic arts skills in printing and duplicating techniques and other modes of graphic communication.


3810 Related Science, Mathematics, and Technology in Occupations (15) Prior department approval for registration. Applicants must show evidence of bonafide occupational experience compatible with the requirements of the course. Occupational experience must be in a recognized trade area. S/NC.

3811 Manipulative Skills in Occupations (15) Prior department approval for registration. Applicants must show evidence of bonafide occupational experience compatible with the requirements of the course. Occupational experience must be in a recognized trade area. S/NC.

3812 Knowledge of Related Subjects in Occupations and Personal Qualifications (15) Prior department approval for registration. Applicants must show evidence of bonafide occupational experience compatible with State Plan requirements. Occupational experience must be in a recognized trade area. S/NC.

3820-21-22 Physical Testing Technology (3, 3, 3) Skills and techniques involved in radiography, metallography, tensile and compression testing, and other destructive and non-destructive testing methods. Undergraduate credit only.

3830 History and Philosophy of Industrial Education (3)

3840-41-42 Part-time Programs in Cooperative Industrial Education (3) Principles of organization, methods, and materials.
3850 Shop Organization and Management (3)
3860-61 Materials and Methods for Teachers of Shop and Related Subjects (3, 3)
3870 School Shop Safety (3)
4620 Special Topics in Drafting (3) Industrial practices in specialized areas of drafting selected for the individual student. Prereq: 6 hours of drafting.
4630 Industrial Electronics and Digital Equipment Controls (3) Applications of digital and analog electronics in industrial and control circuitry. Emphasis is placed on circuit analysis, trouble-shooting, and synthesis of systems, including microprocessor applications. Prereq: 3630.
4660 Vocational Technical Laboratory Equipment Maintenance (3) Understanding of preventive maintenance, maintenance, and calibration of instruments and power equipment used in industrial education shops.
4670 Manufacturing Processes (3) The manufacturing processes of industry and their relationship to careers. Prereq: 2621, 2641, 2660, 3651, or consent of instructor.
4671 Materials and Processes (3) Organic and inorganic materials and processes used to produce finished products. Content, curriculum, and techniques of laboratory operation. Prereq: Consent of instructor.
4682 Power and Energy (3) Development, control, transmission, conversion, interrelationship of power sources; content, curriculum, and techniques of laboratory operation. Prereq: Consent of instructor.
4690 Visual Communications in Industrial Arts (3) Methods of developing and transmitting ideas and information as related to industry and society. Content, curriculum, and techniques of laboratory operation. Prereq: Consent of instructor.
4991 Course Construction in Industrial Arts (3) Advanced work in the selection and arrangement of course content. Emphasis upon instructional objectives, project selection and informational assignments and evaluation. Prereq: Consent of instructor.
4801-02-03 Tools and Machine Design (3, 3, 3) Tool and machine design, calculations, design systems, and designing procedures. Undergraduate credit only.
4810 Directed Teaching (6) Guided observation and teaching in trade, industrial, and/or technical programs in secondary, adult, post secondary, and junior college industrial vocational and technical curricula. Undergraduate credit only. S/NC.
4811 Directed Teaching (6) Observation of all types of trade and industrial classes; preparation of lesson plans and supervised teaching in at least two types. Prereq: Senior standing in industrial education. Prereq, or coreq: 4210; 1 hour and 5 periods. Undergraduate credit only. S/NC.
4820 Foremanship Training by the Conference Method (3)
4830-31 Job Analysis (3, 3) Principles, practice, instructional methods.
4840 Methods of Teaching Shop and Related Subjects (3) Undergraduate credit only.
4850-51 Curriculum Building in Trade and Industrial Subjects (3, 3) Arranging course material in trade subjects, following up results of job analyses, preparing checking sheets and individual job sheets in both trade and related subjects. Prereq, or coreq: 4120.
4860-61-62 Problems in Industrial Education (3, 3, 3)
4870 Numerical Control (3) Tooling, manual programming, automatic programming, automatic programming language, and use of automatic programmer as computer. Undergraduate credit only.
4880-81-82 Seminar in Industrial Education (3, 3, 3) Educational innovations, current events, problems, and other topics associated with the field of industrial education.
4890 New Developments in Industrial Education (3) Developments, pressing problems, and recent trends in field of industrial education as presented by a coordinating instructor in conjunction with knowledgeable resource personnel.
4891 New Developments in Industrial Education (3) Developments, pressing problems, and recent trends in field of industrial education as presented by a coordinating instructor in conjunction with knowledgeable resource personnel.
4895 New Developments in Industrial Education (3) Developments, pressing problems, and recent trends in field of industrial education as presented by a coordinating instructor in conjunction with knowledgeable resource personnel.
GRADUATE
5030 Organization and Operation of Area Vocational-Technical Schools (3)
5055 Vocational School Administration and Management (3)
5810-11-12 Administration and Supervision of Industrial Education (3, 3, 3)
5830-31-32 Special Problems in Industrial Education (3, 3, 3)
5840 Method of Research in Industrial Education (3)
5850 Improving Teachers in Service (3)
5860 Advisory Committees and Apprentice Training (3)
5880 Advanced Methods of Teaching Skills and Technical Information (3)
5890-91-92 Seminar in Industrial Technical Education (3, 3, 3)
The engineer applies mathematical and scientific knowledge in planning economical ways of providing materials and energy in forms that are useful to humankind. In today's technology-based society, everyone feels the effects of the engineer's plans and decisions. Hence, there is a continuing and urgent need for engineering graduates who possess a thorough understanding of mathematical and scientific principles, who can apply these principles to the solution of practical problems, and who can view the solutions in their overall social perspective so that the actions that they recommend will be truly beneficial. It is the purpose of the College of Engineering to educate men and women to the high levels of technical competence and social understanding that will enable them to fulfill their responsibilities as professional engineers.

Graduates of the B.S. curricula offered by the college may enter directly in industry, government, or private practice, or may pursue advanced study in graduate school. Their professional activities include research, development, design, operations analysis, construction, production supervision, and technical sales. Many practice their profession in Tennessee; but engineering knows no geographical bounds, and graduates of the college serve throughout the nation and in other countries as well.

The college had its beginnings early in the history of the University when surveying was introduced into the curriculum in 1838. In 1877 civil engineering was first recognized as a curriculum. The first mechanical course appeared in about 1847; other mechanical courses followed, and in 1877 this body of studies was designated as mechanical engineering. By 1877 mining had found a place in the University, but it was later dropped. Electrical engineering appeared in about 1896, when a Professor of Physics and Electrical Engineering was appointed. Although metallurgy was announced in the catalog as early as 1889, it was dormant until it was revived in the Department of Chemical Engineering shortly after 1940. A separate degree in metallurgical engineering was authorized in 1957, although the rudiments of chemical engineering appeared in the form of industrial chemistry shortly after 1900, a full chemical engineering program and a department were not established until 1936. Industrial engineering was introduced in 1940, was dropped for a time during the war years, and was reinstated in 1947.

Nuclear engineering was established as a separate curriculum in 1957 in response to the rapidly increasing demand for engineers with a knowledge of nuclear phenomena. Engineering physics, a program operated jointly with the physics department, first appeared as an engineering curriculum around 1942. Curricula in aero-space engineering and engineering mechanics were added in 1966, and a curriculum in engineering science was added in 1967.

The first dean of the college, Professor Charles E. Ferris, was appointed in 1912. Prior to that time the engineering programs were organized as a school, with a chairman of the faculty. Other former deans are Nathan W. Dougherty, who served from 1940 to 1956, Armour T. Granger, who served from 1956 to 1965, and Charles H. Weaver, who served from 1965 to 1968, and Fred N. Peebles, who served from 1968 to 1980.

The Cooperative Engineering Program was established in 1926. The University of Tennessee was one of the early pioneers in this valuable type of education, which originated at the University of Cincinnati in 1905. A Cooperative Engineering Scholarship Program was formally established in 1957, with emphasis on participation by students of superior ability. A conventional cooperative program, open essentially to all students in good standing in the college, was re-established in 1967, replacing the scholarship program.

The Engineering Experiment Station was established in 1922.

The college has ten major undergraduate curricula in which a student may specialize: aerospace, chemical, civil, electrical, industrial, mechanical, metallurgical, and nuclear engineering; engineering physics, and engineering science.

Agricultural engineering is based in the College of Agriculture with facilities located on the Agricultural Campus. The agricultural engineering curriculum is offered cooperatively by the College of Agriculture and the College of Engineering. Details of the curriculum may be found in the College of Agriculture section of this catalog.

Facilities

The College of Engineering is housed in Ferris, Estabrook, Perkins, Dougherty, and Berry Halls, and the Nuclear Engineering building, all located on the southeastern end of the campus.

Ferris Hall. This building houses the offices, classrooms, laboratories, and shops of the electrical engineering department, and the Water Resources Laboratory. There is also a remote input/output terminal, and computer graphics facility connected with The University of Tennessee Computing Center.

Estabrook Hall. Some operations of the Departments of Civil Engineering and Engineering Science and Mechanics and of the Engineering Experiment Station are carried out in Estabrook Hall.

Perkins Hall. This building houses the Departments of Civil Engineering, Engineering Science and Mechanics, and Industrial Engineering, and the Office of the Dean of the College of Engineering. The building contains laboratories, drafting rooms, and various classrooms.

Nuclear Engineering Building. This building houses operations of the nuclear engineering department and contains laboratories and equipment for monitoring, counting, and investigating various nuclear phenomena. It also houses subcritical reactors.

Nathan W. Dougherty Engineering Building. This building, the most recent and largest of the engineering buildings, houses the Department of Chemical, Metallurgical, and Polymer Engineering, and Mechanical and Aerospace Engineering. In addition to classrooms and instructional laboratories, it provides modern facilities for various types of research.
Cooperative Engineering Program

The five-year Cooperative Engineering Program is offered to students in the college in order to provide a superior engineering education that affords the student an opportunity to combine significant experience in industry with academic preparation. Cooperative work assignments differ from part-time or summer employment in that they involve regularly scheduled cycles of full-time academic quarters alternated with full-time work quarters—usually six, a minimum of five—in career-related, planned assignments of progressive complexity and responsibility. In exposing the student in this manner to the world of work, the college and the facilities of industry join together to offer a broader and richer preparatory for postgraduate employment and for life in general that can be provided by a conventional academic program alone. This experience in an industrial and professional environment contributes to the student's maturity, increases the scope of acquaintances and concepts, and enables the student to define more clearly educational and career interests and objectives. Some of the experience received is at a subprofessional level not available to an engineer after graduation, yet is of great significance in total education and effectiveness.

Admission to the Cooperative Engineering Program is open to academically qualified freshman and sophomore students. A fall application period conducted in early October is the source of most candidates placed for the following spring and summer; a late application period is usually held in May for students who failed to apply during the previous fall and who hope for placement the subsequent fall or winter. Students must be attending the College of Engineering at the time of application. Those in school fall quarter who are undecided about co-op participation should nevertheless apply during the fall application period, and then request that their applications be held until they are ready to make a definite commitment since fall applicants take priority over spring applicants for all placements for which they are qualified.

In general, work periods begin after the freshman fall quarter has been completed and continue until the beginning of their senior coursework. Exceptionally well qualified candidates may be placed to begin their work experience after two quarters of freshman courses. Applicants must be able to schedule a minimum of five work periods alternating with academic quarters prior to beginning their senior year in order to qualify for co-op placement. With very few exceptions, transfer students must complete a minimum of two academic quarters in the College of Engineering at UTK before beginning co-op participation.

Students in the Cooperative Engineering Program are classified as follows in terms of quarter hours credit of completed courses:

- Freshman: 0-30.0
- Sophomore: 30-100.9
- Junior: 100-153.9
- Senior: 154-up

Sample academic schedules for co-op students are shown elsewhere in this section.

A brochure with further details may be obtained from the Cooperative Engineering Program, University of Tennessee, Knoxville, Tennessee 37996-0630.

Binary Program (Dual Degree)

A binary program in engineering is available. The college has informal agreements with a number of liberal arts colleges to conduct a five-year program, three of which will be given at the liberal arts colleges and the last two years at The University of Tennessee in engineering. At the end of the fifth year, the college will award a baccalaureate degree in one of the following:

- Engineering
- Non-Engineering

Institutions which have cooperated with UTK in offering this Liberal Arts-Engineering 3-2 Binary Plan include:
- Belmont College, Nashville, Tennessee
- Beloit College, McKenzie, Tennessee
- Carson-Newman College, Jefferson City, Tennessee
- David Lipscomb College, Nashville, Tennessee
- East Tennessee State University, Johnson City, Tennessee
- Knox College, Bristol, Tennessee
- Maryville College, Knoxville, Tennessee
- Middle Tennessee State University, Murfreesboro, Tennessee
- Southern Methodist University, Memphis, Tennessee
- Tennessee State University, Nashville, Tennessee
- Union University, Jackson, Tennessee

Questions about courses to be taken in preparation for transfer to UTK may be directed to the Dean of Engineering.

Graduate Program

GENERAL

Graduate programs leading to the degree of Master of Science are offered in all areas of study, and the degree of Doctor of Philosophy is offered in eight major subjects: aerospace engineering, chemical engineering, electrical engineering, engineering science, mechanical engineering, metallurgical engineering, nuclear engineering, and polymer engineering. A Master of Engineering degree focusing on engineering design professional practice is offered in aerospace, civil, electrical, environmental, industrial, mechanical, and nuclear engineering. Information concerning graduate programs is given in the Graduate Catalog.

Graduate Program at the UT Space Institute

At The University of Tennessee Space Institute near Tullahoma, graduate-level courses are offered in engineering fields such as aerospace, electrical, and mechanical engineering, and in mathematics and physics. Current programs lead to the M.S. and Ph.D. degrees. Members of the faculty of the Space Institute are also members of the faculty of the College at The University of Tennessee, Knoxville.

Engineering Experiment Station

William K. Stair, Director

The management of the Engineering Experiment Station is vested in the president of the University, the dean of engineering and the director.

An advisory committee consisting of the heads of the departments of the college and the heads of departments in allied scientific fields may assist in determining policy and procedures. Members of the faculty of the college are available for consultation and advice in technical matters.

The station is organized to conduct research underlying engineering practice and to aid in the development of the state's resources and industries insofar as funds available will permit. Inquiries from industries concerning technical questions which interest them are welcomed. The station maintains special arrangements with any person or company to study any technical question within the capacity of its resources, and to report the results to the company requesting the study. In such cases, the whole expense will be carried by the parties requesting the investigation. Bulletins are published from time to time giving the results of various investigations. Upon request, unpublished results of current studies are made available to interested parties.

Curricula in Engineering

NATIONAL ACCREDITATION

Since 1936 engineering programs at institutions of higher learning have been accredited by an organization formed by many engineering societies and known as the Accreditation Board for Engineering and Technology (ABET). Currently accredited engineering curricula at UTK include aerospace, agricultural, chemical, civil, electrical, engineering science, industrial, mechanical, metallurgical, and nuclear.

COURSE LOAD

The maximum number of hours which can be taken by an undergraduate engineering student without special permission is 19 hours. The dean of engineering must give permission to take 20 hours or more.

DROP DEADLINE

The drop deadline for all undergraduate courses administered by any department in the College of Engineering shall be the end of the seventh calendar day of each quarter, counted from the beginning day of classes. This coincides with the Campus add deadline. Any drop action after this date on the part of any student (regardless of major) is subject to late drop regulations.

GPA COMPUTATION

All grades are to be counted in computing the grade point average, except up to 12 hours of repeatable grades for which the last grade shall count (see page 30). This computation is applied to all courses taken by an undergraduate engineering student, regardless
of the courses involved or where they were taken. The policy applies to all engineering students entering higher education after September 1, 1979.

GENERAL REQUIREMENTS

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

Program for Second B.S. Degree. Upon approval by the dean and the department, a student who already holds a bachelor's degree may obtain the appropriate first degree in engineering upon completion of a minimum of 45 quarter hours' credit. The prevailing University regulations shall apply (see page 33).

Satisfactory/No Credit Courses. An undergraduate Engineering student may count towards a degree up to 12 quarter hours obtained by Satisfactory/ No Credit (S/NC) grading. Such courses must be used for humanistic-social (non-technical) elective credit in engineering. Certain engineering courses carrying only S/NC grading do not count in this limit.

Correspondence Courses. A student should check with the 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. Broadly stated, these electives serve a threefold 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 greater participation in the decision-making process concerning the utilization of technology. Because of the importance of this technology-society interaction, engineering students are encouraged to seriously consider their selection of required electives in this area.

Students are urged to plan a non-technical electives program which will enhance their own interests and objectives. It is recognized that, just as engineers show individual preference for concentration in one of the areas of engineering, they divide their interests in the many areas of the humanities and social sciences. However, these subjects should be pursued with sufficient depth in terms of courses to permit a reasonable level of comprehension of the selected areas. In order to increase the effectiveness of this interest and to meet ABET accreditation guidelines, the Humanities and Social Sciences Committee of the college provides a list of approved courses in the form of 15 coherent groups of courses identified in three broad areas as follows:

Area I. Human, Economic, and Political Relationships to Engineering

A. Governance and Political Science
B. Economics
C. Sociology and Psychology
D. Human Values

Area II. Society-Its Culture, History, and Literature

A. Fine Arts
B. American Culture
C. History
D. Literature
E. Anthropology

Area III. Technology and Society

A. Human Habitat
B. Technology Assessment
C. Communication
D. Resources

Courses in the list which follows are selected by the committee with revisions as course offerings and needs change. They are recommended as satisfying the non-technical (humanistic-social) electives requirement in the various curricula of the college. However, the structure and permissible courses of the non-technical elective content of each engineering curriculum are established by the respective departments. Therefore, individual departments may delete courses from this list, require certain courses, or require selection of courses from specific subgroups. Students should consult their departments for any restrictions.

With respect to student records, deviations from this list are handled by means of a substitution sheet which originates with the adviser.

College of Engineering

GEOPOLITICAL ELECTIVES IN HUMANITIES AND SOCIAL SCIENCES

Area I. Human, Economic, and Political Relationships to Engineering

IA. Governance and Political Science
Economics 3340

Economics 3615

Geography 3795, 4310-20-30, 4370, 4380

Political Science 2510-20, 3545-46, 3555-56, 3710-20, 3750-60, 3801-12-20, 3800, 4060, 4535-36, 4540-50, 4545-46, 4655-66

Sociology 3030, 4530

Area II. Economics
Economics 3110-20-30, 3110-11-12, 3120, 3210-11, 3220, 3240, 3310, 3410-20, 4110

IC. Sociology and Psychology
Economics 3030, 3800, 3680

Psychology 2500, 3120, 3220, 4650-60, 4900

Rural Sociology 3420

Sociology 1510-20, 3030, 3150, 3320, 3410-20, 3620, 4330, 4560

ID. Human Values
Geography 3000

History 3060-70-80, 3270

Philosophy 3130, 3111-21-31-41-51, 3440, 3690

Religious Studies 2610, 3550, 3660-10-20, 3611, 3740

Zoology 3410 (Bioscience)

Area III. Society-Its Culture, History, and Literature

IA. Fine Arts
Art 1815-25, 3715-16, 3725-26, 3750, 3765-66

English 2680, 3411-12-20-30-40

Music 1210-20-30, 3350, 4210, 4230, 4241, 4261-71

Philosophy 2410, 3910

Theatre 3252-53, 354-

IB. Culture
American Studies 3010

Anthropology 3410

Black Studies 2010-20, 3550-60, 4830

English 2640-50, 3310, 4721-31-41

French 2610-20

Geography 3430, 3450, 3660, 3910-20-30-40

History 1950-60, 2350, 3670, 3680, 4290, 4640-50-60

Italian 2610-20

Music 1210-20-30, 1340, 2310-20-30-40, 3350

Philosophy 1510-20, 3311-12, 3720

Political Science 3801-02-03-04

Religious Studies 3510-20, 3560

Spanish 2610-20

Theatre 3262-63

IC. History
Arts 3735-36, 3745-46

Geography 4240


Religious Studies 2611, 3121-31

ID. Literature
Classics 2710-20, 3210-20-30

Comparative Literature 1010


German 1100-20-30-40

Psychology 4890

Religious Studies 3710-11

Russian 3610-20-30

IE. Anthropology
Anthropology 3615-20-30, 3410, 3450, 3710, 4420

Asian Studies 2510-20

Geography 1950-60, 3760, 4240-50-60, 4640-50-60, 4670

Area III. Technology and Society

IA. Human Habitat
Economics 3320

Geography 3520-30, 3600, 3910, 4075
Aerospace Engineering

<table>
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<th>Aerospace Engineering</th>
<th>Hours Credit</th>
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<tr>
<td>Math 1840-50-60</td>
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<tr>
<td>Chemistry 1110-20-30</td>
<td>4 4 4</td>
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<tr>
<td>English 1010-20-30</td>
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<td>Graphics 1410-20</td>
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<td>Basic Engineering</td>
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<td>Basic Engineering</td>
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<tr>
<td>Speech 2361</td>
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<tr>
<td>Computer Science 3150</td>
<td>3 -</td>
</tr>
<tr>
<td>Humanities/social studies electives</td>
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</tbody>
</table>

Before entering the third quarter of the junior year, the student, with the aid and approval of the appropriate advisor, must select a program of study. Any necessary additions to a program of study shall be directed to the major department.

# American History Requirement

Engineering students, regardless of national origin, must fulfill the American history requirement described on page 27 of this catalog. Those students who have not had the required year of American history in high school may take courses in American history as electives. Substitutions in the program, or electives required to meet the degree requirements, will be made only in accordance with regulations in regard to their selection, in consultation with the major department. Procedures governing the selection of humanities/social studies electives are the same as non-technical electives in these areas.

# Technical Electives

Undergraduate elective credit toward an engineering degree must be selected with the advice and approval of the student's major department. In some of the curricula tabulated below, the number of humanities/social studies electives must be taken as indicated, and in others the number of technical electives must be taken as indicated.

# The Voluntary ROTC Program

Engineering students may participate in the ROTC Program. Advanced ROTC courses (3000 and 4000 series) may be counted as technical elective credit toward an engineering degree up to a total of nine (9) quarter hours. Practically no ROTC course can be used as a humanities/social electives.

# Agricultural Engineering

(Association of American Colleges Section.)

Biomedical Engineering

Available In Engineering Science Degree Program

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<th>Biomedical Engineering</th>
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<td>Math 1840-50-60</td>
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<td>Basic Engineering</td>
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<td>Math 2840-50-60</td>
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The Voluntary ROTC Program.

Aero. Engr. 2520
Math 2840-50-60
Physics 2310-20-30
Met. Engr. 2110
Speech 2361
Computer Science 3150

# American History Requirement

Met. Engr. 2110
Speech 2361
Computer Science 3150

# Technical Electives

Aero. Engr. 2520
Math 2840-50-60
Physics 2310-20-30
Met. Engr. 2110
Speech 2361
Computer Science 3150

# Humanities/social studies electives

Aero. Engr. 2520
Math 2840-50-60
Physics 2310-20-30
Met. Engr. 2110
Speech 2361
Computer Science 3150

TOTAL: 201 hour

*Not required in the cooperative program.

A minimum of one half (12 quarter hours) of the humanities/social studies electives must be taken from a single group under one of the areas of the humanities and social studies electives.

# Civil Engineering
Electrical Engineering

**Freshman**
- Math 1840-50-60
- Math/science courses approved by the department
- Math/Science courses approved by the department
- Humanities/social studies electives
- Economics 2110
- Total: 197 hours

**Sophomore**
- Math 1840-50-60
- Math/science courses approved by the department
- Math/Science courses approved by the department
- Humanities/social studies electives
- Economics 2110
- Total: 202 hours

**Junior**
- Math 1840-50-60
- Math/science courses approved by the department
- Math/Science courses approved by the department
- Humanities/social studies electives
- Total: 203 hours

**Senior**
- Math 1840-50-60
- Math/science courses approved by the department
- Math/Science courses approved by the department
- Humanities/social studies electives
- Total: 206 hours

### Electrical Engineering

**Electronics and Instrumentation**
- Elect. Engr. 4680-90, 4600
- Elect. Engr. 4700
- Elect. Engr. 4100
- Elect. Engr. 4800
- Elect. Engr. 4740
- Elect. Engr. 4610
- Elect. Engr. 4850
- Elect. Engr. 4350
- Total: 203 hours

**Bioelectric Option**
- Biology 1210-20-30
- Chemistry 2330
- Elect. Engr. 4600
- Zoology 3060-3089
- Elect. Engr. 4850
- Elect. Engr. 4600
- Elect. Engr. 4800
- Elect. Engr. 4820
- Humanities/social studies electives
- Total: 203 hours

**Engineering Physics**
- Math 1840-50-60
- Math/science courses approved by the department
- Math/Science courses approved by the department
- Humanities/social studies electives
- Total: 199 hours

---

**Engineering Science**

**Freshman**
- Mathematics 1840-50-60
- Math/Science courses approved by the department
- Math/Science courses approved by the department
- Humanities/social studies electives
- Total: 193 hours

**Sophomore**
- Mathematics 2840-50-60
- Math/science courses approved by the department
- Math/Science courses approved by the department
- Humanities/social studies electives
- Total: 197 hours

**Junior**
- Mathematics 3840-50-60
- Math/science courses approved by the department
- Math/Science courses approved by the department
- Humanities/social studies electives
- Total: 196 hours

**Senior**
- Humanities/social studies electives
- Total: 206 hours

---

**Industrial Engineering**

**Freshman**
- Mathematics 1840-50-60
- Math/Science courses approved by the department
- Math/Science courses approved by the department
- Humanities/social studies electives
- Total: 193 hours

**Sophomore**
- Mathematics 2840-50-60
- Math/science courses approved by the department
- Math/Science courses approved by the department
- Humanities/social studies electives
- Total: 197 hours

**Junior**
- Mathematics 3840-50-60
- Math/science courses approved by the department
- Math/Science courses approved by the department
- Humanities/social studies electives
- Total: 196 hours

**Senior**
- Humanities/social studies electives
- Total: 206 hours
### Departments of Instructions

#### Agricultural Engineering
(See College of Agriculture)

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<th>Course Code</th>
<th>Title</th>
<th>Hours</th>
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<tr>
<td>2100</td>
<td>Introduction to Engineering Methodology (4)</td>
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#### Basic Engineering and Graphics
(Non-Departmental Unit)

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<td>1310 Basic Mechanics (4)</td>
<td>(1) Forces in a plane; free body diagram analysis, equilibrium in two dimensions; application to frames and machines; friction; introduction to forces in space. Required of all engineering students except engineering physics majors. Coreq: Math 1840. 4 hrs lec.</td>
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#### Basic Engineering (179)
Coordinator: W. T. Snyder

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<td>1310 Basic Mechanics (4)</td>
<td>(2) Position and displacement vectors, particle kinematics using Newton’s laws; impulse-momentum, work-energy; introduction to simple harmonic motion. Prereq: 1310; coreq: Math 1850. 4 hrs lec.</td>
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#### Chemical, Metallurgical, and Polymer Engineering

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<td>1310 Basic Mechanics (4)</td>
<td>(3) Position and displacement vectors, particle kinematics using Newton’s laws; impulse-momentum, work-energy; introduction to simple harmonic motion. Prereq: 1310; coreq: Math 1850. 4 hrs lec.</td>
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### Engineering Studies

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### Graphic Representation

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<td>1410 Basic Graphics (4)</td>
<td>Introduction to thermodynamics fluid statics, and mechanics. Buoyancy forces on submerged surfaces; Bernoulli’s equation, first law of thermodynamics discussing work, heat, and other forms of energy. Required of all engineering students except engineering physics majors. Prereq: 1310; coreq: Math 1850. 4 hrs lec and one 3-hr lab.</td>
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### Other Courses

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<td>1310 Basic Mechanics (4)</td>
<td>(4) Concepts of mechanics and energy, including conservation of energy, work-energy theorem, power and energy, force and momentum, and simple harmonic motion. Prereq: 1310; coreq: Math 1850. 4 hrs lec.</td>
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### Industrial Engineering

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<td>(5) Concepts of mechanics and energy, including conservation of energy, work-energy theorem, power and energy, force and momentum, and simple harmonic motion. Prereq: 1310; coreq: Math 1850. 4 hrs lec.</td>
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### Other Technical Courses

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<td>(6) Concepts of mechanics and energy, including conservation of energy, work-energy theorem, power and energy, force and momentum, and simple harmonic motion. Prereq: 1310; coreq: Math 1850. 4 hrs lec.</td>
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### Technical Electives

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<td>(7) Concepts of mechanics and energy, including conservation of energy, work-energy theorem, power and energy, force and momentum, and simple harmonic motion. Prereq: 1310; coreq: Math 1850. 4 hrs lec.</td>
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### Cooperative Curriculum in Aerospace Engineering

**Students Working Spring and Fall Quarters—Group A**

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<th>Physics</th>
<th>Speech</th>
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**TOTAL: 203 hours**

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**Students Working Summer and Winter Quarters—Group B**

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**TOTAL: 203 hours**

*Humanities/social studies electives; minimum of 19 hours required.

Technical electives; upper-division courses in engineering, mathematics, or physical science as approved by the department.
Cooperative Curriculum in Civil Engineering

Students Working Spring and Fall Quarters—Group A

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Students Working Summer and Winter Quarters—Group B

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1 Humanities/social studies courses approved by the department.
2 Mechanical engineering 3520 or 3311 may be substituted.
3 Technical electives must be approved by the student's adviser and the primary and one of the two secondary areas of study must come from the departmental list of approved courses for 15 credits and 6 credits respectively.
4 Math/science courses approved by the department.
## Cooperative Curriculum in Electrical Engineering

### Students Working Spring and Fall Quarters—Group A

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### Students Working Summer and Winter Quarters—Group B

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## Cooperative Curriculum in Engineering Physics

**Students Working Spring and Fall Quarters—Group A**

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**TOTAL: 199 hours**

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### Students Working Summer and Winter Quarters—Group B

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**TOTAL: 199 hours**

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1To be taken from the College of Liberal Arts triads of Language, Literature and Arts, or History and Society, with at least 16 hours from courses approved for Language, Literature and Arts.
2The honors sequence (Physics 1318-28-38) is recommended for qualified majors.
3To be taken in College of Engineering.
5From engineering, mathematics, computer science, physics, chemistry, or astronomy.
6Students not pursuing graduate studies may substitute Physics 3710-20-30.
## Cooperative Curriculum in Engineering Science

**Students Working Spring and Fall Quarters—Group A**

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| **SECOND**  | Math. 2840 . 4        | Physics 2310 . 3      | Mechanics 3311 . 3   |                      |
| **YEAR**    | Physics 2330 . 3      | Elect. Engr. 3110 . 3 | Elect. Engr. 3120 . 3 |                      |
|             | ES & M 3700 . 4       | *Humanities/social    | Phys. or bio. sci.   |                      |
|             | ES & M 3310 or 3120 . 3| studies elect . 4    | elective . 3         |                      |
|             | ES & M 3311 or 3120 . 3| *Humanities/social    | *Engr. sci. elect . 3|                      |
|             | Elect. Engr. 3110 . 3 | ES & M 3460 . 4       |                      |                      |
|             | ES & M 3460 . 4       | ES & M 4010 . 4       |                        |                      |
|             | *Humanities/social    | *Humanities/social    |                      |                      |
|             | studies elect . 4     | studies elect . 4     |                      |                      |
| **THIRD**   | ES & M 4810 . 4       | ES & M 4010 . 4       | Math. elect . 3       |                      |
| **YEAR**    | ES & M 4860 . 4       | ES & M 4620 . 4       | Phys. or bio. sci.    |                      |
|             | *Humanities/social    | Elect. Engr. 3520 . 3 | Elect. Engr. 4520 . 3|                      |
|             | studies elect . 4     | *Humanities/social    | *Tech. elect . 3      |                      |
|             | *Tech. elect . 6      | studies elect . 4     | *Engr. sci. elect . 9|                      |

**FOURTH**

| **YEAR**    | Math. 1860 . 4        | Math. 1870 . 4        | Math. 1880 . 4       |                      |
|             | Chem. 1110 . 4        | Chem. 1130 . 4        | Chem. 1150 . 4       |                      |
|             | Engr. 1010 or 1011 . 3| English 1020 . 3      | English 1033 . 3     |                      |
|             | ES & M 3700 . 4       | Basic Engr. 1330 . 4  | Basic Engr. 1410 . 2 |                      |
|             | ES & M 3310 or 3120 . 3| *Humanities/social    | Phys. or bio. sci.   |                      |
|             | Elect. Engr. 3110 . 3 | ES & M 3460 . 4       | elective . 3         |                      |
|             | ES & M 3460 . 4       | ES & M 4010 . 4       | *Engr. sci. elect . 3|                      |
|             | *Humanities/social    | ES & M 4620 . 4       | Tech. elect . 3      |                      |
|             | studies elect . 4     | *Humanities/social    | *Humanities/social    |                      |
|             | *Humanities/social    | studies elect . 4     | studies elect . 4    |                      |

**FIFTH**

| **YEAR**    | ES & M 4810 . 4       | ES & M 4010 . 4       | Math. elect . 3      |                      |
|             | ES & M 4860 . 4       | ES & M 4620 . 4       | Phys. or bio. sci.   |                      |
|             | *Humanities/social    | *Humanities/social    | Elect. Engr. 3520 . 3|                      |
|             | studies elect . 4     | studies elect . 4     | *Tech. elect . 3     |                      |
|             | *Humanities/social    | *Humanities/social    | *Engr. sci. elect . 4|                      |
|             | studies elect . 4     | studies elect . 4     | studies elect . 4    |                      |

**TOTAL:** 196 hours

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1. Humanities/social studies courses approved by the department.
2. Appropriate courses approved by the department.
3. Appropriate courses in the College of Engineering approved by the department.
4. Upper-division courses in mathematics, statistics, natural science, or engineering approved by the department.
## Cooperative Curriculum in Industrial Engineering

### Students Working Spring and Fall Quarters—Group A

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**TOTAL: 206 hours**

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**TOTAL: 206 hours**
### Cooperative Curriculum in Mechanical Engineering

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TOTAL: 203 hours

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1. Humanities/social studies electives: Minimum of 19 hours required.
2. Mechanical engineering electives: senior courses in mechanical or aerospace engineering not otherwise required.
3. Technical electives: upper-division courses in engineering, mathematics, or physics as approved by the department.
Cooperative Curriculum in Metallurgical Engineering

Students Working Spring and Fall Quarters—Group A

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A minimum of one-half (12 hours) of the non-technical electives must be taken from a single group under one of the three areas of the humanities and social studies electives.

Associate Professor
W. T. Becker, Ph.D. Illinois; D. B. Bruns, Ph.D. Houston; R. M. Counce, Ph.D. Tennessee.

*Alumni Distinguished Service Professor
**Distinguished Professor
**Space Institute, Tel Aviv

BACHELOR OF SCIENCE PROGRAM

Separate complete curricula are offered in chemical engineering and in metallurgical engineering. However, the first two years of these curricula are identical and a decision as to which can be made in the third year. Both curricula are arranged to provide a central core of courses with flexibility in the upper-division years to permit emphasis on preparation for graduate study or technical employment. Graduation in either chemical or metallurgical engineering requires a minimum grade point average of 2.00 for all departmental courses.

GRADUATE STUDY PROGRAMS

The programs leading to the degrees of Master of Science and Doctor of Philosophy with majors in chemical engineering, metallurgical engineering, or polymer engineering are offered.

These programs have been strengthened by fellowships or grants provided by industrial companies including Dow, DuPont, General Electric, Shell, Texaco, Procter and Gamble, Celanese, Monsanto, American Enka, Union Carbide, Stauffer, Owens Corning, Cities Service, and Eastman Kodak, and by graduate fellowships and traineeships provided by National Science Foundation. Other aid to students has been available through research assistancies on contracts with industry and governmental agencies. The University's Graduate School operates a Resident Graduate Program at Oak Ridge, Kingsport, and Chattanooga.

See the Graduate Catalog for detailed information.

Chemical and Metallurgical Engineering (227)


2011 Sophomore Inspection Trip (6) Inspection trip to industrial plant. Usually scheduled in fall on ETEA day. Required for chemical engineering and metallurgical engineering majors. S/NC.

2220 Analog Computer Practice (1) Introduction to fundamentals of analog programming. Analog computer facilities and analog simulation languages will be emphasized. Prereq: Electrical Eng. 2310 or Elec. Engr. 3110 or consent of instructor. One lab. S/NC.

2230 Mini Computer Practice (1) Use of mini computers. Prereq: Basic Engineering 1410, or consent of instructor. One lab. S/NC.

2240 Mini Computer Data Acquisition (1) Mini computers used in research. Prereq: 2220 or consent of instructor. One lab. S/NC.

3100 Introduction to the Materials of Technology (4) Examination of sources, processing, and properties of metallic, ceramic, polymeric, and composite materials based upon an historical perspective and current practices in technology, architecture, and art. Lectures and demonstrations. Open to students in all colleges. Prereq: Introductory science course.

4310-20 Seminar (1) Presentation and discussion of economic, political, humanistic, and other topics of interest to chemical and metallurgical engineers. S/NC.

Chemical Engineering (226)

3010 Industrial Inspection Trips (1) Technology of chemical processes emphasizing Tennessee industry; plant trips. S/NC.

3040 Chemical Engineering Thermodynamics (4) Applications of the second law of thermodynamics to physical processes and thermodynamic systems; cycles; applications of the Gibbs function to one, two, and three phase chemical systems; use of tabular and graphical data; equilibrium calculations. Prereq: Chem. Engr. 2020; Chemistry 1130; coreq: Math 2840, 3 hrs and 1 lab period.


3220 Special Problems (3) Investigation of chemical engineering problems. Prereq: Consent of instructor.

3410 Fluid of Flows (4) Differential and overall momentum balances, mechanical energy balances; flow in tubes, piping systems, and packed beds; metering devices, pumps. Prereq: Chem. Engr. 1110, Math 2850, 3 hrs and 1 lab.

3420 Heat Transfer (4) Differential and overall energy balances, steady and unsteady state, heat conduction in simple geometries; heat transfer in tubes and heat exchangers; heat transfer in boiling radiation. Prereq: 3410. 3 hrs and 1 lab.


4450 Diffusional Operations (3) Diffusion simultaneous heat and mass transfers in fixed and fluidized beds; applications including humidification, gas absorption, extraction. Prereq: 3420, Chemet. Engr 3040.

3610 Introduction to Process Dynamics and Control (3) Introduction to concepts of process dynamics and control. Steady-state analysis of chemical process control systems. Unsteady state nature of chemical processes. Laplace transform techniques, block diagram algebra, and transfer functions. Mathematical models for several processes are developed and analyzed in detail. Prereq: Math 2840.

3820 Chemical Process Control (3) Basic control theory applied to control of chemical processes: cascade control, feed-forward control, stability analysis, frequency response. Survey of modern control theory of typical industrial unit operations. Prereq: 3610.

4010-20 Thesis (3,3) Investigation and report of elementary chemical engineering problem.

1110 Chemical Engineering Data Analysis (3) Analytical and experimental identification of system parameters; feedback control; applications including humidity, gas absorption, extraction. Prereq: 3420, Chemet. Engr 3040.


4130 Introduction to Optimization (3) Principles and applications of optimization techniques to chemical process design; unconstrained optimization, equality and inequality constraints, optimization of continuous, combinatorial, and dynamic programming. Prereq: Math 2840.

4220 Chemical Engineering Laboratory (3) Laboratory investigation of chemical engineering operations. Prereq: 3440-50, 3650, 4530.

4230 Project Laboratory (3) Laboratory investigation of chemical engineering problem, stressing techniques of group effort. May be repeated.


4420 Process Design and Economic Analysis (3) Development of basic information on a process into an integrated plant design considering mass and energy balances, equipment specifications, equipment characteristics, capital investment, operating costs, and economic merit. Prereq: 4410, 4530.

4430 Special Problems in Design and Economics (3) Extension of 4420 for student participation in A.I.Ch.E. Student design contest; other advanced design projects. Prereq: 4420.

4450 Hydrocarbon Processing (3) Study of specialized characterization of physical properties of fossil fuel raw materials and products, and of processes for conversion of fossil fuel raw materials into products needed in industrial energy, industrial raw material and consumer markets. Prereq: 3440.

4470 Sulfur Removal from Coal and Associated Problems (3) Chemical and physical treatment of domestic coals, sulfur distributions; beneficiation by both physical and chemical methods; fluidized bed combustion with both natural and synthetic SOx sorbents;stack gas SOx scrubbing. Prereq: Consent of instructor.

4480 Coal Processing to Liquid Fuels (3) Characterization of various coals with respect to current liquidification methods; modeling of conversion processes and estimation of maximum yields; water and oxygen requirements; pyrolysis; catalytic hydrogenation; reactor design considerations; review critique of selected articles from both the current literature and patents. Prereq: Consent of instructor.

5300 Chemical Engineering Reaction Kinetics (3) Chemical reaction in fixed beds, mathematical interpretation of laboratory and pilot plant data; reactor design. Prereq: 3420, Chemet. Engr, 3040, Chemistry 3430.

5450 Fluid-Solid Operations (3) Heat and mass transport in two-phase systems; applications include adsorption, ion exchange, crystallization. Prereq: 3440-50.

6520 Process Modeling, Simulation, and Control of Chemical Processes (3) Development of process models, experimental process identification, process computer simulation, conventional and non-conventional feedback control, advanced control concepts. Prereq: 3620 or equivalent background in basic control theory and differential equations.

4730 Mass and Energy Flow in Biological Systems (3) Basic biochemical and organizational principles applied to biological systems. Derivatives of general equations of biomass and energy transfer Thermodynamics of transport and equilibrium in biological systems. Discussion of Volterra's equation and biological clocks. Lect. Prereq: Consent of instructor.

4740 Introduction to Transport Phenomena in Biological Systems (3) Application of principles of transport and thermodynamics to low Reynolds number flow. Transfer of chemical energy and various cellular active transports; structure and rheology of physiological fluids, membranes of biological phenomena; analysis and design of artificial organs. Prereq: 3440 and 3450, or consent of instructor.

4750 Microbiological Process Engineering (3) Application of chemical engineering principles and design
# Cooperative Curriculum in Agricultural Engineering

(See College of Agriculture Section)

# Cooperative Curriculum in Chemical Engineering

Students Working Spring and Fall Quarters—Group A

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TOTAL: 200 hours

Students Working Summer and Winter Quarters—Group B

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TOTAL: 200 hours

1A minimum of one-half (12 quarter hours) of the humanities/social studies electives must be taken from a single group under one of the three areas of the humanities and social studies electives.
## Cooperative Curriculum in Nuclear Engineering

Students Working Spring and Fall Quarters—Group A

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Students Working Summer and Winter Quarters—Group B

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concept to microbiological processes; continuous culture of microorganisms, food processing and pharmaceutical processes. Prereq: 3440, 3450, or consent of instructor.

4760 Principles of Biochemical Separation (3) Fundamental aspects and similarities of modern biochemical separation methods; classroom demonstrations, design of production and analytical systems. Prereq: Consent of instructor.

4781-62-63 Topics in Chemical Bioengineering (3,3,3) Problems of interest in chemical bioengineering. Prereq: Consent of instructor.

4900 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 9 hours.

GRADUATE

5000 Thesis

5010 Graduate Seminar (1)

5050 Engineering Analysis (3)

5120 Heat Convection (3)

5130 Methods of Optimization (3)

5210 Advanced Diffusion and Operations (3)

5250 Chemical Process Industry Economics (3)

5310 Thermodynamics of Heterogeneous Equilibrium (3)

5320 Statistical Thermodynamics (3)

5510 Chemical Reactor Design (3)

5610 Stagewise Mass Transfer Operations (3)

5620 Differential Mass Transfer Operations (3)

5810 Mechanics of Viscous Flow (3)

5900 Special Topics in Chemical Engineering

6000 Doctoral Research and Dissertation

6130 Process Optimization (3)

6210 Advanced Diffusional Operations (3)

6250 Venture Analysis in the Process Industries (3)

6310 Thermodynamics of Irreversible Processes (3)

6320 Statistical Thermodynamics of Non-equilibrium Systems (3)

6410 Stability Phenomena in Chemical Engineering: Discrete Systems (3)

6420 Stability Phenomena in Chemical Engineering: Continuous Systems (3)

6510 Applied Chemical Reaction Kinetics (3)

6520 Catalytic Reactor Design (3)

6710 Process Dynamics (3)

6900 Advanced Topics of Chemical Engineering (3)

Metallurgical Engineering (679)

2110 Engineering Materials I (3) Introductory course correlating the atomic, crystal, and microstructure of solids with mechanical, physical, and chemical properties of engineering significance. 3 hrs or 2 hrs and 1 lab.

2210 Electron Microscopy (1) Presents to science and engineering students a broad introduction to the operation of the electron microscope and its applications to scientific problems. Prereq: Physics 2130-21, 3-hr lab. S/N.

3010 Industrial Inspection Trips (1) Technology of metallurgical industries, emphasizing Tennessee industry; plant trips. S/N.

3040 Metallurgical Thermodynamics (4) Applications of laws of thermodynamics to problems of metallurgical interest. Law and entropy; auxiliary functions, relationship between free energies and phase diagrams; reaction equations in gases and between gases and condensed phases. Use of heat capacity and free energy data in calculations. Concepts of activity and activity coefficient and their variation with T, P, and chemical potential in condensed phases. Suggested for mechanical, civil, and industrial engineering students.

3050 Production Metallurgy (3) Thermodynamic and kinetic principles of rolling, smelting, refining. Prereq: Chem. Engr. 2404.

3060 Metallurgical Kinetics (3) Application of principles of chemical reaction kinetics, fluid flow, and heat and mass transfer, to pyro-, hydro-, and electrometallurgical processing. Reaction order and basic rate laws; activated complex theory; principles of adsorption and catalysis. Consideration of processes such as roasting of sulfides, reduction of oxides, smelting, refining, electroweaving, and leaching. Prereq: Met. Engr. 3050; Chem. Engr. 3410 and 3420 or equivalent; 3 hrs or 2 hrs and 1 lab.

3110 Engineering Materials I (4) Introductory course correlating the atomic, crystal, and microstructure of solids with mechanical, physical, and chemical properties of engineering significance. 3 hrs and 1 lab.

3120 Engineering Materials II (3) Extension of 2110 with emphasis on production and analytical systems. Prereq: 2110. 3 hrs. or 2 hrs and 1 lab.

3130 Engineering Materials III (3) Extension of 2110 with emphasis on control of electrical and magnetic properties of materials by specification of composition, thermal, and mechanical treatment; correlation or resultant properties with service performance. Suggested for electrical engineering students.

3140 Engineering Material IV (3) Extension of 2110 with emphasis on problem-solving, processing, specification, and evaluation. Suggested for mechanical and industrial engineering students.

3150 Engineering Materials V (3) Extension of 3110 with emphasis on mechanisms and control of reactions of engineering materials with aqueous, non-aqueous, and gaseous environments. Prereq: 2110 or 3110 or Chem. Engr. 2030.

3160 Engineering Materials VI (3) Extension of 2110 with emphasis on control of mechanical properties of materials by specification of composition, thermal, and mechanical treatment; correlation or resultant properties with service performance. Suggested for nuclear and mechanical engineering.

3170 Engineering Materials VII (3) Extension of 2110 to biomedical applications of materials; Engineering materials for medical applications: metals, polymers, ceramics; prosthetic devices; dental applications; corrosion problems; failure analysis; fabrication. Prereq: 2110 or equivalent.


3220 Diffusion and Annealing (3) Introduction to solid state kinetics; point defects, solid solutions, diffusion equations and mechanisms, annealing of cold worked structures. Prereq: 3040.

3230 Phase Transformations (4) Thermodynamic and structural factors governing binary and ternary phase diagrams in simple and complex systems. Prereq: 3220, 3 hrs. and 1 lab.

3310 Biomedical Applications of Materials for Life Scientists (3) Principles of engineering materials; metals, ceramics, and polymer classes; methods of fabrication of components; applications of prosthetics, devices, and dental materials. Prereq: Chemistry 1110-20, 30 or equivalent.

3520 Materials Behavior and Chemical Process Equipment Design (3) Mechanical, metallurgical, and chemical considerations in design of chemical processing equipment. Prereq: Chemet. Engr. 2405 or equivalent; Chemet. Engr. 3420. (Same as Engineering Mechanics 3520.)

3710 Metallurgical Applications in Manufacturing Technology (3) Fabrication methods and principles of mechanical/thermal processing for finished and semifinished articles; casting, powder metallurgy, plastic forming, joining, heat treatment. Prereq: 2110.

4010-20 Thesis (3-6,3-6) Investigation and research on metallurgical engineering problems.

4230 Project Laboratory (3) Group or individual investigation of problems related to metallurgical engineering or materials science. May be repeated for a maximum of 9 credits. Prereq: Minimum of one course beyond 2110, 3110 or Chem. Engr. 2030.

4240 Engineering Materials Design (3) Property control through composition, heat treatment, and transformation in ferrous, nonferrous, Plain carbon steels, stainless steels, and tool steel processing for property selection and service requirements. Prereq: 3320 or consent of instructor.

4250 Design and Analysis (3) Design and laboratory sessions on analysis of materials requirements and performance in engineering structures and components. Prereq: Senior standing.

4510-20 X-Ray Diffraction and Crystallography (3,3,3) Applications of x-rays and micro techniques; structure determination; crystallography; applications; characterization of materials; methods of characterization. Prereq: 3 hrs. or 2 hrs. and 1 lab.

4540 Fracture-Safe Design (3) (Same as Engr. Sci. and Mech. 4540.)

4610 Physical Properties of Materials (3) Electron theory of solids, types of bonding in solids; thermal, electrical, and magnetic properties of material; relationship between metallurgical structure and properties. Prereq: 3 hrs. or 2 hrs. and 1 lab.


4740 Mechanical Metallurgy II (3) Ductile and brittle fracture, creep and stress rupture, fatigue and stress rupture, and residual stresses. Effects of state of stress, loading rate, time, temperature, and structure of engineering materials. 2 hrs. and 1 lab or 3 hrs. Prereq: 3120 or 3230, and 4730 or Mech. Engr. 3650 or consent of instructor. Also suggested for mechanical engineering, engineering mechanics, and engineering science students.

4760 Casting and Welding (3) Principles and processes of casting and welding; heat transfer, solidification, segregation, gas-melt and slag-metal interactions, thermal treatments, associated stresses. Prereq: 3120 or 3230, 3 hrs. or 2 hrs. and 1 lab.

4770 Mechanical Metallurgy III (3) Finite plastic strain. Plastic stress-strain relations; Principles of fabrication: forging, swaging, extrusion, rolling, deep drawing. 2 hrs. and 1 lab or 3 hrs. Prereq: 4730 or consent of instructor. Also suggested for mechanical engineering, engineering mechanics, and engineering science majors.

GRADUATE

5000 Thesis

5010 Graduate Seminar (1)

5050 Engineering Analysis (3)

5110 Point Defects and Dislocations (3)

5120 Plastic Deformation I (3)

5130 Plastic Deformation II (3)

5140 Diffusion and Annealing in Solids (3)

5150 Phase Transformations (3)
5230 Mechanical Behavior of Solid Polymers (3)
5310 Polymer Solution Properties and Characterization (3)
5410 Rheology and Polymer Processing (3)
5450 Principles of Injection and Blow Molding Operations (3)
5511 Laboratory Methods in Polymer Engineering I (1)
5512 Laboratory Methods in Polymer Engineering II (1)
5513 Laboratory Methods in Polymer Engineering III (1)
5610 Textile Processing (1)
5620 Textile Engineering Mechanics (3)
5710 Phase Transformations in Polymer Systems (3)
5810 Physical Properties of Polymer Structures (3)
5810-20-30 Selected Topics in Polymer Science (3,3,3)
6000 Doctoral Research and Dissertation
6110-20-30 Theoretical Metallurgy (3,3,3)
6210-20-30 Rate Processes in Metallurgy (3,3,3)
6320-30 Solidification and Crystal Growth II and III (3,3,3)
6410-20 Thermodynamics of Solids (3,3)
6810 Mechanical and Physical Properties of Crystals I (3)
6820 Mechanical and Physical Properties of Crystals II (3)
6830 Seminar in Anisotropic Properties of Crystals (3)

Civil Engineering (254)
2260 Engineering Surveys (4) Menusuration through the application of surveying techniques, the theory of errors and their analysis; fundamental concepts of horizontal, vertical, and angular measurement; basic surveying operations and computations. 3 hrs. lectures and one 3 hr. lab. Prereq: Math 1950.
2310 Seminar (1) Presentation and discussion of topics related to civil engineering.
2360 Route Surveying (3) Emphasis on basic principles and practical applications of horizontal and vertical alignment of transportation routes, specifically covering surveying, compound, and parabolic curves, and spirals. Earthwork computations. Prereq: 2260.
3210 Stressess in Framed Structures (3) Reactions, moments, shears, and stresses in trusses and framed structures from fixed boundary conditions; influence lines and reactions, moments, and shears. Prereq: Engr. Science Mech. 3311.
3230 Design of Framed Structures (3) Selection of rolled beams; design of compression and tension members for axial and combined axial and bending stresses. Prereq: 3210.
3310 Physical Properties of Soils (3) Introduction to soils as a construction material, determination of physical properties of soils. 2 hrs of lecture and 1 lab. Prereq: Engr. Science Mech. 3110 and 3311.
3320 Computer Applications in Civil Engineering (1) Solution of Civil Engineering problems through the use of digital computers. Prereq: Basic Engr. 1410.
3360 Surveying Practice (3) Route surveying procedures. Three 3-hr. labs. Coreq: 2260.
3600 Transportation Planning (3) Emphasis on transportation planning perspectives and context, location analysis, urban/rural; use of the planning process to establish existing travel patterns, modeling of demand, proposing alternatives, and their evaluation, and plan implementation. Prereq: Junior standing.
3610 Transportation Engineering (3) Introduction to design, construction, maintenance, and operation of various transportation modes; their guideways and terminals. Prereq: Junior standing.
3710 Materials of Construction (3) Physical and mechanical properties of specific construction materials, behavior of materials and structures under load, ferrous and nonferrous metals, cements, concrete, asphalt, and other. 32. 3 lectures and 1 lab. Prereq: Engr. Science Mech. 3311.

4110 Concrete Design (3) Reinforced concrete beams and columns; use of standard specifications. Prereq: 3210 and 3710.

4120 Concrete Design (3) Reinforced concrete continuous beams and floor slabs; footing and retaining walls. Prereq: 4110 and 4410.

4220 Foundations and Substructures (3) Foundation principles of design of dry and subaqueous foundations. Prereq: 3310.

4230 Legal and Ethical Aspects of Engineering (3) Legal principles underlying engineering work; laws of contracts, torts, agency, real property, problems of professional registration and ethics. Prereq: 3220.

4240 Structural Design (3) Plate girders, composite steel and concrete beams, connections and details, and design of small industrial building. Two 3-hr. periods. Prereq: 3930 and 4410.

4260 Photogrammetry (3) Methods of plotting maps from aerial photographs, stereoscopic plotting instruments, applications. Prereq: 3260, or Forestry Summer Camp for forestry majors.

4320-30 Seminar (1, 1) Selected topics dealing with historical and modern civil engineering achievements and professional and ethical responsibilities. Prereq: Senior standing and completion of all junior level non-elective engineering courses.

4410 Deflections and Statically Indeterminate Structures (3) Deflections of beams and trusses; analysis of indeterminate structures, beams, bolts, and frames. Prereq: 3210.

4420 Analysis of Framed Structures (3) Maximum stresses due to moving loads; use of influence lines; lateral forces due to earthquake and wind; analysis of portals, building frames, and space frames. Coreq: 4410.

4430 Construction Methods and Equipment (3) Fundamental operations in construction and selection of equipment; production rates, balancing of equipment, and cost estimates. Prereq: 3710.

4460 Land Surveying (3) Procedures of locating properties; evaluating evidence; procedures to describe property, to create a plat of a division, and to prepare plats; laws of land surveying. Prereq: 2260 or equivalent.

4510-20 Advanced Structural Design (3, 3) Plastic design in steel in 4510; design of typical steel span structures in 4520. Prereq: 3230 for 4510; 3320 and 4110 for 4520.

4530 Cost Comparisons in Design and Construction (3) Cost of engineering and construction. Cost comparison of alternate designs with emphasis on applications to civil engineering problems. Prereq: 4450.


4560 Engineering Behavior of Soils (3) Plastic and elastic behavior of soils, determination and use of engineering properties of in-situ soils. 2 hrs. of lecture and 1 lab. Prereq: 4220 or consent of instructor.

4560 Stabilization of Soils (3) Mechanical stabilization of soils by compaction, drainage, and blending; chemical stabilization of soils with admixtures; water-proofing and modifying soils and additives. 2 hrs. of lecture and 1 lab. Prereq: 3310.

4600 Highway Engineering I (3) Design, construction, operation, and maintenance of highway facilities; includes integration of system planning and project planning to design and construction procedures. Prereq: 2460, 2500, and 3700.

4620 Airport Planning and Design I (3) Emphasis on airport master planning. Included for consideration on the air side are runway configuration, capacity, geometries, and design of airport facilities. Emphasis is on terminal layout and design, and ground access systems and parking. Prereq: 3660, 3610.

4640 Traffic Engineering (3) Characteristics of driver, vehicle, and roadway and their interrelationships; traffic studies; basic considerations of traffic circulation and control; elements of urban transportation planning studies. Prereq: Senior Standing.

4650 Highway Engineering II (3) Integration and application of various engineering principles and techniques to process of planning, locating, and design of highway facility through comprehensive team project. 1 lecture and 2 labs. Prereq: 4620.

4710 Portland Cement Concrete Mix Design (3) Properties and tests of Portland cement concrete, methods of concrete mix design, non-destructive concrete evaluation testing, use of concrete admixtures. 2 lectures and 1 lab. Prereq: 3710.

4720 Asphalt and Bituminous Concrete (3) Properties and tests of asphalt and asphaltic mixes, mix design and bituminous concrete. Emphasis on use of asphalt in transportation construction projects. 2 lectures and 1 lab. Prereq: 3710.

4731-32 Earthquake Resistant Structure I, II (4, 4) (Same as Architecture 4731-32).

4800 Introduction to Civil Engineering Systems (3) Methods of modeling civil engineering systems and their specific application to problems of transportation, environment, water resources, and materials. Prereq: Senior standing or consent of instructor.

4850 Elementary Structural Matrix Methods (4) (Same as Architecture 4850 and Engineering Science and Mechanics 4850.)

4860 Structural Wood Design (3) The application of structural design principles to structural members of various combinations of wood products. Beams, columns, and diaphragm construction with plywood are covered in some detail. Attention is given to various types of fastenings and connections. Prereq: 3230.

4880 Civil Engineering Systems Design and Management (3) Introduction to basic systems engineering concepts within civil engineering context; discussion of the role of decision maker and use of optimal principles of engineering planning. Prereq: Computer Science 3160.

4910-20 Special Topics (1-3) Topics relating to recent developments and current practice in civil engineering through supervised self-study. Prereq: Consent of individual instructor and approved by department head. May be repeated.

GRADUATE

5000 Thesis

5002 Non-Thesis Graduation Completion (3-15)

5110-20 Statically Indeterminate Structures (3, 3)

5140 Statically Indeterminate Structures (3)

5150 Matrix Formulation of Structural Problems (3)

5150 Matrix Formulation of Structural Problems (3)

5160 Analysis and Design of Plate Structures (3)

5170 Introduction to Structural Dynamics (3)

5180 Finite Element Structural Analysis (3)

5220 Pavement Design (3)

5240 Advanced Properties of Materials: Bituminous Substances and Mixes (3)

5270 Planning and Transportation (3)

5310 Engineering Practice (3)

5320-30 Engineering Practice Applied to Administration of Engineering Projects (3, 3)

5410 Construction Contract Law and Administration (3)

5420 Structural Model Analysis (3)

5430-40-50 Construction Management I, II, III (3, 3, 3)

5460-70 Construction Estimating I, II (3, 3)

5550 Soil Mechanics-Plastic Equilibrium (3)

5560 Soil Mechanics-Elastic Behavior (3)

5570 Soil Mechanics-Seepage (3)

5610 Behavior of Steel Structures (3)

5730 Prestressed Concrete (3)

5740 Behavior of Reinforced Concrete Members (3)

5800 Urban Systems: Engineering and Management I (3)

5805 Urban Systems: Engineering and Management II (3)

5810 Traffic Engineering-Characteristics (3)

5820 Traffic Engineering-Operations (3)

5840 Geometric Design (3)

5850 Functional Design of City Streets and Urban Freeways (3)

5860 Urban Transportation Planning (3)

5870 Public Transit Planning (3)

5890 Traffic Accident Reconstruction (3)

5900 Special Problems in Civil Engineering (1-9)

5910-20-30 Special Topics (1-6, 1-6, 1-6)

6000 Doctoral Research and Dissertation

6110 Research Development (3)

6120 Research Management (3)

6161 Behavior of Steel Bridges and Buildings (3)

6740 Behavior of Reinforced Concrete Beams and Frames (3)

6750 Behavior of Reinforced Concrete Slabs (3)

6830 Traffic Flow Theory (3)

6860 Statewide Passenger Transportation Planning (3)

6870 Future Transit Technology and Research (3)

6880 Planning Models for Transportation Systems I (3)

6890 Planning Models for Transportation Systems II (3)

6910-20-30 Special Topics in Civil Engineering (3, 3, 3)

Environmental Engineering (344)

3000 Introduction to Environmental Engineering (3) Introduction to human interaction with the air, water, and land environment in which they live; role of engineering in environmental control. Prereq: Junior standing.

3120 Hydraulics (3) Application of basic and developed principles of hydraulics. Flow measurement, flow in closed conduits; uniform and nonuniform open channel flow; pumps and turbines; basic hydrodynamics; flow similitude and models. Two lectures and one 3-hr. lab. Prereq: Engr. Mech. 3110.


4030 Environmental Engineering Chemistry (3) Fundamentals of chemistry which relate to generation,

participates in the engineering science doctoral program. The department also offers courses in the fields of control systems, electric machines, power systems, and heat transfer. The department also offers courses in the fields of control systems, electric machines, power systems, and heat transfer.


3180 Logic Design of Digital Systems (3) Introduction to Boolean algebra and design of combinational circuits. Topics include: Boolean algebra, logic functions, and logic circuit applications. Design of sequential circuits, and digital system testing and simulation. Prereq: 3100, Computer Science 3150. 3 hrs. including biweekly lab.

3190 Plasma I (3) Engineering applications of electronic plasma, effects and devices. Topics include electronic devices, plasma physics, plasma sources, plasma operation and applications (electro-optics), and MHD, controlled thermonuclear, and other techniques of advanced plasma physics. Introduction to feedback theory; stability criteria. Prereq: 3010 and Math 3150; conreq: 3180. 3 hrs. including project laboratory.

3270 Linear Systems Analysis (3) Stability and transient response; log-frequency, gain-phase, and polar plots; block diagram transformation; signal flow graphs; control systems; properties of second order system; introduction to feedback theory; stability criteria. Prereq: 3010 and Math 3150; conreq: 3180. 3 hrs. including biweekly lab.

3810 Basic Electronics I (3) Band theory fundamentals; theory and applications of p-n junctions; simple power supplies; theory of operation of field-effect transistors and applications. Coreq: 3080. 3 hrs. including project laboratory.

3820 Basic Electronics II (3) Physical operation of bipolar transistors and vacuum tubes with applications in basic amplifiers. Integrated circuit fundamentals. Prereq: 3810. 3 hrs. including project laboratory.

3830 Basic Electromagnetics I (3) Frequency and transient analysis of open and closed transmission lines. Fundamentals of distributed circuit analysis. Basic circuit theory. Prereq: 3820. 3 hrs. including project laboratory.

4020 Direct Electrical Energy Conversion (3) Basic principles, signal processing, and applications in the design of electrical systems. Prereq: 3820. 3 hrs. including biweekly lab.

4090 Propagation II (3) Metal tube, dielectric rod, and stripline waveguides. Waveguide resonators and other load components. Design of structures for utilization of microwave power transmission and for microwave integrated circuits. Prereq: 3060, 3100. 4 labs.


4210 Introduction to Artificial Intelligence (3) (Same as Computer Science 4210.)

4350 Elements of Network Synthesis (3) Graphical and functional properties of networks. Prereq: 3010 and 3040. 3 hrs. including biweekly lab.

4360 Network Synthesis (3) Energy relationships in networks. Quadratic forms. Positive real functions. Block diagram transformation; signal flow graphs; analog systems; properties of second order system; introduction to feedback theory; stability criteria. Prereq: 3010 and Math 3150; conreq: 3180. 3 hrs. including project laboratory.

4370 Introduction to Feedback System Design (3) Mathematical modeling of systems. Introduction to control systems; steady-state error and error constants; root-locus methods; optimum gain adjustment; compensation networks; Introduction to compensation. Prereq: 3720. Lab optional.

4381 Introduction to Applied Modern Control Theory (3) Project-oriented course stressing applications of optimal control theory. Topics include state-space representation of systems, controllability and observability, minimum principle, dynamic programming and the Hamilton-Jacobi equation for deterministic systems, optimal linear systems dynamics, and optimal control of stochastic systems. Prereq: 3720, Computer Science 3150, Math 2860 and 4120.

4391 Introduction to Applied Optimal Estimation (3) A project-oriented course stressing applications of optimal estimation theory. Course topics include: the state-space representation of systems, probability and stochastic processes, uncertain systems, least squares estimation, Wiener filters, the Kalman filter. Prereq: Electrical Engineering 3720, Computer Science 3150, Math 2860 and 4120 recommended.

4410 Power System Components and Control (3) Analysis of power system components and their interconnection. Studies in control of power systems, such as voltage and reactive power. Prereq: 3720.

4420 Power Systems Analysis (3) (Same as Computer Science 3150.)

4430 Transmission, Distribution, and Protection (3) Studies in underground and d.c. transmission; consideration of overvoltages and insulation requirements; system protection against faults. Prereq: 3060.

4460 Lasers and Masers (3) Principles of laser and maser operation based on classical concepts and electrical engineering analyses. Consideration of practical devices and applications. Prereq: Senior standing.


4480 Plasma III (3) Microscopic plasma physics, particles, interactions, oscillations, and waves. Prereq: 3190.


4500 Electro-Optic Detection and Instrumentation (3) Sensitivity, resolution, frequency response, and noise concepts of engineering problems. Data for both photographic emulsions and temporal detectors (e.g. photodiodes) will be given. Last third of the course will be devoted to selected electro-optic instrumentation systems (e.g. laser light scattering, optical data processing, holographic interferometry).


4570 Electro-Acoustics (3) Wave sound for vector, radiation field, and impedance fundamentals. Sound wave propagation in coupled mechanical systems. Example calculations such as active filters, amplifiers, attenuators, function generators, active rectifiers, and synchronous demodulators. Analysis of interfacing problems between transducers and signal processors. Prereq: 3830. 3 hrs. including project laboratory.

4600 Analog Signal Processing Circuits for Electrical Instrumentation (3) Use of operational amplifiers, instrumentation amplifiers, and other integrated circuits in signal processing. Design examples such as active filters, amplifiers, attenuators, function generators, active rectifiers, and synchronous demodulators. Analysis of interfacing problems between transducers and signal processors. Prereq: 3830. 3 hrs. including project laboratory.


4620 Sequential Machine and Digital System Theory (3) Design aspects of pulse, mode, clock-cycle, and level-coded sequential machines. Application of finite state machines and state transition diagrams to analyzing and designing the control and supervisory parts of digital systems. Prereq: 3190. 3 hrs. including biweekly lab.

4630 Digital System Organization and Design (3) Synthesis and implementation of digital systems, including the design and implementation of digital systems, including the design and implementation of digital systems, including the design and implementation of digital systems.
minicomputer and microprocessor architectures and comparisons. Characteristics of ALU and CPU structures, storage systems (RAM, ROM, and PROM building blocks), and input/output systems. Control Unit organization to include serial-parallel modes of operation, synchronous-asynchronous time sequencing, and microprogramming of control functions. Prereq: 3180, 3 hrs. including biweekly lab.

4660 Bioelectric instrumentation (3) Nature and origin of bioelectric potentials, transducers, amplifiers, requirements, recording systems, and noise problems. Prereq: Senior Standing.

4680 Electric Amplifiers (3) Feedback amplifier principles, wideband and linear amplifiers. Audio and radio frequency power amplifiers. Prereq: 3830, 3720, 3 hrs. including project laboratory.

4690 Communications Electronics (3) Receiver and transmitter circuits for communications. Prereq: 3040, 3830, 3 hrs. including project laboratory.

4700 Digital Integrated Electronics (3) Comparators, logic gates, flipflops, registers, counters, memories, analog switches, A/D and D/A conversion, clipping, clamping, and sweep circuits. Prereq: 3830, 3180, 3 hrs. including project laboratory.

4740 Integrated Circuits (3) Processing and fabrication of active and passive components for monolithic and hybrid circuits. Design techniques for linear and digital circuits. Prereq: 3830, 3 hrs. including project laboratory.

4750 Interactive Computer Graphics (3) (Same as Computer Science 4750 and Geography 4756.)


4800 Hardware-Software Interface In Minicomputer and Microprocessor System Design (3) Minicomputer and microprocessor interface design. Hardware-software interaction and trade-off. Priority interrupt structures. Telecommunications. Project oriented, contract course. Completion of two projects, one utilizing a minicomputer and the other a microcomputer, are minimal course requirements. Prereq: 3180.

4810 Discrete-Data Systems (3) Introduction to analysis and design of discrete data control systems using frequency domain techniques. Realtime digital filtering techniques; application of digital computers in closed-loop feedback systems. Prereq: 3720.

4820 Introduction to Pattern Recognition (3) Role of pattern recognition within framework of artificial intelligence. Design of learning and adaptive machines. Typical applications of pattern recognition to problems of practical significance. Computer simulation of elementary pattern recognition problems. Prereq: Either 3100 and Computer Science 3150, or Statistics 3450 and Computer Science 1510. (Same as Computer Science 4820.)

4830 Digital Image Processing (3) Principal methods of coding, storing, and processing images by means of digital computers. Computational algorithms for image operations. Prereq: 3100 and Computer Science 3150, or Statistics 3450 and Computer Science 1510. (Same as Computer Science 4830.)

4850 Small Computer Systems (3) Basic structure of small computer systems, input-output techniques, interrupt structures; peripheral devices, system software, and assembly language programming. Course oriented project oriented. Prereq: Basic Engr. 1410, Computer Science 1510 or 3150, or consent of instructor. (Same as Computer Science 4850.)

4910-20-30 Special Electrical Engineering Problems (3,3,3) Problems in electrical engineering involving library and experimental research. GRADUATE

5000 Thesis

5040-50-60 Electrical Engineering Research (3,3,3)

5070-80 Modern Transform Methods (3,3)

5110 Introduction to Network Analysis (3)

5120 Network Synthesis and Design (3)

5130 Advanced Network Analysis (3)

5170 Bioengineering Systems I: Models, Systems Analysis, and Simulation (3)

5175 Introduction to Logic Design (3)

5180 Bioengineering Systems II: Bioelectric Phenomena (3)

5190 Bioengineering Systems III: Instrumentation and Analysis (3)

5210-20 Advanced Electrical Machinery (3,3)

5230 Advanced Electrical Machinery Applications (3)

5240-50-60 Control Systems Design I, II, III (3,3,3)

5271 Modern Systems Theory I (3)

5281 Modern Systems Theory II (3)

5291 Modern Systems Theory III (3)

5310 Basic Requirements for Plasma Fusion (3)

5320 Diagnostics for Fusion (3)

5330 Engineering of Fusion (3)

5340 Introduction to Quantum Electronics (3)

5350 Properties of Quantum Devices (3)

5360 Application of Quantum Electronic Devices (3)

5370 Advanced Direct Electrical Energy Conversion I (3)

5380 Advanced Direct Electrical Energy Conversion II (3)

5390 Advanced Direct Electrical Energy Conversion III (3)

5410 Power System Networks (3)

5420 Fault and Load Flow Studies (3)

5430 Power System Stability and Control (3)

5440 Distribution Systems (3)

5460 Selected Topics in Power Systems (3)

5510-20-30 Advanced Analog Electronics (3,3,3)

5540 Thick Film Hybrid Microcircuits (3)

5570-80-90 Advanced Electronic Switching Circuits (3,3,3)

5610-20 Logic Design and Finite Automata Theory (3,3)

5615-25 Introduction to Switching Theory and Logic Design (3,3)

5630 Digital System Architecture (3)

5635 Introduction to Digital Computer and Analog Systems (3)

5650-60 Electric Communications Systems (3,3)

5670-80 Pattern Recognition (3,3)

5690 Introduction to Artificial Intelligence (3)

5710 Random Process Theory for Engineers (3)

5720-30 Prediction, Filtering and Detection Theory (3,3)

5740 Digital Processing of Signals (3)

5750-60 Radar Systems Analysis (3,3)

5770 System Identification (3)

5800 Power Transmission Lines (3)

5810-20 Electromagnetic Fields (3,3)

5830 Linear Antennas and Antennas Arrays (3)

5840 Aperture Antennas (3)

5850 Microwave Electronics (3)

5860 Electromagnetic Wave Propagation (3)

5870 Introductory Microwave Networks (3)

5930 Digital Image Processing (3)

5940 -50 Advanced Small Computer Systems (3,3)

6000 Doctoral Research and Dissertation

6240-50-60 Advanced Systems Theory I, II, III (3,3,3)

6270-80-90 Special Topics in Systems Methodology (3,3,3)

6340-50-60 Special Topics in Quantum Electronics (3,3,3)


6550-10 Electrical Conduction in Gases and Plasma Physics (3,3)

6530 Special Topics in Image and Pattern Analysis (3)

6610-20-30 Microwave Networks (3,3,3)

6850 Advanced Antenna Theory (3)

6660 Electromagnetic Diffraction and Scattering (3)

6710-20-30 Network Synthesis (3,3,3)

6750 Detection Theory (3)

6760 Coding Theory (3)

6800-10-20 Advanced Topics in Electronic Instrumentation (3,3,3)

6910-20-30 Advanced Sequential Machine and Automata Theory (3,3,3)

Engineering Administration (See Graduate School.)

Engineering Science and Mechanics

Professors:

Associate Professors:

*Space Institute, Tulahoma.

BACHELOR OF SCIENCE PROGRAM

The curriculum in engineering science provides students an opportunity for education
with breadth in engineering science, mathematics, and physical (or biological) science. Such a program will prepare students for a career in engineering development and research, particularly at the M.S. level, or additional graduate study leading to the master’s or the doctoral degrees. The curriculum will provide students a broad engineering education which permits a strong emphasis on engineering principles and basic science.

In the first two years students in the engineering science program study fundamental sciences. The engineering science program in the upper-division years is essentially an elective curriculum in which the special interests of students can be met which cannot be accommodated in other programs. Examples of special interest elective groups presently available in the engineering science program are biomedical engineering, engineering mechanics, engineering analysis and synthesis, environmental sciences, and engineering materials, and non destructive evaluation. Other elective groups are currently being developed and will be available in the future.

The biomedical engineering elective group provides the basic background for an engineer to contribute to the fields of biology and medicine in such technical areas as nuclear energy, computer science, and the design of research and diagnostic equipment, the development of artificial organs, and the application of the engineering sciences to further the basic understanding of biological systems. With special emphasis on the fields of medicine, the program can emphasize other areas such as the use of computer systems to automate hospital operations, to analyze medical data, and to contribute to the broad area of health care delivery systems. Interested and qualified students may choose to use this program as a background for graduate study in engineering or the life sciences.

The program includes the courses required for entrance into most medical schools, including The University of Tennessee Center for the Health Sciences in Memphis.

The engineering mechanics elective group provides a good theoretical background for students wishing to pursue engineering graduate studies.

The engineering analysis and synthesis elective group provides emphasis on the application of such mathematical techniques as numerical analysis and similitude for the solution of practical engineering problems. As such, heavy emphasis is placed on the use of digital computing.

The environmental sciences elective group introduces the student to some of the areas of knowledge and some of the basic skills involved in environmental education at the M.S. level, or additional graduate study leading to the master’s or the doctoral degrees. The curriculum will provide students a broad engineering education which permits a strong emphasis on engineering principles and basic science.

The engineering materials elective group provides background in the use of materials in the solution of engineering problems. This includes the selection of the proper materials to support the anticipated load conditions and consideration of the environmental conditions that are expected to exist during the design life of the system. There is a special need in industry for individuals with background in both stress/structural analysis and materials properties. The engineering materials elective group provides the student an opportunity to acquire this background.

The non destructive evaluation elective group provides background in the application of non destructive techniques for evaluating material properties and determining material flaws. Demand for this background is increasing in high technology industries such as the nuclear industry. Techniques studied include ultrasonics, X-rays, dye penetration, photoelasticity, etc.

The basic engineering sciences curriculum provides an opportunity to study significant blocks of the engineering science areas recognized by the American Society for Engineering Education. The (1) mechanics; (2) electrical science, electromagnetic and fields, circuits, and electronics; (3) thermodynamics and statistical mechanics; (4) materials science and engineering; (5) transfer and rate processes such as heat, mass, and momentum transfer. Other modern engineering fields which may be studied in the engineering science option are the sciences in the environmental sciences. It is not expected that a student will study all the engineering sciences but will structure a course plan to provide depth in some of the engineering sciences.

Because of the large number of elective courses to be selected in the engineering science degree program, faculty advising plays an essential role in the process of developing the student’s course of study. Before the end of the sophomore year, students in the engineering science program are required to develop, in concert with a faculty adviser, a statement of objectives and a course plan for the upper-division years.

This course plan must be filed with the Office of Admissions and Records before students with more than 90 quarter hours can register for courses. Students’ senior standing sheet can be prepared.

MASTER OF SCIENCE AND DOCTORAL PROGRAMS

Graduate programs leading to the degrees of Master of Science and Doctor of Philosophy in a major in engineering science are available to graduates of recognized curricula in engineering, mathematics, or one of the physical or biological sciences. Program options include solid mechanics, fluid mechanics, biomedical engineering, and other engineering sciences. In the biomedical and engineering science option, interdisciplinary programs are arranged to meet individual needs or interests. Each student will be advised as to any prerequisite courses before entering a program; 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.

The flexibility of the elective aspects of the program options are intended to be of particular interest to prospective students currently employed in research, development, or design activities and whose interests in continuing education (either full-time or part-time) lie at one of the interfaces between science and engineering, or can best be met by interdisciplinary study in engineering. The department’s course offerings and research activities are also intended to meet the needs of students who seek preparation for employment in engineering areas requiring specialization in mechanics, or in related interdisciplinary studies such as biomechanics.

General policies of the Graduate School relating to admission, residence, examinations, and research are described in the Graduate Catalog.

Engineering Science and Mechanics (335)

2705 Elementary Statics and Dynamics (3) Resolution and composition of forces; moments, resultants of force systems; free body diagrams and coplanar equilibrium; friction, particle dynamics. (Primarily for transfer students.) Prereq: Math 1850 or equivalent.

2710 Statics (3) Resultants of force systems; static equilibrium of structural elements and space frame; shear, moment, and forces in trusses. Prereq: Math 2705 or Basic Engr. 1310, Math 1860.

2720 Dynamics (3) Absolute and relative kinematics of rigid bodies; kinetics of rigid bodies using Newton’s laws, work-energy, and impulse-momentum Preq: Math 2705 or Basic Engr. 1310, Math 2840.

3101 Seminar (1) Discussions of engineering professionalism. Field trips and career planning. S/NC.


3310-20 Mechanics of Materials (3) Concepts of stress and strain, stress-strain relations, and Mohr’s circle; stresses and displacements in thinned pressure vessels, shafting, determinate, indeterminate, and nonhomogeneous beams; column theory. Must be taken in sequence. Preq: Basic Engr. 1310; coreq: Math 2840.

3311 Mechanics of Materials (4) Concepts of stress and strain; stress-strain relations and Mohr’s circle; stress analysis of members in terms of stress and displacement analysis of multiply-loaded members; torsion; bending. Not for departmental graduate credit. Preq: Basic Engr. 1310; coreq: Math 2840.

3410 Introduction to Biomedical Engineering (4) Introduces the facets and opportunities of biomedical engineering, and provides basic terminology and background knowledge for further courses in the field. Subjects include anatomy, physiology, biologic and mechanical models of body systems, etc. Coreq: Math 2840 or consent of instructor.

3420 Introduction to Clinical Engineering (3) Eng. applications in the clinical/hospital setting; description, analysis, and design of health care delivery systems; hospital organization and structure; clinical use of biomedical equipment; principles of safety engineering in the hospital and applicable codes, standards and regulations. Preq: 3410, Physics 2230, or consent of instructor.

3510 Materials of Engineering (3) Mechanical properties of engineering materials; behavior of materials under load. 3 hrs. or 2 hrs. and 1 lab. Preq: 3311 and Met. Engr. 2110 or 3110.

3520 Materials, Behavior and Chemical Process Equipment Design (3) (Same as Met. Engr. 3520)

3700 Dynamics (4) Kinematics of rigid bodies; mass moments of inertia; couple, moment, kinetic of rigid
bodies using force, mass, acceleration; work-energy, impulse-momentum. Not for departmental graduate credit. Prereq: 2720 or Math 2840.
3710 Intermediate Dynamics (3) Three-dimensional dynamics of particles and rigid bodies; dynamics of bodies with varying mass; central force motion; Lagrange's equations. Prereq: 2720 or 3700, Math 2850.
4010 Project In Design and Development (4) Investigation, design, and report of an engineering science project. Prereq: Senior standing and a grade of C or better in 3311, 3710, and 3110.
4020 Computer-Aided Design (3) Use of computer graphics and analysis programs for design of assemblies, structures, and components. Evaluation of design alternatives. Prereq: 4810 or consent of instructor.
4011 Project In Design and Development (3) Investigation, design, and report of an engineering science project. Prereq: Senior standing.
4430 Orthopedic Biomechanics (3) Introduction to engineering principles and applications in orthopedics and rehabilitation. Topics include statics, Newton's laws of motion, stresses in simple sections, engineering materials, and biological materials. Prereq: Consent of instructor. Not for non-engineering majors.
4500 Applied Mechanics for Life Scientists (4) Concise and broad coverage of basic principles and concepts of mechanics. Fundamental concepts, statics, vibrations, continuum mechanics, and properties of materials. Applications in engineering and medicine. Prereq: Math 1860 or consent of instructor. Primarily for non-engineering majors.
4520 Biomechanical Mechanics (3) Discusses objectives, review foundations, and present developments in biomechanical fluid mechanics. Properties of human blood and blood vessels, determinants of cardiac performance, analysis and measurement of flow and pressure in arteries, noninvasive study of circulatory system, mechanics of microcirculation. Applications to areas of hemodynamics, thrombosis, and fluid dynamics of heart assist devices. Prereq: 4500 or a course in fluid mechanics or consent of instructor.
4530 Biomechanics (3) Discusses objectives, review foundations, and present developments in areas of mechanical properties of living tissues, biomechanics of injury and prosthetics, material compatibility of prosthetic devices, and biomechanical problems related to impact. Prereq: 3311 or 4500 or consent of instructor.
4540 Fracture-Safe Design (3) A critical review of mechanical properties of materials that are indicative of fracture resistance, including transition temperature, R-curves, stress intensity factors, and J-integrals; the use of these properties in design, 3 hrs. or 2 hrs. and 1 lab. Prereq: 3311 and Met. Engr. 2110. (Same as Met. Engr. 4540.)
4550 Design of Artificial Internal Organs (3) Study of the design, development and evaluation of artificial internal organs including Federal regulation and ethical considerations. Review of currently available devices and new developments. Prereq: 3110, 3410, Math 2850.
4580 Principles of Non-Destructive Testing (3) (Same as Physics 4580.)
4610 Experimental Stress Analysis (3) Basic concepts: theory, techniques, and instrumentation of strain gage methods; theory and techniques of brittle coating method; introduction to other stress analysis methods. Prereq: 3311, Elect. Engr. 2020 or 3110, 2 hrs. and a 3-hr. lab.
4620 Dynamic Data Acquisition (4) Instrumentation of measuring systems for dynamic events and responses; signal conditioning; oscillographs, oscillography, and magnetic tape recording; telemetry and data processing; data processing. Prereq: 3311, 4710, Elect. Engr. 3192, 3 hrs. and a 3-hr. lab.
4630 Introductory Photonics (3) Introduction to photonic devices; photometric coating; method, Moore method, interferometry, and holography. Prereq: 3311, Physics 2320, 2 hrs. and a 3-hr. lab.
4710 Fundamentals of Vibrations (3) Free and forced vibrations of damped and undamped lumped parameter systems; energy methods. Prereq: 2720 or 3700, Math 2860.
4810-20 Engineering Analysis (4,3) Integration of fundamental physical laws and mathematical methods of analysis with emphasis on application to realistic engineering problems. Prereq: 3110, 3311, and Computer Science 3150.
4850 Elementary Structural Matrix methods (4) (Same as Architecture 4850 and Civil Engineering 4850.)
4910-20 Special Engineering Science Topics (3,3) Problems related to recent developments and practices. Open to juniors or seniors with consent of instructor. May be repeated for credit once.
Graduate:
5000 Thesis
5002 Non-Thesis Graduation Completion (3-15)
5110-20 Fluid Dynamics (3,3)
5130 Introduction to Turbulence (3)
5140 Finite Element Methods in Fluid Mechanics (3)
5160 Finite Element Structural Analysis (3)
5220 Mechanics of Viscous Flow (3)
5230 Non-Newtonian Fluid Mechanics (3)
5310-20 Advanced Mechanics of Materials (3,3)
5410-20 Theory of Elasticity (3,3)
5430 Thermal Stresses (3)
5440 Theory of Linear Viscoelasticity (3)
5550 Fracture Mechanics (3)
5630-40 Photoelasticity (3,3)
5710-20 Advanced Dynamics (3,3)
5730 Advanced Vibrations (3)
5740 Vibrations of Continuum Media (3)
5760 Orbital Mechanics (3)
5860 Introduction to Continuum Mechanics (3)
5860 Perturbation Methods in Mechanics
5860 Introductory Finite Element Methods (3)
5910 Special Topics in Engineering Mechanics (3)
6000 Doctoral Research and Dissertation
6110-20 Advanced Topics in Fluid Mechanics and Convective Transfer (3,3)
6140 Advanced Finite Element Methods in Fluid Dynamics (3)
6230-40-50 Theory of Turbulence (3,3,3)
6310 Theory of Plates (3)
6320 Analysis and Design of Thin Shell Structures (3)
6330 Theory of Elastic Stability (3)
6340 Theory of Plasticity (3)
6610 Photoelasticity (3)
6710 Impact and Stress Waves in Solids (3)
6800 Non-Linear Viscoelasticity (3)
6810 Energy Methods (3)
6910 Special Topics in Engineering Mechanics (3)

Engineering Physics
Professor W. M. Bugg (Head); Physics staff as shown on page 223.

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.

The courses in the engineering physics curriculum are shown in tabular form on page 131. Descriptions of the physics courses are found on page 224.

Industrial Engineering (556)
J. N. Snider (Head), Ph.D., Ohio State, P.E.; D. C. Doulet, M.S., Tennessee, P.E.; H. P. Emerson (Emeritus), S.B. Massachusetts Institute of Technology, P.E.; R. M. LaForge (Emeritus), M.S., Georgia Institute of Technology, P.E., H. L. Lovelace, M.D. North Carolina State, P.E.; W. G. Sullivan, Ph.D., Georgia Institute of Technology, P.E.

Assistant Professors:

Assistant Professors:

Kingsport

UNDERGRADUATE
The undergraduate curriculum in industrial engineering provides a strong background in both fundamental engineering principles and the analytical methods necessary for solving the multi-faceted problems associated with the production, maintenance, and delivery of goods and services. In particular, this curriculum emphasizes the knowledge and skills necessary to design integrated systems of people, materials, equipment, and energy wherever they are found, such that the overall system functions at an optimal level and such that the needs of the human components of the system are adequately met.

This curriculum, which is built upon a strong background in mathematics and statistics, includes fundamental course work in all of the engineering sciences, introductory economics and accounting, training in fundamental human factors which influence engineering design, the economic analysis of alternative design choices, quality control techniques, manufacturing processes and materials, production and inventory system design and control, material handling systems and facilities design, the mathematical modeling and simulation of complex systems, and the design and installation of information acquisition and control systems. The technical and non-technical electives further allow the students to

Assistant Professors:
E. K. Boyce, M.S. Tennessee, W. Claycombe, Ph.D., Virginia Polytechnic; E. L. DePorter, Ph.D. VPI & SU; D. H. Hutchinson, Ph.D. Georgia Institute of Technology, A. Lyday, M.S., Tennessee.
specialize in an area(s) which meet particular needs.

The solid, broad base in engineering, combined with training in applying engineering methodology to traditionally non-engineering problem areas through the industrial engineering curriculum, leads to participation by industrial engineers in an unlimited range of fields including, among others, retailing, banking, hotel, air traffic delivery, corporate management, municipal management, aerospace systems, research groups, and government as well as in the traditional area of manufacturing.

MASTERS OF SCIENCE PROGRAM

The graduate program in industrial engineering contains a basic requirement of 18 hours of course work covering topics in industrial engineering at the graduate level. The remaining 18 hours in the program are based upon the educational objective of the student and determined with the approval of the student's advisor. A minor is usually taken in another area related to industrial engineering, and a thesis is required. The program is open to graduates of recognized curricula in all fields of engineering.

The master's program of 45 hours of course work plus a 3-hour project is also available and open to graduates in engineering or science. Basic courses (5110, 5520 and 5700, 5710, 5720) are the same as the basic courses in the program for the thesis students. An option is selected from manufacturing, health systems, operations research, human factors, or decision processes. Each option requires 9 hours of non-engineering electives to support the selected option. The project requires the design of a procedure or operating system based especially upon the course work in the selected option and clearly applicable as a solution to a problem in actual professional practice. The student is examined on the project and related course work.

2310 Seminar (1) Introduction to the industrial engineering profession, its history, and current trends. Plant trips and lectures by the faculty. Prereq: Sophomore standing.

2320 Modeling of Industrial Processes (3) Introduces basic concepts and techniques of developing mathematical models of industrial processes, elementary simulation techniques, and concept of optimization. Prereq: Basic Engr. 1410.

3330 Computer Applications and Analysis Methods (3) Introduction to use of digital computer in problems involving matrix operations, deterministic and stochastic simulations, large scale data base manipulation, and general optimization techniques. Prereq: 2320 and Math 1860.

3410 Textile Industry Systems (3) History, basic operations, products, and economics of the industry; the application of industrial engineering techniques. Prereq: Junior standing and consent of instructor.


3440 Quality Control (3) Application of statistical methods to control quality of manufactured products and processes. Prereq: 3430.

3510 Introduction to Operations Research I (3) Introduction to methodology of operations research and application of operations research to industrial problems. Topics covered include statistical inference, decision theory, and queuing theory. Prereq: 3430 and Computer Science 3150.

3520 Introduction to Operations Research II (3) Introduction to mathematical programming includes classical optimization theory, linear programming (with emphasis on the simple method, the transportation problem, and the assignment problem), and dynamic programming. Prereq: Computer Science 3150 or consent of instructor.

3530 Introduction to Operations Research III (3) Introduction to random processes and use of probabilistic models in industry and business and management. Prereq: 3430 and 3510.

3600 Motion and Time Study (3) Design of work methods, including analysis, improvement, timing of work, place layout, and design of equipment and vehicle design; and in design of industrial communication-control systems. Prereq: Junior standing and consent of instructor.

3610 Human Factors in Work Design I (3) Human capabilities and limitations which must be reflected in work place layout, working environment specifications, tool, equipment, and vehicle design; and in design of industrial communication-control systems. Prereq: Junior standing and consent of College of Industrial Engineering or consent of instructor.

3620 Work Methods and Design (3) Job analysis, job evaluation, design of wage structures, design of work place layout, flow charting, activity chart analysis, and methods improvement. Laboratory work included. Prereq: 2310 and 3610.

3630 Work Measurement (3) Use of work measurement tools such as time study, predetermined time systems, and statistical analysis. Construction of time formulas, development of standard time data, use of learning curves, and design of wage incentive systems. Laboratory work included. Prereq: 3620 and Statistics 3450.


4060 Production Systems Planning and Control I (3) Theory and application of forecasting, capacity and material requirements planning, production systems design and inventory control. Prereq: 3510-20.

4070 Production Systems Planning and Control II (3) Theory and application of master scheduling, materials requirements planning systems, lot sizing and safety stocks, and distribution requirements planning. Prereq: 4060.

4080 Forecasting Methods in Industrial Engineering (3) Application of technological forecasting techniques to industrial engineering problems, including moving averages and exponential smoothing, linear and polynomial regression models, autoregressive time-series models, and Delphi methods, and other selected industrial forecasting methods. Prereq: 4060.

4150 Project Control with CPM and PERT (3) A study of project planning and control based primarily on "critical path" techniques, including resource allocation, time-cost trade off algorithms, multiple project control, and computer programs. Prereq: 3430.


4200 Production Facilities Design (4) Design of production facilities including materials handling, plant layout, service areas, inventory control and production and operating procedures design. Prereq: 3650, 3510-20, 4600, 4520.

4230 Scheduling Systems (3) Performance measures for job shop and flow shop scheduling, including both static and dynamic conditions, as well as techniques for generating production schedules. Deterministic and probabilistic scheduling problems included. Prereq: 3650.

4250 Work Measurement Applications (3) Application of learning curves, queuing theory, standard time methods, and incentive systems to the design of industrial work situations. Prereq: 3630.

4310 Seminar (1) Discussions, lectures, and trips to unify student's educational experience. Prereq: Senior standing in industrial engineering.

4520 Engineering Economy (3) Methods and problems in the selection of equipment. Decisions among engineering alternatives involving capital recovery, economic life of equipment, and rate of return of investment.

4530 Case Studies in Engineering Economy (3) Extension of basic engineering economy principles to actual problems faced by competitive firms and regulated industries. Case studies taken from literature form basis of classroom discussion. Out-of-class assignment involves working with local companies to evaluate make or buy options, leasing versus cash purchases, equipment replacement studies, energy source economics, etc. Prereq: 4520.

4540 Industrial Development (3) Factors other than mechanical or chemical which enter into successful establishment of manufacturing enterprise. Cost and location studies and market analysis to determine the commercial feasibility of new plants or projects.

4590 Simulation (3) Generation of outcome of complex random process by computer. Models of complex systems using available simulation languages. Simulation as design tool in industrial systems. Prereq: 3430 and Computer Science 3150.

4600 Predetermined Time Systems (3) Work design and methods improvement. Problems similar to those commonly used in computer simulation such as Methods Time Measurement, Basic Motion Time-Study, or Work Factor. Theory and application. Prereq: 3630.

4610 Human Factors in Work Design II (3) Human capabilities and limitations affecting work place layout, working environments, design of tools and equipment, and work methods, including analysis, improvement, timing of work, place layout, flow charting, activity chart analysis, and methods improvement. Laboratory work included. Prereq: 3620, 3520, or consent of instructor.

4630 Health Systems Engineering (3) Hospital management systems and means by which they may be improved through application of modern industrial engineering principles and techniques. Prereq: 3620.

4840 Industrial Plant Problems Analysis (3) Industrial problems, application of industrial engineering, field assignment in local industry, problem definition, analysis, and presentation. Prereq: 3630, 3440, 3510, 3520, 4520, 4620.


4870 Mini-Computer Applications in Industrial Engineering (3) Introduction to computer hardware and software for use in industrial engineering. Emphasis on small computers as an element of larger system; applications and limitations of small computers in solving industrial engineering problems. Prereq: Senior standing.

4910-20-30 Special Industrial Engineering Topics (3,3,3) May be repeated for credit. Prereq: Consent of instructor.

4950 Industrial Safety (3) Development of organization and programs for prevention and control of accidents with emphasis on OSHA Rules and Regulations. Prereq: Senior standing.

4950-20-30 Special Industrial Engineering Topics (3,3,3) May be repeated for credit. Prereq: Consent of instructor.
BACHELOR OF SCIENCE PROGRAM

Separate, complete 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 contains 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 aerospace engineering problems. Both curricula are arranged with flexibility in the upper-division years to permit emphasis on preparation 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, design, testing, and production of aerospace vehicles—aircraft, spacecraft, missiles; auxiliary systems—heating, cooling, guidance, control; and propulsion systems—piston engines, turbo-jets, ramjets, and rockets.

Mechanical engineering has its foundation in the basic sciences and requires an understanding of such areas of applied science as mechanics, thermodynamics, heat transfer, structures, vibrations, mechanical design, manufacturing processes, and instrumentation in order to resolve the complex engineering problems of the real world.

In the mechanical engineering curriculum, the student with the aid and approval of an adviser, must select a senior year program of mechanical engineering and technical electives. The following areas of concentration are available.

Energy. A study of energy conversion systems and the laws governing energy transformations. This option includes the design and analysis of conventional and future power generating systems utilizing various energy sources. The central courses are Mech. Engr. 4140-50-60.

Environment. A study of the systems which control the environment within enclosed spaces. The program includes the design and analysis of air conditioning, refrigeration, and heat pump devices encompassing heating, cooling, ventilation, humidifying, and noise control. The central courses are Mech. Engr. 4710-20-30.

Manufacturing. A study of manufacturing methods and production processes common to mass production industries. The program includes the selection of processes, design of tools and fixtures, numerical control and instrumentation in order to demonstrate the abilities to perform satisfactorily in Upper Division courses by attaining a minimum GPA of 2.0 in at least 12 hours of 3000 level required engineering courses (including 9 specified hours in the department). Further admission 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 with the exception of ME and Aero Eng. 2040. Students who have not been admitted to an Upper Division Program will be dropped from departmental class rolls.

TRANSFER STUDENTS at the Upper Division level are admitted on a Provisional Admission basis only. Any student presenting more than 42 hours of Lower Division engineering curriculum courses with transfer credit is considered a Transfer Student.

LOSS OF ADMISSION STATUS

Students who are admitted 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 Admission Status.

GRADUATE STUDY PROGRAMS

Graduate programs leading to the degrees of Master of Science, Master of Engineering, and Doctor of Philosophy with specialization in mechanical engineering or aerospace engineering are available to graduates of recognized undergraduate curricula in mechanical or aerospace engineering and to graduates of other curricula who satisfy the necessary prerequisite courses. The general requirements for advanced degrees are summarized in the Graduate Catalog.
3000 Energy—An Overview (4) Introduction to available energy resources, recovery and utilization, power generation techniques, including conservation schemes. Emphasis on the resources-environment-man interaction associated with energy, primarily for non-engineering students.

3040 Seminar (1) Presentation and discussion of topics related to mechanical engineering. Prereq: Junior standing. S/NC.


3321-30 Engineering Thermodynamics (2,3) Properties of gases and gas mixtures; chemical reactions; equilibrium; applications to mechanical engineering problems. Prereq: 3311 and 3321 respectively.

3410 Fluid Flow (3) Development of continuity, momentum, and energy principles for fluid systems; applications to mechanical and aerospace engineering problems. Prereq: Math 2850; coreq: 3311.


3500-30-40 Thermal Sciences (3,3,3) Fundamental principles of thermodynamics and transport phenomena as applied to engineering design. For non-departmental engineering students. Prereq: Math 2850 and Basic Engr. 1330.


3660 Manufacturing Processes (3) Selection of processes related to the design of machine parts. Casting, hot and cold forming, metal removal, and weldments. Manufacturing tolerances and surface finish. 2 hrs. and 1-2 hrs. lab. Prereq: Met. Engr. 2110.


4010 Thesis (3) Problem investigation and report. Prereq: Senior standing.

4140 Energy Conversion Systems (3) Operating and design methods related to energy conversion systems and including new technology development; selected direct conversion techniques. Prereq: 3330; coreq: 4420.

4150 Energy Conversion Systems (3) Fossil fuel energy conversion systems with emphasis on coal technology. Prereq: 4140.


4200 Turbo-Machinery (3) Basic principles of turbomachinery, systematic methods of analysis, design, performance evaluation. Prereq: Aerospace Engr. 3511.

4180 Energy Production and Utilization (3) Thermodynamic constraints on energy sources and concepts; energy conversion schemes. Prereq: Senior standing in engineering.

4220 Environmental Noise (3) Basic principles of acoustics—measurement and control of noise in industrial and community environments. Prereq: Senior standing in engineering or consent of instructor.

4310 Seminar (1) Discussion of topics related to engineering; includes inspection trips to industrial plants. Prereq: Senior standing. S/NC.

4420 Heat Transfer (3) Heat transfer by free and forced convection, heat transfer in phase change, heat exchanger applications. Prereq: 3440; coreq: Aerospace Engr. 3511.

4450 Lubrication (3) Hydrodynamic theory of lubrication of sliding bearings; application of Navier-Stokes equations to infinite and finite bearings; analytical and numerical solutions; applications to design. Prereq: 3440; Aerospace Engr. 3511.

4471-91 Experimental Mechanical Engineering (3,3,3) Experimental methods and measurements of force, length, time, temperature, pressure, transport rates, and physical properties. Planning, conducting, analyzing, and reporting experimental work according to test standards and other specifications. Prereq: 3321, 3410, 3630, 3650, and Engr. & Mech. 3320 for 4471; 4511 and 4491 for 4591.

4510 System Dynamics (4) Analytical models of physical systems, linearization, Laplace transforms, dynamic characteristics and stability of systems, numerical simulations, and analog computer solutions. Not for graduate department credit. Prereq: 3630 or Aerospace Engr. 3620, 3611 and Elec. Engr. 3110.

4520-30 Creative Design (3,3) Application of engineering principles to the solution of current problems with emphasis on design innovation. Prereq: Consent of instructor.

4621 Manufacturing Processes (3) Comparison of machining methods; plastic production; metrology. Prereq: 3650 and 3690 or consent of instructor.

4622 Tool Design (3) Principles underlying tool and die design, design of high-volume production tools and molds, work holding fixtures. Prereq: 3650-60 or consent of instructor.


4624 Manufacturing Engineering Systems Design (3) Design of complete manufacturing system for a particular product, manufacturing planning, tool and fixture design, selection of manufacturing operations, redelivery of product to reduce cost. Prereq: 4625, 4626, and Ind. Engr. 4520.

4625 Manufacturing Process Engineering I (3) Product specification; dimensional analysis of size and form; pure position tolerance theory; tolerance analysis, and workpiece control for production to tolerance. Prereq: 3660 or Ind. Engr. 4040.

4631 Energy Methods in Mechanical Design (3) Application of strain energy principles in complex beams and structures. Prereq: 3650, 3650, and Computer Science 3150 or consent of instructor.

4660 Materials and Manufacturing Process (3) Selection of materials in design process, emphasizing relationship of material property, environmental, temperature, manufacture, technology, and cost. Prereq: 3510.


4690 Machine Design (3) Innovative design of complete machine; documentation including specifications, design calculations, working drawings, and cost analysis. Written and oral report. Prereq: 4670-80, and Ind. Engr. 4520.

4710 Thermal Environmental Systems (3) Vapor compression and absorption cycles; heat pump systems; moist air properties; psychrometric processes. Prereq: 3330, 3440.


4740 Solar Energy Utilization (3) Nature and availability of solar radiation; review of selected heat transfer topics pertinent to solar energy collection and use; design analysis of solar energy collectors and method oforage, selected applications. Prereq: 3231, 4420, or consent of instructor.

4810 Internal Combustion Engines (3) Thermochemical phenomena in combustion and propulsion engines. Combustion, detonation; equilibrium; dissociation. Analysis of internal combustion engines using ideal and real fluids. Prereq: 3330, 3440.

4910-20 Selected Topics in Mechanical Engineering (3,3) Problems related to developments and practice in mechanical engineering. Prereq: Consent of instructor.

GRADUATE

5000 Thesis

5002 Non-Thesis Graduation Completion (3-15)

5110 Conduction Heat Transfer (3)

5120 Convection Heat Transfer (3)

5130 Radiation Heat Transfer (3)

5140 Phase Change Heat Transfer (3)

5210 Classical Thermodynamics (3)

5220 Microscopic thermodynamics (3)

5230 Special Topics in Thermodynamics (3)

5310 Intermediate Fluid Mechanics (3)

5314 Hydrodynamic Lubrication (3)

5410-20-30 Research in Mechanical Engineering (3,3,3)

5510-20-30 Mechanical Design Engineering (3,3,3)

5540-50-60 Advanced Strength of Materials (3,3,3)

5601 Dynamics of Mechanical Systems (3)

5602 Computer Aided Mechanical Design (3)

5610-20-30 Experimental Stress Analysis (3,3,3)

5640-50-60 Advanced Machine Design (3,3,3)

5670-80 Dynamics of Machinery (3,3)

5690 Vibrations of Mechanical Systems (3)

5710 Metal Machining (3)

5800 Transfer Matrix Methods in Elastomechanics (3)

5810-20-30 Rocket Propulsion Systems (3,3,3)

5840-50-60 Turbo-Machinery Systems (3,3,3)

5870 Dynamic Modeling and Simulation (3)
4320 Seminar (1) Formal oral presentations by students on engineering topics. Evaluations of technical talks. Prereq: Speech 2361 and senior standing.


4510 Airplane Performance (3) Introduction to airfoil and wing characteristics, drag; propellers; static performance and maneuvers; theory and design of control surfaces; stability. Prereq: 3511.

4910 Selected Topics in Aerospace Science (3) Current problems in aerospace science; topics in science and engineering required for an understanding of the several areas of aerospace science. Prereq: Consent of instructor.

GRADUATE

5000 Thesis

5002 Non-Thesis Graduation Completion (0-15)

5110 Fundamentals of Aerodynamics (3)

5120 Experimental Methods in Fluid Mechanics (3)

5150-60-70 Vehicle Aerodynamics and Performance (3,3,3)

5210-20 Aerodynamics of Compressible Fluids (3,3)

5240 Dynamics of Viscous Fluids (3)

5250 Introduction to Hypersonic Flow (3)

5260 Selected Topics in Aerodynamics (3)

5270-80-90 Aerospace Ground Test Facilities (3,3,3)

5310 Magnetohydrodynamics (3)

5340-50 Atmospheric Entry (3)

5440-50 Transonic Flow (3,3)

5510-20-30 Aerospace Mechanics (3,3,3)

5560 Vertical or Short Take-Off and Landing Aircraft (3)

5570 Aircraft Flutter and Vibration (3)

5580-90 Aeorelasticity (3,3)

5610 Applied Acoustics (3)

5620 Aeroacoustics I (3)

5610 Aviation Systems: An Overview (3)

5820 Air Vehicles (3)

5900 Selected Engineering Problems (3-9)

5950 Seminars (1)

5960 Special Topics in Aerospace Engineering (1-3)

6000 Doctoral Research and Dissertation

6310-20-30 Magnetohydrodynamics (3,3,3)

6410-20 Physical Gasdynamics (3,3)

6510-20-30 Advanced Aerodynamics (3,3,3)

6810 Advanced Boundary Layer Theory (3)

6910 Advanced Topics in Gas Dynamics (3)

Nuclear Engineering (716)

Professors:

P. F. Pasqua (Head), Ph.D. Northwestern, P.E.; G. de Saussure; Ph.D. Massachusetts; H. L. Dodds, Ph.D. Tennessee, P.E.; J. B. Fussell, Ph.D. Georgia Institute of Technology; T. W. Kerlin, Jr., Ph.D. Tennessee; H. G. M. MacPherson (Emeritus), Ph.D. California (Berkeley); J. T. Mihalek, Ph.D. Tennessee; J. E. Mott, Ph.D. Minnesota; R. B. Perez, Ph.D. University of Madrid; J. C. Robinson, Ph.D. Tennessee; P. N. Sansou, Ph.D. Northeastern; P.E.; J. J. Wagschal; Ph.D. Hebrew University.

Associate Professors: L. F. Miller, Ph.D. Texas A & M; O. L. Smith, Ph.D. Missouri.

Assistant Professors: E. M. Katz, Ph.D. Tennessee; B. R. Upadhyaya, Ph.D. California (San Diego).

1Honorary.

BACHELOR OF SCIENCE PROGRAM

The curriculum in nuclear engineering is designed to provide basic training in many of the fields encountered in the applications of nuclear and radioactive materials. The first two years are concerned with the fundamental courses in engineering, physics, mathematics, chemistry, and English. The last two years encompass scientific and engineering courses equipping the student for entry into a variety of work in industry, research, or graduate studies.

MASTER OF SCIENCE AND MASTER OF ENGINEERING PROGRAMS

The graduate program leading to a degree of Master of Science and Master of Engineering is available to graduates of recognized undergraduate curricula in engineering and physics. Each applicant will be advised as to the necessary prerequisite courses before entering the program.

The general requirements of the masters' degrees are summarized in the Graduate Catalog.

DOCTORAL PROGRAM

A program leading to the Ph.D. degree is available in nuclear engineering. For details, see the Graduate Catalog.

2310-20-30 Seminar (1,1,1) Presentation and discussion of topics related to nuclear engineering. S/NC.


3030 Introduction to Reactor Analysis (3) Nuclear reactions and radiations from cross section, fission process, diffusion and slowing down, steady state reactor theory, criticality condition, reflected reactors. Prereq: Phys 3720; Math 4710.

3040 Environmental Effects of Nuclear Technology (3) Study of effects on environment since advent of military and peaceful uses of nuclear energy. Prereq: One year of biological or physical science.

3150 Dynamics and Controls (3) Systems differential equations; solution by classical and Laplace transform methods; frequency response, stability, and control. Coreq: 4110.

3210-20 Thermodynamics (4,4) Properties and laws of thermodynamic systems. First and second laws used to analyze power plants. Prereq: Math 2860 and Basic Eng. 1330.

3730 Momentum Transport (4) Differential and integral momentum equations; elementary theory of turbulence. Applications to piping systems, pumps and nuclear reactors. 3 lecs. and one lab. Prereq: Math 4710.


4110-20-30 Introduction to Nuclear Reactor Theory (3,3,3) Nuclear structure, radioactive decay laws;
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neutron interaction; fission process, chain-reacting systems; diffusion equation including multigroup diffusion theory, neutron moderation; reactivity coefficients; perturbation theory. Prereq: Physics 3730 or consent of instructor.

4140 Thermonuclear Systems (3) Fusion reactions; properties of plasmas; plasma containment; plasma diagnostics; thermonuclear devices. Prereq: Physics 3730; Math 4550.

4210-20-30 Nuclear Engineering Laboratory (3,3,3) Radiation detection and counting instrumentation, counting statistics, half-life and decay schemes, gamma spectrometry, cross-section measurements, analog computation, diffusion properties of neutrons, critical loading experiments, control rod calibration, statistical weight, shielding, xenon poisoning, prompt critical reactor behavior, fission density, and adjoint flux. Prereq: 4110 (or registration therein), or equivalent.


4610-20-30 Reactor Power Systems (3,3,3) Nuclear structure, decay laws, neutron diffusion, time behavior of reactors, heat removal, analysis of reactor power plants, economic, safety, and environmental aspects of nuclear power. Prereq: Math 4610; non-nuclear engineering students only.

4710 Energy Transport (4) Development of differential and integral energy conservation equations; conduction, convection, and radiation heat transfer; application of nuclear reactor fuel elements and heat exchangers. Prereq: 3730.

4720 Reactor Thermal Design (4) Hydrodynamics and heat transfer in boiling systems; boiling crises; fuel element thermal design; steam generator design. Prereq: 4710.

4730 Nuclear Reactor Design (3) First order reactor design, integration with non-nuclear heat transfer and power conversion system, economic evaluation; optimization procedures, description of typical systems. Coreq: 4130.


4820 Reactor Kinetics and Controls (3) Derivation of kinetic equations; basic kinetic parameters; transient response with feedback; control and protective systems. Prereq: 4110.

4840 Nuclear Reactor Safety (3) Presentation of reactor safety concepts and criteria; credible accidents; fission product release and transport; containment systems; accident analysis; engineered safeguards. Prereq: 4120.

4930 Nuclear Fuel Management (3) Discussion of problems associated with processing of nuclear materials; fuel cycle analysis; burn-up calculation. Prereq: 4120.

GRADUATE

5000 Thesis

5002 Non-Thesis Graduation Completion (3-15)

5110-20-30 Transport Processes in Nuclear Engineering (3,3,3)

5210 System Dynamics (3)

5220 Reactor System Dynamics (3)

5230 Experimental Methods in Reactor Dynamics (3)

5240 Reactor Instrumentation (3)

5310-20-30 Nuclear Systems Reliability (3,3,3)

5410 Nuclear Fuel Cycle Analysis (3)

5420 Reprocessing and Waste Disposal (3)

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

5710-20-30 Nuclear Reactor Theory (3,3,3)

5740 Reactor Shielding (3)

5790 Monte Carlo Shield Design Shielding (3)

5840-50 Fast Breeder Reactors (3,3)

5870 Special Topics in Nuclear Engineering (3)

5980 Nuclear Engineering Practice (5-12)

6000 Doctoral Research and Dissertation

6110-20-30 Selected Topics in Reactor Theory (3,3,3)

6140 Radiation Shielding (3)

6150 Reactor Dynamics (3)

6510 Nuclear Reactor Noise Analysis (3)

6710 Two-Phase Flow and Heat Transfer (3)
The University of Tennessee pioneered as one of the first institutions of higher education to offer home economics and has continued to hold a position of leadership. The first class was taught in 1897.

The faculty of the college numbers 60 full-time teaching and research staff. There are three departments with curricula leading to the Bachelor of Science degree: Child and Family Studies; Nutrition and Food Sciences; and Textiles, Merchandising and Design. The undergraduate program in Home Economics Education is offered in cooperation with the College of Education. Approximately 350 courses are offered in these departments. The graduate programs leading to the Master of Science degree were begun in the summer of 1925. Programs for the Doctor of Philosophy degree were initiated in 1960. The Doctor of Philosophy degree program in home economics now includes three options: Interdisciplinary, Food Science, and Nutrition. Food Systems Administration may be taken as a concentration in the Food Science doctoral option.

Special Resources
Several special programs enhance the offerings of the college. Selected students have the opportunity to study for one quarter at the Child Development Center of the Center for Health Sciences in Memphis or at the Fashion Institute of Technology in New York. Credits earned may be applied toward a Bachelor of Science degree in appropriate curricula of the college.

Model research programs for infant care and preschool day care and nursery school provide home economics students the opportunity to train for careers as directors of, and teachers in, child care facilities. The need for appropriate child day care facilities staffed with well-trained, competent staff is recognized as one of the most urgent problems of today's urban society. Opportunities for home economics graduates with special interest in preschool programs are numerous and continue to increase. The Nursery School through Grade Three program offered jointly with the College of Education provides certification for teachers in early childhood education.

The U.S. Department of Agriculture Textiles and Clothing Research Laboratory is part of the Southern Region Mid-Atlantic Area and was located at The University of Tennessee in 1967. Textiles and clothing researchers collaborate with the U.S.D.A. staff to conduct investigations that will (1) determine consumer needs for textiles and clothing and the adequacy of products available to meet these needs, (2) develop basic principles to guide consumers in selecting and caring for textiles and clothing, and (3) solve other economic and technical problems pertaining to the field. Graduate students in this area may be trained at the laboratory.

International study tours in several areas of home economics are offered when a demand is indicated. The course "Home Economics 4910 International Study Tour" is offered for 6 credit hours at the undergraduate level. At the graduate level, "Home Economics 5100 International Studies" is available, depending on demand and resources, for up to 15 graduate credit hours. The length of the tours may vary from 6 to 8 weeks and the program is under the direction of a member of the faculty.

The Department of Nutrition and Food Sciences has a cooperative arrangement in which food service systems, such as those of the University, hospitals, schools, hotels, and restaurants are available for laboratory experience for tourism food and lodging administration students and in food industries for those in the food science curriculum. During the junior and senior years students in the Coordinated Undergraduate Program in Dietetics receive clinical experience integrated with courses in hospitals and other health care facilities. The Tourism, Food, and Lodging Administration program offers coordination of theory and experience with industry during all four years and also provides a cooperative plan of study which combines supervised employment experience in approved tourism, food, or lodging industry facilities during the summer and fall quarters of the sophomore, junior, and senior years, with academic studies during the freshman year and subsequent winter and spring quarters. Graduates of the Coordinated Undergraduate Program in Dietetics will be eligible for membership in the American Dietetics Association (ADA) and...
application for the ADA Registration Examination. The Nutrition program is affiliated with the Child Development Center, UT Center for Health Sciences, Memphis, for special study in mental retardation and development disorders. A liaison is maintained with the Knox County Health Department to provide concurrent field experience for students in the Community Nutrition option. The Nutrition Science and Community Nutrition programs also meet academic requirements for membership in the American Dietetic Association.

All departments of the college conduct basic and applied research which may be supported in part by the college, by special grants and contracts, and by the Agricultural Experiment Station. The University of Tennessee Atomic Energy Commission program at Oak Ridge also provides opportunity for training and research.

Workshops on special topics of current importance are offered by the different departments in home economics. These will be of special interest to those desiring to work for advanced degrees. Announcements are sent upon request.

The Continuing Education Program provides advanced courses in all areas of home economics at centers across the state for updating and retraining as faculty resources permit. The program includes short courses, work-shops, evening courses, and special videotape and telelecture courses. Individually planned graduate programs should be arranged with the appropriate department heads.

Facilities
The Jessie W. Harris Home Economics Building was dedicated in 1926. Since that time two wings have been added, one in 1937 and another in 1959. All departments have well-equipped laboratories for both graduate and undergraduate work.

The Child Development Center is a separate building especially planned as a laboratory for teaching and research with preschool children. It houses toddler and infant day care centers, a nursery school for two-, three-, four-, and five-year-old children, a preschool curriculum laboratory, and rooms for observation and research.

A separate Child Day Care Center housed in the UT Golf Range Apartments is staffed by the college and provides a laboratory for study as well as an adequate center for group care of children 2 to 6 years of age. The Family Life Center provides office and classroom space. Nutrition and food science facilities include well-equipped laboratories for basic food science, experimental food science, experimental nutrition (animal), and chemistry for undergraduate and graduate students. Laboratories include instruments for the evaluation of the chemical, physical, histological, and sensory properties of food, in addition to facilities for metabolic and survey studies of human nutrition. Home economics education offices and laboratories are located in the Home Economics Building.

The Department of Textiles, Merchandising and Design facilities include provisions for study, regular classroom, laboratory, and studio experiences. Laboratories for interior design and housing studies are especially equipped for this purpose.

Textile research facilities are available to undergraduate and graduate students and to research personnel interested in textile studies that benefit fiber producers, fabric and clothing manufacturers, and other industries. Laboratories are well equipped for the physical and chemical analyses of fabrics, yarns, and fibers.

Certification in Vocational Home Economics Education
Certification to teach vocational home economics requires either a bachelor's or master's degree in home economics from an institution offering a curriculum for teacher training approved by the State Board for Vocational Education and by the United States Office of Education. The University of Tennessee, Knoxville, is approved for the training of teachers in home economics. A description of the vocational home economics education curriculum leading to recommendation for certification will be furnished upon request. Graduate students interested in meeting certification requirements should consult the coordinator of the Department of Home Economics Education. Transfer and graduate students who desire to qualify for vocational certification in home economics should state this desire when applying for admission.

Certification in Early Childhood Education
A joint program in Early Childhood Education—Nursery School through Grade Three is available through the Department of Child and Family Studies (College of Home Economics) and the Department of Curriculum and Instruction (College of Education). In addition to preschool education, graduates are certified to teach kindergarten through third grade.

Educational Programs for Home Economics Extension Education
Students interested in careers as home economics extension agents have many opportunities for employment in service to rural and urban families. The Extension and Community Services option in Home Economics is designed for individuals interested in working in community based home economics programs such as Extension. This course of study includes comprehensive study in all areas of home economics as well as in educational principles.

Students interested in this program should contact their adviser and the Office of the Dean of the College of Home Economics for detailed information.

Undergraduate Study in Home Economics
Curricula in the following areas lead to the degree of Bachelor of Science in home economics.

Child and Family Studies (CFS)

Option 1—Early Childhood Development
Option 2—Human Development and Family Studies
Option 3—Nursery School-Grade 3

Food Science, Nutrition, and Food Systems Administration (PSNFS)A
Option 1—Food Science
Option 2—Nutrition Science

Home Economics Education (HEED) Option 1—Vocational Home Economics Education Option 2—Extension and Community Services

The curriculum in the following major leads to the degree of Bachelor of Science in Interior Design:

Interior Design (IDH)

Textiles and Clothing (T & C)
Option 1—Merchandising
Option 2—Textile Science
Option 3—Clothing and Textiles

Tourism, Food and Lodging Administration

Plan A
Plan B

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 their particular college or school.

For the degree of Bachelor of Science in Home Economics, students generally plan to complete the last 45 quarter hours of work (three quarters) at The University of Tennessee, Knoxville. Seventy-two hours must be earned in courses numbered 3000 and above at The University of Tennessee, Knoxville. The prospective transfer student is advised to preplan the total college program before starting any college-level work. Careful planning prior to transferring to the college is essential to maintaining a program of study with maximum utilization of credit and sequence of course work. All new freshman and transfer students whose majors require chemistry must enroll in the freshman chemistry course sequence until requirements are completed. It is recommended that transfer students complete the freshman chemistry requirements before transferring to the college. Students wishing to transfer 36 or more credit hours into the College must have an average of 2.0 for admission. Students with an average of less than 2.0 are not eligible for enrollment in junior or senior courses.

During the first quarter each student generally takes courses basic to all curricula and is assigned a faculty adviser for program planning.

A normal student load per quarter is 15-16 hours. The maximum load is 19 credit hours per quarter (18 hours maximum for the Coordinated Undergraduate Program in Dietetics) unless otherwise approved by the Assistant Dean for Undergraduate Studies.

When a student has completed one quarter in residence at The University of Tennessee, Knoxville (with at least a 2.0 average in course work), the student will be eligible to participate in self-registration, except for those quarters for which the student is scheduled for mandatory advisement. Students participating in the voluntary academic registration program bear full responsibility for meeting degree requirements in the proper sequence.

Students may choose to take elective courses outside their major departments under...
the satisfactory/no credit grading system. (Required courses may not be taken for a satisfactory or no credit grade). The purpose of the satisfactory/no credit (S/NC) grading system is to encourage the student to explore subject matter areas outside of the requirements and other courses of the major by minimizing causes for the student's concern that performance may be somewhat less than acceptable. A final grade of C or better will be recorded as satisfactory. The maximum satisfactory or no credit hours which can be counted toward a degree is 30 hours. When the student wishes to take a satisfactory or no credit course, the student must so indicate at the time of registration.

Proficiency examinations are offered for numerous courses of the college. Information on courses for which proficiency examinations are offered may be obtained from departments of the college.

Field training provides the opportunity for practical pre-professional experience and constitutes an integral part of many of the college's programs. Students enrolled in certain College of Home Economics courses who are involved in field experiences are required to participate in the group liability insurance plan offered through the college. The annual cost to the student for this insurance coverage is $4 (subject to change).

The first digit in course numbers indicates the student group for whom the course is primarily offered: 1000 indicates courses for freshmen, 2000 for sophomores, 3000 for juniors, 4000 for seniors, 5000 and 6000 for graduate students.

Graduate education should be elected in the sophomore year by those students majoring in the vocational home economics education curriculum. This course is a prerequisite for the required course for education 3810.

For majors in the food science, nutrition, or textiles curriculum, Nutrition 3310 should be taken preferably in the sophomore year and not later than the first quarter of the junior year. The following four courses are fundamental to home economics and are required in all curricula:

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<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
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<tr>
<td>Philosophy 1510</td>
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<td>Electives</td>
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**OPTION 1. EARLY CHILDHOOD DEVELOPMENT**

This option is appropriate for persons interested in the following types of positions: day care teacher, nursery school teacher, worker in center for socially disadvantaged and/or handicapped children, entry level positions in social work, or preparation for graduate school.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
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<td>Home Economics 1510</td>
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<tr>
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<td>Natural science</td>
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<tr>
<td>English 1010 or 1020</td>
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<td>English 1031 or 1032 or 1033</td>
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<tr>
<td>Mathematics 1540</td>
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**Sophomore**

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<tr>
<td>Physical or biological science elective</td>
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<td>Social sciences</td>
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<tr>
<td>History of political science elective</td>
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<td>Electives</td>
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**Junior**

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<th>Course</th>
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<td>Economics 2110</td>
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**Senior**

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<td>Child and Family Studies 4610</td>
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<td>Child and Family Studies 4420</td>
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<td>Child and Family Studies 4620</td>
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<td>Child and Family Studies 4710 or IDH 4320</td>
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<td>Home Economics 3510</td>
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<td>Electives</td>
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**OPTION 2. HUMAN DEVELOPMENT AND FAMILY STUDIES**

This option is for undergraduate CFS majors who want a generalist background in individual and family studies. This option does not prepare for a career in preschool education. Students interested in the Cooperative Extension Service, community agencies, general family counseling, social work, and graduate work would choose this undergraduate option.

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<tr>
<th>Course</th>
<th>Hours</th>
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<td>Home Economics 1520</td>
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<td>Natural science</td>
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<td>Mathematics 1540</td>
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<td>Philosophy 1510 or 2510 or 2520 or 2310 or 2310 or upper-division foreign language</td>
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<td>Junior</td>
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**OPTION 3. NURSERY SCHOOL-GRAGE THREE**

This option is appropriate for persons interested in working with young children up to the age of eight in a variety of settings. A joint program with the Department of Curriculum and Instruction, this option provides certification for grades K-3.

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<tr>
<th>Course</th>
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<tbody>
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<td>Home Economics 1510</td>
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<td>Music 1210 or 1220 or Art 1815 or 1825</td>
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<tr>
<td>Biological science</td>
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**Professional Curriculum in Child and Family Studies**

The Department of Child and Family Studies is concerned with early education, human development, and family interaction throughout the life span, and with resource management and consumer studies. Departmental goals and objectives are designed to contribute to the interpersonal and professional competence of men and women students, and to provide preparation for careers in the helping professions related to children, adolescents, adults, and families, depending on the option the student selects.

The curriculum is appropriate for persons oriented toward teaching and/or administrative positions in child care centers and nursery schools, in public schools, with family services, child welfare agencies, Cooperative Extension, banks, and consumer agencies. Other opportunities exist that require study beyond the bachelor's level (for example: administration, research, and clinical services). All options provide necessary background for graduate study in child development, family relationships, early childhood education, and social work.
College of Home Economics

Math 2100-20-30 ................ 9
\*Philosophy or religious studies ................ 4

Sophomore
Home Economics 2510 ................ 4
Child & Family Studies 2310 ................ 3
\*With English 2210 ................ 3
Art Education 2100-10 ................ 6
Music Education 2100 ................ 3
Physical Education 3450 ................ 4
\*Physical science ................ 3
\*Literature elective ................ 4
\*Elective 1 ................ 4
\*History elective ................ 4
\*Social science elective ................ 4
Educ. Curriculum 2110 ................ 3

Junior
Home Economics 3510 ................ 3
Child & Family Studies 3120 ................ 3
\*Educ. Curriculum & Instruction 4450 ................ 3
Educ. Curriculum & Instruction 3260-70-80-81 ................ 12
Educ. Curriculum & Instruction 3350 ................ 3
Educ. Curriculum & Instruction 3720 ................ 3
Educ. Curriculum & Instruction 4430 ................ 3
Educ. Curriculum & Instruction 3010-20-30 (choose any two) ................ 6
Music Education 3310 ................ 3
Public Health 3210 ................ 4
Physical Education 3460 ................ 3
Library & Information Science 3510 ................ 3

Senior
Child & Family Studies 3200 or 3220 or 4250 ................ 3
Child & Family Studies 4610 ................ 3
Psychology 2510 or 2520 or 2530 or 2540 ................ 4
Educ. Curriculum & Instruction 4580-51-15
Educ. Curriculum & Instruction 4451 ................ 3
Educ. Curriculum & Instruction 4452 ................ 3
Special Education 3333 ................ 3
Electives ................ 5

TOTAL: 192 hours

\*Courses should be chosen from: Biology 1210 or 1220 or 1230 or Botany 1110 or 1120 or Zoology 2920 or 2930.
\*Courses should be chosen from: Philosophy 1510 or 1520 or 1530 or 1540 or 1550 or Religious Studies 2610 or 2611 or 2680.
\*Nutrition 1230 recommended.
\*Courses should be chosen from: Chemistry 1110, 1510, 1510 (choose one) or 1120, 1520, 1620 (choose one), or Geology 1410 or 1420 or 2210, or Anthropology 2110 or 2120, or Physics 1210 or 1220 or 1410 or 1420.
\*Course should be any 2000-level English literature course.
\*Course should be chosen from Anthropology 2530 or 3410 or Human Sciences 2930, 3100, 3200 or 3300 or Psychology 2100, 2530 or 3610 or 3620, or Sociology 1510, 1530, 3410, or 3420.
\*Course should be chosen from 1000-2000-level history courses.
\*Course should be any course in areas of anthropology, economics, geography, human services, political science, psychology, sociology.
\*Microbiology 2910 or 3910 required for student teaching in Child and Family Studies and in Curriculum and Instruction must be filed in each department no later than January 1 of the academic year preceding the actual experience.

Professional Curricula in the Department of Nutrition and Food Sciences

Entering freshmen interested in Options 1, 2, 3, or 4 of the Food Science, Nutrition, and Food Systems Administration major will be enrolled as departmental majors and a departmental adviser will be assigned to assist with planning freshman courses. Students will not register in a particular option until their third quarter in residence. They will apply for admission to a specific option by April 1.

Designation of an option for each applicant will be made by a faculty committee by May 15, and the student will be assigned to an adviser associated with the chosen option. A second choice of option will be required if Option 4 is the first choice. If a student is listed as an alternate for first choice of option, admission may be reconsidered at a later date.

Applications may be considered periodically as openings occur. Entering freshmen in Plan A or Plan B of the Tourism, Food and Lodging Administration major will be assigned an adviser for that major immediately upon entering the program.

Transfer students must apply to the Director of Admissions and be admitted to The University of Tennessee, Knoxville, before initiating the application procedure for admission to Options 1 through 4, and the Tourism, Food and Lodging Administration Plan A or B.

NUTRITION AND FOOD SCIENCES

FRESHMAN

OPTION 1. FOOD SCIENCE

The food science curriculum is concerned with relating the cultural and scientific aspects of food science to people and their environment. Emphasis is placed on the application of the social sciences to world feeding problems, consumer reaction to food acceptability and marketing problems; application of the physical sciences is made in the study of food composition and properties and changes associated with processing, preparation, and storage. This curriculum prepares students for positions in food product development and evaluation in industry and government, work in communications media, or for direct entrance into a master's degree program needed for college teaching and research. Information concerning modifications necessary to meet the academic requirements of the American Dietetic Association is available from the department.

Freshman
Chemistry 1110-20-30 or 1510-20-30 ................ 12
English 1010 or 1011; 1020 ................ 6
English 1033 ................ 3
Food Science 1010 ................ 3
Home Economics 1510 ................ 4
Home Economics 1520 ................ 4
Microbiology 2910 or 3910 ................ 4
Psychology 2500 or 2585 ................ 4
Nutrition 3110-20-30-39 ................ 12
Microbiology 2919 ................ 2
Nutrition 3410 ................ 3
Nutrition 4230-40 ................ 4
Nutrition 4430 ................ 3
Electives ................ 23
TOTAL: 188 hours

OPTION 2. COMMUNITY NUTRITION

This curriculum is designed for those students interested in community services or graduate work in public health nutrition.

Freshman
Chemistry 1110-20-30 or 1510-20-30 ................ 12
English 1010 or 1011; 1020 ................ 6
English 1033 ................ 3
Food Science 1010 ................ 3
Home Economics 1510 ................ 4
Home Economics 1520 ................ 4
Mathematics 1540 ................ 3
Nutrition 1230 ................ 3
Nutrition 4230-40 ................ 4
Nutrition 4430 ................ 3
Electives ................ 23
TOTAL: 188 hours

OPTION 3. FOOD SYSTEMS ADMINISTRATION

This curriculum provides in-depth training in the basic biological sciences as well as nutrition. This option is designed for students who are interested in graduate study to become college teachers and researchers, or who are interested in graduate study and/or dietetic internship to become a clinical nutrition specialist.

Freshman
Chemistry 1110-20-30 or 1510-20-30 ................ 12
English 1010 or 1011; 1020 ................ 6
English 1033 ................ 3
Food Science 1010 ................ 3
Home Economics 1510 ................ 4
Home Economics 1520 ................ 4
Mathematics 1540 ................ 3
Nutrition 1230 ................ 3
Psychology 2500 or 2585 ................ 4
Sociology 1510 ................ 4
Electives ................ 23
Application and selection by a faculty committee required to enter sophomore year.

Sophomore
Food Science 2510 ................ 3
Home Economics 2610 ................ 3
Journalism 2210 ................ 3
Microbiology 2910 or 3910 ................ 3
Microbiology 2919 ................ 2
Speech 2311-30 ................ 4
Zoology 2920-30 ................ 8
Electives ................ 23
TOTAL: 190 hours
The maximum credit hours carried per quarter should not exceed 18 hours without special permission from the program director. Exceptions to the above may be made by petition to the program director.

Upon satisfactory completion of the program, students receive the Bachelor of Science Degree in Home Economics and are eligible for membership in the American Dietetic Association and to apply for the registration examination to qualify as a Registered Dietitian (R.D.).

A student may select Food Science (Option 1), Nutrition Science (Option 2), or Community Nutrition (Option 3) to fulfill the academic requirements for a dietetic internship. Upon completion of the academic requirements and the dietetic internship, students would be eligible for membership in the American Dietetic Association and may apply for the registration examination to qualify as a Registered Dietitian (R.D.).

**Junior**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Science 3020-21, 3510, 4010</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Nutrition 3410-11, 3920, 4230-31</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Food Systems Administration 3110, 3620, 4140</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Home Economics 3510</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Psychology 4460 or Economics 4320</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Electives</td>
<td>6-7</td>
<td></td>
</tr>
</tbody>
</table>

Application and selection by a faculty committee required to enter junior year.

**Senior**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthropology 4250</td>
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<td></td>
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<tr>
<td>Food Systems Administration 4140, 4140</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Food Systems Administration 4510, 4200, 4410</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Food Systems Administration 4512</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Nutrition 4240-41, 4300-31</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Nutrition 4440</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Food Science 4000</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL: 190 hours**

OPT 4. COORDINATED UNDERGRADUATE PROGRAM IN DIETETICS

The Coordinated Undergraduate Program in Dietetics is a generalist program, training entry-level dietitians in administrative and clinical dietetics, and is accredited by the American Dietetic Association (ADA). The program incorporates an equivalent of a fifth year dietetic internship into a four-year academic curriculum. The curriculum includes a two-year pre-professional sequence that meets general education requirements, eligibility requirements for professional courses, and a professional phase in the junior and senior years. The junior year provides an introduction to dietetics, basic knowledge in food science, nutrition, and food systems administration, and research techniques. The senior or fourth year consists of advanced work in dietetics. During the professional phase, academic courses are coordinated with planned experiences in selected hospitals and community facilities.

The assignment of students to each clinical site is made by the program director.

**Admission and Progression Policies**

A student may be admitted to the program provided all requirements or equivalents of the program up to that time, as well as University of Tennessee and College of Home Economics standards, have been satisfactorily met.

Pre-professional courses may be taken at The University of Tennessee, Knoxville, or any accredited junior, senior or community college.

The program has been planned to permit transfer students to apply prior to the beginning of the junior year. Coordinated professional courses must be taken at The University of Tennessee, Knoxville.

Applications should be made to the program director by April 1.

Criteria for selection include (1) evidence that the student will successfully complete the two-year pre-professional phase, (2) an overall GPA of 2.2 or higher, (3) personal interview, and (4) recommendations from faculty of selected pre-professional courses. The number of qualified students accepted into the Coordinated Undergraduate Program in Dietetics is contingent on the number of clinical sites available. Eligibility for admission must be maintained throughout the pre-professional phase. Exception to criteria may be made by petition to the program director. Criteria for progression in the professional phase junior and senior years will include (1) satisfactory completion of each required professional course as scheduled with a minimum grade of C, (2) periodic evaluation of competency by academic requirements and clinical faculty, and (3) participation in voluntary professional activities. The maximum credit hours carried per quarter should not exceed 18 hours without special permission from the program director.

Upon satisfactory completion of the program, students receive the Bachelor of Science Degree in Home Economics and are eligible for membership in the American Dietetic Association and to apply for the registration examination to qualify as a Registered Dietitian (R.D.).

A student may select Food Science (Option 1), Nutrition Science (Option 2), or Community Nutrition (Option 3) to fulfill the academic requirements for a dietetic internship. Upon completion of the academic requirements and the dietetic internship, students would be eligible for membership in the American Dietetic Association and may apply for the registration examination to qualify as a Registered Dietitian (R.D.).

**Sophomore**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home Economics 2510</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Nutrition 3000, 3330-40</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>English 2510 or 2520 or 2530 or 2540</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Food Science 2510</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Microbiology 2910</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Psychology 2950</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Speech 2311, 4210 or 2410</td>
<td>4 or 3</td>
<td></td>
</tr>
</tbody>
</table>

Application and selection by a faculty committee required to enter sophomore year.

**Junior**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Science 3020-21, 3510, 4010</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Nutrition 3410-11, 3920, 4230-31</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Food Systems Administration 3110, 3620, 4140</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Home Economics 3510</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Psychology 4460 or Economics 4320</td>
<td>3</td>
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</tr>
<tr>
<td>Electives</td>
<td>6-7</td>
<td></td>
</tr>
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</table>

Application and selection by a faculty committee required to enter junior year.

**Senior**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthropology 4250</td>
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<td></td>
</tr>
<tr>
<td>Food Systems Administration 4140, 4140</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Food Systems Administration 4510, 4200, 4410</td>
<td>9</td>
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<tr>
<td>Food Systems Administration 4512</td>
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<tr>
<td>Nutrition 4240-41, 4300-31</td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>Nutrition 4440</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Food Science 4000</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL: 190 hours**

This professional curriculum is concerned with meeting the middle and upper level management needs of the tourist, food, and lodging industry of today. It provides a program for both men and women which will assist students in gaining breadth of knowledge, perspective, flexibility, and creativity to meet the changing environment of complex management problems in the industry.

This major offers two curricular plans, a regular four-year program (A) and a cooperative plan (B) with pre-planned and supervised work experience in the sophomore, junior, and senior years during which the student is employed by an approved facility in the tourist, food, and lodging industries. The cooperative plan will take four years plus two terms. Selection of Plan A or B must be made at the end of the freshman year.

A business minor is available to students who successfully complete all hours of the following required courses: Accounting 2110-20-30, Economics 2110-20-30, and Statistics 2110. In addition, 15 hours of upper division business electives must be taken at UTK. Not more than six upper division hours of accounting, economics, or statistics may be used for this minor. Students are responsible for meeting prerequisites listed for any upper division courses taken. The 12 hours of upper division business courses required in Plan A or B may be applied toward satisfying the 15 hour elective requirement.

**Plan A**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
<td>English 1010 or 1011, 1020 and 1033</td>
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<tr>
<td>Home Economics 1510-20-30</td>
<td>8</td>
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<tr>
<td>Math 1540-50</td>
<td>5</td>
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<tr>
<td>Food Science 1010</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Food Systems Administration 2910</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Economics 2110</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Nutrition 2120</td>
<td>3</td>
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**Plan B**

<table>
<thead>
<tr>
<th>Requirement</th>
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<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>English 1010 or 1011, 1020 and 1033</td>
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<td></td>
</tr>
<tr>
<td>Home Economics 1510-20-30</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Math 1540-50</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Food Science 1010</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Food Systems Administration 2910</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Economics 2110</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Nutrition 2120</td>
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**Sophomore**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home Economics 2510</td>
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</tr>
<tr>
<td>Economics 3510</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Psychology 2500</td>
<td>4</td>
<td></td>
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<tr>
<td>Food Systems Administration 3110</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Speech 2311 or 2410</td>
<td>4 or 3</td>
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</table>

**Junior**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Science 4000 or 4040</td>
<td>3</td>
<td></td>
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<tr>
<td>Food Systems Administration 4130, 4140, 4250</td>
<td>9</td>
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<tr>
<td>Interior Design &amp; Housing 3110</td>
<td>3</td>
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<tr>
<td>Economics 3420</td>
<td>3</td>
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<tr>
<td>Textiles &amp; Clothing 3330</td>
<td>3</td>
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<tr>
<td>Marketing 3110</td>
<td>3</td>
<td></td>
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<tr>
<td>Accounting 2130</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Computer Science 1410</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Electives</td>
<td>6-7</td>
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</table>

**Senior**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home Economics 3510</td>
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<td>Food Systems Administration 4260</td>
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<td></td>
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<tr>
<td>Business Law 4210</td>
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<td>Economics 4140</td>
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<tr>
<td>Food Systems Administration 4270</td>
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<td></td>
</tr>
<tr>
<td>Hotel Administration 4150</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Food Systems Administration 4310</td>
<td>3</td>
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</tr>
<tr>
<td>Electives</td>
<td>6-7</td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL: 190 hours**

This major offers two curricular plans, a regular four-year program (A) and a cooperative plan (B) with pre-planned and supervised work experience in the sophomore, junior, and senior years during which the student is employed by an approved facility in the tourist, food, and lodging industries. The cooperative plan will take four years plus two terms. Selection of Plan A or B must be made at the end of the freshman year.

A business minor is available to students who successfully complete all hours of the following required courses: Accounting 2110-20-30, Economics 2110-20-30, and Statistics 2110. In addition, 15 hours of upper division business electives must be taken at UTK. Not more than six upper division hours of accounting, economics, or statistics may be used for this minor. Students are responsible for meeting prerequisites listed for any upper division courses taken. The 12 hours of upper division business courses required in Plan A or B may be applied toward satisfying the 15 hour elective requirement.
Home Economics 1520 ........................................ 4
Statistics 2100 ........................................ 3
Sociology 1510 ........................................ 4
Winter
Nutrition 1230 ........................................ 3
Home Economics 2510 ........................................ 4
Speech 2310, 2351 ........................................ 4
Accounting 2110 ........................................ 4
Psychology 2500 or 2530 ........................................ 4
Spring
Food Systems Administration 3110 ........................................ 5
Accounting 2120 ........................................ 3
Economics 3420 ........................................ 3
Textiles & Clothing 3310 ........................................ 3
Food Science 4000 or 4040 or 2510* ........................................ 3
Summer
Work
Third Year
Fall
Work
Food Systems Administration 3220 ........................................ 5
Winter
Food Systems Administration 4260 ........................................ 4
Home Economics 3510 ........................................ 5
Food Systems Administration 4140 ........................................ 3
Electives ........................................ 6
Spring
Food Systems Administration 4150 ........................................ 3
Computer Science 1410 ........................................ 3
Marketing 3120 ........................................ 3
Electives ........................................ 3
Summer
Work
Fourth Year
Fall
Work
Home Economics 3510 ........................................ 4
Winter
Interior Design Housing 4110 ........................................ 3
Food Systems Administration 4270 ........................................ 3
Electives ........................................ 8
Spring
Business Law 4110 ........................................ 3
Food Systems Administration 4270 ........................................ 3
Electives ........................................ 8
Summer
Work
Fifth Year
Fall
Work
Food Systems Administration 4210 ........................................ 15
Winter
Interior Design Housing 3110 ........................................ 3
Food Systems Administration 4310 ........................................ 3
Electives ........................................ 8
TOTAL: 190

*Natural science electives (12 hr. sequence) from one of the following areas: Biology 1210-20-30, Chemistry 1510-20-30, or Physics 1410-20-30.
Food Science 2510 requires Chemistry 1530.

Professional Curricula in the Department of Textiles, Merchandising and Design

Acquisition and Exhibition
The department reserves the right of acquisition and exhibition of work completed in its studios under the guidance of the faculty.

INTERIOR DESIGN MAJOR*
The Interior Design major is for students who are primarily interested in becoming professional interior designers. This program has received provisional accreditation by FIDER.

Admission and Progression Policies
Applications in Interior Design must be received by the Director of Admissions no later than March 1 for admission to the summer and fall quarters. Selection will be made by April 1. November 1 is the deadline for applications for the spring quarter; enrollment is filled for the winter quarter. An applicant who is not accepted may be reconsidered if an application is made for a future class.

Admission to junior level interior design studio requires (1) satisfactory completion of the sophomore level interior design series (2115-16) with a cumulative grade point average of at least 2.3, exceptions by petition only, (2) application to the Department of Textiles, Merchandising and Design no later than the eighth week of the quarter in which the student is enrolled in IDH 2116, and (3) a personal interview and evaluation of the applicant's portfolio by designated members of the interior design faculty.

Students whose competencies suggest other programs will be counseled to enter other departmental curricula or assisted in the transfer to other college or University programs.

Students must maintain an overall 2.3 grade point average by the end of 96 hours in order to maintain "full status" in the program. Academically deficient students will be put on "temporary status" during which the students must raise their overall GPA to 2.3, or have a minimum of 2.3 for each quarter's work until their overall average is raised to 2.3. If the GPA is not raised to 2.3, the student will be dropped from the interior design program.

Students must earn a C or better in each required upperdivision interior design courses in order to graduate from the program.

Professional Curricula in Interior Design

**Freshman**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 100 or 108, 1020, 1033</td>
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<tr>
<td>Architecture 1001, 1002, 2000</td>
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<td>Art 110, 120</td>
<td>8</td>
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<tr>
<td>Home Economics 1510-20</td>
<td>8</td>
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<tr>
<td>Natural science elective</td>
<td>8</td>
</tr>
<tr>
<td>Interior Design &amp; Housing 1430</td>
<td>4</td>
</tr>
<tr>
<td><strong>Sophomore</strong></td>
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</tr>
<tr>
<td>Interior Design &amp; Housing 2450-51-52</td>
<td>12</td>
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<tr>
<td>Interior Design &amp; Housing 2435</td>
<td>4</td>
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<tr>
<td>Interior Design &amp; Housing 2420</td>
<td>4</td>
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<tr>
<td>Interior Design &amp; Housing 2750</td>
<td>4</td>
</tr>
<tr>
<td>Home Economics 2510</td>
<td>4</td>
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<td>Economics 2110</td>
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<tr>
<td>Humanities elective</td>
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<tr>
<td><strong>Junior</strong></td>
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<tr>
<td>Interior Design &amp; Housing 3450-51-52</td>
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<td>Interior Design &amp; Housing 3260</td>
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<td>Art 297</td>
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<td>Social science elective</td>
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<td>Humanities elective</td>
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<tr>
<td>Home Economics 3510</td>
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<td><strong>Senior</strong></td>
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<tr>
<td>Interior Design &amp; Housing 4450-51</td>
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<tr>
<td>Textiles &amp; Clothing 3420</td>
<td>4</td>
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<tr>
<td>Interior Design &amp; Housing 4440</td>
<td>4</td>
</tr>
<tr>
<td>Art 3745</td>
<td>4</td>
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<td>Interior Design &amp; Housing 4791</td>
<td>4</td>
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<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>14</td>
</tr>
</tbody>
</table>

TOTAL: 192 hours

*The professional interior design curriculum includes electives to be selected from the concentration electives list available in the department. These electives may be chosen to provide the base for in-depth concentrations according to student interest and ability. Concentrations include: History/Preservation/Restoration, Art/Crafts: Human Environment Interaction; Business/Merchandising. Other concentrations may be formulated with the approval of an adviser.

INTERIOR DESIGN AND HOUSING MAJOR
This general curriculum is designed for students preparing for positions in business, education, and public service programs and provides background for advanced study in interior design and housing.

**Freshman**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>Chemistry 110-30 or 150-20-30</td>
<td>12</td>
</tr>
<tr>
<td>English 1010 or 1011; 1020</td>
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<tr>
<td>English 1033</td>
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<tr>
<td>Food Science 100</td>
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<tr>
<td>Humanities and social science electives</td>
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<tr>
<td>Interior Design &amp; Housing 1419</td>
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<tr>
<td>Electives</td>
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<td><strong>Sophomore</strong></td>
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<tr>
<td>Home Economics 2510</td>
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<tr>
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<td>English 2510 and 2530 or 2540</td>
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<td>Psychology 2500 and 2530 or 2540</td>
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<td>Interior Design &amp; Housing 2540</td>
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<tr>
<td>Sociology 150</td>
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<tr>
<td>Speech 238</td>
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<tr>
<td>Zoology 2920-30</td>
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<tr>
<td>Electives</td>
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<td><strong>Junior</strong></td>
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<tr>
<td>Food Science 3200</td>
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</tr>
<tr>
<td>Child &amp; Family Studies 3420</td>
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<td>Microbiology 290</td>
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<tr>
<td>Microbiology 293</td>
<td>3</td>
</tr>
<tr>
<td>Nutrition 3020</td>
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<tr>
<td>Interior Design &amp; Housing 310</td>
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<td>Interior Design &amp; Housing elective</td>
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<td>Textiles &amp; Clothing 3420</td>
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<td>Home Economics 3510</td>
<td>4</td>
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<td>Electives</td>
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<td><strong>Senior</strong></td>
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<tr>
<td>Child &amp; Family Studies 3200 or 3220</td>
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<tr>
<td>Child &amp; Family Studies 3510 or 3520</td>
<td>3</td>
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<tr>
<td>Interior Design &amp; Housing 4320</td>
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<td>Interior Design &amp; Housing 4410</td>
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<td>Electives</td>
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</tbody>
</table>

TOTAL: 189 hours

*Select from anthropology, art history, sociology, psychology, history.
*Select from anthropology, political science, history.

TEXTILES AND CLOTHING MAJOR

Option 1. Merchandising

This curriculum is appropriate for students wishing to prepare for positions in merchandising of apparel and/or fabrics, fashion writing, and in public relations with pattern companies and manufacturers of textile products. Application for field work (Textiles and Clothing 4630-40) must be submitted to the Department Coordinator by December 15 of the year preceding field work.

**Freshman**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>Chemistry 110-20-30, or 110-20-30</td>
<td>12</td>
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<tr>
<td>English 1010 or 1011; 1023</td>
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<td>Home Economics 1510</td>
<td>4</td>
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<td>Psychology 2500</td>
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<td>Home Economics 1520</td>
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<tr>
<td>Textiles &amp; Clothing 1160</td>
<td>3</td>
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<td>Textiles &amp; Clothing 1170</td>
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<tr>
<td>Textiles &amp; Clothing 2110</td>
<td>3</td>
</tr>
<tr>
<td>Sociology 1510</td>
<td>4</td>
</tr>
<tr>
<td><strong>Sophomore</strong></td>
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<tr>
<td>Accounting 2110</td>
<td>3</td>
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<tr>
<td>Economics 2110-20; 230</td>
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<tr>
<td>Literature elective</td>
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<tr>
<td>Home Economics 2510</td>
<td>4</td>
</tr>
<tr>
<td>Anthropology 2520</td>
<td>4</td>
</tr>
<tr>
<td>Textiles and Clothing 3420, 3429</td>
<td>4</td>
</tr>
<tr>
<td>Zoology 2920-30 or biology elective</td>
<td>8</td>
</tr>
</tbody>
</table>
Having completed 89.9 credit hours requires 2.

Textiles & Clothing 4220
Textiles & Clothing 2170, 3170, 4510, 3

Students who are interested in graduate study wishing to prepare for positions as research technicians and for graduate study leading to these courses.

This curriculum is designed to prepare students who are interested in graduate study to become college teachers and researchers in the social science aspects of textiles and clothing. Completion in the program after having completed 89.9 credit hours requires the achievement and maintenance of an overall grade point average of 2.5 or better.

Freshman
Chemistry 1510-20-30 or 1110-20-30... 3
English 1010 or 1011; 1020; 1033... 9
Math 1540-50-60... 1
Home Economics 1510... 4
Textiles & Clothing 1160... 4
Textiles & Clothing 2110... 3

Sophomore
Economics 1010-20-30... 9
Biology 1210 or 1220 or 1230 (choose 2)... 6

Junior
Textiles & Clothing 4010... 3

Sophomore
Home Economics 3510... 4
Sociology 1510... 4
Child & Family Studies 1120... 3

TOTAL: 191 hours

Eight-hour sequence from foreign language or philosophy or history or art history or music.

Spring quarter only.

Twenty hours of electives must be upper-division level.

Approved upper-division courses may be substituted.

Fall quarter only.

A minimum grade point average of 2.2 is required to enroll in these courses.

**Option 2. Textile Science**

This curriculum is appropriate for persons wishing to prepare for positions as research technicians and for graduate study leading to collegiate teaching and research in textiles.

**Freshman**
Chemistry 1110-20-30 or 1510-20-30... 12
English 1010 or 1011; 1020; 1033... 9
Home Economics 1510... 4
Psychology 1510... 4
Home Economics 1520... 4
Textiles & Clothing 1160... 3
Textiles & Clothing 1165... 4
Electives... 6

**Sophomore**
Chemistry 3211-19 or Nutrition 3310... 4
English 2510 or 2520 or 2530 or 2540

(choose two).... 8

Home Economics 2510... 4
Mathematics 1540-50-60 or 1840-50-60... 12
Sociology 1510... 4
Textiles & Clothing 3420, 3429... 4
Zoology 2920-30... 8

**Junior**
Economics 2110, 2130... 6
Psychology 2110... 4
Physics 2120-20 or 1210-20... 8
Statistics 2100 or 3450... 3
Home Economics 3510... 4
Electives... 15

**Senior**
Child & Family Studies 4830... 3
Interior Design & Housing 2430, 3130... 6
Textiles & Clothing 2170, 3170, 4510, 4280 (choose three)... 9
Textiles & Clothing 4230... 4
Textiles & Clothing 4010, 4120, 4140, 4270... 12

Electives... 14

**TOTAL: 191 hours**

*English 2560 or 2570 or 2580.

At least 30 hours must be upper-division courses.

Eight-hour sequence from foreign language or philosophy or history or art history or music.

**Option 3. Clothing And Textiles**

This curriculum is designed to prepare students who are interested in graduate study to become college teachers and researchers in the social science aspects of textiles and clothing. Completion in the program after having completed 89.9 credit hours requires the achievement and maintenance of an overall grade point average of 2.5 or better.

**Freshman**
Chemistry 1510-20-30 or 1110-20-30... 12
English 1010 or 1011; 1020; 1033... 9

**Sophomore**
Economics 1010-20-30... 9

**Junior**
Textiles & Clothing 4010... 3

**Senior**
Textiles & Clothing 4210... 3

**TOTAL: 192 hours**

Eight-hour sequence from foreign language or philosophy or history or art history or music.

Twenty-four hours of electives must be upper-division level.

**Professional Curriculum In Home Economic Education**

**Option 1. Vocational Home Economics Education**

The teacher education program in home economics, planned in cooperation with the College of Education, prepares prospective teachers for certification at the secondary level. Preparation is for both the consumer and homemaking program and the occupational program. The four-year course of study involves general education and professional courses including home economics subject matter. State certification requirements are met plus provision for capitalizing on one's area of interest.

Requirements for admission to teacher education, to student teaching, and for recommendation for certification are listed on page 104.

All freshmen, sophomore, and junior required courses must be completed before a student engages in student teaching. Home Economics Education 4240 should be scheduled within one of the two quarters immediately preceding the quarter in which student teaching is scheduled.

Endorsements in one or more of the occupational areas is optional. Course requirements for an endorsement are in addition to those of the basic consumer and homemaking education requirements.

**Freshman**
English 1031 or 1032 or 1033... 3
Food Science 1010... 3
Home Economics 430... 4
Child & Family Studies 1120... 3
Mathematics elective... 3
Physical Education or health electives... 3
Speech elective... 3
Textiles & Clothing 1160... 4
Textiles & Clothing 1165... 4

**Sophomore**
Home Economics 1520... 4
Economics electives... 4

**Junior**
Child & Family Studies 3210, 3510... 6
Educ. Curriculum & Instruction 3020-30*... 6
Special Education 3333... 3
Educational Psychology 3810... 3
Electives... 10
Food Science 3020... 3
Home Economics Education 3420... 4
Child & Family Studies 3420 or 4210 or 4630... 3
Nutrition 3050... 3
Interior Design & Housing 3110... 3
Textiles & Clothing 3420... 3

**Senior**
Electives... 9

**TOTAL: 190 hours**

*13-17 hours of electives can be used for additional endorsement in one or more of the following occupational areas: food services; child care and guidance; clothing management, production, and services. If occupational endorsement is not sought, 9 hours of electives are to be selected in additional home economics subject matter.

See page 106 for humanities requirements.

*Choose courses in history, anthropology, geography, political science, sociology, or Child and Family Studies 2110.

*Requires admission to Teacher Education Program.

**Recommended course.**

**Option 2. Extension and Community Service**

This option is designed to prepare graduates to work in community based home economics education programs. Due to social forces and effects of legislation, home economists are increasingly entering the field of community service as teachers and specialists in home economics subject matter in non-traditional educational settings. This option provides the same general education components as in Option 1, a comprehensive home economics background encompassing all of the subject.
mater areas within the field, as well as educational principles and skills needed to effectively participate in community based programs. There is provision in the curriculum for students to select coursework in supporting areas such as communications, psychology, political science, sociology, human services, and education. Early exposure to community based programs and an extensive field experience are integral portions of the curriculum.

Freshman
Chemistry 1510-20-30.............12
English 1010 or 1011, 1020........6
English 1031 or 1032 or 1033....3
Food Science 1010..................3
Home Economics 1510..…………..3
Child & Family Studies 1120....3
Mathematics elective..............3
Physical Education or health electives........3
Speech elective....................3
Textiles & Clothing 1160...........3
Textiles & Clothing 1166...........3
*Electives and/or supporting courses........6
Sophomore
Home Economics 1520 ..………….3
Home Economics 2510 ..............3
Economics electives..............3
Home Economics Education 2240 ..3
Humanities electives..............3
Literature electives................3
Psychology 2500.................3
Social science elective..........3
Zoology 2300 or 2305 ..........3
*Electives and/or supporting courses........6
Junior
Child & Family Studies 3515.....3
Child & Family Studies 3210, 3510..6
Educational Psychology 3810 or Child & Family Studies 3520........3
Food Science 3020.................3
Child & Family Studies 3420 or 4830 ....3
Nutrition 3020....................3
Interior Design & Housing 3110 .3
Rural Soc. 3420..................3
Sociology 3420.................3
Textiles & Clothing 3420...........3
Vocational-Technical Education 2100 .3
*Electives and/or supporting courses........12
Senior
Child & Family Studies 4210 .......3
Child & Family Studies or Sociology 3690........3-4
Child & Family Studies 4440 .......3-4
Child & Family Studies 4610 .......3
Home Economics 3510 ..............3
Home Economics Education 4400 ..........3
Home Economics Education 4500 .....3
Interior Design & Housing 4320 ....3
Nutrition 4060 or 4065...........3
Nutrition 4065....................3
Textiles & Clothing 3440...........4
*Electives and/or supporting courses........6
TOTAL: 190 hours

* A minimum of five supporting courses are to be chosen from an approved list (available in Home Economics Education Office).

Graduate Study Programs in the College of Home Economics

The College of Home Economics offers a full range of graduate studies leading to the M.S. and Ph.D. degrees. Any person interested in graduate study should request information, application forms, and a Graduate Catalog from the College of Home Economics, The University of Tennessee, Knoxville, TN 37996-1600.

Departments of Instruction
Child and Family Studies (245)

Professors: Carol Barski (Emerita), Ed.D. Columbia; N.H. Beale (Dean), Ph.D. Michigan State; M. L. Bishop (Emerita), Ph.D. Cornell; C. E. Gilbert (Emerita), Ed.D. Cornell; R. L. Higbee (PhD. Iowa) E. L. Speer (Emerita), M.A. Columbia.


Lecturer: A. E. Cox, M.S. Tennessee.

1120 Management and Its Contribution to Family Living (3) Decision-making processes in consumer matters-quantity and logic, art, music, literature, science. 3350 recommended.

1140 Child and Family Studies (245)

1500 Introduction to Early Education (3) introduction and overview of preschool education; concepts of children, teachers, and teaching. Includes field observation.

2110 Humani Socialization (3) Human development with emphasis on socialization process from infancy through adolescence in family, school, and peer group settings. For non-home economics majors only.

2120 Male-Female Relations (3) Examination of interaction between infant and his/her environment. Review of sexuality as examined through cultural, social, and psychological influences.

2121 Human Socialization (3) Dimensions of human sexuality as examined through cultural, social, and psychological influences.

2122 Intimacy: Marriage and Alternatives (3) Examination of family and community. Special attention to different social and cultural settings. Adjustment to internal and environmental changes through middle and aged years. Prereq: 2110 or Home Economics 1510 or equivalent background in adult development or consent of instructor.

2123 Contemporary Developments (1-3) Student or staff initiated course for study of special topic(s) pertinent to human development or equivalent.

2124 Developing Family Relationships (3) Survey of selected theories relevant to child development with emphasis on research literature and research methodology. Prereq: 4 hrs. of psychology and 6 hrs. of child development or equivalent.

2125 Learning Experience with Parents (3) Dynamics of parent-child interaction. Emphasis on a variety of techniques for developing communication and working relationships between parents and teachers through experiences in a variety of settings. Prereq: Home Economics 1510 or 3210.

2126 Adult Development and Aging (3) Adult life in our society. Adjustment to internal and environmental changes through middle and aged years. Prereq: 2110 or Home Economics 1510 or equivalent background in adult development or consent of instructor.

2210 Adult Development and Aging (3) Adult life in our society. Adjustment to internal and environmental changes through middle and aged years. Prereq: 2110 or Home Economics 1510 or equivalent background in adult development or consent of instructor.

2220 Observing and Understanding the Family (3) Application of principles of organization for implementing decisions; evaluation procedures; factors affecting management process; application of management principles to problems.

3125 Human Socialization (3) Dimensions of human sexuality as examined through cultural, social, and psychological influences.

3126 Family and Consumer Services (245)

3210 Development in Early Childhood (3) Comprehensive view of the child during the early childhood years. Analysis of interrelationships among various aspects of development: physical, cognitive, emotional, and social. Recommend 3200 be taken prior to this course. 3 hrs. 1 hr observation per week.

3220 Development in Middle Childhood (3) Growth and development during the middle childhood years with emphasis on influence of family and community. Special attention to different social and cultural settings. Recommend 3200 and 3210 be taken prior to this course. 3 hrs. 1 hr observation per week.

3230 Observational Methods in Child Development (3) Overview of methods of observing teacher and child behavior and development of individuals skills in observational analysis. Prereq: 3200 or 3210 or 3220 or consent of instructor.

3300 Observational Methods in Child Development (1-3) Student or staff initiated course for study of special topic(s) pertinent to human development or equivalent.
6250 Advanced Topics (3)
6310 Individual and Family Development: Physiological Determinants (3)
6320 Individual and Family Development: Cognition (3)
6330 Individual and Family Development: Socialization (3)
6410 Theory Construction in Family Studies (3)
6450 Conceptual Frameworks for the Family (3)
6540 Seminar in Programs for Infants and Preschool Children (3)
6610-20 Applied Behavior Analysis in Natural Settings (3,3)
6710 Elements of Consumer Choice (3)
6730 Urban Consumers (3)

Nutrition and Food Sciences

Professors: R. E. Beauchene, Ph.D. Kansas State; M. R. Buckley (Emerita), M.A. Columbia; A. M. Campbell, Ph.D. (Emerita), Cornell; B. R. Carruth (Head), Ph.D. Missouri; G. E. Goertz (Emerita), Ph.D. Kansas State; E. B. Green (Emerita), M.S. Columbia; M. J. Hiscock, Ph.D. Wisconsin; F. L. Macleod (Emerita), Ph.D. Columbia; L. M. Otdland (Dean Emerita), Ph.D. Wisconsin; D. Sc. Rhode Island; J. R. Savage, Ph.D. Wisconsin; J. T. Smith, Ph.D. Missouri; M. A. Smith*, Ph.D. Tennessee.

Associate Professors: D. W. Hubbard, Dr. P. H. Tulane; D. E. Lyon (Emerita), M.S. Cornell; M. P. Penfield, Ph.D. Tennessee; D. S. Sachan, Ph.D. Illinois; M. N. Taylor, M.S. Georgia; M.P.H. Berkeley.

Assistant Professors: F. E. Andrews, Ph.D. Ohio State; M. D. Brooks*, M.S. Alabama; G. W. Disney, Ph.D. Tennessee; M. R. Evans, M.S. Kentucky; J. D. Skinner, Ph.D. Oregon State.

Instructors: L.L. Butler, M.S. Western Kentucky; W. L. Dodson, M.S. Tennessee; A. L. Hay, M.S. Kansas; N. J. Lee*, M.S. Case Western Reserve; K. L. Mount, M.S. Tennessee.

*Memphis.

Food Science (386)
1010 Food Principles (3) Principles of food selection, preparation, and service, 2 hrs. and 1 lab.
2000 Cultural and Scientific Aspects of Foods and Nutrition (2) Cultural and scientific aspects of foods and nutrition as applied to the individual and community. Must be taken concurrently with Nutrition 2000. Prereq: 12 hrs. of natural science.
2510 Nature of Food I (3) Classification on basis of composition, type of systems, structure, and consistency, source, food components, and their interrelations. Prereq: 3510. Chemistry 1530 or equivalent, 2 hrs. and 1 lab.
3020 Food and the Consumer (3) Economic considerations in food management, including food legislation, quality, consumer acceptability, and convenience. Prereq: 3 hrs. of economics. 2 hrs. and 1 lab.
3021 Clinical Experience in Dietetics (1) Planned experiences for application of economic principles of food selection and consumer acceptability in selected community facilities. Coreq: 3020. Open only to students in the Coordinated Undergraduate Program in Dietetics.
3510 Nature of Food II (3) Food composition in relation to response of foods to heat, microwave, enzymatic, and other physical and chemical treatments. Prereq: 2510. Nutrition 3310 or Nutrition 3000. 2 hrs. and 1 lab.
4000 Origin of Food and Foodways (3) Food origin and development of individual and group foodways. Prereq: 3 hrs. of social science of humanities.
4010 Introductory Experimental Food Science (3) Physical and sensory evaluation in experimentation with high protein foods, and batter and dough systems. Prereq: 2510. 2 hrs. and 1 lab.
4020 Experimental Food Science (3) Individual experimentation and its relation to research literature. Prereq: 4010; Nutrition 3320 recommended. 1 hr. and 2 labs.
4060 Food in Contemporary Society (3) Consumer's options, responsibility, and potential influence with respect to food supply.
4100 Food Preservation (3) Application of basic principles and research findings to food preservation in home. Prereq: 1010. 4 hrs. of microbiology and Nutrition 3310 or equivalent recommended. 2 hrs. and one lab.
4530 Field Experience (3-15) Planned educational experience in selected food industry laboratories. Prereq: Consent of instructor. Hrs. and credit arranged.
4710 Contemporary Developments (1-3) Student or staff initiated course for study of special topic(s) pertinent to the field, topics to be determined by students and instructor with departmental approval. Elective credit only. Prereq: Consent of instructor. May be repeated with departmental approval for credit up to 9 hrs.
4800 Current Topics (1-3) Assigned reading and group discussion of research literature. Hrs. and credit arranged. Prereq: 4010 or consent of instructor.
4900 Seminar (1-3) Individual review, organization, and reporting of literature on selected topics. May be repeated for credit. Prereq: 4010 or consent of instructor. Hrs. and credit arranged.
4978 Honors: Food Science (1-3) Special problems for juniors and seniors showing special ability and interest in food science. May be repeated for credit. Prereq: 4010 or consent of instructor. Hrs. and credit arranged.

4978 Honors: Child, Family, and Consumer Studies (3) Individual special problems for juniors and seniors showing special ability and interests. May be repeated. Maximum credit 9 hrs.

Graduate School

5000 Thesis
5002 Non-Thesis Graduation Completion (3-15)
5060 Practicum (1-12)
5110 Field Work in Family Life (3)
5140 Consumption and Standards of Living (3)
5150 Assessment of Family Behavior (3)
5160 Management of Time and Energy in the Home (3)
5170 Consumer Economics (3)
5174 Public Consumption (3)
5180 Family Financial Consultation (3)
5190 Standards in Consumer Protection (3)
5210 Theories of Child Development (3)
5220 Family Life Programs (3)
5310 Theory and Research on Human Sexuality (3)
5410 Advanced Family Relationships (3)
5420 Parents and Children (3)
5430 Families in Crisis (3)
5510 Survey of Research in Child and Family Studies (3)
5530 Research Methods in Child and Family Studies (4)
5540 Learning in Preschool Programs (3)
5550 Supervision in Preschool Programs (3)
5610 Theories of Management in Family Environment (3)
5620 Nursery School Administration (3)
5630 Seminar in Infant Development (3)
5640 Teaching Child and Family Studies (6)
5700 Current Programs and Trends in Child and Family Studies (1-3)
5720 Consumer Protection (3)
5800 Problems in Child, Family, and Consumer Studies (1-3)
5850 Children's Effects on Parents and Marriage (3)
5900 Seminar in Child and Family Studies (1-3)
5910 Research Seminar (1-2)
6110 Seminar in Child Development, Family Relationships, and Consumer Studies (3)
Nutrition (725)

1230 Elementary Nutrition (3) Principles and application to everyday living.
2000 Cultural and Scientific Aspects of Foods and Nutrition (3) Cultural and scientific aspects of foods and nutrition as applied to the individual and the community. Must be taken concurrently with Food Science 2000. 12 hrs. of natural science.
2710 Family Health Promotion (4) Management of family health throughout the life cycle with emphasis on family health status, health promotion and maintenance, health care delivery system, and prevention of illness. (Same as Nursing 2710.)
3000 Nutrition Science (3) Basic nutrients as chemical entities. Prereq: Chemistry 1510-20-30 or equivalent.
3200 Nutrition (3) Fundamentals of nutrition which pertain to man. Not open to graduate students or undergraduate majors in nutrition or food science. Prereq: Chemistry 1510-20-30 or equivalent; Zoology 2920-30-30 or equivalent.
3050 Basic Nutrition (3) Relationship of basic nutrition and nutrition in selected health care facilities. Coreq: 4230.
3310 Organic Chemistry (4) Emphasis on subjects leading to 3320-30, Text. & Clo. 4220. Prereq: General Chemistry 2510-20-30 or equivalent. 3 hrs. and 1 lab. Not for graduate credit to departmental majors.
3320 Food Analysis (4) Elementary quantitative analysis; typical food analyses. Prereq: 3310 or equivalent. 3 hrs. and 1 lab. Not for graduate credit to departmental majors.
3330 Physiological Chemistry (2) Metabolism of carbohydrates, lipids, and proteins. Role of vitamins and minerals in metabolism. Not for graduate credit to departmental majors.
3339 Physiological Chemistry Laboratory (1) Prereq: 3330, Coreq: 3339. 1 lab. Not for graduate credit to departmental majors.
3340 Clinical Analyses (2) Laboratory and lecture. Principles, application, and interpretation of chemical analyses of physiological materials. Prereq: 3300 or equivalent; Coreq: 3350.
3410 Science of Nutrition (5) Basic principles of nutrition; significance of recommended dietary allowances and application. Prereq: 3330-36; Zoology 2920-30; Food Science 2510. 4 hrs. and 1 lab. Not for graduate credit to departmental majors.
3411 Clinical Experience in Dietsetics (1) Planned clinical experiences applying principles of nutrition in disease. Coreq: 4230.
3420 Nutrition in Disease II (3) Interdisciplinary lectures and discussions on the metabolic processes of normal and diseased organs and/or tissues and the dietary or behavioral modifications required. Prereq: 4220. Designed for senior students in the Coordinated Undergraduate Program in Dietsetics.
4241 Clinical Experience in Dietsetics (2) Advanced educational experiences applying principles of nutrition in disease in selected health care facilities. Coreq: 4240. Open only to students in the Coordinated Undergraduate Program in Dietsetics.
4330 Readings in Nutrition (3) Reports and discussions of current literature. Prereq: 3410.
4420 Environmental Effects on Nutrition (3) Effect of natural and synthetic food toxins, drugs, both social and therapeutic, and extreme environmental conditions upon the nutrient availability, utilization, and requirements of humans. Prereq: 6 hrs. natural science.
4430 Diet and Drug Therapy (3) Effect of drug therapy on absorption and utilization of nutrients, and effect of diet on absorption, utilization, and toxicity of drugs. Prereq: 3410 or consent of instructor.
4440 Clinical Experience in Dietsetics (4) Experience in providing coordinated and continuing nutritional care in health delivery systems. Prereq: 4031. Open only to students in the Coordinated Undergraduate Program in Dietsetics.
4450 Field Experience in Nutrition (1-6) Planned educational experiences based on unique needs and interests of students.
4710 Contemporary Developmental (1-3) Student or staff initiated course for study of special topic(s) pertinent to the field; topics to be determined by students and instructor with departmental approval. Elective credit only. Prereq: Consent of instructor. May be repeated with departmental approval for credit up to 9 hrs.
4978-98-98 Honors: Nutrition (1-12) Honors: Nutrition (1-12) Prereq: 3410 or consent of instructor.
5000 Thesis
5002 Non-Thesis Graduation Completion (3-15)
5110-20 Advanced Physiological Chemistry (4,3)
5140 Foods and Nutrition: Physiochemical Principles (3)
5210 Advanced Nutrition (3)
5230 Experimental Methods in Nutrition (3)
5240-50 Research Techniques (3,3)
5310-20-30 Community Nutrition (3,3,3)
5340 Field Study in Community Nutrition (1-12)
5350 Mental Retardation or Other Developmental Disorders of Childhood (3)
5410-20 Human Nutrition (3,3)
5430 Physiological Bases for Diets in Disease (3)
5440 Maternal and Child Nutrition (3)
5450 Survey Methods in Human Nutrition (3)
5460 World Food Supply and Human Nutrition (3)
5470 Nutrition and Aging (3)
5610 Nutrition in Mental Retardation and Developmental Disorders (1-12)
5700 Current Programs and Trends in Nutrition (1-3)
5800 Problems in Nutrition (1-3)
5900 Seminar (1-3)
6000 Doctoral Research and Dissertation
6110 Proteins and Amino Acids (3)
6120 Mineral Metabolism (3)
6130 Lipid Metabolism (3)
6140 Vitamin Metabolism (3)
6210 Advanced Topics in Nutrition (1-3)
6900 Seminar (1-3)

Food Systems Administration (388)

2910 Seminar in Tourism, Food, and Lodging Administration (2) Overview of tourism including food and lodging segments of tourism and professional curricula. Contacts with industry through field trips and guest speakers. Students must pay own expenses for field trips.
3000 Dimensions of Tourism (3) Economic and cultural impact of tourism on society. Focus on processes and forces influencing the domestic and international tourism industry.
3110 Quantity Food Procurement, Production, and Service (3) Application of principles necessary for determining needs, procuring, preparing, and serving foods in volume. Prereq: Food Science 1010 or 2510, Economics 2130 or consent of instructor. 3 hrs. and 2 labs.
3220 Tourism, Food, and Lodging Administration Externship (5) Planned educational experiences in selected food and lodging operations or other tourism-related facilities. Prereq: 2910, 3110.
3320 Food Service Administration (2-3) Effective and efficient use of management resources in food service systems. Two credits to include lectures only. Three credits to include quantity foods laboratory. Prereq: 3110 or consent of instructor. Not open to majors in Food Systems Administration.
3820 Survey of Dietsetics I (1) Introduction to dietsetics and to career opportunities, and role of diethetic in health delivery systems. Prereq: Junior standing.
4130 Food Systems Administration (3) Functions of management applied to food service systems. Prereq: 3110.
4140 Food System Personnel Development (3) Development of training programs for food systems personnel. Prereq: 4130 or consent of instructor.
4150 Design and Layout of Food Service Systems (3) Design of physical facilities and selection and purchasing of equipment for food service systems. Prereq: 3110 or consent of instructor.
4210 Tourism, Food, and Lodging Managerial Field Experience (5-15) Planned educational managerial experience in selected food services or food and lodging systems of tourism-related enterprises. To be taken at the beginning of the senior year with consent of instructor. Prereq: 4130, 4150.
4250 Food and Lodging Managerial Cost Control (3) Cost analysis for control. Use of financial statements for decision making for food and lodging systems. Prereq: 4130, Accounting 2210.
4260 Food and Lodging Physical Plant, Planning and Maintenance (4) Feasibility, planning development, and construction of food and lodging plant and maintenance. Electrical, mechanical, heating, plumbing, air conditioning and ventilation, and illumination systems. Types of building materials and construction with emphasis on communication of nutrition information. Prereq: 3050 or consent of instructor.
4110 Introduction to Nutrition Research (3) Discussion of principles and laboratory experience. Prereq: 3410. 2 hrs. and 1 lab.
4230 Nutrition in Disease (4) Nutrition problems in diseases influenced by diet. Prereq: 3410.
4231 Clinical Experience in Dietsetics (1) Planned clinical experiences applying principles of nutrition in disease. Coreq: 4230.
4240 Nutrition in Disease II (3) Interdisciplinary lectures and discussions on the metabolic processes of normal and diseased organs and/or tissues and the dietary or behavior modifications required. Prereq: 4230. Designed for senior students in the Coordinated Undergraduate Program in Dietsetics.
4241 Clinical Experience in Dietsetics (2) Advanced educational experiences applying principles of nutrition in disease in selected health care facilities. Coreq: 4240. Open only to students in the Coordinated Undergraduate Program in Dietsetics.
4330 Readings in Nutrition (3) Reports and discussions of current literature. Prereq: 3410.
4420 Environmental Effects on Nutrition (3) Effect of natural and synthetic food toxins, drugs, both social and therapeutic, and extreme environmental conditions upon the nutrient availability, utilization, and requirements of humans. Prereq: 6 hrs. natural science.
4430 Diet and Drug Therapy (3) Effect of drug therapy on absorption and utilization of nutrients, and effect of diet on absorption, utilization, and toxicity of drugs. Prereq: 3410 or consent of instructor.
4440 Clinical Experience in Dietsetics (4) Experience in providing coordinated and continuing nutritional care in health delivery systems. Prereq: 4031. Open only to students in the Coordinated Undergraduate Program in Dietsetics.
4450 Field Experience in Nutrition (1-6) Planned educational experiences based on unique needs and interests of students.
4710 Contemporary Developmental (1-3) Student or staff initiated course for study of special topic(s) pertinent to the field; topics to be determined by students and instructor with departmental approval. Elective credit only. Prereq: Consent of instructor. May be repeated with departmental approval for credit up to 9 hrs.
4978-98-98 Honors: Nutrition (1-12) Honors: Nutrition (1-12) Prereq: 3410 or consent of instructor.
5000 Thesis
5002 Non-Thesis Graduation Completion (3-15)
5110-20 Advanced Physiological Chemistry (4,3)
5140 Foods and Nutrition: Physiochemical Principles (3)
5210 Advanced Nutrition (3)
5230 Experimental Methods in Nutrition (3)
5240-50 Research Techniques (3,3)
5310-20-30 Community Nutrition (3,3,3)
5340 Field Study in Community Nutrition (1-12)
5350 Mental Retardation or Other Developmental Disorders of Childhood (3)
5410-20 Human Nutrition (3,3)
5430 Physiological Bases for Diets in Disease (3)
5440 Maternal and Child Nutrition (3)
5450 Survey Methods in Human Nutrition (3)
5460 World Food Supply and Human Nutrition (3)
4270 Tourism, Food, and Lodging Information Systems (3) Qualitative and quantitative analyses of information systems for decision making in food and lodging operations or other operations related to tourism industries. Prereq: FSA 4120. 4 credits.

4310 Tourism and Lodging Administration (3) Examination of management principles, processes, and concepts applied to various departments in tourist and lodging facilities. Current problems in hospitality organization and operation. Prereq: FSA 4120.

4410-20-30 Clinical Experience in Dietetics (3,3,3) Development of technical, human, and conceptual skills through planned clinical experiences at increasing levels of administrative responsibility in selected food systems. Must be taken in sequence. Prereq: 3110, 4410, 4110, 4420 coreq to 4110. Open only to students in the Coordinated Undergraduate Program in Dietetics.

4421 Contemporary Developments in Dietetics (2) Relating professional course concepts in clinical experiences through small group discussions. Open only to seniors in the Coordinated Undergraduate Program in Dietetics. May be repeated. Maximum credit 6 hrs.

4710 Contemporary Developments (1-3) Student or staff initiated course for study of special topic(s) pertinent to the field; topics selected to be determined by students and instructor with departmental approval. Elective credit only. Prereq: Consent of instructor. May be repeated with departmental approval for credit up to 9 hrs.

4800 Current Topics (1-3) Assigned reading and group discussion of research, literature. Hrs. and credit arranged. Prereq: 3110 or consent of instructor. May be repeated with departmental approval for credit up to 9 hrs.

4800 Seminar (1-3) Review, organization, and reporting of literature on selected topics. May be repeated for credit. Prereq: 3410 or consent of instructor. Hrs. and credit arranged.

4978 Honors: Food Systems Administration (1-3) Special problems for juniors and seniors showing special ability and interest in institution administration. May be repeated for credit. Hrs. and credit arranged.

GRADUATE

5000 Thesis 5 credits

5002 Non-Thesis Graduation Completion (3-15) 5110-20 Experimental Quantity Food Study (3,3) 5210 Methods of Food Systems Research (3) 5220 Experimental Design of Food Systems Facilities (3) 5230 Food Systems Evaluation (3) 5240 Financial Management of Food Systems (3) 5310 Administration of Food Service Delivery Systems (3) 5500 Clinical Training in Health Care Agencies (3) 5700 Current Problems and Trends in Food Systems Administration (1-3) 5800 Problems in Food Systems Administration (1-3) 5850 Field Experience (3-9) 5900 Seminar (1-3) 6110 Advanced Topics in Food Systems Administration (3) 6210 Manpower Planning and Training for the Food Service Industry (3) 6310-20 Quantitative Methods to Control Resources in Food Service Systems (3,3) 6900 Seminar (1-3)

Home Economics (481)


3510 Family Systems: Consumer Resources (4) Appraisal and application of effective management of resources with implications for roles of professional in the interactions of individuals and families with society. Prereq: 3 hrs. of economics, junior standing.

4000 Senior Seminar (2-15) Personal application of integrated knowledge and professional competencies through experience in community service training to serve society in a professional capacity; gaining experience beneficial to chosen professional career; scope of current research and career opportunities in home economics; comprehension of professional ethics required of a home economist. May be repeated. Maximum credit 15 hrs. Prereq: Junior or senior standing. Consent of department head required for credit beyond 2 hrs. S/N.

4110 Community Services Programs with Adults (3) Procedures and techniques in working with adults, individual, group, and mass methods. Taken as an off-campus course of field training together with 4120. Prereq: 3110 and consent of instructor.

4120 Community Services Programs with Youth (3) Procedures and techniques in working with youth. Taken as an off-campus course of field training together with 4110. Prereq: 3110 and consent of instructor.

4130 Methods and Procedures for Community Services Work (3) Individual, group, and mass methods. Taken as an off-campus course of field training together with 4120. Prereq: 3110 and consent of instructor.

4978 Honors: Community Services Programs (3) Problems for junior and seniors with special interest in community services programs. May be repeated. Maximum credit 9 hrs. Prereq: Consent of department.

GRADUATE

5060 Practicum (1-12) 5100 International Studies (1-15) 5210 History and Philosophy of Home Economics (3) 5220 Development of Community Services Programs (3) 5230 Evaluation of Community Services Programs (3) 5700 Current Problems and Trends in Human Resource Development (1-3) 5800 Problems in Community Services (1-3) 5900 Seminar in Human Resource Development (1-3)

6000 Doctoral Research and Dissertation 6110-20 Theoretical Issues in Human Resource Development (3,3) 6210 Professional Issues in Human Resource Development (3) 6310 Advanced Topics (3) 6500 Methodological Issues in Home Economics (3) 6900 Seminar (1-3)


The Department of Home Economics Education is included as an instructional unit in the Department of Vocational-Technical Education in the College of Education (see page 124 for course offerings). Professional subject matter courses are offered by the departments of the College of Home Economics for those preparing for secondary school teaching programs and extension and community service careers. The vocational home economics education curriculum is designed to provide the requirements for certification in vocational home economics. The curriculum is listed on page 163.

Textiles Merchandising and Design


Textile and Design

Professors: C. J. Cox, Ph.D. Tennessee; S. J. Dillard, M.S. Tennessee; L. A. Kocher, Ph.D. California (Davis); G. C. McCurry, M.S. California State.

Lecturers: B. B. Thompson, B. Arch. Iowa State.

Interior Design and Housing (582) 1430 Introduction to Interior Design (4) Introduction to interior design, basic creative design skills, drawing, spatial organization, color, and design awareness. Prereq: Architecture 1002, 1 hour and 3 labs.

2420 Mechanical Systems for Interior Designers (4) Principles and methods of analysis required in heating, ventilation and air conditioning buildings; includes plumbing and acoustics. Prereq: Sophomore standing.

2435 Materials and Methods of Design (4) The development and application of materials and methods used in interior architectural space. Prereq: 1430, 4 hours.

2450 Fundamentals of Interior Design (4) Development of basic design skills for problem solving in spatial...
organization, introduction to design methods, project budgeting, drawing, materials, environmental systems on a micro-use scale. Prereq: 1430.

4251 Fundamentals of Interior Design II (4) Problem-solving in micro-environments using the design process. Communication of design solutions through perspective drawing, model-making, and presentation methods. Prereq: 2450 and full admission to interior design program or consent of instructor.

4252 Fundamentals of Interior Design III (4) Problem-solving in micro-environments on an increasingly larger scale. Communication of total design solutions using a variety of graphic, audio and photographic techniques to create the greatest satisfaction from homes and places of work. Prereq: 1410 or equivalent. 1 hr. and 2 labs.

3100 Color (4) Experimentation based on an understanding of systematic theories of color. Color communication as related to light, perception, and cultural meaning. Application of color to enhance and define the interior environment.

3260 Professional Procedures (4) Preparation of interior design majors for practicum experiences. Emphasis on interpersonal relationships and business practices related to interior design.

3450-51-52 Interior Design I, II, III (4, 4, 4) Studio problems of intermediate complexity that integrate and extend previous knowledge of working drawings, materials and sources, design methods, spatial organization, and planning of micro- and macro-environments. Prereq: 2452 and junior standing for 3450. Courses should be taken in sequence or have consent of instructor.

3791 History of Interior Architecture I (4) History of interior architecture, furniture, and other design forms within the cultural context: Greece, Rome, the Italian Renaissance, and France during the seventeenth, eighteenth, and early nineteenth centuries.

3110 Beginning Interior Design (3) Individual and design factors influencing selection, arrangement, and combination of furnishings to achieve the greatest satisfaction from homes and places of work. Prereq: 1410 or equivalent. 1 hr. and 2 labs.

4710 Contemporary Developments (1-4) Student or staff initiated course for study of special topics pertinent to the field; topics selected to be determined by students and instructor with departmental approval. Elective credit only. May be repeated with consent of department. Maximum credit 12 hrs. Prereq: Consent of instructor.

4791 History of Contemporary Interior Architecture (4) History of interior architecture, including a study of furniture, design and design philosophies of Europe and America. Discussion of art movements in relation to the forces that shaped them: movements in the visual arts, technological advancements, and the cultural milieu.

4792 History of American Interior Architecture (4) A study of patterns in historical development as revealed in interior architectural spaces and the decorative arts of America, Colonial through Federal periods. Design forms are analyzed within the cultural context.

4979 Honors: Interior Design (1-3) Problems for juniors and seniors with special ability and interest in interior design. Hours arranged. May be repeated. Maximum credit 9 hrs. Prereq: Consent of department head.

4989 Honors: Housing (1-3) Problems for juniors and seniors with special ability and interest in housing. Hours arranged. May be repeated. Maximum credit 9 hrs. Prereq: Consent of department head.

GRADUATE

5000 Thesis

5002 Non-Thesis Graduation Completion (3-15)

5040 Seminar in Design (3)

5050 Advanced Design Studio (4)

5060 Practicum (1-12)

5120 Historic Interior Design (3)

5210 Furniture Appreciation (3)

5310 Interior Design (3)

5410 Advanced Problems (3)

5510 Environmental Factors in Interior Design (3)

5520 Environmental Factors in Interior Design (3)

5530 Environmental Factors in Interior Design (3)

5560 Furniture Design (3)

5613 Housing Management (3)

5614 Housing Regulations and Controls (3)

5615 Housing Programs and Policies (3)

5620 Experimental Methods in Household Equipment (3)

5630 Environmental Requirements for Family Work Centers (3)

5815 Environmental Design Research (1-3)

5820 Interior Design (1-3)

5830 Problems in Housing (1-3)

5910-20-30 Seminar (1-4, 1-4, 1-4)

6110 Contemporary Housing Issues and Problems (3)

6120 Advanced Topics in Housing Research (3)

6210 Environmental Design Analysis (3)

6420 Perspectives in Interior Design (3)

Textiles and Clothing (971)

1165 Apparel Construction (3) Fundamentals of pattern alteration, fitting, and construction with emphasis on design quality and production compatibility. Prereq: 1160. 1 hr. and 2 labs.

1170 Design Analysis: Pattern Making (4) Apparel design analysis based on flat pattern, draping and drafting techniques. Comparison of these methods for style variations and costing of garments. Prereq: 1160, proficiency or 1165 or equivalent. 2 hrs. and 2 labs.

2110 Fashion (3) How fashion works, from designer to consumer, fashion trends and cycles.


3170 Advanced Apparel Production (3) Advanced apparel techniques and an experimental approach for contemporary fabrics and variations in garment style. Prereq: 1170. 1 hr. and 2 labs.

3330 Textiles (3) Textile products—study of consumer selection, preference, and satisfaction with emphasis on performance. For non-majors only.

3410 Cultural and Functional Aspects of Textiles and Clothing (3) Select topics from functional, institutional, and textile/apparel design and production, and technological developments in textiles and clothing. Prereq: 3 hrs. of the following: child development and family studies, fashion merchandising, economics, 4 hrs. of sociology or anthropology or psychology.

3420 Textiles Laboratory (1) Laboratory examination of fibers, yarns, fabrics, and finishes. Coreq: 3420. Required for majors, optional for non-majors.

3450 Consumer Issues: Clothing for Contemporary Families (3) Problems of clothing consumption encountered during various stages of family life cycle. Prereq: Junior standing.

3480 Historic Costume (3) Development of costume from ancient to modern times with consideration of historic, social, and economic settings.

3510 Fashion Merchandising: Planning and Control (3) Analysis of fashion merchandising practices and problems focusing on application of decision mechanisms. Prereq or coreq: 2110 and Accounting 2110.

4010 Textiles II (3) Recent textile developments with emphasis on marketing, merchandising, fibers, construction techniques and finishes. Opportunity for individual investigation. Prereq: 3420.

4110 Fashion Buying (3) Analysis of buying practices, procedures, activities, techniques and underlying concepts fundamental to fashion merchandising. Prereq: 3510.

4120 Textile Economics (3) Economic background of textile and apparel industry with emphasis on production and distribution. Current national and international problems. Prereq: Economics 2110, 2130.

4130 Research Experiences (3-15) Individual juniors and seniors showing special abilities may be assigned to ongoing research within department or work in research and development laboratory or quality control department of fiber, chemical, or textile company. Prereq: Recommendation of department head and research advisor. 4130, 4140, and 3 hrs. of statistics. May be repeated. Maximum credit 15 hrs.

4140 Introduction to Textile Testing Methods (3) Methods and equipment used in physical testing as approved by recognized textile groups. Prereq: 3420, 3429, 1 hr. and 2 labs.

4210 Elementary Textile Microscopy (3) Microscopic techniques as applied to study of textile fibers and fabrics. Prereq: 4010, 1 hr. and 2 labs.

4220 Textile Fiber Chemistry (4) Chemistry of textile fibers with emphasis on structure, preparation, and reactions. Implications relating to dyeing and finishing
of fabrics. Prereq: One quarter of organic chemistry. 3 hrs and 1 lab.

4280 Design Analysis: Functional Apparel (3) A systematic approach to apparel design integrating aesthetic, psychological, social and physiological aspects of apparel problems for special reference groups. Garment specifications are translated for production. Prereq: 1170, 2170 and 3170. 2 hrs and 1 lab.

4410 Apparel Production Management (3) A management perspective of the apparel production industry. Emphasis on production planning, process, and management of human resources. Course work supplemented by plant tours and case studies on production problems. Field trips required.

4510 Teaching Materials (3) Investigation, preparation, and evaluation of teaching materials. For students planning to teach or do home demonstration work. Prereq: 3440, senior standing. 1 hr. and 2 labs.

4620 Introduction to Field Experience in Merchandising (1) Interviews with store personnel; placement and planning for field experience. Prereq: Economics 2110-30, junior standing, concentration in merchandising option, approval of program coordinator, and a minimum grade point average of 2.2. Offered fall quarter only.

4630 Field Experience in Merchandising (9) Off-campus, supervised experience in a cooperative program with business establishments which merchandise textiles and/or apparel. Prereq: 3510, 4110, 4620, 9 hrs. of marketing, senior standing, major in merchandising, and a minimum grade point average of 2.2; coreq: 4640. Offered fall quarter only.

4640 Methods In Field Experience (6) Investigation of training systems and store organization, analyses of jobs, and evaluation of field experience. Prereq: 4620, senior standing, major in merchandising, and a minimum grade point average of 2.2; coreq: 4630. Offered fall quarter only.


4710 Contemporary Developments (1-3) Student or staff initiated course for study of special topic(s) pertinent to the field; topics to be determined by students and instructor with departmental approval. Elective credit only. Prereq: Consent of instructor. May be repeated with departmental approval for credit up to 9 hrs.

4976-88-98 Honors: Textiles and Clothing (3,3,3) Individual problems for juniors and seniors showing special ability and interest in textiles and clothing. Admission only upon recommendation of head of department. Hrs arranged.

GRADUATE

5000 Thesis

5002 Non-Thesis Graduation Completion (3-15)

5110 Textile Testing and Methods of Research In Textiles (3)

5120 Advanced Problems in Textiles and Clothing (3)

5130 Advanced Tailoring (3)

5150 Principles of Design Analysis (3)

5160 Review of Literature (3)

5170 Social, Psychological, and Economic Aspects of Clothing (3)

5180 Advanced Textile Economics (3)

5210 Evaluation of Instructional Materials in the Field of Textiles and Clothing (3)

5220 Historic Textiles (3)

5240 Practicum (1-9)

5250-60-70 Problems in Textile Chemistry (4,4,4)

5310 Fashion Analysis (3)

5320 Problems in Historic Costume (3)

5700 Current Programs and Trends In Textiles and Clothing (1-3)

5800 Problems in Textiles and Clothing (1-3)

5900 Seminar In Textiles and Clothing (1-3)

6010 Advanced Studies in Textiles and Clothing (3)

6110 Selected issues in Textiles and Clothing (3)

6140 Selected Behavioral Theories in Clothing (3)

6150 Social-Psychological Theories of Clothing Consumption (3)

6160 Textiles Flammability (3)

6170 Physical Performance Behavior of Textile Structures I (3)

6910 Seminar In Textiles and Clothing (1-3)
The College of Law is, since 1961, conducted on the semester system. The University of Tennessee College of Law commenced operation in 1890 and has continuously sought to provide high-quality legal education in a university community.

While the principal objective of the college is to prepare students for the private practice of law, its total mission is more broadly conceived. The college exposes students to the legal issues of our society enabling them to develop analytical skills in respect of decisional law and statutes, the ability to communicate effectively to others their knowledge of the law, an awareness of the historical growth of the law, a knowledgeable appreciation of the interrelationship of law and society, and the ability to use law as an implement of societal control and development. Students are thus equipped to serve their community not only as advocates and counselors, but as policy makers and active, responsible citizens.

The coordinated program of the college has three dimensions: teaching and learning, research into and appraisal of our legal systems and institutions, and service to the community. Each plays a significant role in the college as a modern law center.

The teaching and learning element of legal education at the college involves a cooperative classroom interaction between faculty and students in the analytical study of a host of questions and problems found in today's legal profession. These involve decisional law, statutory interpretation, administration regulation, techniques of trial and appellate advocacy, and the roles and responsibilities of the lawyer in advising and representing clients. While proper consideration is given to the problems of Tennessee law, the course of study is conducted with a view to preparing the students for any state.

The college is also directly involved in providing service to the community of which it is a part. A major element of public service is centered in the Legal Clinic where students, under the guidance of skilled and experienced licensed practitioners, provide legal services to indigent persons of Knox County. Additionally, through research, consultation, and other services to legal institutions and groups within the state, the college seeks to participate in the development and improvement of the society in which its students may eventually practice law. The Public Law Research and Service Program is primary examples of this function.

In combination, the direction and objectives of the college lead to the development not of a narrow technician, but of a student of the law with the perspective, breadth, and understanding necessary for the accomplishment of the many tasks assigned by society to the legal profession.

The College of Law Building

Since 1960 the college has occupied a building especially designed for teaching, study, and research in the law. In the spring of 1971 the college occupied the new wing begun in the fall of 1969. The new addition has doubled the available facilities. The library, the classrooms, and the offices are air-conditioned. Adequate classrooms, courtrooms, seminar rooms, a private office for each full-time faculty member, the well-equipped offices of the Legal Clinic, and a spacious, well-lighted Law Library are contained in this modern building. Stack space for more than 200,000 volumes will permit the repository of one of the largest law book collections in the South.

Legal Clinic

The University of Tennessee Legal Clinic was established in 1947. Though the Legal Clinic provides legal assistance to indigent persons, it is designed primarily as a teaching device to correlate theory and practice. It introduces the student under faculty supervision to the law in practice through personal contact with clients and their problems. The Legal Clinic functions as a large law office in which the student gains experience in interviewing clients, writing legal letters, investigating and evaluating facts, preparing memoranda of law, preparing cases for trial or adjustment, and briefing cases.

Classroom work supplements the handling of actual cases. The student is thus trained in the technique of law practice and the management of a law office. The ethical responsibilities of lawyers and their function as public servants are stressed. Under present rules of the Tennessee Supreme Court, students, under the direct supervision of the Legal Clinic staff, are certified to practice before all the courts of Tennessee.

The Law Library

The Law Library contains the official state reports of all states, the complete National Reporter system which covers all states and the federal courts, the Annotated Reports, standard sets of miscellaneous reports, the reports of the Canadian cases and of English cases from the yearbooks to date. In addition to these, there are adequate encyclopedias, digests and dictionaries, standard textbooks, law reviews, and current looseleaf services, totaling together more than 100,000 cataloged volumes. The library is under the supervision of a law librarian who is trained in law and library science. Law students also have the use of the University Main Library, which is located across the street from the Law Library, the Undergraduate Library a few blocks away, and other branch libraries.

Degree of Doctor of Jurisprudence

The degree of Doctor of Jurisprudence will be conferred upon candidates who complete, with the required average, six semesters of resident law study and who have 84 semester hours of credit, including all required courses. The required average is 2.0 and that average must be maintained on the work of all six semesters and also for the combined work of the grading periods in which the last twenty-eight (28) hours of credit were earned. Averages are computed on weighted grades. Grades are on a numerical basis from 0.0 to 4.0. A grade of 0.9 or below is a failure.

Eligible law students may receive credit towards the J.D. degree for acceptable performance in up to three (3) courses taken in other departments at The University of...
Tennessee. Course selection and registration are subject to guidelines approved by the law faculty which include the requirement that any such course be acceptable for credit towards a graduate degree in the department offering the course.

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 this college.

Dual J.D.-M.B.A. Degree Program

The College of Business Administration and the College of Law offer a coordinated dual degree program leading to the conferral of both Doctor of Jurisprudence and the Master of Business Administration degrees. A student pursuing the dual program is required to take fewer hours of course work than would be required if the two degrees were to be earned separately.

Admissions. Applicants for the J.D.-M.B.A. program must make separate application to, and be competitively and independently accepted by, the College of Law for the J.D. degree and the Graduate School and College of Business Administration for the M.B.A. degree, and by the Dual Degree Committee. Students who have been accepted by both colleges may commence studies in the dual program at the beginning of any term subsequent to matriculation in both colleges, provided, however, that dual program studies must be started prior to entry into the last 28 semester hours required for the J.D. degree and the last 24 hours required for the M.B.A. degree.

Curriculum. A dual degree candidate must satisfy the graduation requirements of each college. Dual degree students withdrawing from the dual degree program before completing the dual degrees will not receive credit toward graduation from either college for courses in the other college, except as such courses qualify for credit without regard to the dual degree program. For students continuing in the dual degree program, the J.D. and M.B.A. degrees will be awarded upon completion of requirements of the dual degree program.

The College of Law will award credit toward the J.D. degree for acceptable performance in a maximum of eight semester hours of approved graduate-level courses offered by the College of Business Administration. A student shall receive two semester hours of credit for each such course successfully completed unless the law faculty specifies otherwise. Two of the eight semester hours must be earned in Accounting 5810 or a more advanced accounting course. If College of Law credit is given for such accounting course, the dual degree student may not receive College of Law credit for Legal Accounting (Law College Course 8590). The College of Business Administration will award credit toward the M.B.A. degree for acceptable performance in a maximum of eight semester hours of approved courses offered by the College of Law.

Except while completing the first year courses in the College of Law, students are encouraged to maximize the integrative facets of the joint program by taking courses in both colleges each year.

Awards of Grades. For grade recording purposes in the College of Law for graduate business courses and in the College of Business Administration for law school courses, grades awarded will be converted to either Satisfactory or No Credit and will not be included in the computation of the student's grade average or class standing in the college where such grades are so converted. The College of Law will award a grade of Satisfactory for a graduate business course in which the student has earned a B grade or higher and a No Credit for any lower grade. The College of Business Administration will award a grade of Satisfactory for a College of Law course in which the student has earned a 2.3 grade or higher and a No Credit for any lower grade. Grades earned in courses of either college may be used on a regular graded basis for any appropriate purpose in the college offering the course. The official academic record of the student maintained by the Registrar of the University shall show the actual grade assigned by the instructor without conversion.

Satisfactory/No Credit Option

(1) Course Eligibility

Required courses may be taken on a Satisfactory/No Credit (S/NC) basis except as specifically designated.

(2) Satisfactory/No Credit

a. Election to take courses on a Satisfactory/No Credit basis must be made at the time of registration and cannot be changed thereafter. Students who register for a course Satisfactory/No Credit when they are ineligible to do so will be required to change to regular grading when the error is discovered.

b. Credit will be given for a course taken on a Satisfactory/No Credit basis only in semesters in which the student completes (receives a grade in) at least ten hours on a regular graded basis.

c. Students electing the Satisfactory/No Credit basis must meet all requirements imposed on students taking the course on a regular graded basis, e.g., attendance, term paper, recitation, etc.

d. Examinations and other work of students electing a Satisfactory/No Credit basis shall not be graded separately or differently from that of other students.

e. For purposes of Satisfactory/No Credit grading, Satisfactory shall mean a grade of at least 2.0.

f. A student electing Satisfactory/No Credit who makes 2.0 or above shall receive credit for the course, but the grade shall be recorded as S and will not be used in determining the grade average.

g. A student electing Satisfactory/No Credit who makes below 2.0 will receive an NC for the course and neither this grade nor the hours for the course will be used in computing the grade average or hours credit.

h. A maximum of two courses may be taken on a Satisfactory/No Credit basis.

Maintenance of a Satisfactory Record

No student will be excluded from the College of Law for academic reasons prior to the completion of two semesters of academic study. A full-time student who fails to achieve an overall average of at least 2.0 upon completion (receipt of a grade) of two semesters of academic study shall be excluded. Such exclusion shall occur regardless of whether the student has obtained permission to vary the first-year full course load.

Maximum Course Load Per Semester

The maximum course load for a law student is eighteen (18) hours in any one semester. During the Summer term the maximum course load is seven (7) hours.

Clinical Courses

A student may take no more than a total of two clinical courses for law credit and normally no more than one clinic course per semester. Clinical courses are 8746, 8756, 8775, 8785.

Policy for Graduate Students Taking Law Courses

Law courses are not available for graduate credit; however, a graduate student may be allowed to take up to 6 semester hours of law courses and receive credit toward a degree upon approval of the College of Law and the major chairperson. The graduate student must register for the law course during regular registration at the College of Law requesting an S/NC grade only. If a 2.0 or above is obtained in a law course, an S will be recorded on the transcript. If a student earns below a 2.0, an NC will be recorded and the course cannot be used toward meeting degree requirements. Grades for law courses will not be reflected in the cumulative average.

Different rules apply to the student enrolled in the Dual J.D.-M.B.A. Program. Grades must be earned according to the grading system of the respective college, e.g. numerical grades for law courses, letter grades for graduate courses. Refer to page xx for the grading scale acceptable toward meeting degree requirements. Cumulative GPA for law courses only will be carried until graduation, at which time both the graduate and the law cumulative will be shown on the permanent record.

Admission

Information regarding admission, financial aid, academic policies, extracurricular activities, and student services is available in the College of Law Bulletin. Interested students interested in the college should obtain a copy of the Bulletin from the Admissions Office. The University of Tennessee, College of Law, 1505 West Cumberland Avenue, Knoxville, Tennessee 37996. Completed application should be received before February 1 of the year of expected admission.

Faculty

Professors:


Associate Professors:

G. L. Anderson, LL.M. Harvard; J. P. Black, Jr., J.D. Vanderbilt; M.S.L. Black, J. D. Tennessee; D. K.
The following program is designed to give the student an adequate preparation for the practice of law. From 12 to 15 hours of classroom work a week are required of all full-time students. The required courses will be taken as early in the law curriculum as possible or as scheduled by the law faculty. See statement of course availability at end of this section.

REQUIRED COURSES

8860 Income Tax (4) What is income; whose income is it; when is it income; how is it taxed (capital gains and losses, maximum and minimum tax); deductions and credits; rates (corporate, estate, and trust).


8940 Civil Procedure II (3) Pleading, joinder of claims and parties; discovery, trials, verdicts, judgments and parties; discovery, trials, verdicts, judgments and parties; discovery, trials, verdicts, judgments and parties; discovery, trials, verdicts, judgments and parties; discovery, trials, verdicts, judgments and parties; discovery, trials, verdicts, judgments and parties; discovery, trials, verdicts, judgments and parties; discovery, trials, verdicts, judgments and parties.

8020 Contracts I (3) The basic agreement process and legal protection afforded contracts. Problems to offer and acceptance, interpretation, illegality, and the statute of limitations.

8030 Contracts II (3) Pleading, joinder of claims and parties; discovery, trials, verdicts, judgments and parties; discovery, trials, verdicts, judgments and parties; discovery, trials, verdicts, judgments and parties; discovery, trials, verdicts, judgments and parties; discovery, trials, verdicts, judgments and parties; discovery, trials, verdicts, judgments and parties; discovery, trials, verdicts, judgments and parties.

8040 Criminal Law (3) Course on substantive aspects of criminal law. General principles applicable to all criminal conduct, then specific analysis of particular crimes. Substantive defenses of crimes, including insanity, intoxication, mistake, necessity, legal duty, self-defense, and duress.

8070 Legal Process (2) Introductory course on judicial process. Brief survey of judicial organization and procedure. Legal history, case analysis, significance of precedent, influence of the judge as policy maker, adversary system, and role and responsibilities of the lawyer as an advocate. Legislative interpretation.

8110-11 Research and Writing I, II, 1, 2) Two semster sequential offering is designed to provide the student with a progressively more sophisticated involvement in legal research and writing. Fundamentals of legal thought and research, legal research techniques, and research skills will be an integral part. Among the other components to be included are the drafting of a law office memorandum and other written materials. The preparation and presentation of an appellate argument (written and oral) will also be expected. Classes will be divided, with individual criticism given on all work submitted. Lectures on research, writing, and advocacy skills will be included. (8110 graded S/NC.)

8130 Property I (3) Freehold estates, future interests, concurrent ownership, uses, implied contract and deed. Principles of personal property.

8140 Property II (3) The recording system, title assurance, easements, nuisance, lateral support, water rights, zoning, and eminent domain.

8180 Torts I (3) Intentional interference with the person, assault and battery, false imprisonment, negligence, affirmative duties, immunities, actual causation, and contributory causes.


8300 Constitutional Law I (3) Judicial review, limitations on judicial power, national legislative power, regulation of commerce, power to tax and spend, other sources of national power, state power to regulate and tax, intergovernmental immunities; substantive due process; Congress and state legislative power.

8660 Legal Profession (2) Role of the lawyer in society and ethical responsibilities implied in that role. Admission to the Bar, the organized profession, solicitation, advertising, unauthorized practice, conflicts of interest, decision to represent or withdraw as counsel; fiduciary relationship, agency and its limitations, fees, and disciplinary procedures.

Additional Required Courses: Perspective Course Requirement: One course among the following is required for graduation: American Legal History; Comparative Law; Criminal Law Theory; International Law; Jurisprudence; Law and Economics; Language and Ethics; Legal Imagination; and Tax Theory.

Writing Requirement: One seminar or upper-level course requiring a substantial legal research paper under faculty supervision is required for graduation. This requirement may also be satisfied by a Directed Research project approved by the Academic Standards Committee.

NOTE: No single course may be taken to satisfy both the Perspective Course Requirement and the Writing Requirement. Additional required courses may be taken at any time during the second or third year.

ELECTIVE COURSES

8015 Comparative Law (3) A general introduction to the civil law systems of France and Germany, focusing on legal institutions, methodology and aspects of the law of obligations and commercial law.

8050 American Legal History (3) Historical development of the law, legal institutions, legal profession, and legal education from colonial times to present. Historical relationship of legal system to society.

8055 Criminal Law Theory (3) A study of the theoretical foundations of criminal law, focusing on an examination of concepts of justice and morality and pertinent materials in the physical and behavioral sciences.

8060 Criminal Process (4) Examination of the constitutional and statutory rights of parties charged with crimes, including search and seizure, self-incrimination, right to counsel, electronic eavesdropping, entrapment, guilty pleas, fair trial, double jeopardy, and habeas corpus.

8125 Admiralty (2) Admiralty courts and their jurisdiction, death and injury to persons; special provisions concerning various maritime workers; carriage of goods by ships; principles governing collisions and liability.

8170 Trial Practice (3) Criminal and civil litigation, with primary emphasis on trial problems and preparation.

Basic trial strategy, professional responsibility, fact investigation, witness preparation, discovery and presentation of evidence, selection and instruction of juries, opening and closing arguments.

8300 Administrative Law (3) Administrative agencies and practices. Delegation and interpretation of powers. Investigatory and rule-making procedures and requirements. Adjudicative procedures, evidence, findings, state and federal rule, and rule against participation as a lawyer in adversarial proceedings.

8260 Bills and Notes (2) Negotiable instruments, negotiability, transferees and holders in due course, requires and defenses; liability of parties; discharge; letters of credit; Arts., 3, 4, and 5 of Uniform Commercial Code.

8280 Conflict of Laws (3) Jurisdiction, foreign judgments, choice of law, constitutional limitations, renvoi, and classification.

8310 Constitutional Law II (3) Freedom of expression, association and religion. Fourteenth Amendment rights of criminally accused, including discrimination as to race, sex, etc., right to franchise and apportionment, concept of state action in matters of civil rights.


8360 Family Law (3) Survey of laws affecting the family. Separation, divorce, and dissolution of marriages; custody; adoption; alimony and support, domicile, modification of judgments, and modification of orders of the court. Custody, child support, adoption, abortion, and illegitimacy.

8420 Evidence (4) Rules regulating introduction and exclusion of oral, written, and demonstrative evidence, including relevancy, competency, impeachment, hearsay, privilege, judicial notice, presumptions, and burden of proof.

8460 Federal Courts (3) Jurisdiction of federal courts and conflicts between federal and state judicial systems, including nature of judicial power, federal questions, diversity, removal, jurisdictional amount, choice of state or federal law, habeas corpus, abstention, enjoining state proceedings, appellate jurisdiction, and joinder of parties and claims.

8490 Environmental Law (3) Survey course examining basic federal and state statutory schemes for air and water quality, hazardous waste legislation such as the National Environmental Policy Act of 1969, selected introduction to role and scope of federal, state and local agencies in enforcement and proposing new laws and regulations.

8500 Future Interests (3) The law of future interests, including reversions, remainders, possibilities of reverter and rights of entry, executory interests, construction of limitations, and rules of subsequent estate.

8510 Government Contracts (2) Principles relating to government procurement, both federal and state, to include award, performance, and termination of contracts. Administrative settlement of disputes arising under government contracts. Prereq: 8200.

8525 International Business Transactions (3) Legal status of persons abroad, acquisition and use of property within a foreign country, doing business abroad as a corporation, engaging in business within a foreign country, and exportation or nonexportation of contracts or concessions.

8530 Public International Law (3) International agreements, organizations, jurisdiction of states, nationality, territory, jurisdiction and immunities, claims, extraterritoriality, force and war.

8535 Jurisprudence (3) A comparative examination of legal theories including natural law, idealism, historical jurisprudence, utilitarianism, analytical jurisprudence, sociological jurisprudence, legal realism, and the policy science approach.

8540 Labor Law (4) Evolution of labor relations law, rights of labor organization; employer and union under federal labor practices; strikes; boycotts and picketing, collective bargaining; public employee labor relations; inte-
nal union affairs; individual rights in labor relations; employment discrimination, federalism and preemption; unions and the antitrust laws.

8560 Law, Language, and Ethics (3) An intermediate level seminar course. Law is the mind's attempt to direct, defend, and administer human activity. Exploration of ethical values underlying formal legal rules through the analysis of jurist's personal and social values. Application of legal concepts through the methods of epistemology.

8565 Law and Economics (3) Examination of the relationship between legal and economic thought, with particular emphasis on the use of economic analysis and legal concepts.

8590 Legal Accounting (2) Designed to familiarize law students with accounting problems and techniques, and to enable them to use and understand accounting information.

8650 Copyright, Patent and Trademark (3) Protection for intellectual property under federal and state law; patents, trade secrets, copyright, tax considerations, and international aspects.

8655 Legal Imagination (3) Systematic study of literature and its application to accurate, fluent, and creative legal composition.

8670 Legal Writing (1) By arrangement. Academic credit for completion of a Casenote or Comment for the Treatment of a topic in a particular area of law as a member of a faculty supervised moot court competition. (Graded S/NC) Legal Writing will not be counted toward the total number of hours for degree or division courses that may be taken on a S/NC basis.

8680 Legislation (3) Examination of interpretation and drafting of statutes, legislative process, and legislative power. Judicial views on legislative process subjected to critical comparison with the realities of legislative process and applicable constitutional principles.

8690 Modern Land Use Law (2) Use and planning, nuisance, zoning, and eminent domain.

8700 Local Government (3) Distribution of power between local and governmental units; sources of authority for limitation of local government operations; creation of local governmental units and determination of their boundaries, home rule; problems represented by fragmentation of local governmental units; problems in the financing of local services; influence of federal policy on local government finance and decision making.

8710 Natural Resources Law (3) Selected materials on nature of interest, conveyancing, royalties, grants and reservations, leases, and taxation.

8740 Business Associations (4) An introduction to the law of cooperative business enterprises including agency, partnership, limited partnership, and the corporation.

8750 Remedies (4) Study of judicial remedies, including damages, restitution, and equitable relief. Consideration of availability, limitations and measurement of various remedies. One objective is a comparative evaluation of remedies available in various situations.

8755 Selected Problems in Remedies (3) Advanced clinic examining indebt particular remedial problems. Specific course content will vary. Possible topics of study include civil rights injunctions, remedies in complex litigation (class actions and/or derivative suits), problems in restitution. Prereq: 8750 or consent of instructor.

8760 Advanced Business Associations (2) Selected topics from the law of business associations. Prereq: 8740.

8770 Products Liability (3) Negligence of manufacturer, strict liability of retailer and other suppliers. Defectiveness and causation. Disclaimers and contributory fault.

8800 Sales and Secured Transactions (4) Art. 2 (Sales) and Art. 7 (Documents of Title) of the Uniform Commercial Code. Brief survey of suretyship and guaranties. Art. 9 (Security Interests) of the Uniform Commercial Code.

8815 Discrimination and the Law (3) Comparison of race, sex and other invidious discriminatory practices as they affect political participation, education, employment, housing and other social and economic activities; emphasis on legislative enforcement of post-Civil War Amendments to the Constitution.

8820 Securities Regulation (3) Advanced problems of governmental regulation of issuance of securities.

8830 Social Legislation and Employee Benefits (3) Legislative policies and programs addressing labor-management relations, workers compensation, wage and hour laws, unemployment compensation, public assistance, Social Security, and Medicare.

8840 Wealth Transfer Taxation (3) Transfers of wealth at death (estate tax) and during life (gift tax); generation skipping transfers; deductions and credits; inter-relationships of transfer taxation.

8850 Tax Theory (3) A comparative study of the devices, and problems incurred in event of default, collection through an examination of economic theory and various actual proposed schemes of taxation.

8860 Income Tax II (3) Partnership; corporate reorganizations and distributions; transactions among corporations and shareholders.

8905 Decedents' Estates (3) Nature, creation, transfer, termination and modification of trusts; inheritance and estate taxes; administration; intestate succession; validity, execution, mistake, revocation, probate and contest of wills; ademption, advancements and contribution of wills.


8985 Directed Research (1-2 Hours) Hours to be arranged. Independent research by a student under direct supervision of a faculty instructor. A student may take course maximum of once each year in last two years of study. Proposal must be approved by Academic Standards Committee.

8990 Land Finance Law (2) Financing devices such as mortgages, deeds of trust and land contracts, problems involved in transferr of interests subject to these devices, including defaults, foreclosures. Consideration also directed to contemporary problems arising in such areas as condominiums, cooperatives, housing subdivisions, and shopping centers.

LEGAL CLINICS

Students are eligible to enroll in clinical courses after the successful completion of their fourth semester in addition to meeting other specified prerequisites. Students must enroll in only one clinical course per semester and are limited to a total of two courses.

8746-56 Introduction to Advocacy (4-4) Concentrated study of litigation with primary emphasis on trial problems and preparation. Basic trial strategy, discovery, presentation of evidence, voir dire, jury instructions, and opening and closing statements are among the topics addressed. Concentrated role-playing in simulated situations will be used in addition to the representation of actual clients. Ethical issues encountered by students during supervised fieldwork will be examined during the course and selected problems of professional responsibility will be analyzed and discussed.

8756 Advanced Advocacy (4) Students who have successfully completed one fieldwork component may be eligible to enroll in the other course during a subsequent semester.

8746 Civil Component: Assists students in understanding the criminal justice system and the advocacy role as criminal defense counsel. In addition to classwork, work includes supervised fieldwork requiring participation in criminal defense representation, usually at preliminary hearings and misdemeanor trials in the general sessions courts. Prereq: 8040, 8060, and 8420.

8775 Advanced Advocacy (4) Builds on the lawyering and legal skills developed in 8746-56 by involving students in litigation and advocacy of greater complexity. When offered, course limited either to those students who have successfully completed an Introduction to Advocacy course or to those who have completed 8756. Students having completed 8746 will enroll in Supervised Fieldwork in such a way as to limit course work and comprehensive legal drafting, litigation, and practical problem solving. Supervisors practice. Students having completed 8756 will be assigned fieldwork involving representation of criminal defendants in felony trials and criminal appeals. Prereq: 8746 or 8756.

8785 Economic Development (4 or 5) Students develop models and skills pertaining to the representation of corporations and businesses. Emphasis on non-litigation skills such as negotiation, counseling, document preparation, business planning and representation before various state and federal agencies. Supervised fieldwork involves legal representation of community groups and small business ventures. Ethical issues encountered by students during their supervised fieldwork will be examined, as will selected problems of professional responsibility. Prereq: 8740 or 8746. (4 or 5) Credit may be repeated for credit.

NOTE: Students receiving credit for 8170 prior to taking an Introduction to Advocacy course (8746 or 8756) will receive five (5) hours credit for that course; students receiving credit for the Introduction to Advocacy course will receive four (4) hours credit rather than eight (8) hours credit. Students receiving credit for both 8746 and 8756 after completing 8746 or 8756 will receive four (4) hours credit for 8785. Students enrolling in 8746 or 8756 after completing 8756 will receive seven (7) hours credit for the Introduction to Advocacy course.

SEMINARS

8240 Arbitration Seminar (2) Arbitration of labor agreements. Judicial and legislative developments, nature of process, relationships to collective bargaining, selected arbitration problems on various topics under collective agreements, and role of lawyers and arbitrators in the process.


8345 Criminal Law Seminar (2) Advanced problems in criminal law and administration of justice.

8400 Estate Planning Seminar (2) Problems of estate planning both inter vivos and testamentary. Advantages and disadvantages of various types of ownership. The law and practice of fiduciary administration, insurance, wills, future interests, trusts, corporations, partnerships, and gifts as related to estate planning. Research on assigned topics. Drafting of estate plan for hypothetical fact situations. Prereq: 8606 and 8840.

8456 Juvenile Law Seminar (2) Examines the unique history and philosophy of juvenile justice system. Consideration, jurisdiction, judicial and extrajudicial functions of juvenile court, and various dispositional alternatives. Students will read judicial opinions and materials from fields of history, sociology, and psychology. Knox County Juvenile Court serves as laboratory for students; all professional staff from the Court participate in seminar on regular basis.

8550 Labor Relations Law Seminar (2) Study and discussion of selected labor relations law problems.


8585 Law and Current Problems Seminar (2-3) Topics selected by the instructor. Students must enroll in seminar each semester. May be repeated for credit.

8580 Law and Mental Health Seminar (2) Introduction to psychiatric principles, role of psychiatrist, and
relationship to role of legal counsel; assigned readings; field work in mental health clinic; jointly taught by law professor and psychiatrist.

8870 Business Planning Seminar (2) Selected problems on corporate and tax aspects of business planning and transactions. Prereq: 8860, 8862, and 8740.

8890 Environmental Protection Seminar (2) Through team-teaching and input of selected experts, course will focus on specific problems of litigating in defense of the environment and mobilizing public and private efforts in defense of the environment. Problems of proving environmental impact of selected projects, interpretation and evaluation of scientific data, use of expert witnesses. Special environmental concerns of the region, e.g., TVA operations, strip mining, forest management, wildlife preserves. Prereq: 8490.

8875 Commercial Law Seminar (2) Content will vary. On some occasions this will be a planning seminar in which students are required to plan and execute a complex commercial transaction, such as the sale and financing of major equipment. Other years the seminar will focus on selected problems in commercial transactions, with students required to write a major research paper. Prereq: 8900.

8845 Legal Professional Competence Seminar (2) Exploration of typical situations in which malpractice claims arise, including third party claims, conflicts of interest, breach of fiduciary duties and the like; examination of difficult problems of proof including use of expert testimony, which is hallmark of much legal malpractice litigation.

8910 Administrative Law Seminar (2) In-depth study of principles of administrative law not covered in basic courses. Discretion, choice of adjudication of rulemaking to develop administrative policy, consistency in administrative action.

8930 Consumer Protection Seminar (2) Selected problems in consumer protection.

8935 Law and Medicine Seminar (2) Examination of medical profession's involvement in judicial process, including: (1) medical malpractice and alternatives to fault-based liability; (2) responsibilities for disposition and care of dead bodies and legal principles governing organ transplantation; (3) expert medical proof and testimony; (4) medico-legal aspects of euthanasia; (5) other more specific matters such as legal import of medical profession's various canons of ethics.

8955 Trade Regulation Seminar (2) Study and discussion of selected problems arising under antitrust laws and laws applicable to regulated industries.

8960 Office Practice Seminar (2) Techniques of law office management, methods and practice, including techniques in the preparation of various legal instruments, office accounting, interviewing and counseling, management of personnel.

8995 Land Acquisition & Development Seminar (2) Alternative business forms will be assigned teams of students who will then prepare and present for seminar discussion all major documents (notes, deeds, prospectus, etc.) necessary to accomplish the acquisition or development of large pieces of raw land. Prereq: 8900.

Course Offerings Subject To Change

The necessity of adjustments to accommodate changing conditions may dictate modifications in the course offerings and other features of the program described above. Accordingly, the college reserves the right to make such variation in its program as circumstances may require. Prospective students who are interested in the precise course offerings at a given time or who desire other special information should make inquiry in advance.

It is necessary to offer some courses and seminars only on an every other-year basis. Choice is based on subject matter and past patterns of student enrollment.
The arts and sciences encompass the entire range of human knowledge, from the earliest records to the latest laboratory results. All that human beings have observed about themselves, about their societies, and about the natural world around them is of concern to one or another of the arts and sciences.

The curriculum of the College of Liberal Arts reflects this widening concern with the life of the mind. It emphasizes the breadth of human knowledge, perceived not only in terms of the traditional categories of the humanities and the natural and social sciences, but also in broader perspectives which extend across academic fields and reach beyond the boundaries of a college of liberal arts. It also stresses depth of learning, thereby seeking to acquaint the student with the rigors of the intellectual process. Through a study of the liberal arts one thus learns to participate in an intellectual tradition which is independent of particular teachers and which guides one in the choice of subjects for investigation and in the interpretation of those subjects. With time the individual begins to apprehend the great outlines of knowledge, the principles upon which they rest, the scale of their parts, and their lights and shadows.

The central purposes of a liberal education include the encouragement of intellectual tolerance, a dedication to the quest for knowledge as a worthwhile goal in and of itself, and the cultivation of a responsible, creative individual mind. These qualities should enable one to develop through life an ability to reason and to express oneself clearly, an incentive to absorb emerging knowledge, and a competence to confront the uncertainties of human experience. For the student whose interests and talent lead into research, scholarship, and teaching, a liberal education provides an invaluable foundation. For the individual who enters business, industry, the professions, or government service, it furnishes a broadly useful and well-rounded educational background. For all it offers the opportunity to share in a rich intellectual heritage, in the adventures of the mind, and in the life of the educated imagination. A liberally educated person is identified not so much by specific knowledge as by quality of mind and by creative response to the challenges of the times.

At the heart of a liberal education is an appreciation of and a familiarity with a great trust: language, literature, and the arts; history and society; science and mathematics. These three great wellsprings of human thought are sources of the programs of study offered students in the College of Liberal Arts.

Programs of Study

Granting the broad, general goals of a liberal education, students come into the college with a wide variety of specific educational and vocational objectives. Recognizing this diversity, the college offers a number of different programs of study leading to the baccalaureate degree, and also several pre-professional curricula which prepare the student for advanced study but do not lead to a degree from this college.

Degrees Offered

(1) BACHELOR OF ARTS

The Bachelor of Arts is the basic liberal arts degree, representing the attainment of a broad knowledge of the arts and sciences as well as a comprehensive understanding of one or more areas of special interest. Four programs leading to this degree are open to the student:

(a) Basic Program—The program appropriate for most B.A. students, it is developed around the broad area requirements in the Triad plus intensive study in one or more of the specified departmental or interdepartmental major fields described below.

(b) Individualized Program—Designed for students whose educational goals are best met by a program tailored to their particular needs, it is similar to the Basic Program in broad area requirements but permits the student to develop an individual concentration incorporating work in two or more departments.

(c) College Scholars Program—Intended for a limited number of students who are especially highly qualified and motivated and who have been selected to undertake this honors-level program, the College Scholars Program permits the student maximum freedom to design a curriculum to meet particular interests and goals.

(d) Pre-Professional Program—The Pre-Professional Program is offered for those who wish to participate in one of the cooperative 3-1 curricula in the health sciences (medicine, dentistry, pharmacy, or medical technology). The student proceeds directly to specialized training in the chosen area after the third year of liberal arts study and offers the first year of professional study in lieu of a major concentration in the college in satisfying the requirements for the B.A. degree.

(2) BACHELOR OF FINE ARTS

The Bachelor of Fine Arts degree represents intensive study preparing students for graduate study and professional positions in art. The degree is offered with a major in studio art. Recommended course combinations for those who desire to concentrate in ceramics, communication design, drawing, painting, fiber-fabrics, inter-area, watercolor, printmaking, or sculpture are available in the art department office.

(3) BACHELOR OF MUSIC

The program leading to the Bachelor of Music degree prepares students for graduate study and for positions in which a professional degree is required. The degree is offered with a major in music which has concentrations in music theory, composition, music history and literature, piano literature, and applied music (voice—organ—strings—woodwind, brass, and percussion instruments—multiple woodwind instruments, organ and church music, piano, studio music and jazz, Suzuki string pedagogy).

(4) BACHELOR OF SCIENCE IN CHEMISTRY

The Bachelor of Science in Chemistry is a professional degree designed in accordance
with standards set by the American Chemical Society to train students to go directly into positions in the chemical industry or to enter graduate study leading to positions in research and college teaching. Students may either choose the four-year program or a five-year cooperative program in which they alternate a quarter of study with a quarter of work in a chemical industry, thus gaining several quarters-on-the-job experience while earning the degree.

Program Planning

Each student's academic program is highly individualistic, reflecting that person's special interests, goals, and aspirations. Usually it will reveal a growing intellectual sophistication and the development of particular motivations. On occasion, unfortunately, it gives indication of frustration and lack of clear direction. Viewed as a whole it may appear to be a miscellany of unrelated courses which were chosen almost capriciously; or it may be a carefully selected curriculum which the student brought together in a way which represented for that individual the most appropriate and effective way of attaining educational goals.

The importance of program planning can hardly be overstressed. A few students enter the college with well-defined educational objectives in mind and their programs develop quite readily around these predetermined goals. Many, however, do not reach that stage of certainty until their academic careers are relatively far advanced. For these persons the exploration of possible directions and programs, in consultation with faculty advisers, is an important part of the educational process. It is essential for them to develop their programs carefully and creatively in order that maximum flexibility in their ultimate decision making may be assured.

A basic decision, of course, is the degree to be sought. If it is one of the three professional degrees (Bachelor of Fine Arts, Bachelor of Music, or Bachelor of Science in Chemistry), the student's program will be somewhat circumscribed, for these degrees are necessarily more prescriptive than the general liberal arts degree. If the student chooses to work for the Bachelor of Arts degree, the three elements which make up the curricula leading to that degree will need to be kept in balance: the broad requirements in the Triad, the major area, and the elective courses which support and supplement the work in the first two categories. Most students find it desirable to lay a broad foundation by taking courses which will satisfy Triad requirements in the first two years, thus reserving most of the final years for in-depth study in the area of concentration. Elective courses may be taken at any time.

Advisors in the Liberal Arts Advising Center (220 Ayres Hall), in the various major departments, in the University Counseling Center, and elsewhere on campus are available to assist students with their program planning. In the final analysis, however, only the student can determine the program which will best satisfy particular needs.

Requirements for Degrees

Bachelor of Arts

As has already been stated, the general liberal arts degree is the Bachelor of Arts, and it is the appropriate objective for most students in the college. Requirements for this degree and the several curricular programs which lead to it will now be discussed in detail.

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

GENERAL REQUIREMENTS

Each student seeking a Bachelor of Arts degree must develop a program which includes the following:

1. A minimum of 180 credit hours;
2. At least 60 credit hours in courses numbered 3000 or above;
3. Appropriate work to satisfy the broad requirements of the Triad, counting no course for more than one Triad area (Basic Program, Individualized Program, and Pre-Professional Program only);
4. A graduate record consisting of at least 36 credit hours in courses numbered 2000 or above as specified by the department or program, and counting no course in this major which has been used for Triad credit. (A course which satisfies a Triad requirement may serve, however, as prerequisite or corequisite to a major.)
5. A minimum grade of C must be earned in every course counted as part of a major.
6. Students transferring from other institutions must complete at least 12 credits at The University of Tennessee, Knoxville, in each major awarded on this campus.

Multiple Majors: After the general requirements described above have been satisfied, additional majors may be recorded on the transcript without regard to course overlap among majors or among these additional majors and Triad requirements. Students developing multiple majors must specifically declare this intent at the time they apply for graduation. Once a student has graduated, the establishment of additional majors becomes subject to University second-degree requirements.

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

A business minor is available to students who successfully complete 21 hours of the following required courses: Accounting 2110-20-30, Economics 2110-20-30, and Statistics 2100. Also, 15 hours of upper-division business electives must be taken at UTK. Not more than six upper-division hours of accounting, economics, or statistics may be used for this minor. Students are responsible for meeting prerequisites listed for any upper-division courses taken in a particular concentration.

1. Basic Program

A. THE TRIAD:

Language, Literature, and the Arts; History and Society; Science and Mathematics

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

It is important that every student of liberal arts becomes acquainted with these modes of experience within this culture and through exposure to cultures that are foreign, distant, and strange. To know what one is not is essential for knowing what one is. Although there is no formula for determining which disciplines, skills, and enjoyments are of primary or of secondary importance, the written and spoken word has a wider range of reference than any other human skill. A basic competence in reading is thus a minimal condition for knowing how to think about and relate all other activities.

The study of history is an integral part of a liberal education. Because human beings build on their experience, a clear understanding of the present requires a historical perspective. Much of this information may be acquired by a number of courses, including the traditional survey of western civilization or other broad surveys such as Asian history, Latin American history, history of the United States, and Afro-American history. More specialized courses in the history of particular segments of human experience, e.g., philosophy or religion, may also prove valuable.

A liberal education presupposes not only an awareness of the past but also a familiarity with contemporary social institutions, processes, and practices. From a wide variety of offerings in the social sciences the student may choose courses which will help to define that familiarity. Only by such knowledge can people of good will hope to maintain humane values in a world where industrialization, urbanization, and other dimensions of technological change challenge traditional patterns of individual and collective behavior.

Study of science and mathematics develops in the student an inquiring attitude toward the natural environment and confidence in the ability to understand scientific explanations of diverse phenomena. These ends may be realized through an understanding of the empirical and the rational in the methods of inquiry and an awareness of the limitations of science and technology in solving problems. The student should attain a knowledge of the way in which the development of science and technology has affected our world views, philosophies, and the development of civilization.

Specific Requirements in the Triad

(1) Language, Literature, and the Arts

(a) Writing Proficiency

Each student is required to demonstrate ability to use the English language effectively and coherently in one of the following four ways:

(i)
By completing nine credits in English writing courses in one of the following series: (1) English 1010 or 1011, 1020, and three credits drawn from 1031, 1032, or 1033. Students who complete 1020 with the grade of A have the additional option to satisfy the remaining three credits in any 2000- or 3000-level writing course offered by the department. (2) English 1018, 1028, 1038. Students who obtain the grade of A or B in 1028 have the additional option, with permission, to satisfy the remaining three credits in any 2000- or 3000-level writing course offered by the department. (3) English 1431, 1441, 1451.

By earning a score of 4 or 5 on the College Board Advanced Placement Test in English; or, with special permission, by earning a score of 3 on that examination and completing one 2000-level course in English at The University of Tennessee, Knoxville, with a grade of B or better.

By passing (normally after completing one quarter of freshman English at UT) a proficiency examination in English, administered by the Department of English in cooperation with the Committee on Writing Standards.

By completing the hours of freshman English followed by a minimum of six hours in courses which require substantial emphasis courses are identified by the Committee on Writing Standards; a list of those approved may be obtained in the office of the Department of English or the Liberal Arts Advising Center.

Note: Students should normally take English in the first quarter of their registration and continue to take English or a writing-emphasis course in each succeeding quarter until this requirement is met.

(b) Literature, Foreign Language, and the Arts
The student may select any one of the following three options to satisfy this requirement:

(i) Eight hours of literature in foreign language in the 2000-level or above.

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

(ii) Intermediate-level competence in a foreign language demonstrated by diagnostic (noncredit) or proficiency (credit) examination or by completing a 2000-level sequence (or an approved equivalent) in that language, and a minimum of two courses of literature in English (originally in English or in translation) drawn from the list of courses published by the Committee on Literature, the Arts, and the Liberal Arts Advising Center.

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

Note: in options (i) and (ii), those who take the diagnostic examination will not receive credit toward graduation but will be exempted from the portion of the requirement not satisfied by the examination. Those who take proficiency examination may earn up to 16 hours of credit toward graduation for previous study of the language, in addition to the credit they earn for course work undertaken in the college.

Normally two years of high school language study is regarded as equivalent to one year of college study. Students who have had four years of high school study of the same language should be able to satisfy the requirement for intermediate-level competence in either option by examination and those who have had less than four years of study may be able to satisfy a portion of the requirement in this way, thereby reducing the time required to satisfy this requirement. Full credit toward graduation is given for any language study undertaken successfully in the college regardless of the amount of previous study of that language.

Students who have had less than two years of study of the same language in high school are admitted with an entrance deficiency. Satisfaction of that deficiency is necessary to remove this deficiency.

(c) History, Philosophy, or Social Impact of a Major Field
Each student must complete 24 hours of course work in this area including:

(a) One eight-hour sequence from the several options offered by the Department of History or in a comprehensive interdisciplinary sequence having a substantial emphasis on history;

(b) Eight hours in courses with emphasis on man and society which are not primarily historical in nature;

(c) The remaining hours may be taken in either category (a) or (b).

A list of courses which satisfy this requirement is published by the Committee on History and Society and is available in the Liberal Arts Advising Center.

(3) Science and Mathematics
Each student must complete 24 hours of course work in this area, including:

(a) One eight-hour sequence in biology, chemistry, or mathematics;

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

(ii) An eight-hour sequence in physical science.

(b) 16 hours drawn from additional courses in the biological and/or physical sciences or from designated courses in:

(iii) the history, philosophy, or social impact of science;

(iv) mathematics and logic.

No more than 16 hours may be applied toward this requirement from any one of the above four categories.

A list of courses which satisfy this requirement is published by the Committee on Science and Mathematics and is available in the Liberal Arts Advising Center.

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

Requirements for the specific majors available to students in the Basic Program vary from a minimum of 36 to a maximum of 56 credit hours in courses numbered 2000 and above, including prerequisites and corequisites (i.e., supporting courses in other departments or areas). Insofar as possible, the objective of each major program balances reasonably between broad area requirements in the Triad, the major, and supplementary courses, the student may elect many courses as desired in any department or area.

Majors available in the Basic Program:

- Anthropology
- Art
- Art History
- Audiology
- Biology
- Botany
- Chemistry
- Computer Science
- Cultural Studies
- Economics
- English
- French
- Geography
- Geology
- German
- Greek
- History
- Human Services
- Speech & Theatre
- Speech Pathology
- Sociology
- Spanish
- Statistics
- Zoology

C. SUPPLEMENTARY ELECTIVE COURSES
At least one-fourth of each student's curriculum in the Basic Program will be made up of courses selected according to the individual's interests to supplement and support the work being done in the major and in the Triad. 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 quarter.

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

II. Individualized Program
The Basic Program described above will meet the educational needs of most of the students enrolling in the college. Some, however, come with particular strengths in their preparation or with special interests which do not coincide with the departmental or interdepartmental majors specified in the Basic Program. For these students the Individualized Program has been established as a means of obtaining a closer correlation between student needs and academic programs.
Students in the Individualized Program satisfy the broad requirements of the Triad, just as do those in the Basic Program. The point at which the greatest degree of individualization 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 36 hours in courses numbered above 2000), there is no restriction in principle on the choice of courses of which it is composed. The student may design a program, in consultation with an adviser, and submit it to the Committee on the Individualized Program. The proposed courses of study must have some clear central purpose, usually implemented through intensive work in two or three departments; an undirected scattering of courses will not be approved. For further information contact the Liberal Arts Advising Center.

III. College Scholars Program

A limited number of freshmen, entering students with less than 60 credit hours, and transfer students with less than 90 credit hours are invited each year to enter this distinguished honors curriculum. Selection is based on previous academic record, test scores, and recommendations, a written essay, and a personal interview. Admission is provisional for two quarters; continuation depends upon maintenance of a satisfactory record (normally 3.25 or above) and evidence of ongoing motivation and interest.

The College Scholars Program affords the highest degree of freedom to the student in developing a meaningful curriculum. Each program is worked out individually with a special adviser (tutor) who under ordinary circumstances continues to advise the student throughout the course of study. 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.

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

IV. Preparation for the Health Professions

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

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

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

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

PRE-DENTAL PROGRAM

The college offers both three-year and four-year programs leading to the degree of Bachelor of Arts for students preparing for the study of dentistry. Both programs are based upon the curriculum outlined below. In the three-year program the student must complete at least 135 credit hours while enrolled in the college, and the B.A. degree is granted upon satisfactory completion of the last year of study at UTCMS. In the four-year program the degree is granted upon completion of 180 or more credit hours while enrolled in the college, including a more than 40 hours in addition to the courses listed below. The requirement for a major is waived for those completing their fourth year at UTCMS. Students in either the three- or four-year program must complete the last 45 hours of credit in residence at The University of Tennessee, Knoxville, before entering UTCMS.

Although the B.A. degree is not required for admission to the College of Dentistry at Memphis, most of the students accepted into the study of dentistry have the baccalaureate degree before admission. Therefore, pre-dental students are encouraged to plan to complete all requirements for the B.A. degree before enrolling in the College of Dentistry.

Freshman Hours Credit

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<th>Course</th>
<th>Hours</th>
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<tr>
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<tr>
<td>Chemistry 1110-20-30</td>
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<tr>
<td>Math 1404-50</td>
<td>8</td>
</tr>
<tr>
<td>Biology 1210-20-30 and Zoology 1118-25-36</td>
<td>12</td>
</tr>
<tr>
<td>Total</td>
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*Students wishing to prepare for professional training at institutions other than UTCMS should consult with those institutions to determine the specific requirements needed for admission.

PRE-DENTAL HYGIENE PROGRAM

A Bachelor of Science in Dental Hygiene is granted by UTCMS upon completion of a program which includes 96 hours of prescribed courses in the College of Liberal Arts and six quarters of study at UTCMS. Students interested in the pre-dental hygiene program are encouraged to consult with a health professional adviser in the Liberal Arts Advising Center or the Coordinator of the Health Professions Office for more information. Bulletins describing the pre-dental hygiene program and requirements in detail may be obtained from the Health Professions Office, 218 Ayres Hall.

PRE-MEDICAL PROGRAM

The college offers both three-year and four-year programs leading to the degree of Bachelor of Arts for students preparing for the study of medicine. Both programs are based upon the program outlined below. In the three-year program the student must complete at least 135 credit hours while enrolled in the college, and the B.A. degree is granted upon satisfactory completion of the first year of study at UTCMS. In the four-year program the degree is granted upon completion of 180 or more credit hours while enrolled in the college, including a major of 36 or more hours in addition to the courses outlined below. The requirements for a major are waived for those completing their fourth year at UTCMS. Students in either the three- or four-year program must complete the last 45 hours of credit in residence at UT before entering UTCMS.

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

Freshman Hours Credit

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tr>
<td>English 1010-11; 1020; 1031 or 1032</td>
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<td>Chemistry 1110-20-30</td>
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<td>Math 1404-50</td>
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<tr>
<td>Biology 1210-20-30 and Zoology 1118-25-36</td>
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<td>Total</td>
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*Or equivalent honors courses.

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<td>Math 1404-50</td>
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<td>Biology 1210-20-30 and Zoology 1118-25-36</td>
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<td>Triad II (History &amp; Society)</td>
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<tr>
<td>Electives</td>
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*Recommended courses in biology and zoology are genetics, cell biology, and comparative vertebrate anatomy.
Sophomore

Biology 1010-20-30 or Zoology 1118-28-38...12
Chemistry 3211-21-31 & 3219-29-39...12
Triad I...4
Triad II...4
Electives...15

48

Junior

Physics 2210-20-30...12
Triad I...4
Triad II...4
Electives...16

48

Senior

Completion of major program and B.A. requirements or Completion of one year at UTCHS...45

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

PRE-MEDICAL TECHNOLOGY PROGRAM

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

Students interested in the pre-medical technology program are encouraged to consult with a health professions adviser in the Health Professions Office for more information. Bulletins describing the pre-medical program in detail may be obtained from the Health Professions Office, 218 Ayres Hall.

PRE-MEDICAL TECHNOLOGY PROGRAMS

The college offers two programs leading to a degree of Bachelor of Science in Medical Technology from UTCHS.

Pre-Medical Technology Program

Students planning to seek admission to the medical technology program of study at UTCHS must complete 90 credit hours of prescribed courses while enrolled in the College of Liberal Arts. The program at Memphis is 4 years in length and leads to the degree of Bachelor of Science in Medical Technology from UTCHS. Classes are admitted in September and application must be made one year in advance.

Students interested in the medical technology program of study at UTCHS are encouraged to consult with a health professions adviser in the Health Professions Office for the specific requirements for admission. Bulletins describing both pre-medical technology programs and requirements in detail may be obtained from the Health Professions Office, 218 Ayres Hall.

PRE-NURSING PROGRAM

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

Registered nurses who wish to work for a degree of Bachelor of Science in Nursing must complete 54 hours of prescribed courses to qualify for admission with advanced standing. These students are encouraged to consult with a health professions adviser in the Health Professions Office, 218 Ayres Hall.
Veterinary Medicine

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

**Bachelor of Fine Arts**

The Bachelor of Fine Arts degree represents intensive study preparing the student for graduate programs and careers relating to art. A minimum of 189 credit hours are required for graduation. Although there are no specific concentrations within the major, guidelines for the following recommended programs are available in the departmental office: (1) studio art, (2) communication design, (3) drawing, (4) fiber-fabrics, (5) painting, (6) printmaking, (7) sculpture, and (8) watercolor. Interarea concentrations are also possible.

Transfer students are advised that a minimum of 28 hours in studio courses and eight upper-division hours in art history must be earned at The University of Tennessee, Knoxville. The Bachelor of Fine Arts degree and its major are recorded as the Bachelor of Arts degree.

Degree: Bachelor of Fine Arts

**Major: Studio Art**

Electives

A recommended sequence of courses from such areas as business, education, and sciences are designed to help the student combine art with other fields for possible careers in art administration, gallery and museum management, scientific illustration, non-certificate teaching, and other art related occupations. Up to 60 elective hours may be used by applying the 20 credit hour requirements of non-art electives (III.C) to a career preparation sequence. See Option II under Electives. Counseling and programs of study are available in the Art Center Student Advisement Center, Room 112.

**CORE CURRICULUM**

The core is required of all B.F.A. candidates. It is designed to give a broad art background, an understanding of the various artistic disciplines, and an opportunity to become acquainted with the various artistic disciplines. This gives each student the understanding to plan a better program during the remaining two years. Unless otherwise stated the art core courses are non-sequential.

**I. Core**

Art History courses are non-sequential.

A. Art 1000 (to be completed during freshman year)...
B. Art History courses...
C. Studio

I. Art Fundamentals 1115, 1125, 1135 (to be completed during the freshman year)...
II. Introduction to Media (to be completed prior to junior year)...

A. Art 2105, 2205 (or 2305), 2405...
B. A minimum of 12 hours selected from: Art 2520, 2555, 2450, 2505, 2605, 2950...

**Subtotal:** 64 hours

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

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

B. Inter-Area: A combination of courses from the various other areas (III.A above) to be approved by the department.

**Subtotal:** 36 hours

**III. General Curriculum**

A. Triad

1. English Composition 9
2. History-Society 8
3. Science-Mathematics 8

B. Philosophy 3910 4
C. Non-art electives 20

**Subtotal:** 49 hours

**IV. Electives**

Option I: Additional art or non-art electives

Option II: Career preparation electives

**Subtotal:** 40 hours

**TOTAL:** 189 hours

**COLLEGE ARTISTS PROGRAM**

A program of 180 hours is to be determined by the student and approved by the Department of Art honors committee. This program allows the gifted student greater opportunity for establishing a unique education in studio art, which may include independent study, off-campus study, or foreign study in addition to formal class work. Participation and graduation in the College Artists Program will be noted on the student transcript.

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

Each College Artist will normally enroll in one or more general or departmental honors course each quarter, and must participate in an honors exhibition prior to graduation.

**STUDIO HONORS COURSES**

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

A. Grade-point average of 3.2 in studio art courses
B. Portfolio of class and/or outside work
C. Recommendation of the studio faculty, and/or approval of the instructor

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

**Bachelor of Music**

The Department of Music offers the degree of Bachelor of Music with concentrations in music theory, composition, music history and literature, and applied music (voice—piano—organ—organ and church music—strings—woodwind, brass, and percussion instruments—multiple wind instruments—studio music and jazz—Suzuki string pedagogy). The study is designed to prepare students for graduate study or for positions in...
Students who plan to work for this degree are assigned an adviser in the Department of Music. All students entering the program. Continuation in the program at the 3000 level requires the achievement of an average of 2.5 or better in all music courses taken. The minimum requirement for the degree is 180 credit hours, including the specified courses outlined below.

**Note:** In addition to the concentrations offered in the Bachelor of Music curriculum, a major in music with a concentration in music history and literature or applied music is available in the Bachelor of Arts curriculum.

### Music Theory

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<th>Level</th>
<th>Course Code</th>
<th>Hours</th>
<th>Credit</th>
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<tbody>
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<td>Freshman</td>
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<td></td>
<td>Music 1111-21-31</td>
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<td></td>
<td>Music 1133-23-33</td>
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<td>Music 1199</td>
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<td>Music 1340</td>
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<td>Ensemble</td>
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<td>Music 2133-23-33</td>
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**TOTAL: 180 hours**

### Music History and Literature

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**TOTAL: 180 hours**

### Composition

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**TOTAL: 180 hours**

### PIANO Literature

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**TOTAL: 180 hours**

### Voice

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**TOTAL: 180 hours**
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<td>Music 1133-23-33</td>
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<td><strong>Senior</strong></td>
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<td><strong>Sophomore</strong></td>
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<tr>
<td><strong>Junior</strong></td>
<td></td>
<td>Ensemble</td>
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| **TOTAL: 185 hours** |

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<td>Music 1111-21-31</td>
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<tr>
<th><strong>MULTIPLE WOODWIND INSTRUMENTS</strong></th>
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<td>English 1010 or 1011; 1020; 1031 or 32 or 33.</td>
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<tr>
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<td>Music 1111-21-31</td>
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<td><strong>TOTAL: 185 hours</strong></td>
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</table>
**Suzuki String Pedagogy**

**Freshman**

- **English** 1010 or 1011; 1020; 1031 or 1032; 1033 or 33
- **Music** 1111-21-31
- **Music** 1113-23-33
- **Music** 1340
- **Principal applied study**
- **Music** 1010-20-30
- **Ensemble**
- **Liberal arts electives (not in music)**
- **Music** 2340
- **Music** 3113-23-33
- **Music** 3111-23-33
- **Music** 3210-20-30
- **Psychology** 2500
- **Ensemble**
- **Principal applied study**
- **Music** 1040-50-60
- **Principal applied study**
- **Liberal arts electives (not in music)**
- **Music** 2000

**Sophomore**

- **Music** 2111-21-31
- **Music** 2113-23-33
- **Music** 2310-20-30
- **Psychology** 2500
- **Ensemble**
- **Principal applied study**
- **Music** 1040-50-60
- **Principal applied study**
- **Liberal arts electives (not in music)**
- **Music** 2000

**Junior**

- **Music** 2340
- **Music** 3113-23-33
- **Music** 3111-23-33
- **Music** 3210-20-30
- **Music** 2599
- **Applied Music**
- **Ensemble**
- **Synthesizer Ensemble**
- **Music** 2199
- **Music** 3113, 3123
- **Music** 3597
- **Aged Music**
- **Ensemble**
- **Synthesizer Ensemble**
- **Computer Science** 2610
- **Electives**

**Senior**

- **Music** 2340
- **Music** 3113, 3123
- **Music** 3111-23-33
- **Music** 3210-20-30
- **Music** 2599
- **Applied Music**
- **Synthesizer Ensemble**
- **Music** 2000
- **L. A. Electives (not in music)**

**TOTAL: 180 hours**

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**Electronic Music**

**Freshman**

- **English** 1010 or 1011; 1020; 1031 or 1032 or 1033
- **Music** 1111-21-31
- **Music** 1113-23-33
- **Music** 1199
- **Music** 1340
- **Applied Music**
- **Ensemble**
- **Music** 2000
- **Physics** 1810
- **L. A. Electives (not in music)**

**Sophomore**

- **Music** 2111-21-31
- **Music** 2113-23-33
- **Music** 2310-20-30
- **Music** 2599
- **Applied Music**
- **Synthesizer Ensemble**
- **Music** 2199
- **Music** 3113, 3123
- **Music** 3597
- **Aged Music**
- **Ensemble**
- **Synthesizer Ensemble**
- **Computer Science** 2610
- **Electives**

**Junior**

- **Music** 2340
- **Music** 3113-23-33
- **Music** 3122, 3123
- **Music** 3113, 3123
- **Music** 3597
- **Aged Music**
- **Synthesizer Ensemble**
- **Computer Science** 2610
- **Electives**

**Senior**

- **Music** 2340
- **Music** 3113-23-33
- **Music** 3597
- **Aged Music**
- **Synthesizer Ensemble**
- **Music** 2000
- **L. A. Electives (not in music)**

**TOTAL: 180 hours**

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**Preparation for Other Professional Degrees**

**Law**

Students who plan to study law should consult the statement regarding admission to the College of Law (page 171) and discuss their programs with advisers in the Liberal Arts Advising Center.

**Library Science**

Certain courses in the Graduate School of Library and Information Science are open to students in the College of Liberal Arts interested in beginning positions in a library or in preparation for future graduate study in professional librarianship. For further information, see page 54 or consult the Director of the Graduate School of Library and Information Science.

**Planning**

Students who wish to consider a career in city and regional planning or a related field will find a brief description of the program of the Graduate School of Planning on page 55. Students are accepted into planning from a broad variety of undergraduate backgrounds. Detailed information on the planning...
professions, admission requirements, and the program of study may be obtained from the Graduate School of Planning.

Public Administration

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

**Freshman**
- Political Science 2510-20, 2530 (choose 8 hours) 8
- Economics 2110-20-30... 9

**Sophomore**
- Political Science 3545-46... 8
- Political Science 3545-46 or 3801-02-03-04... 8
- Economics 3340... 3
- Accounting 2110-20-30... 9

**Junior**
- Political Science 4610-20... 7
- Political Science 4410... 4
- Economics 3410... 3
- Accounting 3850-60... 3
- Finance 4505-60... 6

In addition, sufficient electives in political science must be taken to meet the number of hours required for a major in political science.

Further information may be obtained in the Department of Political Science.

1Or equivalent honors courses.
2May also be counted toward Triad requirements.

Social Work

Students who wish to prepare for graduate professional training in social work will find a brief description of the program of the School of Social Work on page 55. Detailed information about courses and curricula, as well as requirements for admission, will be found in the catalog of the School of Social Work.

Teaching

Students in the College of Liberal Arts who wish to be certified for secondary school teaching must satisfy state certification requirements as well as all degree requirements of the College of Liberal Arts, and must be certified for certification by the College of Education. The College of Education is approved by the National Council for Accreditation of Teacher Education (NCATE); recommendation for certification by the college, therefore, in effect certifies the student in 30 states.

Application for admission to the Teacher Education Program should be made during the second or third quarter of the sophomore year in the office of the dean of the College of Education, 212 Claxton Education Building. Criteria for admission are: (1) a 2.2 cumulative grade point average; (2) satisfactory ratings in a speech and hearing exam as determined by tests administered by the Speech and Hearing Center; (3) a personality inventory; (4) satisfactory student conduct records; (5) a successful field experience.

One quarter during the senior year must be reserved for student teaching (Education C & I 4710-20). Application for student teaching must be filed not later than January 1 of the year preceding the academic year in which the student teaching will be undertaken. Those planning to student teach during the 1981-82 academic year must apply by January 1, 1981. For additional information contact Teacher Certification Office, Room 212 Claxton Education Building.

NOTE: The same course may be applied both to certification requirements and to Triad or major requirements of the College of Liberal Arts.

Theology

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

General Information

Admission to the College

For information regarding admission to the College of Liberal Arts, see page 29.

Course Load

The average course load in the college for any quarter is 14-16 credit hours. The University defines full-time undergraduate students as those who register for a minimum of 12 hours. The maximum number of hours which may be taken by liberal arts students is 17, exclusive of elective work in ensemble music and physical education. Exceptions to this rule will require approval by the Associate Dean for Student Academic Affairs (218 Ayres Hall).

Lower Division—Upper Division

Courses numbered at the 1000 and 2000 levels are considered lower division and are normally taken by students in the freshman and sophomore years. Courses numbered 3000 and above are upper division and are designed for students at the junior and senior levels.

Satisfactory/No Credit Courses

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

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

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

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

Off-Campus Study

Recognizing that learning is not restricted to formal classroom situations, the college provides for students to earn credit toward graduation for approved off-campus study. Such study may be undertaken only with prior approval of the faculty member and the department concerned. It may include certain kinds of work experiences, community involvements, working in political campaigns, etc. Credit per quarter will vary from 1-16 hours. Up to 24 hours of credit earned in this way may be applied toward a degree in the college, although individual departments may limit the number of hours which may be applied toward a specific major.

Independent Study

Certain educational-goals may best be met through independent study done by an individual under the direction of a faculty member. Students who wish to co such independent work should obtain the approval of the faculty members and the departments concerned prior to embarking upon their study. Credit per quarter will vary from 1-16 hours. Up to 24 hours of credit earned in this way may be applied toward a degree in the college, although individual departments may limit the number of hours which may be applied toward a specific major.

Study Abroad and Foreign Study Courses

Several opportunities for study abroad are available to students in the college. One avenue is through group programs arranged and supervised by departments of the college on a full-quarter or summer terms basis. A second is through group programs conducted
abroad by other academic institutions to which UKT students with approval may enroll for credit. Assistance in identification of and registration in such programs may be obtained through the Overseas Study Information Service located in the University's Division of International Education. A third opportunity is through individualized programs under the foreign study number 4101. The nature of this work as well as credit for it should be negotiated by students prior to departure with the appropriate liberal arts departments. Credit will be awarded only after completion of all agreed upon requirements, and may vary from 1-16 hours in any one department. Up to 24 hours of such credit, exclusive of that earned in group programs offered by departments, could apply toward a degree in the college. Departments may in any of the above forms, however, limit the hours of credit which can be applied toward a given major.

### Liberal Arts Advising Center

Academic advising for students of the college is offered through the Liberal Arts Advising Center, 220 Ayres Hall, as well as through the several major departments. The Advising Center is staffed on a regularly scheduled basis by members of the college faculty, each of whom has been trained for this specialized work. Students in their first quarter of residence are assigned to the Advising Center where they may relate themselves to a particular adviser of their choice or consult the person on duty at the time they need assistance. Most students continue in this relationship to the Advising Center until they have determined their major, normally by the beginning of the junior year, at which time they may be transferred for advising to a faculty member in the major department.

### Student Academic Affairs Office

Academic assistance for students is also provided through the Student Academic Affairs Office, 218 Ayres Hall. This office serves primarily those students not assigned to the Liberal Arts Advising Center, helping them meet a variety of academic needs relating to the development of their academic programs, satisfying graduation requirements, etc. For those who are planning careers in the health sciences it provides a liaison with the Center for the Health Sciences.

### Office of African and Afro-American Studies

The Office of African and Afro-American Studies, 802 Volunteer Blvd., Suite 416, cooperates with the various departments and colleges of the University with respect to the development of curricular changes and innovations which incorporate the Black experience into academic and extracurricular programs of the institutions, supplies information on financial assistance for Black students, and serves as the focal point for the coordination and development of an improved and expanded African and Afro-American Studies Program at the University.

### Bureau of Public Administration

The University has established in the college a Bureau of Public Administration for the purpose of promoting sound governmental administration through research, publication, and consultation. Offices and staff are maintained in both Knoxville and Nashville. The head of the Department of Political Science serves as director of the Bureau of Public Administration.

### Psychological Clinic

The Psychological Clinic is an outpatient psychodiagnostic and treatment center established by the University within the Department of Psychology.

It provides advanced graduate training for students in clinical psychology and also serves as a training facility for graduate students in the School of Social Work. Referrals for treatment come from many sources, including self-referrals and referrals by relatives and friends and by various social and mental health agencies. Treatment services are available to anyone regardless of residence, sex, age, race, or citizenship.

### University Theatres

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

### Instructional Facilities

The college carries out its varied teaching and research activities in more than two dozen principal buildings in two areas of the campus, as well as in a number of converted residences which provide office, studio, or clinical space. The older of the two clusters of buildings is on "The Hill," and includes Ayres Hall (psychology and mathematics), Austin Peay (psychology), Hesler (biological sciences), Physics (physics and astronomy), Geology-Geography (geology and geography), and Debney and Bueltel (chemistry). West of "The Hill" is a recently built group of buildings for the humanities, social sciences, and fine arts: McClung Tower and the Humanities-Social Sciences classroom building (classics, English, foreign languages, history, human services, philosophy, political science, religious studies, sociology, and speech and theatre), the Music Building (music), and the Hearing and Speech Center (audiology and speech pathology). In this area also are the McClung Museum and the Clarence Brown and Carousel Theatres, as well as the Undergraduate Library. Anthropology is housed in South Stadium, and art utilizes several small buildings for its studios.

### College Offices

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

### Departments of Instruction

#### American Studies
See Cultural Studies.

#### Ancient Mediterranean Civilizations
See Cultural Studies.

### Anthropology (122)

**Professors:**
- W. M. Bass (Head), Ph.D. Pennsylvania
- C. H. Faulkner, Ph.D. Indiana
- J. K. Guth, Ph.D. Michigan
- R. L. Jarrett, Ph.D. Kansas
- P. W. Parmalee, Ph.D. Texas
- A. M. Bass, Ph.D. Kansas State

**Associate Professors:**
- I. Harrison, Ph.D. Syracuse
- M. H. Logan, Ph.D. Pennsylvania State
- F. H. Smith, Ph.D. Michigan
- W. E. Kippel, Ph.D. Missouri
- B. Howell, Ph.D. Kentucky
- G. F. Schroedi, Ph.D. Washington State

**Assistant Professors:**
- J. Chapman, Ph.D. North Carolina

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

1. Alumni Distinguished Service Professor.

#### UNDERGRADUATE

**A major in anthropology shall consist of 42 hours, 12 of which are to be in the introductory 2000-level courses. Of the remaining 30 hours, 3333, 4480 and six hours of 3000 level or above courses are required in each of these subfields:**

- **(a) Cultural:** (b) Physical; and (c) Archaeology.

- **(a) Cultural:** 3410, 3440, 3450, 3530, 3540, 3570, 3800, 4111, 4200, 4210, 4240, 4250, 4400, 4420, 4430, 4440, 4450, 4450, 4540, 4740.

- **(b) Physical:** 3070, 3900, 3920, 3930, 4930, 4950, 4960, 4970. (c) Archaeology: 3610, 3620, 3630, 3640, 3860, 3870, 4400, 4600, 4610, 4640, 4650.

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

#### 2510 Human Origins

- Non-technical survey of man's primate background, fossil primates, fossil man, and living races of mankind.

#### 2520 Prehistoric Archaeology

- Survey of prehistoric culture with specific emphasis on method and theory in archaeology; prehistory of western Europe and Africa, archaeology in Americas.

#### 2530 Human Culture

- Introduction to ethnology: survey of nature of culture and society and similarities and differences in man's material culture, social, economic, and political organizations, ideology, art, and language.

#### 2540 Introduction of Linguistic Anthropology

- Basic linguistic concepts. Aspects of language studied by anthropologists and sociolinguists.

#### 3010 Prehistoric Humans and Their Lifeways

- A survey of the development of humans and their cultural behavior from earliest evidence of humans until the end of the Pliocene. Emphasis on the interaction between cultural and biological development and adaptation.

- Prereq: 2510 or 2520 recommended.

#### 3370 Genetics and Society

- (Same as Botany 3370)

#### 3333 Visiting Lecture Program

- Developed around lectures by visiting scholars in physical anthro-
3410 Principles of Cultural Anthropology (3) Basic concepts, theories, and objectives in the study of culture. Range of cultural phenomena and approaches to its study. 2530 recommended.

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

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

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

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

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

3540 North American Indians (3) Ethnographic survey of prehistoric and historic Indian peoples and cultures of North America. 2530 recommended.


3555 Cherokee Ethno History (3) Survey of Cherokee history and material culture from initial occupation to early contact with European groups. Emphasis on 18th and 19th centuries.


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

3610 Archaeology of United States and Canada (3) Survey of prehistoric and historic Indian cultures of the United States and Canada. Prereq: 2530 recommended. 2530 should be taken in sequence.

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

3630 European Prehistory II (3) Cultural developments during Metal Ages. From close of Neolithic through Iron Ages. 2530 recommended. 2530 should be taken in sequence.

3640 Ancient Civilization of Mesoamerica (3) Introduction to archaeology of areas of advanced Indian culture in Mexico and Central America beginning with earliest cultures and proceeding to contact with Europe and the spread of its culture. 2530 recommended.

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

3670 Principles of Archaeology (3) Research strategies in an archaeological excavation, interpretation, and explanation. Prereq: 2520 or consent of instructor.

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

3710 European Folk Culture (3) Traditional aspects of life as expressed in technology, beliefs, art, and folklore, under changing historical and socio-economic conditions.

3800 Language and Culture (3) Relationship between linguistic categories and cultural problems of content, function, and society. Prereq: 2540 or consent of instructor. Recommended: 2520.

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

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

3920 Principles of Physical Anthropology (3) Survey of methods in physical anthropology. 2510 recommended.

3930 The Biology of Races of Man (3) Processes of racial differentiation; criteria of significant differences among existing stocks; influence of biology and culture in race formation, analysis of studies concerning blood groups, race mixture, constitution, growth, and nutrition. 2510 recommended.

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

4101 Foreign Study (1-16) See page 185.

4102 Off-Campus Study (1-16) See page 184.

4103 Independent Study (1-16) See page 184.

4110 Education in Cultural Perspective (3) (Same as Edu. C & I 4110.)

4111 Non-Western Education: Anthropological Approaches (3) Analysis of educational practical practices among non-Western peoples encountered from application of Western models of education among non-Western peoples. Prereq: Anthropology 2520 or consent of instructor. Recommended: An East Asian course.

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

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

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

4250 Medical Anthropology: Lectures (3) Survey of medical anthropology. Emphasis on Western and non-Western cultures; aspects of health, disease, and death in industrial societies and folk medicine systems which co-exist with Western, technical medicine. Coreq: or prereq: 4250.

4300 Readings in Anthropology (1-9) Intensive reading, problem oriented. For anthropology majors with senior standing. Others by consent of instructor. May be repeated to a maximum of 9 credit hours.

4360 Field Work in Anthropology (3-9) Practicum work in anthropology, methods of data analysis; intensive reading. Prereq: 2510-20-30 and consent of instructor. May be repeated to a maximum of 9 credit hours.

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

4420 Dynamics of Culture (3) Culture change: innovation, diffusion, and acculturation; cultural continuity and stability. Prereq: 2530 or consent of instructor. Recommended: 2520.


4440 Urban Anthropology (3) Survey of theoretical and methodological issues anthropologists encounter researching cross-cultural urban settlements. Focus is on anthropological perspective, community development, programs of community and national development, public health, and military assistance. Emphasis on Western and non-Western cultures; aspects of health, disease, and death in industrial societies and folk medicine systems which co-exist with Western, technical medicine. Coreq: or prereq: Anthropology 2520 or 2530, or 3410, or consent of instructor. Recommended: An East Asian course.

4480 Current Trends in Anthropology (3) Analytical strategies and field techniques in contemporary anthropology. Introduction to commercial and non-commercial aspects of the discipline. Prereq: Anthropology 2520 or 2530, or 3410, or consent of instructor. Recommended: An East Asian course.

4510 Peoples of China II: Chinese Society after 1839 (3) Anthropological perspective on Chinese society and culture in the late Qing period. Emphasis on social and economic changes and external relationships from first European contact to present. Prereq: 2530 or 2540 or consent of instructor.

4520 Medical Anthropology: Laboratory (3) Fieldwork in medical anthropology. Emphasis on theory and cultural aspects of health, disease and death in industrial societies and folk medicine systems which co-exist with Western, technical medicine. Coreq: or prereq: 4250.

4530 The Biology of Races of Man (3) Processes of racial differentiation; criteria of significant differences among existing stocks; influence of biology and culture in race formation, analysis of studies concerning blood groups, race mixture, constitution, growth, and nutrition. 2510 recommended.

4550 Peoples of the Southeastern United States (3) Survey of Southeastern Indian cultures; emphasis on archaeology of areas of advanced Indian culture in the Southeastern United States. Prereq: Anthropology 2520 or 2530, or 3410, or consent of instructor. Recommended: An East Asian course.

4570 Peoples of Southeast Asia (3) Survey of representative ethnic groups and indigenous cultures of mainland and island Southeast Asia. Prereq: Anthropology 2520 or 2530, or consent of instructor, or an East Asian course.

4580 Asians in the Americas since 1800: Anthropological Perspectives (3) Character, factors, and motivations in Asian immigration to North, Central, and South America. Assimilation pattern and enclave communities are major topics. Major focus on United States.

4590 Peoples of Japan (3) Analysis of cultural diversi ty and unity of peoples of Japan. Prereq: 2530 or consent of instructor. Recommended: 2510 or 2520 or an East Asian course.

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

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

4620 Prehistory of Northwest North America (3) Survey of archaeological and prehistoric cultures in Northern Great Basin, Columbia Plateau, Northwestern Plains, and Northwest Coast. Prereq: Anthropology 2520 or Anthropology 2530, or 3410, or consent of instructor. Recommended: An East Asian course.

4660 Prehistory of Northwest North America (3) Survey of archaeological research and prehistoric cultures in Northern Great Basin, Columbia Plateau, Northwestern Plains, and Northwest Coast. Prereq: Anthropology 2520 or Anthropology 2530, or 3410, or consent of instructor. Recommended: An East Asian course.

4670 American Folklore (3) Anthropological perspectives on folklore of geographical regions and ethnic groups of the United States. Prereq: Anthropology 2520 or 2530, or 3410, or consent of instructor.
cultures different from ours; emphasis on awareness of
design. 2 hrs. and 2 labs.
cultural differences; emphasis on awareness of
24 credit hours.
2008 Honors: Art (4) Intensified study for the excep-
tional student. May be repeated for a maximum of 24
2006 Special Topics in Drawing (4) Student or in-
structor initiated course offered at convenience of De-
partment. Prereq: Determined by department. May be
2105 Survey of Drawing (4) Further exploration and
development of fundamental aspects of drawing with
emphasis on composition and techniques. Prereq: 1115.
2106 Special Topics in Drawing (4) Student or in-
structor initiated course to be offered at convenience of De-
partment. Prereq: Determined by department. May be
2115 Life Drawing (4) Further development of drawing and
tying skills with special emphasis on structure
dynamism of human figure and of the figure in
environment. Prereq: 2105. May be repeated. Maxi-
mum credit 8 hours.
2117 Intermediate Design and Color (4) Prereq:
1115-25-35.
2119 Intermediate Three-Dimensional Design (4)
Prereq: 1115-25-35.
2205 Introduction to Painting (4) Capacities of oil
and acrylic. Prereq: 1115, 1125, 1135 for art majors;
none for non-art-majors.
2206 Special Topics in Painting (4) Student or in-
structor initiated course offered at convenience of de-
partment. Prereq: Determined by department. May be
2215 Painting II (4) Techniques of expression in oil
and/or acrylic. May be repeated. Maximum credit 8
hours. Prereq: 2205 for art majors, none for non-art-
majors.
2250 Introduction to Fabric Design (4) Exploration of
printing, resist, and direct application methods of dye-
ing fabric. Includes block printing, fold/dyeing, direct
drawing, and painting.
2255 Introduction to Fiber Design (4) Exploration of
woven and non-woven constructions in fiber: looping,
hitching, frame loom weaving, and related processes of
spinning and dyeing fiber. Prereq: 1115-25-35 for art
majors; none for non-art-majors.
2256 Special Topics in Fiber and Fabrics (4) Student
or instructor initiated course offered at convenience of de-
partment. Prereq: Determined by department. May be
2255. May be repeated. Maximum credit 8 hours.
2260 Fabric Design II: Dyeing Techniques (4)
Application of batch, fabric, resist, and direct dyeing
2265 Fiber Design II: Non-Woven (4) Application of
interloping, coiling, and twining in contemporary fiber
constructive art. Prereq: 2255. May be repeated. Maxi-
mum credit 8 hours.
2270 Fabric Design II: Screen Printing (4) Utilization of
paper, resist, cut-film, and photo stencils in designing
surface of fabric. Prereq: 2250. 2260 also recom-
2275 Fiber Design II: Weaving (4) Application of
weaver-controlled and loom-controlled constructions in
floor loom weaving. Prereq: 2255. 2265 also recom-
2305 Introduction to Watercolor (4) Capacities of trans-
parent and opaque watercolor for art majors, none for non-art-majors.
2315 Watercolor II (4) Techniques that make water-
color a major medium of expression. May be repeated.
Maximum credit 8 hours. Prereq: 2305 for art majors,
none for non-art-majors.
2405 Introduction to Sculpture (4) Problems in clay
modeling, construction, and basic casting techniques.
Prereq: 1115, 1125, 1135 for art majors, none for non-
art-majors.
2416 Sculpture: Life Modeling (4) Modeling tech-
diques in clay and wax, working from figure. Possibili-
ties of expression with human figure as subject. Empha-
sis on modeling process as both observational and material
approach. Students desiring to cast their work are advised to do so in 2415 or 3415 taken after this course. Prereq: 1115, 1125, 1135, or consent of instructor.
2450 Introduction to Wood Sculpture (4) Explora-
tion of wood as a sculptural medium. Study of sculptural
tools and basic skills in lamination, finishing, carving,
and use of joints. Prereq: 1115-25-35 for art majors,
none for non-art-majors.
2460 Wood Sculpture: Studio Projects (4) Applica-
tion of lamination and carving skills in designing utili-
arian and nonutilitarian art objects. Prereq: 2450. May be
repeated. Maximum credit 8 hours.
2505 Introduction to Communication Design (4)
Survey of the graphic communication. Study of de-
designers' tools and equipment. Prereq: 1115, 1125,
1135 for art majors, none for non-art-majors. Will not
substitute for 2515.
2506 Special Topics in Communication Design (4) Student or instructor initiated course offered at conven-
tience of department. Prereq: Determined by depart-
ment. May be repeated. Maximum credit 16 hours.
2515 Lettering and Layout (4) Fundamentals of hand
lettering, typography, character design, and page layout.
Introduction of new and innovative methods and theory of adver-
sing layout and design. Developing manual skills and
ideation. Prereq: 2505.
2516 Advertising Design (4) Fundamentals of letter-
ning and layout for newspaper, magazine, television, outdoor
advertising. Non-art majors only.
2525 Production (4) Theory and practice of mechani-
cal preparation of art work for various printing pro-
cesses. Emphasis on skills and craftsmanship. Prereq:
2515.
2545-55-65 Photo-Graphic (4,4,4) Introduction to art of
photography.
2605 Introduction to Printmaking (4) Relief, lithogra-
phy, intaglio, and screen printing.
2615 Intaglio II (4) Metal plate intaglio printing in
traditional and contemporary techniques of etching,
drypoint, mezzotint, aquatint, and photolithography. May be
repeated. Maximum credit 8 hours.
2616 Lithography II (4) Exploration of stone and
aluminum plate lithography applying traditional and
contemporary printing techniques. May be repeated.
Maximum credit 8 hours.
2617 Screen Printing II (4) Creative explorations of a
variety of screen printing techniques. May be repeated.
Maximum credit 8 hours.
2655 Introduction to Metal Design (4) Basic tech-
niques of jewelry and metalworking. Prereq: 1115,
1125, 1135 for art majors, none for non-art majors.
2665 Special Topics in Metal Design (4) Student or
instructor initiated course to be offered at convenience
department. Prereq: Determined by department. May be
repeated. Maximum credit 16 hours.
2665 Metal Design II: Jewelry (4) Additional jewelry
and metalworking techniques including casting,
stonesetting, and forming. Prereq: 2655. May be re-
2725 Black Art (4) Black art history in America. 19th
century to contemporary trends.
2736 Film Design (4) Introductory theory and practice
of film making. Emphasis on graphic elements through
use of motion picture camera. May not receive credit for
both 2116 and 2357.
2735 Introduction to Ceramics (4) Exploration of cer-
icities and constructing pottery forms using pinch, coil,
slab, and wheel techniques. Prereq: 1115-25-35 for art majors, none for non-art majors.
2795 Special Topics in Ceramics (4) Student or in-
structor initiated course to be offered at convenience of De-
artment. Prereq: Determined by department. May be
repeated. Maximum credit 16 hours.
2906 Ceramics II: Handbuilding Techniques (4)
Prereq: 2905.
2970 Ceramics III: Wheel Techniques (4) Prereq:
2960.
3008 Honors: Intermediate Art (4) Intensified study
for the exceptional student. May be repeated for a
maximum of 24 credit hours.
3115 Drawing III (4) Development of personal drawing
techniques and concepts through class problems. May be
repeated. Maximum credit 12 hours. Prereq: 2115.
3119 Design Resources (4) Sources, development,
and application of design as it relates to visual arts.
Design, proceedings, tools, and materials utilized in
developing design resources. Prereq: Completion of
studio core.
3215 Painting III (4) Individual expression with varied
media on canvas. May be repeated. Maximum credit 12
hours. Prereq: 8 hours of credit in 2215 for art majors;
consent of instructor for non-art majors.
3260 Fabric Design III: Stitchery and Applique (4)
Stitching and application methods in designing surface
of fabric: stitchery, applique, and quilting. Prereq: 2260
or 2270.
3265 Fiber Design III: Spinning and Dyeing (4)
Application of spinning in development of yarns from
natural fibers. Dyeing yarns chemically. Prereq: 2265 or
2275.
3270 Fabric Design III: Individual Class Projects (4)
Prereq: 2360 or consent of instructor. May be repeated.
Maximum credit 8 hours.
3275 Fiber Design II: Individual Class Projects (4)
Prereq: 2360 or consent of instructor. May be repeated.
Maximum credit 8 hours.
3316 Watercolor III (4) Individual expression with
water-based media on paper. May be repeated. Maximum credit 12 hours. Prereq: 8 hours in 2315 for
art majors, consent of instructor for non-art majors.
4318 Sculpture III (4) Individual projects through dis-
cussion with instructor, designed to widen previous
experience. May be repeated. Maximum credit 12 hours.
3416 Sculpture: Advanced Life Modeling (4) Ad-
vanced modeling techniques in clay and wax, working from
the live model. Prereq: 2416 or consent of instructor.
3515 Graphic Design (4) Advanced theory and tech-
niques. Visual problem solving for printed media and
television. Prereq: 2525.
3516 Typography (4) Theories and techniques of
typescripting and printing as fine art medium. Creative
problems are solved using type and printing presses.
May be repeated. Maximum credit 12 hours.
Audiology and Speech Pathology (160)

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

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

Assistant Professors:
T. C. Davidson, M.A., Tennessee; C. J. Ferrell, M.A., Tennessee; E. I. Hambly, Ph.D., Iowa.

Instructors:

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

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

4504 Communication Design (1-4) Intermediate to advanced. May be repeated.

4954 Ceramics (1-4) Intermediate to advanced. May be repeated.

4910 Drawing (1-4) Beginning to intermediate. May be repeated.

4904 Photography (1-4) Intermediate to advanced. May be repeated.

4864 Enameling (1-4) Intermediate to advanced. May be repeated.

4854 Metal Design (1-4) Intermediate to advanced. May be repeated.

4804 Printmaking (1-4) Intermediate to advanced. May be repeated.

4404 Sculpture (1-4) Intermediate to advanced. May be repeated.

4470 Fine Arts. In addition to meeting requirements of the Graduate School, applicant must have an undergraduate major in art or outstanding proficiency. Examples of work will be requested. For additional information regarding these programs, write to the head of the department.

5000 Thesis

5002 Non-Thesis Graduation Completion (3-15)

5011-21-31 Exhibition in Lieu of Thesis (3,3,3)

5101 Foreign Study (1-12)

5102 Off-Campus Study (1-12)

5013 Independent Study (1-12)

5115 Graduate Drawing I (2-6)

5125 Graduate Drawing II (2-6)

5215 Graduate Painting I (2-6)

5225 Graduate Painting II (2-6)

5255 Graduate Fiber and Fabrics I (2-6)

5275 Graduate Fiber and Fabrics II (2-6)

5315 Graduate Watercolor I (2-6)

5325 Graduate Watercolor II (2-6)

5415 Graduate Sculpture I (2-6)

5425 Graduate Sculpture II (2-6)

5515 Graduate Ceramics I (2-6)

5525 Graduate Ceramics II (2-6)

5615 Graduate Communication Design I (2-6)

5625 Graduate Communication Design II (2-6)

5645 Graduate Printmaking—Lithography I (2-6)

5655 Graduate Printmaking—Intaglio I (2-6)

5665 Graduate Printmaking—Screen Printing I (2-6)

5675 Graduate Printmaking—Screen Printing II (2-6)

5755 Reading and Research in Art History (2)

5770 Seminar In Art History (4)

5955 Graduate Ceramics I (2-6)

5975 Graduate Ceramics II (2-6)

5990 Seminar In Art Criticism (4)

5999 Projects In Lieu of Thesis (10)

Asian Studies

See Cultural Studies.

Astronomy

See Physics and Astronomy.
Students who wish to enroll in clinical practice courses in \textit{Speech Audiology and Speech Pathology} must apply for admission at the Hearing and Speech Center prior to the initial practicum enrollment. Clinical admissions may be limited due to available supervisory staff, clinical facilities and caseloads. A grade of "C" or better in each course required for clinical practice enrollment. Once admitted to clinical training, students will be continued in the program so long as they are clinically and academically successful. Academic success is defined as a grade of "C" or better in each course taken in the Department of Audiology and Speech Pathology. Clinical success is defined as performance judged as "adequate" on at least 75 percent of the clinical contact hours assigned during each quarter's enrollment. Failure to meet either the clinical or academic success criteria for two successive quarters automatically removes the student from clinical practice enrollments.

4560 \textit{In Speech Pathology (3)} Prereq: Consent of instructor.

4610 \textit{Introduction to Language Pathology in Children (4)} Nature, etiology, and treatment of language retardation. Observation in language clinic is available. Prereq: 3040, 3050, or consent of instructor. (Same as Special Education 4610.)

4620 \textit{Birth Defect Syndromes and Language Retardation (3)} Examination of research literature relevant to birth defects and language retardation including clinical, educational, and socio-emotional implications of such disorders. Prereq: 4610 or consent of instructor.

4630 \textit{Practical Applications of Language Habilitation Techniques (3)} Discussion and demonstration of various methods and procedures used in treating language retarded children. Prereq: 4610 or consent of instructor.

4640 \textit{Parent Participation in Language Habilitation Programs (3)} Nature of counseling and educational relationships with parents of exceptional children including emotional support for families, behavior management strategies, home training methods. Prereq: 4610 or consent of instructor.

4650 \textit{Speech and Language of the Culturally Different Child (3)} Discussion of speech and language differences of children of various minority groups, of different geographic regions; their causes and their effects upon educational programs.

4660 \textit{Topics in Language Retardation and its Habilitation (3)} Lectures on selected topics by representatives of such fields as special education, early childhood education, educational psychology, genetics, and psychology. Prereq: 4610 or consent of instructor.

4720 \textit{Audiology II (4)} Basic principles of clinical audiology; pure-tone, speech, masking, and overview of special auditory tests. Prereq: 3710. (Same as Special Education 4720.)


4930 \textit{Aural Rehabilitation: Speechreading and Auditory Training (3)} Discussion of rehabilitation of acoustically impaired by maximizing use of residual hearing and utilization of speechreading as a receptive communicative process. Prereq: 4720. (Same as Special Education 4930.)

4940 \textit{Introduction to the Verbo-Tonal System (4)} Prereq: 3710 or 4760; 4930 and 3050 recommended. (Same as Special Education 4940.)

\textbf{GRADUATE}

5000 \textit{Thesis}

5002 \textit{Non-Thesis Graduation Completion (3-15)}

5040 \textit{Advanced Clinical Practice in Audiology (1-6)}

5045 \textit{Practicum in Hearing Aid Orientation and Communication Counseling (1-6)}

5050 \textit{Practicum in Verbo-Tonal Habilitation (1-6)}

5051 \textit{Practicum in Aural Rehabilitation (1-6)}

5060 \textit{Anatomy and Physiology of Speech (3)}

5070 \textit{Anatomy and Physiology of Hearing (3)}

5071 \textit{Physiological Acoustics and Electrophysiology (3)}

5100 \textit{Comparative Anatomy of Peripheral Auditory Structures (3)}

5110 \textit{Introduction to Research in Speech and Hearing (3)}

5117 \textit{Instrumentation in Audiology and Speech Pathology (3)}

5119 \textit{Laboratory in Instrumentation in Audiology and Speech Pathology (1)}

5200 \textit{Seminar on Stuttering (3)}

5201 \textit{Aphasias (3)}

5220 \textit{Seminar: Articulation Disorders (3)}

5230 \textit{Seminar: Voice Disorders (3)}

5320-30-40 \textit{Advanced Clinical Practice in Speech and Language Disorders (1-6, 1-4, 1-6)}

5350-60-70 \textit{Advanced Clinical Practice in Speech Diagnosis (1-6, 1-6, 1-6)}

5390 \textit{Cerebral Palsy (3)}

5381 \textit{Adult Dysarthria (3)}

5390 \textit{Cleft Palate (3)}

5440 \textit{Hearing Aid Evaluation (3)}

5450 \textit{Sound Measurement and Audiometer Calibration (3)}

5451 \textit{Noise and Audiology (3)}

5480 \textit{Advanced Audiology (3)}

5470 \textit{Impedance Measurement in Audiology (2)}

5490 \textit{Practicum in Hearing Conservation (1-6)}

5500 \textit{Seminar in Audiology (3)}

5503 \textit{Special Auditory Tests (3)}

5505 \textit{Special Problems in Audiology (1-6)}

5520 \textit{Seminar in Speech Pathology (3)}

5540 \textit{Seminar in Language Pathology (3)}

5550 \textit{Special Problems in Speech Pathology (1-3)}

5560 \textit{Independent Study in Speech Pathology (1-3)}

5570 \textit{Management and Supervision for Speech-Language-Hearing Professionals (3)}

5600 \textit{Independent Study in Audiology (1-4)}

5610 \textit{Practicum: Language Pathology in Children (3)}

5651 \textit{Seminar in Language Differences (3)}

5730 \textit{Hearing Disorders (3)}

5740 \textit{Pediatric Audiology (3)}

5750 \textit{Educational Audiology (3)}

5790 \textit{Seminar in Psycholinguistic Concepts in Speech Pathology (3)}

5830 \textit{Advanced Aural Rehabilitation (3)}

5950 \textit{The Verbo-Tonal System (3)}

6000 \textit{Doctoral Research Dissertation}

6010 \textit{Experimental Phonetics (3)}

6019 \textit{Experimental Phonetics Laboratory (2)}

6020 \textit{Psychoacoustics (3)}

6029 \textit{Psychoacoustics Laboratory (2)}

6060 \textit{Applied Anatomy and Physiology of Speech Mechanism (3)}
Biochemistry (186)

Professors:
W. D. Hicks, Ph.D. Harvard (Head); J. E. Churchich,
Ph.D. Sheffield (England); J. G. Joshi, Ph.D. Poona 
(India); K. J. Monty, Ph.D. Rochester.

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

Assistant Professors:
L. Brattsten, Ph.D. Illinois; R. E. Bryant, Ph.D. Illinois; 
R. H. Feinberg, Ph.D. California (Berkeley); E. Freire, 
Ph.D. Virginia; J. Koontz, Ph.D. Kentucky.

UNDERGRADUATE

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

For the Bachelor of Arts degree with a minor in biochemistry, the following courses are required: Chemistry 2140-49; 3211-21-31; 
3219-29-39; and Biochemistry 4110-20; and 4120-20; 4190-99; 4210-20, and 4290-49; 4369, 4386, 4450. 

In meeting the upper-division minimum requirement, not more than 12 hours may be credited from any one biological science department, and not more than 4 hours of research courses may be credited. Prerequisites to this concentration are Biochemistry 4110-20, or Botany 4190, 4199; Botany, any 3000- or 4000-level courses 
except 3050, 3070, 3090; Microbiology 3200, 3700, 3519, 4110-19, 
4140-49; 4270, 4290, 4420, 4490; Zoology 3050, 3060, 3280, 3500, 3565, 4110-
20, 4250, 4290, 4369, 4386, 4450. 

In meeting the upper-division minimum requirement, not more than 8 hours may be credited from any one biological science department, and not more than 4 hours of research courses may be credited. Prerequisites to this concentration are Biochemistry 4110-20 or Botany 1110-20, or 1118-28 or Zoology 1118-
28 and Chemistry 1110-20-30, Corequisites are Math 1841-51; a year sequence in physics (except 1410-20-30); and Chemistry 2140-49. 

B. Concentration in Organismal and Systems Biology: Consists of Biology 3110, 3120, 3130, Chemistry 3211-21-31, 3219-29-39, and 18 hours of upper-division courses from: 
Biochemistry 3110, 4110-20, 4119, 4500; Botany, any 3000- or 4000-level courses 
including not more than 3050, 3070, 3090; Microbiology, any 3000- or 4000-level 
courses; Zoology, any 3000-4000-level courses except 3010-20-30 and 3090. 

In meeting the upper-division minimum requirement, not more than 12 hours may be credited from any one biological science department, and not more than 4 hours of research courses may be credited. Prerequisites to this emphasis are Biology 1210-20-30 or Botany 1110-20 or 1118-28 or Zoology 1118-28 and Chemistry 1110-20-30, Corequisites are Math 1841-51 or 1550-60 (Math 1841-51 is recommended choice); a year sequence in physics (except 1410-20-30) or Geology 1410-
20-30.

C. Concentration in Ecology Consists of Biology 3110-20-30, Chemistry 3211-21-31, and 3219-29-39; Environmental Engineering 3000, either Geography 3520 or Geography 3530, and 17 hours of upper-division courses from: Botany 3030, 3210, 4030, 4310; Forestry 3020, 3550, 3730, 4020; Geography 3520-30; Microbiology 4110, 4150; Wildlife 3200, 4450, 4460, 4720; Zoology 3030, 4240, 4660, 4720-
29. 

In meeting the upper-division minimum requirement, at least 8 hours must be chosen from the group Botany, Microbiology, and Zoology. Prerequisite to this concentration are Biology 1210-20-30 or Botany 1110-20 or 1118-28 or Zoology 1118-28 and Chemistry 1110-20-30. Corequisites are Math 1841-51 or 1550-60 (Math 1841-51 is recommended choice); Physics 1210-20 or 2210-20. 

Note: Students majoring in biology are advised to exercise care in fulfilling the science and mathematics Triad requirements. Math 1841-51 (or in some cases 1550-60) and chemistry 1110-20-39 or equivalent (20 hours altogether) must be completed by biology majors. Students majoring in biology are advised to consider completion of a physical science minor (page 232).

Minor: Consists of Biology 3110-20-30 and 12 hours of upper-division courses chosen from the list below. Biochemistry 4110-20, 4119, 4199; Botany, any 3000- or 4000-level courses; Microbiology 3200, 3500, 3565, 4110-
20, 4250, 4290, 4369, 4386, 4450. 

In meeting the upper-division minimum requirement, not more than 10 hours may be credited from any one biological science department, and not more than 4 hours of research courses may be credited. Prerequisites to the minor are ...
introductory biology courses (Biology 1210-20-30 or Botany 1110-20 or 1118-28 or Zoology 1118-28) and Chemistry 1110-20-30.  

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

1210-20-30 General Biology (4,4,4) Biology of cells: chemical basis of life, cell structure and function, energy metabolism, cell division, DNA, RNA, and protein synthesis, monera, protista, and fungi. 1220—Biological study of plants and animals; survey of plant kingdom, structure and function of plant tissues, plant growth and reproduction, survey of the animal kingdom, reproduction and development in animals, animal tissue and organ systems. 1230—Genetics, evolution, populations and ecology. May be taken in any sequence. Students who receive credit for 1210-20-30 may not also receive credit for Botany 1110-20, 1119-28 or Zoology 1118-28-38.

3110 General Genetics (4) Classical and modern principles of heredity. Prereq: 1210-20-30 or Botany 1110-20 or equivalent of 2 years of high school biology and satisfactory ACT scores; Chemistry 1111-20-36. 3 hrs and 1 additional class meeting. May be taken in any sequence or combination with 3120 and 3130.

3120 Cell Biology (4) Organization and function of the cell. Prerequisites: 1210, 3 hrs. and 1 additional class meeting. May be taken in any sequence or combination with 3110 and 3130.

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

Black Studies  

See Cultural Studies.

Botany (198)  

Professors:  
W. W. Hutton (Head), Ph.D. Michigan; E.C. Cieloch, Ph.D. Dike; H. R. DeSimis, Ph.D. Ohio State; A. M. Evans, Ph.D. Michigan; W. R. Henson (Vice Chancellor for Academic Affairs), Ph.D. Vanderlitz; L. W. Jones, Ph.D. Texas; J. F. McCormick (Director of Ecology Program), Ph.D. Emertius; F. D. Ohio State, Ph.D. R. H. Petersen (Columbia); A. J. Sharp (Emertius); Ph.D. Ohio State; P. L. Waite, Ph.D. Texas.  

Associate Professors:  
C. C. Amundson, Ph.D. Colorado; J. D. Caponetti, Ph.D. Dike; H. H. Davis, Ph.D. Ohio State; R. R. Henke, Ph.D. Miami (Ohio); L. G. Hickok, Ph.D. Massachusetts; K. W. Hughes, Ph.D. Utah; O. J. Schwarz, Ph.D. North Carolina State.

Assistant Professors:  
S. G. Mullin, Ph.D. North Carolina State; E. E. Schilling, Ph.D. Indiana; D. K. Smith, Ph.D. Tennessee; W. O. Smith, Ph.D. Dike.

Instructor:  
K. D. McFarland, M.D. Ohio University.

UNDERGRADUATE  

Major: Consists of Biology 3110-20-30; 23 upper-division hours of botany, including 3210 and at least 2 hours from 4710-20-30, plus 4 hours of upper-division courses from a related biological science (zoology, microbiology, biochemistry, entomology, and plant pathology, forestry, ornamental horticulture and landscape design, or plant and soil science). Not more than 3 hours from 3050, 3070, 3090 allowed for major credit. Prerequisites to this major are Biology 1110-20 or Botany 1118-28 or Zoology 1118-28-30 and Chemistry 1110-20-30.  

Corequisites are Math 184-1-51 or Math 1550-60; Physics 1210-20-30 or Prysics 2210-20 or Chemistry 32112-3-31; 3219-29-39, or Geology 1510-20 plus 4 additional hours in geology.

400 Tutorial in Botany (1-3) Individual, independent study under guidance of selected staff. Application only. May be repeated with consent of department. Maximum credit 6 hours.

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

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

403 Mechanisms of Plant Speciation (3) Processes of plant speciation emphasizing population genetics, isolation, drift, hybridization, variation, and techniques, establishment of population barriers, and other aspects of plant speciation. Prereq: 3010-20 and Biology 3110.

404 Aquatic Vascular Plants (3) Field experience on identification of aquatic vascular plants. Frequent field trips emphasizing field recognition of species and habitats. Laboratory sessions for discussion and practice with techniques and literature for accurate identification. Prereq: 6 hours of botany. Recommended: Botany 3010-20.

406 FieldPhysiology (3) Field experience on identification of fresh water algae. Frequent field trips emphasizing field recognition of species and habitats. Laboratory sessions for discussion and practice with techniques and literature for accurate identification. Prereq: 6 hours of botany. Recommended: Botany 3010-20.


4240 Paleobotany (4) (Same as Geology 4240.)
4310 Plant Ecology (4) Interactions between individuals, species communities and their environments. Circulation of energy and matter in ecosystems. Weekly field trips or laboratory periods, and at least two week-end field trips. Prereq: 3030 or equivalent.
4410-20-30 Undergraduate Research Participation (2,2,2) Experience in active research projects under supervision of staff members. Prereq: junior or senior standing, minimum grade average 3.0, consent of instructor.
4710-20-30 Senior Seminar (1,1,1) At least 2 hours of 4710-20-30 are required of botany majors. Prereq: Senior standing.
4830 Field Measurements In Plant Ecology (3) Practice in the use of field and laboratory instruments for the measurement of environmental factors, plant functions, and/or community characteristics. Data collection will be followed by analysis and interpretation of data. Visits to highly instrumented field sites will be included. Prereq: 3030 or equivalent; 1 year of physics and chemistry recommended.

**Graduate**

5000 Thesis
5002 Non-Thesis Graduation Completion (3-15)
5003-04 Non-Thesis Research (3,3)
5002 Non-Thesis Graduation Completion (3-15)
5000 Thesis
5810 Cytogenetics (4)
5830 The Field Research Problem (4)
5850-51-52-53-54 Methods and Instrumentation in Field Investigations (1,1,1,1,1)
5870 Experimental Plant Genetics (4)
5910-20 Developmental Plant Morphology (3,1)
6000 Doctoral Research and Dissertation
6010 Advanced Topics In Morphology of Vascular Plants (2-4)
6060 Advanced Topics In Cryptogamic Botany (2-4)
6210 Photobiology (3)
6310 Advanced Topics In Cytology and Cell Biology (2-3)
6320 Ecosystems of the World (3)
6420 Advanced Topics In Genetics (2-4)
6520 Seminar In History of Botany (2)
6820 Advanced Topics In Plant Physiology (2-4)
6830 Advanced Topics In Ecology (2-4)
6930 Advanced Topics In Systematic Botany (2-4)

**Chemistry (235)**

**Professors:**
- G. Mamanov (Head), Ph.D. Louisiana State; N. S. Bowman, Ph.D. Princeton; C. A. Buehler (Emeritus), Ph.D. Ohio State; J. Q. Kabalka, Ph.D. Purdue; G. D. O'Kelley, Ph.D. California (Berkeley); R. M. Magid, Ph.D. Yale; G. D. O'Kelley, Ph.D. California (Berkeley); R. M. Magid, Ph.D. Harvard; W. T. Smith (Emeritus), Ph.D. Ohio State; W. A. Van Hook, Ph.D. Johns Hopkins; E. L. Wehry, Ph.D. Purdue; T. F. Williams, Ph.D. London (England); J. H. Wood (Emeritus), Ph.D. North Carolina.

**Associate Professors:**
- J. E. Bloom, Ph.D. Manchester (England); F. A. Grimm, Ph.D. Cornell; J. F. Kline, Ph.D. Akron; C. A. Lane, Ph.D. California (Berkeley); F. M. Schell, Ph.D. Indiana.

**Assistant Professors:**
- J. L. Addcock, Ph.D. Texas; S. D. Alexander, Ph.D. California (Berkeley); J. D. Kova, Ph.D. Yale;
- L. J. Magid, Ph.D. Tennessee; M. J. Sepaniak, Ph.D. Iowa State;

**Alumni Distinguished Service Professor.**

**Undergraduate**

For information regarding the Bachelor of Science in Chemistry degree and the cooperative program in chemistry, see page 183.

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

Concentration A is designed to prepare the student for a career as a professional chemist or for entrance into graduate school in such fields as chemistry, biochemistry, geochemistry, etc. This program has similarities to that leading to the degree of Bachelor of Science in Chemistry (page 183), but with more opportunity for selection of electives outside the department and outside of science. Unlike the Bachelor of Science in Chemistry degree, the B.A. degree uses Concentration A is not approved by the Committee on Professional Training of the American Chemical Society.

The prerequisites for the Bachelor of Chemistry include Chemistry 1110-20-30, Mathematics 1840-50-60, 2840-50, Physics 2510, 2310-20. The concentration consists of Chemistry 2140, 2149, 3211-23-31, 3219-29-39, 3410-20-30, 3429 plus at least 10 hours of additional upper-division work in chemistry, including at least one of the following courses: Chemistry 4110, 4210, 4220, 4310, 4420, 4510, 4550. (Up to six hours of biochemistry 4000 level and above or Geology 4610 may be applied to the requirement but at least one three-hour chemistry course must be included.) While not required, Math 2860 is highly recommended as an elective for majors in this concentration.

Concentration B is specifically designed for students who have career objectives in fields other than chemistry, but in fields where chemistry has direct applications, such as medicine, dentistry, pharmacy, law, business, and ecology. This concentration, supplemented by appropriate courses from other areas, is suitable for students planning careers in these areas. Concentration B is not appropriate for students intending to become professional chemists.

The prerequisites consist of Chemistry 1110-20-30, Mathematics 1540-50-60 or 1840-50-60, and any one of the following natural science options: (a) Physics 2210-20-30 or 2510, 2511-20; (b) Geology 1510-20; (c) Biology 1210-20-30; (d) Biology 3110-20 and Microbiology 3200, 3519; (e) Botany 1110-20. The concentration consists of Chemistry 2140, 2149, 3211-23-31, 3219-29-39, 4910-20-30, 4929 plus at least 10 hours of additional upper-division work in chemistry, including at least one of the following courses: Chemistry 4110, 4210, 4220, 4310, 4420, 4510, 4550. (Up to six hours of biochemistry 4000 level and above or Geology 4610 may be applied to the 10-hour requirement but at least one three-hour chemistry course must be included.)

A minor in chemistry shall consist of the successful completion of 24 hours of chemistry courses consisting of Chemistry 2140-49 (4 hours) and at least one of the following courses: Chemistry 2311-21-31, 2319-29-39 (12 hours) or Chemistry 3410-20-30 (9 hours) or Chemistry 4910-20-30 (9 hours).

**Placement in Freshman Sequences:** The sequence which meets all requirements of a year of general chemistry and is a prerequisite for upper-division courses is 1110-20-30. The 1500 and 1600 series have more limited applications. The 1500 series emphasizes organic and biochemistry and may be used as a prerequisite only for 2250 and 3510. The 1600 series is for non-science majors and does not provide an adequate background for any additional courses in chemistry.

It is possible to move from one sequence to another if permission for substitution is obtained in advance. For example, a student who finds a need to complete the 1110 series after having completed 1510 may substitute 1510 for 1110 with approval of the chemistry department and may then take 1120 followed by 1130. However, no single quarter of the 1500 or 1600 sequences may be substituted for 1120 or 1130. Credit may be received for only one of the courses 1110, 1510, or 1610.

In any chemistry course above the freshman level which has Chemistry 1110-20-30 as a prerequisite, 1510-20-30 may be used as a prerequisite with approval of the chemistry department.
Chemistry 1118-28-38 is an honors course designed for the student who has already made considerable progress in science. Class size may be as small as 20 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 grade of B or D in 1128 will not be eligible for 1138 and must take 1150 to get the credit. Beginning students who have had high school chemistry and who have had additional experience (e.g., summer institute study, special research projects, home laboratory) are invited to apply during the summer to the head of the department for permission to take a proficiency examination in one or more quarters of freshman chemistry. If a satisfactory grade is made on the examination, credit will be allowed for the quarter (or term) course for which the exam was taken.

1110-20-30 General Chemistry (4,4,4) General courses of theoretical and descriptive chemistry. 1110—Modern atomic theory, chemical bonding, stoichiometry, and quantitative treatment of gases. 1120—Quantitative aspects of solution chemistry, kinetics, chemical equilibria, and thermochromy. 1130—Principles of non-radioactive and radioactive elements, electrochemistry, and introduction to organic chemistry and biochemistry. Must be taken in sequence. 3 hours and 1 lab.

1118-28-38 Honors: General Chemistry (4,4,4) (See explanation above) 3 hours and 1 lab.

1410 Chemistry for Nurses (4) Inorganic, organic, and biochemistry. 3 hours and 1 lab.

1420 Chemistry for Nursing (4) Aromatic compounds and biological chemistry. Prereq: 1410. 3 hours and 1 lab.

1510-20-30 General Chemistry II (4,4,4) Introductory course with emphasis on topics relating to living systems. 1510—Bonding and molecular structure, gas laws, liquid and solid state, solutions, colloids. 1520—Acids and bases, oxidation and reduction, kinetics and equilibrium. Introduction to organic chemistry, alkenes, unsaturated and aromatic hydrocarbons. 1530—Structure and function of biological macromolecules. 1620—Impact and utilization of chemical principles in modern society with selected topics in areas of energy, environment, medicine, and consumer products. Must be taken in sequence. 3 hours and 1 lab.

1610-20 Chemistry and Society (4,4) Chemistry for non-science majors emphasizing role of chemistry in dealing with current social concerns. 1610—Basic principles including particle nature of substances, their structure, and chemical changes. 1620—Impact and utilization of chemical principles in modern society with selected topics in areas of energy, environment, medicine, and consumer products. Must be taken in sequence. 3 hours and 1 lab.

2140 Analytical Chemistry (3) Principles and practice of quantitative measurements in chemical systems. Acid-base equilibria, oxidation reduction systems, complexometric titration, elementary spectrophotometry, potentiometric methods, application of titrimetric analysis. Prereq: 1110-20-30; coreq: 2140.

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

2230 Elements of Organic Chemistry (4) Brief treatment of organic chemistry with emphasis on compounds of biological interest. Prereq: One year of general chemistry. Open to chemistry majors or minors. Credit may not be received for both Chemistry 2230 and 2211, toward graduation or otherwise.

3211-21-31 Organic Chemistry (3,3,3) Compounds of carbon, hydrogen, and other elements. Aromatic, heterocyclic, and other physical properties. Must be taken in sequence. Prereq: 1110-20-30. Corresponding laboratory 3211-21-33 is coreq for students not having credit for the laboratory.

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


3420-29-39 Physical Chemistry Laboratory (1,1) Experiments, liquids, chemical equilibria, solutions, phase equilibria, and physical and electrochemistry. Prereq or coreq: Corresponding courses (3420 and 3430). 1 lab.

3511-21-31 Principles of Organic Chemistry (3,3,3) Structure and reactivity of aliphatic and aromatic compounds emphasizing reactions of synthetic utility. Use of spectroscopic and physical techniques to elucidate reaction mechanisms. Recommended for chemistry majors and students planning careers in physical or biological sciences. Must be taken in sequence. Prereq: 1110-20-30; coreq: laboratory. 3219-29-39 or 3219-29-39 is a coreq for students not having credit for the lecture.

3810 Radioactivity and its Applications (3) Radioactive materials in tracer and therapeutic applications. Radioactive dating, and the techniques, tracer procedures, and safety precautions in agriculture, biology, medicine, nutrition, etc. Not for credit by chemistry majors or minors.


4119 Physical Chemistry Laboratory (1) Solutions, phase equilibria, reaction kinetics and spectroscopy. Corresponding course 4110 is coreq.

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

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

4219 Advanced Analytical Chemistry Laboratory (1) Experiments on topics discussed in 4210. Coreq: 4210.

4220 Advanced Analytical Chemistry (3) Electroanalytical methods of analysis (including potentiometry, coulometry, polarography, and voltammetry); magnetic resonance methods; mass spectrometry; x-ray absorption and fluorescence techniques. Prereq: 2140-49, 3420 or 4290 recommended.

4229 Advanced Analytical Chemistry Laboratory (1) Experiments on topics discussed in 4220. Coreq: 4220.

4420 Physical Inorganic Chemistry (3) Theoretical concepts leading to an understanding of inorganic chemistry, quantum mechanics, molecular structure, and chemical bonding. Prereq: 3410-20-30, 4110.

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

4510 Organic Qualitative Analysis (3) Identification of pure organic compounds and mixtures. Prereq: 3410-21-31, 3530-29-39 or 3530-29-39. 2 hrs and 2 labs. (Not open to students who have completed 4610.)


4610-20 Advanced Chemical Experimentation (2,2) Laboratory courses in application of modern experimental techniques to solution of chemical problems. Synthesis and characterization of organic and inorganic compounds with emphasis on independent study using advanced techniques. Prereq: 3331-39 or 3331-3530, 3430-39, 4220. Students who receive credit for 4610 may not also receive credit for 4510.

4640 Chemical Instrumentation (4) Principles of chemical instrumentation; practice in the design and construction of chemical instruments. 2 hrs and 2 labs. Prereq: 2140-49.

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

4910-20-30 Biophysical Chemistry (3,3,3) Physical-chemical principles with applications to biological systems. Must be taken in sequence. Not open to students having 4910-20-30. 4910—Gases, laws; first, second, and third laws of thermodynamics, quantum mechanics. 4920—Solution chemistry, electrochemistry, kinetics; nuclear chemistry. 4930—Elementary quantum chemistry; optical and magnetic spectroscopy; light scattering; macromolecular properties. Prereq: 1110-20-30, Math 1540 or equivalent.

4929 Biophysical Chemistry Laboratory (1) Experiments in topics discussed in 4910-20-30. Must be taken in sequence. Not open to students taking 4310-20-30-39 sequence. 4920 is coreq or prereq for 4929. 1 lab.

Graduate Students majoring in the chemistry for the M.S. or Ph.D. degree are required to present as a prerequisite one year each of general, analytical, organic, and physical chemistry with a satisfactory record. Students lacking any of these prerequisites may be admitted with appropriate deficiencies which must be removed without graduate credit. For students minorning in chemistry, the prerequisite is two years of chemistry including quantitative analysis. The master's degree or doctoral degree requirements are found in the Graduate Catalog. The department offers specialization in nine areas for the Ph.D.: analytical, energy, environmental, inorganic, organic, physical, theoretical, chemical physics, and polymer science.

5000 Thesis 5110-20-30-35 Advanced Organic Chemistry (3,3,3,3)

5129 Advanced Organic Chemistry Laboratory (3)

5139 Spectroscopic Characterization of Organic Compounds (2)

5140 Introductory Polymer Chemistry (3)

5150 Kinetics of Polymerization (3)

5160 Organic Chemistry of Polymers (3)

5170 Physical Chemistry of Polymers (3)

5220 Analytical Chemistry Laboratory (1) Experiments in topics discussed in 5210. Coreq: 5210.

5229 Advanced Analytical Chemistry Laboratory (1) Experiments on topics discussed in 5220. Coreq: 5220.

5230 Advanced Analytical Chemistry (3) Electroanalytical methods of analysis (including potentiometry, coulometry, polarography, and voltammetry); magnetic resonance methods; mass spectrometry; x-ray absorption and fluorescence techniques. Prereq: 2140-49, 3420 or 4290 recommended.

5240 Chemical Instrumentation (4) Principles of chemical instrumentation. 2 hrs and 2 labs.

5250-60-70 Advanced Analytical Chemistry (3,3,3) 5259-69-79 Advanced Analytical Chemistry Laboratory (1,1,1)

5340-50 Quantum Chemistry (3,3)
**Greek**

**UNDERGRADUATE**

A major in Greek consists of 39 hours of language courses numbered above 2000 but including Classics 4220. Nine hours from the following general courses may be substituted for language courses at the discretion of the department: Classics 3210-20, 3310-20, 4101. 4101 may be taken for a maximum of 6 hours. The Greek minor consists of 24 hours in language courses numbered above 2000 including Classics 4220. Six hours from the following general courses may be substituted: Classics 3210-20, 3310, 3320.

1210-20-30 Beginning Greek (3,3,3) Must be taken in sequence.

2610 Xenophon (4)

2620 Homer: Odyssey (4)

2630 Homer: Iliad (4)

2640 Greek New Testament (4) Prereq: 2610 or consent of instructor.

2650 Readings in Hellenistic Greek (4) Reading and discussion in religious and secular literature of Hellenistic Greek (koiné). Prereq: Classics 1210-20-30. May be repeated. Maximum credit 8 hours. (Same as Religious Studies 2650.)

3010 Plato (3)

3200 Herodotus (3)

3300 Euripides (2)

4020 Aesculapius, Sophocles (3)

4030 Lysias (3)

4040 Aristophanes (3)

450-60-70 Directed Readings in Greek (3,3,3)

**Latin**

**UNDERGRADUATE**

A major in Latin consists of 39 hours in language courses numbered above 2000, but including Classics 4220. Nine hours from the following general courses may be substituted for language courses at the discretion of the department: Classics 3210-20-30, 3310, 3320, 3330; 4101 may be taken for a maximum of 6 hours. Greek language courses numbered above 2000 may be substituted for a maximum of 9 hours of Latin courses with consent of department.

The Latin minor consists of 24 hours in language courses numbered above 2000 including Classics 4220. Six hours from the following general courses may be substituted: Classics 3210-20-30, 3310, 3320, 3330.

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

**Proficiency Examinations:** Students who have acquired a knowledge of Latin through private study or tutoring should request a proficiency test. A student who earns a grade of B or better in this examination is eligible for credit toward graduation. A student who omits any course in a sequence may receive credit for it by passing the appropriate proficiency examination.

**Certification for Teaching Latin in Tennessee:** Consult Certification Clerk, Room 212, Clayton Education Building.

**Chinese**

See Cultural Studies (Asian Studies).

**Classics (257)**

Professors:

- H. C. Rutledge (Head), Ph.D. Ohio State; A. Rapp (Emeritus), Ph.D. Illinois.

Associate Professors:

- G. C. Gesell, Ph.D. North Carolina (Chapel Hill); J. E. Shelton, Ph.D. Vanderbilt.

Assistant Professors:

- C. P. Craig, Ph.D. North Carolina (Chapel Hill); S. D. Martin, Ph.D. Michigan; D. W. Tandy, Ph.D. Yale.

**5410-20-30 Advanced Physical Chemistry (3,3,3)**

**5450 Statistical Thermodynamics (3)**

**5511 Survey of Inorganic Chemistry (3)**

**5521 Survey of Analytical Chemistry (3)**

**5531 Survey of Organic Chemistry (3)**

**5550 Industrial Chemical Research (3)**

**5610-20-30 Chemical Basis of Energy Conversion (1,1,1)**

**5710-20-30 Theoretical Inorganic Chemistry (3,3,3)**

**5810 Nuclear Chemistry (3)**

**5911-21-31 Chemistry Seminar (1,1,1)**

**6111 Selected Topics In Organic Chemistry (3)**

**6130 Natural Product Chemistry (3)**

**6175 Organic Photochemistry (3)**

**6190 Organometallic Chemistry (3)**

**6210 Advanced Analytical Spectroscopy (3)**

**6211 Selected Topics In Analytical Chemistry (3)**

**6311 Selected Topics In Polymer Chemistry (3)**

**6320 Natural Polymers (3)**

**6411 Selected Topics In Physical and Theoretical Chemistry (3)**

**6420 Nuclear Magnetic Resonance (3)**

**6430 Photochemistry and Radiation Chemistry (3)**

**6450 Electrochemistry (3)**

**6475 Electronic Structure of Radicals (3)**

**6480 Statistical Thermodynamics (3)**

**6495 Advanced Chemical Kinetics (3)**

**6510 Theoretical Organic Chemistry (3)**

**6520 Magnetic Resonance (3)**

**6550 Inorganic Chemistry (3)**

**6650-20-30 Theoretical Inorganic Chemistry (3,3,3)**

**6750 Molten Salt Chemistry (3)**

**6810 Thermodynamics of Solutions (3)**

**6820 Magnetic Resonance (3)**

**6870-20-30 Chemical Basis of Energy Conversion (1,1,1)**

**6910 Organic Photochemistry (3)**

**6920 Organic Photochemistry (3)**

**6930 Statistical Thermodynamics (3)**

**6940 Electronic Structure of Radicals (3)**

**6950 Inorganic Chemistry (3)**

**6960 Molecular Vibration-Rotation Theory (3)**

**6970 OrganicPhotochemistry (3)**

**6980 Inorganic Photochemistry (3)**

**6990 Inorganic Photochemistry (3)**

**7510-20-30 Theoretical Inorganic Chemistry (3,3,3)**

**8620 Magnetic Resonance (3)**

**8910 Organic Photochemistry (3)**

**8920 Organic Photochemistry (3)**

**8930 Statistical Thermodynamics (3)**

**8940 Electronic Structure of Radicals (3)**

**8950 Inorganic Chemistry (3)**

**8960 Molecular Vibration-Rotation Theory (3)**

**8970 OrganicPhotochemistry (3)**

**8980 Inorganic Photochemistry (3)**

**8990 Inorganic Photochemistry (3)**

**9110-20-30 Beginning Latin (3,3,3) Must be taken in sequence.**

**2511-21 Intermediate Latin (4,4) 2511—Readings from the age of Cicero. 2521—Virgil's Aeneid. Open to those who have had at least two years of high school Latin, or equivalent.**

**3140 Ovid (3) Prereq: 3 or 4 years of high school Latin or 2521.**

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

**3160 Catullus (2) Prereq: 3 or 4 years of high school Latin or 2521.**

**3440 Livy (3)**

**3450 Pliny and Martial (3)**

**3460 Elegiac Poets (3)**

**4120 Horace, Satires and Elegies (3)**

**4140 Cicero and Techniques of Latin Prose Composition (4) Recommended for Latin majors and minors, especially those intending to teach or pursue graduate work. Works of Cicero studied as models for prose composition.**

**4310 Selected Readings from Latin Literature (3)**

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

**4340 Horace, Odes (3)**

**4350 Tacitus (3)**

**4360 Lucretius (3)**

**4370 Readings in Medieval Latin (3)**

**GRADUATE**

**5410-20-30 The Latin Epic. Lucretius, Virgil, Lucan (3,3,3)**

**5510-20-30 Roman Comedy. Plautus, Terence (3,3,3)**

**5510-20-30 Roman Comedy. Plautus, Terence (3,3,3)**

**GENERAL COURSES**

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

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

**2730 Medical Terminology (3) Prepares the student to make sense of, and to more easily remember, thousands of complex medical words through a knowledge of the simple classical roots which combine to form most medical vocabulary.**

**2740 Word Power: Basic Vocabulary from Greek and Latin (3) Vocabulary building from Greek and Latin bases. General, non-technical vocabulary. Exercises in English etymology. Not open to students who have credit for either Classics 2710 or 2720.**

**2810 Greek Life (4) Manners and customs, social and economic aspects of classical civilization; family, politics, laws, finance, commerce.**

**2820 Roman Life (4) Description same as for Greek Life 2820.**

**3210 Early Greek Mythology (3) Comprehensive study of Greek myths through readings, lectures, and discussion with emphasis on significance for Greek thought and religion. Slices and tales illustrate influence of Greek myths on art, music, and literature of ancient Greek and later cultures. (Same as Religious Studies 3210.)**

**3220 Greek Mythology in the Classical Period (3) Use of myth in literature, history, religion, philosophy, and art of Classical Age of Greece, and change of
attitude toward myth from earlier periods. Familiarity with basic Greek myths is assumed. Readings, lectures, slides, and discussion. (Same as Religious Studies 3220.)

3230 Roman Mythology (3) Myths created by Romans, as well as those the Romans borrowed from Greek sources. Emphasis on myth as an aspect of the society, religion, and society. Readings, lectures, slides, and discussion. (Same as Religious Studies 3220.)

3310 Art and Archaeology of the Aegean Bronze Age and Early Greece (3) and Early Greece (3) Troy, and cycades islands: Greek mainland, and Crete. Emphasis on palaces of Crete and Mycenaen. Titys, and Pythies, their fall, the following Dark Age, and rebirth of Greek civilization. Illustrated lectures.

3320 Art and Archaeology of Archaic and Classical Greece (3) Survey of development of Greek architecture, sculpture, and painting from 650 B.C. to death of Alexander. Illustrated lectures.

3330 Art and Archaeology of Hellenistic Greece and Rome (3) Hellenistic Greek, Etruscan, and Roman sculpture, painting, and architecture with attention to city planning. Illustrated lectures.

3340 Cities of the Greek and Roman World (3) Archaeological survey of Greek and Roman cities from 650 B.C. to 500 A.D. Survey of development of city planning and quality of life. Such cities as Mycenae, Athens, Priene, Alexandria, Rome, and Lepcis Magna will be studied.

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

3510 Early Greek Literature in English Translation (3) Epic and lyric poetry, including Homer and Sappho, and Herodotus' history of Persian Wars.

3520 Classical Greek Literature in English Translation (3) History, philosophy, and drama of Golden Age from its brilliant rise to its tragic decline in Peloponnesian War.

3530 Roman Literature in English Translation (3) Poetry and prose of major Latin authors, with attention to Greek background. Selections made from early comedy through literature of Augustus Age and of later empire.

4010 Greek Drama in English Translation (3) Survey of dramatic masterpieces of Greek literature.

4101 Foreign Study (1-16) See page 185.

4210 Teaching of Latin (3) Carries no language credit. (Same as Educ. C & I 3656.)

4220 Seminar in Classical Studies (3) Special problems in literature and other arts of Greece and Rome. For graduate students and advanced undergraduates. May be repeated for credit with consent of department.

4230 Classical Mythology and Its Uses (3) Intensive review and survey of Greek and Roman mythology for graduate students and advanced undergraduates. Emphasis on uses of classical mythology in literature, music, and plastic arts, especially of modern times.

4510 Selected Readings in Latin Literature in Translation (3) Content varies; may be repeated for credit with consent of department.

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

GRADUATE

5620 Problems in Old World Archaeology (3) Comparative Literature

See Cultural Studies.

Computer Science (266)

Professors:
T. Fagin (Head), Ph.D. Texas; R. T. Gregory, Ph.D. Illinois; G. R. Sherman, Ph.D. Purdue.

Associate Professors:
T. E. Koziej, Ph.D. Texas; M. R. O'Kennon, Ph.D. Clarkson; R. H. Sady, Ph.D. Notre Dame; D. W. Straight, Ph.D. Texas.

Assistant Professors:
R. W. Heller, Ph.D. and A. R. Holman, Ph.D. Texas; D. L. Matusek, Ph.D. Texas; M. R. O'Kennon, Ph.D. Clarkson; R. H. Sady, Ph.D. Notre Dame; D. W. Straight, Ph.D. Texas.

Instructor:
K. Y. Bowder, M.S. Tennessee

*Space Institute

UNDERGRADUATE

Computer science offers an undergraduate major as well as a Master of Science degree (for details, see Graduate Catalog). Information about computer science programs may be obtained from the departmental office, 8 Ayres Hall, or from the Liberal Arts Advising Center, 220 Ayres Hall.

Major: Computer Science 1610 is a prerequisite to a major in computer science which consists of 2610, 2710, 3155, 3520, 3715, 4510, 4550, and an additional 15 hours selected from computer science intermediate and advanced courses. Also required are Math 2840-50 and Statistics 3450.

Minor: A minor in computer science consists of 2610, 2710, and an additional 18 hours of upper division computer science courses.

Introductory and Service Courses

1410 Introduction to Business Oriented Programming (3) Current and potential uses of computers as tools in business and commerce with emphasis on learning FORTRAN programming. Not for computer science majors. Students may not receive credit for both 1410 and 1510.

1510 Introduction to Programming—FORTRAN (4) Computer as a tool of varied uses in modern world; emphasis on basic programming in FORTRAN. Problem-solving process; organization and characteristics of digital computers. Survey of applications of computers in various disciplines. Students may not receive credit for both 1410 and 1510.


2610 Programming Techniques in FORTRAN (3) Problem formulation and solution. External devices and direct access input and output. For students who have programming background in a higher level language. Prereq: 1510 or 1610 or 3150 or consent of instructor.

2710 Machine Organization (3) Elementary computer architecture. Introduction to machine and assembly language programming, representation of data and microprogramming. Prereq 3150 or 1610 or 3150.

3010 Computers and Society (3) History of computing and computer systems; capabilities of computer; applications in artificial intelligence, humanities, social sciences, and computer problems. Reading and discussions in foreign countries; computer assisted instruction; future advances in computing; careers in computing. Prereq: Consent of instructor.

3100 Introduction to Numerical Algorithms and Programming (3) Roots of equations, systems of linear equations, least-squares data fitting, numerical integration, numerical methods for ordinary differential equations. Prereq: Math 2860. 3100 and 3155 may not both be taken for credit; students with a knowledge of FORTRAN should take 3100. Prereq or coreq: Math 2860. (Same as Math 3152.)

3155 Introduction to Numerical Algorithms (3) Roots of equations, systems of linear equations, least-squares data fitting, numerical integration, numerical methods for ordinary differential equations. 3100 and 3155 may not both be taken for credit; students with a knowledge of FORTRAN should take 3100. Prereq: 1510 or 1610 or consent of instructor. Prereq or coreq: Math 2860. (Same as Math 3155.)

4100 Computer Programming—COBOL (3) Computer programming in businessoriented language COBOL. Prereq: 1410 or 1510 or 3150 or consent of instructor.

4330 Independent Study in Computer Science (1-3) Special project in area of student's primary interest. To be directed by computer science faculty, perhaps jointly with student's faculty adviser. Prereq: Consent of instructor. May be repeated. Maximum credit 9 hours.

4340 Interactive Statistical Data Processing (3) Statistical data processing using interactive computer systems. Use of computer utility and statistics programs such as StastPack, editors, and FORTRAN. Not for credit for computer science majors. Prereq: Statistics 2100 or equivalent.

4350 Independent Study in Computer Science (1-3) Special project in area of student's primary interest. To be directed by computer science faculty, perhaps jointly with student's faculty adviser. Prereq: Consent of instructor. May be repeated. Maximum credit 9 hours.

4510 Computer Organization and Programming I (3) Problem formulation and advanced programming in FORTRAN; operation and control of digital computers. Prereq: 1410 or 1510 or 3150 or consent of instructor.


3015 Discrete Structures (3) Introduction to discrete structures useful in computer science. Graphs and algorithms for manipulating data represented by them. Algebraic structures, Boolean algebras, relations, functions, Proof techniques, induction, logic, Graphical representations and algorithms. Prereq: 1510 or 1610 or 3150 (or equivalents). Prereq or coreq: Math 2860. (Same as Math 3715.)

3725 Advanced Discrete Structures (3) Advanced topics in discrete structures useful in computer science. Graphs and algorithms for manipulating data represented by them. Algebraic structures, Boolean algebras, lattices, groups, monoids. Prereq: 3715 or equivalent. Prereq or coreq: Math 3715.

4650 Number Systems for Digital Computers (3) Floating-point number representation, mixed-radix representation, multiple-modulus residue number representation, finite-segment p-adic number representation, errors in floating-point computation, finite fields, and exact computation using digital computers. Prereq: 3155.

4210 Introduction to Artificial Intelligence (3) Intelligence, machines, and computer systems. Artificial intelligence, symbolic systems, natural language understanding, computer vision and learning. Computer implementation of AI problem-solving. Prereq: 4610. (Same as Electrical Engineering 4210.)
4225 Numerical Solution to Equations and Numerical Approximations (3) (Same as Math 4225.)

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

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

4470 Programming Languages (4) Comparison and study of machine-oriented languages and their design, features, and implementation. Topics include processors, operations, sequel control, data control, and storage management. Detailed discussion and programming experience in Lisp and either SNOBOL, APL, or SIMULA. Prereq: 4510.

4510 Data Structures and Non-numeric Programming (3) Data structures and algorithms for their manipulation. Arrays and orthogonal lists; stacks, queues, rings, doubly-linked lists; trees, dynamic storage allocation; organization of files; programming languages for information structures. Prereq: 2710 and either 1610 or 2610.

4550 Systems Programming (3) Computer organization and advanced programming. Machine language and design of computers, representation of information, microprogramming, software systems, input-output systems, interpreters, macro assemblers. Prereq: 3520 or equivalent.

4570 Introduction to Database Management System (3) Introduction to database management systems. Hierarchical, network, and relational models of data. Logical and physical views of data. Data definition and manipulation languages. Data independence, implementation and operational considerations such as performance, integrity, security, and reliability. Prereq: 4550 and 4510. Students may not receive credit for both 4570 and 5570.

4610 Operating Systems—Concepts and Facilities (3) Detailed examination of a major operating system. Memory, processor, device, and data management interrupts, machine-level I/O, loaders and relocation device characteristics, data set organizations, SPOOLing. Prereq: 4550 and 4510. Students may not receive credit for both 4610 and 5670.

4620 Operating Systems—Case Studies (3) Alternatives in operating system design, dynamic relocation, paging, segmentation, time sharing, time slicing, protection, concurrency, real time systems. Examples from different operating systems analyzed as appropriate. Prereq: 4610 or equivalent or consent of instructor. Students may not receive credit for both 4620 and 5660.

4660 Compiler Construction (3) Practical experience with design of compilers. Scanning, parsing, semantic analysis, code generation and optimization, errors, detection and correction. Term project will include a complete compiler for small block-structured language. Prereq: 4510.


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

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

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

4900 Analysis and Management of Computer Installations (3) Analysis and design of computer systems, implementation, justification, perception in systems; perspective on systems. Prereq: 3520 or equiva lent.

4950-90 Special Topics in Computer Science (1-4) Credit determined at time of registration. May be repeated. Maximum credit 9 hours with consent of department. Prereq: Recommendation of computer science staff.

GRADUATE

5000 Thesis

5002 Non-Thesis Graduation Completion (3-15)

5010 Computer Assisted Instruction (3)

5050 Computer Modeling and Simulation of Physical Systems (3)

5100 Immigration of Computer Science (5)

5105 Immigration to Computer Science Practicum (2)

5175 Introduction to Logic Design (3)

5210 Artificial Intelligence (3)

5250 Medical Computing (3)

5430 Theory of Compilers (3)

5455 Finite Difference Methods for Partial Differential Equations (3)

5455 Finite Element Methods (3)

5475 Advanced Topics in Numerical Partial Differential Equations (3)

5570 Database Management Systems (3)

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

5670-80 Advanced Operating Systems (3,3)

5710 Finite Automata Theory (3)

5730 Computability and Computational Complexity (3)

5750 Theory of Formal Languages (3)

5775 Combinatorial Algorithms

5810 Information Organization and Retrieval (3)

5840-50 Pattern Recognition (3)

5880 Data Security (3)

5910-30-50 Special Topics in Computer Science (1-6,1-4,1-6)

5940-50 Advanced Small Computer Systems (3,3)

5970 Independent Study in Computer Science (1-3)

American Studies (099)

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

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

3010 Introduction to American Culture (3) Explores dynamics and nature of contemporary American cul- ture.

3223-34 Forms of Popular Literature and Culture (3,3) (Same as English 3233-34)

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

Asian Studies (145)

The Asian studies concentration consists of 36 quarter hours: Asian Studies 2510-20 plus 28 additional credits from Asian studies or approved departmental courses. The latter should constitute a coherent program, including a minimum of one course (3 or 4 hours) from each of the following three areas: (a) art, Asian culture, literature, and music; (b) economics, geography, history, and political science; (c) anthropology, philosophy, religious studies, and sociology. Students who prefer to use Asian Studies 2510-20 for Triad or elective credit may, with permission of the program chairperson, substitute 8 additional upper-division hours in acceptable courses for that required sequence in the concentration.

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

It is strongly recommended that students planning to attend graduate school take an appropriate Asian language through the Intermediate level.

Further information may be obtained from the chairman of the Asian Studies Committee, Dr. Eric Gangloff.
1431-32 Spoken Arabic (4,4) Must be taken in sequence. Direct entry is only available to students in the intervening Arabic Language program. Class meetings and two laboratory periods. May be repeated once for credit.

2431-32-33 Elementary Modern Standard Arabic (4,4,4) Must be taken in sequence. Three class meetings and two laboratory periods.

2519-20 Asian Civilization (4,4) Introduction to Asian civilization by comparative study of development of religion, social institutions, and high culture in India, China, Japan, and the Islamic world. 2510—Fives of classical civilizations. 2520—Traditional cultures and their modern developments.

2531-32-33 Elementary Chinese (4,4,4) Taped language program. Must be taken in sequence.

2531-32-33 Elementary Modern Chinese (4,4,4) Taped language program. Must be taken in sequence.

2731-32-33 Elementary Persian (4,4,4) Taped language program. Must be taken in sequence.

2831-32-33 Elementary Modern Hebrew (4,4,4) Taped language program. Must be taken in sequence.

3310 Indian Culture (4)

3320 Chinese Culture (4)

3330 Japanese Culture (4)

3340 Islamic Culture (4)

3431-32-33 Intermediate Modern Standard Arabic (4,4,4)

3531-32-33 Intermediate Chinese (4,4,4) Taped language program. Prereq: 2531-32-33 or equivalent or consent of instructor. Must be taken in sequence.

3610 The Literatures of India in English Translation (4) A survey of some of the major genres and masterpieces of Indian literature—epic poetry, drama, court poetry, modern novels. Major concentration is on the ancient and classical periods of Indian literary history.

3631-32-33 Intermediate Japanese (4,4,4) Prereq: 2831-32-33 or equivalent or consent of instructor. Must be taken in sequence.

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

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

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

4019-20-30 Readings in Asian Literature (4,4,4) Prereq: Mastery of intermediate-level of Japanese, Chinese, Arabic, or Sanskrit and consent of instructor.

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

4631-32-33 Advanced Japanese (4,4,4) Reading in Japanese in graded primer with attention paid to finer points of grammar. Class will include conversation, drill, and composition practice with native speaker. Must be taken in sequence. Prereq: 3631-32-33 or equivalent.

4740-50-60 Elementary Sanskrit (4,4,4) (Same as Religious Studies 4940-50-60)

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

Asian Language and Literature

ARABIC (127)

(See Romance Languages)

1510-20 Spoken Arabic (4,4)

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

3510-20 Intermediate Modern Standard (4,4)

3610 Islamic Literature in English Translation (4)

4101 Foreign Study (1-16)

5101 Foreign Study (1-12)

5102 Off-Campus Study (1-12)

5103 Independent Study (1-12)

CHINESE

Asian Studies 2531-32-33 Beginning Chinese I, II, III (4,4,4) Taped language program. Must be taken in sequence.

Asian Studies 3531-32-33 Intermediate Chinese I, II, III (4,4,4) Taped language program. Prereq: 2531-32 or equivalent or consent of instructor. Must be taken in sequence.

Asian Studies 4531-32-33 Advanced Chinese I, II, III (4,4,4) Taped language program. Prereq: 3531-32 or equivalent or consent of instructor. Must be taken in sequence.

HEBREW

Asian Studies 2631-32-33 Beginning Hebrew I, II, III (4,4,4) Taped language program. Must be taken in sequence.

Asian Studies 3631-32-33 Intermediate Hebrew I, II, III (4,4,4) Taped language program. Prereq: 2631-32 or equivalent or consent of instructor. Must be taken in sequence.

JAPANESE

Asian Studies 2631-32-33 Elementary Japanese I, II, III (4,4,4) Must be taken in sequence.

Asian Studies 3631-32-33 Intermediate Japanese I, II, III (4,4,4) Prereq: 2631-32-33 or equivalent or consent of instructor. Must be taken in sequence.


Asian Studies 4631-32-33 Advanced Japanese I, II, III (4,4,4) Reading in Japanese in graded primer with attention paid to finer points of grammar. Class will include conversation, drill, and composition practice with native speaker. Must be taken in sequence. Prereq: Asian Studies 3652 or equivalent.

PERSIAN

Asian Studies 2731-32-33 Beginning Persian I, II, III (4,4,4) Taped language program. Must be taken in sequence.

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

Approved Area Courses

(a) Art, Asian Culture, Literature, and Music

Art 3775 Art of Indian Asia (4)

Art 3776 Chinese Art (4)

Art 3777 Japanese Art (4)

Asian Studies 3310 Indian Culture (4)

Asian Studies 3320 Chinese Culture (4)

Asian Studies 3330 Japanese Culture (4)

Asian Studies 3340 Islamic Culture (4)

Arabic 3610 Islamic Literature in English Translation (4)

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

Asian Studies 3660 Modern Japanese Literature in English Translation (4)

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

Spanish 4050-60-70 Hispano-Arabic Literature and Culture (3,5,3)

Music 4260 Introduction to Ethnomusicology (3)

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

Economics 4322 The Political Economy of Asian Development (3)

Geography 3870 Geography of Asia (4)

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

History 3785 Contemporary Middle East (4)

History 3800 North Africa since 1830 (3)

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

History 4791 Modernization of the Middle East (5)

History 4792 Historical Writers in Islamic History (3)

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

History 4870 Cultural History of China (3)

History 4880 History of Modern China (3)

History 4890 History of Contemporary China (3)

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

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

Political Science 3795 Contemporary Middle East (4)

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

Anthropology 3510 Peoples and Cultures of Mainland Asia (3)

Anthropology 4510 Peoples of China in Chinese Society after 1839 (3)

Anthropology 4570 Peoples of Southeast Asia (3)

Anthropology 4590 Peoples of Japan (3)

Philosophy 3650 Philosophy and Religion in India (4)

Philosophy 3660 Buddhist Philosophy and Religion (4)

Philosophy 3671 Religion and Philosophy in China (4)

Religious Studies 3650 Philosophy and Religion in India (4)

Religious Studies 3660 Buddhist Philosophy and Religion (4)

Religious Studies 3671 Religion and Philosophy in China (4)

Religious Studies 3672 Religion and Society in Japan (4)

Religious Studies 3680 Islam (4)

Religious Studies 3760 Eastern Religions and Western Thought (3)

Religious Studies 3770 Zen Buddhism (3)

Religious Studies 4670 Topics in Eastern Religions (4)

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

Sociology 3672 Religion and Society in Japan (4)

Sociology 4960 Tradition, Change and Modernity in Asia (4)

Afro-American Studies

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

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

Black Studies (195)
1510-20 Elementary Swahili (4,4) Taped language program. Must be taken in sequence.
2010-20 Introduction to Black Studies (4,4)
3140-50-60 Directed Readings In Black Studies (1,1,1) Designed for students who are interested in doing intensive reading in some area of Black Studies which is not covered by the student and the instructor. Prereq: 2010 (or 2020) and consent of instructor.
3330 Prejudice and Racism In the United States (4) (Same as Sociology 3330.)
3340 Sociology of Poverty and Inequality (4) (Same as Sociology 3340.)
3490 African Religions (4) (Same as Religious Studies and Anthropology 3490.)
3550 Religion and Racism In America (4) (Same as Religious Studies 3550.)
3560 Black Religion in America (4)
3560 Black Religion in America (4) (Same as Religious Studies 3560.)
3590 The Education of Black People (4,4) Sequence will trace, analyze, and interpret educational systems established for and by Blacks. Special emphasis will be given to colonial experience and the Washington-DuBois controversy in 3630. 3640 will deal with present urban educational problems of Blacks. Recent proposed remedies and solutions as integration, compensation program, decentralization, voucher systems; Black Studies and Freedom Schools will be discussed. Sociology 2010-20, History 1950-60 recommended. Prereq: Consent of instructor.
4101 Foreign Study (1-16) See page 185.
4102 Off-Campus Study (1-16) See page 184.
4103 Independent Study (1-16) See page 184.
4200 Senior Seminar on Pan-Africanism (4) Explores concepts and philosophers of Pan-Africanism and implication of the ideology for various societal institutions.
4300 Resource Materials in Black Studies (4) Introduction to basic references such as bibliographies, indices, and listings of audiovisuals in Afro-American History, African History, and children's literature. Prereq: 2010 or 2020 or consent of instructor.
4510 Research in Black Studies (4) Deals with Black experience and research status.
4550 Current Issues and Topics in Black Studies (3-4) Problems, topics, and issues in area of Black Studies. Consent and credit determined by instructor. May be repeated. Maximum credit 12 hours.
4810 Afro-American Families (3) (Same as Child and Family Studies 4810.)
4830 Black Women In American Society (4) Historical and contemporary socio-political factors in American society as they relate to the Black woman. History 1950-60 recommended. Prereq: Consent of instructor.
4880 Afro-American Psychology (3) (Same as Psychology 4880.)

Approved Area Courses

Anthropology 3530 Peoples and Cultures of Africa (3)
Anthropology 3930 Biology of the Races of Man (3)
Art 2725 Black Art (4)
CFS 4310 The Afro-American Family (3)
English 2540 The Literature of Black America (4)
English 4610-20-30 Black Literature (3,3,3)
Geography 3830 Geography of Africa (3)
History 1950-60 Afro-American History: An Introduction (4,4)
History 2950 Introduction to Afro-American History (3)
History 4950-60 The Negro in American History (3,3)
Music 3350 Introduction to Afro-American Music (4)
Music 4270 Evolution of Jazz (3)
Political Science 3615-16 Black Africa: The Politics of Change and Stability (4,4)
Political Science 3555 Minority Group Politics in the U.S. (4)
Psychology 4880 Afro-American Psychology (4)
Religious Studies 3560 Religion and Racism In America (4)
Religious Studies 3560 Black Religion in America (4)
Sociology 3330 Race, Class, and Power (4)
Sociology 3540 Sociology of Poverty and Inequality (4)
Sociology 4820 American Minority Ethnic Groups (4)
Speech 4582 Black Rhetoric (4)

Recommendations for the concentration and the minor:
(a) Those with a concentration in Black studies are encouraged to take a second major, with which an individually designed program in Black studies can be correlated.
(b) Students should seek academic advising from the Chair of Black Studies for courses for the concentration of the minor which relate to career plans, preparation for graduate study, and relationship to the second major.
(c) Those with a concentration and a minor are strongly encouraged to combine classroom and experiential learning through a careful selection of courses, e.g. Human Services 4400 and/or Black Studies 4102.

 Cinema Studies
Minor: Consists of English 2690 and Art 2935 plus sixteen additional hours of approved area courses. It is strongly recommended that English 2690 and Art 2935 be taken before selection of electives provided for in the minor.
For further information consult the chairperson of the Cinema Studies Committee, Dr. Ferdinand A. Hilenski.

Approved Area Courses

Art 3935 Film Design (4)
Broadcasting 3670 TV Film News (3)
Broadcasting 4030-40 Television Production (3,3)
Comparative Literature 4032 Topics in Film and Literature (3)
English 3233 Film and American Culture (3)
English 3440 Literature and Film (3)
English 4090 Topics in Film Study (3)
Italian 3340 The Italian Cinema (3)

Comparative Literature (260)
A concentration in comparative literature consists of 36 hours including Comparative Literature 4010, 4012-22-32, 9 hours of literature in a foreign language in courses numbered 3000 and above, and one classics course selected from Classics 4010, 4230, 4510. The remaining 12 hours should include literature courses, either in English or in a foreign language, numbered 3000 and above, from at least two of the following departments: English, Germanic and Slavic Languages, Religious Studies, Romance Languages (certain courses in Philosophy and Speech and Theatre may be substituted with the approval of the chairperson of the Comparative Literature Program). Students concentrating in comparative literature are strongly encouraged to acquire a working knowledge of a second foreign language, especially if they hope to pursue comparative literature on the graduate level.
A minor in comparative literature consists of 24 hours including Comparative Literature 4010, two courses from Comparative Literature 4012-22-32, 6 hours of literature in a foreign language in courses numbered 3000 and above, and 9 hours of literature courses numbered 3000 and above, either in English or in a foreign language, from at least two of the following departments: Classics (4010, 4230, 4510), English, Germanic and Slavic Languages, Religious Studies, and Romance Languages (certain courses in Philosophy or Speech and Theatre may be substituted with the approval of the chairperson of the Comparative Literature Program). Minors in comparative literature are strongly encouraged to continue their study of a foreign language beyond the minimum requirement.
For further information, consult the chairperson of the Comparative Literature Committee, Dr. Harry C. Rutledge.

2010 Introduction to Comparative Literature (4)
Basic knowledge, techniques, and sources necessary to compare literatures of various cultures, ages, and nations.
3236-37 Special Themes in Literature (3,3) (Same as English 3236-37.)
4010 Methodology of Comparative Literature (3) Research and writing of comparative literature. Major project will be preparation of seminar paper in comparative literature. Prereq: 2010 and one course from 4012-22-32 or consent of instructor.
4012-22-32 Special Topics in Comparative Literature (3,3) Content varies; may be repeated for credit.
5012 Comparative Theories of Literature (3)
5022 Approaches in Comparative Literature (3)
5032 Studies in Comparative Literature (3)

Approved Area Courses
Classics 3210-20-30 Greek and Roman Mythology (3,3)
Latin American Studies (600)
Concentration consists of 36 hours including Spanish 3710-20 or Portuguese 3510-20,
History 3870-60-90, Political Science 3625-26, and Geography 3800 or 3790 and 7 hours of
acceptable elective courses in any of the participating departments or in the Latin
American studies sequence 2510-20 (4,4) or Independent Research 4010.

Two years of Spanish or Portuguese or a practical working knowledge acquired
independently are a prerequisite.

Minor: Consist of 24 quarter hours selected from Geography 3800 or 3790, History 3870-
80-90, Political Science 3625-26, Spanish 3710-20 or Portuguese 3510-20, and the Latin
American studies sequence 2510-20 or Independent Research 4010.

For further information, consult the chairman of the Latin American Studies Committee, Dr.
H. E. Lewald.

2510-20 Introduction to Latin American Studies (4,4) Introduction to societies of Latin America with
special emphasis on dominant culture patterns, social changes, and impact of nationalism; 2510—Pre-Colonial
and Colonial periods through independence era; 2420—Latter 19th century and the Modern period.

4010 Independent Research in Latin American Studies
Minor: Directed research in any topic fully related to Latin American Studies to be undertaken by a student
off campus, normally in Latin American country. The research must be approved and evaluated by the Latin
American Studies Committee and directed by a faculty member involved in the study of the Latin American
area. Credit to vary according to the scope and length of the project.

4970 Senior Seminar (3-4) Selected topics in Latin American studies. May be repeated with consent of
instructor.

Linguistics (623)

This concentration offers a broad exposure to the various field of linguistics (including historical,
descriptive, and theoretical linguistics) along with an opportunity to study areas
where linguistics overlaps with other disciplines such as psycholinguistics,
sociolinguistics, speech pathology, and the like. It is designed to prepare a student for
graduate work in linguistics or related areas, or to serve as a general survey of language and
linguistics. It provides the additional possibility of emphasizing the teaching of English as a
second language for the student interested in

Courses of variable content; topics courses, reading and research, off-campus, or foreign
study in the Departments of Art, Classics, History, Philosophy, or Religious Studies can
be applied to the three divisions as appropriate.

Students are encouraged to satisfy the Language, Literature, and Arts Triad
requirement with Greek, Latin, or Hebrew in either Option I or Option II. Upper-division
courses in these languages may be applied to the appropriate division listed above.

For further information, consult Dr. H. C. Rutledge (Classics) or Dr.
W. L. Humphreys (Religious Studies).
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 ideas, and modes of perception and expression.

A concentration in Medieval studies consists of Medieval Studies 2010 and 4010 and 28 hours of upper-division courses concerned primarily with the Medieval experience, divided among the following three categories: (1) history, philosophy, political science, and religious studies; (2) language and literature; (3) the arts—history of art, architecture, music, and speech and theatre. Courses should not be selected at random but should either form a related pattern (for example, courses in the literature and history of Medieval England or Italy, etc.), or should revolve around a particular discipline, or two closely related disciplines (for example, courses in the history of art and architecture). A minor in Medieval studies consists of Medieval studies courses 2010 and 4010 and 16 additional hours distributed among the categories listed above for the major. Each student's program, major or minor must be approved in advance by the Medieval Studies Coordinating Committee, chairperson Dr. Paul Barrette.

It is strongly recommended that students selecting the Medieval studies concentration choose a foreign language option for the Triad requirement. Russian 2110-20-30, Latin is the most appropriate language for students and is essential for those who plan to continue their studies in graduate school. In addition, students planning to go on to graduate school are strongly advised to supplement their Medieval studies concentration with extensive work in one of the traditional disciplines.

2010 Medieval Civilization (4) Introduction to basic themes in medieval experience, approached from interdisciplinary points of view and including philosophy and religion, art and architecture, language and literature, social and political history.

4010 Seminar in Medieval Studies (4) interdisciplinary treatment of selected topics.

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

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

History 3061 History of Western Religious Thought and Institutions (4)

History 3411 Renaissance (3)

History 3710 History of Germany (3)

History 3790 History of Middle East (3)

History 4011 European History Colloquium (3) (when subject is part of medieval culture and society)

History 4500 History of Medieval England (3)

History 4710-20-30 Medieval History (3,3,3)

Philosophy 4430 Medieval Philosophy (4)

Political Science 3802 Studies in Political Thought (4)

Religious Studies 3061 History of Western Religious Thought and Institutions (4)

Religious Studies 3411 Renaissance and Reform (4)

Religious Studies 3713 Religion in the Middle Ages

Religious Studies 4610 Topics in Western Religious Thought and Institutions (4) (when subject is part of medieval culture and society)

Category #2 Language and Literature

Classics 4310 Selected Reading from Latin Literature (3) (readings in Latin)

Comparative Literature 4012-22-32 Special Topics in Comparative Literature (3,3,3) (when subject is part of medieval culture and society)

Comparative Literature 4050-60-70 Dante and Medieval Culture (3,3,3)

English 4410 Introduction to Study of English Language (3) (no language requirement)

English 4420 History of English Language (3) (no prerequisites)

English 4910-20 Chaucer (3,3) (Readings in Middle English)

French 3210 French Literature in English Translation (3)

French 4350-60-70 Medieval French Literature (3,3,3) (readings in French)

French 4410 French Civilization (3) (readings in French)

German 3210 German Literature in English Translation (3-4)

German 3240 Old Norse Literature in English Translation (3)

German 4510 History of German Language (3) (readings in German)

Italian 4010 Italian Drama in English Translation (3) (or in Italian)

Italian 4050-60-70 Dante and Medieval Culture (3,3,3) (readings in English or Italian)

Italian 4330 History of Italian Language (3) (readings in Italian)

Spanish 4050-60-70 Hispano-Arabic Literature and Culture (3,3,3) (in English translation)

Category #3 The Arts

Architecture 4130 Seminar in Medieval Architecture (4)

Art 3704 History of Medieval Art (4)

Art 3705 Northern European Painting, 1350-1600 (4)

Art 3715 Early Italian Renaissance Art, 1300-1500 (4)

Music 4200 Independent Study in Music History and Literature (1-3) (when subject is part of medieval culture and society)

Music 4280 The Mass to 1600 (3)

Music 4290 Gregorian Chant (3)

Theatre 3252 History of the Theatre (4)

Russian and Eastern European Studies (887)

Prerequisites to the major are the completion of Russian 2110-20-30 and Russian 2640-50. It is suggested that students planning to major in Russian and East European Studies satisfy Option 2 of the Language, Literature and Arts section of the Triad. Russian 2110-20-30 can be used to satisfy part of that Option. Russian 2640-50 can be used to satisfy Part A of the History and Society section of the Triad. The major consists of 42 hours distributed as follows: Geography 3880; six hours from History 3470-50-60; Philosophy 3550; Political Science 3651 and four additional hours from Political Science 3632, 3796, 4615, 5370, and 5380; Russian 3110-20-30; Russian 4010 (Selected Topics in Russian and East European Studies); and any eight additional hours in courses numbered 3000 or above from the list "Approved Area Courses," which can be obtained from the chairman of the Russian and East European Studies Committee, Dr. Donald Fiene.

4010 Selected Topics in Russian and East European Studies (5) An interdisciplinary seminar on a selected topic using a comparative approach.

Urban Studies (985)

A concentration in urban studies consists of 40 quarter hours, including Urban Studies 2500 and 3000, at least 4 hours of Urban Studies 4000, and 28 hours from the urban studies curriculum provided below. The urban studies minor consists of 24 quarter hours, including Urban Studies 2500 and 3000 plus 16 hours from the urban studies curriculum provided below. For further information consult the chairperson of the Urban Studies Committee, Dr. Samuel Wallace.

2500 Interdisciplinary Urban Studies (4) Fundamental perspectives of various disciplines toward the city, urbanism as a way of life, and urbanization as an ongoing process. Stresses the multidimensional nature of urban studies.

3000 Selected Topics in Urban Studies (4) May be repeated with consent of the committee. Maximum credit 12 hours.

3750 The Urban Policy (4) (Same as Political Science 3750).

4000 Directed Field Work (1-16) Participant observation and other directed field research in selected sites and organizations. May be done in a concentrated manner, such as a summer, or over the course of an academic year. Minimum of four credits required for a concentration in urban studies. May be repeated. Maximum credit 16 hours.

4100 Survey of Planning (3) (Same as Planning 4100).

4330 Urban Ecology (4) (Same as Sociology 4330).

4440 Urban Anthropology (3) (Same as Anthropology 4440).

4670 Cities and Urbanization in American History (4) (Same as History 4670).

4900 Aspects of Urban Environment (4) (Same as Architecture 4900).

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

Anthropology:

3450 Community Studies in Complex Culture (3)

4440 Urban Anthropology (3)

Architecture:

2000 Man-Environment Systems I (4)

3930 Behavioral Approaches to Environmental Design (6)

4900 Aspects of Urban Environment (4)

Geography:

3000 Man, Location, and Behavior (4)

3430 Urban Geography (4)

History:

4670 Cities and Urbanization in American History (4)

4740 The City in Europe (3)

Planning:
4100 Introduction to Planning (3)

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

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

Sociology:
3410 Urban Environment (4)
3420 Urban Problems (4)
4350 Community Organization (4)

Women's Studies (944)

Minor: Consists of Women's Studies 2010-20 and 16 hours of appropriate courses numbered 3000 or above. Courses approved for Women's Studies minor are listed below. Students may petition the Women's studies Committee for approval of courses other than those listed. For further information consult the chairperson of Women's Studies, Dr. Martha Lee Osborne, at the Women's Studies offices, Alumni Hall, 974-2409, or in the Philosophy Department, 807 McClung Tower, 974-3196 or 974-3255.

2010-20 Women's Studies (4,4) Explores basic knowledge and sources necessary to understand current and past societal experiences of women. 2010 utilizes perspective of humanities; 2020 employs that of social sciences.

4000 Topics in Women's Studies (4)

Supporting courses from several departments and colleges on the UT-Knoxville campus include:

Black Studies 4830 Black Women in American Society (4)

English 3310 Women Writers in England and America (3)

French 3240 Women in French Culture (4)

History 4290 Women in American History (4)

History 5310 Topics in Women's History (graduate course; variable contents) (3)

Philosophy 3430 Concepts of Women (4)

Public Health 4430 Women's Health (3)

Psychology 4870 Contemporary Research in the Behavior of Women (4)

Sociology 3150 Gender in Society (4)

Speech and Theatre 4560 Rhetoric of the Women's Rights Movement (4)

Educational and Counseling Psychology 4110 Psychology of Sex Role Development (3)

Educational and Counseling Psychology 5110 Psychology of Women (2)

Cultural Studies (270)

1000 Selected Topics (2-4) May be repeated. Maximum credit 8 hours.

4000 Selected Interdisciplinary Cultural Topics (1-12) Acceptable for credit in any cultural studies concentration or minor except Black studies. Registration by consent of director of cultural studies and the respective chairman. Please see pages 185 and 198.

4102 Off-Campus Study (1-16) Acceptable for credit in any cultural studies concentration or minor except Black studies. Registration by consent of director of cultural studies and the respective chairman. Please see pages 184 and 198.

4103 Independent Study (1-16) Acceptable for credit in any cultural studies concentration or minor except Black studies. Registration by consent of director of cultural studies and the respective chairman. Please see pages 184 and 198.

GRADUATE

5101 Foreign Study (1-12)

5102 Off-Campus Study (1-12)

5103 Independent Study (1-12)

Ecology (278)

J. Frank McCormick, Director.

Basic Faculty:

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

ADMISSION

Requirements for admission to the program are: (1) admission to the Graduate School of the University of Tennessee; (2) at least 12 quarter hours of college chemistry, 9 quarter hours of college mathematics, and 4 quarter hours of ecology at the upper-division level. Candidates for the doctoral degree are expected to take the Graduate Record Examination.

Application forms for admission should be obtained from the Graduate School. Inquiries concerning the admission requirements should be addressed to the Director, Graduate Program in Ecology, University of Tennessee, Knoxville, Tennessee 37916.

COURSES ACCEPTABLE IN PROGRAM

4010 Biology of Soil Microorganisms (4)
Agricultural Economics
4330 Land Economics (3)
5420 Advanced Land Economics (3)
Anthropology
4360 Field Work in Physical Anthropology (3-9)
6460 Zoocarcheology (3)
4960 Primate Paleontology (3)
4970 Human Paleontology (4)
5970 Emergence and Early Evolution of Man (3)
Botany
4310 Plant Ecology (4)
5340 Plant Geography (4)
5350 Analysis of Plant Communities (4)
5510-20-30 Systems Ecology (3,3,3)
5830 Field Methods in Plant Ecology (4)
6320 Ecosystems of the World (3)
Ecology
5000 Thesis
5100 Special Problems in Ecology (1-15)
5210-20-30 Principles of Ecology (2,2,2)
5310 Ecology for Planners and Engineers (3)
5320 Implementation of Environmental Policy (3)
5610 Environmental Toxicology (3)
5640 Techniques in Environmental Toxicology (3)
6000 Doctoral Research and Dissertation
6100 Special Topics in Ecology (3)
6110 Seminar in Animal Behavior (2)
6120 Seminar in Aquatic Ecology (2)
6130 Seminar in Physiological Ecology (2)
6140 Seminar in Community Ecology (2)
6150 Seminar in Radiation Ecology (2)
6160 Seminar in Systems Ecology (2)
6431 Current Topics in Environmental Toxicology (1)
Economics
4260 Economics of Resources and Environmental Policy (3)

Environmental Engineering
4240 Animal Ecology (4)
4860-70 Limnology (4,4)
4700 Arachnology (4)
5570 Animal Populations (3)
5860 Geographic Distributions of Animals (4)

Economics (283)
See faculty list, page 89.

UNDERGRADUATE
The program in economics combines a broad liberal education with the rigorous study of current issues of the day such as employment, inflation, poverty, wealth, and the benefits and costs of economic growth. Courses offered in the Department of Economics of the College of Business Administration provide opportunity for a major or minor. For all economics courses, the equivalent of the second year (2000 level) of a foreign language is corerequisite for any of the three English concentrations. The equivalent of the second year (2000 level) of a foreign language is corerequisite for any of the three English concentrations.

English for Non-Majors: The department welcomes non-majors both in its sophomore introductions to literature (2510-2660) and also in its 3000-4000 level courses in language, literature, and creative writing. Of particular interest to students in other fields are Special Themes in Literature (3225-37), Forms in Popular Literature and Culture (3233-34), Literature and Other Fields (3230-31), and Technical Writing (414050). For prerequisites and other advice, consult specific courses descriptions below and departmental advisers.

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

Concentration in Literature: Twelve English courses at the 30004000 level including:
(1) English 3042;
(2) at least three courses in major figures of the literature concentration but not (1);
(3) at least two courses concerned with approaches other than literary history, such as literary forms or modes, theories of criticism, or other unifying approaches or ideas;
(4) a total of three courses in writing or the English language may be counted towards the literature concentration but may not be subsituted for requirements 1, 2, or 3 above.

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

Concentration in the English Language: Twelve English courses at the 3000-4000 level including:
(1) English 3330; (2) five courses in linguistics and the English language selected from among those offered by the English advisor approval, from Psychology 4660, Anthropology 3500, or Linguistics 4030;
(3) two additional courses in language, literature, or writing;
(4) four courses in literature.

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

Honors Programs: For students who qualify for this program, the English department offers individualized study in the senior year culminating in a senior thesis and a comprehensive examination. Both the thesis and examination both receive grades of B+ or better, the student will be graduated with Honors in English. Interested students should consult their advisers or the Director of Undergraduate Studies.

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

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

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

1010 English Composition (3) Expository writing recommended for students with ACT English scores at or above cutoff point (currently 13) set by the English Department. Emphasis on organization, revision; intensive study of essays for meaning and ways of expressing meaning; conferences on individual writing problems. A, B, C, I, NC, W grading. Students may not receive credit for both 1010 and 1011.

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

1019 Writing Workshop (1) Self-paced laboratory course designed to prepare students for the beginning of the quarter by their English Composition teachers. Individual instruction in grammar, mechanics, sentence patterns, reading, and paragraph development. There is no classroom, and a student must participate at least two hours per week and must also pass the composition class in which he/she is currently enrolled. May be repeated, maximum credit 6 hours. S/NC. (Same as Audiology and Speech Pathology 1020.)

1431 English Composition for Foreign Students (3) Content varies. Detective fiction, science fiction, and such poetry as that by PreRaphaelites, humorists, and Decadents.

101A—Expository writing based on study of non-fiction prose. Introduction to research writing. 1038—Analytical and research writing based on study of great literature. Students receiving a grade below B in 101A will complete a year's work in English composition by taking 1020. For one course on the 1030 level, students receiving a grade of A or B also receive credit and a grade of 1028 and may continue into 1038; all students with A's and those with B's and consent of department have additional option of completing this sequence within the 1030 level or any 3000-level writing course. A, B, C, I, NC, W grading.

1211 Written and Oral English for Foreign Students (6) Rapid review of English grammar structures and pronunciation with intensive oral, aural, and written drill. Required for all foreign students. Demonstration of residence of all foreign students (graduates, undergraduates, and transfer students) who are not excused from it on the basis of the English Proficiency Examination or credit obtained for the full sequence of freshman composition with a grade of C or better at a college or university in the United States which is accredited by a regional association. A, B, C, I, F, W grading. Students registered for this course are permitted to register for only two other courses.

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

1431 English Composition for Foreign Students (3) Content varies. Detective fiction, science fiction, and such poetry as that by PreRaphaelites, humorists, and Decadents.


1441 English Composition for Foreign Students (3) For students whose native language is not English. Emphasis on paragraph and composition organization with attention to grammar and mechanics. 1441 replaces English 1010 for undergraduate foreign students. Prereq: 1221 or recommendation based on English Proficiency Examination. A, B, C, NC, W grading.

1441 English Composition for Foreign Students (3) Content varies. Detective fiction, science fiction, and such poetry as that by PreRaphaelites, humorists, and Decadents.

1451 English Composition for Foreign Students (3) For students whose native language is not English. Emphasis on reading and discussion with attention to use of library and to basic skills of documentation, critical writing assignments encountered in college. A, B, C, I, NC, W grading. Maximum credit 6 hours each. (Same as Linguistics 1451.)

2670 Introduction to Poetry (4) Study of selected poems to provide critical techniques necessary for reading different types of poetry. A, B, C, I, W grading.

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

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

4050JC Colloquium in Literature (3) Introduction to methods and objectives of literary study; conferences to plan student's program in major.

4054 Introduction to Literary Criticism (3)

4070 Modern British Poetry (3) From Housman to Thomas and more recent poets.

4080 Modern American Poetry (3) From Robinson to Stevens and more recent poets.

4090-50 Romantic Poetry and Prose (3,3,3) 5110-20-30 Emphasis on the late 18th century. 2650-From the late 18th century to 1500.

3380 Old and Middle English Literature In Translation (3) Major texts and genres of English literature. Students receiving a grade below B in 1018 may be repeated. Maximum credit 6 hours each. (Same as Linguistics 3380.)

3170 The Short Story (3) British and Continental European, with emphasis on 20th century.

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

3210-20 English Literature and Culture of the Nineteenth Century (3,3) Survey of literature dealing with leading movements in politics, science, religion, and the arts. 3210—1830 to 1835. 3220—1835 to 1895.

3230-31 Literature and Other Fields (3,3) Content varies. Detective fiction, science fiction, film, or other topics. May be repeated with consent of department. Maximum credit 6 hours each. (Same as American Studies 3230-34.)

3293-34 Forms of Popular Literature and Culture (3,3) Content varies. Detective fiction, science fiction, film, or other topics. May be repeated with consent of department. Maximum credit 6 hours each. (Same as American Studies 3293-34.)

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

3310 Women Writers in England and America (3) Emphasis upon the literary consciousness of women in the 18th and 20th centuries.

3330 Introduction to Study of English Language (4) Same as Linguistics 3330.

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

3332 Modern English Grammar (3) Traditional, prescriptive approaches to English grammar, followed by intensive study of descriptive approaches of American structuralism and introduction to generative-structuralist theory. (Same as Linguistics 3332.)

3360 Old and Middle English Literature in Translation (3) Major texts and genres of English literature from beginnings to 1500.

4111-12-20 Modern Drama (3,3,3,3) 3144—Continental to 1850. 3142-Continental since 1890. 3420—British. 3450—American.
problems or situations of contemporary interest are technical or vocational specialty program is programs might emphasize particular aspects with specific interests and needs. Such develop a coherent program in accordance major and by appropriate selection of electives choices available within the structure of the geography are strongly urged to consult with a introduction to the minor which consists of geography, 

**Geography (415)**

**Professors:** S. R. Jumper (Head), Ph.D. Tennessee; C. S. Akens, Ph.D. Georgia; R. L. Hammond, Ph.D. California (Berkeley); R. G. Long (Emeritus), Ph.D. Northwestern; C. W. Minkey (Dean for Graduate Studies), Ph.D. Syracuse; T. H. Schumacher, Ph.D. Wisconsin.

**Associate Professors:** T. L. Bell (Assistant Dean for Research), Ph.D. Iowa; L. W. Brinkman, Jr., Ph.D. Wisconsin; J. H. Carter, Ph.D. Georgias; J. B. Render, Ph.D. Louisiana State.

**T. J. Blessing (Adjunct), Ph.D. Wisconsin; R. A. Foresta, Ph.D. Northwestern; L. M. Pulipher, Ph.D. Southern Illinois; B. A. Paleson, Ph.D. Northwestern.**

**UNDERGRADUATE**

**Major:** Eight hours in courses numbered at the 1000 or 2000 level are recommended as an introduction to a major which consists of Geography 3700, 4010, and 4990, and an additional 28 hours selected from courses at the 3000 and 4000 levels. At least one course must be selected from each of groups A, B, and C below:

- **A. Physical Geography:** 3510, 3520, 3530, 4550
- **B. Economic Geography:** 3410, 3430, 3490, 4075, 4610, 4630
- **C. Cultural Geography:** 3450, 3600, 3610, 3660, 4240
- **D. Regional Geography:** 3790, 3800, 3810, 3830, 3840, 3870, 3880, 3910, 3920, 3930, 3940

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

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

Students wishing to major or minor in geography are strongly urged to consult with a departmental undergraduate adviser. While choices available within the structure of the major and by appropriate selection of electives outside the department, each student may develop a coherent program in accordance with specific interests and needs. Such programs might emphasize particular aspects of geography itself or might develop interdisciplinary themes such as natural environment and resources, urban and regional planning, the culture, history, or economy of a particular area. A useful technical or vocational specialty program is available which emphasizes cartography and remote sensing.

**Asian Studies.** See Cultural Studies.

**Latin American Studies.** See Cultural Studies.

**Russian and East European Studies.** See Cultural Studies.

1610-20 Introduction to Geography (4,4) Selected problems or situations of contemporary interest are studied in depth, illustrating geographical points of view and techniques not usually found in sequence. Not open to students who have taken 1110 and 1120, respectively.

1810-20 Geographical Analysis (4,4) Characteristics and processes of earth's surface and lower atmosphere; their interaction to produce world pattern of distinctive environments significant to man. May be taken in sequence. 1810 not open to students who have taken 1710.

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

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

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

3410 Intermediate Economic Geography (4) Concepts, theories, and practices in location, planning, and location patterns in agriculture, manufacturing, and service activities.

3420 Urban Geography (4) Concepts and theories concerning development and significance of systems of cities and internal morphology of cities. Not open to students who have taken 4660.

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

3460 Geography of Resources (4) Study of factors related to resources and their availability from time to time and from place to place, with particular emphasis upon energy and metallic resources.

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

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

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

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

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

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

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

3750 Geography of Middle America (4) Covers Mexico, Central America, and the West Indies. Not open to students who have taken 3740, 3770, or 3780.

3800 Geography of South America (4) Not open to students who have taken 3730, 3750, or 3760.

3810 Geography of Europe (4) Survey of major physical, cultural, and economic characteristics of Africa with particular emphasis on the area to the south of the Sahara.

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

3870 Geography of Asia (4) A survey of the physical, cultural, and economic characteristics of the countries of Asia, excluding the Soviet Union. Not open to students who have taken 3820, 3890, or 3950.

3880 Geography of the Soviet Union (4)

3910 Regional Geography of United States and Canada (4) Major physical, economic, and social distribution as they pertain to distinctive character regions of United States and Canada. Not open to students who have taken 3710 or 3720.

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

3930 Geography of Tennessee (4)

3940 Geography of Appalachia (4) Relations of physical, economic, and social patterns to give distinctive character to regions of eastern United States; especially southern Appalachia. Appalachia in perspective in the current American scene.

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

4100 Quantitative Methods in Geography (4) Geographical applications of statistical techniques, point pattern analysis, and analysis of areal units. Prereq: Mathematins 3000 or consent of instructor.

4101 Foreign Study (1-16) See page 185.

4102 Off-Campus Study (1-16) See page 184.

4103 Independent Study (1-16) See page 184.

4210 Problems in Geographical Method (4) Examples of problems and methodological techniques, point pattern analysis, and analysis of areal units. Prereq: Mathematins 3000 or consent of instructor.

4240 Historical Geography of the United States (4) Survey of changing human geography of United States during four centuries of settlement and development. Emphasis upon changing population patterns, development of agricultural regions, and patterns of urban development. Not open to students who have taken 4250-60.

4510 Principles of Geomorphology (4) (Same as Geology 4510).

4550 Geography of Soils (4) Soils as physical systems and their relationship to environments. Investigation of specific cases of role of soil in management of environmental systems.

4610 Industrial Geography (4) Factors affecting location of manufacturing activities, with emphasis on the United States. Prereq: 3410 or consent of instructor.

4630 Geography of Agriculture (4)

4710 Cartographic Design and Production (4) Introduction to principles, design, construction, and reproduction of maps. 3700 recommended. 2 hours and 2 labs.

4720 Data Mapping (4) Automated techniques of representing surface using geographic information systems. 3700 and knowledge of a computer language recommended.

4730 Advanced Cartography (4) Map production from design through color proofs. Prereq. 3700, 4710, and 4740 or consent of instructor.

4740 Remote Sensing: Types and Applications (4) Basic principles and uses of aerial photography and other remote sensing techniques. Emphasis upon value of various types of imagery for geographic interpretation and simple mapping. Prereq. Consent of instructor.
4750 Interactive Computer Graphics (3) [Same as Computer Science 4750 and Electrical Engineering 4750.]

4799 Practicum in Cartography/Remote Sensing (2) Supervised practice in design and production of maps and other graphic materials in Department of Geography's Cartographic Services Laboratory or a similar organization. Prereq: 4750 or 4740. May be repeated: Maximum credit 6 hours.

4990 Proseminar in Geography (4) Overview of major themes in geography, especially trends over past 20 years. Designed for undergraduate majors and minors; not open to graduate students. Prereq: Completion of at least 12 hours of major or minor requirements for geography.

GRADUATE

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

5000 Thesis

5100 Colloquium in Geography (1)

5101 Foreign Study (1-12)

5102 Off-Campus Study (1-12)

5150 Introduction to Geographical Research (3)

5160 Research Design and Field Problems (4-6)

5170 Geographic Concept and Method (3)

5200 Special Problems in Geography (2-6)

5250 Topics in Historical Geography (3)

5260 Advanced Cultural Geography (3)

5310 Topics in Regional Geography of the United States (3)

5320 Topics in the Geography of the American South (3)

5410 Advanced Topics in Economic Geography (3)

5520 Advanced Urban Geography (3)

5550 Topics in Geography of Land-Surface System (3)

5610 Topics in Climatology (3)

5710 Seminar in Geography (3)

5720 Topics in Quantitative Geography (3)

5740 Advanced Topics in Remote Sensing (3)

5790 Topics in Cartography (3)

5915 Regional Geomorphology (4)

6000 Doctoral Research and Dissertation

6110-20 Seminar in Economic Geography (3,3)

6230-70 Seminar in Urban Geography (3,3)

6240-50 Seminar in Historical Geography (3,3)

6260-70 Seminar in Cultural Geography (3,3)

6310-20 Seminar in Rural Geography (3,3)

6410-20 Seminar in Regional Geography of United States (3,3)

6610-20 Seminar in Regional Geography of Latin America (3,3)

6710-20 Seminar in Physical Geography (3,3)

Geological Sciences

Associate Professors: M. Clark, Ph.D. Pennsylvania State; K. C. Misra, Ph.D. Western Ontario.


The Department of Geological Sciences provides training for (1) those who plan a career as a professional geologist in industry, federal and state surveys, education, or other fields which utilize earth scientists; and (2) those who seek a general knowledge of geology and its relationships to the other sciences, engineering, business, law, and other disciplines.

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

UNDERGRADUATE

Major: Geology 1410, 1420, 1430 are prerequisite to a major which consists of Geology 3180, 3260, 3310, 3360, 3370, and at least 24 hours additionally in upper-division courses in geology chosen to include at least 12 hours from among the following courses: Geology 3510, 4110, 4115, 4230, 4510, and 4610. Geology 4310 and/or 4440 (or equivalent) are strongly recommended for students planning to become professional geologists.

Because of the interdisciplinary nature of geology and the prerequisites for advanced study, students who major in geology are required to take the following allied science and mathematics courses: Biology 1210-20, Chemistry 1110-20, Mathematics 1840-50, Physics 2210-20 or 2510, and 2310-20. It is recommended that students take additional courses beyond the elementary level in at least one of the above allied fields.

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

Geology (424)

1000 Frontiers in Earth and Planetary Sciences (4) Recent developments in earth science of interest to the public. Designed for non-majors; treat popular topics such as discoveries on moon by Apollo missions, recent developments in earth science of interest to the public.

1110-20 Seminar in Urban Geography (3,3)

1200-50 Seminar in Historical Geography (3,3)

1240-70 Seminar in Cultural Geography (3,3)

1310-20 Seminar in Rural Geography (3,3)

1410-20 Seminar in Regional Geography of United States (3,3)

1610-20 Seminar in Regional Geography of Latin America (3,3)

1810-20 Seminar in Physical Geography (3,3)

1870-20 Seminar in Economic Geography (3,3)

1930 Geological History of the Earth (4) Origin and evolution of continents, atmosphere, oceans, and early inhabitants with emphasis on physical history of North America. Prereq: 1420; 3 hours and 1 lab or field period.

2110 History of Life on Earth (4) Chronological account of origin and evolution of life, its environment, and societal patterns. Not intended for geology majors. 3 hours and 1 lab or field period.

2130 Resources Crises—Minerals and Energy (4) Evaluation and estimation of reserves and resources. Distinctive features, present status, and future trends of minerals industry. Appraisal of conventional and alternative energy resources. Resource crisis and possible solutions. Regional policies on minerals and energy. Not for geology majors. May be taken by geology majors, but credits will not count toward major requirements.


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

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

3160 Introduction to Earth Materials (4) Study of minerals and rocks. Laboratory includes both hand specimen and analytical methods of identification. Not available for credit majors. Prereq: 1410. 2 lectures and 2 labs.

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

3190 Introduction to the Petrographic Microscope (1) Introduction to the petrographic microscope and optical methods for minerals identification in thin section. To be taken concurrently with 3310. 1 lab per week, 5/NC grading only.

3210-20 Invertebrate Palaeontology (4,4) Systematic review of important moluscan invertebrate fossil groups. 3210—Foraminifera to Annelida, including cnidarians, echinoderms, decapods, and conodonts. 3220—Mollusca through Chordata, including arthropods and echinoderms. May be taken separately or in sequence. Prereq: 3280, Biology 1210-20, or consent of instructor. 3 lectures and 1 lab or field period.

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

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

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

3280 Paleontology (4) Introduction to classification and properties of igneous and metamorphic rocks, processes which produce them, and tectonic environments in which they form. Laboratory emphasizes both hand specimen and microscopic study of important rock types. Prereq: 3180. 3 lectures and 1 lab.

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

3360 Stratigraphy-Sedimentation (4) Introduction to the classification of stratigraphic principles and processes of sedimentary processes and interpretation of depositional environments. Prereq: 1420 and 3180. 3 hours and 1 lab or field period.
3370 Structural Geology (4) Introduction to structural geology, covering topics such as folds, faults, joints, cleavage, and primary structures. Laboratory work includes field trip and field exercises. Prerequisites: 1420, Math 1830 or equivalent. 3 hours and 1 lab.

3410 Principles of Ground Water Geology (3) Geologic materials and processes affecting the occurrence and movement of ground water. Prerequisite: Consent of Instructor. 2 hours and 2 lab or field periods.

3510 Introductory Environmental Geology (4) Geologic problems involving earth environments and resource evaluation. Special emphasis is given to the association of geologic parameters associated with resource control and misuse. Prerequisite: Consent of instructor. 2 hours and 2 lab or field periods.

3610 Quaternary Geology for Engineers (3) Erosional and depositional processes, landforms, ground water. Prerequisites: 2 lectures and 1 lab or field period. Prerequisite: 2510 or equivalent.

3710 Origin and Evolution of the Continents and Ocean Basins (4) Introduction to the evolution of the earth's crust and the ocean basins. Prerequisite: 1420.

3810 Regional Geology of the United States (3) Survey of geologic histories of various geologic provinces of the United States. Special emphasis is given to the stratigraphic and tectonic framework. Prerequisite: Geology 1410-20 or equivalent.

4110 Principles of Economic Geology (4) Corequisite of mineral deposits, classification, and origin. Prerequisites: Physical Geology, Geology 1420, or consent of instructor. 3 hours and 1 lab. Prerequisite: Consent of instructor. 2 hours and 1 lab.

4150 Elementary Applied Geophysics (4) Basic principles of electrical, seismic, gravity, and magnetic surveys. Recommended: 1420, Physics 2220 or 2320, 3 lectures and 1 lab.

4130 Sedimentology (4) Introduction to physical processes of sedimentation: transport of sediments and their characteristics. Recommended: 1420, Physics 2220 or 2320, 3 lectures and 1 lab.

4230 Paleocology (4) Principles of environmental analysis as applied to fossil assemblages and associated lithologies. Prerequisite: 3260 or consent of instructor. 3 hours and 1 lab.

4240 Paleobotany (4) Survey of fossil record of plants and particular emphasis on (1) comparative morphologies and evolutionary trends in major plant groups and (2) chronologic successions and stratigraphic distribution of past floras on earth. Prerequisite: 1420 or 2210; Botany 3110 or consent of instructor. 3 lectures and 1 lab. (Same as Botany 4240.)

4480 Geologic Photography and Photogrammetry and Remote Sensing (4) Principles of terrestrial and aerial photography, and principles of photogeologic remote sensing systems. Prerequisite: Consent of instructor. 2 hours and 2 labs.

4570 Tectonic Styles (4) Elements, habitats, and geotectonic causes of basic styles of tectonic deformation presented on maps, sections, and fieldwork. Prerequisite: 12 hours of geology. 3 hours and 1 lab.

4660 Geologic Photography and Photogrammetry and Remote Sensing (4) Principles of terrestrial and aerial photography, and principles of photogeologic remote sensing systems. Prerequisite: Consent of instructor. 2 hours and 2 labs.

4610 Principles of Geochemistry (4) Application of the principles of geochemistry to problems of geologic significance. Prerequisite: 3310. 3 hours and 1 lab.

4770 Evolution of Oceans and Continents (4) Principles of oceanography and the evolution of the ocean basins. Prerequisites: Math 1830, Physics 1330. Recommended: Math 2610 or equivalent. 3 hrs. and 1 lab.

4440 Field Geology (4) Five weeks' field course, first term summer quarter. Advanced undergraduates or first-year graduates in geology. Prerequisite: Consent of instructor. 12 hours of geology. 3 hours and 1 lab.

4450 Optical Mineralogy (4) Identification of minerals and determination of crystal-chemical parameters using photometric techniques. Prerequisites: 1410, 3310, and 4610. 3 credits.

4460 Principles of Geomorphology (4) Gradational processes acting at earth's surface and their effects. Prerequisite: 1410. 20-30. 3 hours and 1 lab.

4520 Process Geomorphology (4) Gradational processes operating on and near the earth's surface, applied geomorphology, and field work in geomorphology. Prerequisite: 1430 and 4510. 3 hours and 1 lab or field period.

4550 Optical Mineralogy (4) Identification of minerals and determination of crystal-chemical parameters using petrographic microscope. Prerequisites: 1410, 3310, and 4610. 3 credits.

4510 Principles of Geochemistry (4) Application of chemical principles to geologic problems. Emphasis on crystal chemistry and relation between basic atomic structure and behavior of elements in the earth's crust. Prerequisite: Chemistry 1110-20 or equivalent required. Recommended 3310.

4560 Mineral Phase Equilibria (4) Principles of phase equilibrium and application of phase equilibria studies in rock-forming systems as aids to understanding conditions of formation and modification of rocks. Prerequisite: 4510 or consent of instructor. 3 credits.

4670 Exploration Methods (3) Principles of geologic association and exploration. Special emphasis is given to the exploration for oil and gas. Prerequisites: 3260 or equivalent. 3 credits.

4700 Petrophysics (3) Fluid, heat, electric current, and ionic flow through rock masses in a potential field. Stress-strain behavior of rock as a function of temperature and pressure. 3 lectures per week. Prerequisite: 3310, Math 1360, Physics 1330. Recommended: Math 2610 and 2820.

4770 Evolution of Oceans and Continents (4) Introductory study of origins and changes that have occurred in earth's crust with emphasis on the processes of continental drift and plate tectonics. Prerequisite: 1420.

4790 Uranium Deposits (4) Distribution, characteristics, and origin of different types of uranium deposits. Prospecting and evaluation of uranium deposits, with special reference to domestic potential resources. Prerequisites: 4110 or 4110 and 1 lab/field/seminar period.

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

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

5000 Thesis
5050 Geochemistry of Ore Mineral Deposits (3)
5069 Experimental Geochemistry Laboratory (1-3)
5120 Geophysics—Gravity and Magnetic Methods (4)
5130 Geophysics—Seismic Exploration Methods (4)
5210-20-30 Special Problems in Geology (1-4, 1-4, 1-4)
5290 Quaternary Geology (4)
5310 Depositional Environments and Models for Exploration (4)
5340 Seminar in Local Stratigraphy (1)
5350 Selected Topics in Geology (1)
5370 Mesofaunal Analysis (4)
5460 Photogeologic Interpretation (4)
5470 Plate Tectonics and Orogeny (4)
5520 Igneous Petrology (4)
5530 Metamorphic Petrology (4)
5540 Terrigenous Clastic Sedimentary Petrology (4)
5550 Carbonate Sedimentology (4)
5620 X-Ray Diffraction: Single Crystal Techniques (3)
5640 Clay Mineralogy (4)
5650 Thermochemistry for Geologists (3)
5680 Cathodoluminescence Petrography (3)
5710 Advanced Paleontology (4)
5720 Paleontological Nomenclature and Techniques (4)
5750 Petrophysics (3)
5820 Strata-bound and Stratiform Sulfide Deposits (4)
5830 Mammal Invertebrate Deposits (4)
5840 Ore Petrology (4)
5850 Regional Studies in Geology (3)
5860 Coal Depositional Environments (4)
5915 Regional Geomorphology (4)
6000 Doctoral Research and Dissertation
6110 Seminar in Stratigraphic Geology (3)
6210 Seminar in Paleontology (3)
6310 Seminar in Structural Geology (3)
6410 Seminar in Mineralogy (3)
6610 Seminar in Economic Geology (3)
**German and Slavic Languages**

**Professors:**
- H. Kratz (Head), Ph.D. (Germany)
- J. E. Falen, Ph.D. (Indiana)
- J. C. Osborne, Ph.D. (Ohio State)
- J. S. Elliott, Ph.D. (Michigan)
- D. M. Fiene, Ph.D. (Bonn, Germany)
- R. L. Hankamer (Emeritus), Ph.D. (Bonn, Germany)
- N. A. Lauckner, Ph.D. (Wisconsin)
- D. E. Lee, Ph.D. (Chicago)
- D. E. Lee, Ph.D. (Bonn, Germany)
- N. A. Lauckner, Ph.D. (Bonn, Germany)

**Instructor:**
- M. H. Harris, M.A. Illinois

**UNDERGRADUATE**

**Placement Examination:** Students who have had previous work in German or Russian either in high school or in another college should register for the course in which they would normally be placed. During the first week of the quarter a placement test will be given, and students will be advised if a change in registration is indicated.

**Proficiency Examinations:** Students who have acquired a knowledge of German or Russian through private study, tutoring, residence in foreign countries, or the like, should request a proficiency test. A student earning a grade of B or better on such a test will receive credit for a limited number of courses. Superior students are encouraged to proceed as rapidly as their achievement permits. Students who omit any course in a sequence may receive credit for it by passing a proficiency examination.

**Foreign Study:** Students are encouraged to study abroad. The department is prepared to recommend summer study programs and junior year abroad programs for students who are interested in foreign study. Credits from recognized foreign study programs can readily be transferred to UTK. For qualified students, the department also offers German 4101 Foreign Study through the UTK Study Abroad Program.

**Graduate and Advanced Undergraduate Courses**

**German (433)**

1101-20-30 Elementary German (3,3,3) Must be taken in sequence.

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

1518-2518-28 Honors: Intermediate and Elementary German (6,6,6) Honors course for students of superior ability. Freshmen are admitted on the basis of high school average and performance on the American College Testing Program. Upperclass students must achieve a B average. A grade of C or above must be achieved in 1518 in order to continue with German 2518. A student obtaining a grade of D or better in 1518 may continue with German 2530. This sequence is equivalent to 1510-20 or 1110-20-30 and 2110-20-30 and its completion allows the student to enter all 3000-level German courses.

1530 Elementary German through Individualized Instruction (1-4) Same materials as in German 1510-20, but student may proceed at own pace, with a minimum of one credit hour per quarter. With completion of four hours student has option of transferring to 1520. May be repeated. Maximum credit 8 hours.

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

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

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

3110-20-30 Introduction to German Literature (3,3,3) Prereq: 2110-20 or equivalent.

3120-30 Conversation and Composition (3,3,3) Prereq: 2130 or equivalent.

ADVANCED UNDERGRADUATE AND GRADUATE

4101 Foreign Study (1-16) See page 185.

4102 Off-Campus Study (1-16) See page 184.

**4103 Independent Study (1-16)** See page 184.

**4110-20-30 Studies in Classical and Modern Writings (3,3,3)** Content varies with consent of department. Prereq: 9 hours of 3000 courses (exclusive of 3100-20-30, or courses in English translation) or equivalent.

**4150-50 Selected Topics in German Literature from 1750 to the Present (3,3) Prereq: 9 hours of 3000 courses (exclusive of 3100-20-30, or courses in English translation) or equivalent.

**4160 Studies in German Authors (3)** Life and works of a single outstanding German literary figure. Content varies. May be repeated for credit. Prereq: 9 hours of 3000 courses (exclusive of 3100-20-30, or courses in English translation).

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

**4210-20-30 Studies in German Literary Types (3,3,3)** 4110—Lyric poetry, 4250—Drama, 4350—Narrative prose. Prereq: 9 hours of 3000 courses (exclusive of 3100-20-30, 3210-20-30, 3310) or equivalent.

**4250 Introduction to Descriptive Linguistics (3)**

(As same as Russian, French, Spanish, and Linguistics 4250.)

**4260 Introduction to Historical and Comparative Linguistics (3)**

Linguistic change, proto-languages. Philological and historical. Cultural, historical, sociological influences upon the development of language. Semantic change. Lexicography. All topics copiously illustrated by selected examples from Indo-European languages. Prereq: 9 hours of upper-division courses in a modern or ancient language (exclusives of German and French 3010-20-30, 3210-20-30, 3310) in literature in translation, and general courses in Latin and Greek requiring no knowledge of these languages.

**4500-30-50 Advanced Conversation and Composition (3,3,3) Prereq: 3810-30 or equivalent or consent of department.

**4550 Business German (3)** Survey of German used in fields of business and economics. Primarily for students wanting to major in minor or major in business or economics. Prereq: 3110-20-30.

**GENERAL COURSES**

**4610-20-30 German Civilization (3,3,3)** Prereq: 2130 or equivalent.

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

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

**4850 Business German (3)** Survey of German used in fields of business and economics. Primarily for students wanting to major or minor in business or economics. Prereq: 3110-20-30.
3280 Goethe's Faust in English Translation (3)

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

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

3330 Dramas of Ibsen and Strindberg (3-4) Study of two principal forerunners of 20th-century drama. Works are read in English translation. No foreign language credit.

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

GRADUATE

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

5000 Thesis

5101 Foreign Study (1-12)

5102 Off-Campus Study (1-12)

5103 Independent Study (1-12)

5160 Introduction to German Semantics (3)

5200 Proseminar (3)

5210-20-30 College Teaching of German (1,1,1) Prereq: 9 hours of 3000-level courses in German (exclusive of 3010-20-30, 3210-20-30, 3310-20-30). May be repeated. Maximum credit 9 hours each. Advanced students of Russian. May be repeated. Max. credit 9 hours.

5310-20-30 Elements of Russian for Graduate Students and Seniors (3,3,3) For graduate students preparing for language examinations and seniors desiring reading knowledge of a second foreign language. Prereq: 2 years of some foreign language in college or completion of an equivalent undergraduate course only. No credit for students having completed 1510-20 or equivalent.


5460 Russian Culture and Composition (3,3,3) Practice in writing and speaking; grammar review and vocabulary building. Prereq: Completion of 2110-20-30.

ADVANCED UNDERGRADUATE AND GRADUATE

4010 Foreign Study (1-16) See page 185.

4020 Off-Campus Study (1-16) See page 184.

4030 Independent Study (1-16) See page 184.

4101-20-30 Studies in Major Russian Writers (3,3,3) Content varies. Pushkin, Lermontov, Gogol, Turgenev, Tolstoy, Dostoevsky, Chekhov, and others. Prereq: 9 hours of 3000 courses (exclusive of 3010-20-30, 3210-20-30, 3310-20-30-40, 40-60, 70, 3310) or equivalent. May be repeated for credit.

4210-20-30 Russian Literature in Modern Periods (3,3,3) 4120—Russian Romanticism. 4220—Russian Realism. 4230—Russian Modernism. Prereq: 9 hours of 3000 courses (exclusive of 3010-20-30, 3210-20-30, 3310-20-30-40, 50-60, 70, 3310) or equivalent. May be repeated for credit.

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

4280 Introduction to Historical and Comparative Linguistics (3) (Same as German, French, Spanish, and Linguistics 4280.)

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

4310-20-30 Advanced Studies in Russian Language (3,3,3) Intended primarily for students majoring or minoring in Russian interested in language and linguistics: includes problems in morphology and syntax, stylistics and translation techniques, and history of Russian language as well as other special problems for advanced students of Russian. May be repeated. Maximum credit 9 hours each.

4410-20-30 Directed Readings in Russian (3,3,3) Intended primarily for students participating in program in Russian and East European Area Studies, course will involve individual study related to student's major field. Prereq: 9 hours of 3000-level courses in Russian (exclusive of 3010-20-30, 3210-20-30-40, 50-70, 3310 or equivalent).


GENERAL COURSES

2640-50 Background and Main Currents of Russian Culture (4,4) A broad interdisciplinary approach to the development of Russian culture. May be repeated for credit. Prereq: 3110-20-30.

2620 19th Century Russian Literature in English Translation (3-4) Realism and the novel; selection from works of Pushkin, etc.

2680 20th Century Russian Literature in English Translation (3-4) War and Peace, Anna Karenina, and other works.

2690 20th Century Russian Literature in English Translation (3-4) War and Peace, Anna Karenina, and other works.

2700 Nineteenth-Century Russian Literature in English Translation (3-4) Realism and the novel; selection from works of Pushkin, etc.

2220 Works of Leo Tolstoy in English Translation (3-4) Crime and Punishment, Brothers Karamazov and other works.

2730 Twentieth Century Russian Literature in English Translation (3-4) Russian modernism and literature under the Soviets.

2740 The Russian Drama in English Translation (3-4) Selections from works of Fonvizin, Griboedov, Pushkin, Gogol, Ostrovsky, Turgeniev, Chekhov, and others.

2750 The Works of Ivan Turgeney and Anton Chekhov in English Translation (3-4)

2760 Russian Folklore in English Translation (3-4)

2770 Russian Philosophical and Theological Thought (4) A survey of the development of philosophical and theological thought in Russia from the Middle Ages to the Revolution. Special emphasis on the expression of this thought in Russian literature and literary criticism. No knowledge of Russian required. (Same as Philosophy 3270 and Religious Studies 3270.)

2780 Special Topics in Russian Literature in English Translation (4) Topics vary and are announced in advance. Student suggestions for topics are welcome. No foreign language credit. May be repeated.

2791 Contemporary Slavic Literature in English Translation (3-4) Survey of Polish, Czech, Yugoslav, and Russian fiction since 1900, with emphasis on first three.

Greek

See Classics.

Hebrew

See Religious Studies.

History (462)

Professors:

P. H. Bergerson, Ph.D. Vanderbilt; E. V. Chiniewicz, Ph.D. Harvard; Ph.D. Harvard; R. E. Duncan, Ph.D. California (Berkeley); L. P. Graf1, Ph.D. Harvard; Y. P. Hao, Ph.D. Harvard; A. G. Haas, Ph.D. Chicago; R. W. Hawkins (Emeritus), Ph.D. California (Berkeley); C. O. Jackson (Associate Dean, Liberal Arts College), Ph.D. Emory; M. M. Klein2,3, Ph.D. Columbia, R. G. Landen (Dean, Liberal Arts College), Ph.D. Princeton.

Associate Professors:

J. D. Bing, Ph.D. Indiana; S. R. Biersheil (Head), Ph.D. Harvard; W. E. Haskins (Emeritus), Ph.D. California (Berkeley); L. P. Graf1, Ph.D. Harvard; Y. P. Hao, Ph.D. Harvard; A. G. Haas, Ph.D. Chicago; R. W. Hawkins (Emeritus), Ph.D. California (Berkeley); C. O. Jackson (Associate Dean, Liberal Arts College), Ph.D. Emory; M. M. Klein2,3, Ph.D. Columbia, R. G. Landen (Dean, Liberal Arts College), Ph.D. Princeton.

Assistant Professors:


Instructor:

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

1Alumnus Distinguished Professor.

2Benwood Distinguished Professor.


GENERAL COURSES

2640-50 Background and Main Currents of Russian Culture (4,4) A broad interdisciplinary approach to the development of Russian culture. May be repeated for credit. Prereq: 3110-20-30.

2620 19th Century Russian Literature in English Translation (3-4) Realism and the novel; selection from works of Pushkin, etc.

2680 20th Century Russian Literature in English Translation (3-4) War and Peace, Anna Karenina, and other works.

2730 Twentieth Century Russian Literature in English Translation (3-4) War and Peace, Anna Karenina, and other works.

2740 The Russian Drama in English Translation (3-4) Selections from works of Fonvizin, Griboedov, Pushkin, Gogol, Ostrovsky, Turgeniev, Chekhov, and others.

2750 The Works of Ivan Turgeney and Anton Chekhov in English Translation (3-4)

2760 Russian Folklore in English Translation (3-4)

2770 Russian Philosophical and Theological Thought (4) A survey of the development of philosophical and theological thought in Russia from the Middle Ages to the Revolution. Special emphasis on the expression of this thought in Russian literature and literary criticism. No knowledge of Russian required. (Same as Philosophy 3270 and Religious Studies 3270.)

2780 Special Topics in Russian Literature in English Translation (4) Topics vary and are announced in advance. Student suggestions for topics are welcome. No foreign language credit. May be repeated.

2791 Contemporary Slavic Literature in English Translation (3-4) Survey of Polish, Czech, Yugoslav, and Russian fiction since 1900, with emphasis on first three.

Greek

See Classics.

Hebrew

See Religious Studies.
students who have not yet met Tennessee Legislature requirements in American history, or for transfers who enter liberal arts major in right, in an American history sequence. 2511—Settlement to 1865, 2521—1865 to present. Prereq: Consent of department; permission; 2510 for 2520. May not be taken as 1 hour elective. Will not be offered during summer sessions.

2515-29 United States History for International Students (3,3) Consent of department required.

3008 Honors: Introduction to Historical Analysis and Interpretations (3) Required of students working for honors in history.

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

3048 Honors: Readings (5) Required of and open only to students working for honors in history.

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

3140-50-60 History of England (3,3,3) 3140—To 1660. 3150—1660 through Reform Bill of 1688. 1688. 3160-320-330 History of France (3,3,3) 3160—To 1815; 3170—1815 to present.

3210 History of Sports in United States (3) Analysis of development of sports and their significance in American life from colonial period to present. Emphasis on social, cultural, economic, and political impact of both spectator and participatory sports in 20th century.

3240 Law in American History (3) Nature and function of law in American society: evolution of law and legal profession with attention to selected aspects; legal education, professionalization of the bar, and application of law to problems of race, religion, and morality.

3270 History of Human Services and Public Health in United States (3) Course analyzes development of human services in modern society. Focusing on how and why public housing, health, and welfare services emerged in industrial America and providing historical background for understanding contemporary social services, professionalization of those services, and values and attitudes of deliverers and recipients of them.

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

3411-12 The Reformation (3,3) 3411—Reformation. 3412—Reformation, Counter Reformation, and Wars of Religion, 1517-1618. (Same as Religious Studies 3411-12.)


3445-46 History of France (4,4) 3445—To 1789. 3446—Since 1789.

3470-80-90 History of Russia (3,3,3) 3470—To 1901. 3480—1901-1920. 3490—20th century.

3610-20 History of the American Colonies and the American Revolution (3,3) 3610—Settlement to 1783. 3620—1783 to 1865. 3630—1865 to present.

3670 Popular Culture in the United States (4) Examination of significance of fads, fashions, and amusements of American public from Colonial period to age of television. Not for graduate credit.

3690 Indian-White Relations in United States History (4) 3690—From contact to 1901. 3690A—1901-1941; 3690B—1941-1991.

3710-20-30 History of Germany (3,3,3) 3710—First Reich to 1713. 3720—Habsbourg and Napoleon and Formation of Second Reich, 1713-1890. 3730—From a unified to a divided Germany, 1890 to present.

3740 The City in Europe, ca. 1200-1900 (3) Survey of European urban growth, with comparative analysis of major periods of urbanization of 13th and 19th centuries. Emphasis on relationship between demographic, economic, and social foundations of cities and political and cultural development.

3751-52 Ancient Near Eastern Civilization (3,3) 3751—Early and Middle Bronze Ages, 3752—Late Bronze and Iron Ages.

3760-70 The Ancient World (3,3) 3760—Greece. 3770—Rome.

3780-90 History of the Middle East (3,3) 3780—Rise and spread of Islamic civilization to the 16th century. 3785—The impact on the West of the Middle East from the 16th century to World War I.

3785 Contemporary Middle East (4) Background of current problems in area, from World War I to present. (Same as Political Science 3785.)

3800 North Africa since 1830 (3) Morocco, Algeria, Tunisia, and Libya in 19th and 20th centuries.

3810-20-30 History of East Asia (3,3,3) 3810—Tradition China and Japan, ancient of mid-19th century. 3820—Modern China, Japan, Korea, mid-19th century to 1920s. 3830—Contemporary China, Japan, and Korea, 1920s to present.

3870-80-90 History of Latin America (3,3,3) 3870—Exploration, conquest, and colonial life to 1800. 3880—Major countries of South America, 1800-present. 3890—Central America, the Caribbean, 1800-present.


4010-11-12 History Colloquia (3,3,3) 4010—General. 4011—European. 4012—American. Small group study of selected historical period or theme. Recommended that students have previously taken appropriate lower-division historical sequence.

4015 Studies in History (3-4) Variable content course offering opportunity to offer subject matter not covered in an existing course. May be repeated for credit.

4018-28 Honors: Seminar (4-6) Required of students working for honors in history.

4101 Foreign Study (1-16) See page 185.

4102 Off-Campus Study (1-16) See page 184.

4103 Independent Study (1-16) See page 184.

4120-30 History of Colonialism and Imperialism (3,3) 4120—Background; Age of Discovery and Exploration to 19th century. 4130—19th century to present.

4250-60-70 European Intellectual and Cultural History (3,3,3) 4250—From Reformation to Scientific Revolution (1500-1700). 4260—From Enlightenment of Age of Reason (1700-1780). 4270—From Subjectivism to Realism (1870-present).

4280 Women in European History (4) Comparative analysis of role and image of women in Medieval, Renaissance, and Victorian periods. Attention given to parallel changes in structure of family, as well as relationship between Western culture and women's protest movements.

4290 Women in American History (4) Approaches of 4290 applied to American society.

4310-20-30 History of American Foreign Relations (3,3,3) 4310—Since 1810 to present. 4320—1901-1941; 4330—1941 to present.
I. Culture and Personality American Studies 3010; Anthropology 3410, 3800, 3900, 4420, 4430, 4740; Audiology & Speech Pathology 4250, 4650; Child and Family Studies 3100, 3200, 4810; Educational Psychology 4110, 4800; Geography 3610; Psychology 3120, 3550, 3650, 4510; Sociology 3130, 4820; Speech 3021, 3039.

II. Complex Organizations Geography 3610; Political Science 3565, 3566, 4665, 4666; Psychology 4520; Religious Studies/Sociology 4940; Sociology 3610, 3620, 4030, 4690.

III. Research and Statistics Computer Science 3310; Philosophy 3720, 4720; Psychology 3150; Sociology 3910, 3920.

IV. Community and Society Economics 3220, 3410; Anthropology 3070, 3450; Child and Family Studies 3515, 3520, 4610; Geography 3000, 3430; Home Economics 3110; Human Services 4900; Philosophy 3320, 3440, 3461; Political Science 3710, 3720, 3730, 3760, 4560, 4950; Public Health 3330; Religious Studies 3550, 3660, 3610; Rural Sociology 3420; Sociology 3160, 3220, 3330, 3550, 3420, 3510, 3690, 4330, 4420, 4430; Special Education 4940, 5620.

2890 Introduction to Human Services (4) General field of human services with focus on related societal values; contemporary issues in human services.

3100 Social Welfare as a Social Institution (4) Specific social welfare institutions examined in depth in relation to human needs, structure, program, and service approaches. 2890 recommended.

3200 Peoples and Problems of Appalachia (4) Course designed to provide better understanding of Appalachian peoples, by exploring their life style and institutions from contemporary human services point of view. Special emphasis placed on political and economic structure of region. Recommended: Anthropology 4740.

3300 Thinking about People (4) Intended to facilitate development of thoughtful, informed, and empathic attitudes toward human beings—those providing service as well as those receiving service.

4100 Deviant Behavior as a Product of Labeling (4) Course is designed to show human services workers the role they plan in maintaining the deviance or deviant role of client or clients being served. Settings considered will include crime, delinquency, health, and blindness.

4101 Foreign Study (1-16) Foreign Study (1-16) Application filed not later than the first week of the quarter prior to the quarter of enrollment. For additional information, see page 185.

4102 Off-Campus Study (1-16) Off-Campus Study (1-16) Application filed not later than the first week of the quarter prior to the quarter of enrollment. For additional information, see page 184.

4103 Independent Study (1-16) Independent Study (1-16) Application filed not later than the first week of the quarter prior to the quarter of enrollment. For additional information, see page 184.

4200 Social Welfare Policies and Issues (4) Specific social welfare policies in depth in relation to human needs, structure, program, and service approaches. Special focus on developing an analytical framework and social change efforts. Prerequisite: Full acceptance into major.


4220 Social Work Practice III (4) Essential theory, values, and skills of professional social work intervention. Emphasis on the development and acquisition of professional work with clients. To be taken in sequence. Prerequisite: Social Work 3400. Corequisite: Social Work 3100.


4250 Family Field Practice (4) Field experience in helping agencies or organizations specified by students. Prerequisites: Social Work 3400, 4110. Corequisite: Social Work 4110.
and practice and critically examine use of self as a professional helper in person. Weekly faculty directed seminars. Prerequisite: Full acceptance into major. Corequisite: Social Work 412030.

Italian
See Romance Languages.

Japanese
See Cultural Studies (Asian Studies).

Latin
See Classics.

Latin American Studies
See Cultural Studies.

Linguistics
See Cultural Studies.

Mathematics (641)

Professors:
J. S. Bradley (Head), Ph.D. Iowa; G. E. Albert (Emeritus), Ph.D. Wisconsin; J. H. Carruth, Ph.D. Louisiana State; R. E. Cline, Ph.D. Purdue; R. J. Daverman, Ph.D. Wisconsin; D. J. Desio, Ph.D. Maryland; D. E. Dobie, Ph.D. Cornell; E. D. Eaves (Emeritus), Ph.D. Texas; H. Friedman, Ph.D. Illinois; R. T. Gregory, Ph.D. Illinois; M. D. Gunzburger, Ph.D. New York; T. G. Hallam, Ph.D. Missouri; D. B. Hinton, Ph.D. California (Berkeley); F. A. Johnson, Ph.D. Illinois; J. S. Jordan, Ph.D. California; C. G. Wagner, Ph.D. Duke.

Associate Professors:
L. J. Gross, Ph.D. Cornell; O. Karakashian, Ph.D. Pennsylvania; K. Soni, Ph.D. Oregon State; A. Smith, Ph.D. California (Berkeley); G. A. Sodt, Ph.D. Wisconsin; R. T. Gregory, Ph.D. Illinois; M. D. Gunzburger, Ph.D. Chicago; S. L. Husch, Ph.D. Florida State; H. T. Mathews, Ph.D. Tulane; R. M. McCornell, Ph.D. Duke; D. D. Miller (Emeritus), Ph.D. Michigan; R. J. Piemmons, Ph.D. Auburn; B. S. Rajput, Ph.D. Illinois; C. K. Reddy, Ph.D. Indian Institute of Technology; W. P. Schaefer, Ph.D. Maryland; F. W. Stallman, Ph.D. Illinois; G. Bissens (Germany); W. R. Wade, Ph.D. California (Riverside); C. G. Wagner, Ph.D. Duke.

Assistant Professors:
C. E. Clark, Ph.D. Florida State; G. S. Jordan, Ph.D. Wisconsin; K. R. Kimble, Ph.D. Ohio State; G. A. Klassen, Ph.D. Nebraska; Y. Kuo, Ph.D. Cincinnati; W. H. Row, Ph.D., Ph.D. Wisconsin; R. J. Rowlett, Ph.D. Virginia; S. M. Serrini, Ph.D. Cornell; J. Smith, Ph.D. California (Berkeley); G. A. Rodd, Ph.D. California (Berkeley); K. Soni, Ph.D. Oregon State; R. Soni, Ph.D. Oregon State; J. W. Waddell, Ph.D. SUNY (Binghamton).

Instructors:
C. G. Doss, M.A. Tennessee; M. S. McLean, M.S. Purdue; D. P. Nash, M.A. Colorado.

1Space Institute, Tullahoma.

UNDERGRADUATE

Placement Information for Freshman Courses:
Students who need more than one year of mathematics should plan to take 1840-50-60 (or 1842-52-62 or 1848-58-68). The prerequisites for 1840 (and 1842) are two years of high school algebra, one year of geometry, and two quarters of trigonometry or the appropriate course(s). Students who present an ACT score below 18 in mathematics may take 1540 but are advised to take Math 0110 in the Evening School (or equivalent elsewhere), and make at least B, or to make a passing grade in Math 0110 and 0120 in the Evening School (or equivalent elsewhere).

Students who have taken two years of high school algebra and one year of high school geometry and who present an ACT score in mathematics of at least 26 (or those who earned a B in high school algebra and geometry, and present an ACT score in mathematics of at least 24) are encouraged to omit 1540 and begin with 1550.

Students who have a deficiency in algebra or geometry must remove the deficiency by taking the appropriate refresher course(s) in the Evening School (or equivalent elsewhere).

No student who has received credit for Mathematics 1840 with a grade of C or better may subsequently receive credit for Math 1540 or 1700. No student who has received a grade of C or better in Mathematics 1850 may subsequently receive credit for Mathematics 1550.

Honors Courses:
The current practice of the department is to offer honors versions (1848-58-68 and 2848-58-68) of 1540-50-60 and 2840-50-60 in sequence, fall-winter-spring, each year. In addition to these regularly offered honors courses, an honors version of any course in the department whose number has zero as the last digit may be offered in any quarter. In this case, the last digit will be changed to eight and the title will be preceded by the word "Honors," both in the Timetable and on the student's transcript. These honors courses may be offered upon the initiative of interested faculty. honors, or to make a taking the appropriate refresher course(s) in the evening.

Honors Examinations:
Students who have taken calculus in high school are encouraged to contact the Mathematics Office, Ayres 121, about the possibility of taking a proficiency examination for one or more courses from the calculus sequence 1840-50-60. If a satisfactory grade is made on the examination(s), credit will be awarded for the appropriate course(s).

Advanced Mathematics Courses:
These programs, along with other useful information for majors, are published in a Planning Guide, which is available on the Webpage, along with other useful information for majors, are published in a Planning Guide, which is available on

College of Liberal Arts 215
request at the department office, room 121, Ayres Hall. Prospective students are invited to write for copies.

1010 Mathematics: A Philosophical Approach (4) Emphasizes the "language game" nature of mathematics truth; strengths and limitations of axiomatic method; the infinite and the infinitesimal; mathematical logic; ethical problems facing the mathematician-scientist.

1540 College Algebra (4) Sets, real and complex number systems, exponents and radicals, fundamental algebraic operations, theory of equations, polynomial equalities, relations, functions, graphs. No student who has received credit for Math 1640 with a grade of C or better may subsequently receive credit for Math 1540 or 1700. Prereq: Two years of high school algebra or one year of college mathematics and one year of college algebra.

1550-60 Introductory Calculus—General Mathematics (4.4, 4.4) 1550—Equations of straight lines, conics, derivatives of algebraic functions, applications of derivatives, maxima and minima, related rates, antiderivatives, integration of algebraic functions, applications. Prereq: Math 1540, one year of college algebra, 2500. Determinants, matrices, systems of linear equations and inequalities, Cramer's Rule, linear programming, trigonometric functions, plane analytic geometry, polar coordinates. Must be taken in sequence. Prereq: Math 1550 or equivalent.

2010 Great Ideas in Mathematics (4) Course for non-majors designed to expose the student to ideas which have had a significant impact on direction of mathematics as a whole, in particular and on civilization in general. Selected topics may include: the Greeks and mathematics as logical reasoning; irrational numbers; Descartes and analytic geometry; Newton and Leibniz and the calculus; the theory of probability and the mathematics of motion; non-Euclidian geometry; the infinite. Prereq: High school algebra and geometry and an interest in cultural mathematics.

2110-20-30 Structure of the Number System (3,3,3) 2110—Sets, set operations, numeration systems, number systems, properties of whole and rational numbers. 2120—Elementary number theory, rational and irrational numbers. Euclidean number system in sequence. Prereq: 1 year of high school algebra and at least sophomore standing in elementary education, College of Education, or consent of instructor.

2412-22 Finite Mathematics (4,4) Logic and sets, combinatorics and probability, vectors and matrices, elementary optimization and game theory, applications to simple problems in the behavioral and/or managerial sciences. Prereq: Two years of high school algebra or one year of college algebra and one year of geometry. No student who has received grade of C or better in Mathematics 1550 may subsequently receive credit for Mathematics 1550.

1841-51 Calculus for Biological Sciences (4,4) Course for students whose intended major is in an area of the life sciences. Functions, graphs, differentiation and integration of algebraic, logarithmic, exponential, and trigonometric functions. Applications of the derivative and definite integral to problems in population growth, curves, parametric equations, polar coordinates. Prereq: Math 1840 with a grade of C or better may subsequently receive credit for Math 1540 or 1700. Prereq: Two years of high school algebra, one year geometry, and one semester of trigonometry or equivalent.

1840-50-60 Single Variable Calculus (4,4,4) Functions, graphs, slope of a curve, definition of a derivative, limit, continuity, antiderivatives, applications of the derivative and definite integral, maxima and minima, related rates, antiderivatives, integration of algebraic functions, applications. Prereq: Math 1540, one year of college algebra, 2500. Determinants, matrices, systems of linear equations and inequalities, Cramer's Rule, linear programming, trigonometric functions, plane analytic geometry, polar coordinates. Must be taken in sequence. Prereq: Math 1550 or equivalent.


2610 Introduction to Differential Equations (2) Topics emphasized. Prereq: Two years of high school algebra, one year geometry, and one semester of trigonometry or equivalent.

1848-58-68 Honors: Single Variable Calculus (4,4,4) Honors courses in calculus, selected on basis of placement test scores and high school record. Students receiving a grade of B or better in Math 1540 may subsequently receive credit for Math 1550 and 1650. Special sections of 1858 will be made available for students who perform well in 1840. Must be taken in sequence. Prereq: Math 1848-58-68 Honors: Single Variable Calculus. For students who enter with deficiency in high school trigonometry. 3 hours per week. No college credit.

1800 Selected Topics (4) Applications of definite integration; approximate integration; simultaneous linear equations; matrix inversion; elementary linear programming; the infinite. Prereq: Math 1860 or 2550 or equivalent.

2012 Basic Concepts of Elementary Mathematics (4) Sets, theory of mathematical operations, elementary probability and statistics. Basic geometrical concepts, elementary analytic geometry. Applications. May not be taken for credit after or concurrently with 1540, 1550, 1700, 1840, 2110, 2540. Primarily for secondary education students.

3000 Elementary Quantitative Methods (4) Elementary course designed to prepare students for courses in social and life sciences for quantitative courses in their departments. Treats basic topics in probability and statistics without calculus. Course cannot be used to meet requirements for majors or minors in mathematics, nor is it available for credit to students in College of Business Administration.

3040 The Ideas of Calculus (4) Study of basic ideas and their interrelations and integral calculus designed for students whose course of studies does not involve the use of calculus. Emphasizes the historical framework in which calculus was discovered and its influence on subsequent philosophical and scientific thought. Prereq: One year of high school algebra. May not be taken by student who has previously received credit for any college-level calculus course.

3050 Elementary Probability and Statistical Analysis (4) Sample space, probability axioms, random variables, probability distributions; estimation; confidence intervals and statistical tests of hypotheses; least squares and linear regression. Prereq: 3050 or consent of instructor. Does not satisfy the requirements of a major or minor in mathematics.

3060 Elementary Statistical Analysis (3) Probability distributions; sampling theory; confidence intervals and tests of hypotheses; least squares and linear regression. Prereq: 3050 or consent of instructor. Does not satisfy the requirements of a major or minor in mathematics.

3090 Polynomials and Rings (3) An introduction to abstract algebra, beginning with study of integers followed by more general notions on rings, integral domains, and fields. Emphasis is given to certain ring theoretic properties shared by integers and polynomial rings over integral domains. Prereq or coreq: Math 3100 or consent of instructor.

3100 Logic and Sets (3) Elements of mathematical logic; elementary algebra of sets. For students in the College of Education. Prereq: 1 year of college algebra. Does not satisfy the requirements of a major or minor in mathematics.

3110 Real Number System (3) Laws of arithmetic, rational and irrational numbers; fields. Primarily for students in the College of Education. Prereq: 1 year of college algebra. Does not satisfy the requirements of a major or minor in mathematics.

3140 Mathematical Modeling (3) Survey of construction and development of mathematical models used in social and life sciences. Topics may include: Markov chains, linear optimization, graph theory, and differential and integral equations. Emphasis is developed to understand the model and associated scientific problem that it approximates. Prereq: Math 2490-50.

3152 Introduction to Numerical Algorithms and Programming (3) (Same as Computer Science 3152.)

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

3220 History of Mathematics (3) Survey of development of various branches of mathematics, from ancient to modern times. Not acceptable for satisfying requirement for any major or minor in mathematics. Prereq: Math 1860 or 2550 or equivalent.

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

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

3330 Transformational Geometry (3) Fundamental transformations in Euclidean geometry. Classification of
isometries and similarities; symmetries of a polygon; inversions. Prereq: One year of college mathematics.

3510 Intermediate Analysis for Teachers (3) Primarily for elementary school teachers. Course covers elementary calculus from advanced viewpoint with emphasis on proofs of basic theorems. Topology of real line, sequences and series, continuous functions, derivatives, definite integral, and fundamental theorem of integral calculus. Prereq: 1550-C or 1860. Does not satisfy the requirements for a major or minor in mathematics.

3560-60 Intermediate Analysis (3.3) Infinite series, convergence, uniform convergence, Taylor series, Fourier series. Theory and applications. Prereq: 2840-50-60. Must be taken in sequence. Prereq: Math 3150 or 3155. (Same as Computer Science 4225.)

4235 Numerical Methods for Ordinary Differential Equations (3) Interpolation by polynomials and piecewise polynomials, quadrature, singlestep and multistep methods for differential equations. Stability, consistency, and convergence. Current algorithms, variable step and order; stiff systems. Boundary value problems. Prereq: Math 3150 or 4610 or 4225. (Same as Computer Science 4235.)


4250-60 Introduction to Complex Analysis (3.3) 4250-Complex numbers, Cauchy-Riemann equations, Cauchy's theorem, Taylor and Laurent series, residues and their applications. 4260-Conformal mapping, Schwarz-Christoffel transformations, the Dirichlet problem, applications (steady temperatures, electrostatics, fluid flow), additional topics in complex function theory. Must be taken in sequence. Prereq: Math 2860; one 4000-level mathematics course recommended.

4510-30-60 Introduction to Analysis (3.3) Real number system, fucntions, sequences, limits, continuity, uniform continuity, differentiation, integration. Functions of several variables, implicit function theorem, Multiple integrals, infinite series, sequences and series of functions, uniform convergence, Taylor series. Should be taken in sequence. Prereq: Math 2860.

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

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


4640 Calculus of Finite Differences (3) Real differential equations, applications to problems in engineering and physics. Prereq or coreq: Math 4610.

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

4710 Vector Analysis (3) Fundamental operations, basis vectors, dot and cross products, directional derivatives, divergence and curl of vector fields, line and surface integrals, divergence theorem of Gauss, and Stokes theorem. Prereq: Math 2860. Does not satisfy the requirements for a major or minor in mathematics.

4780-60-70 Introductory Probability Theory (3,3,3) 4750-Elementary probability theory, probabilities in discrete sample spaces, conditional probability and stochastic independence, binomial, Poisson, hyper-geometric, and normal distributions. 4760—Expectation, conditional expectation, and characteristic function of random variables; sequences of random variables, the weak and strong laws of large numbers, and the central limit theorem. 4770—Markov chains: limiting probabilities; the ergodic theorem, methods of state and stationary distributions; stochastic processes; Poisson, birth and death processes; Kolmogorov equations. Prereq: Math 2840-50-60.

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

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

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

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

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

GRADUATE

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

5000 Thesis

5002 Non-Thesis Graduation Completion (3-15)

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

5012 Differential Geometry for Teachers (3-4)

5013 Geometry for Teachers (3-4)

5014 Analysis for Teachers (3-4)

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

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

5051 Introductory Business Mathematics (3)

5052 Mathematics for Business Decisions (3)

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

5150-60-70 Foundations of Analysis (3,3,3)

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

5250-60 Applied Linear Algebra (3,3,3)

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

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

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three years of the Science-Medical Technology Curriculum, described on page 179, and who have been approved by the Pre-Medical Advisory Committee.

4011-12 Microbiology (6,6) Laboratory work in bacteriology, myology, and parasitology. Emphasis on pathogenic bacteria and fungi, their sources, methods of culture, techniques of identification, and evaluation of antibiotic sensitivity. Gross and qualitative chemical examination of feces and methods of identification of protozoa and helminth parasites of man.

4021-22 Clinical Chemistry (6,6) Clinical aspects of biochemical research, including overview of principles and instrumentation with emphasis on practical laboratory application of analytical procedures, specimen collection and handling, significance of results, and quality assurance. Includes blood gas analysis, including radioimmunoassay, and analysis of blood and other body fluids for enzymes, hormones, and other constituents of clinical interest, utilizing both automated and manual techniques.

4031-32 Hematology and Clinical Microscopy (8,6) Principles, theories, and instrumentation related to the quantitative and qualitative evaluation of cellular elements of blood and other body fluids; factors of hemostasis, qualitative and quantitative analysis of urine, and renal function studies. Emphasis is placed on microscopic identification of cells and the significance and correlation of laboratory data.


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

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

4060 Histology (1) Overview of techniques of preparation of tissue for microscopic evaluation and role of histopathology in clinical diagnosis.

4071 Orientation and Basic Techniques (1) Designed to facilitate those from campus to hospital community and clinical laboratory. Introduction to medical terminology, ethics, and health team concept. Orientation to basic techniques of methods of study include procedures for collection and handling of specimens, principles of operation of many laboratory instruments, reagents, and introduction to quality control procedures. Portions of course extend over entire clinical year.

4072 Principles of Supervision and Education in Medical Technology (1) Seminars in basic principles of management, supervision, and education theories and methods. Comprehensive examination covers entire course.

Music (698)


Music (698)

Courses in this major are open only to qualified students who have completed the first three years of the Science-Medical Technology Curriculum, described on page 179, and who have been approved by the Pre-Medical Advisory Committee.

4011-12 Microbiology (6,6) Laboratory work in bacteriology, myology, and parasitology. Emphasis on pathogenic bacteria and fungi, their sources, methods of culture, techniques of identification, and evaluation of antibiotic sensitivity. Gross and qualitative chemical examination of feces and methods of identification of protozoa and helminth parasites of man.

4021-22 Clinical Chemistry (6,6) Clinical aspects of biochemical research, including overview of principles and instrumentation with emphasis on practical laboratory application of analytical procedures, specimen collection and handling, significance of results, and quality assurance. Includes blood gas analysis, including radioimmunoassay, and analysis of blood and other body fluids for enzymes, hormones, and other constituents of clinical interest, utilizing both automated and manual techniques.

4031-32 Hematology and Clinical Microscopy (8,6) Principles, theories, and instrumentation related to the quantitative and qualitative evaluation of cellular elements of blood and other body fluids; factors of hemostasis, qualitative and quantitative analysis of urine, and renal function studies. Emphasis is placed on microscopic identification of cells and the significance and correlation of laboratory data.


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4060 Histology (1) Overview of techniques of preparation of tissue for microscopic evaluation and role of histopathology in clinical diagnosis.

4071 Orientation and Basic Techniques (1) Designed to facilitate those from campus to hospital community and clinical laboratory. Introduction to medical terminology, ethics, and health team concept. Orientation to basic techniques of methods of study include procedures for collection and handling of specimens, principles of operation of many laboratory instruments, reagents, and introduction to quality control procedures. Portions of course extend over entire clinical year.

4072 Principles of Supervision and Education in Medical Technology (1) Seminars in basic principles of management, supervision, and education theories and methods. Comprehensive examination covers entire course.

Music (698)


2015 Fundamentals of Opera Acting (3)
Analysis of roles. Techniques of singing actor.

2020 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.

2055-65-75 Diction for Singers (2,2,2) Sounds by phonetic symbols. Opera and art songs used for examples. Performance practice.

2071-1-9-1 Church Service Playing I (1,1,1,1) Practical skills applicable to the use of the organ in church services, including keyboard harmony, improvisation, hymn playing, and accompanying the organ. Prereq: 1131 and 6 hours in organ.

2199 Techniques of Sound Recording (3)
Theory and applications of tape recording. Topics include room acoustics, microphones, processing, noise reduction, mixing, editing, dubbing, and recorder maintenance.

2810-20 Jazz Piano (1,1) Harmonic language of jazz: interpretation of chord symbols, formulating for voice chords, chord progressions, and fundamental melody-playing and improvisation for right hand. Must be taken in sequence. Prereq: 1010-20.

3000 Junior Recital (0)

3012-32-32 Song Literature (2,2,2) Study of literature from 1600 to present with emphasis on performance practices. 3012—Classical and Romantic German art song; 3032—French and Russian songs; 3052—Late German and other contemporary songs. Prereq: 2075 and consent of instructor.

3014-24 Woodwind Literature (2,2) Prereq: Consent of instructor.

3015 Percussion Literature (1) Prereq: Consent of instructor.

3016 String Literature (2) May be repeated. Maximum 6 hours. Prereq: Consent of instructor.

3018 Introduction to Styles in Jazz Drumming (2) Examination and study of major composers and performers who have contributed significantly to creation of principal styles of jazz drumming.

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

3052-63 Jazz Improvisation (2,2) Study and application of principles of improvisation, including nomenclature, chord progressions, chord-scales, patterns, melodic development, and free form devices. Prereq: Consent of instructor. 2 hours and 1 lab.

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

3061 Production (1-3) Supervised work on opera productions. May be repeated for credit. Prereq: Consent of instructor.

3071-91-91 Church Service Playing II (1,1,1) Continuation of Music 2071-91-91, which is prereq.


3102 Suzuki Piano Method (2) Study of the psychological, theoretical concepts, tape and synthesizer usage. Prereq: Consent of instructor.

3100 Senior Recital (0)

3102 Suzuki Piano Method (2) Study of the psychological, theoretical concepts, tape and synthesizer usage. Prereq: Consent of instructor.

3102 Suzuki Piano Method (2) Study of the psychological, theoretical concepts, tape and synthesizer usage. Prereq: Consent of instructor.

3102-20-30 Piano Literature (1,1,1,1) Problems of piano playing: development of piano technique; style and interpretation; program building. Prereq: Consent of instructor.

4012-22-32 Principles of Vocal Pedagogy (1,1,1) Examination of vocal techniques and characteristics of techniques. Approaches to teaching singing (past and present) and related teaching materials. Collateral laboratory experiences accompany the study. Prereq: Consent of instructor.

4036-37-38 Advanced Piano Literature (2,2,2) Piano music from preclassical period to present. Prereq: Consent of instructor.

4041 Styles in Opera Acting (3) Study and practice of styles in opera acting based on historical and national characteristics. Prereq: 3015 or consent of instructor.

4045 Projects in Opera Theatre (1-3) May be repeated for credit. Consent of instructor.

4050 Advanced Instrumental Conducting (3) Development of knowledge and skills in instrumental conducting; study of various periods and composers and relationships of different styles to the conductor's art; musical analysis and practice in conducting. Prereq: Music Ed. 4430 or equivalent.

4056-56-57 Elementary and Intermediate Piano Pedagogy (2,2,2) Examination and study of piano methods and materials designed for teaching precocious level students. Prereq: Consent of instructor.

4060 Choral Techniques I (3) Techniques and methods involved in producing total choral program.

4074-84 Church Music Seminar (3,3) History and philosophy of church music; church music administration. Prereq: Consent of instructor.

2150 Advanced Ear Training (1) Technique, literature, performance practice, live playing, and basic tuning and maintenance. Requires a thorough keyboard background. May be repeated. Maximum credit 3 hrs. Prereq: Consent of instructor.

4091 Special Topics In Performance (1-3) Prereq: Consent of department head. May be repeated. Maximum credit 6 hours.


4400 Jazz Directing (1) Rehearsal techniques in jazz and related to teaching of jazz and administering of jazz programs. Prereq: Enrollment in applied music with jazz emphasis or consent of instructor.

4840 Jazz Pedagogy (1) Methods and materials relating to teaching of jazz improvisation. Prereq: Consent of instructor.

4860 Advanced Improvisation (2) Emphasis on further development of individual skills and solving individual problems in jazz improvisation. Prereq: Music 3052-53.

MUSIC THEORY AND COMPOSITION


1112-22-33 Sight Singing and Ear Training (1,1,1) Should be taken concurrently with 1111-21-31 or 1118-28-38. Must be taken in sequence. 2 hours per week.

1116-28-38 Honors: Theory I (4,4,4) Materials of music with emphasis on literature of Baroque, Classic, and Romantic periods. Exercises and projects in writing and analysis. Designed for music majors with concentrations in theory or composition. Other students may be admitted subject to placement examination. Grade of C or better must be achieved to continue the course sequence.

1199 Fundamentals of Music Composition (3) Melodic invention in simple forms. May be repeated. Maximum credit 4 hours. Prereq: Consent of instructor.

1400 Analysis of Jazz Styles (2) Individual improvisatory styles through analysis of their transcribed solos. Training and function of ear in music. Transcription of solos from recordings and preparation of analyses. Prereq: Consent of instructor.

2111-21-31 Theory II (3,3,3) Materials of music with emphasis on literature of Romantic and contemporary periods. Exercises in writing and analysis. Must be taken in sequence. Prereq: 1151 or 1158 or consent of instructor.

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

2118-28-38 Honors: Theory II (4,4,4) Materials of music with emphasis on literature of Romantic and contemporary periods. Exercises of projects in writing and analysis. Prereq: 1153 or placement examination.

2062-63-64 Sight Reading at the Piano (1,1,1) Prereq: Consent of instructor.

3111-21-31 Tonal Counterpoint (3,3,3) Contrapuntal techniques of 16th century, with emphasis on works of J. S. Bach. Must be taken in sequence. Prereq: 2131 or 2138.

3112 Instrumentation (3) Basic techniques in scoring for voices; brass, woodwind, and string choirs; and percussion. Prereq: 2131 or 2138.

3113 Analysis I (3) Study and practice in analysis of structures of music, smallest structural units to large compound forms. Emphasis on macroanalytic techniques. Prereq: 2131 or 2138 or equivalent.

3122 Orchestration (3) Advanced techniques in instrumental writing with emphasis on scoring for the concert orchestra. Prereq: 3112 or consent of instructor.

3123 Analysis II (3) Continuation of Analysis I with emphasis on micro and linear analytic techniques. Prereq: 3113.

4100 Independent Study in Music Theory (1-3) May be repeated for credit. Prereq: Consent of department head.

4101 Foreign Study (1-16) See page 185.


4121 Twentieth-Century Compositional Techniques (3) Styles and compositional devices from Debussy to present. Analysis of scores, idiomatic writing. Prereq: 2131 or consent of instructor.

4131 Pedagogy of Music Theory (3) Techniques, methods and materials involved in college-level theory programs. Prereq: Consent of instructor.

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

4151 Variation (3) Study and application of variation procedures. Prereq: 3129 or equivalent.

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

4171 Choral Arranging (3) Analysis of scores and writing of arrangements for men's, women's, and mixed choruses. Prereq: 3112 or consent of instructor.

4124 Marching Band Arranging (3) Study and application of techniques employed in scoring for marching band. Prereq: 3112 or equivalent.

4134 Concert Band Arranging (3) Study and application of techniques employed in scoring for concert band. Prereq: 3112 or equivalent.

4150 Survey of Music Theory (3) Theory of music with emphasis on harmonic practice of Baroque, Classic, and Romantic periods. Exercises in writing and analysis. Recommended as review course for graduate students. Prereq: Consent of instructor.

4850 Jazz Composition (3) Prereq: Music 4114 and consent of instructor.

APPLIED MUSIC

Applied study is classified as Principal or Secondary. Students studying their principal (major) instrument register for credit appropriate to their program, 2-4 credit hours; students studying a secondary instrument register for 1 hour of credit. Study at the principal level receives one hour of private instruction per week or a one-hour class lesson plus a half-hour private lesson. Determination of the mode of instruction rests with the department. Study at the secondary level receives one-half hour instruction per week or a one-hour class lesson plus a half-hour private lesson. Non-music students will be accepted at the secondary level if they meet audition requirements established by area faculty (piano, voice, violin, etc.) and instruction time is available. Undergraduate students seeking entrance to applied music courses must be concurrently registered for no less than nine credit hours in academic courses. exceptions to these requirements may be made with the approval of the department head if applied music registration is necessary to completion of degree requirements. 

ADVANCEMENT IN APPLIED MUSIC IS MEASURED BY PROFICIENCY (JURY) EXAMINATION. STUDENTS WHO DO NOT MEET PROFICIENCY REQUIREMENTS AT ANY LEVEL MAY BE REQUIRED ADDITIONAL STUDY AT THAT LEVEL. COURSE LEVEL AND CREDIT HOURS WILL BE DETERMINED BY THE APPLIED FACULTY. ALL STUDENTS STUDYING APPLIED MUSIC AT THE PRINCIPAL LEVEL ARE REQUIRED TO REGISTER FOR MUSIC 2000 SOLO CLASS. THE REQUIREMENTS FOR THIS COURSE ARE TO ATTEND SCHEDULED CONCERTS, RECITALS, MASTER, REPERTOIRE, AND SOLO CLASSES, AND TO PERFORM AT LEAST ONCE EACH QUARTER AS PARTIAL FULFILLMENT OF APPLIED MUSIC CREDIT REQUIREMENTS.
must acquire a minimum of six credits in any of the following ensembles: Concert Choir, Chamber Singers, University Chorus, Women's Chorale.

A student's preference for musical organization will be honored whenever possible, but factors considered in making the assignment include playing ability, specific needs of various organizations, and previous performance experience at the University.

3600-5600 Small Ensemble (1,1) May be repeated for credit.

3601-5601 Woodwind Choir (1,1) May be repeated for credit.

3602-5602 Brass Choir (1,1) May be repeated for credit.

3604-5604 Jazz Ensemble (1,1) May be repeated for credit.

3606-5606 Trombone Choir (1,1) May be repeated for credit.

3680-5680 Concert Choir (1,1) May be repeated for credit.

3681-5681 Varsity Band (1,1) May be repeated for credit.

3686-5686 Men's Glee Club (1,1) May be repeated for credit.

3687-5687 Women's Chorale (1,1) May be repeated for credit.

3688-5688 University Chorus (1,1) May be repeated for credit.

3697-5697 Symphony Orchestra (1,1) May be repeated for credit.

3698-5698 Men's Glee Club (1,1) May be repeated for credit.

3699-5699 Accompanying (1,1) May be repeated for credit.

5864 Campus Chorus (1) May be repeated for credit.

**Graduate Catalog for admission and degree requirements.**

5000 Thesis

5001 Choral Conducting Document (3)

5002 Non-Thesis Graduation Completion (3-15)

5010 Organ Literature Seminar (3)

5012-22-32 Pedagogy of Voice (2,2,2)

5020 Piano Literature Seminar (3)

5030 Choral Literature Seminar (3)

5040 Vocal Literature Seminar (3)

5050 Graduate Recital (3)

5051 Opera Performance (3)

5052 Vocal Chamber Music Performance (3)

5053 Choral Conducting Performance (3)

5054 Lecture-Recital (3)

5055-5056 Practicum for Instrumental Conductors (1,1)

5057 Instrumental Conducting Seminar (3)

5060 Seminar in Choral Performance (3)

5061 Choral Conducting (3)

5070 Opera Production (1-3)

5080 Instrumental Conducting Performance (1)

5090 Special Topics in Performance (1-3)

5100 Independent Study in Music Theory (1-3)

5111 Advanced Harmony (3)

5114 History of Music Theory (3)

5116 Musical Styles (3)

5121 Analytical Techniques (3)

5125 Practicum in Computers and Music Research (3)

5150 Seminar in Music Theory (3)

5200 Independent Study in Music History and Literature (1-3)

5210 Introduction to Music Research (3)

5220 Music Bibliography (3)

5270 Seminar in Musicology (3)

5315 Band Literature (3)

5350 Music in the Middle Ages (3)

5352 Music in the Renaissance (3)

5353 Music in the Baroque Period (3)

5355 Music in the Classic Period (3)

5400 Musical Aesthetics (3)

5597 Composition with Electronic Media (1-3)

5611 Marimba Choir (1)

**Organizational Psychology Program**

See Graduate School.

**Philosophy (745)**

*Professors:*

 J. W. Davis (Head), Ph.D. Emory; L. B. Cebik, Ph.D. Nebraska; R. E. Edwards, Ph.D. Chicago; D. Van de Vate, Ph.D. Yale.

**Associate Professors:**


**Assistant Professors:**

H. P. Hamlin, Ph.D. Georgia; E. R. Jones III, Ph.D. Chicago; J. E. Nott, M.A. Ohio State; D. E. Oett, Ph.D. Texas; S. J. Reaven, Ph.D. California (Berkeley).

Philosophy seeks to understand humans, the world, their relations. It involves (1) use of logical and scientific methods, (2) appreciation of all values, (3) history of ideas, (4) philosophical systems.

Philosophy is an appropriate major for students wishing a broad education, and those preparing for careers as writers (whether journalistic or literary), lawyers, ministers, teachers, in various types of political and government service, and in non-technical positions in business and industry.

A major in philosophy includes a balanced program in the humanities, natural and social sciences. Graduate students should read French or German, preferably both; other ancient or modern languages are useful and necessary for some advanced work.

**UNDERGRADUATE**

**Major:** 36 hours in courses numbered 2000 and above. Majors should discuss their program with a member of the philosophy faculty.

**Minor:** 24 hours in courses numbered 2000 and above. It is suggested that minors discuss their programs with a member of the philosophy faculty.

**American Studies.** See Cultural Studies.

**Russian and East European Studies.** See Cultural Studies.

1510 Introduction to Philosophy: Human Nature and Values (4)

1520 Introduction to Philosophy: Consciousness and Reality (4) May be taken before 1510.

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

2310 Elementary Ethics (4) Theories of ethical values.

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

2510-20 Elementary Logic (4,4) 2510—Traditional or modern deductive logic, informal fallacies, uses of language, definitions. (510 is recommended as introductory for students with mathematical aptitude.) 2520—Inductive reasoning, elements of scientific method, and statistical inference.

3111 Ancient Western Philosophy (4)

3121 Medieval Philosophy (4)

3131 Seventeenth-and Eighteenth-Century Philosophy (4)

3141 Nineteenth-Century Philosophy (4)

3151 Contemporary Philosophy (4) Survey of recent movements in philosophy.

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

3311-12 American Philosophy (4,4) 3311—Colonial to late 19th century: 3312—Late 19th century to present.

3320 Philosophy of Law (4) Nature, sources, function of law.
4420 Aristotle (4) Prereq: 8 hours of philosophy or consent of instructor.

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

4460 British Empiricism (4) Prereq: 8 hours of philosophy or consent of instructor.

4470 Kant (4) Prereq: 8 hours of philosophy or consent of instructor.

4480 Advanced Topics in Existentialism and Phenomenology (4) Prereq: 8 hours of philosophy or consent of instructor.


4511 Advanced Topics in Logic (4) Prereq: Consent of instructor. May be repeated for credit.

4610 Philosophical Analysis (4) Prereq: 8 hours of philosophy or consent of instructor.

4620 Philosophy of Mind (4) Problems of mind and body in relation to consciousness and personal identity. Prereq: 8 hours of philosophy or consent of philosophy.

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

4710 Philosophy of Natural Science (4) Consideration of standard topics pertinent to natural science including reduction of theories and teleological explanation. Familiarity with symbolic logic is recommended. Prereq: 3770 or two years of natural science.

4720 Philosophy of Social Science (4) Examination of methods of inquiry and modes of explanation of social sciences. Prereq: 3770 or two years of natural science.

4810 Metaphysics (4) Prereq: 8 hours of philosophy or consent of instructor.

GRADUATE

5000 Thesis

5050 Symbolic Logic (4)

5080 Philosophy of Logic (4)

5101 Foreign Study (1-12)

5102 Off-Campus Study (1-12)

5103 Independent Study (1-12)

5110-20-30-40-50-60 Studies in History of Europe and Philosophy (4,4,4,4,4,4)

5250 Studies in the History of American Philosophy (4)

5310-29-30 Studies in Value and Normative Theories (4,4,4)

5355 Orientation to Medical Ethics (2)

5365 Applied Ethical Theory (4)

5370 Topics In Medical Ethics (4)

5375 Clinical Medical Ethics (1)

5410 Philosophy of History (4)

5430 Philosophy and Literature (4)

5450 Problems of the Self (4)

5460 Philosophy of the Mind (4)

5510-20 Studies in Epistemology (4,4)

5560-60 Philosophy of Science (4,4)

5610 Recent Developments in Philosophy of Religion (4)

5710 Studies in Metaphysics (4)

5810 Social and Political Philosophy (4)

5940 Lakeshore Clinical Residence (6)

5950 Clinical Practicum in Medical Ethics (4-12)

6000 Doctoral Research and Dissertation

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

6150 Seminar in History of American Philosophy (4)

6250 Seminar in Philosophy of Religion (4)

6310 Seminar in Axiology (4)

6370 Advanced Topics in Medical Ethics (4)

6510 Seminar in Epistemology (4)

6550 Seminar in Philosophy of Science (4)

6950 Advanced Residence in Medical Ethics (4-12)

**Physical Sciences**

**Major:** None offered.

**Minor:** Consists of the following courses: Physics 2210-20-30, Chemistry 2140-49, 3211-31-41-51, 19-29-39-49, and six hours chosen from Biochemistry 4210-20-30, Chemistry 3410-20-30, 4140-50, 4910-20-30, or Physics 3410-20-30, 3610-20-30. Prerequisites to this minor are Mathematics 1640-50 and Chemistry 1110-20-30. The physical sciences minor is designed particularly for students majoring in one of the biological sciences and/or preparing for graduate studies in a biological science or medicine.

1Math 2840 is a prerequisite for these courses.

**Physics and Astronomy**

**Professors:**
- Associate Professors:
- Assistant Professors:
  - M. J. Breig, Ph.D. Oregon; S. B. Euston, Ph.D. Massachusetts; T. H. Hander, Ph.D. Rutgers.
- Research Associate Professors:
  - A. H. Rogers, Ph.D. Massachusetts Institute of Technology.
- Research Assistant Professors:
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College of Liberal Acts

Lectures:
+Alumni Distinguished Service Professor.
2 Space Institute, Tullahoma.
3 Distinguished Professor.
°Chancellor's Research Scholar.

Astronomy (150)
2110-20-30 Introductory Astronomy (4,4,4) Surveys
astronomical data and theories . 2110-20 concentrate
on the solar system . 2130 introduces stellar astronomy
including binary and variable star clusters and nebulae.
It is recommended that the courses be taken in sequence . 4 hours including demonstration lab.
2118-28-38 Honors: Introductory Astronomy
(4,4,4) Observation and theories of matter and space in
the universe . Planets, stars, and the interstellar medium . Must be taken in sequence . 3 hours lecturediscussion ; 2 hours lab per week . Coreq: Math 184050-60 or equivalent.
4110-20-30 Astrophysics (3,3,3) Physics of stars and
interstellar matter, planets and interplanetary matter;
atmospheres, interiors, and evolution ; nebulae,
quasars, pulsars, etc. Observational data and their
determination . Current developments . Approach will be
interdisciplinary . Acceptable for major credit in physics.
Prereq : Physics 2330 and consent of instructor.

Physics (773)
UNDERGRADUATE
The undergraduate program in physics is
designed to give the student a wide
background which will permit ready
specialization in various areas such as nuclear
physics, solid state physics, high energy
physics, molecular physics, etc.
Students planning to major in physics are
urged to consult advisers in the Department of
Physics prior to registration in freshman year
with regard to selection of proper first course
in physics.
Major: Physics 1318-28-38 and Math 184050-60 are prerequisites to a major in physics
which includes the following courses : Physics
2318-28-38, Math 2840-50-60 ; Physics 321020 ; either Physics 3710-20-30 or 4111-20-30;
4210-20 ; and at least six hours from 3510-20-

Physics 1310-20-30 or Basic Engineering
1310-20-30 may be substituted for Physics
1318-28-38 and Physics 2310-2030 may be
substituted for Physics 2318-28-38 as a

graduation requirement. Transfer students from
other schools or departments may substitute
2510 and 1330 for 1310-20-30 or 1318-28-38.
A major in physics with a concentration in
health physics includes Physics 2310-20 or

2318-28, 3210-20,

3710-20-30, 4210-20,
4710-20-30, and Math 2840-50-60 . It is
suggested that students also take Chemistry
1110-20-30, 3211-21-31, 3219-29-39, and 12
hours of an approved biological science.
Minor: A minor in Physics shall consist of
Physics 2310-20-30 or 2318-28-38 and 15
hours from physics and astronomy courses
numbered 3000 and above . Substitution
provisions in the major statement also apply to
the minor.
An Engineering Physics Curriculum is also
offered . The program is described on page
149 and listed in tabular form on page 131.
1210-20-30 Introductory Physics (4,4,4) General
course for students whose major falls outside the
physical sciences . Concepts of physics developed by
observation of phenomena and logic rather than mathematical analysis . Areas covered in first quarter are
mechanics, heat, and energy . In second quarter wave
motion, sound, electricity and magnetism, and light . In
the third quarter the main emphasis is modern physics.
It is recommended that the courses be taken in se-

quence . 1210-20 represent a survey of classical physics and are recommended as an introduction to the
discipline for liberal arts non-science majors.

matics, and dynamics of systems of particles and rigid
bodies ; 3250-Lagrangian and Hamiltonian equations
of motion . Must be taken in sequence . Prereq : 2320
and Math 2860.

1310-20-30 Fundamentals of Physics : Mechanics
and Heat (4,4,4) First course in physics for engineers
and liberal arts majors in mathematics and the physical
sciences . Basic Engineering 1310-20-30 is equivalent
for graduation purposes . Must be taken in sequence.
Coreq : Math 1840-50-60 . 3 hours of lecture, 2 hours of
lab.

3230 Heat and Thermodynamics (3) Concepts of
temperature and heat; laws of thermodynamics ; applications of laws to simple physical and chemical problems . Prereq : 2320 1 or 2330 and calculus ; 3210-20 or
instructor's consent.

1318-28-38 Honors : Fundamentals of Physics : Mechanics and Heat (4,4,4) Honors course designed for
physics and engineering physics majors and for qualified students from other disciplines . Must be taken in
sequence . Coreq : Math 1840-50-60 . 3 hours of lecture,
2 hours of lab.
1410-20-30 Nature of the Physical World (4,4,4)
Introductory course in concepts and principles of physical sciences which enables a student to establish a
unified picture of the physical universe . In the first two
terms the principles of mechanics, electricity, and wave
motion are developed and applied to such varied fields
as solar systems, atomic and molecular behavior,
radiation, dynamic changes in the atmosphere and in
the earth's crust, and to stellar and galactic phenomena. In the third term these principles are applied in more
detail to such topics as nuclear energy, cosmology,
atmospheric and oceanic phenomena, drifting continents, and science and society . May be taken out of
sequence only with consent of instructor . 4 hours
including demonstration lab.
1450 Physics of Athletic Activity (4) Principles of
physics, particularly mechanics and heat, are introduced . Discussion of these ideas will emphasize
their role in physical activities, particularly sports-related . Course topics include statics, equilibrium, linear
and angular motion, momentum, force, work, and energy. 4 hours lecture and demonstration.
1810 Physics of Music (4) Production, transmission,
and reception of sound waves . Frequency, intensity,
timbre. Basic acoustics of instruments and voice . 4
hours lecture and demonstration.
2210-20-30 Elements of Physics (4,4,4) 2210-Mechanics, properties of fluids, heat . 2220-Electricity
and magnetism, sound waves . 2230-Optics, atomic
and nuclear physics, radiation protection . Basic physical principles and applications required in pre-medical,
pre-dental, pre-pharmacy, and pre-veterinary programs . Must be taken in sequence . Prereq : Math 155060 or Math 1840-50 (or equivalent honors courses) . 3
hours of lecture and 3 hours of lab.
2240-50-60 Elements of Physics for Architects
(4,4,4) 2240-Statics, dynamics, properties of fluids;
coreq : Math 1840 or 1550 . 2250-Heat and thermodynamics, sound and wave motion, optics ; coreq:
Math 1850 or 1560. 2260-Electricity and magnetism,
alternate energy topics . Basic physical principles with
applications particularly as applied in architecture . Limited to students in School of Architecture . Should be
taken in sequence . 3 hours of lecture. 3 hours of lab.
2310-20-30 Fundamentals of Physics : Electricity,
Waves and Optics, Modem Physics (3,3,3) Required
of all engineering students . 2310-Electricity . 2320Waves and Optics . 2330-Modern Physics . Must be
taken in sequence. Prereq : 1310-20-30 1 or Basic Engineering 1310-20-30, or Physics 2510 ; coreq : Math
2610, 2840-50 . 3 hours of lecture, 2 hour of laboratory
and recitation per week.
2318-28-38 Honors : Fundamental Physics : Electricity, Waves and Optics, Modern Physics (4,4,4) Honors course designed for selected students admitted on
basis of performance in 1318-28-38, 1310-20-30, and
Engineering 1310-20-30 . 2318-Electricity ; 2328Waves and Optics; 2338-Modern Physics. Coreq:
Math 2610, 2840-50 . 3 hours of lecture-discussion, 2
hours of lab per week.
2510 Mechanics (5) Statics, kinematics, Newton's
laws, momentum, energy, rotation . 4 hour of lecturerecitation, 3 hours of laboratory-problem sessions.
Prereq : Math 1840-50-60 or equivalent. 2510 satisfies
prereq for Physics 2310, although physics major should
also take Physics 1330 as a prereq to the major.
3210-20-50 Mechanics (3,3,3) 3210-Statics, kinematics and dynamics of a particle; 3220-Statics, kine-

3410-20-30 Concepts of Modern Physics (3,3,3)
Modern ideas of atomic structure, nuclear changes,
particles, and radiation . Not for credit for physics majors or minors . Prereq : General physics . Must be taken
in sequence.
3510-20-30 Physical Measurements (3,3,3) Laboratory measurement of some physical quantities . Theory
supplied where necessary. Prereq : 2310-2030 or 221020-30, and calculus ; 3510 for 3520 and 3530 . 3 labs.
3610-20 Electronics (3,3) Electronic components and
circuits of interest to physicists . Prereq : 2310-20-30 or
2210-20-30 and calculus . 3 labs.
3630 Nuclear Electronics Laboratory (3) Elementary
circuits of interest in nuclear instrumentation are designed and built, and their characteristids are tested as
a function of various parameters . Prereq : 361020.
3710-20-30 Introduction to Atomic and Nuclear
Physics (3,3,3) 3710-Special relativity and early quantum theory ; 3720 - Atomic and molecular physics;
3730 - Nuclear physics . Prereq : Math 2860 and
Physics 2320 for 3710 ; 2338 or 3710 for 3720-30.
3990 Junior Seminar (1-3) Topic of current interest.
May be repeated for credit with consent of department.
4040 Foundation of Physics (3) Selected topics from
history and philosophy of classical and modern physics. Prereq : One year of general physics and consent of
4110-20-30 Introduction to Quantum Mechanics
(3,3,3) Introduction to fundamental principles of quantum mechanics and methods of calculation . Application
of atomic, molecular, and nuclear physics . Prereq:
2330 or equivalent, Math 4550.
4140 Elementary Nuclear Physics (3) General properties of nuclei, twonucleon systems, nuclear forces,
nuclear models, nuclear reactions, nuclear distintegrations and beta-decay, nuclear spin and magnetism.
Prereq : 3730 or 4120.
1 Or equvalent , honors courses.
4160 Physical Acoustics (4) Considerations fundamental to detailed investigation of any branch of
acoustics ; propagation of acoustic waves in the infrasonic, the audible, the ultrasonic, and the hypersonic
ranges of frequencies . 3 hours and 1 lab. Prereq: 321020-30.
4210-20-30 Electricity and Magnetism (3,3,3) Intermediate level electrostatics ; steady and alternating currents ; laws of electromagnetism ; Maxwell's equations;
radiation of electromagnetic waves; reflection and
refraction ; electromagnetic fields of moving charges.
Must be taken in sequence . Prereq : 2320 or 2220 and
Math 2860.
4230-40 Modem Optics (4,4) 4230-Geometrical optics : reflection and transmission of light at a dielectric
interface ; paraxial theory of interfaces, lenses, and
mirrors ; thick lenses, lens systems, ray tracing;
polarization ; imagery ; laser light . 4240-Physical optics: mathematics of wave motion, superposition of
waves ; interference ; Fraunhofer and Fresnel diffraction;
Fourier optics ; holography. Prereq : 4210 or consent of
instructor . 3 hours of lecture and 3 hours of lab.
4510-20-30 Atomic Physics Laboratory (3,3,3) Experiments in fundamental particle properties,
photoelectricity, conduction of electricity through
gases, atomic and molecular spectroscopy, X-ray.
Prereq or coreq : 371020-30 . 3 labs.
4540-50 Experimental Nuclear and Radiation Physics (4,4) Interaction of charged particles and electromagnetic radiation with matter ; theory and characteristics of various detectors ; statistics of counting,
nuclear properties . Experiments illustrate recent tech-


6000 Doctoral Research and Dissertation (3,3)
6430 Advanced Topics in Quantum Theory (3)
6420 Advanced Topics in Classical Theory (3)
6310 Electromagnetic Theory of Light (3)
6300-31 Special Problems in Optics (3,3)
5911-31 Special Problems In Teaching of Physics (3,3,3)
5910-20-30 Special Problems (3,3,3)
5720 Physics of Polyatomic Molecules (3)
5610-20-30 Mathematical Methods in Theoretical Physics (3,3,3)
5410-20-30 Electromagnetic Theory (3,3,3)
5310-20-30 Advanced Modern Physics (3,3,3)
5210-20-30 Advanced Modern Physics (3,3,3)
5100 Thesis (12)
5022 Non-Thesis Graduation Completion (3-15)
5080 Graduate Research Participation (3)
5110-20-30 Introduction to Theoretical Physics (3,3,3)
5210-20-30-20 Advanced Modern Physics (3,3,3,3)
5410-20-30 Electromagnetic Theory (3,3,3)
5440 Experimental Methods of Infrared and Raman Spectroscopy (3)
5510-20-30 Advanced Thermodynamics and Statistical Mechanics (3,3,3)
5610-20-30 Mathematical Methods in Physics (3,3,3)
5640 Numerical Methods in Physics (3,3,3)
5720 Physics of Polyatomic Molecules (3)
5910-20-30 Special Problems (3,3,3)
5911-31 Special Problems in Teaching of Physics (3,3,3)
5920 Doctoral Research and Dissertation (3,3,3)
6110-30-30 Quantum Mechanics (3,3,3)
6210-20-30 Nuclear Structure (3,3,3,3)
6310 Electromagnetic Theory of Light (3)
6320 Special Relativity (3)
6330 General Relativity (3)
6420 Advanced Topics in Classical Theory (3)
6430 Advanced Topics in Quantum Theory (3)
6500-10 Electrical Conduction in Gases and Plasma Physics (3,3,3)
6610 Interaction of Electrons with Gases (3)
6620 Interaction of Electrons with Solids (3)
6630 Interaction of Radiation with Matter (3)
6710-20-30 Advanced Solid State Physics (3,3,3)
6810 Vibration Problems in Molecules Spectra (3)
6820 Molecular Vibration-Rotation Theory (3)

**Political Science (801)**

**Politics and Government (3,3)**
- Professors: T. D. Ungs (Director), Ph.D. Iowa; R. A. Avery (Emeritus); F. W. Hofland, Ph.D. North Carolina; L. S. Greene (Emeritus), Ph.D. Wisconsin; V. R. Iredell, Ph.D. Chicago; D. D. Nimmo, Ph.D. Vanderbuilt, H. Paas, Ph.D. Utah; N. M. Robinson, Ph.D. Syracuse; T. A. Smith, Ph.D. Ohio State; H. Stephenson, Jr., Ph.D. Johns Hopkins; D. M. Welborn, Ph.D. Texas.
- Assistant Professors: W. Fierman, Ph.D. Harvard; P. K. Freeman, Ph.D. Wisconsin; D. F. Olafski, Ph.D. Temple.

**BUREAU OF PUBLIC ADMINISTRATION**

**Political Science (3,3)**
- Professor: T. D. Ungs (Director), Ph.D. Iowa.
- Associate Professor: M. R. Fitzgerald, Ph.D. Oklahoma.
- Assistant Professors: P. K. Freeman, Ph.D. Wisconsin; D. F. Olafski, Ph.D. Temple.

**UNDERGRADUATE**

A major consists of 40 hours that must be distributed as follows:
1. Eight hours at the 2000 level in political science or in political science courses not used for Triad credit but included on the History and Society list.
2. Twenty-hour in political science courses numbered at 3000 and above. Upper-division courses on the Triad list may be included. These 32 hours must include at least one course in each of four areas of the discipline: United States Government and Politics/Public Administration; Comparative Government and Politics; International Relations; and Political Theory and Methodology.

A minor consists of 24 hours that must be distributed as follows:
1. Eight hours at the 2000 level in political science or in political science courses not used for Triad credit but included on the History and Society list.
2. Sixteen hours in political science courses numbered at 3000 and above. Upper-division courses on the Triad list may be included.

**Honors in Political Science**

The Honors concentration encourages highly motivated students to obtain a superior liberal education and more rigorous preparation in the discipline. Admission is selective. The Honors concentration is usually a two year program and consists of 60 hours, including:
1. Eight hours at the 2000 level in political science or in political science courses not used for Triad credit but included on the History and Society list.
2. Forty-eight additional hours in political science courses, including:
   a. Political Science 3918-28-38
   b. Political Science 4918-28-38
   c. 24 additional hours numbered 3000 and above. These 48 hours must include at least one course in each of four areas of the discipline: United States Government and Politics/Public Administration; Comparative Government and Politics; International Relations; and Political Theory and Methodology. Upper-division courses on the Triad list may be included. To graduate with Honors in Political Science, the student must have a GPA of at least 3.3 in Political Science, and an overall GPA of at least 3.0.

**Public Administration**

See page 84 and page 180.

**American Studies**

See Cultural Studies.

**Asian Studies**

See Cultural Studies.

**Latin American Studies**

See Cultural Studies.

**Russian and East European Studies**

See Cultural Studies.

**2020 Introduction to Political Science (4)**

A variety of the basic substantive concepts and concerns of political science.

**2010-20 United States Government and Politics (4)**

An introduction to the Constitution, separation of powers, campaigns and elections, parties, interest groups, the media, public opinion. 2520-2530-2540: Institutions: executive, legislative, judiciary, bureaucracy at national, state, and local levels.

**2510-2518 Honors: United States Government and Politics (4)**

Either course designed for students of superior ability and interest. Entrance into 2518 requires a B average; selected entering freshmen will be accepted on the basis of placement scores and high school record. A grade of 5 in 2516 is necessary for entrance into 2528.

**2520 Tennessee Government and Politics (4)**

**2550 Governments in Knox County (4)**

Analysis of political institutions and processes in Knox County.

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

**3545 United States Constitutional Laws: Sources of Power and Restraint (4)**

Analysis of judicial review, constitutional powers and restraints, separation of powers, campaigns and elections, parties, interest groups, the media, public opinion. 2520-2530-2540: Institutions: executive, legislative, judiciary, bureaucracy at national, state, and local levels.

**3546 United States Constitutional Law: Civil Rights and Liberties (4)**

Emphasis on judicial interpretation of the Constitution, protection of political rights. 2518 desirable as preceding courses.

**Minority Group Politics in the United States (4)**

Content varies from quarter to quarter. May be repeated up to a maximum credit of 8 hours with consent of department.

**Introduction to Public Administration Organization and Management (4)**

Organization and decision-making theory, line and staff services, politics of organization, leadership, personnel and fiscal management, administrative responsibility. 2510-2520 desirable as preceding courses.

**Public Administration and the Policy-Making Process (4)**

Public bureaucracies and the policy-making process, their political environments, administrative problems associated with policy making. 2510-2520 desirable as preceding courses.

**State Politics (4)**

Focus on formal and informal settings of state government. State government's role in formulating, enacting, and implementing state policy.

**State Government and Policy Making (4)**

Nature and functions of the institutions of state govern-
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3701-02</td>
<td>Introduction to International Relations</td>
<td>Study of international relations, focusing on major conflicts and policy issues. Can be repeated up to maximum of 8 hours with consent.</td>
</tr>
<tr>
<td>4701-02</td>
<td>International Organization</td>
<td>Study of international organizations, with emphasis on major conflicts and policy issues. Can be repeated up to maximum of 8 hours with consent of department.</td>
</tr>
<tr>
<td>4711</td>
<td>International Law</td>
<td>Study of international law and its role in international relations.</td>
</tr>
<tr>
<td>4727</td>
<td>Politics of Inter-American Relations</td>
<td>Study of political relationships within the Americas, with emphasis on current issues.</td>
</tr>
<tr>
<td>3801</td>
<td>Studies in Ancient Political Thought</td>
<td>Study of political thought in ancient Greece and Rome, with emphasis on major figures.</td>
</tr>
<tr>
<td>3802</td>
<td>Studies in Medieval Political Thought</td>
<td>Study of political thought in the Middle Ages, with emphasis on major figures.</td>
</tr>
<tr>
<td>3803</td>
<td>Studies in Early Modern Political Thought</td>
<td>Study of political thought in the early modern period, with emphasis on major figures.</td>
</tr>
<tr>
<td>4815</td>
<td>Contemporary Soviet Marxism-Leninism</td>
<td>Study of Soviet political thought, with emphasis on major figures.</td>
</tr>
<tr>
<td>4831-32</td>
<td>The Systematic Study of Politics</td>
<td>Study of political thought, with emphasis on major figures.</td>
</tr>
<tr>
<td>4875</td>
<td>Special Topics in Political Thought</td>
<td>May be repeated up to maximum of 8 credit hours with consent of department.</td>
</tr>
<tr>
<td>4918-28-38</td>
<td>Senior Honors Seminar and Seminar</td>
<td>May be repeated up to maximum of 8 credit hours with consent of department.</td>
</tr>
<tr>
<td>3850</td>
<td>Introduction to Political Analysis</td>
<td>Study of political thought, with emphasis on major figures.</td>
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<tr>
<td>5810</td>
<td>The American Political Process</td>
<td>Study of political thought in the United States, with emphasis on major figures.</td>
</tr>
<tr>
<td>5820</td>
<td>The American Political Process</td>
<td>Study of political thought in the United States, with emphasis on major figures.</td>
</tr>
<tr>
<td>5840</td>
<td>Ethics, Values, and Morality in Public Administration</td>
<td>Study of ethical issues in public administration, with emphasis on major figures.</td>
</tr>
<tr>
<td>5850</td>
<td>Research and Methodology in Public Administration</td>
<td>Study of research and methodology in public administration, with emphasis on major figures.</td>
</tr>
<tr>
<td>5855-45</td>
<td>Operations Research for Public Administrators</td>
<td>Study of operations research in public administration, with emphasis on major figures.</td>
</tr>
<tr>
<td>5840</td>
<td>Ethics, Values, and Morality in Public Administration</td>
<td>Study of ethical issues in public administration, with emphasis on major figures.</td>
</tr>
<tr>
<td>5850</td>
<td>Research and Methodology in Public Administration</td>
<td>Study of research and methodology in public administration, with emphasis on major figures.</td>
</tr>
<tr>
<td>5870-80</td>
<td>Seminar in Soviet Politics and Government</td>
<td>Study of Soviet politics and government, with emphasis on major figures.</td>
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<tr>
<td>5910</td>
<td>Seminar in Latin American Government</td>
<td>Study of Latin American politics, with emphasis on major figures.</td>
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<tr>
<td>5920</td>
<td>Seminar in Politics of Development</td>
<td>Study of political development in various regions, with emphasis on major figures.</td>
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<tr>
<td>5930</td>
<td>Seminar in International Organization</td>
<td>Study of international organizations, with emphasis on major figures.</td>
</tr>
<tr>
<td>5940</td>
<td>Seminar in Comparative Public Administration</td>
<td>Study of comparative public administration, with emphasis on major figures.</td>
</tr>
<tr>
<td>5950</td>
<td>Seminar in Administration in Developing Countries</td>
<td>Study of administration in developing countries, with emphasis on major figures.</td>
</tr>
<tr>
<td>5960</td>
<td>Public Administration</td>
<td>Study of public administration, with emphasis on major figures.</td>
</tr>
<tr>
<td>5970-80</td>
<td>Seminar in Comparative State Politics</td>
<td>Study of state politics in various regions, with emphasis on major figures.</td>
</tr>
<tr>
<td>5990-20</td>
<td>Quantitative Political Analysis</td>
<td>Study of quantitative methods in political analysis, with emphasis on major figures.</td>
</tr>
</tbody>
</table>
Psychology (830)

Professors: W. H. Calhoun (Head), Ph.D., California (Berkeley); G. M. Barlow, F. Symon, Ph.D., Tennessee; C. P. Cohen, Ph.D., Kansas; E. E. Cureton (Emeritus), Ph.D., Columbia; H. J. Fine, Ph.D., Syracuse; S. H. Hardel, Ph.D., Johns Hopkins; L. Handler, Ph.D., Michigan State; R. P. Lorion, Ph.D., Rochester; J. F. Lubar, Ph.D., Chicago; E. O. Milton (Distinguished Research Center), Ph.D., Michigan; K. R. Newton, Ph.D., Tennessee; H. R. Pollio, Ph.D., Michigan; N. L. Rasch, Ph.D., Pennsylvania; F. Samelstein, Ph.D., Keio (Japan); R. R. Shrader, Ph.D., Tennessee; W. S. Verplanck (Emeritus), Ph.D., Brown; R. G. Wahler, Ph.D., Washington; J. A. Wilberly, Ph.D., Syracuse.

Associate Professors: J. M. Barrett, Ph.D., Tennessee; E. A. Elliott, M.S., Tennessee; D. S. Freeman, Ph.D., Tennessee; H. R. Friedeman, Ph.D., Tennessee; M. G. Johnson, Ph.D., Johns Hopkins; J. J. Kamin, Ph.D., Tennessee; J. E. Lawler, Ph.D., North Carolina; K. A. Lawler, Ph.D., North Carolina; J. W. Lounsbery, Ph.D., Michigan State; A. Mckney, Ph.D., Yale; J. C. Malina, Ph.D., Duke; W. G. Morgan, Jr., Ph.D., Tennessee; M. J. O'Connell, Ph.D., Tennessee; R. S. Saudargas, Ph.D., Florida State; E. D. Sundstrom, Ph.D., Utah; C. L. Travis, Ph.D., California (Davis).

Assistant Professors: N. W. Dye, Ph.D., Tennessee; J. W. Erickson, Ph.D., Tennessee; D. R. Giffin, Ph.D., Tennessee; S. R. Friedland, Ph.D., Georgia State; J. A. Jones, Ph.D., Nebraska; K. R. Lounsbery, Ph.D., Michigan State; M. A. Rentz, Ph.D., Syracuse.

(Contribution of General Psychology) Designed to give students a broad and current background in the science and application of psychological methods and principles. It is particularly suited for students who plan careers in areas such as business, law, and journalism, or who for other reasons desire a liberal education concentrating on psychology and related areas. Four and one-half courses from 2520-30-40 and 2538-28 and two courses from 2520-30-40 or 2518-28 are prerequisites to a major consisting of Psychology 3150 or 4150, at least 5 hours of laboratorv, field, or practical courses, or 2 more hours of upper-division psychology courses.

(Contribution of Academic Psychology) Designed to prepare students for advanced work in the scientific, professional, and college-level teaching areas of psychology. Prerequisites to the major includes Psychology 2518-28 (or 2500 together with 2 courses from 2520-30-40) Mathematics 1540-50-60 or 1840-50-60, and Biology 1210-20-30. The major consists of Psychology 3150 or 4150, 8 hours of laboratory, field, or practical courses (including 3319), and 28 or more hours of upper-division courses of which 12 hours must be in psychology.

Minor: A minor in psychology shall consist of Psychology 2500 and 20 additional hours from upper-division psychology courses.

Honors Program in Psychology: A two-year (Junior-Senior) program leading to the B.A. degree. Objective of the Honors Program is to enable superior students to accelerate development of grasp of science of psychology, Program encourages independent study.

Eligibility: Selection of participants is determined by departmental Undergraduate Honors Committee. The interested student should apply to the psychology department. Successful applicants usually have a G.P.A. of at least 3.0. Requirements: "Psychology 2500 or 2518 and one other 2000-level course in psychology, 3150, and one quarter of laboratory or field experience. Honors students will complete Psychology 4948-56-68 and Psychology 4954. Admission of the Honors Program is dependent upon submission of an Acceptable Honors research thesis and passing of a final Honors examination.

2500 General Psychology (4) An introduction to psychology, behavior, and contributing methods and contributions of the major movements and ideas which define contemporary psychology.

2518-28: Honors General Psychology (4,4) First quarter and examination of general psychology. Second quarter participation is optional research, either individually or group arranged. Prereq for 2518: Minimum ACT Composite 28; GPA 3.2. Prereq for 2528: Admission by consent of department.

2520: Honors General Psychology (4) An introduction to psychology, behavior, and the development and research findings on individual psychology. Recommended: 2500.

2530 Psychology as a Social Science (4) An introduction to individual behavior and experience in a social context. 2500 recommended.

2540 Psychology of the Individual (4) Study of individual, behavior, and the progressive changes in behavior that occur in natural environments. Introduction to personality, development and abnormal psychology. Recommended: 2500.

3120 Social Psychology (4) General survey of theories, methods, and research findings on individual behavior in a social context. Prereq: 2500.

3129 Social Psychology Laboratory (2) Prereq: 3120; recommended prereq: 3319.

3150 Psychological Statistics (4) Introduction to basic statistical methods used in behavioral sciences. Not open to students with credit in Statistics 2100, Mathematics 3000, Sociology 3920, or equivalent. Prereq: 2 years of high school algebra or one course in college algebra.

3211 Learning and Thinking (4) Study of theoretical and empirical learning and thinking. General psychology recommended.

3219 Laboratory in Learning and Thinking (2) Prereq: 3210; recommended prereq: 3319.

3220 Motivation and Emotion (4) Current theories, approaches, and their development.

3240 Psychology of Music (4) Introduction to psychological overtones of pitch, perception, and psychological principles of musical sounds and instrumentation. Prereq: consent of instructor.

3319 Introduction to Research in Psychology (3) Basic techniques of research in behavioral science, including experimentation and naturalistic observation.

Honor's: N. W. Dye, Ph.D., Tennessee; J. W. Erickson, Ph.D., Tennessee; E. D. Sundstrom, Ph.D., Utah; C. L. Travis, Ph.D., California (Davis).

Departmental Requirements: M. A. Rentz, Ph.D., Syracuse.

Student Organization: Psi Chi.

Honors Program: Alabama Distinguished Service Professor, Dr. C. L. Travis, Ph.D., Tennessee.
4620-30 Seminar in Group Processes (3,3) Didactic and laboratory experience for those qualified for further training as group facilitators. Prereq: 4610 and consent of instructor.

4640 Psychological Tests and Measures (4) Theory and construction of individual and group measures; survey of various methods of assessment of intelligence, personality, special abilities, and educational achievement. Prereq: 3510.

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

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

4670 Cognitive Development (4) Theory and research on development of language and thinking in children and adolescents. Prereq: 3210 or 3550.

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

4719 Physiological Psychology Laboratory (4) Laboratory studies of nervous system and physiological correlates of behavior. Coreq: 4710.

4720 Comparative Animal Behavior (4) Methods and principles of studying animal behavior. (Same as Zoology 4720.)

4729 Comparative Animal Behavior Laboratory (4) Laboratory and field studies. Coreq: 4720. (Same as Zoology 4729.)

4750 Evolution and Ontogeny of Social Behavior (4) Genetic, evolutionary, ecological, and developmental processes as they apply to social organization and dynamics of vertebrates. Prereq: Consent of instructor.

4770 Psychology and the Law (4) Psychological aspects of the legal system. Prereq: Junior Standing.

4780 Psychology and Current Issues (4) Research and theory relevant to selected contemporary issues. 4 class hours per week. Prereq: Consent of instructor. May be repeated. Maximum credit 8 hours.

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

4850 Learning Theories (4) Historical and theoretical development of learning models. Prereq: 3210.

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

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

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

4910 Senior Seminar in General Psychology (4) Integrative review of major problems in psychology. Intensive examination of selected topics. Prereq: Consent of instructor.

4948-58-68 Honors: Reading and Research (4,4,4) Honors candidates only.

4978-88-88 Honors: Senior Reading and Research (4,4,4) Honors candidates only.

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

5000 Thesis

5002 Non-Thesis Graduation Completion (3-15)

5017 Colloquium In Ethology (1)

5019 Research Practicum (1-3)

5050 Methods of Research in Applied Psychology (3)

5070 Seminar in College Teaching (2)

5079 Practicum In College Teaching (2)

5100 Developmental Psychology (3)

5105 Developmental Assessment (3)

5110 Clinical Aspects of Human Sexuality (3)

5111 Seminar In Current Issues in School Psychology (3)

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

5149-59-69 Practicum In School Psychology I (2,2,2)

5170-80-90 Proseminar In Organization Psychology (3,3,3)

5200 Topics In Developmental Psychology (3)

5300 Readings and Special Problems in Psychology (1-5)

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

5325 Behavioral Interventions (3)

5340 Group Dynamics (3)

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

5400 Psychophysics and Scaling Methods (3)

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

5450 Human Problems In Administration (3)

5490 Continuing Education In Mental Health (1-4)

5500 Fundamentals of Psychometrics (4)

5510 Instrumentation for Psychological Research (3)

5520 Theory of Mental Measurement (3)

5530 Issues In Applied Psychological Measurement (3)

5540 Probability Models In Psychology

5550 Advanced Social Psychology (3)

5560 Seminar In Social Psychology (3)

5560 Theories of Personality (3)

5581-82-83 Clinical Psychology I: Human Development and Personality (3)

5589 Psychological Techniques Laboratories (2)

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

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

5610-20 Psychology of Learning (3,3)

5650 Ethics In Professional Psychology (2)

5670 Forensic Psychology (2)

5680 Neural Basis of Behavior (3)

5690 Psychopharmacology (3)

5702 Community Psychology (3)

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

5750 Ethological Psychology (3)

5750 General Vertebrate Neuroanatomy (3)

5769 Advanced Techniques in Physiological Psychology (3)

5790 Seminar In Psycholinguistic Concepts In Speech Pathology (3)

5840 Student Appraisal (3)

5850-60-70 Psychological Appraisal (3,3,3)

5859-69-79 Practicum In Psychological Appraisal (2,2,2)

5980 Counseling Techniques (3)

5980-60 Theory and Practice of Consultation (3,2)

5989-69 Practicum In Psychological Appraisal (2,2,2)

6000 Doctoral Research and Dissertation

6050 Seminar On Methods of Social Research (3)

6089 Internship In Community Psychology (1-6)

6099 Internship In School Psychology (1-6)

6100 Seminar In Community Psychology (3)

6150 Seminar In Program Evaluation (3)

6159 Practicum In Program Evaluation (3)

6210-20-30 History, Systems, and Theories In Psychology (3,3,3)

6250-60-70 Seminar In Organizational Psychology (3,3,3)

6280-90 Factor Analysis (3,3)

6310 Seminar In Motivation and Emotion (3)

6319 Field Work In School Psychology; Level II (2)

6320 Seminar In Research Methods (3)

6330 Seminar In Learning (3)

6340 Seminar In Developmental Psychology (3)

6350 Seminar In Thinking (3)

6360 Seminar In Sensation and Perception (3)

6370 Seminar In Theoretical Psychology (3)

6380 Seminar In Industrial Psychology (3)

6385 Hypnosis and Imagery (3)

6390 Seminar In Psychotherapy (2)

6395 Seminar In Assessment (3)

6400 Seminar In Changing Concepts In Clinical Psychology (3)

6405 Seminar In Hypopathology (3)

6410-20-30 Psychotherapy (3,3,3)

6411-12-13-14 Psychotherapy; Elective Concentration Learning Laboratory (2,2,2)

6419-29-39 Psychotherapy Practicum (1-3,1-3,1-3)

6450-60 Advanced Psychometrics (3,3)

6490 Continuing Education In Professional Mental Health (1-4)

6491 Field Placement In Clinical Psychology Level 1 (1-8)

6492 Field Placement In Clinical Psychology Level 2 (1-8)

6493 Field Placement In Clinical Psychology Level 3 (1-8)

6494 Field Placement In Clinical Psychology Level 4 (1-8)

6500 Seminar In Psychometrics (3)

6520 Experimental Design (3)

6550 Seminar In Advanced Social Psychology (3)

6575 Seminar In Mental Health Administration (3)

6650 Assessment of Human Services Organizations (3)
Religious Studies (863)

Professors: C. H. Reynolds (Head), Ph.D. Harvard; F. S. Lusby, B.D. Colgate (Rochester); D. L. Dungan, Th.D. Harvard; W. L. Humphreys, Th.D. Union; D. E. Linge, Ph.D. Vanderbilt; R. V. Norman, Jr. (Associate Vice Chancellor for Academic Affairs), Ph.D. Yale.


UNDERGRADUATE

Major: Two options are available in religious studies. One religious studies 2000-level course is a prerequisite for either option, and Religious Studies 4850 is required in both options.

The basic option consists of 36 hours of courses at the 3000 level or above (excluding 4850) with a minimum of 12 hours selected from courses listed below under History and Literature of Religions and a minimum of 12 hours selected from courses listed below under Undergraduate Religious and Cultural Traditions of Ancient Israel from earliest period to Exile.

1200 The Rise of Judaism (4) Political, religious, and historical development of Judaism in the Middle East from the late 2nd millennium B.C. to 70 C.E., 3000-186 C.E. (same as History 8600-70-80-90).

1300 Jewish History and Cultural Traditions (4) Introduction to the study of religion through selected historical traditions, East and West.

1310 Introduction to Near Eastern Religions (4) Introduction to the study of religion through selected ancient Near Eastern and Mediterranean traditions.

1320 Issues in Religious Studies (4) Introduction to the study of religion through selected religious problems and alternatives.

HISTORY AND LITERATURE OF RELIGIONS

3060-70-80 History of Western Religious Thought and Institutions (3,3,3) 3060—First century to 5th century. 3070—6th century to 10th century. 3080—11th century to 1900. (Same as History 3060-70-80).

3110 Ancient Israel's Historical and Religious Traditions (4) Political, religious, and cultural history and traditions of ancient Israel from earliest period to Exile.

3120 The Rise of Judaism (4) Political, religious, and historical development of Judaism in the Middle East from the late 2nd millennium B.C. to 70 C.E., 3000-186 C.E. (same as History 8600-70-80-90).

3130 Religious Traditions of Ancient Egypt (4) Religious and cultural traditions of ancient Egyptian culture, interaction with modern cultures.

3140 Religious Traditions of Ancient Mesopotamia (4) Religious and cultural traditions of ancient Sumerians, Babylonians, and Assyrians.

3210 Early Greek Mythology (3) (Same as Classics 3210.)

3220 Greek Mythology in the Classical Period (3) (Same as Classics 3220.)

3230 Roman Mythology (3) (Same as Classics 3230.)

3270 Russian Philosophical and Theological Thought (4) (Same as Russian 3270 and Philosophy 3270.)

3311-12 Images of Jesus (4,4) Introduction to and modern portrayals of Jesus, understood within their cultural milieu. Must be taken in sequence.


3340 Judaism in the Common Era. (3) Survey of literature and traditions of Judaism in the Common Era.

3411-12 The Reformation (3,3) 3411—Renaissance, 3412—Reformation, Counter Reformation, and Wars of Religion, 1517-1618. (Same as History 3411-12.)

3440 Religion of Primitive Peoples (3) (Same as Anthropology 3440.)

3490 African Religions (4) Examination of religions of the indigenous peoples of Africa, including a study of functions of myths, rites, and symbols and an analysis into how certain political movements in Africa have been and are informed by religious sensibilities. (Same as Anthropology 3490 and Black Studies 3490.)

3510-20 Religion in America (4,4) Not a survey but a representative profile of religion in America, past and present, organized each quarter around theme or problem. May be taken independently.

3530 Religion and Racism in America (4) Historical and critical survey of role played by religion in supporting and countering American racial injustice. (Same as Black Studies 3550.)

3560 Black Religion in America (4) Historical and critical examination of formation and development of black religious thought and institutions in America. (Same as Black Studies 3560.)

3650 Philosophy and Religion in India (4) (Same as Philosophy 3650.)

3660 Buddhist Philosophy and Religion (4) (Same as Philosophy 3660.)

3671 Religion and Philosophy in China (4) (Same as Philosophy 3671.)

3672 Religion and Society in Japan (4) (Same as Sociology 3672.)

3680 Islam (4) Origin and early history, rapid spread as a world faith, development of Muslim theology and culture, interaction with modern cultures.

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

3711 Literature of the English Bible (3) (Same as English 3711.)

3770 Zen Buddhism (3) Examination of historical, philosophical, and meditational materials of Zen. Special emphasis upon Zen theories of emptiness, no-mind, sudden enlightenment, and the koan.

4200 Classical Indian Systems of Philosophy: The Moksha Tradition. Basic writings and philosophical problems of the traditions of Samkhya, Yoga, and Vedanta. Prerequisite Religious Studies/Philosophy 3650 or 3660. (Same as Philosophy 4200.)

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

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

4450 Topics in American Religion (4) Prerequisite: One of the following: 3510, 3520, 4410, or consent of instructor. Prerequisite: consent of instructor. May be repeated. Maximum credit 12 hours.

4670 Topics in Eastern Religions (4) Selected figures, issues, and institutions. Senior and graduate students only, except by consent of department. Prerequisite: consent of instructor. May be repeated. Maximum credit 12 hours.

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

PROBLEMATIC OF RELIGION

3011 Phenomenology of Religion (4) Examination of recurrent forms, themes, and patterns in history of religions, such as high gods, cultural heroes, initiations, and asceticism.

3021 Religious Myth, Symbol, and Ritual (4) Study of interrelation of myths, symbols, and rituals among preliterate peoples through a specific motif, such as solar, lunar, and communal.

3500-10 Religious Ethics (4,4) Historical and critical survey of religious ethics, basic theories and their application in social problems.

3511 Medical Ethics (4) (Same as Philosophy 3611.)

3630 Topics in Religious Ethics (4) Examination of particular theoretical issues and social problems from perspectives of religious ethics. May be repeated once for credit.

3690 Philosophy of Religion (4) (Same as Philosophy 3690.)

3715 Religious Thought in the Nineteenth Century (4) Major problems and themes in European and American religious thought between 1800 and the beginning of World War I.

3720 Contemporary Religious Thought (3) Major themes, issues, and thinkers.

3740 Issues in Science and Religion (3) Relation of religion to history, methods, and theories of science.
3750 Theology and Literature (3) Exploration of issues raised for religious inquiry by phenomenon of literature. Relation of religious language to certain forms of human expression (symbol, metaphor, myth, image) identified in study of literature.

3760 Eastern Religions and Western Thought (3) Critical consideration of influences of Hindu and Buddhist philosophy on Western thinkers.

3780 The Literature of Dissent (3) Critique of religion in History: Hellenic, Arabic, Hebrew, and monotheism, and revolution in such thinkers as Lucretius, Spinoza, Voltaire, Feuerbach, Marx, Nietzsche, Russell, and Camus.

4101 Foreign Study (1-16) See page 185.

4102 Off-Campus Study (1-16) See page 184.

4103 Independent Study (1-16) See page 184.

4111-21 Modern Religious Philosophies (4,4) Examination of the religious implications of major thinkers and movements. 4111—Nicolas of Cusa to Hume. 4121—Kant and the 19th century. Prereq: 9 hours of philosophy other than logic. (Same as Philosophy 4111-21.)

4370 Theoretical issues in Medical Ethics (4) (Same as Philosophy 4370.)

4410 American Religious Thought (4) Selected figures, movements, and problems in American religious thought from colonial period to present.

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

4610 Topics in Western Religious Thought and Institutions (4) Selected and Institutions (4) Selected figures, issues, and institutions. Seniors and graduate students only, except by consent of department. Prereq: 3360-70. May be repeated. Maximum credit 12 hours.

4810-20-30 Readings and Research in Religious Studies (3,4-3,4-3) Prereq: Consent of instructor. May be repeated. Maximum credit 12 hours.

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

4950 Theory of Religion (4) Elements for construction of theory of religion drawing on resources from field of psycho-history, social psychology, sociology of religion, cultural anthropology, theology, and comparative religion.

4960 Tradition, Change, and Modernity of Asia (4) Comparative study of processes of religious and social change seen in historical context in Asian societies. Comparative focus of course will vary each year (e.g., China and Japan, India and South Asia, etc.). May be repeated once for credit. (Same as Sociology 4960.)

GRADUATE

5101 Foreign Study (1-12)

5102 Off-Campus Study (1-12)

5103 Independent Study (1-12)

5310-20 Topics in Religion and Society (4,4)

5355 Orientation to Medical Ethics (2)

5585 Applied Ethical Theory (4)

5510-20 Topics in the History of Religion (4,4)

5710-20 Topics in Religious Thought (4,4)

RELATED LANGUAGE STUDIES

2650 Readings in Helenistic Greek (4) (Same as Classics 2650.)

3140-50-60 Elementary Classical Hebrew (3,3,3) 3140—Basic elements of Hebrew, phonology, script, morphology, and syntax. 3150—Continued grammar study and selected reading and translation. 3160—Continued reading and translation. Introduction to basic elements of text, literary form, historical, and traditional criticism.

3170-80-90 Intermediate Classical Hebrew (4,4,4) 3170—Torah and Former Prophets. 3180—Prophets. 3190—Wisdom and prophetic Hebrew. Prereq: 3151 or consent of instructor.

4740-50-60 Elementary Sanskrit (4,4,4) Introduction to grammar of classical Sanskrit and reading of annotated selections of epic and classical Sanskrit. (Same as Asian Studies 4710-50-60.)

4770-80-90 Intermediate Sanskrit (4,4,4) Advanced grammatical constructions and reading of epic and classical religious and narrative materials (e.g. Bhagavad Gita, Mahabharatam, Ramayana, Katsasatragam). Prereq: 4760 or consent of instructor. (Same as Asian Studies 4770-80-90.)

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

Romance Languages

Professors: P. E. Barrette, Ph.D. California (Berkeley); C. W. Cobb, Ph.D. Tulane; J. C. Elliott, M.A. Illinois; T. B. Irving (Emeritus), Ph.D. Princeton; H. E. Lewald, Ph.D. Minnesota; T. F. Longino (Emeritus); Ph.D. Columbia; M. Petrovska, Ph.D. Kentucky; M. J. O. Swain (Emeritus), Ph.D. Illinois; A. M. Vazquez (Gonzaga), Ph.D. Minnesota; G. E. Wade (Emeritus), Ph.D. Ohio State; A. H. Wallace, Ph.D. North Carolina.

Associate Professors: W. F. Byers (Emeritus), Ph.D. Wisconsin; R. M. E. DeFyckse, Ph.D. Illinois; W. H. Heffin, Jr. (Head), Ph.D. Florida State; K. D. Levy, Ph.D. Kentucky; C. R. M. Pinsky, Ph.D. California (Berkeley); Y. M. Washburn, Ph.D. North Carolina.

Assistant Professors: A. S. Allen, Ph.D. California (Berkeley); T. R. Arrington, Ph.D. Kentucky; E. J. Campion, Ph.D. Yale; M. H. Hanidesman, Ph.D. Florida.

Instructors: C. G. Cox, M.A. Tennessee; D. M. DiFuccio, M.A. Kansas; M. T. Rabot, Cert. de Lic. Poitiers; B. S. West, M.A. Louisiana; P. A. Wilson, M. A. Tufts.

Placement Examination: Students who have had two or more year's work in French, Italian, or Spanish through private study, tutoring, or Spanish 2510. During the first week of the quarter a placement test will be given, and students will be advised if a change in registration is indicated.

Proficiency Examinations: Students who have acquired a knowledge of French, Italian, or Spanish through private study, tutoring, or Spanish 2510. Students earning a grade of C or better on a such a test will receive credit for a limited number of courses. Superior students are encouraged to proceed as rapidly as their achievement permits.

Note to Majors and Minors in French, Italian, or Spanish and Minors in Portuguese: Students who have completed nine hours of upper-division courses in French, Italian, or Spanish literature at the University of Tennessee, or equivalent work at other institutions, must either (1) have a minimum grade point average of 2.0 in French, Italian, or Spanish before being accepted for a major's program, or (2) pass by demonstrating, during the first week of the quarter, not less than a minimum ability equivalent to a grade of middie C on the current examination in French or Spanish 2130 or French, Italian, or Spanish 2523.

All majors must take upper-division courses under more than one instructor, and must have an acceptable pronunciation and an adequate reading knowledge of the language.

Latin American Studies. See Cultural Studies.

Certification for Teaching French or Spanish in Tennessee

Consul Certification Clerk, Room 212

Claxton Education Building.

French (405)

Major: Consists of 36 hours in courses numbered 3110 or above. Students whose primary interest is literature must have the following courses (or their equivalent, with consent of the department): 3110-20-30 or 3810-20-30 (aspects or survey of literature, 9 hours); 3410 or 3420 or 3430 (intermediate composition and conversation, 3 hours); 4210 (phonetics, 3 hours); 4220 or 4230 (advanced grammar, 3 hours); 9 hours of literature at the 4000 level; 9 additional hours selected from courses in literature, civilization, or Spanish. Students whose primary interest is language must have the following courses (or their equivalent, with consent of the department): 3110-20-30 or 3810-20-30 (aspects or survey of literature, 9 hours); 3410 or 3420 or 3430 (intermediate composition and conversation, 3 hours); 4210 (phonetics, 3 hours); 4220 or 4230 (advanced grammar, 3 hours); 6 hours selected from courses 3410-20-20 (intermediate composition and conversation, 2220-30 (advanced grammar), or 4250-60-70 (linguistics); 6 hours of literature at the 4000 level; 6 additional hours selected from courses in literature, language, or civilization. With either of the above options, students may substitute Foreign Study (4101) for certain courses; students with special interests, such as comparative literature, may make certain substitutions with consent of department.

Minor: Consists of 24 hours in courses numbered 3110 or above, including the following: 3110-20-30 or 3810-20-30 (aspects or survey of literature, 9 hours); 3410 or 3420 or 3430 (intermediate composition and conversation, 3 hours); 4210 (phonetics, 3 hours); 4220 or 4230 (advanced grammar, 3 hours); 9 additional hours selected from courses in literature, language, or civilization. Students pursuing a minor are strongly advised to consult with a departmental adviser.

Courses which are the equivalents of the foregoing may be substituted with consent of the department, but courses in French literature in English translation may not be counted toward either a major or a minor.

1110-20-30 Elementary French (3,3,3) This sequence strongly recommended for students intending to take upper-division courses in French. Must be taken in sequence of 3 hours.

1118-28-38 Honors: Elementary French (3,3,3) Honors course for students of superior ability. 1118 not for students who have taken French in high school. Freshmen admitted to 1128 and 1138 on basis of diagnostic test or conference with instructor, high school average, and performance on ACT.

Class held to maximum of 15 for individual attention. Class covers normal elementary French program for first year, but is enriched. Students expected to spend normal amount of preparation time. Students finding course too
difficult may easily transfer to regular class. Potential majors and minors in French are urged to take this course. Students passing 1110 with grade of B or higher are eligible for 1128 rather than 1120. Students passing 1120 with grade of B or higher are eligible for 1138 rather than 1130.

1510-20 Elementary French (4,4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.

2110-20-30 Intermediate French (3,3,3) This sequence strongly recommended for students intending to take upper-division courses in French. Must be taken in sequence. 3 hours and 2 labs.

2118-28-38 Honors: Intermediate French (3,3,3) Honors course for students of superior ability in French. Incoming freshmen admitted on basis of diagnostic test, high school average, and performance on ACT. Class held to a maximum of 15 for individual attention. Students follow enriched program which emphasizes speaking ability and reading, including literary selections. Students passing 2110 with grade of B or higher are eligible for 2128 rather than 2120. Students passing 2120 with grade of B or higher are eligible for 2138 rather than 2130. Students earning a grade of A or B in 2138 are eligible to take a proficiency exam for French 2000 credit for French 3000 given to students receiving a grade of A or B on this examination.

2510-20 Intermediate French (4,4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.

2610-20 Panorama of French Culture (4,4) 2610—Cultural forces which produced the French nation; art, literature, architecture under French classical influence; and the culture. 2620—Arts in Age of Reason and trends in French culture during the Revolution (1789-1815); in Romanticism, in bourgeois art of 19th century, and in modern movements of surrealism, dadaism, and existentialism.

3000 French Translation (3) Development of linguistic skills necessary for satisfactory work in courses above 2520. Recommended for students who feel they would benefit from additional training beyond 2130 or 2520 in basic skills of reading, speaking and writing French.

3010-20-30 Elements of French for Upper- Division and Graduate Students (3,3,3) Elements of language, elementary and advanced readings. Open to graduate students preparing for language examinations, and upper-division students desiring reading knowledge of the language. Undergraduate credit only. Not for credit for those having had 1110-20-30, 1510-20; or equivalent. No auditors.

3110-20-30 Aspects of French Literature (3,3,3) Structure of the language and various periods of the literature; emphasis upon the genres (poetry, novel, drama) varied. Prereq: 2130, 2520, or equivalent. Recommended for literature majors and graduates.

3210-30 French Literature In English Transla- tion (3,4-3,4-3) 3210-From the origins through the Renaissance: Life of St. Alexus, Song of Roland, Romance of the Rose, Babelais, Du Béhaty, 3220—The Classical period and the Age of Reason: The great dramatists, La Princesse de Cleves, Voltaire, Rousseau, 3230—The 19th and 20th centuries; Bazar, Flaubert, Proust, Camus. No change in credit hours after add deadline. Option of 4 hours credit must be presented in amount of extra work added that required for 3 hours.

3240 Women in French Culture (4) Influential role of women in shaping French history and culture. Feminists (Giovanni, Stendhal, Balzac, Sarah Bernhardt; intellectuals (Mme. de Staël); actresses (Sarah Bernhardt); scientists (Marie Curie) will be among the important figures studied.

3250 Masterpieces of French Fiction In English Translation (4) These works studied are Romances of Tristan and Iseult, Eugene Grandet, Swann's Way, The Wanderer, and short stories of Maupassant and Merimée.

3410-20-30 Intermediate Composition and Conver- sation (3,3,3) Grammatical analysis of modern French prose; review of grammatical principles and their application to French prose; intensive study of French, both written and oral; exercises in free composition. Prereq: 2130 or 2520.

3450 Composition and Conversation for Careers in Business (3) Analysis of contemporary French lan- guage as it applies to business transactions. Under- standing and composing business letters; oral com- munication and elements of French Culture related to good business practices. Students will work in simulated business transactions. Only one of the courses, 3430 or 3450, may be applied toward the major. Prereq: 3410 or 3420 or permission of instructor.

3810-20-30 Survey of French Literature (3,3,3) Chronological study of various genres (poetry, novel, drama) by periods, from medieval period to the present. May be taken in place of 3110-20-30. Prereq: 2130, 2520, or equivalent.

4001-02-03 Introduction to consecutive and simul- taneous French Translation (3,3,3) 4001—Consecutive Translation into English; 4002—Consecutive Transla- tion to and from English; 4003—Simultaneous Transla- tion to and from English. Training of students with intermediate or advanced knowledge of French for consecutive and simultaneous oral translation from French into English, and vice versa, on a variety of practical subjects such as business, economics, polit- ics, and sciences. The course will be given mainly in the language lab with additional classroom supervision by the instructor. Prereq: 3430 or equivalent. Must be taken in sequence.

4010 Masterpieces of French Literature in English Translation (3) No foreign language credit.

4011 Foreign Study (1-16) See page 185.

4101-20-30 French Literature of the Seventeenth Century (3,3,3) Prereq: 2130, 2520, or equivalent.

4150 Theatrical French (1-3) Performance in one or more French plays. May be repeated for credit with consent of department. Prereq: 2130, 2520, or equivalent, and consent of instructor.

4160-70-80 Advanced Conversation (2,2,2) Intensive study and preparation of simultaneous conversa- tions. Subjects range from travel and current events to literature and aspects of national culture. Prereq: Completion of 9 hours of courses on 3000 level.

4210 Phonetics (3) Prereq: 2130, 2520, or equivalent.

4220-30 Advanced Grammar (3,3) Prereq: 2130, 2520, or equivalent.

4250 Introduction to Descriptive Linguistics (3) Phonetics and phonemics, morphology and syntax. Types of languages, linguistic groups, dialects, and dialect geography. Application of descriptive linguistics—dialect linguistics, dialect study; its practical use in learning languages and in language teaching. Introduction to transformational grammar. Prereq: 9 hours of upper-division English or 9 hours of upper-division courses in a modern or ancient language (exclusive of German and French 3100-20,330 courses in literature and translation, and general courses in Latin and Greek requiring no knowledge of these languages), or con- sent of department. (Same as German, Russian, Span- ish, and Linguistics 4250.)

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

4270 Romance Linguistics (3) Development of classi- cal Latin through vulgar Latin into major Romance languages. (Same as Spanish and Linguistics 4250.)

4310-20-30 French Literature of Eighteenth Centu- ry (3,3,3) Prereq: 2130, 2520, or equivalent.

4350-60-70 Medieval French Literature (3,3,3) Medi- eval works in modern French texts. Prereq: 2130, 2520, or equivalent.

4410-20-30 Advanced Grammar (3,3,3) Prereq: 2130, 2520, or equivalent.

4510-20-30 French Literature of Nineteenth Centu- ry (3,3,3) Prereq: 2130, 2520, or equivalent.

4535-60-70 The Philosophes (18th Century) (3,3,3)

4540-20-30 The French Novel (3,3,3)

4550-60 Lyric Poetry of Nineteenth Century (3,3)

4740 Baudelaire and the Symbolists (3,3,3)

4750-20-30 Trends in Contemporary French Litera- ture (3,3,3)

4750-60 Advanced Syntax and Stylistics (3,3,3)

4760 Problems in Romance Linguistics (3,3,3)

4790 20-30 Seminar in French Literature (3,3,3)

5101 French Theatre of the 18th and 19th Centu- ries (3,3)

5120-30 French Directing Readings (3,3,3)

5350-60-70 The Philosophes (18th Century) (3,3,3)

5410-20-30 The French Novel (3,3,3)

5450-60 Lyric Poetry of Nineteenth Century (3,3)

5470 Baudelaire and the Symbolists (3,3,3)

5610-20-30 Trends in Contemporary French Litera- ture (3,3,3)

5650-60 Advanced Syntax and Stylistics (3,3,3)

5670 Problems in Romance Linguistics (3,3,3)

5710-20-30 Seminar in French Literature (3,3,3)

5910 Literary Criticism: Foundations of Romance Criticism (3,3,3)

Italian (584)

UNDERGRADUATE

Major: Consists of 36 hours of courses numbered 3110 or above, to include the following (or equivalents, with consent of the department): 5410-20-30 (advanced grammar, composition, and conversation, 9 hours); 3110-20-30 or 3510-20 (aspects of Italian literature, at least 8 hours); 9 hours of literature at the 4000 level; 10 additional hours selected from courses in literature, language, or civilization. Students may substitute Foreign Study (4101) for certain courses; students with special interests, such as comparative literature, may make certain substitutions with consent of the department.

Minor: Consists of 24 hours in courses numbered 3110 or above, to include the following: 3410-20-30 (advanced grammar, composition, and conversation, 9 hours); 3110- 20-30 or 3510-20 (aspects of Italian literature, at least 8 hours); 7 additional hours selected from courses in literature, language, or civilization.

Courses in Italian literature in English translation may not be counted toward either a major or a minor.
4760 Italian Folklore (3) Folk arts, music, traditions, rituals, and lore of Italy from Middle Ages to present. (Same as Anthropology 4760.)

GRADUATE
See Graduate Catalog for requirements.

5011 Techniques in Literary Analysis (2)

5101 Foreign Study (1-12)

5102 Off-Campus Study (1-12)

5161-61-72 Bibliography and Methods of Research (1,1,1)

5610-50-50 Readings in Italian Literature (3,3,3)

5710-20-30 Seminar in Italian Literature (3,3,3)

Portuguese (811)

UNDERGRADUATE
Minor: A minor only is offered in Portuguese, consisting of 8 hours in the 3510-20 sequence (aspects of Portuguese literature) and 18 hours in the 4310-20-30 sequence (directed readings in Brazilian and Portuguese literature, a course of variable content which may be repeated for credit). Students may substitute Foreign Study (4101) for any of the above courses.

1510-20 Elementary Portuguese (4,4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.

2510-20 Intermediate Portuguese (4,4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.

3510-20-30 Portuguese literature (4,4,4) May be repeated with consent of instructor. Recommended for literatures majors.

4310-20-30 Directed Readings in Brazilian and Portuguese Literature (3,3,3) May be repeated with consent of instructor. Recommended for literature majors.

5101 Foreign Study (1-12)

5102 Off-Campus Study (1-12)

5103 Independent Study (1-12)

Spanish (924)

UNDERGRADUATE
Major: Consists of 36 hours in courses numbered 3310 or above. Students whose primary interest is literature must have a minimum of 8 hours chosen from the following sequences: 3110-20-30 (aspects of Spanish literature, 9 hours); 3310-20-30 (aspects of Spanish American literature, 9 hours) or 3610-20 (survey of Spanish literature, 8 hours). 3410 (composition and conversation, 3 hours); 4210 (phonetics, 3 hours); 9 hours selected from courses 3420-30 (aspects of Spanish literature, 9 hours); 3510-20 (aspects of Spanish American literature, 9 hours) or 3610-20 (survey of Spanish literature, 8 hours); 3410 (composition and conversation, 3 hours); 4210 (phonetics, 3 hours); sufficient additional hours selected from courses in literature, language, or civilization to fulfill the major requirement.

With either of the above options, students may substitute Foreign Study (4101) for certain courses, students with special interests such as comparative literature, may make certain substitutions with consent of the department.

Minor: Consists of 24 hours in courses numbered 3110 or above, including a minimum of 8 hours chosen from the following sequences: 3110-20-30 (aspects of Spanish literature, 9 hours); 3310-20-30 (aspects of Spanish American literature, 9 hours); or 3610-20 (survey of Spanish literature, 8 hours); 3410 (composition and conversation, 3 hours); 4210 (phonetics, 3 hours); sufficient additional hours selected from courses in literature, language, or civilization to fulfill the minor requirement. Students pursuing a minor are strongly advised to consult with a departmental advisor.

Courses which are the equivalents of the foregoing may be substituted with consent of the department; but courses in Spanish literature in English translation may not be counted toward either a major or a minor.

1110-20-30 Elementary Spanish (3,3,3) This sequence strongly recommended for students intending to take upper-division courses in Spanish. Must be taken in sequence. 3 hours and 2 labs.

1510-20 Elementary Spanish (4,4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.

1518-28 Honors: Elementary Spanish (4,4) Honors course for students of superior ability. 1518 not open to students who have taken Spanish in high school. Freshmen are admitted on the basis of a diagnostic test or recommendation with the instructor. Prerequisite: Permission of the department. Students who find the course too difficult may easily transfer to a regular class. Potential major and minor in Spanish are urged to take this course. Students who pass 1510 with a grade of B or higher may take 1528 instead of 1520.

2110-20-30 Intermediate Spanish (3,3,3) This sequence strongly recommended for students intending to take upper-division courses in Spanish. Must be taken in sequence. 3 hours and 2 labs.

2510-20 Intermediate Spanish (4,4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.

2518-28 Honors: Intermediate Spanish (4,4) Honors course for students of superior ability in Spanish. Incoming freshmen are admitted on the basis of a diagnostic test, high school average, and performance on the ACT. Casa
ewill be held to a maximum of 15 so that each student may receive more attention. Students follow the normal Spanish program for the first year, but will be enriched wherever possible. Students will be expected to spend only the normal amount of time in preparation. Those who find the course too difficult may easily transfer to a regular class. Potential major and minor in Spanish are urged to take this course. Students who pass 1510 with a grade of B or higher may take 1528 instead of 1520.

401 Foreign Study (201-20) See page 185.

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

GRADUATE

5101 Foreign Study (1-12)

5102 Off-Campus Study (1-12)

5103 Independent Study (1-12)

Spanish (924)

UNDERGRADUATE
Major: Consists of 36 hours in courses numbered 3310 or above. Students whose primary interest is literature must have a minimum of 8 hours chosen from the following sequences: 3110-20-30 (aspects of Spanish literature, 9 hours); 3310-20-30 (aspects of Spanish American literature, 9 hours); or 3610-20 (aspects of Spanish American literature, 8 hours); 3410 plus 3420 or 3430 (composition and conversation, 6 hours); 4210 (phonetics, 3 hours); 9 hours of literature at the 4000 level; 3 hours of civilization; sufficient additional hours selected from courses in literature, language, or civilization to fulfill the major requirement. Students whose primary interest is language must have a minimum of 8 hours chosen from the following sequences: 3110-20-30 (aspects of Spanish literature, 9 hours); 3310-20-30 (aspects of Spanish American literature, 9 hours); or 3610-20 (survey of Spanish literature, 8 hours); 3410 (composition and conversation, 3 hours); 4210 (phonetics, 3 hours); 9 hours selected from courses 3420-30 (composition and conversation), 4220-30 (advanced grammar), or 4250-60-70 (linguistics); 3 hours of literature at the 4000 level; 3 hours of civilization; sufficient additional hours selected from courses in literature, language, or civilization to fulfill the major requirement. With either of the above options, students may substitute Foreign Study (4101) for certain courses, students with special interests such as comparative literature, may make certain substitutions with consent of the department.

Minor: Consists of 24 hours in courses numbered 3110 or above, including a minimum of 8 hours chosen from the following sequences: 3110-20-30 (aspects of Spanish literature, 9 hours); 3310-20-30 (aspects of Spanish American literature, 9 hours); or 3610-20 (survey of Spanish literature, 8 hours); 3410 (composition and conversation, 3 hours); 4210 (phonetics, 3 hours); sufficient additional hours selected from courses in literature, language, or civilization to fulfill the minor requirement. Students pursuing a minor are strongly advised to consult with a departmental advisor.

Courses which are the equivalents of the foregoing may be substituted with consent of the department; but courses in Spanish literature in English translation may not be counted toward either a major or a minor.

1110-20-30 Elementary Spanish (3,3,3) This sequence strongly recommended for students intending to take upper-division courses in Spanish. Must be taken in sequence. 3 hours and 2 labs.

1510-20 Elementary Spanish (4,4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.

1518-28 Honors: Elementary Spanish (4,4) Honors course for students of superior ability in Spanish. Incoming freshmen are admitted on the basis of a diagnostic test, high school average, and performance on the ACT. Casa
ewill be held to a maximum of 15 so that each student may receive more attention. Students follow the normal Spanish program for the first year, but will be enriched wherever possible. Students will be expected to spend only the normal amount of time in preparation. Those who find the course too difficult may easily transfer to a regular class. Potential major and minor in Spanish are urged to take this course. Students who pass 1510 with a grade of B or higher may take 1528 instead of 1520.

2110-20-30 Intermediate Spanish (3,3,3) This sequence strongly recommended for students intending to take upper-division courses in Spanish. Must be taken in sequence. 3 hours and 2 labs.

2510-20 Intermediate Spanish (4,4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.

2518-28 Honors: Intermediate Spanish (4,4) Honors course for students of superior ability in Spanish. Incoming freshmen are admitted on the basis of a diagnostic test, high school average, and performance on the ACT. Casa
ewill be held to a maximum of 15 so that each student may receive more attention. Students follow the normal Spanish program for the first year, but will be enriched wherever possible. Students will be expected to spend only the normal amount of time in preparation. Those who find the course too difficult may easily transfer to a regular class. Potential major and minor in Spanish are urged to take this course. Students who pass 1510 with a grade of B or higher may take 1528 instead of 1520.

2610-20 Panorama of Hispanic Culture (4,4) 2610—Peninsula: Spain from Roman invasion through 19th century, including Colonial period in Latin America. 2620—Highlights of 20th-century culture in both Latin America and Spain.

3000 Spanish Transition (3) Development of linguistic skills necessary for satisfactory work in courses above 3000. Recommended for students who feel they would benefit from additional training beyond 2130 or 2520 in basic skills of reading, speaking, and writing Spanish.

3010-20 Spanish and Spanish American Literature in English Translation (3,3,3) 3010—Mas-
terpieces of classical Spanish literature; Cervantes, renowned for his famous picaresque novel, Don Quixote; Golden Age Theatre. 3020—Masterpieces of 20th century Spanish literature: Unamuno, Lorca, Baroja, Ortega, 3030—Contemporary Spanish American Fiction: Marquez, Borges, Fuentes, Asturias. No change in credit hours after add deadline. Option for 4 hours credit must present an appropriate amount of extra work above that required for 3 hours.

3110-20-30 Aspects of Spanish Literature (3,3,3)
3110—Introduction to Spanish literature, using selections from prose, drama, and poetry of the modern period; 3120—Aspects of Golden Age literature, including the mystics, Cervantes, and Lope de Vega; 3130—Aspects of modern Spanish literature, including Unamuno, Ortega y Gasset, and Garcia Lorca. Prereq: 2130, 2520 or equivalent. Recommended for literature majors. Not offered for graduate credit.

3310-20-30 Aspects of Spanish American Literature (3,3,3). Study (not usually chronological) of various periods of the literature; emphasis upon the genres (poetry, novel, drama) varies. May be taken in place of 3110-20-30 or 3610-20. Prereq: 2130, 2520 or equivalent.

3410-20-30 Intermediate Composition and Conversation (3,3,3). Not offered for graduate credit.

3610-20 Survey of Spanish Literature (4,4) Chronological study of the various genres (poetry, novel, drama) by periods from the medieval period to the present. May be taken in place of 3110-20-30 or 3310-20. Prereq: 2130, 2520 or equivalent.

4030 Masterpieces of Spanish Literature in English Translation (3) No foreign language credit.

4050-60-70 Hispano-Arabic Literature and Culture (3,3,3)

4101 Foreign Study (1-16) See page 185.

4110-20-30 Spanish Literature of the Golden Age (3,3,3) The picaresque novel; Cervantes, the Comedia.

4160-70-90 Advanced Conversation (2,2,2) Intensive training in prepared and spontaneous conversations. Subjects range from travel and current events to literature and aspects of national culture. Prereq: Completion of 9 hours of courses on 3000 level.

4210 Phonetics (3) Prereq: 2130, 2520, or equivalent.

4220-30 Advanced Grammar (3,3) Prereq: 2130, 2520, or equivalent.

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

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

4270 Romance Linguistics (3) (Same as French and Linguistics 4270.)

4410 Spanish Civilization (3) Prereq: 2130, 2520, or equivalent.

4420-30 Latin American Civilization (3,3) Prereq: 2130, 2520, or equivalent.

4450-70 Studies in Modern Spanish Style (3,3) Prereq: 9410-20-30 or consent of instructor.

4510 Special Topics in Nineteenth Century Spanish Literature (3) Prereq: poetry and theatre of Spain in the Nineteenth Century. This course may focus on a genre, movement, or combination of several literary aspects. Course may be repeated with consent of department. Maximum credit 9 hours. Prereq: Intermediate Spanish or equivalent.

4618-38 Honors: Readings in Literature (3,3) Prereq: 3130, 3330, 3520, or equivalent and at least 3.0 on all university work. No credit for grade less than B.


GRADUATE

The Master's Program

See Graduate Catalog for requirements.

Sociology (915)

Russian

See Germanic and Slavic Languages.

Russian and East European Studies

See Cultural Studies.

Eberwine (Vice Chairman for Planning and Administration), Ph.D. Pennsylvania; D. W. Hastings, Ph.D. Massachusetts; W. B. Jones (Emeritus), Ph.D. Vanderbilt; N. E. Shover, Ph.D. Illinois (Urbana); S. E. Wallace, Ph.D. Minnesota.

Associate Professors:


Assistant Professors:

S. H. Redding, Ph.D. California (San Diego); S. Kurth, Ph.D. Illinois (Chicago); K. D. Van Liere, Ph.D. Washington State; K. V. Ritter, Ph.D. Washington.

Instructor:

D. Harris, M.A. Tennessee.

UNDERGRADUATE

Major: Consists of 36 upper-division hours in sociology. Eight lower-division hours in sociology are prerequisite to a major. The minor shall consist of 24 upper-division hours. Eight lower-division hours in sociology are a prerequisite to a minor.

Social Work: Students contemplating entrance into the field of professional social work will have an opportunity to plan their upper-division programs to this end. Suggested course offerings for students planning a social work career can be obtained from the Graduate School of Social Work. The address and general information on the School are given on page 55.

Students who contemplate professional training in social work should discuss their upper-division programs with the Knoxville campus representatives of the School of Social Work.

American Studies, See Cultural Studies.

Latin American Studies. See Cultural Studies.

1510 General Sociology (4) Social origins, structures, forces, processes, and products.

1520 Sociology of Social Problems (4)

3010 Collective Behavior (4) Analysis of collective phenomena emphasizing crowd behavior, responses to disaster; popular crazes, mass movements, and social protests.

3015 Resource Scarcity and Social Change (4) The relationship between scarcity of natural resources and changes in societal beliefs and social structure. Topics include the social and physical limits to growth and collective action problems.

3030 Political Sociology (3) Sociological analysis of American political system. Attention given to consideration of concept of power, elitist/pluralist controversy, end-of-ideology debate, and related topics.

3130 Social Psychology (4) Social psychological analysis of social behavior emphasizing its acquisition, its enactment and its dynamic nature.

3140 Deviance and the Social Order (4) Examination of relations between deviance and social order. Various types of social deviance considered, with focus on their structure, social factors related to process of becoming deviant, and consequences of deviant conduct.

3150 Gender in Society (4) Exploration of gender in society utilizing various sociological perspectives with special focus on the relationships between social structures, social roles and gender identities.

3160 Sociology of Medicine (4) Introduction to sociological approach to study of health and medicine. Emphasis on relationship of demographic characteristics to the prevalence of disease, organization of health care facilities, and staff-patient relationships.

3220 The Family (4) Examine theoretical frameworks and sociological conceptualizations in the sociological study of past and present family forms.

3320 Sociology of Communicative Processes (4) Sociological dimensions of communication and of cont-
munication processes at the organizational and interactional levels.

3330 Prejudice and Racism in the United States (4) (Same as Black Studies 3333.)

3340 Sociology of Poverty and Inequality (3) Factors contributing to condition of poverty and social consequences of being poor. (Same as Black Studies 3340.)

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

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

3420 Urban Problems (4) Cities and the urban context; urban problems and interventions; housing, urban renewal, and neighborhood conservation; the urban poor, the dispossessed, and alienated; planning for urban youth; the urban elderly; the social and physical planning processes; new towns.

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

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

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

3672 Religion and Society in Japan (4) (Same as Religious Studies 3672.)

3680 Sociology of Aging (4) The aged as social minority and subculture in society; role changes in middle age and in old age; significance of increase in proportion of aged in terms of employment, welfare, retirement, and political power.

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

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

3920 Elementary Statistical Methods (4) Statistics used in social research; elementary descriptive techniques; measures of central tendency; dispersion; elementary statistical inference; tests of significance for parametric and non-parametric data.

4000 Special Topics (4) Student-generated course offered at discretion of department upon student initiative. Scope of subject matter determined by students and instructor with consent of department. Effective credit only. Prereq: Determined by department.

4030 Sociology of Sport (4) Social organization and meaning of sport. The relation between sport and play and games, social stratification and sport, sport as an occupation and medium of mass culture, career subcultures, and reciprocal influences of sport and cultural milieu.

4102 Off-Campus Study (1-16) See page 184.

4103 Independent Study (1-16) See page 184.

4110 Population Problems (4) Demographic factors and social structure; trends in fertility, mortality, population growth, migration, distribution, and composition; population policy.

4120 Topics in Social Psychology (4) (Same as Psychology 4129.)

4130 Sociology of Punishment and Corrections (4) Traces development of correctional movement, develops critical sociological perspective on contemporary correctional programs, and provides overview of evaluative research in corrections.

4160 Theory of Attitudes and Values (4) Study of organization, functions and measurement of attitudes and values; approaches to attitude change; and relationships to attitudes, values, and behavior.

4190 Socialization Across the Adult Life Cycle (4) The social process through which people acquire skills and abilities and undergo identity transformations and types of adult socialization (e.g., occupational, institutional) are emphasized.

4310 Criminology (4)

4330 Urban Ecology (4) Examination of public, private, collective, and individual space. Classical school ecology; its neoclassical revision; social area analysis, and cognitive symbolic ecology emphasized. (Same as Urban Studies 4350.)

4410 Educational Sociology (3) (Same as Educ. C & I 4410.)

4530 Community Organization (4) Structure; functions; linkages. Change and development and important community studies. Emphasis on sociological analysis, not on implementation of change.

4540 Social and Religious Change (4) Critical review of historical and contemporary theories and methods employed in study of religious change. Both micro and macro group change. (Same as Religious Studies 4540.)

4560 Formal Organization (4) Analysis of bureaucratization process, division of labor, delegation of authority, channelled communication under system of rationality.

4820 American Minority Groups (4) Minority groups and social structure in American society; analysis of intergroup relations with attention given to both past and present relationships of selected groups to broader society.

4930 Social Movements (4) Development, organization, and function of social movements; attention is given to ideology, leadership, and organization of political, religious, and other types of social movements.

4940 Sociology of Religion (4) Interrelationship of society, culture, and religion. (Same as Religious Studies 4940.)

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

4988 Honors: Sociology (4) Intensive study and research in selected area of interest, including writing of senior thesis. Course credit may be split into two quarters. Candidacy is open only to majors who have shown a marked capability for independent study and who have grade averages of at least 3.0 in the college of Liberal Arts and 3.2 in the department. Prereq: Senior standing.

GRADUATE

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

5000 Thesis

5010 Professional Seminar (1)

5040 Methodological Issues in Social Research (3)

5050 Seminar in Political Sociology (3)

5060-70 Special Social Investigation (3,3)

5125 Seminar in Environmental Sociology (3)

5200 Seminar in Collective Behavior and Social Movements (3)

5210, 5420-30 Social Theory (3,3,3)

5220 Social Control (3)

5230 Seminar in Sociology of Medicine (3)

5251 Historical Demography (3)

5310 Seminar in Methods of Sociological Research (3)

5320-30 Social Statistics (3,3)

5520 Crime, Law, and Social Control (3)

5530 Seminar in Community (3)

5550 Seminar in Community Power (3)

5560-70 Field Research in Deviance (3,3)

5580 Sociology of Mental Disorders (3)

5590 Social Differentiation and Stratification (3)

5610-20-30 Seminar in Occupations (3,3,3)

5640 Theories of Social Psychology (3)

5670 Social Organization (3)

5720 Social Interaction (3)

5730 Seminar in Research Problems in Intergroup Relations (3)

5810 Seminar in Race and Culture (3)

5910 Urban and Regional Sociology (3)

5920 Seminar in Social Attitudes (3)

5940 Delinquency and the Social Structure (3)

5960 Demographic Techniques (3)

5970 Sociology of Development and Modernization (3)

6000 Doctoral Research and Dissertation

6040 Experimental Research (3)

6050 Seminar on Methods of Social Research (3)

6070 Problems in Field Research (3)

6080 Reading in Social Psychology (3)

6090-6100 Survey Design and Analysis (3,3)

6130 Seminar in Mass Behavior and Related Topics (3)

6140 Advanced Reading in Sociological Theory (4)

6150 Advanced Reading in Sociological Methods (4)

6160 Advanced Special Social Investigation (4)

6170 Cross-cultural Aspects of Human Fertility (3)

6180 Theory and Method in Human Ecology (3)

6190 Advanced Special Social Investigation (4)

6200 Topics in Socialization (3)

6240 Theory and Research in Human Migration (3)

6510 Advanced Issues in Criminological Theory (3)

6520 Sociology of Deviance (3)

6530 Sociology of Law (3)

6540 Readings in Criminology and Deviance (3)

6550 Advanced Studies in Community (3)

6610 Seminar in Formal Organization (3)

6620 Seminar in Formal Organization (3)

6630 Seminar in Formal Organization (3)

6710 Seminar in Class and Status (3)

6810 Advanced Studies in Social Psychology (3)

6840-50 Social Change (3,3)

6940 Advanced Studies in Urban Sociology (3)
Spanish

See Romance Languages.

Speech and Theatre

Professors:


Associate Professors:


Graduate Faculty:


UNDERGRADUATE

Major: The major, speech and theatre, offers two areas of concentration as follows:

Concentration in Speech:
Eight hours from Speech 1211-21, Speech and Theatre 1441 are prerequisite to a concentration which consists of two courses from Speech 2021, 2311 or 3551 by permission, 2351, 2354, and 30 additional hours in speech courses numbered 2000 and above, 12 hours of which may be cognate areas approved by the department and 24 of which must be in courses numbered 3000 and above.

Concentration in Theatre:
Theatre 1320-30-40 is prerequisite to a concentration which consists of Theatre 1310, 2121-21, 2211-21, 2231, 3252-35-54, 19 additional hours of theatre courses numbered 2000 or above, 12 hours of which may be cognate areas approved by the department. At least one-half of the hours in the concentration must be earned at the 3000 or above level. Corequisite: nine hours from courses listed in the Dramatic Arts option of the Language, Literature, Arts Triad.

Minor: Two minors are offered: speech and theatre. Speech 1211-21 is prerequisite to a minor in speech which consists of 24-hours in speech courses numbered 3000 and above. Theatre 1320-30-40 is prerequisite to a minor in theatre which consists of 24-hours in theatre courses numbered 3000 and above, 6 hours of which must be in history and criticism.

Certification for Teaching Speech and English:
Consult Certification Clerk, Room 212, Claxton Education Building.

GRADUATE

General requirements for the master's degree are given in the Graduate Catalog.

Speech (943)

1211 Communication and Society (4) Study of communication media (posters, speeches, songs, plays, demonstrations, film) and social change.

1221 Introduction to Speech Communication (4) Fundamental theories and practices with particular reference to interpersonal communication, persuasion, semantics, psycholinguistics; legal and ethical dimensions of communication.

2021 Voice and Diction (4) Voice production; attention to individual speech problems.

2311 Public Speaking (4) Basic principles of speech preparation and delivery.

2331 Argumentation and Debate (4) Recommended: 2311.

2341 Parliamentary Procedure (3) Various techniques and procedures for collective decision making in assemblies.

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

2361 Business and Professional Speaking (4) Basic principles of oral communication within organizations. Listening, skills, interviewing techniques, formal presentation (including technical papers and reports), conference planning, selecting and employing visual aids, informal communication systems, communicating corporate image, and other aspects of business and professional communication.

2410-20-30 Intercolligate Forensics (1,1,1) Supervised work in tournament debate and individual events.

Prereq: Consent of instructor.

3011 Persuasion (4) Persuasive theory: psychological, sociological, and cultural dimensions.

3021 Group Communication (4) Communication theory in its application to small groups, especially discussion groups; communication barriers, non-verbal communication, business communication.

3031 Non-verbal Communication (4) Exploration of non-verbal behavior in human communication; interpersonal perspectives, origins and research, usage and coding of non-verbal behavior, research strategies and theoretical approaches.

3041 Communication Projects (1-4) Intensive application of communication theory covered in other Speech Communication courses. Includes the areas of persuasion and interpersonal communication. May be repeated. Maximum 4 credit hours.

3361 Fundamentals of Organizational Communication (4) A study of communication behavior, theory and skills in organizational settings; upward, downward and lateral communications in dyads and groups.

3410-20-30 Intercolligate Forensics (1,1,1) Continuation of 2410-20-30. Must be taken in sequence.

3551 Persuasive Speaking (4) Speech forms; principles and practice of speech composition.

422 Advanced Argumentation and Debate (4) Prereq: 2331 or consent of instructor.

4461 Quantitative Research Methods in Speech Communication (4) Designing experiments; planning field studies; using statistical analysis.

4541 Rhetorical Theory and Criticism (4) Survey of Western and Eastern rhetorical approaches to criticism of public address.

4560 Rhetoric of the Women's Rights Movement (4) Historical and critical study of public address in campaign for women's rights from the 1830s to present.

4571 British Oratory (4) Historical and critical study of British public address.

4591 Persuasive Uses of Imaginative Literature (4) Topics in social and political uses of novels, plays and poems.

4811 Advanced Phonetics (4) Phonetic aspects of contemporary dialects of the English language. Prereq: Consent of instructor.

4900 Studies in American Public Address (4) May be repeated. Maximum credit 12 hours.

4999 Colloquium in Speech Communication (1) May be repeated for credit.

GRADUATE

5140 Communications Theory (3)

5210 Topics in Group and Interpersonal Communications (3)

5220 Quantitative Projects in Speech Communications (3)

5440 Organizational Communication (3)

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

5750-60-70 Studies in Rhetoric (3,3,3)

9111 Directing the Forensic Program (4)

Theatre (976)

1310 Introduction to Theatre (4) Theatre as experience, materials and techniques.


2111-21 Acting (4,4) 2111—Realism: readings, improvisations and scene study. 2121—Extended Realism: voice and movement for the stage, basic rehearsal techniques. Prereq: Consent of instructor for 2121. Production participation required.

2111-21 Stagecraft (4,4) 2111—Techniques of scene construction. 2221—Fundamental methods of stage lighting. Production participation required.

2231 Basic Stage Costuming (4) Costume design and construction: basic theory and technique. Production participation required.

3121-22 Advanced Acting (4,4) Historical styles of acting. 3121—Renaissance, 17th and 18th centuries. Prereq: Consent of instructor. Production participation required.

3151 Theatre Practicum: Performance (1-4) Supervised work on departmental productions. Available for credit only to theatre majors or with consent of department. Prereq: Consent of instructor. May be repeated. Maximum credit 4 hours.

3152 Theatre Practicum: Production (1-4) Supervised work on departmental productions. Available for credit only to theatre majors or with consent of department. Prereq: Consent of instructor. May be repeated. Maximum credit 4 hours.

3153 Summer Repertory Productions (1-4) Supervised work on summer repertory productions. Available only to members of summer company by consent of instructor. May be repeated. Maximum 4 credit hours.

3124-15 Technical Theatre (4,4) Special techniques in scenery and property construction; stage management; problems in technical theatre practice. Must be taken in sequence. Prereq: 2211-21 or consent of instructor.

3221-22 Introductory to Scene Design (4,4) 3221—Problems in stage design with reference to space and form, properties, scenery, color, lighting and technical procedure. 3222—Play interpretation through scenic means; setting as environment for dramatic action; rudiments of design and model making. Must be taken in sequence.

3252-53-54 History of the Theatre (4,4,4) Drama in performance with particular emphasis in theatre architecture, scene design, and acting styles. 3252—Antiquity to the Renaissance. 3253—The European theatre, 1560-1650. 3254—Modern theatre.

3262-63 History of the American Theatre (3,3) Development of the theatre as social institution in America, 3262—Development of its beginnings to 1900. 3263—From 1900 to present.

3321-22 Introduction to Lighting Design (4,4) Mechanics of stage lighting; elementary theory; problems in basic lighting practice. Must be taken in sequence. Prereq: 2211-21 and consent of instructor.

3451-52 Play Directing (4,4) Must be taken in sequence. Prereq: 2211.

3511-12 Introduction to Costume Design (4,4) Costume as expression of character on stage; the application of costume history to specific design projects. Prereq: 2111 or consent of instructor.

4133-34 Special Problems in Acting (3,3) Advanced exercises in voice and movement; preparation of major role under performance conditions. Prereq: 3121-22 and consent of instructor.
4151 Theatre Practicum: Performance (1-4) Continuation of 3151. Available for credit only to theatre majors. Prereq: Consent of instructor. May be repeated. Maximum credit 4 hours.

4152 Theatre Practicum: Production (1-4) Continuation of 3152. Available for credit only to theatre majors. Prereq: consent of instructor. May be repeated. Maximum credit 4 hours.

4153 Summer Repertory Productions (1-4) Continuation of 3153. Available only to members of summer company by consent of instructor. May be repeated. Maximum 4 credit hours.

4214-42 Advanced Technical Theatre (4,4) Advanced technical theatre management; advanced scenery and property execution; special problems in technical theatre.

4241-42 Advanced Scene Design (4,4) 2421—Descriptive drawing as an approach to three-dimensional design; theatrical graphic standards and preparation of design drawings. 2422—Perception of surface color; construction of spatial illusion through color with reference to rendering, scene painting, and preparation of painter's elevations. Must be taken in sequence. Prereq: 2211-21, 3221-22, and consent of instructor.

4341-42 Advanced Lighting Design (4,4) Relationship of light to setting in creating stage environment. Must be taken in sequence. Prereq: 3322 and consent of instructor.

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

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

4751-52 Dramatic Theory and Criticism (3,3) See faculty list page 94. Liberal arts students may major or minor in statistics under the supervision of the faculty of the department in the College of Business Administration. The major is designed to prepare students for graduate studies in statistics or for professional work in various applications of statistical methods, including applications in the physical and social sciences, business, and industry. It is highly recommended that a student majoring in statistics have a minor in an area of application.

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

4101 Foreign Study (1-16) See page 185.

4102 Off-Campus Study (1-16) May be repeated for major credit to maximum of 12 hours. See page 184.

4103 Independent Study (1-16) May be repeated for major credit to maximum of 6 hours. See page 184.

4170-80-90 Film History and Theory (3,3,3) Analysis of cinematic forms and styles. 4170—Narration. 4190—Exposition and persuasion. 4190—Experimental forms; films and other media.

4640 Group Performance of Literature (4) Oral interpretive techniques of choral reading, readers theatre, and chamber theatre.

GRADUATE

5000 Thesis

5002 Non-Thesis Graduation Completion (3-15)

5110 Introduction to Graduate Research in Speech and Theatre (3)

5120 Directed Reading and Research (3)

5160 Theory and Technique in Oral Interpretation (4)

Statistics

See faculty list page 94. Liberal arts students may major or minor in statistics under the supervision of the faculty of the department in the College of Business Administration. The major is designed to prepare students for graduate studies in statistics or for professional work in various applications of statistical methods, including applications in the physical and social sciences, business, and industry. It is highly recommended that a student majoring in statistics have a minor in an area of application.

Major:

(a) Required courses: 27 hours to consists of Mathematics 2840-50-60; Statistics 3450, 4750; Computer Science 4310. Statistics 3550 or Mathematics 4650 or 4750.

(b) Statistics electives: 12 hours from upper-division statistics courses not listed in part (a) above.

(c) Electives: 12 hours to be selected from no more than two of the following groups: Computer Science 3150, 3510, 3520, 4230; Industrial Engineering 3430, 3510, 3520, 3530, 4590; Industrial Management 4610, 4620; Mathematics 3780-90, 4060-70, 4510-20-30 (or 4518-28-38), 4660-70.

Minor:

(a) Required courses: 21 hours to consists of Mathematics 2840-50-60; Statistics 3450-60; Computer Science 4310.

(b) Statistics electives: 9 hours from upper-division statistics courses not in part (a) of the minor.

University Studies (984)

(Speech and Theatre (945)

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

2031 Introduction to Oral Interpretation (3) Art of reading aloud; development of interpretive techniques and their application to selected passages of prose, poetry, and drama.

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

3651 Oral Interpretation of Poetry (4) Prereq: 2031 or consent of instructor.

2010 Technology, Society and the Common Good: The Energy Problem (3) Designed for students of all disciplines, this course explores the economic, technological, and philosophical/religious dimensions of the problem and its implications for society, using examples from U.S. and global energy policy. Seminar format.

4100 Energy Needs and Our Environment (3) Problems of present and projected energy resources and demands; economic, behavioral, legal, technical, and environmental opportunities and constraints; regional impacts of energy production and consumption. Topical focus will change from quarter to quarter. May be repeated with approval of instructor.

Women's Studies

See Cultural Studies.

Zoology (995)

Professors: J. H. Abele(Head), Ph.D., Brown, R. M. Bagby, Ph.D., and W. B. Johnson, Ph.D.; L. L. Bunting, Ph.D., Oklahoma State; J. G. Carlson (Emeritus), Ph.D., Peabody, A. C. Cole (Emeritus), Ph.D., Ohio State; C. Daniel, Jr., Ph.D., Ohio State; D. A. A. Heller, Bi., Bi. Miniaci; R. F. Fraser, Ph.D., Minnesota; B. Hochman, Ph.D., California (Berkeley), J. C. Howell (Emeritus), Ph.D., Cornell; E. H. Howley, Ph.D., Wisconsin; K. W. Jeon, Ph.D., London (England); A. W. Jones (Emeritus), Ph.D., Virginia; J. R. Kerckend; Ph.D., Iowa, J. N. Liles, Ph.D., Ohio State; L. E. Rath (Vice Chancellor for Graduate Studies), Ph.D., Chicago; C. A. Rivers, Ph.D., Michigan State; J. L. H. Swint, Ph.D., Cornell; H. G. Welsh, Ph.D., Florida; M. C. Whiteside, Ph.D., Indiana; G. L. Whitson, Ph.D., Iowa.

Associate Professors: K. D. Burnham, Ph.D., Iowa, A. C. Eichhorn, Ph.D., Kansas; D. J. Fox, Ph.D., Johns Hopkins; M. A. Handel, Ph.D., Kansas State; J. A. Macabe, Ph.D., California (Davis); M. L. Pan, Ph.D., Pennsylvania; S. E. Peirce, Ph.D., Wisconsin; G. L. Vaughn, Ph.D., Duke.

Assistant Professors: T. T. Chen, Ph.D., Florida; L. D. Elkin, Ph.D., Indiana; G. F. McCracken, Ph.D., Cornell, N. B. Greenberg, Ph.D., Rutgers.

UNDERGRADUATE

Prerequisites to upper-division courses: Biology 1210-20-30 or Zoology 1118-20 are prerequisites for all upper-division courses, with the exception of 3090 and 4940. Additional prerequisites are included with course descriptions. Courses numbered in the 4000's are no more advanced than those in the 3000's except as may be indicated by prerequisites.

Majors: Consists of Biology 3110, 3120, 3130; 18 hours of upper-division zoology courses and 3 quarters of chemistry or biochemistry at the 2000 level or above. Of the 16 hours of upper-division zoology courses a minimum of 6 hours must be at the 4000 level, and must include at least one laboratory or field course. 1 to 3 hours of Zoology 3990 must also be included. Prerequisites to this major are: Biology 1210-20-30 or Zoology 1118-20 (Zoology 2000-30 may be substituted for Zoology 1118 or Biology 1220), and Chemistry 1110-20-30. Corerequisites are Mathematics 1841-51, or 1840-50 or 1550-60 (Mathematics 1841-51 is the recommended choice); and a year sequence in physics (except 14-20-30).

Note: Students majoring in zoology are advised to exercise care in fulfilling the Science and Mathematics Triad requirements. Mathematics 1840-50 or 1841-51 or 1540-50-60 and Chemistry 1110-20-30 or equivalent (20 or 21 hours altogether) must be completed by all zoology majors.
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<td>Biometry (3)</td>
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<td>5380</td>
<td>Isotopic Methods and Techniques: Lecture (2)</td>
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<td>5410</td>
<td>Advanced Parasitology (4)</td>
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<td>5430</td>
<td>Advanced Medical Entomology (3)</td>
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<td>5510-20</td>
<td>Advanced Animal Physiology (5,5)</td>
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<td>5610-20</td>
<td>Foundations of Radiation Biology (4,4)</td>
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<td>5630</td>
<td>Methods of Experimentation with Laboratory Mammals (3)</td>
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<td>Physiology of Development (3)</td>
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<td>General Vertebrate Neuroanatomy (3)</td>
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<td>Transport of Ions Across Epithelia (4)</td>
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<td>Methods of Taxonomy (4)</td>
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<td>Seminar in Radiation Biology (2)</td>
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</table>
College of Nursing

Sylvia E. Hart, Dean
Barbara M. Reid, Associate Dean
Dorothy B. Stephens, Assistant Dean

The College of Nursing at The University of Tennessee, Knoxville, was established in July 1971 in response to a long-recognized and well-established need for nurses prepared at the collegiate level and as a part of a statewide comprehensive plan approved for The University of Tennessee system by its Board of Trustees and for the state by the Tennessee Higher Education Commission.

The undergraduate program offered by the college is fully accredited by the National League for Nursing. It combines the unique resources of the University with those of several cooperating health agencies in a manner which enables both faculty and students to become aware of and responsive to an evolving dynamic culture, rapid scientific and technological advances, and changing concepts of health, of human beings, and of society.

The baccalaureate nursing program has as its central focus and frame of reference human beings, society, and health. It is based on the belief that nursing has equal concern for the prevention of illness, the promotion of health, and the care of the sick.

General education courses, nursing courses, and electives are organized in a manner designed to promote creative thinking and innovative approaches at both the theoretical and practical levels. General education courses are incorporated into the nursing curriculum at both lower- and upper-division levels. Certain aspects of general education, primarily in the natural and behavioral sciences, are prerequisite to any courses in the nursing major. Other supporting courses are taken concurrently with nursing courses.

Since nursing is a humanistic science and an art, nursing courses provide theoretical content which draws heavily from the theories and principles of related sciences and disciplines. This content is organized, integrated, and synthesized in a manner which promotes a comprehensive understanding of the life process from conception through senescence. In nursing practice, this knowledge and understanding is combined with intellectual judgments, practical skills, and human compassion. Opportunities to develop this kind of expertise in a variety of settings and situations are integral components of all nursing courses.

A broad base of general education, a thorough study of human behavior, emphasis on health maintenance and promotion, and a strong family and community orientation are essential components of baccalaureate education in nursing. It is these characteristics which differentiate it from other types of basic nursing education.

Because of the expanding role of the professional nurse, the increasing complexity of health care delivery, and the ever-changing health needs of society, the goals of the program are to prepare graduates who are able to:

(1) Assume beginning leadership positions in nursing in a variety of settings.

(2) Work collaboratively with other health professionals.

(3) Function as socially conscious and contributing citizens.

(4) Pursue advanced education on either a formal or an informal basis.

GENERAL REQUIREMENTS

In order to obtain a Bachelor of Science in Nursing Degree, 12 quarters of full-time study or their equivalent are required. Students may enroll in nursing courses following successful completion of 90 quarter hour credits in prescribed general education courses. These courses may be taken at The University of Tennessee or at any accredited junior or senior college or community college. One hundred eighty-nine quarter hour credits must be successfully completed in order to be awarded the Bachelor of Science in Nursing Degree.

NOTE: Students are advised to consult the University's degree requirements as stated in the front of this catalog as well as the requirements for the College of Nursing.

GRADING POLICY

The satisfactory-no credit option is not permitted for any nursing course except 3900. The minimum acceptable grade for all courses in the nursing curriculum, other than electives, is a C; a course in which a grade of D or F is achieved may be repeated once. If a grade of D or F is achieved on the second attempt, the student will be required to withdraw from the program.

Any student who achieves a grade of D or F for more than two clinical nursing courses will be required to withdraw from the program even if previous courses in which the grades of D or F were achieved have been repeated and a grade of C or better has removed the D or F. Clinical courses are: 2800, 3010, 3210-20, 3410, 4110, 4230, 4510-20, 4760.

If a student receives an Incomplete (I) in a required nursing course, the Incomplete must be removed before the student may enroll in any other required nursing courses.

If a student's clinical laboratory performance for any nursing course is deemed unsatisfactory, the grade for that course will be an F regardless of any grades related to the theoretical component of the course. If the unsatisfactory clinical performance is characterized by dangerous, inappropriate, or irresponsible behavior, behavior which actually or potentially places the patient's or family's welfare in jeopardy, the student will be required to withdraw from the program.

ADMISSION AND PROGRESSION PROCEDURES

(1) Nursing students must achieve a course grade of C or better in all required lower-division courses, exclusive of electives.

(2) During the academic year in which students expected to complete all lower-division requirements, a petition for progression to upper-division nursing courses must be submitted. Petition forms are available in the college's Student Affairs Office, and must be submitted to this office no later than the fifth class day of January. Students selected for progression are notified no later than one day prior to the preregistration period for the spring quarter.

Students selected for progression must successfully complete Nursing 2800 prior to enrollment in upper-division nursing courses. This course is offered in both the spring and summer quarters. Only students selected for progression may enroll in Nursing 2800.

(3) Students who expect to enroll in The University of Tennessee, Knoxville,
College of Nursing, once they have completed lower-division requirements elsewhere, should contact the Dean for Student Affairs at the UT College of Nursing as soon as they are admitted to the University. If the number of students qualified to begin upper-division nursing courses exceeds the number that can be accommodated during the fall quarter, the cumulative grade point average will be utilized to select those students who may enroll in upper-division nursing courses. Qualified students not selected are eligible to reapply for registration during the next review period.

(4) Transfer students who have been accepted by the University must complete all course requirements identified in the nursing curriculum. Transcripts will be evaluated on an individual basis. Students are free to take proficiency or challenge examinations in order to determine whether it is necessary for them to enroll in a course or whether they have met those course requirements in another way.

(5) Registered nurses seeking a baccalaureate degree in nursing must also apply for admission to the University and must be accepted on the same basis as others. They must complete all prerequisites and all required courses identified in the nursing curriculum. They may also take challenge or proficiency examinations in required courses whenever these are appropriate and available.

Registered nurses who have completed Chemistry 1410-20 with a grade of C or better, within ten years prior to their admission to the College of Nursing, have satisfied the chemistry requirement.

For registered nurses, the following courses may be substituted for those required in the nursing curriculum if a grade of C or better was achieved and if the courses were taken within ten years prior to admission to the College of Nursing: Microbiology 2110 or Microbiology 2610; Nutrition 1230 for Nutrition 2800.

Registered nurses must successfully complete 3230-40-60, 4440, 4510-20, 4660, 4760, and 4860. After successfully completing Nursing 2810, registered nurses may challenge up to a maximum of 40 hours of other required clinical nursing courses and they will receive credit for Nursing 3110 (Pharmacology) if they take or have taken the NLN Pharmacology Achievement Test and achieved a score at or above the 50th percentile. The following course requirements are waived for registered nurses: Nursing 3010, 3410, and Psychology 3650.

**Course Load**

The maximum credit hours per quarter, allowed for any student without special permission is 15.

**Bachelor of Science in Nursing Curriculum**

The following curriculum leads to the Bachelor of Science in Nursing degree. A minimum of 189 quarter hours of credit is required.

<table>
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<td>Chemistry 1510-20</td>
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**Sophomore**

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**Junior**

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**Senior**

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At least 14 of the elective hours must be in humanities courses.

**Nursing (720)**

Professor: S. E. Hart (Dean), Ph.D. New York

Associate Professors: D. H. Goodfellow, Ph.D. Peabody, M. E. Groer, Ph.D. Illinois, K. J. Kett, Ph.D. Illinois; J. N. Mezquina, Ph.D. Walden; B. M. Reid, M.S. Columbia.

Assistant Professors:

M. T. Boynton, M.S. Emory; S. L. Bruning, M.S. Emory; J. A. Greene, Ph.D. Vanderbilt; M. J. Jolly, M.S. Cincinnati; F. Kollar, M.N. Vanderbilt; M. A. Moline, M.S. Case Western; D. R. Odle, M.S. Emory; H. E. Overton, M.P.H. Vanderbilt; M. P. Pierse, M.P.H. Tennessee; V. M. Redford, M.S. Colorado; C. M. Sampfie, M.S. Ohio State; T. Sharp, Ed.D. Emory; J. M. Mozingo, Ph.D. Tennessee; P. L. Smith, M.S. Medical College of Georgia; B. J. Walters, M.N. Mississippi (Med. Center).

Instructors:

S. M. Bowman, M.S. Tennessee; J. C. Coven, M.S. Tennessee; P. G. Droopman, Ph.D. Pennsylvania; L. L. Harrison, M.S. Delaware; S. M. Hodson, M.S. Tennessee; J. Jozwik, M.S. Tennessee; S. A. Offutt, M.S. Texas Women's; M. S. Theodoropoulus, M.S. Boston.

Lecturer:

D. B. Stephens, M.S. Tennessee.

**Graduate**

General requirements for the Master of Science in Nursing degree are given in the Graduate Catalog. The following courses are open only to BSN degree candidates who have not completed an undergraduate major in nursing: 2410, 2820-30, 4240, 4240-10, 4260, 4280, 4820.

**2410 Integrated Biomedical and Health Science (1-5)**

Examination and application of selected theories from physics, cellular biochemistry, genetics, microbiology and nutrition to the nursing process. Five modules each carry one credit. Prereq: concurrent one year of biology or chemistry or consent of instructor.

**2710 Family Health Promotion (4)** (Same as Nutrition 2710)

2800 Introduction to Clinical Nursing (4)

Theory and laboratory activities for development of cognitive and psychomotor nursing skills; emphasis on determinants of health, nurse-client interactions, and nursing assessment and care of health problems. Coreq: 2410, 2820-30, 4240, 4240-10, 4260, 4280, 4820. Lab. Prereq: RN status and completion of all lower-division requirements, or consent of instructor.

2810 Transition to Professional Nursing (4)

Review of current state of profession; analysis of nursing process as applied to a shifting health care delivery system; introduction of the philosophy of professional nursing and of the conceptual framework of the baccalaureate program, 3 lectures, 1 lab. Prereq: RN status and completion of all lower-division requirements, or consent of instructor.

2820 Basic Concepts of Professional Nursing (4)

Introduction to the current practice of nursing, the nursing process and basic concepts and skills required to support physiological and psychological processes of the hospitalized adult. 2 hrs. and 2 labs. Open only to M.S.N. candidates without baccalaureate degree in nursing; others with consent of instructor. Coreq: 3110.

2830 Basic Concepts of Professional Nursing II (4)

Continuation of Nursing 2820. Development of more complex psychomotor skills; application of the nursing process with hospitalized adults. Coreq: 3110 and completion of 3110. Open only to M.S.N. candidates without baccalaureate degree in nursing; others with consent of instructor. Coreq: 3210.

3100 Nursing Process (8)

Emphasis upon the nursing process and its application to hospitalized adults with uncomplicated health problems; continued development of psychomotor skills; introduction of concepts of the nurse as health team member and patient educator. 4 hrs. and 4 labs. Prereq: 2800; Coreq: 3110, 3410. For nursing majors only.

3110 Pharmacology (4)

Biochemical and pharmacological effects of chemicals and medications on the human body. Positive and negative pharmacological reactions and interaction effects between and among drugs. Prereq: Chemistry 1610-20-30; Zoology 2820.

3210 Acute Care Nursing I (8)

Content and clinical laboratory experience related to nursing care of patients whose health problems require hospitalization. Physiological and behavioral deviations which underlie or are associated with more common, relatively uncomplicated acute illnesses of children and adults are stressed. Clinical laboratory experiences are provided to enable students to apply their knowledge and skills to the care of patients in acute care settings as well as to provide assessment and intervention in non-acute health care settings. Coreq: 3110. 4 hrs. and 4 labs. Prereq: 2800; Coreq: 3110, 3410. For nursing majors only.

3220 Acute Care Nursing II (10)

Analysis of physiological and psychological deviations which are associated with more complex and critical illnesses. Laboratory experiences provide opportunities to apply increasing knowledge and skill to care of acutely ill patient as well as to provision of continuity of care for those patients and their families. 6 hours, 4 labs. Prereq: 3210. For nursing majors only.

3230 Acute Care Nursing Theory I (8)

Nursing process, principles, and concepts required to care for acutely ill, hospitalized adults and children. Prereq: 3210. For RN's in BSN program only.

3240 Acute Care Nursing Theory II (8)

Continuation of 3230. Emphasis on advanced concepts and principles that are life threatening. Prereq: 3230. For RN's in BSN program only.

3260 Clinical Practice in Acute Care Nursing (3)

Application of nursing theory, principles and concepts to 3, 4 or 5 days of hospitalization. Prereq: 3230. For RN's in BSN program only.

3410 Children and Health (4)

Theory and laboratory experiences related to systematic, comprehensive assessment of children and adolescents at various levels of health illness. Emphasis on normal growth and development, interrelationship with parents, children and families to support the child and hospitalization. Coreq: 3010, 3110. 3 hrs. 1 lab.
4110 Family Health Nursing (10) Nursing needs of families in health and crisis. Emphasis on provision of comprehensive care to families in the child bearing and child rearing phases of family development. Application of theories of human growth and development, family dynamics, and crisis intervention. Laboratory experiences to develop skills necessary to provide quality nursing care to families experiencing normal pregnancy and childbirth or health problems such as complications of childbearing, congenital anomalies, and other high-risk birth, disturbed parent-child relationships, and gynecologic disturbances. 5 hours, 5 labs. Prereq: All 3000-level Nursing courses or their equivalent. For nursing majors only.

4200-10 Integrated Psychosocial and Developmental Theories I, II (2,5) Examination and application of selected behavioral theories as applied to the nursing process. Prereq: 10 hours of 4000-level Nursing courses or their equivalent. Open only to MSN candidates lacking an undergraduate major in nursing; others with consent of instructor. Prereq: 16 hours of behavioral sciences. Prereq: All 3000 level nursing courses. For nursing majors only.

4230 Psychosocial and Long-Term Nursing (10) Nursing needs of clients whose primary health problems are of a developmental, behavioral, or long-term nature. Equal emphasis on prevention, health promotion, and rehabilitation. Laboratory experiences in a variety of psychiatric, extended care, and outpatient clinics. 5 lectures, 5 labs. Prereq: All 3000-level Nursing courses or their equivalent. For nursing majors only.

4240 Nursing in Acute Care Settings (5) Theory and clinical practice related to care of hospitalized children and adults who are experiencing acute illness episodes. Open only to MSN candidates lacking an undergraduate major in nursing; others with consent of instructor. Prereq: All required 2000 and 3000-level Nursing courses. 3 lectures, 2 labs.

4260 Community Mental Health Nursing (3) Theory and clinical practice related to care of clients and their families in varying stages of child bearing and child rearing. Normal and abnormal states are examined and explored. Open only to MSN candidates lacking an undergraduate major in nursing; others with consent of instructor. Prereq: All required 2000 and 3000-level Nursing courses. 2.5 hours, 2.5 labs.

4330 Nursing in the Specialties (2-4) Application of psychosocial and developmental theories from behavioral, physical, social, and nursing sciences to solution of nursing problems. Includes exploration of nursing intervention needed to maintain or restore homeostasis in clients experiencing selected physiological and/or behavioral deviations. Specific topics to be determined by faculty and students. May be repeated with consent of instructor. Maximum credit 12 hours. Prereq: Consent of instructor.

4350 Oncology Nursing (3) In-depth exploration of the cancer problem; medical and nursing intervention. Relates cellular kinetics to theories of carcinogenesis and metastasis, and examines treatment modalities and nursing intervention employed in all phases of the disease. Interdisciplinary approach analyzed. Prereq: Nursing 4230, RN status or consent of instructor.

4440 Scientific Inquiry In Nursing (3) Introduction to language of research, types of research design, methodological approaches, sampling, data analysis, and significance of findings. Evaluation of existing and ongoing nursing research studies. Prereq: 10 hours of 4000-level Nursing courses. For nursing majors only.

4510 Community Health Nursing: Family (3) Application of the nursing process to care of clients and their families in the home setting; utilization of community health services in planning comprehensive goal directed care; principles related to prevention and control of common communicable diseases are presented. 1.5 hrs. and 1.5 lab. Prereq: All 3000 level nursing courses: Prereq: or coreq: 4110 or 4240. For nursing majors only.

4520 Community Health Nursing: Aggregates (3) Community studies utilizing the epidemiological approach. Emphasis on comprehensive assessment of and intervention for aggregates at high risk for maturational or situational health and nursing problems; political and legislative community health issues are explored. 1.5 hrs. and 1.5 lab. Prereq: All 3000-level nursing courses. Prereq. or coreq: 4230 or 4260. For nursing majors only.

4680 Professional Nursing Seminar (3) Critical examination of legislative, legal, ethical, social, and educational issues and trends which have immediate or long-range implications for professional nursing practice. Prereq: 10 hours of 4000-level Nursing courses. For nursing majors only.

4760 Nursing Management (6) Theory and practice of management principles with application to nursing care of groups of patients/clients; organization, planning, decision making and leadership are emphasized; nursing staff qualifications, staff utilization and nursing service delivery patterns are analyzed and evaluated; entry-level management roles are practiced clinically. 3 hrs. and 3 lab. Prereq: 10 hours of 4000-level nursing courses. For nursing majors only.

4770 Comprehensive Health Assessment (4) Principles and theories underlying health screening of children and adults, including health history, interviewing, and physical examination. Practicum included. 3 hours and 1 lab. (4 hours each). Prereq: All 3000-level Nursing courses or their equivalent or consent of instructor.

4790 Health Assessment Practicum 1-3 Selected clinical experiences in health assessment based on individual student needs and interests. Prereq: 4770 or equivalent and permission of instructor.

4820 Clinical Nursing Practicum and Seminar (6) Intensive clinical laboratory with opportunity to apply nursing and nursing related theories in a variety of health care settings. Weekly seminars are conducted with the clinical practice. Open only to MSN candidates lacking an undergraduate major in nursing; others with consent of instructor. Prereq: All required 2000 and 3000-level Nursing courses and 4200; coreq: 4210. 3 lectures, 2 labs.

4830 Nursing the Child Bearing Family (5) Theory and clinical practice related to care of clients and their families in varying stages of child bearing and child rearing. Normal and abnormal states are examined and explored. Open only to MSN candidates lacking an undergraduate major in nursing; others with consent of instructor. Prereq: All required 2000 and 3000-level Nursing courses. 2.5 hours, 2.5 labs.
Independent Departments

Department of Air Force Aerospace Studies

Air Force ROTC Program
Professor of Air Force Aerospace Studies:
Colonel W. J. Haynes (Head), M.B.A. Inter-American.

Assistant Professors:
Major L. E. Cool, M.B.A. Texas; Captain R. E. Dane, M.A. Webster College; Captain C. L. Little, M.A. Northern Colorado.

Purposes of the AFROTC:

1. The Air Force Reserve Officers' Training Corps (AFROTC) is an educational program designed to provide the college student an opportunity to earn an Air Force commission as a second lieutenant while completing the University requirements for a bachelor's degree. The program provides education that will develop the skills and attitudes vital to the professional Air Force officer. Upon successful completion of the program and graduation from the University, students are commissioned as second lieutenants and they enter active duty.

The Programs

The Four-Year Program: Students entering the Four-Year Program may register for the program at the same time and in the same manner as they enroll in their other college courses and there is NO MILITARY OBLIGATION. During their freshman and sophomore years, students enroll in the General Military Course (GMC). They then may compete for entry into the Professional Officer Course (POC) which is normally taken during the last two years of college. Selection into the POC is highly competitive and is based on qualifications on an Air Force medical examination, scores achieved on the Scholastic Aptitude Test (SAT) or American College Test (ACT), scores achieved on the Air Force Officer Qualifying Test (AFQT), successful completion of a four-week field training course at an Air Force base, and the recommendation of the Professor of Aerospace Studies.

The Two-Year Program: The Two-Year Program consists of the Professional Officer Course (POC), the last two years of the Four-Year Program. It is designed to provide greater flexibility to meet the needs of students desiring Air Force opportunities. The basic requirement is that applicants have two academic years remaining at either the undergraduate or graduate levels, or a combination of both. After being nominated by a Professor of Aerospace Studies, applicants seeking enrollment in the Two-Year Program are evaluated on scores achieved on the AFQT, the Air Force medical exam, and a personal interview by a board of Air Force officers. Additionally, every POC applicant must agree to take and successfully complete a course in mathematical reasoning or its equivalent before graduation and commissioning.

Since the processing procedure must be completed approximately six months in advance of intended enrollment, interested students must apply early in the year proceeding the fall term in which they intend to enter the program. Application should be made in writing or by a personal visit to the Professor of Aerospace Studies.

Women in AFROTC

AFROTC at The University of Tennessee has been coeducational since 1970. Women complete the same courses as men and have the same opportunities. Upon successful completion of the AFROTC program and degree requirements, women are commissioned in the Air Force as second lieutenants. Pay and job opportunities are equal for women and men. Virtually all career fields in the Air Force are open to women, to include flying positions (pilot and navigator). The courses

The General Military Course (GMC): This is a two-year course taken during the freshman and sophomore years with one hour of academic instruction and one hour of Leadership Laboratory a week. The curriculum covers two main themes—the mission and organization of the Air Force, and the history of the development of air power. These courses are open to any student enrolled in the University, and there is no military obligation associated with them.

The Professional Officer Course (POC): This is a two-year course of instruction normally taken during the junior and senior years with three hours of academic instruction and one hour of Leadership Laboratory a week. The curriculum covers Air Force management and leadership and American defense policy. Admission is not automatic but is limited to fully qualified students selected by the Air Force ROTC staff.

Leadership Lab: Leadership Lab involves cadet participation in, and cadet direction of, corps leadership activities. It is largely cadet planned and organized in line with the premise that leadership training experiences will improve a cadet's ability to perform as an Air Force Officer. The freshman and sophomore Leadership Lab program involves initial Leadership Lab experiences such as: preparing the cadet for individual, squadron, and flight movements in drill and ceremonies; customs and courtesies to include wearing of the uniform and saluting the flag; career opportunities; educational benefits and training programs; environment of the Air Force officer to include the military community, organizations, and functions; and preparation for field training. The junior and senior Leadership Lab program involves the cadets in advanced leadership experiences. The cadets will be responsible to a large degree for planning, organizing, directing, coordinating, and controlling the activities of the cadet corps; for preparing briefings and written communication; and to provide interviews, guidance, information, and other services which will increase the performance and motivation of other cadets.

Field Training: Every AFROTC cadet or applicant is required to attend a summer camp, called field training, normally between the sophomore and junior years. Cadets in the Four-Year Program attend for four weeks, while Two-Year Program applicants attend for six weeks. The curriculum consists of aircraft, aircrew, career and survival orientation, physical training, small arms training, a social action program, and supplemental training. Field training is conducted at a number of Air Force bases throughout the United States. In addition to receiving travel pay, in and from the Air Force base, each cadet or applicant is paid for attending field training.
Flight Training: Flight training is offered free of charge to qualified pilot candidates who are senior AFROTC cadets. The cadet receives 25 hours of flight instruction. University credit is granted for the Ground School portion of the Flight Instruction Program.

UNIVERSITY CREDITS
The following credits are granted for Air Force Aerospace Studies work and are creditable toward a degree in some colleges. Aerospace Studies 1200 series (Freshman)—6 quarter hours per year Aerospace Studies 2200 series (Sophomore)—6 quarter hours per year Field Training Academics (Sophomore)—6 quarter hours Aerospace Studies 3200 series (Junior)—9 quarter hours per year Flight Instruction Ground School—3 quarter hours Aerospace Studies 4200 Series (Senior)—9 quarter hours per year.

SCHOLARSHIP PROGRAM
Air Force ROTC Scholarships are available to qualified applicants in both the Four-and Two-Year Programs. Each scholarship provides full tuition, room and board, medical, and travel assistance, and full reimbursement for curriculum-required textbooks. In addition, scholarship cadets receive a non-taxable $100 each month during the school year while on scholarship status. In addition, scholarship cadets receive a subsistence allowance of $50 as security to the University texts and uniforms. Enrollees are required to complete the GMC.

Applications for these scholarships should be made directly to the Air Force ROTC recruiter. Bulletins may be obtained directly from the Air Force ROTC, Advisory Service, Maxwell AFB, AL 36112.

College Students: Other scholarship opportunities exist for students already in college. Four-, three-, and two-year scholarships are available in a competitive basis and the student must have at least four, three, or two undergraduate or graduate years of study remaining in order to compete. Applications for these scholarships should be made directly to the Professor of Aerospace Studies.

In order to obtain an AFROTC scholarship, students must maintain the minimum grade point average prescribed by the university and they must take and complete an English composition course or its equivalent before completing the GMC.

PAY AND ENTITLEMENTS
All cadets enrolled in AFROTC are furnished shoes, is returned to the student upon deposit, minus a nominal fee to cover cost of stenography and carbon papers. Enrollees are required to deposit $50 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 successful completion of AFROTC or upon early withdrawal. Professional Officer Course cadets receive a subsistence allowance of $100 per month during the academic year. In addition, there is an allowance to and from flight training, plus pay commensurate with active duty rates while at field training.

ACTIVE DUTY COMMITMENTS
Commissioned graduates going into non-flying duties will be required to serve four years on active duty. Those graduates going into pilot assignments will be required to serve six years’ active duty after completion of pilot training. Those graduates going into navigator assignments will be required to serve five years’ active duty after completion of navigator training.

Curriculum
Air Force Aerospace Studies (094)

2120-20-30 Air Force Aerospace Studies (2,2,2)
Surveys the missions, functions, and organization of the Air Force. Emphasis on the Air Force Commands, the environment in which Air Force operates, and how the Air Force works with the Army and Navy, providing foundation upon which study of the Armed Forces and the Air Force can build. 1 hour and 1 hour lab (Leadership Laboratory).

2210-20-30 Air Force Aerospace Studies (3,3,3)
Introduction to study of air power. Course is developed from a historical perspective starting before the Wright Brothers and continuing into the 1970s. 3 hrs. and 1 lab. (Leadership Laboratory).

2240 Field Training (Academic Program) (1-6)
Role of United States military forces in contemporary world. Emphasis on United States Air Force, its organization and mission, various component forces of the U.S. military power, organization of America's defense structure, policies of major powers, and elements and processes in contemporary policy. Conducted at Field Training bases in the country. Approximately 60 class hours.

2310-20-30 Air Force Aerospace Studies (3,3,3)
Air Force leadership at junior officer level, including theoretical, professional, and legal aspects, with attention to communicative skills. Military management functions, principles, and techniques are covered. 3 hours and 1 lab. (Leadership Laboratory).

3240 Flight Instruction Ground School (Private Pilot) (3) Part of Air Force ROTC Flight Instruction Problem designed to prepare student to operate safely as a pilot. A secondary objective is to enable student to pass FAA private pilot's written examination. Thirty-quarter hours of classroom instruction. Subject areas covered are: Pre-flight—flying students with factors affecting flight; Meteorology—involves student in learning weather phenomena affecting flight; weather information, and services available to pilots; Flight Computer, Navigation, and Radio—Navigation—covers the requirements to plan a cross-country, use of appropriate maps, charts, logs, and regulations that must be known to operate safely; Federal Aviation Agency (FAA) written examination for Commercial Pilot's License. Prereq: 3240 or an FAA private license.


4210-20-30 Air Force Aerospace Studies (3,3,3)
Role and function of professional officer in a democratic society; socialization process, public attitudes, and value orientations associated with professional military service; requisites for maintaining national security forces; obligations of the Department of Defense; political, economic, and social constraints affecting formulation of U.S. defense policy; impact of technological and international developments upon strategic preparedness; emphasis on developing communicative skills. 3 hours and 1 lab (Leadership Laboratory).

Department of Military Science

Army Reserve Officers' Training Corps

Professor of Military Science:
Colonel Richard W. Griffin (Head), M.S. Georgia Institute of Technology

Assistant Professor of Military Science:
 LTC G. E. Crask, M.S. Livingston University; MAJ R. Y. Buff, MBA Winthrop College; S. D. Peti, B.S. Southern Mississippi; L. K. Krueger, MPA Western Kentucky University; CPT J. E. Alexander, M.S. Wichita State; J. R. Wheeler, M.A. Tennessee Technological Institute; R. L. Hover, M.A. Central Michigan University

UNIVERSITY ROTC PROGRAM
The University of Tennessee offers a voluntary ROTC program leading to appointment as an officer in the United States Army.

PURPOSE AND OBJECTIVE
This program is to provide professional education which will prepare students for appointment as commissioned officers in the Regular Army or the United States Army Reserve.

Objectives of the program are to provide students with an understanding of the fundamental concepts and principles of military science; to develop in them a basic understanding of associated professional knowledge, a strong sense of personal integrity, honor, and individual responsibility, and an appreciation of the requirements for national security; 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.

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, 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 one, 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. One-, 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.

EARLY COMMISSIONING PROGRAM
By utilization of placement credit for the ROTC Basic Course, many cadets enter the Advanced Course in either their freshman or sophomore year. The "ECP" enables cadets who complete the ROTC program to be commissioned in a reserve component prior to awarding of a baccalaureate degree. These newly commissioned officers begin their
military service in the Army Reserve or Army National Guard while still enrolled in college pursuing a four year degree. SIMULTANEOUS MEMBERSHIP PROGRAM

The "SMP" is an option which combines the Army, ROTC living allowance ($100/mo.) with membership in the Army Reserve or Army National Guard and allows the student to receive pay from both programs. ROTC cadets serve as "officer-trainees" in direct leadership/management positions. Participation with the reserve forces is one weekend per month and two weeks each summer.

UNIVERSITY CREDIT

The University of Tennessee grants the following credit for military science:

Military Science I—3 quarter hours (MS 1110)
Military Science II—6 quarter hours (MS 2110-20)
Military Science III—12 quarter hours (MS 3110-20-30)
Military Science IV—12 quarter hours (MS 4110-20-30)
Army ROTC Summer Studies Basic (Basic MS 2000) 6 quarter hours.
Army ROTC Summer Studies—6 quarter hours (MS 4000)

BASIC ACADEMIC REQUIREMENTS FOR APPOINTMENT AS SECOND LIEUTENANT

Academic prerequisites for appointment as Second Lieutenant in the United States Army through the ROTC Program at The University of Tennessee, Knoxville, include the following minimum requirements. The sequence and selection of courses not specified will be determined by the adviser in concert with the head of the Department of Military Science. In cases where a student is pursuing a discipline which is not narratively listed (excluding Military Science Core Curriculum) with few elective options, any conflict in scheduling or course selection will be resolved in favor of academic degree requirements.

MILITARY SCIENCE CORE CURRICULAR

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<td>6</td>
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<td>12</td>
<td>MS 4110-20-30 Seminar in Leadership and Management (4,4,4)</td>
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SUBSTITUTION

The following courses may be substituted for military courses with permission of adviser and ROTC department head:

Management 4460, History 4380 for MS 4130. Certain other courses may be substituted with permission of FMS.

OTHER ACADEMIC COURSES

Academic prerequisites for the University is designed to provide a well-balanced education in diversified fields, no specific hour requirement is levied for courses outside the Military Science Core Curriculum.

FRESHMAN AND SOPHOMORE YEARS

The University requirements for subjects in the field of communications (English grammar, composition, speech, etc.; physical, natural, and biological sciences; humanities; social sciences; and applied sciences (engineering, mathematics, computer science, etc.) will satisfy the Army's desire for its officers to have a well-rounded liberal education.

JUNIOR AND SENIOR YEARS

The cadet is expected to pursue at least one quarter of upper-division work in each of two different divisional course areas (other than major) as follows: mathematics, computer sciences, natural sciences, anthropology, economics, political science and international relations, history, psychology, sociology, foreign languages, management, urban studies, mass communications, or accounting. Students seeking an Army commission are permitted to substitute military studies for non-technical electives, social studies, and/or humanities to satisfy degree requirements. This substitution is at the sole discretion of the dean of the separate schools and colleges.

ENROLLMENT AND CONTINUANCE REQUIREMENT

The general requirements for enrollment and continue in the ROTC program are:

1. Basic Course—III and IV
   a. Be a citizen of the United States.
   b. Be physically qualified.
   c. Not less than 18 years of age and have not reached 23 years of age at the time of commission.

2. Advanced Course—MS III and IV
   a. Have either completed the 3 year High School ROTC Basic Course, or an off-campus six-week field training course, or have the required amount of prior military training.
   b. Have two academic years of college remaining (either graduate or undergraduate).
   c. Be a full-time student, either at the University of Tennessee or at a nearby institution in a cooperative program.
   d. Meet military screening and physical requirements.

REGULARLY enrolled students who meet the academic prerequisites and do not desire a commission may take individual courses as electives with the permission of the department head and academic advisor.

ADVANCED MILITARY STANDING FOR MILITARY TRAINING

On the basis of previous honorable active military service in any branch of the Armed Services, or participation of the Junior ROTC Program at Secondary Schools, a student may request exemption from parts of the Basic Course. Exemption allowed will be determined by the academic advisor.

PROFICIENCY EXAMINATIONS

Students may study for proficiency examinations in Military Science 1110, 2110, and 2120. A student applying for a proficiency examination should present evidence that he or she has acquired those abilities and attitudes expected of a student who has taken the course involved. The application must be approved by the department head.

EMOLUMENTS

All students enrolled in the Army ROTC program are furnished texts by the Army through the Military Property Officer. Students enrolled in the ROTC Advanced Course receive uniforms and equipment plus an allowance or $100 per month during the academic year. While attending the ROTC summer studies each cadet receives approximately $525, plus meals and clothing.

COURSES AVAILABLE

The curriculum of the Army ROTC program is designed to qualify the candidate for appointment as an officer. Selection for assignment to the various branches of the Army is based upon:

a. The cadet's interests of the cadet.
b. The major course of study.
c. Academic accomplishment.
d. Leadership potential.
e. The needs of the Service.

The 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.

CURRICULUM MILITARY SERVICE (688)

1110 Fundamentals of Military Organization, Leadership and Management (3) Development of American military institutions, policies, experiences, and traditions in peace and war from colonial times to present. Historical examples of effective and ineffective leadership and application of principles of war. Practical exercise in leadership development.

2000 Army R.O.T.C. Basic Summer Studies (6) Role of the United States Army as a component of our National Defense system with particular attention on mission, organization, and previous branches of the Army, and our national resources. Concentrated study of the techniques of military planning, elements of successful leadership styles, the development of personal and interpersonal skills, the management of organizations and factors affecting human behavior. (44 hours of instruction, four presented each week). Conducted at Fort Knox, Kentucky by faculty from colleges and universities participating in the Army R.O.T.C. program. This course is taken in lieu of all or part of the Army R.O.T.C. Basic Program (MS 1110, MS 2110, MS 2120). Students may not receive more than a total of 9 credit hours for any combination of MS 1110, MS 1110, MS 2110, or MS 2120. Successful completion of MS 2000 qualifies an individual for admission to the Advanced Military Science Program.


2120 Applied Leadership and Management (3) Contemporary world scene and impact on the military Planning, preparation, and presentation of briefings and continued development of leadership skills through practical exercises. Discussion of ROTC Advanced Course. Prereq: 2110.

3110-20-30 Advanced Leadership and Management (4,4,4) Applied leadership to include operation of the military team, unit, personal and interpersonal skills, land navigation, small unit leadership, and internal defense/development. Two field trips. Leadership Laboratory and philosophy of organization and operation of military in tactical and administrative roles. Prereq: 2120.

4000 Army ROTC Advanced Summer Studies (6) A six-week field study program conducted at an Army installation in the continental United States. 44 hours of instruction. Two weeks solicited, A period of 3000 and MS 1110, MS 2110, and 2120. Normal schedule as extended program of study is an extension of leadership and management curriculum with emphasis on practical application. Prereq: 2120.

4110 Theory and Dynamics of the Military Team (4) Organization and management of division military team,
development and function of military staff, and coordination and planning of the military team. Leadership Laboratory: Staff and Tactical Planning, presentation of briefings, preparation, execution, and supervision of plans. Prereq: 4000 or consent of instructor.

4120-30 Seminar In Leadership and Management (4,4) Analysis of selected leadership and management problems involved in unit administration, military justice, Army Readiness Program, and officer-enlisted relationships. Leadership Laboratory. Prereq: 4110.
Division of Continuing Education

Charles H. Weaver, Vice President for Continuing Education
Charles W. Harrell, Assistant Vice President for Continuing Education
Raymond A. Shirley, Assistant Vice President for Continuing Education

The Division of Continuing Education is responsible for the operation of all statewide continuing education programs, both on campus and off campus. The Division is concerned with policies and programs required for effective offering of educational opportunities, including attainment of college-level degrees, to qualified students of all ages and walks of life who pursue knowledge outside the traditional on-campus setting. All continuing education programs of the University are coordinated through the Division.

Information concerning continuing education programs of the various campuses is set forth in the respective catalogs. Information on continuing education programs of The University of Tennessee, Knoxville, is given on page 101 of this catalog.

Center for Extended Learning

Director: D. F. Holden, Ph.D. Kansas.

Associate Directors:
B. W. Wallace, M.S. Tennessee; R. H. Considine, Ph.D. Tennessee.

Assistant Director: R. A. Shirley, M.A. Tennessee.

CEU Programs: Continuing Education Units are available for approved non-credit professional programs.

CLEP Open Center: Administers College Level Examination Program tests each month.

College Credit for High School Seniors: Coordinated in cooperation with the State Board of Education.

College Entrance Courses: To remove entrance deficiencies or to complete high school requirements.

Conferences: For specific clientele statewide.

Independent Reading: The student should contact the academic department for the desired reading course and then register for credit through the CEL.

Independent Study: Extends instructional services of the University from all campuses to the citizens of the state. Courses may be started at any time.

Non-Credit Courses and Certificate Programs: In areas of general interest and in technical, business, and professional fields.

Undergraduate Cooperative Education Program: For students desiring to work alternate quarters while going to school.

Video-tape Programs: Special educational programs on video-tape, both credit and non-credit. Tapes can be purchased or rented.

For Information on enrollment, costs, books, and credit, write: Center for Extended Learning, 420 Communications and University Extension Bldg., The University of Tennessee, Knoxville, Tennessee 37996-0300. Telephone: (615) 974-5135.

Grants and Contracts In Human Services

Director: L. C. Briggs, M.S. Wisconsin.
Associate: K. J. Davis, B.S. Iowa State.

This department assists public and private human service agencies through contractual training arrangements in the development of staff capabilities and understandings through inservice continuing education. Projects are developed for public dissemination of information related humanistic concerns.

Radio Services

Director: N. L. Dyer, B.M. Indiana.

Associate Directors:
J. C. Adkins, M.S. Tennessee; J. A. Chasteen; S. D. Williamson, Jr., B.M. Tennessee.

Assistant Directors:
R. A. Shirley, M.A. Tennessee.

This department provides educational films for the public schools, colleges, churches, civic clubs, and other interested organizations on a wide variety of subjects, ranging from agriculture to technical material on the space age, and also films for industrial use. Film councils throughout the state encourage the use of these materials for forum discussions and general adult education. An advisory service on effective film use is also provided by the department. Films, equipment, and other services are made available to the academic departments of the University and to public and private institutions throughout the state.

Teaching Materials Center

Director: J. T. Benton, M.S. Tennessee.

This department provides educational films for the public schools, colleges, churches, civic clubs, and other interested organizations on a wide variety of subjects, ranging from agriculture to technical material on the space age, and also films for industrial use. Film councils throughout the state encourage the use of these materials for forum discussions and general adult education. An advisory service on effective film use is also provided by the department. Films, equipment, and other services are made available to the academic departments of the University and to public and private institutions throughout the state.
faculty for classroom instruction, and experimentation and educational films are provided for the students both on and off campus for student teaching, previews, and special projects.

Television Services

Director:
F. A. Lester, M.A. Tennessee

Assistant Directors:
D. L. Bower; W. R. Terry, B.A. Tennessee.

Producers:
S. H. Gordon, B.S. Tennessee; W. P. Wilson, B.S. Tennessee.

Artist:
Marshall Thurman.

Television services has responsibility for the administration, scheduling, production and distribution of credit courses and instructional materials over the campus closed-circuit system. The department helps all interested academic departments utilize the television closed-circuit system for instructional purposes. Some 8000 students are taught one or more resident classes each year by television.

The department also serves as a central television production facility for meeting other University needs. Television programs are produced, edited, and duplicated to open circuit broadcast, cable distribution, and videotape distribution. Production efforts include UT sports events, University news and information, continuing education materials, and graduate and undergraduate credit courses for off-campus students.
The University Library

Donald R. Hunt, Director
Betty G. Bengtson, Associate Director/Technical Services
Kenneth E. Marks, Associate Director/Public Service
Marcia J. Myers, Associate Director/Administrative Services
Aubrey H. Mitchell, Collection Development Librarian

Professors:

Associate Professors:

Assistant Professors:

Instructors:

The UTK Library, as the premier library of the state, seeks to acquire and service all necessary recorded information, both print and non-print, that meets the needs of the University's teaching, research, and service programs.

The books, periodicals, non-print and any other materials contained in the four UTK library units are available to all students, faculty and staff of The University of Tennessee, Knoxville. Included among the holdings are 1,392,009 books, 1,243,266 microforms, 5,983 audio tapes, 120,685 slides, 1,076 video tapes, more than 2 million manuscripts, and various historical ephemera, maps, and oral history tapes. More than 24,000 periodical and serial titles are received annually.

The library in its four locations is open to all students and faculty, regardless of their fields of study. The James D. Hoskins Library at 1401 West Cumberland is the main library where administrative and technical services offices are located. The dictionary catalog, listing the library holdings for the entire campus, is in Main, as are the general and research collections, comprehensive reference, interlibrary services, documents, 4000/5000-level reserves, newspapers, non-print materials, and Special Collections, the last a repository of local and regional source materials.

The John C. Hodges Undergraduate Library, on Volunteer Boulevard at Andy Holt Ave., has a limited collection of 150,000 volumes selected to meet the needs of students in undergraduate courses. Reserve materials for 1000-3000 level courses are available in this library as is a large collection of audio tapes, slides, and videocassettes.

Other libraries serving specialized areas are Agriculture-Veterinary Medicine in the Veterinary Medicine building and Music in the Music Building.

The libraries are administered by a director, three associate directors (for public, technical, and administrative services) and a number of department heads. Questions and comments are invited in person or through the suggestion boxes located in each library. Continuing evaluation and building of the collections is the responsibility of the Collection Development Librarian. While most materials are selected by faculty, recommendations for purchase are invited from all students and staff.

"Library Guides" are available in all library units, describing library services and facilities.
The University of Tennessee Computing Center (UTCC) provides computing facilities and services for the University’s teaching, research, public service, and administrative, activities. UTCC maintains close contact with the UTK academic community by supporting research and instructional users with professional computer staff.

UTCC is principally located in the Stokely Management Center and in Andy Holt Tower. From the Stokely location, UTCC supplies computing services to all campuses in the UT system through job entry facilities located on each campus. At UTK, UTCC maintains seven job entry stations for batch work and nine sites for interactive computer work. UTCC maintains a graphics center with ten Tektronix graphics terminals, five storage and five refresh, two digitizing tablets, and a graphics plotter. Another digitizing tablet, plotter, and storage terminal are available at SMC M-1. UTCC also provides data entry services with two Entrex 600/50 key-to-disk systems.

UTCC’s computers at Stokely Management Center which include two IBM 370/3031’s, an IBM 4341/2, a DECsystem-10, and a DEC PDP 11/55 are used in research, instruction, and administrative work. UTCC also has an IBM 360/40 used exclusively for administrative work. A Calcomp 1051 plotter is used to produce graphics output from jobs run on the IBM and DEC computers at SMC. Each IBM 370/3031 has six million bytes of memory, the IBM 4341/2 has eight million bytes of memory, and the DECsystem-10 has 1024K words of memory. The DEC PDP 11/55 is used to support the WIDJET job submission and retrieval system.

The IBM 370/3031’s run under SVS with HASP II. The DECsystem-10 runs under TOPS-10. Time sharing features include VM/CMS and Coursewriter III on the 370/3031’s and APL, FORTRAN, BASIC, COBOL, MACRO, and other special purpose application programs, including extensive graphics software support, on the DECsystem-10.

UTCC publishes a User’s Guide which describes the use of the IBM 370/3031’s and the DECsystem-10. The guides are available at the UT Book & Supply Store. UTCC also publishes a monthly Newsletter which announces systems, equipment and procedural changes and contains other items of interest to users. Program write-ups and special user’s guides are also available.

UTCC Periodically offers intensive training seminars of several days duration in computer utilization on the IBM 370/3031’s and the DECsystem-10. These seminars are primarily for faculty, staff and graduate students who use or plan to use UTCC facilities. UTCC offers non-credit short courses each quarter in topics such as programming languages and special purpose programs. These courses are announced in the UTCC Newsletter, the “Campus Capsule” section of the UT Daily Beacon, and “this week on campus”, a publication announcing campus events.

Computing services can be requested via the request for services form available from the receptionist, 200 Stokely Management Center. All users of UTCC facilities are assigned a consultant to provide user assistance.
Public Service

Vice President for Public Service (Acting): R. S. Hutchison, M.B.A. Chicago.

Institute for Public Service

Executive Director:
R. S. Hutchison, M.B.A. Chicago.

Assistant Director:
T. B. Ballard, B.S. Tennessee.

Business Manager:
G. W. Baskette.

Business Assistants:
C. E. Shopman, Jr., B.A. Vanderbilt; M. M. Hoes.

The Institute for Public Service was established in 1971 within the Office of the Vice President Public Service. The purpose of the Institute is to coordinate and promote public service activities throughout the University system, excluding services provided through the Institute of Agriculture.

The basic goal of the University public service effort is to bring to the citizens of Tennessee—their business, their industry, and their governments—the problem-solving capabilities uniquely embodied within their statewide University system.

Public service at The University of Tennessee includes all services offered to those outside the University, including teaching in certain non-degree situations, technical assistance, and applied research which is conducted specifically at the request and for the benefit of non-University organizations in Tennessee.

The Institute provides: (1) a system-wide focal point for urban and public services; (2) a means to coordinate the various system-level public service activities; and (3) an organizational base for communication and program development that relates to both outside service clientele of the University system.

The Institute is headquartered in Knoxville and maintains regional offices in Cookeville, Jackson, Johnson City, and Nashville.

County Technical Assistance Service

Executive Director:
J. H. Westbrook, Jr., B.S. Tennessee.

Associate Director:
R. M. Wormley, B.S. Cumberland.

Assistant Director for Administration:
T. D. McNally, M.A. Austin Peay State.

Legal Specialists:
P. C. Davis, J.D. YMCA Law School; R. E. Fults, J.D. Tennessee; W. C. McIntyre, J.D. YMCA Law School.

Senior Law Enforcement Consultant:
G. L. White.

Financial Specialists:
R. L. Adams, B.S. Bethel.

Communications and Publications Specialist:
B. E. Matter, B.S. Tennessee.

TCSA Consultant:
R. A. Johnson, M.S. Tennessee.

Senior Field Advisors:
J. R. Carmichael, B.S. Austin Peay State; M. R. Garland, M.C.M. East Tennessee State; B. C. Rodgers, B.S. Tennessee Technological.

County Field Advisors:

The County Technical Assistance Service was established by the Board of Trustees at the 1973 mid-year meeting and began operation September 1, 1973. Establishment of the Service was authorized by the 88th General Assembly for the purpose of providing studies and research in county government, publications, educational conferences and attendance thereat, and to furnish technical, consultative, and field services to counties of the state in problems relating to fiscal administration, accounting, law enforcement, improvements, and public works, and in any and all matters relating to county government. This program shall be carried on in cooperation with and with the advice of counties in the state acting through the Tennessee County Services Association and its Board of Directors, which is recognized as their official agency or instrumentality.

The Service is headquartered in Nashville, with regional offices in Cookeville, Jackson, Johnson City, and Knoxville.

Municipal Technical Advisory Service

Executive Director:
E. O. Miner, Ph.D. Utah.

Assistant Director:

Specialist Consultants:
J. R. Hight, M.S. Tennessee (Energy); D. W. Huffer, J.D. Tennessee (Ordinance Codification); J. Kersh, B.S. Tennessee (Municipal Information); F. E. Kerk, B.S. in C.E. Southern Methodist (Public Works); J. H. Leuty, B.S. Tennessee Polytechnic (Finance and Accounting); A. D. Lewis, B.S. Missouri (Energy); A. C. Lock, J.S. C.E. C.E. Oklahoma State (Public Works); R. A. Lovelace, M.P.A. Kansas (Intergovernmental Affairs); W. Owsley, J.D. Tennessee (Ordinance Codification); M. T. Pentecost, B.S. Murray State (Finance and Accounting); E. Purd, J.D. Tennessee (Municipal Law).

Municipal (District) Consultants:

The 75th General Assembly (1949) established a Municipal Technical Advisory Service at The University of Tennessee. The legislation designated the purposes to be “studies and research in municipal government, publications, educational conferences and attendance thereat, and furnishing technical, consultative, and field services to municipalities in problems relating to fiscal administration, accounting, law assessment and collection, law enforcement, improvements and public works, and any and all matters relating to municipal government.” Services are currently provided in the fields of municipal law, municipal management, public works, finance and accounting, ordinance codification, municipal information, and...
intergovernmental relations. The state is divided into four districts and a Regional Coordinator is assigned to coordinate service in that area. Headquarters for the agency is located on the Knoxville campus; regional offices are maintained in Cookeville, Jackson, Johnson City, Martin, and Nashville. This program is carried on in cooperation with the Tennessee Municipal League.

**Center for Industrial Services**

Executive Director: R. E. Harris, M.S. Tennessee, P.E.

Assistant Director: T. C. Parsons, M.S. Tennessee, P.E., CPA.


Management Consultant: J. E. Ross, M.B.A. Tennessee Technological, P.E.

Field Counselor: H. D. Reasons, B.S. Bethel.

Research Associate: N. W. Wiesenbuegel, M.L.S. Peabody.


The Center for Industrial Services has the primary role of assisting Tennessee's manufacturing firms by providing technical and managerial assistance to those companies seeking assistance. By the Tennessee Public Acts of 1963, the assigned objectives for the Center are "to render service to the industries in this state by providing information, data, and materials relating to the needs and problems of industry which might be supplied and solved through research; by providing information about available research facilities and research personnel in Tennessee colleges and universities, and in governmental and private research laboratories; by keeping Tennessee's industries informed about the supply of and demand for trained and qualified personnel; and by cooperating with the Tennessee Department of Economic and Community Development in carrying out its duties."

This statewide program encourages and assists managers of Tennessee firms to draw upon the intellectual resources of the colleges and universities to upgrade their firm's performance. Field engineers experienced in manufacturing operations take the initiative in encouraging the upgrading and expansion of management in their plant environment.

The Center for Industrial Services is headquartered in Nashville. Regional offices are maintained in Cookeville, Jackson, Johnson City, and Knoxville.

**Center for Government Training**

Executive Director: G. M. Maloney, III, M.C.M. East Tennessee State.

Associate Director: A. C. North, Jr., B.S. Middle Tennessee State.

Assistant Directors: G. T. Himes, Jr., B.S. Belmont.


Regional Managers: D. J. Edmondson, B.S. Tennessee (Chattanooga); J. W. Fort, M.A. Austin Peay State; J. W. Pryor, J.D. Memphis State; D. R. Waynick, B.S. Lambuth.

Project Manager: J. H. Wenberg, M.S. Tennessee (Chattanooga).

Assistant Project Manager: P. S. Blanton, MSSW Tennessee.

Manager of Program Development and Evaluation: J. H. Wenberg, M.S. Tennessee (Chattanooga).


The Center for Government Training has responsibility for providing professional assistance and establishing training and career development programs for state and local government officials and employees throughout the state. Headquarters is located in Nashville, but regional offices are also maintained in Jackson and Knoxville. The Center is charged with identifying and analyzing needs for public service education and training at the state and local levels in Tennessee, and with developing and conducting programs for training of public agency employees, working with institutions of higher education in the state and other educational facilities. The Center acts as a clearing house for information relative to public service personnel education and training programs. In addition, the Center serves as the central administrative agency in a statewide local government training network which includes four campuses of the University and the six senior institutions in the Board of Regents system.

**Critical Care Education Center**

Director: N. J. Shepard, B.S. Middle Tennessee.

Assistant Director: P. P. Vaughan, M.S.N. Vanderbilt.

Coordinators: J. C. Driver, A.S. Tennessee (Nashville); V. S. Rice, M.S.N. Vanderbilt; L. A. Tillman, M.S.N. Vanderbilt.

The Critical Care Education Center, created in 1971 by the Middle Tennessee Hospital Council, became a part of the former UT Nashville campus in 1973. Following the merger of UTN and Tennessee State University in 1979, the Center was moved to the Institute.

The Center provides: (1) a monthly series of one-hour videotape courses used to keep hospital personnel updated on the latest developments in critical care; (2) a 13-month, 688-hour paramedic training course for Middle Tennessee ambulance personnel; and (3) a four-week, 140-hour critical care course that provides certification required by the Joint Commission on Accreditation of Hospitals for registered nurses to staff and intensive care units.
## Administration

Trustees:
- Appointed by the Governor: 18
- Ex-Officio: 5

Officers of Administration:
- President: 1
- Vice-Presidents: 6
- Associate/Assistant Vice Presidents: 9
- Chancellors: 4
- Vice Chancellors: 16
- Associate/Assistant Vice Chancellors: 5
- Deans and Directors: 230

### Faculty for 1981-82

<table>
<thead>
<tr>
<th>Faculty for 1981-82</th>
<th>Center for the Health Sciences(^a)</th>
<th>Chattanooga</th>
<th>Knoxville</th>
<th>Martin</th>
<th>Institute of Agriculture</th>
</tr>
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<tr>
<td><strong>Full-Time</strong></td>
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<tr>
<td>Professors</td>
<td>156</td>
<td>49</td>
<td>422</td>
<td>52</td>
<td>71</td>
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<tr>
<td>Associate Professors</td>
<td>143</td>
<td>94</td>
<td>358</td>
<td>100</td>
<td>95</td>
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<tr>
<td>Assistant Professors</td>
<td>187</td>
<td>101</td>
<td>280</td>
<td>52</td>
<td>60</td>
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<tr>
<td>Instructors/Lecturers/Agents</td>
<td>69</td>
<td>16</td>
<td>100</td>
<td>19</td>
<td>391</td>
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<tr>
<td><strong>Total Full-Time Faculty</strong></td>
<td>555</td>
<td>260</td>
<td>1160</td>
<td>223</td>
<td>617</td>
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<tr>
<td><strong>Total Part-Time Faculty</strong></td>
<td>176</td>
<td>2</td>
<td>177</td>
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<td><strong>Total Faculty</strong></td>
<td>731</td>
<td>262</td>
<td>1337</td>
<td>242</td>
<td>621</td>
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Graduate, Research, and Teaching Assistants, Fellows, Trainees: 1745\(^b\)

### Officers of Other Units

- Officers of the UT Center for the Health Sciences-Knoxville Unit: 34
- Officers of the Institute of Agriculture: 30

\(^a\)Includes UTCHS—Knoxville unit.
\(^b\)Fall 1980.
# STATEWIDE ENROLLMENT SUMMARY

**Fall 1981**

<table>
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<th></th>
<th>Freshman</th>
<th>Sophomore</th>
<th>Junior</th>
<th>Senior</th>
<th>Graduate</th>
<th>Undergraduate</th>
<th>Professional</th>
<th>Subtotal</th>
<th>TOTAL</th>
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<tr>
<td>Knoxville</td>
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<tr>
<td>Knoxville Day</td>
<td>4,204</td>
<td>3,944</td>
<td>2,308</td>
<td>2,062</td>
<td>2,312</td>
<td>1,759</td>
<td>2,619</td>
<td>2,128</td>
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<td>Chattanooga Coop Center (AD)</td>
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<td>3</td>
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<td>Kingsport</td>
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<td>Oak Ridge</td>
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<td></td>
<td>114</td>
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<td>Oak Ridge Biomedical Science</td>
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<td>Social Work—Memphis</td>
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<td>Social Work—Nashville</td>
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<td>All Other Off Campus</td>
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<td>10</td>
<td>8</td>
<td>5</td>
<td>213</td>
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<td><strong>Sub-Total</strong></td>
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<td>4,005</td>
<td>2,316</td>
<td>2,071</td>
<td>2,323</td>
<td>1,762</td>
<td>2,827</td>
<td>2,133</td>
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<td>Space Institute</td>
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<tr>
<td><strong>Total Knoxville</strong></td>
<td>4,258</td>
<td>4,005</td>
<td>2,312</td>
<td>2,071</td>
<td>2,323</td>
<td>1,762</td>
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**NOTE:**

1. The enrollment data in this statewide summary of The University of Tennessee System represent students enrolled for degree credit. Students enrolled only on a non-credit or audit basis are not included.
2. UT Center for the Health Sciences does not include 654 graduate medical students (residents and interns).
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