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
Student Academic Calendar
for 1975-1976

Summer Quarter 1975

June 16-17  Registration, First or Both Terms
June 18  Classes Begin
July 4  Independence Day Holiday (no classes)
July 7  Drop Deadline, First Term
July 18  Classes End, First Term
July 21  Registration, Second Term
July 22  Classes Begin, Second Term
July 22  Drop Deadline, 12-Week Term
August 8  Drop Deadline, Second Term
August 21  Classes End
August 23  Commencement

Winter Quarter 1976

January 5  Orientation (Transfer & Freshman)
January 5-6  Registration
January 7  Classes Begin
February 10  Drop Deadline
March 16  Classes End
March 19  Commencement

Spring Quarter 1976

March 25  Orientation (Transfer & Freshman)
March 25-26  Registration
March 29  Classes Begin
April 16-17  Easter (no classes)
May 3  Drop Deadline
June 8  Classes End
June 11  Commencement

Fall Quarter 1975

September 19  Orientation (Transfer Students)
September 22  Orientation (Freshman Students)
September 22-23  Upperclassman & Graduate Registration
September 23-24  Freshman and Transfer Registration
September 25  Classes Begin
October 29  Drop Deadline
October 31  East Tenn. Educ. Assoc. (no classes)
November 8  Homecoming (no classes)
November 27-29  Thanksgiving (no classes)
December 9  Classes End
December 12  Commencement

Summer Quarter 1976

June 21  Orientation (Transfer & Freshman)
June 21-22  Registration, First or Both Terms
June 23  Classes Begin
July 5  Independence Day Holiday (no classes)
July 9  Drop Deadline, First Term
July 21  Classes End, First Term
July 22  Registration, Second Term
July 23  Classes Begin, Second Term
July 27  Drop Deadline, 12-Weeks Courses
August 9  Drop Deadline, Second Term
August 19  Classes End
August 23  Commencement
Contents

Calendar for 1975-76
Board of Trustees
University Administration
Knoxville Administration
The University
Programs of Study
Colleges and Schools
Faculty
Map of Knoxville Campus
Physical Facilities
Historical Background

Academic Policies and Costs
Admission to the University
Academic Regulations
Degree Requirements
Fees and Expenses
Housing
Student Financial Aid
Scholarships and Grants
Student Loans
Student Employment
Honors and Awards
Campus Honorary and Professional
Fraternities

Student Affairs and Services
Vice Chancellor for Student Affairs
Office
International Student Affairs
University Center
Office of Recreation
Student Health Service
Student Counseling Center
Religious Influences
Student Organizations
Hearing and Speech Services
Career Planning and Placement
Service
Vehicle Operation and Parking
Cultural Opportunities
Athletics
Student Publications
Traditions

Memorial Research Center and Hospital
Learning Research Center
University Publications
University of Tennessee Press
Computing Center

Colleges, Schools, and Other Academic Units
The Graduate School
Graduate School of Biomedical Sciences
Graduate School of Library and Information Science
Graduate School of Planning
Graduate School of Social Work
Water Resources Development
Space Institute
Institute of Agriculture
College of Agriculture
College of Veterinary Medicine
School 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
School of Nursing
Air Force Aerospace Studies
Military Science
Division of Continuing Education
University Library
Urban and Public Affairs
General Summary
Index
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, Tennessee Higher Education Commission

From Congressional Districts
Howard N. Westhaaver, Morristown
E. S. Bevins, Jr., Concord
Leonard Raulston, Lookout Mountain
William E. Miller, Cookeville
Robert A. McDowell, Nashville
Clyde M. York, Columbia
Ben Douglass, Lexington
Tom Elam, Union City
Frank R. Ahlgren, Memphis

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<th>Service</th>
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<td>Howard N. Westhaaver</td>
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<td>Second</td>
<td>E. S. Bevins, Jr.</td>
<td>1971</td>
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<td>Clyde M. York</td>
<td>1953</td>
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<td>Ben Douglass</td>
<td>1951</td>
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<td>Tom Elam</td>
<td>1956</td>
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<tr>
<td>Ninth</td>
<td>Frank R. Ahlgren</td>
<td>1948</td>
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From Anderson, Bedford, Coffee, Franklin, Lincoln, Moore, and Warren Counties
Don O. Shadow

From Hamilton County
Paul J. Kinser

From Knox County
Ann Baker Furrow
Frank P. Bowyer

From Shelby County
Harry W. Laughlin
Marcus J. Stewart

From Weakley County
Wayne Fisher

Student Member
William B. Nolan

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William E. Miller, Vice Chairman
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Brodie Baynes, Treasurer
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The President is a member ex-officio of all standing committees.
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Treasurer, Brodie Baynes, B.S., CPA
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Emeritus Vice President for Academic Affairs, Kenneth L. Knickerbocker, A.B., A.M.,
PH.D.
THE UNIVERSITY OF TENNESSEE, KNOXVILLE

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Assistant to the Chancellor, Gerald H. Gaither, B.S., A.M., PH.D.
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Vice Chancellor for Graduate Studies and Research, Hilton A. Smith, A.B., A.M., PH.D.
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Auxiliary Enterprises, Director, James L. McAuliffe, B.A., M.S.
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Student Activities, Director, 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, Hilton A. Smith, A.B., A.M., PH.D.

Institute of Agriculture
Dean of College of Agriculture, O. Glen Hall, B.S., M.S., PH.D.
Dean of College of Veterinary Medicine, Willis W. Armistead, D.V.M., M.S., PH.D.

School of Architecture
Dean, Donald D. Hanson, B.ARCH., M.ARCH.

College of Business Administration
Dean, John B. Ross, 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, James D. McComas, B.S., M.S., PH.D.
School of Health, Physical Education, and Recreation, Director, George F. Brady, B.E., A.M., PH.D.

College of Engineering
Dean, and Director of Engineering Experiment Station, Fred N. Peebles, B.S. in CH.E., M.S., PH.D.

College of Home Economics
Dean, Lura M. Odland, B.S., M.S., PH.D., D.SC.

College of Law
Dean, Kenneth L. Penegar, A.B., J.D., LL.M.

College of Liberal Arts
Dean, Alvin H. Nielsen, A.B., M.S., PH.D.

School of Library and Information Science
Director, Gary R. Purcell, A.B., M.L.S.

School of Nursing
Dean, Sylvia E. Hart, B.S.N., M.S.N., PH.D.

School of Planning
Director, James A. Spencer, A.B., M.C.P.

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, Stanley C. Beck, B.S., M.S., Colonel, USAF.

Army Reserve Officers' Training Corps
Professor of Military Science, William D. Guinn, Jr., B.S., M.B.A., Colonel, USA

AT OAK RIDGE
Oak Ridge Graduate School of Biomedical Sciences
Director, Daniel Billen, B.S., M.S., PH.D.

AT TULLAHOMA
Space Institute
Dean, Charles H. Weaver, 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
The University of Tennessee is a multi-campus, multi-purpose system of higher education encompassing all Tennessee. It is the state's official State University and Federal Land-Grant Institution—frequently called "the capstone of the state's educational system." The institution is owned and supported by the people of Tennessee. It also receives some federal support for certain programs sponsored cooperatively by the state and federal governments.

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. The five primary campuses are under the direct supervision of chancellors. 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

The highest institution in the state's public education system, the University has the responsibility of providing the young 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.

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 1974, a total of 45,440 students enrolled on the five campuses of The University of Tennessee System. This total included 28,011 enrolled at Knoxville and Centers, 2,519 at the Center for the Health Sciences (Memphis), 4,978 at Martin; 5,034 at Chattanooga; and 4,998 at Nashville.

To serve the academic needs of all of these students, the University system offers 165 degree programs at the bachelor's level, 148 at the master's level, and 65 at the doctoral level. The degree programs offered by colleges and schools of the UT, Knoxville campus are described in this catalog. Degree programs offered by the Center for the Health Sciences (at Memphis) and at Martin, Chattanooga, and Nashville 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 academic programs consist of twenty-three colleges and schools which offer studies on five primary campuses at Knoxville, Memphis, Martin, Chattanooga, and Nashville. The Knoxville campus also offers programs at Oak Ridge, Tullahoma, 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
School 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
School of Nursing
Graduate School of Planning
Graduate School of Social Work

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

At Tullahoma
Space Institute

At Memphis
Joint University Center—MSU/UT

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
THE STATE IS THE CAMPUS OF THE UNIVERSITY OF TENNESSEE

LEGEND
- Academic Campuses
- Agricultural Experiment Stations
- Agricultural Extension Service District Offices
- 4-H Centers
- Extension Leaders and Agents
- Institute for Public Service Regional Offices

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

UT AT CHATTANOOGA
College of Arts and Sciences
College of Professional Studies
Engineering Division
Graduate Division

UT AT NASHVILLE
Undergraduate degrees offered in arts and
sciences, business administration, education,
engineering, and nursing; graduate degrees
offered in business administration; graduate
studies offered, in conjunction with the
Knoxville campus, in engineering and public
administration. All programs except nursing
offered primarily in evenings.

Faculty
A highly competent faculty is the most
essential quality of a strong institution of
higher education. The University of
Tennessee has a distinguished group of
faculty members, nationally recognized for
scholastic and professional achievements.
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 for 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.

The Faculty elects a representative body
called the 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.

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 a hundred
different extracurricular organizations and
activities are maintained on the University's
Knoxville campus.

Research
As Tennessee's most comprehensive
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 attack problems confronting the
people of Tennessee, and to discover new
knowledge leading to greater development of
human and material resources. All groups
within the state—farmers, industrialists,
medical personnel, businessmen, and
others—look to the University for
developments such as increased yields of
crops, improved industrial processes, new
medicines to combat illness, and similar
advancement in all fields of endeavor.

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
Memorial Research Center and Hospital
at Knoxville
Center for the Health Sciences at
Memphis—all divisions have
organized research programs.
Water Resources Research Center
The Graduate School—embraces almost all
departments in all colleges, is founded upon
research; graduate students are required to
do research as part of their study programs.
Extension and Public Service

The University's teaching programs and research findings extend beyond the limits of the campus 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 three large divisions established 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 services are maintained at Chattanooga, Cookeville, Jackson, Knoxville, and Nashville.

Division of Continuing Education, which serves in non-agricultural areas of education. The Division’s program includes Teaching Materials Center, Radio and Television Services, Conferences and Institutes, Correspondence Instruction, class instruction, Library Services, and the Head Start Regional Training Office. Extension centers are located at Knoxville, Memphis, Nashville, Oak Ridge, and Kingsport.

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 are the Municipal Technical Advisory Service, the County Technical Assistance Service, the Center for Government Training, the Center for Industrial Services, the Civil Defense Education Program, the Technical Assistance Center, and the State Agency for Title I, Higher Education Act of 1965. In addition, the Institute jointly supports with UT Knoxville two specialized research and service units, the Environment Center and the Transportation Center.

Physical Facilities of the University

The University of Tennessee's physical plant—its land, buildings, and equipment—has a book value in excess of $327,764,000. A total of 157 major buildings, 38,846 acres of land, more than $55,737,000 worth of equipment, about $4,297,000 worth of books, and hundreds of small buildings and miscellaneous items constitute the physical plant.

The Knoxville campus is valued at approximately $145,379,000 and the Memorial Research Center and Hospital at $16,504,000. Facilities of the Center for the Health Sciences at Memphis are valued at approximately $32,251,000, the Martin campus, $31,649,000, the Chattanooga campus, $25,553,000, and the Nashville campus, $6,901,000. Facilities at the Tullahoma Space Institute are valued at $3,198,000. Experimental farms, livestock, and other facilities throughout the state have a value of $6,293,000.

Buildings on the main campus and agricultural 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 below. 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 catalog 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 older institutions of higher education in the nation. Blount College also had other unusual qualities. It was strictly nonsectarian in character, which was unique among institutions of higher education in that day. The institution has remained nondenominational to the present time and is said to be the oldest such institution west of the Appalachian Divide. Moreover, Blount College for a few years admitted women as students, thus becoming the first coeducational college in the United States, though it is probable these first co-eds studied in a sub-collegiate department. The institution later restricted enrollment to men, but reverted to its present coeducational status in 1892.

In 1807 the institution began to widen the scope of its service area. During that year the State Legislature changed the institution’s name to “Ecolelege” and made it the recipient of one-half of the proceeds of the sale of land set aside by Congress for the support of two colleges, one in East and the other in Middle Tennessee. 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. After the war East Tennessee University reopened again, and from that time to the present the institution has enjoyed its most significant advances.

In 1869 East Tennessee University was selected by the State Legislature as Tennessee’s Federal Land-Grant Institution, under terms of the Morrill Act passed by Congress in 1862. This selection meant the establishment of an Agricultural and Mechanical College as part of the University, supported by an endowment resulting from the sale of land warrants received by Tennessee from the Federal Government. Thus the efforts of the institution to broaden its offerings from a college to a true university were given a tremendous boost.

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 head and an integral part of the public education system. By this act the state pledged to the University its own name and reputation and promised the institution a future in keeping with the prestige of the state.

Since its establishment, the University has grown into an institution consisting of twenty-three different colleges and schools, and it has become statewide in its physical location 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 at 900 College Avenue in 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 1969 with the merger of the University with the University of Chattanooga. In 1971 the University’s Nashville Center, established in 1947, was made the fifth primary campus. Down through the years Agricultural Experiment Stations were established at Jackson, Spring Hill (Columbia), Springfield, Lewisburg, Crossville, Wartburg, Oak Ridge, Greeneville, and Grand Junction. The system Division of Continuing Education coordinates all continuing education programs offered by the five primary campuses, and the Division of Continuing Education, Knoxville, conducts evening classes, conferences, and institutes for the Knoxville campus. The Agricultural Extension Service has district offices at Jackson, Nashville, Cookeville, Chattanooga, and Knoxville and has agricultural extension leaders and agents in every one of Tennessee’s ninety-five counties.

In 1968 the Board of Trustees reorganized the institution into a university system, giving a central administrative staff responsibility for the entire statewide functions of the University and establishing chancellors on the primary campuses, responsible for their respective campuses.

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. As a result, the University has been able to broaden and strengthen its programs to meet the educational and research needs of the people of Tennessee and has become one of the leading institutions of higher education in the nation—an institution with international prestige.
Academic Policies and Costs

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

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

Applications, credentials, and inquiries should be directed as follows:

- For admission to all undergraduate programs, including the University Evening School:
  - Director of Admissions
  - The University of Tennessee
  - Knoxville, Tennessee 37916
  - (615) 974-2184

For readmission of former undergraduate students:

- Director of Readmissions
- The University of Tennessee
- Knoxville, Tennessee 37916

For admission to the College of Law (see College of Law Bulletin for information on admission to the College of Law):

- Dean, College of Law
- The University of Tennessee
- Knoxville, Tennessee 37916

For admission to the Graduate School (see Graduate School Catalog for information on admission to the Graduate School):

- Graduate School
- The University of Tennessee
- Knoxville, Tennessee 37916
- (615) 974-3251

For admission to the Colleges of Basic Medical Sciences, Dentistry, Medicine, Nursing (except Knoxville School of Nursing), and Pharmacy and programs in the allied health professions, administered by The University of Tennessee Center for the Health Sciences in Memphis (see Health Sciences Catalog for information on admission to these colleges):

- Director of Admissions
- The University of Tennessee
- Center for the Health Sciences
- 62 South Dunlap
- Memphis, Tennessee 38103

**Deadlines**

Applications for undergraduate admission and all supporting credentials must be received by the Director of Admissions no later than August 1 for Fall Quarter admission, and no later than three weeks before the start of classes for admission to any other quarter.

Former students who have been dropped from the University for academic deficiency or disciplinary reasons must apply for readmission to the Director of Readmissions no later than six weeks before the start of classes of the quarter they wish to enter.

**Undergraduate Admissions Requirements**

Applicants for undergraduate admission to the University must meet the following:

1. general requirements as indicated below,
2. requirements for the applicant's specific admission category as shown in Table I, and
3. requirements of the academic college or school the applicant seeks to enter as shown in Table II.

**ACADEMIC CREDENTIALS**

- **Freshman Applicants**—Transcript of high school credits and score report of the American College Testing Program (ACT). These should be received at the University preferably in the fall of the senior year; a supplementary high school credit sheet of final senior grades should be sent after graduation.

- **Transfer Applicants**—Complete transcripts of all college work at each college or university attended.

**EVIDENCE OF GOOD CHARACTER**

- **Freshman Applicants**—Recommendation of high school principal.

- **Transfer Applicants**—Character report from college student personnel officer(s).

**Residency**

Students are classified as in-state or out-of-state for the purpose of determining fees and tuition on the basis of regulations established by the Board of Trustees. Basically, these regulations state that:

1. students receiving support from their parents, and
2. students independent of parental support may establish Tennessee residency for fee purposes by living in Tennessee for at least one year before applying for admission to the University and by proving, to the University's satisfaction, that they came to Tennessee for reasons other than obtaining an education for themselves or their spouses.

A student's residency classification for fee purposes also determines whether the student will be considered under in-state or out-of-state admissions requirements.

**Units**—Entrance requirements are stated in terms of units. A unit represents nine months of study in a subject in secondary school, constituting approximately a quarter of a full year's work. A four-year secondary school curriculum should be regarded as representing sixteen units of work as a minimum.

**Unit Requirements**—For admission sixteen units, with high school graduation, are required as specified on the following pages. Graduates of Tennessee high schools must present one unit in American history or take a comparable course during the first year in college, with college credit.

**Unit Requirements for Individual Programs**

A number of programs offered by the University require specific high school units for admission beyond the general University admissions requirements. These are shown in Table II.

**Furnished Specialized Students**—Students who meet University admissions requirements but do not meet the specific unit requirements of the program they seek to enter may be admitted as unclassified students. They will be assigned special advisors in the college they plan to enter. Students so admitted should remove entrance deficiencies as soon as possible, and in no event later than one year following enrollment. Students who have not removed entrance deficiencies by the start of their third year in college will not be allowed to continue at the University.

**Special Requirements for International Students**

In making application for admission to undergraduate study, each international student will be required to provide the following:

1. A completed application for undergraduate admission;
2. Authenticated copies of all academic records. These records should describe the courses of instruction in terms of years spent in school and types of work covered, with grades earned in each subject;

### Table I: Maximum Units

<table>
<thead>
<tr>
<th>Subject</th>
<th>Maximum Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bible</td>
<td>1</td>
</tr>
<tr>
<td>Biology</td>
<td>1</td>
</tr>
<tr>
<td>(Botany &amp; Zoology)</td>
<td>2</td>
</tr>
<tr>
<td>Bookkeeping</td>
<td>1</td>
</tr>
<tr>
<td>Business Arithmetic</td>
<td>1</td>
</tr>
<tr>
<td>Business English</td>
<td>1</td>
</tr>
<tr>
<td>Chemistry</td>
<td>1</td>
</tr>
<tr>
<td>Civics</td>
<td>1</td>
</tr>
<tr>
<td>Commercial Law</td>
<td>1</td>
</tr>
<tr>
<td>Distributive</td>
<td>1</td>
</tr>
<tr>
<td>Education</td>
<td>1</td>
</tr>
<tr>
<td>Dramatics</td>
<td>1</td>
</tr>
<tr>
<td>Economics</td>
<td>1</td>
</tr>
<tr>
<td>English</td>
<td>4</td>
</tr>
<tr>
<td>French</td>
<td>4</td>
</tr>
<tr>
<td>Geography</td>
<td>1</td>
</tr>
<tr>
<td>Geology</td>
<td>1.5</td>
</tr>
<tr>
<td>Geometry</td>
<td>1.5</td>
</tr>
</tbody>
</table>

**Group B**

<table>
<thead>
<tr>
<th>Subject</th>
<th>Maximum Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>4</td>
</tr>
<tr>
<td>Distributive</td>
<td>2</td>
</tr>
<tr>
<td>Education</td>
<td>2</td>
</tr>
<tr>
<td>Engineering</td>
<td>2</td>
</tr>
<tr>
<td>Drawing</td>
<td>2</td>
</tr>
<tr>
<td>Home Economics</td>
<td>2</td>
</tr>
</tbody>
</table>

**Table II: Maximum Units**

<table>
<thead>
<tr>
<th>Subject</th>
<th>Maximum Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Science</td>
<td>1</td>
</tr>
<tr>
<td>German</td>
<td>4</td>
</tr>
<tr>
<td>Greek</td>
<td>3</td>
</tr>
<tr>
<td>Health Education</td>
<td>1</td>
</tr>
<tr>
<td>History</td>
<td>4</td>
</tr>
<tr>
<td>Italian</td>
<td>2</td>
</tr>
<tr>
<td>Journalism</td>
<td>1</td>
</tr>
<tr>
<td>Latin</td>
<td>4</td>
</tr>
<tr>
<td>Music Appreciation</td>
<td>1</td>
</tr>
<tr>
<td>Music Harmony</td>
<td>1</td>
</tr>
<tr>
<td>Musical Performance</td>
<td>1</td>
</tr>
<tr>
<td>Physics</td>
<td>1</td>
</tr>
<tr>
<td>Physiology</td>
<td>1</td>
</tr>
<tr>
<td>Sociology</td>
<td>1</td>
</tr>
<tr>
<td>Spanish</td>
<td>4</td>
</tr>
<tr>
<td>Speech</td>
<td>1</td>
</tr>
<tr>
<td>Trigonometry</td>
<td>0.5</td>
</tr>
</tbody>
</table>

**Group B**

<table>
<thead>
<tr>
<th>Subject</th>
<th>Maximum Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>4</td>
</tr>
<tr>
<td>Other subjects accepted for high school graduation, each field of study</td>
<td>2</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1</td>
</tr>
<tr>
<td>R.O.T.O.</td>
<td>1</td>
</tr>
<tr>
<td>Shopwork</td>
<td>2</td>
</tr>
</tbody>
</table>
### TABLE I

**ADMISSIONS REQUIREMENTS FOR SPECIFIC CATEGORIES**

<table>
<thead>
<tr>
<th>Admissions Category</th>
<th>Admissions Requirements¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>FRESHMAN In-State</td>
<td>Graduation from an approved high school; completion of all high school units required for the program student seeks to enter, as specified in Table II; applicants not having a high school grade point average of at least 2.25 nor an ACT composite score of at least 17 will be assigned a special adviser. ACT score report is required for counseling and advisement.</td>
</tr>
<tr>
<td>FRESHMAN Out-of-State</td>
<td>Same as for in-state freshmen except that applicants from states in the region served by the Southern Association of Colleges and Schools, and from Arkansas, must have minimum high school grade point average at least 2.25 and 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</td>
<td>At least 18 years old; average standard score of at least 50 on the high school level General Educational Development Tests; applicant's high school class must have graduated; completion of high school units required for the program student seeks to enter, as specified in Table II.</td>
</tr>
<tr>
<td>FRESHMAN—EARLY ADMISSION</td>
<td>Completion of junior year in high school; completion of high school units required for the program student seeks to enter; high school grade point average at least 3.50 and ACT scores at or above the 95th percentile for University of Tennessee freshmen; nomination by the student's high school principal and consent of parents; review and approval by the Director of Admissions.</td>
</tr>
<tr>
<td>TRANSFER In-State</td>
<td>At least 12 hours of college credit work at an accredited institution of higher learning; honorable dismissal from all such institutions attended; grade point average on all college work attempted at least the minimum that the University of Tennessee requires of its own students for readmission (see Undergraduate Academic Continuation, page 20 of this catalog.)²</td>
</tr>
<tr>
<td>TRANSFER Out-of-State</td>
<td>Same as for in-state transfer applicants except that grade point average on all college work must be at least 2.00 to be eligible for consideration. Eligible students will be screened by the Committee on Admissions for final decision.</td>
</tr>
<tr>
<td>SPECIAL STUDENT</td>
<td>Applicant's high school class must have graduated; may not be candidate for bachelor's degree; must show satisfactory evidence of preparation for courses attempted. Special students may accumulate no more than 90 hours of college credit toward a degree (including any previous college work). To enroll in a degree program, a special student must meet transfer admissions requirements. Former University of Tennessee students may not be admitted as special students unless they have already earned a bachelor's degree.</td>
</tr>
</tbody>
</table>

¹Grade point averages are expressed on a 4.00 scale.
²Transfer applicants planning to enter the School of Architecture or the College of Communications must have college grade point average of at least 2.00. Transfer applicants who have attempted at least 36 quarter hours of college work must have grade point averages of at least 2.00 for admission to the College of Education, the College of Business Administration or the College of Home Economics.
### TABLE II
HIGH SCHOOL UNITS REQUIRED FOR ADMISSION TO SPECIFIC PROGRAMS

<table>
<thead>
<tr>
<th>College/Degree Sought</th>
<th>English</th>
<th>One Foreign Language</th>
<th>Algebra</th>
<th>Geometry</th>
<th>Advanced Math or Trigonometry</th>
<th>Science or Humanities</th>
<th>Minimum Group A Units</th>
<th>Total Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>COLLEGE OF AGRICULTURE</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Bachelor of Science in Agriculture</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td>16</td>
</tr>
<tr>
<td>Bachelor of Science in Forestry</td>
<td></td>
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<tr>
<td>Bachelor of Science in Agricultural</td>
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<tr>
<td>Engineering</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0.5</td>
<td></td>
<td></td>
<td></td>
<td>16</td>
</tr>
<tr>
<td>SCHOOL OF ARCHITECTURE</td>
<td></td>
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<tr>
<td>Bachelor of Architecture</td>
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<td></td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0.5</td>
<td>4.5</td>
<td></td>
<td></td>
<td>16</td>
</tr>
<tr>
<td>COLLEGE OF BUSINESS ADMINISTRATION</td>
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<tr>
<td>Bachelor of Science in Business Administration</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td>16</td>
</tr>
<tr>
<td>COLLEGE OF COMMUNICATIONS</td>
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<tr>
<td>Bachelor of Science in Communications</td>
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<tr>
<td></td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>12</td>
<td></td>
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<td>16</td>
</tr>
<tr>
<td>COLLEGE OF EDUCATION</td>
<td></td>
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<td>16</td>
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<tr>
<td>Bachelor of Science in Education</td>
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<tr>
<td>COLLEGE OF ENGINEERING</td>
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<tr>
<td>Bachelor of Science in Engineering</td>
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<td></td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0.5</td>
<td>12</td>
<td></td>
<td></td>
<td>16</td>
</tr>
<tr>
<td>COLLEGE OF HOME ECONOMICS</td>
<td></td>
<td></td>
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<td>16</td>
</tr>
<tr>
<td>Bachelor of Science in Home Economics</td>
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<tr>
<td></td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td>16</td>
</tr>
<tr>
<td>COLLEGE OF LIBERAL ARTS</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>Bachelor of Arts, general and pre-professional curricula</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td>16</td>
</tr>
<tr>
<td>Bachelor of Fine Arts</td>
<td></td>
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<td></td>
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<tr>
<td>Bachelor of Music</td>
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<td></td>
</tr>
<tr>
<td>Two-year pre-dentistry, pre-medical technology, and pre-physical therapy programs</td>
<td></td>
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<tr>
<td>Bachelor of Science in Chemistry</td>
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</tr>
<tr>
<td>Two-year pre-pharmacy program</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Two-year pre-nursing program</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>SCHOOL OF NURSING (Knoxville)</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Bachelor of Science in Nursing</td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td>16</td>
</tr>
</tbody>
</table>

**Remarks**

- A second unit of algebra may be offered in lieu of geometry.
- These units allow admission to first-year pre-architectural program. Admission to the second year requires: (1) satisfactory completion of pre-architectural program with grade point average at least 2.0, (2) a personal interview and evaluation of applicant's work by a 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.
- A unit of advanced mathematics or trigonometry may be offered in lieu of the second unit of algebra or the unit of geometry.
- A second unit of algebra may be offered in lieu of geometry.
- Three units of science, including physics, are recommended.
- A second unit of algebra may be offered in lieu of geometry. See College of Liberal Arts Section, page 153, for discussion of language requirements.
- A second unit of algebra may be offered in lieu of geometry; a unit of history or social science is required.
- A second unit of algebra may be offered in lieu of geometry.
- A second unit of algebra may be offered in lieu of geometry. One unit of chemistry is recommended.
3. All international students whose native language is not English must present their scores on the Test of English as a Foreign Language (TOEFL). Test results should be sent by Educational Testing Service to the Director of Admissions. Final consideration cannot be granted until test results are received by the Director of Admissions.

NOTE: All international students whose native language is not English must also take an English Proficiency Examination after they arrive at the University. Students will be placed in appropriate English courses based on the results of this examination.

Advanced Standing by Examination

Students at The University of Tennessee, Knoxville may accelerate their programs through credit by examination. To receive such credit, a student must be regularly enrolled at the Knoxville campus.

ADVANCED PLACEMENT EXAMINATIONS

Students who satisfactorily pass Advanced Placement Examinations prepared and administered under the auspices of the College Entrance Examination Board are eligible to receive credit in courses offered by the College of Liberal Arts on the basis of such tests. In each case the final decision as to whether or not credit is to be given on this basis rests with the appropriate department, 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. Participating departments are Botany, Chemistry, Classical Languages, English, German, History, Mathematics, Physics, Romance Languages, and Zoology.

PROFICIENCY EXAMINATIONS

Proficiency examinations for advanced standing are offered in the Colleges of Agriculture, Business Administration, Education, Engineering, Liberal Arts, and Home Economics, and in the School of Nursing (Knoxville). A student may obtain the privilege of taking proficiency examinations on recommendation of the head of the department and approval of the Registrar. See additional discussion on page 21.

Additional Requirements for Registration of Admitted Students

EVIDENCE OF GOOD HEALTH

(1) Physical examination by a licensed physician, (2) tetanus immunization which is up-to-date, and (3) chest X-ray or tuberculin test. These requirements exist for the protection of all students. They are to be completed and approved by the applicant's doctor on the physical examination form which is sent to admitted students. This form must be returned to the Student Health Service before enrollment.

PARTICIPATION IN ORIENTATION

Beginning freshman and transfer students are required to attend an orientation session prior to their first registration at the University. Schedules for these programs are mailed to admitted students by the Dean of Student Conduct and Orientation. Orientation programs are designed to help new students become acquainted with opportunities and services at the University, and to provide information needed for registration.

Faculty Advising

Once students are admitted, the University accepts certain responsibilities for their guidance and placement in order that they may secure the greatest benefit from their university work. At registration each student is assigned to a member of the faculty, who acts as the student's adviser. The duties of the adviser are to assist the student in selecting subjects to ensure a well-rounded education, and to aid the Student Counseling Center in interpreting the University's requirements. The responsibility for the selection of courses rests, in the final analysis, upon the student, and it is not the province of the adviser to refuse approval of a course which the student selects. Similarly, it is the full responsibility of all students to meet the requirements of their courses of study in their proper order, so that they may not in the senior year find themselves ineligible for graduation. At the opening of each quarter students are urged to consult their advisers concerning their choice of studies. They are also urged to confer with their advisers frequently during each quarter. Students also have the privilege of consulting with the Dean of their college. All beginning students, and former students whose grade point averages are below 2.00, must obtain adviser approval of their course selections at registration.

The Colleges of Business Administration, Education, and Liberal Arts have established advising centers where students may go at any time for advice on academic matters. The Student Counseling Center, Temple Court, is available to any student desiring help with individual or personal problems. Facilities are also available for improving reading skills and study habits. Students may go to the Center themselves or they may be referred by members of the faculty.

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 attended, not including hours for which grades of N, NG, P, S, SI, and W have been received.

Undergraduate students are graded on the following scale:

<table>
<thead>
<tr>
<th>Grade Level</th>
<th>Quality Points Per Hour of Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Superior</td>
<td>4</td>
</tr>
<tr>
<td>B Good</td>
<td></td>
</tr>
<tr>
<td>C Satisfactory</td>
<td>2</td>
</tr>
<tr>
<td>D Below Average</td>
<td>1</td>
</tr>
<tr>
<td>F Failure</td>
<td>0</td>
</tr>
</tbody>
</table>

Graduate students taking courses for graduate credit may also receive grades of B+ (3.5 quality points per quarter hour of credit) and C+ (2.5 quality points per quarter hour of credit).

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 0.5 and below count as failures.

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.

I (incomplete) is assigned to a student whose work is satisfactory but who has failed to complete a laboratory, shop, or other parallel exercise. 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 Student English certifies to the instructor that a student has made the necessary improvements.

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

GRADES THAT DO NOT INFLUENCE GRADE POINT AVERAGE

The grades of N, NG, P, and W carry no quality points, but hours on which these grades are earned are not counted in computing a student's grade point average. Hence these grades have no effect on grade point average.

N (no progress) indicates lack of progress on an intermediate quarter of a course approved by the Undergraduate Council or Graduate Council to extend beyond one quarter (see P below). At the end of the last quarter of such a course a final grade and the total credit hours will be recorded for the course. The grade of N is also used to indicate lack of progress on a graduate thesis or dissertation.

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

NG (no grade) indicates failure to complete a course satisfactorily for graduate students.

P (pass) designates a passing grade without further indication of performance level. It may be awarded to students who take courses on a pass-fail or pass-no grade basis. The grade of P also indicates satisfactory performance on an intermediate quarter of a course approved by the Undergraduate
Council or Graduate Council to extend beyond one quarter, as with the grade of N above. Finally, the grade of P is used to indicate progress on a graduate thesis or dissertation.

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

SI (Incomplete) is assigned in S/NC graded courses only. See Section 3.17 for requirements for completion.

W (withdrawal) is assigned in courses from which a student has officially withdrawn. Regulations concerning withdrawal from courses or from the University appear in the 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 he usually does well and, motivated by his own intellectual curiosity, explore a subject matter in which performance may be somewhat less outstanding than work in preferred subject fields. To this end a Satisfactory/No Credit (S/NC) system of 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 take as much as eight hours of S/NC grading in any one quarter (excluding courses offered only for S/NC grades). A student may not repeat a course for S/NC if the student received a conventional grade (A,B,C,D,F or I).

The instructor of a conventionally graded course will not be informed which student, if any, has elected S/NC grading. If the student elects nonconventional grading, the computer converts an A to an S, B to a C, C to an S and a D or F to NC. The grade of I for incomplete work will be recorded as an S, which will not be computed in the average. A student is permitted to change the system of grading in a course, through the add deadline. The grade W will be applied in the same manner for either a regular grading system or S/NC grading. The changing of an S/NC grade to a regular letter grade or vice versa is not permitted unless a bona fide error is determined by the Registrar.

REPEATING COURSES

When a course is repeated the last grade only is counted in computing the grade point average. All grades are entered on the permanent record. A student may not repeat a course more than twice in order to obtain a better grade.

GRADUATING SENIOR PRIVILEGES

A senior who fails one subject during the quarter of intended graduation has the privilege of standing an examination in that subject at the beginning of or during the next quarter, and, if successful, receiving the degree at the next commencement.

A senior who receives the grade of I in any subject will request on 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 him/her eligible for graduation.

ENGLISH PROFICIENCY

Students are expected to maintain a satisfactory standard of oral and written English throughout their college programs. Any student may be reported by a member of the faculty for examination in English, and, if found deficient by the Committee on Student English, as required to take without credit such further work as the Committee may direct. To facilitate the reporting of students deficient in English, faculty members may apply 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 continued until the student has notified of his deficiency and shall continue until the student's performance in English has been declared satisfactory by the laboratory instructor, or both.

Changes in Registration

Mid-Term is an announced date midway between the beginning and ending days of classes each quarter or session (35 calendar days after the beginning of classes, except for summer sessions). Prior to Mid-Term undergraduate students may withdraw from courses specified below. Providing space is available and prior to the third meeting of the class, students may add courses without the permission of the student's department. Students may not add courses after the second meeting of a class without permission of the instructor of the course and the dean of the college in which the student is enrolled. Change of sections must be approved by the department head or the instructor of the class the student wishes to enter. All official withdrawals from the University are made through the Office of Special Services. It is important that all students who leave the University prior to the completion of a quarter report their withdrawal to this office.

Withdrawal from University before Mid-Term (35 calendar days). If an undergraduate student officially withdraws from the University 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. Prior to Mid-Term neither the instructor's nor the advisor's permission is required. A course dropped during the first five class days in any quarter will not appear on the student's permanent record. Graduate students should consult the Graduate School 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 Mid-Term will receive the grade of "F" unless it can be clearly demonstrated that one of the following conditions exists:

a. illness or injury of the student; as verified by the student's health service or private physician;

b. serious personal or family problems as verified by the student's parents, minister, physician, etc.;

c. necessary change in work schedule as verified by the student's employer;

d. change of major or minor, or change in the course that the student wishes to drop would not normally be used in satisfying degree requirements. Acceptance of the student into the new program should be verified by the dean of the college administering the program;

e. financial inability to continue at the University, or;

f. call to active military service.

A student will not be permitted to drop a course after mid-term simply to avoid a poor grade.

A student wishing to withdraw from a course, or from the University after the withdrawal deadline, must present a request, together with evidence of extenuating circumstances, to the Office of Special Services. If the request is approved, this office will notify the Registrar, who will enter the grade(s) of "W" on the student's permanent record. Graduate students should consult the Graduate School Catalog for regulations concerning the dropping of courses and withdrawal from the University.

Course Numbers And Levels

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

<table>
<thead>
<tr>
<th>Course Numbers</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>0000-0999</td>
<td>Non-credit; preparatory</td>
</tr>
<tr>
<td>1000-1999</td>
<td>Lower division—primarily for freshmen and sophomores</td>
</tr>
<tr>
<td>2000-2999</td>
<td>Upper division—primarily for seniors</td>
</tr>
<tr>
<td>3000-3999</td>
<td>Upper division—primarily for juniors and seniors; usually available for graduate credit; when taken for graduate credit, the letter &quot;G&quot; will precede the course credit hours on the grade report</td>
</tr>
<tr>
<td>4000-4999</td>
<td>Graduate; sometimes available for undergraduate credit; when taken for graduate credit, the letter &quot;U&quot; will precede the course credit hours on the grade report</td>
</tr>
<tr>
<td>5000-5999</td>
<td>Graduate; sometimes available for undergraduate credit; when taken for graduate credit, the letter &quot;U&quot; will precede the course credit hours on the grade report</td>
</tr>
<tr>
<td>6000-6999</td>
<td>Advanced graduate; open to graduate students only</td>
</tr>
<tr>
<td>7000-7999</td>
<td>Open to exceptionally qualified students</td>
</tr>
</tbody>
</table>
QUARTER HOURS PASSED

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Engineering</th>
<th>Agriculture</th>
<th>Undergraduate</th>
<th>Programs</th>
<th>Law</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Architecture</td>
<td>Engineering</td>
<td>Forestry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>First</td>
<td>0-51.9</td>
<td></td>
<td>0-44.9</td>
<td>0-44.9</td>
<td>0-39.9</td>
</tr>
<tr>
<td>Second</td>
<td>52-103.9</td>
<td>45-89.9</td>
<td>45-89.9</td>
<td>40-79.9</td>
<td></td>
</tr>
<tr>
<td>Third</td>
<td>104-155.9</td>
<td>90-134.9</td>
<td>90-134.9</td>
<td>80-134.9</td>
<td></td>
</tr>
<tr>
<td>Fourth</td>
<td>156-207.9</td>
<td>135-179.9</td>
<td>135-up</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fifth</td>
<td>208-up</td>
<td>180-up</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

To be eligible for upper-division work a student must have attained junior (third-year) status, as defined in the following section, unless approval is granted by the dean of the student's college. This rule applies to transfers, as well as 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 and law 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. (Audit hours are not considered in this computation.) For the summer quarter, an undergraduate student must be enrolled in 6 quarter hours each six-week term to be classified as full-time for the term.

Teacher Certification

Teacher certification is a responsibility of the College of Education of The University of Tennessee, Knoxville. Students desiring certification must meet general education, professional education, and area specialization 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) hour requirement in Health or Physical Education.

Honors Courses

Courses specifically designed 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 hours credit toward graduation. (In the fields of science offering four-hour courses the total may be twelve hours.) There is also a non-departmental honors course open to a limited number of freshmen entering in any college.

Auditors

Students registered for credit courses may enter classes as auditors, subject to the approval of the instructor whose class is visited. Auditors are under no obligation of regular attendance, preparation, recitation, or examination. They receive no credit. They may not take part in class discussion or laboratory or field work.

Students not registered for credit courses may be admitted as auditors only with the consent of the Director of Admissions; they are required to register, pay the fees for auditors, and to have class cards for the courses they elect to attend.

Minimum Class Size

An undergraduate course will not be given for fewer than five students except by permission of the Vice Chancellor for Academic Affairs.

Undergraduate Academic Continuation

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 following chart.

<table>
<thead>
<tr>
<th>Total Quarter Hours Attempted</th>
<th>Minimum Acceptable Grade Point Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-35.9</td>
<td>1.00</td>
</tr>
<tr>
<td>36-83.9</td>
<td>1.50</td>
</tr>
<tr>
<td>84-149.9</td>
<td>2.00</td>
</tr>
</tbody>
</table>

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

A student who has attempted over 150 hours will be dropped for graduation requirements only, except when on academic probation. Such students, if on academic probation, must attain a cumulative average of 2.00 or a 2.00 for that quarter, or be dropped from the University.

A student who has been dropped from the University for the first time or who has been absent must make application for readmission. Readmission is not automatic. Application must be made at least six weeks before registration. The Committee on Readmissions may approve or refuse the application for readmission. Students are strongly encouraged to appear in person before the Committee on Readmissions.

A student who has been previously dropped and readmitted will be placed on academic probation. Failure to meet the regular University standards of retention during the probationary quarter or subsequent thereto will result in the student's being dropped from the University and required to remain out of school for at least three quarters before becoming eligible to apply for readmission.

A transfer student who is conditionally admitted and fails to meet the regular University standards during the probationary quarter or subsequent thereto will be dropped from the University and may not make application for readmission for three academic quarters. Freshmen who enter as probationary students and fail to meet the requirements of their probationary status must make application for three academic quarters. Full committee approval is required for further enrollment.

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 is considered a regular quarter in determining absence from the University.

C. The quarter hours attempted in determining continuation are used for readmission purposes only. Pass/Fail, Satisfactory/No Credit, and Pass/No Grade hours are included in hours attempted but excluded in determining minimum cumulative grade point average requirements for retention and graduation.

D. Students who transfer to other accredited colleges or universities must submit an acceptable grade point average before gaining regular status to the University.

E. To register for credit or audit courses in any branch, center, or division of the University controlled by the Knoxville campus, a student must meet the admission or readmission regulations that govern courses for credit at the Knoxville campus.

Correspondence courses are open to students regardless of admission or readmission status.

F. A student will not be readmitted when the record indicates a very low probability of success in college work. In its review of an application, a Committee on Readmissions shall consider the applicant's total record, including the academic record and other factors which may be expected to influence academic performance.

G. No student referred by the Committee on Readmissions may be permitted to re-enter the University without the approval of the Committee.

H. There will be no tentative readmissions.

Comment: The University of Tennessee, Knoxville, is committed to helping students overcome academic deficiencies. A letter advising of academic probation will be sent at about the same time as the quarterly grade report. This letter will advise the student to see his/her 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 following requirements.

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, Curricular
requirements change frequently, and students should note the caution on the programs in 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 ten years of the date of graduation. This does not obligate the University to offer a discontinued course. Other sets of requirements will be available only upon approval 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 enroll at UTK within one year after the last period of study at the institution from which he or she is transferring.

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

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

4. Maintain 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 90 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 at least twenty-seven quarter hours of upper division technical agriculture approved by the student's faculty adviser must be completed at The University of Tennessee, Knoxville. In the College of Home Economics, the last six quarters must be completed at The University of Tennessee, Knoxville. Work taken for credit through the University's Continuing Education program is presented 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.

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

8. Pay to the Treasurer's Office a $10.00 graduation fee no later than the beginning of the quarter the student plans to graduate.

9. File an application for a degree with the Office of the Registrar, Room 209 Student Services Building, no later than six weeks before the date the student plans to graduate.

SECOND BACHELOR'S DEGREE

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

1. Meet all requirements for both degrees, as specified above.

2. Complete at least forty-five quarter hours beyond the first bachelor's degree.

3. Attend the University for at least three quarters beyond the minimum time required for the first bachelor's degree.

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 each quarter of the Vice Chancellor for Graduate Studies and Research.

Correspondence Work

The candidate may offer by correspondence as much as one-fourth of the total hours required for the degree sought and have this work count toward the degree. Credit for undergraduate courses in correspondence 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 Medical Units.

A senior may take only nine hours of the last year's work (the last forty-five hours offered for the degree) by correspondence, and this must be taken with The University of Tennessee, Knoxville. If the candidate is a senior transfer, no work may be taken by correspondence or extension.

Students taking work for certification purposes should consult the State Department of Education of their respective states concerning the amount of extension and/or correspondence credit allowed for a teacher's certificate. All courses taken by correspondence for which degree credit is given must meet degree program requirements of the Knoxville campus.

Proficiency Examinations

Any student may apply for proficiency examinations in selected undergraduate subjects in the Colleges of Agriculture, Business Administration, Education, Engineering, Home Economics, and Liberal Arts, and in the School of Nursing (Knoxville). A student applying for a proficiency examination should present evidence that he or she has developed the abilities and attitudes expected of students who have taken the course involved. The application must be approved by the department offering the course. A fee of $10.00 will be charged per course. A student who passes a proficiency exam is allowed a choice of taking the grade on the exam (A, B, or C) or taking an S as credit in the course. Exception to this is when a proficiency course is graded only on an S/N basis. By taking an S a student would not affect the grade point average. The maximum credits obtained through proficiency examinations and the use of proficiency examinations to remove failing grades (also the grade of I) are determined by the department offering the proficiency examination.

When approved by a given department, nationally recognized examinations, such as the appropriate subject examinations of 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 $5.00 for the evaluation of such an examination.

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.

Accelerated Program

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

Personnel Forms

Each candidate for a degree may file personnel material with the Bureau of Personnel Service. The services of the Bureau are available to all candidates for degrees during the year previous to the payment of the graduation fee and thereafter. The payment of the graduation fee entitles the candidate to all alumni privileges for the two-year period immediately following graduation.

Advanced Military Science 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.

**Degrees**

**AT KNOXVILLE**

*Graduate School*

Doctor of Business Administration.
Doctor of Education.
Doctor of Philosophy.
Specialist in Education.
Master of Arts.
Master of Business Administration.
Master of Fine Arts.
Master of Mathematics.
Master of Music.
Master of Public Health.
Master of Science.
Master of Science in Library Science.
Master of Science in Planning.
Master of Science in Public Administration.
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.
Doctor of Veterinary Medicine.

*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 Law*

Doctor of Jurisprudence.

*College of Liberal Arts*

Bachelor of Arts.
Bachelor of Fine Arts.
Bachelor of Music.
Bachelor of Science in Chemistry.

*School of Nursing*

Bachelor of Science in Nursing.

**CENTER FOR THE HEALTH SCIENCES**

(See CHS Bulletin)

*Graduate School—Medical Sciences*

Doctor of Philosophy.
Master of Science.

*College of Basic Medical Sciences*

Master of Science in Medical Technology.
Bachelor of Science in Medical Technology.

*College of Medicine*

Doctor of Medicine.
Master of Science in General Surgery.
Master of Science in Obstetrics and Gynecology.
Master of Science in Orthopedic Surgery.
Master of Science in Pediatrics.
Master of Science in Urological Surgery.

*College of Dentistry*

Doctor of Dental Surgery.
Master of Science in Orthodontics.
Master of Science in Pedodontics.

*College of Pharmacy*

Master of Science in Pharmacy.
Bachelor of Science in Pharmacy.

*College of Nursing*

Bachelor of Science in Nursing.

*School of Physical Therapy*

Bachelor of Science in Physical Therapy.

**AT CHATTANOOGA**

(See Bulletin of UT Chattanooga)

Bachelor of Arts.
Bachelor of Music.
Bachelor of Science.
Bachelor of Science in Engineering.
Bachelor of Science in Nursing.
Master of Business Administration.
Master of Education.
Master of Science.

**AT MARTIN**

(See Bulletin of UT Martin)

Associate of Arts in Nursing.
Bachelor of Arts.
Bachelor of Science.
Bachelor of Science in Agriculture.
Bachelor of Science in Business Administration.
Bachelor of Science in Education.
Bachelor of Science in Engineering Technology.
Bachelor of Science in Home Economics.
Bachelor of Science in Law Enforcement.
Bachelor of Science in Natural Resources Management.
Master of Science in Education.
Master of Science in Home Economics.

**AT NASHVILLE**

(See Bulletin of UT Nashville)

Associate of Arts in Fire Science Administration.
Associate of Arts in Nursing.
Bachelor of Arts.
Bachelor of Science.
Bachelor of Science in Business Administration.
Bachelor of Science in Education.
Bachelor of Science in General Engineering.
Bachelor of Science in Nursing.
Master of Business Administration.

**Fees and Expenses**

**Maintenance Fee.** All students, including both in-state and out-of-state, are required to pay the established maintenance fee.

**Tuition.** Tuition is free to residents of Tennessee. However, tuition is required for all students who are classified as non-residents for fee assessment purposes.

**Classification for Fees.** A student’s classification is determined primarily by the domicile of his parents. Exceptional cases are given special consideration and are determined on the basis of the particular circumstances in each case. Any student who is classified as an out-of-state student may request that his classification be reconsidered. When additional information concerning a student’s classification is available, the student should provide the Office of the Dean of Admissions with this information.

**Student Hospitalization and Medical Insurance.** The University makes available, by contract with an insurance company, group hospitalization insurance expressly for students. Changes in the group plan may be authorized by the University after annual review depending on prevailing hospital costs in the Knoxville area.

As would be expected with a large student group contract, a low premium cost for the individual student is obtained. Students are urged to avail themselves of this insurance, or other comparably adequate insurance, since the paying for hospital care is the student’s own responsibility.

Information about the insurance is mailed by the company to the student’s home and his participation is solicited. Enrollment in the insurance program remains open for a designated period after classes begin. The student wishing to avail himself of this insurance after arriving on the campus may
obtain the application from the Office of Student Health Services. Whether application is made from his home or from the campus, the student applies directly with the Knoxville agent of the insurance company. Enrollment in insurance is not a part of registration for classes. 

NOTE: Some family policies do not cover the dependent child after his nineteenth birthday. The family hospitalization insurance policy should be reviewed from this aspect.

Military Deposits. All students registering for Air Science and members of the band are required to make a deposit of $35.00 each to cover damage to or loss of property issued to them. The unused portion of the deposits will be returned to the students after completion of training.

Identification Card. ID cards, issued 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 cashing facilities in the UT Bookstore, and admission to various athletic, social, and cultural events. These cards are non-transferable and may not be duplicated. 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 342, University Center.

University Fees

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

MAINTENANCE FEE

Undergraduate Students
Graduate and Law Students
TUITION (additional for all-out-of-state students)

Per Quarter $136.00
Per Quarter $146.00
Per Quarter $284.00

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.

Undergraduate Students
In-State $16.00 per quarter hour or fraction thereof; minimum charge $48.00
Out-of-State $35.00 per quarter hour or fraction thereof; minimum charge $105.00

Graduate and Law Students
In-State $22.00 per quarter hour or fraction thereof; minimum charge $66.00
Out-of-State $48.00 per quarter hour or fraction thereof; minimum charge $144.00

UNIVERSITY PROGRAMS AND SERVICES Fee
Per Quarter $15.00

All undergraduate and graduate students taking in excess of six quarter hours per quarter will be assessed a University Programs and Services Fee of $15.00 per quarter. Part-time students taking six quarter hours or less will be assessed at the rate of $1.00 per quarter hour or fraction thereof (minimum charge $3.00) but are not entitled to admission to general activities programs. This fee is not refundable.

The University Programs and Services Fee for the Summer Quarter will be $12.00. Part-time students taking six quarter hours or less will be assessed at the rate of $1.00 per quarter hour or fraction thereof (minimum charge $3.00) but are not entitled to admission to general activities programs.

Students taking a course load of six hours may elect to pay the full Programs and Services Fee.

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

Students enrolled exclusively in Evening School or at Oak Ridge and Kingsport Centers will be exempt from the University Programs and Services Fee.

ACTIVITIES CARDS ARE NON-TRANSFERABLE AND MAY NOT BE DUPLICATED

MUSIC FEE:
One hour-half hour lesson per week, per quarter $20.00
One hour lesson per week, per quarter $40.00
Payable by eligible full-time students receiving individual instruction in music.

GRADUATION FEE:
Bachelor's Degree $10.00
Master's Degree $16.00
Doctoral Degree (except J.D.) $36.00
Payable at the beginning of the quarter in which the candidate is to be graduated. This fee is non-refundable and is valid for four quarters.

DELAYED REGISTRATION SERVICE FEE

Graduated Late Service Fee $2.00 per day

Students (including Law College students) who pre-register and for whom a class schedule (either complete or partial) is available on the regular registration dates must pay their fees (or make satisfactory arrangements with the Treasurer's Office) on these dates. Effective the first regular business day (excluding Saturday, Sunday, and any holidays) following the last regular registration day a graduated late service fee of $2.00 per day will be charged during the next ensuing five regular business days. ($2.00 first day, $4.00 second day, $6.00 third day, $8.00 fourth day, and $10.00 fifth day.)

Students who do not pre-register but register through the "secondary" registration procedures will be granted two additional days after the final regular registration day to pay their fees before the graduated late service fee begins. Such students will be charged the graduated late service fee beginning with the third regular business day following the last regular registration day (Minimum charge $8.00 third day, $8.00 fourth day, $10.00 fifth day).

Additional Late Service Fee $10.00

All students who have not completed registration and paid their appropriate charges (or made satisfactory arrangements with the Treasurer's Office) within five regular business days after the last regular registration day will be charged an additional $10.00 late service fee (total $20.00).

This $10.00 service fee is also applicable to delays in payment occasioned by checks which fail to clear the bank on which drawn, and to room and board charges which are not paid (or satisfactory arrangements made for deferral) within five regular business days after registration or assignment date, whichever is later.

Reinstatement Service Fee $10.00

Students who have not completed registration and paid their appropriate charges (or made satisfactory arrangements with the Treasurer's Office) within ten regular business days after the last regular registration day may, at the discretion of the University, be automatically withdrawn from the University. A student withdrawn for such reason will be assessed the appropriate fees as of the date dropped. Students in this category who, either before or after withdrawal, may be permitted to continue their enrollment will be charged a $10.00 reinstatement service fee in addition to the other service fees set forth in the previous paragraphs (total $30.00).

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

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

The failure of students to pay their debts or other obligations to the University or any component thereof when due may result in denial of registration, graduation, and the withholding of the transcripts.

DEFERRED PAYMENT SERVICE FEE $3.00

Applicable when the payment of any part of a student's account is deferred by satisfactory arrangement with the Treasurer's Office, including accounts which must be billed to outside agencies, organizations and institutions. This fee is also applicable when any additional charge (out-of-state tuition, music fee, room and board adjustments, etc.) is not paid within five regular business days after the date it was incurred. Students are expected to take the initiative to pay all University obligations promptly.

APPLICATION FEE $10.00

Each undergraduate, graduate, and College of Law application for admission must
be accompanied by a fee of $10.00 before it will be processed. This fee is not refundable.

PROFICIENCY FEES: $10.00

Fees for proficiency and substantiating examination are $10.00 per course. See page 21 for information on proficiency, CLEP, or other organized examinations.

CO-OP REGISTRATION FEE: $5.00

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

AUDITOR'S FEE:

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

SPECIAL STUDENT AND POST-BACCALAUREATE FEES:

Special students pay fees at the undergraduate rate. Post-Baccalaureate students pay fees at the graduate rate although graduate credit is not given for course work.

REFUND OF FEES AND ADJUSTMENTS:

Upon receipt of a class schedule, partial or complete, a student is responsible for payment of appropriate fees. Withdrawal from the University after receiving a class schedule must be by official notification to the Office of Special Services. The minimum of 20 per cent of fees will be charged even if classes are not attended. Failure to promptly notify the Office of Special Services when withdrawing could result in a larger percentage fee assessment. The effective date of withdrawal is the date the Office of Special Services is notified and the withdrawal notice is recorded.

For a regular academic quarter, withdrawal within 7 calendar days beginning with the first day following regular registration permits an 80 per cent fee refund. Withdrawal between 8 and 14 calendar days following regular registration permits a 60 per cent fee refund. Withdrawal between 15 and 21 calendar days following regular registration permits a 40 per cent fee refund. Withdrawal between 22 and 28 calendar days following regular registration permits a 20 per cent fee refund. Refunds, in accordance with the refund policy, will be made after the drop deadline.

No refund is due on courses which are dropped unless the sum of the remaining hours calculated at the hourly rate plus the adjusted charge for the course(s) dropped is less than the total amount paid or the maximum quarterly tuition and/or maintenance fee. On the Knoxville campus no refund is made for courses dropped later than twenty-one calendar days after the last regular registration day. Refunds resulting from dropped courses will be made after the final audit at the end of the quarter.

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

Note: All charges and refunds will be made to the nearest even dollar. All charges are subject to subsequent audit and verification. Errors will be corrected by appropriate additional charges or refund. Other information on fees, expenses, refunds, and adjustments is given in the Timetable (Schedule of Classes) for each quarter.

Summer Quarter Fees and Expenses

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

Although the Summer Quarter is divided into terms of varying lengths (three-, four-, six-week, etc.), tuition and fees are assessed at the regular quarter hour rate up to the maximum charge for a complete regular quarter.

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. Estimates for equivalent accommodations and meals elsewhere will usually be somewhat higher.

<table>
<thead>
<tr>
<th>Undergraduate</th>
<th>Graduate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintenance Fee</td>
<td>$408</td>
</tr>
<tr>
<td>Programs &amp; Services Fee</td>
<td>45</td>
</tr>
<tr>
<td>Room and Meals</td>
<td>1,095</td>
</tr>
<tr>
<td>Books, Supplies, etc.</td>
<td>180</td>
</tr>
<tr>
<td>Laundry &amp; Dry Cleaning</td>
<td>90</td>
</tr>
</tbody>
</table>

Total for Tennessee Residents

$1,818 $1,848

Add for Non-Resident Tuition

852 852

$2,670 $2,700

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 they commute from the home of 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 halls assignments for the academic year are made in the summer. The student must be admitted to the University prior to assignment. If a student withdraws from the University, his housing contract is suspended in accordance with policies stated in the contract. Students assigned to residence halls on the room and board plan will be given contracts written to include both room and board. A contract for housing signed by a student is binding for the term of contract and is rigidly enforced by the University.

Additional information pertaining to single student housing may be obtained from the Office of Residence Halls, The University of Tennessee, 37916.

Off-Campus Housing. Students living in off-campus housing are expected to observe the same rules of conduct and standards that are applicable to all students. The student is responsible for obtaining his off-campus housing. The University does not list, refer, inspect or approve these facilities. The terms and conditions for the rental of off-campus housing are between the student and the landlord.

Graduate Students. Single graduate students may be assigned to the University's residence halls or the single student apartments. Special graduate floors are available upon request. 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, 37916.

Food Service Facilities

Excellent University-operated food service facilities have been provided. They are air-conditioned, conveniently located in relation to residence halls, and serve nourishing food at reasonable prices.

The University recognizes the educational role that its food service facilities play in student life and group living. The Food Services Department employs a highly 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 the student residing in residence halls and not under the Board Plan, excellent, well-planned meals can also be obtained from cafeterias operated on a cash basis.

In addition, the Food Services Department offers a "Charge Plan" whereby a student can charge his meals and have the bill rendered to him or his parents monthly.

For the late evening snack or morning coffee break, the most popular spots on the
made possible through funds provided by the University, outside foundations, estates, private citizens, civic groups, individuals, and alumni. The administration of these scholarships is coordinated by the Financial Aids Office. Some undergraduate scholarships for currently enrolled students are administered in the various schools and departments of the University.

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 is based solely on academic achievement. If you wish to compete for merit scholarships only, you must submit an Application for Student Financial Aid. A Parents' Confidential Statement is not necessary.

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 scholarship stipends range from $100 to $750.

Most scholarships are awarded for one year, with the recipient competing for scholarships each year of enrollment in the University. The majority of these scholarships are awarded by local individuals, foundations, and other organizations.

Supplemental Educational Opportunity Grants. This is a program of direct grants available to entering freshmen, transfer, and enrolled undergraduate students with exceptional financial need. The amount of financial assistance a student may receive depends upon: the family's total income; assets; the costs of attending the University; the student's academic achievement and financial need; and the costs of the student's family. The University requires each student to apply annually for renewal of financial aid. The renewal of financial aid is based upon the student's academic achievement and financial need.

Academic achievement is judged by the applicant's secondary school academic record and scores on the American College Test Battery (ACT). Academic achievement for currently enrolled students and transfer students is judged by the applicant's cumulative grade point average. The University of Tennessee has three basic types of financial aid—scholarships and grants, loans, and part-time employment. These may be awarded individually or in combination according to the needs of the student.

Scholarships and Grants

Scholarships. The University of Tennessee (Knoxville) scholarship program for entering freshmen and currently enrolled students is available to students at the University Center throughout the year. Loans up to $2,200 per academic year can cover living expenses in addition to tuition, fees, and books. Application forms are available in the Financial Aids Office.

Nursing Scholarship Program. 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 amount of scholarship which a student may receive depends upon his financial need. The maximum scholarship available for any student in a twelve (12) month period is $2,000. The above regulations and provisions of the Nursing Scholarship Program are subject to change by federal legislative action.

Student Loans

National Direct Student Loans. Long-term loans are available primarily through the National Direct Student Loan. Proven need for financial assistance determines your eligibility.

Loan repayment and interest payments on National Direct Student Loans 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 also be deferred for a period of three (3) years while the borrower is serving in the Armed Forces, Peace Corps, or Vista. Interest is 5 per cent per year on the unpaid balance. The repayment period is ten (10) years with the current minimum annual repayment of $180.00 or 10 per cent of the accumulated loan, whichever is greater.

If the graduate student becomes a full-time teacher in a public or non-profit school which is designated by the commissioner as having a high enrollment of low-income families or becomes a teacher of the handicapped, 15 per cent of total principal plus interest is cancelled for the first and second year of teaching, 20 per cent for the third and fourth years, and 30 per cent for the fifth year. If after graduation you are employed at a full-time job, payments on the unpaid balance must be made at a rate of 1% per cent of the principal plus interest.

An undergraduate may be extended a maximum annual loan of $1,250 to an accumulated loan total of $5,000. Graduate level students may be extended annual loans of $2,500 to a maximum accumulated loan total of $10,000. The above regulations and provisions of the National Direct Student Loan Program are subject to change by federal legislative action.

The University of Tennessee Student Loan. Student loans from University sources, established by friends and alumni of the University, are available to currently enrolled students. You can be extended a loan up to $250 per quarter to an annual maximum of $750. The interest is 3 per cent per annum payable annually on the anniversary date of the loan. The loan is usually paid within a twelve-month period and is due at the end of a stated number of years from the date of the note.
Extensions may be obtained if you continue your academic studies at the graduate school level. The borrower may, without penalty, pay all or part of his loan at any time before the maturity date.

**Nursing Student Loans.** The Nursing Student Loan is available to students who are enrolled or admitted as students in a course of study leading to a baccalaureate degree in Nursing and who show need of assistance in order to pursue their course of study. The program provides a long-term low-interest loan with repayment beginning nine months following termination of half-time study at an accredited school of nursing. Repayment may also be deferred for a period up to three (3) years while the borrower is serving in the Armed Forces or Peace Corps or up to five (5) years for full-time course of study leading to advanced professional training. If upon graduation you become employed full-time as a registered nurse in a public or non-profit private agency or institution, up to 85 per cent of the principal may be cancelled at the rate of 15 per cent of the loan that was unpaid on the first day of employment plus interest for the first three years of employment and 20 per cent for the fourth and fifth year.

A Nursing Student Loan or any other educational loan will be repaid by HEW if the nursing graduate enters into an agreement to serve as a full-time registered nurse for a continuous period of at least two (2) years in an area designated as having a shortage of nurses. Thirty per cent of principal and interest will be cancelled for the first two (2) years of service and 25 per cent for the third year. The above regulations and provisions of the Nursing Loan Program are subject to change by legislative action.

**Student Employment**

Two employment programs are administered in the Financial Aid Office to help students find part-time employment. The College Work-Study Program is administered in accordance with an agreement between The University of Tennessee and the United States Office of Higher Education. To be eligible, the applicant must be accepted for enrollment or, if currently enrolled, be in "good standing" with the University. Eligibility further depends upon the need for assistance. The above regulations and provisions of the College Work-Study Program are subject to change by federal legislative action.

The Student Employment Service operates as a central referral agency. It coordinates listings of employment from both University and private employers with the requests of students seeking part-time employment. Referrals are made in accordance with the student’s skills and qualifications. Part-time jobs range from 15 to 20 hours per week. If part-time employment is a financial necessity to the student with a low grade average, he is advised to accept a job which will not interfere with work per week.

Spouses of full-time students or students not enrolled full-time in the University should contact the Personnel Office, 1900 Terrace Avenue, The University of Tennessee, Knoxville, Tennessee 37916, concerning employment.

**Other Assistance**

The Basic Educational Opportunity Grant Program's central purpose is to assist in making available the benefits of post-secondary education to qualified students who display a financial need for funds. The program is administered by the U.S. Office of Education or a specified agency contracting with the Office of Education. Applications are available in high schools, post-secondary educational institutions, post offices, and other locations easily accessible to students. The student submits his application for determination of family contribution to the specified agency contracting with the Office of Education to calculate the family contribution. The contractor notifies the student of his expected family contribution. The student forwards a copy of the notification form to the institution which he/she plans to attend. The University then reviews the expected family contribution, computing and dispersing the B.E.O.G. funds to the student.

When the program is fully funded, maximum grants are $1400 less the parent contribution or one-half of the cost of education. For information write to U.S. Office of Education, Washington, D.C.

The Tennessee Educational Loan Corporation, through participation agreements with lending institutions of the State of Tennessee, enables these institutions to make long-term personal loans to help pay educational expenses. You must have been a Tennessee resident for one year prior to entrance in the University. You must be admitted, registered, and in good standing at the University. Interest on such loans is paid by the Federal Government while the student is in school if the student is eligible for interest benefits.

During the repayment period which begins no less than nine months after graduation or withdrawal from the University, the student pays up to 7 per cent simple interest. The maximum amount of a loan to an undergraduate in a twelve-month period cannot exceed $2500. Total loans outstanding may not exceed $7,500 for the undergraduate or $10,000 for the graduate student. Complete information is available at most Tennessee banks and credit unions, or can be obtained by writing the Tennessee Student Assistance Corporation, 707 Main Street, Nashville, Tennessee 37206.

The Tennessee Tuition Grant Program is designed to further the opportunity for higher education for residents of the State. Tuition grants range from a maximum of one hundred dollars ($100) to a maximum of one thousand dollars ($1000), dependent upon the need of the student and the amount of tuition and mandatory fees assessed by the institution. The highest grant at the University of Tennessee is approximately four hundred dollars ($400). Students are eligible to choose the educational institution in Tennessee, public or private, which they wish to attend, provided the college or university offers undergraduate academic work leading to a baccalaureate degree at least a minimum two-year certificate or degree program, and is accredited by the Southern Association of Colleges and Schools.

More information may be obtained on the Tennessee Tuition Grant Program by writing to Tennessee Student Assistance Corporation, 707 Main Street, Nashville, Tennessee 37206.

**Application Procedures**

**ENTERING FRESHMEN AND UNDERGRADUATE TRANSFERS**

(1) Complete and submit an undergraduate application for Admission.

(2) Complete and submit the application for financial aid on or before the following priority deadlines: Freshmen-March 1; Undergraduate Transfer-April 1.

(3) Complete and submit a Parents' and/or Student's Financial Statement to the College Scholarship Service approximately three (3) weeks prior to the March 1 or April 1 deadline.

(4) Apply for the Basic Educational Opportunity Grant, and, if you are a Tennessee resident, the Tennessee Tuition Grant.

**CURRENTLY ENROLLED STUDENTS**

(1) Complete and submit the application for financial aid on or before April 1.

(2) Complete and submit the Parents' and/or Student's Financial Statement to the College Scholarship Service approximately three (3) weeks before the April 1 priority deadline.

(3) Apply for the Basic Educational Opportunity Grant and, if you are a Tennessee resident, the Tennessee Tuition Grant.

**ENTERING GRADUATE AND LAW STUDENTS**

(1) Apply for admission to the appropriate administrative office at The University of Tennessee.

(2) Complete and submit the application for financial aid on or before May 1.

(3) Complete and submit a Parents' and/or Student's Financial Statement to the College Scholarship Service approximately three (3) weeks before the May 1 priority deadline.

Financial aid programs, policies, and procedures are subject to annual change. Therefore, those interested in applying for financial aid should refer to the current informational brochure, "Financial Assistance for Students," distributed by the Financial Aid Office.

Applications for financial aid can be obtained by writing to The Financial Aid Office, 301 Student Services Building, The University of Tennessee, Knoxville, Tennessee 37916. Graduating Tennessee high school students are encouraged to obtain application materials and information from their high school guidance counselor.

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

- Accelerated Program Scholarships
- AFCI-O Estes Kefauver Memorial Scholarship
- Agrico Scholarship
- Agricultural Faculty-Alumni Scholarships
- Air Force ROTC
- Aloha Foundation Scholarships
- Alpha Kappa Delta Scholarships
- Alpha Lambda Delta Scholarships
East Tennessee Electrical Contractors Scholarship
East Tennessee Title Insurance Agency Scholarship
Electrical Engineer Discretionary Scholarship
Dick Evans Scholarship
Shawn Everhart Kefauver Memorial Scholarship Fund
John and Rella Factor Foundation Estes Kefauver Memorial Scholarship Fund
John Richard Fain Student Aid Scholarships
Fayette County Farm Bureau Agricultural Scholarship
Dr. Mark P. Fecher Agricultural Scholarship
N. E. Fitzgerald Scholarship
Flemmiker Fowler and McClamroch Memorial Scholarship
Fletcher Scholarship
Grace C. Follin Memorial Scholarship
Henry L. Ford Scholarship
Robert L. Forrester Memorial Scholarship
Franklin County Farm Bureau Scholarship
Margaret Franklin Memorial Fund
Julius and Henrietta Freed Memorial Scholarship
Katherine and Helen Freed Memorial Scholarship
Eugene C. Fretz Memorial Scholarship
Laurence Gardiner Agricultural Scholarship
General Foods Fund
General Motors Scholarship
Mr. and Mrs. R. E. Gettys Scholarships
Gibson County Farmers Cooperative Scholarship
Granger County Agricultural Scholarship
A. J. Graves Memorial Scholarship Fund
May Graves Scholarship
Irene and Gordon L. Green Memorial Scholarship
John W. Green Scholarship
Greene County Farm Bureau Agricultural Scholarship
Greene Farmers Cooperative Scholarship
J. A. Hadley Scholarship
Harriet Greve Scholarship
Hamilton County Farm Bureau Scholarship
Edward H. Hamilton Scholarship
The Hand Foundation Inc. Scholarship
Jessie W. Harris Foundation Scholarships
George E. Harrison Scholarship
Haskins and Sells Foundation Award
Hawkins County Farm Bureau Scholarships
Hawkins Equipment Company Scholarship
Damon Rivers Headden Memorial Scholarship
David Clayton Heins Scholarship
Robert and Libby Henley Scholarship
Hennes Freight Lines Scholarship
G. L. Herron Memorial Scholarship
Hewgley’s Music Shop Band Scholarship
James H. Hickman Scholarship
Herman Hickman Memorial Scholarship
C. S. Hobbs Scholarship
Sylius E. Hodges Memorial Scholarship Fund
O. R. and F. R. Holley Memorial Scholarship
Ernest Holmes Company
Andrew David and Mary Elizabeth Holt Scholarship
Home Federal Savings and Loan Association of Johnson City Scholarship
John F. Humphrey Metal Fabricators Inc. Scholarship Fund
The Maria Humphrey Scholarship
Arthur B. Hyman Scholarship Fund
Ideal Cement Company Scholarship
ILGWU Estes Kefauver Memorial Scholarship
Indianapolis—Kansas City Motor Express Scholarship
Insurers of Knoxville, Inc. Scholarship
Edith N. Jessop Memorial Scholarship
Kay’s Ice Cream Scholarship
Estes Kefauver Scholarships
John L. and Elizabeth V. Kind Memorial Scholarships in German
James M. King Scholarship
Knox County Farm Bureau Agricultural Scholarship
Knoxville Civic Music Association Scholarship
Knoxville Farm Bureau Scholarship
Knoxville Farmers Cooperative Scholarship
Knoxville Music Center Band Scholarship
Knoxville Post Office Welfare Committee Scholarship
Knoxville Sails Executive Club Scholarship
Knoxville Woman’s Club Scholarship
The Knoxville Magazine Scholarship
Stanley Kogut Memorial Scholarship
John and Margaret Lambert Scholarships
Lawrence County Test Demonstration Association Agricultural Scholarships
Leonard Agricultural Scholarship
Lincoln County Farm Bureau Agricultural Scholarship
Lincoln County Farm Bureau Home Economics Scholarship
Lincoln County Farmers Cooperative Agricultural Scholarship
Colonel S. H. Lockett Memorial Scholarships
Wayne and Albleria Longmire
Raymond H. and Sarah H. McNally Animal Science Scholarship
McDonald’s Restaurant Scholarships
George H. McFadden & Brother Fund, Inc.
Mary E. McFarland Scholarship
Macon Bank and Trust Company Scholarships
Macon County Farm Bureau Scholarship
Macon County Jaycees Scholarship
Madison County Farm Bureau Scholarship
Magnavox Foundation Scholarships
Martin Marietta Freshman Aerospace Scholarships
Mascot Community Club Scholarship
Mason & Dixon Lines Scholarship
Maury County Farm Bureau Agricultural Scholarship
Maury Farmers Cooperative Agricultural Scholarship
MCF Scholarships
John Mercer Agricultural Scholarship
Merrill-Palmer Award
Middle Tennessee A.I.A. Chapter Scholarship
Mike Milburn Memorial Scholarships
T. A. Mitchell Scholarships
Minneapolis Star Scholarship
Monsanto Scholarship
George C. Moore Scholarships
Grace Moore Scholarships in Music
Moorman Company Scholarships
Morton & Sweeney, Architects Scholarship
National Food Brokers Association
National Plant Food Institute Achievement Award
Robert R. Neyland Academic Scholarships
J. H. Nicholson Memorial Scholarships
Harry Nides Endowment Scholarship
Fund
Novick Scholarship
Omicron Nu Scultorum more Award
The Orange and White Book Store Scholarships
Orchard Farm Scholarship
The Orange and White Book Store Scholarships
Orchard Farm Scholarship
Ornamental Horticulture and Landscape Design Scholarship
Eli L. Pacette Scholarship
Park Industries Incorporated Scholarship
Park National Bank Scholarships
Marcus Parker Agricultural Scholarships
Paul Parrott Cloth Shops, Inc., Scholarships
William Britt Pennebaker Scholarship
Phi Kappa Phi Society Scholarship
Joe Frank Porter Scholarship
Porter-Walker Hardware Company
Agricultural Scholarship
Joe Powell Memorial Scholarship
Prater Equipment Company Scholarship
President’s Student Aid Fund
Presser Foundation Music Scholarships
Price Waterhouse Foundation
Jeneene J. Quillen Memorial Scholarship
Fund
Raisaie Purina Scholarship
Rehabilitation Corporation of Tennessee Scholarship
Retail Clerks International Association Estes Kefauver Memorial Scholarship Fund
Rhenium Scholarships in Chemistry
Stephen D. Rimmer Memorial Scholarship
Roane County Council of Home Demonstration Clubs Scholarship
The University

Robertson County Farm Bureau Home Economics Scholarship

Thomas L. and Emma Robinson Scholarship

Fred M. Roddy Memorial Scholarship

Rohm and Haas Company Scholarship

Culley Wood Ross Scholarships

Jesse and Dorothy Safley Agricultural Scholarship

John Sample Agency of Connecticut Mutual Scholarship

Schlumberger Foundation Scholarships

Virginia and Alfred Schmied Scholarship

Aubrey Scott Memorial Scholarship

Scrivs-Howard Foundation Scholarships

Sears-Roebuck Foundation Scholarships in Home Economics

Sevier County Farmers Cooperative Scholarship

John A. Sexauer Foundation Scholarship

Lynn Sheely Co. Senior Piano Award

Sherwood Chevrolet Co. Scholarships

Beverly Shrode Agricultural Memorial Scholarship

Sigma Alpha Epsilon Scholarship

Charles D. Simmons Scholarships

Charles S. Simmons Scholarships

J. Hungerford Smith Company Scholarship in Food Technology

Smith Farmers Inc. Scholarships

Snelling and Snelling Teacher Training Scholarships

Sorvall W. Shively Scholarship in Geology

Helen Knowles Soper Scholarship

Richard Stansfeld Scholarship

Stauffer Chemical Company Scholarships

Dr. Rutf Stephens Scholarship in History

Dr. Rutf Stephens Scholarship in International Relations

William B. Stokely, Jr. Scholarship

William B. Stokely, Ill. Scholarship

Elsa Walburn Strong Scholarship

Stoughton Agricultural Scholarships in Home Economics

James Stuart Scholarship

Sullivan County Agricultural Scholarship

Swan Brothers, Inc. Scholarship

Tate Beta Pi Scholarships

Judge George Caldwell Taylor Memorial Scholarship

Tennessee Association of Broadcasters Scholarship

Tennessee Association, Future Homeowners of America-Margaret Browder Scholarships

Tennessee Association of Real Estate Boards Scholarship

Knox. Aux. of Tennessee Bar Association Scholarship

Tennessee County Agents’ Association Scholarship

Tennessee Farm Bureau Federation Agricultural Scholarship

Tennessee Farmers Cooperative Agricultural Scholarship

Tennessee Farmers Mutual Insurance Company Agricultural Scholarship

Tennessee Federation of Garden Clubs Scholarships in Horticulture Scholarship

Tennessee Home Demonstration Agents Association Scholarship

Tennessee Association Scholarship

Tennessee Road Builders Association Scholarships

Tennessee Society of Certified Public Accountants Scholarships

Tennessee Society of Professional Engineers, Kiwanis Chapter, Scholarships

Tennessee State Florist Association Scholarship

Tennessee Valley Bank Scholarship

Tennessee Valley Section of American Society of Civil Engineers Scholarships

Texaco Scholarships

Thorn, Howe, Stratton & Strong Scholarship

Thrift Loan Company Scholarships

William M. Tolley Scholarship Fund

Toms Foundation Scholarships

Towson-Easton Community Memorial Scholarships

The Willburn B. Townsend Memorial Scholarship

Tractor Service Company Forestry Scholarship

Transportation Department Scholarships

Tri-Cities Chapter American Institute of Industrial Engineers Scholarships

Tri-State Roofing Contractors Scholarship

Trousdale County Farm Bureau Young Farmers and Homemakers

Tullahoma Shrine Post of American Military Engineers Scholarship

Union Bag-Camp Paper Corporation Scholarship

Union Carbide Engineering Scholarship

United Auto Workers Estes Kefauver Memorial Scholarship

United Statesworkers of America Estes Kefauver Memorial Fund

University of Tennessee Alumni Association Scholarship

University of Tennessee Alumni Association Freshmen Scholarship

University of Tennessee Alumni Association Upper-classmen Scholarships

University of Tennessee Alumni Association Valedictorian Scholarships

University of Tennessee Alumni Association National Merit Scholarships

University of Tennessee Band Scholarships

University of Tennessee International Scholarship Fund

Victory Van Lines Agricultural Scholarship

Vinyliex Corporation Scholarship

Frederick Bickford Vreeland Scholarship

Charles A. and Myrtle Warner Memorial Scholarship

Harold C. Warner Law Centurion Endowment Fund

Washington County Farm Bureau Scholarship

Ira A. Watson Scholarship

William Way Memorial Scholarship

Weakley County Farmers Cooperative Scholarship

Western Electric Fund Scholarships

Daniel B. Wexler Scholarship

White Stores Company Scholarship

White Stores, Inc. Scholarships

Wilson County Agricultural Extension Scholarship

Chancellor Glen W. Woodlee Scholarship Fund

Dick Wright Scholarship

Gerti Wundulich Scholarship in German

C. E. Wylie Scholarship in Dairying

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. Trow Bankerfont Fund

Bixby-Altrusa Loan Fund

John L. Boyd Student Loan Fund

John H. Cantrell Scholarship Fund

W. W. Carson Loan Fund

Fred Collins Memorial Loan Fund

Nancy M. Dismuke Loan Fund

E. P. Frost Memorial Foundation (The Scarbabeen Senior Society Loan Fund)

Eugene Gambill Loan Fund

Helen B. Gibson Loan Fund

Gordon A. Hawkins Memorial Loan Fund

Pleas Crillie Hodge Memorial Loan Fund

J. E. Hogan Loan Fund

Ruth Hope Memorial Loan Fund

R. N. Kesterson Loan Fund

Knoxville Academy of Medicine Loan Fund

J. E. Lutz Memorial Loan Fund

Clarence H. Moody Loan Fund

Ise Moore Student Loan Fund

Phi Kappa Phi Loan Fund

Phi Mu Alumnae Association Loan Fund

Mary Plummer Memorial Loan Fund

Maude Power Scholarship Aid Fund

James H. Rader Memorial Loan Fund

Charles C. Ritthof Loan Fund

William Ruit Loan Fund

Senior Memorial Loan Fund, 1922

Senior Memorial Loan Fund, 1925

Sarah Hawkins Senior 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 of the State of Tennessee Bankers’ Association (Fred Collins Memorial Foundation)

Mary Boyle Temple Loan Fund

Williamson County Farm Bureau Scholarship

Nathaniel S. Woodard Memorial Loan Fund

Honors and Awards

The honors and awards available to students at The University of Tennessee, Knoxville are listed with donors below.

The University reserves the right not to award any of the honors or awards listed herein.

General Honors and Awards

Dean’s List. Public announcement of students passing a quarter’s work “With Highest Honors” (grades from 3.75 through 4.0), “With High Honors” (3.40 through 3.74), “With Honors” (3.0 through 3.39). To be eligible, student must complete at least 12 hours, not counting work taken on satisfactory/no credit basis.

College of Agriculture

The American Society of Agricultural Engineers each year selects an outstanding agricultural engineering student for the ASAE Student Honor Award. Based on scholarship, activities, and community contributions, the award consists of a key and certificate.

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

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

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

The Danforth Foundation Inc. provides a leadership training fellowship to an outstanding agricultural student during the summer following his junior year. The award includes two weeks in St. Louis for study of important businesses related to agriculture and two weeks of leadership training at Camp Minwauke on the shores of Lake Michigan. A similar award, offered to an outstanding agricultural student following his freshman year, consists only of the two weeks of training at Camp Minwauke.

The Forestry Faculty Scholarship Award, given annually at the end of the junior year of the recipient who is selected by the Forestry faculty on the basis of outstanding scholarship and contribution to the Forestry program.

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.
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.

Dick Evans Scholarship, given to outstanding student in News-Editorial sequence of the School of Journalism.

Edward J. Meeman International Communications Fellowships. $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.

Grantland Rice Scholarships or Fellowships. $2,200 total, to upper-division or graduate students selected on the basis of character, competence, and potential professional service in the tradition of Grantland Rice.

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.

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

Myron G. Chambers Scholarships, 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.

Sigma Delta Chi Outstanding Graduate Citation. Certificate given by professional journalism society to outstanding graduate.

Tennessee Association of Broadcasters. $300 to outstanding freshman and outstanding junior or senior planning a career in broadcasting.

Willie C. Tucker Scholarship Award, given by Sigma Delta Chi. Silver bowl or key to graduating senior with highest academic average.

College of Education

Kappa Delta Pi. An honor society in Education open to outstanding upper-classmen and graduate students.

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

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

College of Engineering

American Chemical Society. East Tennessee Section of American Chemical Society offers an award each year to an outstanding senior in chemical engineering.
College of Home Economics

Alcoa Foundation Scholarships. Three, $600 each.
American Association of University Women Award. Awarded membership for one year to outstanding senior.
American Home Economics Association Student Member Chapter. $100. Awarded to an outstanding sophomore active in AHEA.
Aubrey Scott Scholarships. $300.
Chattanooga Area Home Economics Association. Awarded to a sophomore or junior from the Chattanooga area. $100.
Chattanooga Dietetic Association. $100.
Chattanooga Hotel-Motel Association Scholarship. Awarded to a student enrolled in the Food and Lodging Administration program. $500.
Danforth Award. Expenses exclusive of travel for two week's leadership training at American Youth Foundation Camp on the shore of Lake Michigan paid by Danforth Foundation, Inc.
Donelson Home Economics Club. $500.
Gibson County Farm Bureau. $400.
Jessie W. Harris Scholarship. Awarded to sophomore, junior and senior with highest scholastic record. Three, $300 each.
Hawkins County Farm Bureau. Awarded to a freshman from Hawkins County. $300.
Hyatt Corporation Scholarship. Awarded to student enrolled in the Food and Lodging Administration program. $500.
Knoxville Home Economists in Homemaking. Awarded membership in AHEA to outstanding senior.
Knoxville Hotel-Motel Association Scholarship. Awarded to student enrolled in the Food and Lodging Administration program. $500.
Lewissohn Scholarships, endowed by Frederick Lewissohn. Six, $250 each.
Memphis Hotel-Motel Association Scholarship. Awarded to student enrolled in the Food and Lodging Administration program. $500.
Nashville Area Home Economists in Homemaking Scholarship. Awarded to a Nashville resident. $500.
Nashville Hotel-Motel Association Scholarship. Awarded to student enrolled in the Food and Lodging Administration program. $500.
Nellie Crooks Award. Award of reference books and journals to an outstanding junior.
Omicron Nu Sophomore Scholarship Award. $100. Awarded by the Home Economics honor fraternity.
Rehabilitation Scholarship. Ten, $400 each.
Roane County. Awarded to freshman from Roane County. $250.
Tennessee Chapter of Future Homemakers of America. Two. $250.
Tennessee Dietetic Association. Awarded to upperclassman enrolled in dietetics program. $100.
Association of Extension Home Economists. $250.
White Stores Scholarships. Two, $450 each.

College of Law

Herbert L. Davis Memorial Trust Fund. Award of $100 to student having highest scholastic average on first two years of law.
Bobbs-Merrill Company Prize. Copy of Tennessee Code Annotated to student attaining highest average during three years of law.
Callaghan and Company Prize. Offers a copy of Brown on Personal Property to student attaining highest average during junior year in law.
Hamilton National Bank Prize. Three prizes of $125, $75, and $50 to law seniors who draft the best wills based upon a hypothetical set of facts.
Lawyers Cooperative Publishing Company and the Bancroft-Brown Company Prize. Joint publishers of American Jurisprudence offer separately bound topics from the encyclopedia to students receiving the highest grades in the respective subjects.
West Publishing Company Prize. Offers a selected title from Hornbook Series to member of each of the three classes who achieves highest scholastic average in the class.
West Publishing Company Prize. Offers a selected title of Corpus Juris Secundum to member of each of the three classes who made most significant contribution toward overall legal scholarship.

College of Liberal Arts

John M. Allen Mathematics Prize. Medal, to outstanding freshman mathematics student. Prize is determined by competitive examination covering material found in the following courses: Mathematics 1540-50-60, Mathematics 1840-50-60, and Mathematics 1846-56-68.
Philo Sherman Bennett Prize, established by the late Hon. William J. Bryan. Cash award to student submitting best essay discussing principles of free government.
Biologica Award. Plaque, to the outstanding biology senior.
Chi Omega Prize, given by Pi chapter of sorority. $25, to the senior girl majoring in the social sciences, with the greatest proficiency in that subject.
Senior Greek Prize, established by friends of the classics. Cash award, to member of senior Greek class showing greatest proficiency in the course.
Maud Calloway Hays Scholarship. Variable scholarship of approximately $200 to senior history major with special interest in U.S. History.
History Department Scholarship. $360 to history major with financial need.
Italian Studies Award, established by Italian division of Department of Romance Languages. Cash award to outstanding student in upper division courses in Italian.
Senior Latin Foundation Prize, established by friends of the classics. Cash award, to member of senior Latin class showing greatest proficiency in the course.
Charles L. McClung Prizes. First prize of $100, second prize of $50, to junior or senior for excellence in composition and declamation. Subjects are set by English Department in first quarter of academic year. Manuscripts must be submitted by Feb. 15. Six finalists compete in public declamation contest on first Wednesday evening in March.
Mrs. J. Harvey Mathes Tennessee D.A.R. American History Scholarship. Interest on $500, to woman student, Winners selected by the Department of History.
Judson H. Robertson Award in Analytical Chemistry. Endowment established by family and friends of the late Professor Robertson. $100 to student with highest scholastic average in sophomore analytical chemistry courses.

Bernadette Schmitt History Scholarships. Two scholarships of $500 each for academic excellence, and one of $500 based on financial need. History majors only.
Ruth Stephens Award in International Relations and International Law, established by the late Mr. and Mrs. Oscar Harris, Knoxville. Dividends from investment of $1,500, to student showing greatest knowledge of International relations or international law.
Ruth Stephens History Scholarship, $400 to history major for academic excellence.
Rush Strong Medal, established by the late Benjamin Rush Strong, Knoxville. Medal, to student submitting best essay on "The Value of Truth."
Lee L. Verstandsng Fellowship in History, Cash award to an outstanding student in history.
Pauline Capell Walker Prize in French. $10, to senior French major with greatest mastery of language, literature, and civilization of France.

Campus Honorary and Professional Fraternities

A number of honorary and professional fraternities have chapters on the University's Knoxville campus.
Membership in these organizations is generally based on the initiate's good character, professed interest in his chosen field, leadership characteristics, and a high scholastic record.
Those honor fraternities, both national and local, with chapters at The University of Tennessee are:
Alpha Chi Sigma, for chemical engineering and chemistry students. Student must have a point average of 2.5 in chemistry and/or chemical engineering combined and 2.5 in all academic work and must have been enrolled in this school for at least one quarter and be elected to membership by others in the local chapter.
Alpha Epsilon Delta, for students preparing for study of medicine. Students with minimum 3.0 average in all courses may be pledged at end of their first three quarters in the University, or at end of four quarters with a minimum 2.8 overall average. They may be initiated at end of five quarters if overall 2.8 average has been maintained.
Alpha Lambda Delta, for freshman women. Students with a minimum 3.5 average for the first two quarters or for the entire freshman year are eligible to election upon invitation.
Alpha Phi Omega. Any undergraduate who is a former Scout is eligible for membership. A pledge must have completed one quarter of academic work with an average grade of 2.0 before eligible for initiation.
Alpha Pi Mu, for industrial engineering students. Prospective members are chosen from the upper one-third of the senior class and upper one-fifth of the junior class. A minimum 2.5 average is required.
Alpha Zeta, agricultural fraternity for juniors and seniors. Prospective members must be among the upper two-fifths of their respective class and show leadership ability.
Beta Alpha Psi, for accounting students. Any undergraduate or graduate accounting major registered in advanced accounting, with a minimum "B" average in accounting subjects and a minimum "B-minus" average in all subjects, is eligible for active membership.
Beta Gamma Sigma, for students in the field of business studies. Membership is limited to those commerce and business administration students ranking in the upper one-tenth of their graduating class. Juniors among the highest 3 percent of their class may be elected in the last quarter of the year.

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

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

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

Delta Sigma Pi, professional business fraternity for students enrolled in the College of Business Administration. Graduate students must have a grade-point 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 original speaking activities and who rank in the upper 35 percent of their college class.

Delta Theta Phi, for law students.

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

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

Gamma Sigma Delta, agricultural honorary society for graduating seniors, graduate students, faculty, and agricultural alumni. Seniors 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 3.5 average or better on at least 24 hours toward the advanced degree. They must have shown promise or superior ability in carrying on advanced study and/or research directly concerned with agriculture and of making worthy contributions 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 9 hours industrial education courses with at least "B" average.

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

Omicron Delta Kappa, for junior and senior men.

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

Order of the Coif, for law students.

Phi Alpha Delta, for law students.

Phi Beta Kappa, the oldest national scholarship honorary society. Students in the Bachelor of Arts or Bachelor of Science in Chemistry curricula may be eligible for election to Phi Beta Kappa. Minimum requirement for membership is a grade-point average of 3.50 for 135 hours of liberal arts courses (senior election) or 3.80 for 110 hours of liberal arts courses (junior election). Transfer students must have completed 60 hours of liberal arts courses at The University of Tennessee, Knoxville, and have made the requisite average both on the hours taken at The University of Tennessee, Knoxville, and the total number of hours of liberal arts courses. In addition to the grade-point average required, students must have completed the second college year of foreign language study and one year of college-level mathematics and must rank in the upper 10 percent of candidates for the B.A. and B.S. in Chemistry degrees in their graduating class to be eligible for election.

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

Phi Delta Phi, for law students.

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

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

Phi Mu Alpha, (Sinfonia), professional music fraternity for students interested in music. Requirements: a 2.5 overall average. The main purpose of the organization is to further American music in the campus and community.

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

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

Pi Lambda Theta, for female education students. Open to juniors, seniors, and graduate students with a minimum 3.2 average. Membership by invitation only.

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

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

Scabbard and Blade, military science honor society for upperclassmen.

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

Sigma Delta Pi, for Spanish students. Prospective members must have a minimum 2.75 average in all University work and a minimum 3.2 average in Spanish and must have completed a junior year in Spanish literature or be registered in the last term of such a course.

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

Sigma Pi Sigma, physics honor society for upperclass and graduate students, faculty members, and qualified alumni.
Student Affairs and Services

Office of the Vice Chancellor for Student Affairs

The Vice Chancellor for Student Affairs coordinates the various offices and departments of the University which offer assistance to students in their education and life beyond the classroom.

Office of the Dean of Admissions and Records

All matters relating to undergraduate admission to the University and to credit for work at other schools and colleges are administered by the Dean of Admissions and Records.1 All credit, applications for admission, and inquiries about admissions should be addressed to the Director of Admissions, The University of Tennessee, Knoxville, Tennessee 37916.

In addition to undergraduate admissions, this office has general administrative responsibilities for academic retention and re-enrollment, academic integrity, maintenance of student academic records, certification of completion of requirements for undergraduate degrees, registration procedures, and eligibility for athletic participation. This office also administers relations between students and the Selective Service Boards, Social Security Administration, and Veterans Administration Affairs.

Office of the Dean of Student Conduct and Orientation

The Student Orientation 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. The Student Conduct 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

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

The office maintains the overseas student's official records and provides a liaison with the teaching faculty. It coordinates such projects as a community volunteer program and activities for student wives. 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 held at the beginning of each term; foreign students admitted to the University are notified in advance and are urged to arrive in time to attend them. Non-U.S. students who are applying for Graduate School admission should write to: The Vice-Chancellor for Graduate Studies and Research, The University of Tennessee. Persons seeking undergraduate admission should apply to: Director of Admissions, The University of Tennessee. 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 CENTER

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. The house was first opened in February, 1969, to provide a facility where domestic and foreign students could come together to relax and discuss matters of mutual interest.

An executive committee composed of students and faculty representing all national student groups, campus student government groups, and administration oversees the operation of the House and supervises a variety of weekly programs.

Office of Director of Student Activities

The Office of the Director 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.

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 newly enlarged Center:

- Lower level houses 12 automatic bowling lanes, 14 billiard tables, dark room facilities, and an arts and crafts area. These facilities are among the best in the nation for student recreational pursuits.
- The expansive food service on the ground level provides the finest food available. The entrance to the large, modern, two-level book store is on Stadium Drive. Such facilities as central ticket office, day student lounge, and the post office are conveniently located on the ground level.
- The first floor is the student program area. An auditorium with 575 seats, a 150-seat seminar room, meeting rooms, and four public lounges supplement the large ballroom and meeting rooms for any type of student event. Large banquet, 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. This office also maintains a campus calendar for all major events.

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 12 hours daily.

Used and new textbooks are bought and sold on the lower level of the two-level store. In addition to textbooks, a 95,000 paperback book selection, technical and reference books, and numerous study aids are available on this floor. The first floor offers a complete stock of engineering, art and school supplies, records, tapes, art prints, posters, and other items for student needs.

Small branch stores are located in Hess Hall, Residential Court, and Andy Holt Apartments. These stores are open 6:30 a.m. a week for the student's convenience.

Students benefit indirectly from their patronage of the University Book and Supply Stores since all profits are used to help support the operations and activities of the University Center and Aquatic Center. The stores are the only locations on campus where students may cash personal checks.

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 (slight charge for billiards) are located in the upper lobby along with a TV viewing area. Bicycles are available for rental.

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.

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 minimal fee. UT organizations may rent the Student Aquatic Center for swim parties and dances. Numerous free dances and splash parties are held during each quarter for the student's enjoyment.

INTRAMURALS FOR MEN

The Intramural Program for Men 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, and Independents. These Division Champions then compete for the All University Championship.

The league activities include basketball, bowling, football, crosscountry, golf, handball, water polo, paddleball, racquetball, softball, swimming and diving, tennis, track relays, track and field, and volleyball.

INTRAMURALS FOR WOMEN

The purpose of the Women's Intramural Program is to provide organized sports activities for all women students including individual and dual sports, team sports, and selected sports events. The basis of competition is league play followed by divisional tournaments among the league champions to determine Division Champions for Residence Halls, Independents, and Sororities. These Division Champions then compete for the All University Championship.

Activities are badminton, basketball, bowling, football, golf, putting, innertube, water polo, softball, swimming and diving, table tennis, tennis, track and field, track relays, and volleyball.

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. Activities are organized for both teams and individual participants. Events include badminton, basketball, billiards, bowling, golf, football, handball, paddleball, shuffleboard, squash, table tennis, tennis, volleyball, and water polo.

SPORTS CLUBS

Sports Clubs are organized when students express an interest in a certain activity or foresee 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 and includes: Archery, Badminton, Bicycling, Bowling, Boxing, Canoe & Hiking, Crew, Dolphin, Equestrian, Fencing, Flying, Gocart, Gymnastics, Handball, Ice Hockey, Ice Skating, Judo, Karate, Lacrosse, Racketball, Rugby, Sailing, Scuba, Snow Ski, Soccer, Sports Car, Table Soccer, Table Tennis, Trap & Skeet, Volleyball, Water Ski, and Weightlifting.

CO-RECREATION

The Intramural Office now offers co-recreational activities. All students, faculty and staff, and their nonstudent wives, husbands, or friends are eligible to participate, providing the students meet the eligibility requirements of the men's and women's intramural program.

The Co-Rec activities are organized as an informal program, using modified rules so that men and women can participate on an equal basis.

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

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 on their leisure time. Students may check out necessary equipment at each facility upon presentation of their student identification card.

A recreation facility is open Monday through Friday from 12-9 p.m., Saturday from 12-6 p.m., and Sunday from 1-6 p.m. Students and members can also enjoy the sun lamps and relaxed atmosphere found at poolside.

National, regional, and state aquatic events have been held in these great facilities during the past nine years. The last event was the NCAA Championship held in 1973. It was shown on ABC Wide World of Sports.

Along with the greatest facility in the land, UT has a very prestigious aquatic program 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—wetsuits, 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.
7. Varsity swim team practice is held 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 each quarter to students who need special care in aquatic activities.
9. Lifeguard School is offered at the Aquatic Center each quarter for specialized training of all lifeguards to be hired.

10. Beginning swimming, intermediate, beginning and advanced diving, swimmer, junior lifesaving, and competitive swimming programs 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 students, faculty and staff throughout the whole year. Records are kept, and certificates awarded during certain phases of the program.

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

13. Community competitive swimming programs are offered each quarter for community members. We offer the students (at no charge) moonlight swim parties, water basketball, water polo, special Carousel showings of aquatic programs, movies of aquatic skills, competitive swimming, trampoline and mini-boarding during supervised activities.

The Aquatic Center is available after hours for private and organizational parties, community aquatic programs, etc. for a fee. Our facility has been viewed by visitors, professional and nonprofessional, from all parts of the world, who have said it is second to none in the United States. We feel that our aquatic program will measure up to any program in the nation.

Student Activities Office

An extensive program of extracurricular activities is available at The University of Tennessee, with over 200 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 University agency charged with the development and administration of the extracurricular program is the Student Activities Office located in the University Center.

Student Health Service

Health services provided by the University are available to any student currently enrolled at the University. These services are available continuously throughout every quarter.

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

Regular daytime hours are posted at the Health Service building, are known to the residence halls' staffs and campus safety officers and are printed in Hill Topics, the student handbook. Emergency care during evenings, weekends, and some holidays is available through the Student Health Clinic at The University of Tennessee Memorial Research Center and Hospital except during the longer breaks between quarters. Emergency transportation (including the use of an ambulance when necessary) to either facility may be obtained through campus Safety and Security.

The student needing total care may have this arranged by Health Service physicians, if he chooses, in The University of Tennessee Memorial Research Center and Hospital. Because total care is sometimes needed, it is important for the student to have hospitalization insurance. Student group hospitalization insurance is available and may be purchased during a designated period at the beginning of each quarter.

Health Service personnel will cooperate with the student and his family physician to continue good health practices during his university career.

Student Counseling Center

The Student Counseling Center is a service 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 he may work on his general adjustment to the academic life. Psychological tests may be used for self-evaluation and information. Occupational information is available. All students, student spouses, and, to a limited extent, pre-college students are eligible for counseling. Appointments may be made by phone or in person at the Student Counseling Center, 804 Volunteer Boulevard.

The Office of Special Services

The office acts as a clearinghouse for student problems. Special advising programs, withdrawals from the University, and coordination of the course late drop program are handled here. The office also works with the faculty and other student personnel services to develop educational programs and coordinate extracurricular projects to meet the needs of minority groups and women at the University. The office is located at 812 Volunteer Boulevard.

Student Rights and Responsibilities

By registering in the University, the student neither loses the rights nor escapes the duties of a citizen. Enjoying reiter opportunities to the average citizen, the University student has greater responsibilities. Each student should conduct his personal life 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, Hill Topics, is published and distributed annually so that students are aware of the University Standards of Conduct and all disciplinary regulations and procedures.

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

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

Religious Influences

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, Disciples' House (Christian), Westminster House (Presbyterian), Tyson House (Episcopal), Lutheran Student Center, Wesley Foundation (Methodist), Church of Christ, and Hillel Foundation.

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 are provided to give broad opportunities for student participation.

A full listing of all student organizations on the campus will be found in the annual Student Directory. 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 25 national social fraternities and 19 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 Kappa Lambda
Alpha Tau Omega
Beta Theta Pi
Chi Phi
Delta Tau Delta
Delta Upsilon
Farmhouse
Kappa Alpha
Kappa Sigma
Lambda Chi Alpha
Omega Psi Phi
Phi Delta Theta
Phi Gamma Delta
Phi Kappa Psi
Phi Kappa Tau
Phi Sigma Kappa
Pi Kappa Alpha
Pi Kappa Phi
Sigma Alpha Epsilon
Sigma Chi
Sigma Nu
Sigma Phi Epsilon

The Sororities are:
Alpha Chi Omega
Alpha Delta Pi
Alpha Epsilon Phi
Alpha Gamma Delta
Alpha Kappa Alpha
Alpha Omicron Pi
Alpha Xi Delta
Chi Omega
Delta Delta Delta
Delta Gamma
Delta Zeta
Gamma Phi Beta
Kappa Alpha Theta
Kappa Delta
Kappa Kappa Gamma
Mu Phi
Pi Beta Phi
Sigma Kappa
Zeta Tau Alpha

Other University Services, Organizations, and Cultural Opportunities

Ombudsman
The office of the Ombudsman in the University Center assists students in the resolution of problems encountered with any aspect of the University. The office is open during the regular working day and students are welcome to drop in at their convenience. Problems are treated confidentially and are dealt with expeditiously. The Ombudsman does not replace existing structures but helps to insure their more adequate functioning and provides advice in creating ways of meeting the needs of students.

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 on international and intercultural interests throughout the university community 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 educational process.

In addition to the dissemination of information throughout 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 involved in international program development.

Study abroad programs sponsored through the University are coordinated through the Division, and new programs are planned with its assistance. New services include the coordination of orientation programs and charter flights. Other services include a work, travel, and study abroad consultant and a reference library containing information on work, travel, and study abroad, scholarships and fellowships, and special program information.

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. This service is available to everyone regardless of ability to pay.

The Center provides speech evaluations for all incoming freshmen and transfer students with diagnostic and therapeutic follow-up when warranted. It also serves as a community Hearing and Speech Center, providing a pre-school for deaf children, aural rehabilitation programs for the hearing handicapped, and speech and language pathology for persons of all ages who have been professionally referred to the Center.

Career Planning and Placement Service
This service is engaged in two major types of activity. First, students are offered the opportunity of receiving many forms of career advising and are provided with a wide range of career literature and audio-visual materials. Second, students and alumni are given several aids for their job search process. These include on-campus interviews, job listings, employer information and address lists, a credentials service, and training in interviewing, resume writing, and other job search skills.

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. Large student parking areas are located on the perimeter of the campus, and the University provides an intra-campus bus system between these parking areas and the center of the campus at no cost to the student. Faculty and staff parking areas are located throughout the campus.

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 Safety and Security Division. A University Parking Authority determines the parking policy, traffic regulations, and this information is published each year in the "University Traffic and Parking Regulations." Copies of the regulations will be available at the time students and staff register their vehicles or register for classes each quarter. Additional copies may be obtained from the Traffic Section of the Safety and Security Division.

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

THEATRE
The University Theatres organization, under the aegis of the Department of Speech and Theatre, presents several programs of plays and films, in three theatre plants—the Clarence Brown Theatre, a two million-dollar plant containing excellent facilities for prosenium staging, open staging, standard film presentations, and laboratory productions (in a separate Studio Theatre of the Clarence Brown Theatre); the Carousel Theatre, a unique structure specially designed for arena staging, and for conversion to open-air performances in the summer; the Hunter Hills Theatre, a beautiful and spacious outdoor theatre plant located in the Great Smoky Mountains near Gatlinburg, in which are presented musical productions and other plays suitable for outdoor presentation.

All University students are welcome to read for parts in plays staged in all of these University theatres, and to participate in other aspects of play and film presentations.

ART
Frank H. McClung Museum, in Circle Park, stands as a permanent memorial for "the display, preservation, and study of paintings, works of art, objects of natural history and historical objects." The museum contains five major areas of interest, including permanent exhibit of natural history illustrating the sciences and the Green Memorial Room which contains valued items pertaining to the history of Knoxville and East Tennessee.

A major purpose of the museum is to provide superior teaching and research facilities for students, faculty, and staff. Eleanor Deane Audigier Memorial Art Collection features paintings, 19th-century furniture, rare textiles, ceramics, sculpture, and small art objects. On permanent display in the Main Library, the collection was presented to the University by Louis Bailey Audigier in memory of his wife. Christmas Art Sale is an annual affair held each December in the McClung Museum. Faculty, students, and regional artists display modestly priced works in time for Christmas buying.

Dogwood National Invitation Art Exhibit is planned each year to coincide with the Dogwood Arts Festival. Held annually in McClung Museum, the exhibition offers a...
The University

cross section of the world of art. In 1966, the University Center, in cooperation with the UT art department, inaugurated a program in which the University Center purchases works from this annual art exhibit. These works then became a part of the Ralph E. Dunford Permanent Collection, housed and exhibited in the University Center.

Clothesline Art Show, which is held in the spring each year, displays student art work. The works of art, which are for sale, are exhibited on one of the terraces of the University Center.

Art Auction, held in Carousel Theatre each spring, is a means of raising scholarship funds for art students. Original works of leading local and national artists as well as those of outstanding students in the art department, are auctioned to the public. There is a nominal admission charge and unique door prizes are given throughout the auction.

MUSIC

UT Choral Groups consist of five choirs and glee clubs, all of which are outstanding. The UT Singers, the Women's Glee Club, Madrigal Singers, Vox Chorus, and the UT Chorus perform in choral concerts in the Knoxville area. These choirs are open to all students by audition.

UT Singers are known as the University's "Good Will Ambassadors." Among the many projects of this group are the annual state-wide tour each spring, and tours abroad on alternate years. The Singers have in the past been the musical company for all Hunter Hills Theatre productions.

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

During winter and spring 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 and of Student Recitals presented by upperclass and graduate members of the music department in partial fulfillment of degree requirements. Scottish Rite Masonic Chair of 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 a 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 now on display in the Main Library.

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 major concert series, a mini-concert series and the much smaller Guest Artist series.

Cultural Affairs 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 Lecture Committee presents programs around a current issue. The program is centered around speakers who are considered experts and represent diverse points of view on the designated topic.

BROADCASTING

WUOT, the University's 100,000-watt radio station, broadcasts fourteen hours each day to all of eastern Tennessee and portions of adjacent states. WUOT is primarily a fine music station, featuring the full repertoire of the world's great music. Musical programs are supplemented by broadcast versions of great plays, by many documentary programs on contemporary problems, and by university-level discussion and exposition.

Annual Faculty Phi Kappa Phi Lectures


ATHLETICS

The University encourages athletics as a part of its educational program, with all intercollegiate sports directed and controlled by the Department of Athletics.

Teams have been organized in football, crosscountry, basketball, baseball, swimming, tennis, track, wrestling, and golf. Intercollegiate varsity and junior varsity games are played under the rules of the Southeastern Conference, of which organization the University is a member.

Eligibility to participate is determined by the University faculty and the Southeastern Conference.

The Department of Physical Education and Recreation provides intramural sports as a recreational opportunity for all students not actively engaged in intercollegiate athletic competition.

NEYLAND STADIUM

Neyland Stadium, the University's football stadium, was named in memory of the late General Robert R. Neyland, long-time football coach and athletics director. Shields-Watkins Field, the football field, and the Field House, formerly 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 years, can presently accommodate 70,650 spectators.

STOKELY ATHLETICS CENTER

The hub of the University's sports program is Stokely Athletics Center, which houses a 12,700-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 and national meets and built to Olympic specifications. The Student Athletic Center, with its indoor and outdoor Olympic-size pools, separate diving pools, water polo court, sauna baths, and extensive exercise facilities, is a top spot of interest on the campus. Hudson Field, a newly remodeled baseball field and stadium seating 1,500 fans in addition to providing dugouts and press box facilities, is one of the best complexes in the conference.

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

Other student publications are: Sorority Scope, published annually by the Panhellenic Council, to provide information about the sororities at the University. IFC Rush Brochure, published annually by the Inter-Fraternity Council, to acquaint male students with the fraternities.

The Tennessee Engineer, published quarterly by students and faculty of 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 the University, is ever present during the student's campus life. This traditional symbol admonishes would-be leaders to 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 lighthearted as well as serious. Among the less serious traditions are three annual all-student productions which have become part of the University way of life. These are the noisy, bustling Homecoming, the hit and melody of All-Sing, and the spangle and wit of Carnicus.

Homecoming is a time when former students return to the University 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 1930's 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 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, senior medical students, nurses, medical technologists, x-ray technicians, and auxiliary health personnel. Out-patient services are furnished to both area residents and University of Tennessee 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 experimentation 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.

Two periodicals are published on a University-wide basis. The University of Tennessee Record includes the General Catalog, Graduate School Catalog, Report on Research and Publications, Pictorial Record, and other publications of a record nature. The Torchbearer, issued four times a year, contains news of campus life and other information about UT's teaching, research, and continuing education activities 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 Publications Committee appointed by the President 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 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, nonfiction 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.

Computing Center

The University of Tennessee Computing Center (UTCC) provides computing facilities for the academic community of the University. It is intended for use by all academic staff whose work requires a modern computational facility and all students whose course work or research entails the use of computer methods.

Both timesharing and batch processing are offered through the Center's IBM 360/65. In addition to the usual peripheral devices, a plotter is available for graphical output. The administrative offices and the majority of the programming staff are housed in William B. Stokely Center for Management Studies.

Consulting services are available for students and faculty engaged in educational or research projects which utilize the computer facilities. Various non-credit short courses in computer programming and utilization are offered, free of charge, throughout the year. The Computing Center also publishes a User's Guide which describes in detail the facilities and programming systems available at UTCC. Further information about UTCC can be obtained through the administrative offices of the Computing Center.
The University of Tennessee, Knoxville offers a graduate program which is one of the largest and most comprehensive to be found in the nation. Courses of study leading to Master's degrees are available in almost all colleges and schools. The University's present doctoral programs were initiated about thirty years ago, and have expanded rapidly, with Doctor's degrees presently offered in fifty areas. Additional fields are being added as warranted by expanding faculty and facilities.

The principal aim of the Graduate School is that of education beyond the Bachelor's level through advanced courses, seminars, and research. The total resources of the University are made available to graduate students through its various colleges, schools, and special services. Each student is expected to take full advantage of the opportunities offered in the field of study and to maintain a high quality of achievement in the various phases of the program. To assist the student, certain procedures and regulations are described in subsequent paragraphs. These are formulated by the Graduate Council and administered by the Vice Chancellor for Graduate Studies and Research. The program of an individual student may be quite flexible but should still remain within the framework of the degree programs approved by the Council. Each student should be acquainted with the rules and procedures, as well as with any special requirements of individual colleges or departments.

**General Information**

**Knoxville Campus:** The main and most varied offerings of the Graduate School are available in advanced study at both the Master's and Doctor's level. More limited opportunities may be found at other locations as indicated below. Complete information concerning the Graduate School may be found in the Graduate Catalog, copies of which may be obtained by writing to the Vice Chancellor for Graduate Studies and Research, The University of Tennessee, Knoxville, Tennessee 37916.

**The University of Tennessee Space Institute:** Opportunities for graduate study and research leading to the degrees of Master of Science and Doctor of Philosophy in areas of engineering and science, particularly pertinent to aerospace technology, are offered by the Space Institute located near the Arnold Engineering Development Center, Tullahoma, Tennessee. Course work and research work in related areas of environmental pollution control, earth resources, energy conversion, materials, and systems and simulation are also available. Formal course work toward graduate degrees is provided at the Institute and at the Knoxville campus. The close Institute-Center relationship provides unique facilities and opportunities for research work in aerospace technology. Further information concerning the Institute may be obtained from the Dean, The University of Tennessee Space Institute, Tullahoma, Tennessee 37388.

**Kingsport University Center:** The University of Tennessee offers at Kingsport resident graduate programs in science, engineering, and business at both the Master's and Doctor's level. The program is operated within the policies set by the Graduate Council of The University of Tennessee and is administered by the Vice Chancellor for Graduate Studies and Research. It is coordinated with the graduate and undergraduate offerings of East Tennessee State University.

Students who enroll in this program must be admitted to the Graduate School of The University of Tennessee either as degree candidates or non-degree graduate students. Information and appropriate application forms may be obtained by writing to: Director, Kingsport University Center, The University of Tennessee, P. O. Box 9, Kingsport, Tennessee 37662.

**Oak Ridge Resident Graduate Program:** The Graduate School, in cooperation with the Oak Ridge Associated Universities and Union Carbide Corporation, offers a graduate study program at Oak Ridge. Programs leading to the Master's or Doctor's degree in the biological sciences, chemical and metallurgical engineering, chemistry, engineering science, mathematics, management, and physics are available. Information regarding these programs may be obtained by writing to the Director, The University of Tennessee Graduate School, Post Office Box 117, Oak Ridge, Tennessee 37830.

**Radiation Biology:** A graduate major in the field of radiation biology leading to the M.S. and Ph.D. degrees is offered through the Institute of Radiation Biology. On the Institute staff are scientists from the Departments of Biochemistry, Botany, Chemistry, Microbiology, Physics, Zoology, the Memorial Research Center, and the UT-AEC Agricultural Research Laboratory of The University of Tennessee, the Biology and Ecology Physics Divisions of the Oak Ridge National Laboratory, and the Medical Division of Oak Ridge Associated Universities. Areas of specialization include biochemistry, biophysics, cytology, ecology, electron microscopy, embryology, entomology, genetics, hematology, immunology, microbiology, molecular biology, oncology, parasitology, pathology, physiology, and tissue culture.
School of Social Work: The University of Tennessee offers a fully accredited two-year program leading to the degree of Master of Science in Social Work, with programs in Nashville, Knoxville, and Memphis. The program is designed to prepare personnel for positions in family and child welfare agencies, psychiatric social work, school social work, medical social work, social group work, social welfare administration, community organization, corrections, rehabilitation, and service to the aging. Professional skills may be concentrated in the areas of social work treatment, and social welfare administration and planning.

Information regarding admission and programs may be obtained from the Dean of the School of Social Work, The University of Tennessee, P.O. Box 8820, Knoxville, Tennessee 37916.

Chattanooga Engineering Graduate Program: The University of Tennessee, Knoxville, offers a program of graduate work at Chattanooga leading to the Master’s degree in the areas of engineering. Courses are given at The University of Tennessee at Chattanooga in the late afternoons and evenings. Students who enroll in this program must be admitted to the Graduate School of The University of Tennessee, Knoxville, either as degree candidates or unclassified graduate students.

Information concerning this program may be obtained from the Director, Chattanooga Engineering Graduate Program, The University of Tennessee at Chattanooga, Chattanooga, Tennessee 37401.

The University of Tennessee—Oak Ridge Graduate School of Biomedical Sciences: The University provides at Oak Ridge, Tennessee, a program leading to a Ph.D. degree in various areas of biomedical sciences. Advanced graduate students will have the opportunity to study and do research in conjunction with the Biology Division of the Oak Ridge National Laboratory.

Information concerning this program is available from the Director, The University of Tennessee—Oak Ridge Graduate School of Biomedical Sciences, Biology Division, Oak Ridge National Laboratory, Box Y, Oak Ridge, Tennessee 37830.

ASSISTANTSHIPS AND FELLOWSHIPS

Non-Service Fellowships supported by the University are awarded on the basis of ability and without regard to the field of study of the candidate. Successful applicants will need better than an overall 3.0 grade point average and high Graduate Record Examination scores. The normal deadline for receipt of completed applications is February 18. Fellowships or traineeships in special areas are sometimes supported from non-University sources. Information concerning these fellowships, as well as application blanks, may be obtained from the Fellowship Assistant, the Graduate Office.

Graduate assistantships and additional fellowships are offered through many departments of the University. The stipends usually carry remission of tuition and fees. Information concerning these opportunities and appropriate application forms may be secured by writing to the head of the department in which the student expects to do his major study.

### Degrees Available

(Majors and minors are available only in departments checked)

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<tr>
<th>Degree</th>
<th>Maj.</th>
<th>Min.</th>
<th>APT.</th>
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<td>Aviation Systems</td>
<td>M.S.</td>
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<td>Biomedical Sciences</td>
<td>M.S., Ph.D.</td>
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<tr>
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<td>M.S., Ph.D.</td>
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<td>Water Resources Development</td>
<td>M.S.</td>
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| College of Agriculture              |      |      |      |      |            |
| Agricultural Biology                | M.S.  | X    | X    |      |            |
| Agricultural Economics              | M.S., Ph.D. | X |      |      |            |
| Agricultural Engineering            | M.S., Ph.D. | X | X    | X    |            |            |
| Agricultural Extension Education    | M.S.  | X    |      |      |            |
| Agricultural Mechanization          | M.S.  | X    |      |      |            |
| Animal Science                      | M.S., Ph.D. | X |      |      |            |
| Food Technology and Science         | M.S.  | X    |      |      |            |
| Forestry                            | M.S.  | X    |      |      |            |
| General Agriculture                 | M.S.  | X    | X    |      |            |
| Ornamental Horticulture and Landscape Design | M.S., Ph.D. | X | X    |      |            |
| Plant and Soil Science              | M.S.  | X    |      |      |            |
| Rural Sociology                     | M.S.  | X    |      |      |            |
| Wildlife and Fisheries Science      | M.S.  | X    |      |      |            |

| College of Business Administration  |      |      |      |      |            |
| Accounting                          | M.B.A., D.B.A. | X | X    |      | X          |
| Economics                           | M.A.C.T., M.A. | X |      |      |            |
| Finance                             | M.B.A., M.S., Ph.D. | X | X    | X    | or         | X          |
| 'Industrial Management              | M.B.A. | X    | X    |      |            |
| Management                          | M.B.A. | X    |      |      |            |
| Management Science                  | D.B.A. | X    |      |      |            |
| Marketing                           | M.S., M.B.A., Ph.D. | X | X    | X    | or         | X          |
| Office Administration               | M.B.A., D.B.A. | X | X    |      |            |
| Real Estate and Urban Development   | M.B.A. | X    | X    |      |            |
| 'Statistics                          | M.S., M.B.A. | X | X    |      |            |
| Transportation                      | M.B.A. | X    |      |      |            |
| Transportation and Logistics        | D.B.A. | X    |      |      |            |

*For Ph.D. applicants only.
**For American students only.
*Offered also at Oak Ridge and Kingsport.
**Offered only at UT Space Institute.
# Degrees Available

(Majors and minors are available only in departments checked)

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<th>College of Communications</th>
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*For Ph.D. or Ed.D. applicants only.
**For international students only.
***American students only.
*Offered also at Oak Ridge and Kingsport.
*Offered also at the Space Institute, Tullahoma.
*Interdisciplinary option offered in each department.
*Departmental doctoral option offered under the major of Home Economics.
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<td>Speech Pathology</td>
<td>M.S., Ph.D.</td>
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**Graduate School of Biomedical Sciences (193)**

**Daniel Billen, Director**

**Full-Time Faculty**

Professor:  
D. Billen (Director), Ph.D. Tennessee.  
Associate Professor:  
F. H. Garfinkle, Ph.D. Purdue; F. D. Hamilton, Ph.D. Pittsburgh; D. E. Olin, Ph.D. Rockefeller.

Research Assistant Professor:  
C. T. Hadden, Ph.D. Washington.

The University of Tennessee—Oak Ridge Graduate School of Biomedical Sciences, established in 1966 under the joint auspices of The University of Tennessee and the Biology Division of Oak Ridge National Laboratory, is a novel venture in scientific graduate education. The National Laboratory, one of the three installations operated at Oak Ridge by Union Carbide Corporation for the United States Atomic Energy Commission, is a well-known center of basic research in biology, chemistry, physics, mathematics, metallurgy, health physics, and ecology. The school utilizes the staff and facilities of this large federal research institute, thus bringing directly into the mainstream of full-time graduate study in the life sciences the talent and experience of that staff, as well as the most advanced research methods.

The program of study, which incorporates a high faculty-to-student ratio, is based on intensive graduate courses supplemented by tutorial instruction, participation in a wide variety of seminars, and a heavy emphasis on research training and independent study. The program encourages and requires students, through individual initiative and self-discipline, to pursue graduate studies to the limits of their abilities.

The school is not departmentalized and apart from certain basic requirements, each student's curriculum is planned to meet his individual needs, with the aim of giving: (1) strength in the basic sciences; (2) perception of the biomedical sciences as a whole; and (3) experience and training in a chosen specialty.

Students work in a four-year Ph.D. program in close association with senior staff members of the Biology Division and full-time University personnel located in Oak Ridge in the...


Graduate School of Library and Information Science (620)

Gary R. Purcell, Director

Associate Professors:

Assistant Professors:

The Graduate School of Library and Information Science provides a library education program at both the graduate and undergraduate levels, leading to the preparation of librarians for work in all types of libraries. The program is to help meet the manpower needs of the State of Tennessee. The programs of study of this School include a graduate curriculum leading to the degree of Master of Science in Library Science and an undergraduate program which allows for a minor in either the College of Education or the College of Liberal Arts.

The Undergraduate Program

The undergraduate library education program leads to a minor in the College of Education or the College of Liberal Arts. Students in other colleges may elect a minor in library science with the approval of their faculty advisors. The undergraduate minor is planned for the following groups of people: (1) Students preparing for positions as school librarians in elementary and secondary schools; (2) Students preparing to become better acquainted with books and other instructional materials; (3) Students who wish to explore the place of the library in the instructional program; (4) Students preparing for the graduate program in library education; (5) Persons seeking a position at the level of Library Associate as described in the manpower policy of the American Library Association. The minimum requirements for a full-time position as school librarian in the State of Tennessee (both elementary and secondary) can be met through fulfilling the requirements for teacher certification and completion of the following library courses: 3510, 3520, 3530, 4140, 4150, 4270, 4330, and 4750.

The Graduate Program

The objective of the program is to prepare individuals to assume a role in the libraries and information centers of today and the future. Students are exposed to various ideas about the role of libraries and information centers in society and the processes by which knowledge is communicated through the medium of the bibliographic record. Students acquire a familiarity with the bibliography and the literature of various subject fields. They are expected to develop the ability to evaluate and use various types of print and non-print materials and are also introduced to current concepts of the management of library operations and services. The basic professional core curriculum, designed to provide sound foundations in principles applicable to all types of libraries, is augmented by elective choices within library and information science as well as other disciplines represented in the university community.

For further information write for a Graduate School Catalog.

UNDERGRADUATE

3510 Books and Related Materials for Children (3) Readings based on materials suitable for children in leisure time or classroom activities; criteria for selecting books, magazines, recordings, films, and related materials; story-telling and other devices for encouraging reading. Undergraduate credit only. Prereq: Admission to teacher education or junior standing. (Same as Educ. C & I 3510.)

3520 Books and Related Materials for Young People (3) Basically same approach as 3510, but adapted to needs and interests of teenagers. Undergraduate credit only. Prereq: Admission to teacher education or junior standing. (Same as Educ. C & I 3520.)

3530 Books and Related Materials for Adults (3) Principles of materials selection, selection aids, annotations, book reviews, evaluation of adult books in various subject areas. Undergraduate credit only. Prereq: Admission to teacher education or junior standing.

4140 Libraries and Librarianship (3) Historical development of libraries in society and their role and significance in twentieth century; career aspects of librarianship; professional ethics and associations.

4150 School Library Administration (3) Objectives, functions, and place of school library; relationship to local and state services; cooperative planning for quarters and materials; evaluation. (Same as Educ. C & I 4150.)

4270 Organization of Library Collections I (6) Acquisitions, cataloging and maintenance of library collections.

4330 Introduction to Reference Materials (3) Basic information services and services for all libraries.

4750 Audiovisual Methods and Techniques (3) (Same as Educ. C & I 4750 and Vocational-Technical Education 4750.)

GRADUATE

5000 Thesis

5110 Problems in Library Science (3)

5120 Problems in Library Science (3)

5130 Problems in Library Science (3)

5140 Research Methods in Library Science (3)

5200 Subject Reference and Bibliography (3)

5210 Sources and Services for the Social Sciences (3)

5220 Sources and Services for the Natural Sciences (3)

5230 Sources and Services for the Humanities (3)

5240 Organization of Library Collections II (3)

5250 Government Publications I (3)

5260 Government Publications II (3)

5270 Legal Bibliography (3)

5300 Library Management (3)

5310 Library Systems and Services (3)

5320 Library and Information Networks (3)

5330 Academic Libraries: Seminar (3)

5340 Public Libraries: Seminar (3)

5350 School Libraries: Seminar (3)

5360 Technical Libraries and Information Centers: Seminar (3)

5370 The Library in the Community (3)

5400 Library Facilities (3)

5500 Principles of Materials Selection (3)

5510 Multimedia Resources in Libraries (3)

5520 History of Books and Printing (3)

5530 Contemporary Publishing (3)
Graduate School of Planning (782)

J. A. Spencer, Director

Professors:

Associate Professors:
J. Spencer (Director), M.C.P., Ohio State; K. B. Kenney, Ph.D., North Carolina; R. L. Wilson, M.R.P., North Carolina.

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

The purpose of study is the education of professional planners, competent to handle positions of increasing technical and administrative responsibility. Graduates are candidates for positions in public and private plan making in regional, city, county, and metropolitan area planning agencies; in local, state, and federal agencies concerned with physical, economic, and administrative planning; in private business and organizations dealing with urban problems; and in private consulting practices.

The school, located in Knoxville, is in an excellent position to draw on the knowledge of the nation's leaders, the nation's outstanding regional planning and development agency, the Tennessee Valley Authority. The students can also view and study the close-at-hand economic problem area of Appalachia.

The Field of Planning

Planning is one of the challenging techniques by which modern man seeks to harness new methods and technologies in urban growth, economic development and re-development, housing, and transportation. Planning seeks to improve not only the physical but also the economic and social environment of the individual. Through the use of public policies, and through maximum cooperation between private economies and public purposes, it seeks to increase the opportunity of the individual; to better his chances for a decent job and a decent home in a community of which he is proud. Planning candidates accept our present urban and rural environment as the best of all possible worlds. The planner can expect a challenging, sometimes frustrating, but always rewarding career.

Planning is a rapidly evolving field, but at present it is chiefly concerned with two general areas. Regional and state planning is concerned primarily with economic and resource growth, the forces that generate economic growth, and the ways in which state and regional resources can be organized to generate area development. Urban planning is concerned primarily with understanding the urban environment, the social and economic forces that affect it, and the administrative and technological means by which it may be guided.

Graduate Education in Planning

The curriculum is organized on a basis of six quarters, or 72 credit hours, including a nine-credit thesis. The curriculum provides the student with core courses in planning theory, methods, and techniques, and also takes advantage of rich offerings at The University of Tennessee in related fields such as government, economics, geography, civil engineering, and sociology.

The course of study ordinarily requires two years, with a work internship during the summer between the two years. However, students entering the school with previous planning experience have an option of taking six consecutive quarters of study, utilizing the summer period. Planning courses as well as related courses will be offered during the summer period.

The purpose of this is to serve the needs of those planners now in the field, who wish to acquire their professional degree but who can spare only the minimum amount of time from their jobs because of financial or family considerations. By going to school for six consecutive quarters they do not face the problem of having to move their family during the three-month period between school years.

Entering students follow a suggested program of courses which provides training in the basic elements of planning. These include studies in theory, history, analytical methods, design, and legislation, as well as related courses in government, geography, sociology, and economics. Students in the latter quarter of the first year, and in the second year, have the option of pursuing studies in an urban concentration or a regional concentration. They are permitted to pursue particular interests through the choice of electives approved by the Graduate School of Planning. Practice in research and analysis on a particular planning problem or topic is obtained through the preparation of an individual thesis. A comprehensive written examination on previously taken graduate course work will be given to students who have finished their first year of study and before they have finished their second year of study. An oral examination will be given on the thesis subject prior to graduation.

Faculty

Core planning courses are taught by the full-time faculty of the Graduate School of Planning. Related courses are taught by other specialists drawn from the University faculty. In most instances these are senior faculty members. In addition, the services of experienced professional planners in TVA and other public and private organizations are called upon to broaden the scope of the students understanding. A variety of outside speakers and seminar leaders provides insight into particular problems of significance to planners.
The University of Tennessee School of Social Work is a fully accredited, two-year graduate professional school, with a program leading to the degree of Master of Science in Social Work. Founded in 1942, the School is a charter member of the Council on Social Work Education and was initially accredited by its predecessor, The American Association of Schools of Social Work.

The School's objectives are to prepare students for competent and responsible social work practice; to assist social welfare agencies and staffs; to increase the quality and quantity of service through the provision of special courses, institutes, and workshops; to provide appropriate educational experiences for students preparing for related fields; to advance standards of professional practice, particularly in this region, through collaboration with social welfare agencies and educational institutions.

The full two-year curriculum is offered both at the University's Nashville Center and on the Knoxville campus. In addition, the first-year curriculum is offered in Memphis with resident full-time social work faculty and the use of the University's campus resources in that city.

The two-year graduate program qualifies students for positions in public and voluntary social service agencies including family and child welfare, medical and psychiatric social work, social group work, social welfare administration, community organization, corrections, rehabilitation, and services to the aging.

The Graduate School of Social Work publishes its own catalog. All inquiries concerning admission to the School of Social Work should be addressed to Vice Chancellor for Graduate Studies, University of Tennessee, Knoxville, Tennessee 37916.

Courses

5000 Thesis
5070 Social Work Research I (3)
5080 Social Work Research II (2)
5081 Evaluative Research in Social Work (3)
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)
5161-62 Social Welfare Seminars (2, 2)
5170 Economic Bases of Social Welfare Systems (2)
5201 Social Interaction: Structure and Process (3)
5210-20 Human Behavior and Social Environment I and II (3, 3)
5230 Human Behavior and Social Environment III (3)
5290 Special Accelerated Program in Social Work (15)
5310 Human Behavior and Social Environment (2)

5311 Imaginative Perspectives on the Human Condition (2)
5410 Social Work Practice I (3)
5420 Social Work Practice II (3)
5430 Methods of Social Work III (4)
5460 Social Casework IV (3)
5470 Social Casework V (3)
5560 Social Group Work IV (3)
5570 Social Group Work V (3)
5600 Community Organization in Social Work (2)
5611 Community Organization IV (3)
5670 Seminar in Community Organization (3)
5701 Administration in Social Work (2)
5702 Organizational Design of Social Welfare Agencies (3)
5741 Supervision in Social Work (2)
5742 Consultation in Social Work (2)
5761 Social Work Administration IV (3)
5762 Seminar in Social Welfare Administration (3)
5771 Information Processing and Decision Making in Social Welfare (3)
5772 Financial Management for Social Welfare Administration (3)
5800 Services in Children's Institutions (2)
5801 Social Casework Practice (2-3)
5802 Social Group Practice Work (2-3)
5812 Organizational Perspectives in Juvenile Justice (2)
5820 Social Aspects of Illness (2)
5825 Social Work with Alcohol and Drug Abuse (2-3)
5826 Social Work in Marital Adjustment (2-3)
5830 Law and Social Work (2-3)
5860 Social Gerontology (2-3)
5865 Implications for Social Work Practice of Roles of Women in Society (2)
5870 Issues and Problems in Social Welfare (2)
5880 Administration and Community Organizing in Social Work (2)
5890 Social Aspects of Children's Behavior (2)
5910-20 Field Practice (3, 4)
5930-40-50-60 Field Practice (4, 4, 8, 4)
5961 Integrative Seminar (2)
5970 Outcomes in Social Work Practice (3)
5980 Practicum in Governmental Social Welfare Policy Making (2-3)

Water Resources Development (991)

Floyd C. Larson, Director, Water Resources Research Center

Specific requirements for admission to this program are a Bachelor's degree in law, engineering, or one of the physical or social sciences from an accredited college or university, and evidence of ability to do work of graduate quality, as ascertained by undergraduate records. Also considered will
be work record, if any, and letters of recommendation. The general policies and requirements of the Graduate School apply to this program.

The degree of Master of Science requires 45 quarter hours of graduate studies, including 9 hours of thesis work. The exact curriculum of each student is decided in consultation with a faculty committee, depending on the student's background and field of interest. If the student's undergraduate work has, in the opinion of the faculty committee, sufficient training and education in one or more of the required courses, the student may substitute other elective courses. Electives will consist of advanced work in the student's specialty or in a related field.

UNDERGRADUATE

3410 Principles of Ground Water Geology (3) (Same as Geology 3410.)

3420 Geohydrology (3) (Same as Geology 3420.)

3565 Introduction to Public Administration Organization and Management (4) (Same as Political Science 3565.)

4110 Managerial Economics (3) (Same as Economics 4110.)

4810 Water Law (3) (Same as Environmental Engr. 4810 and Law 8975.)

GRADUATE

5000 Thesis

5130 Planning Research Methods I (3)

5160 Planning and Utilities (3)

5200 Water Resources Systems (3)

5330 Descriptive Hydrology (3)

5340 Hydrology of Agricultural and Forest Lands (3)

5410-20-30 Interdisciplinary Seminars (3, 3, 3)

5510 Development and Management of Small Watersheds (3)

Space Institute

Charles H. Weaver, Dean

Aviation Systems (169)

Professors: B. H. Goethert (Dean), Ph.D. Berlin; G. W. Braun (Emeritus), Ph.D., Goettingen; L. W. Crawford, Ph.D. Cincinnati; W. Frost, Ph.D. Washington (Seattle); A. A. Masen, Ph.D. Tennessee; M. K. Newman (Emeritus), Ph.D. Columbia; F. Shahrokhi, Ph.D. Oklahoma; R. S. Sleeper, A.M. Harvard; M. A. Wright, Ph.D. Wales; J. M. Wu, Ph.D. California Institute of Technology; R. L. Young, Ph.D. Northwestern.

Associate Professors: S. N. Chaudhuri, Ph.D. Indian Institute; L. B. James, M.S. Southern California; S. C. Roberts, M.S. Cranfield; J. D. Trolinger, Ph.D. Tennessee.

Assistant Professors: K. R. Kimble, Ph.D. Ohio State; R. H. Kohl, Ph.D. Ohio State.

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 major field credit in various aspects of aviation systems, 6 or more quarter hours credit in each of the areas of research-development and administration and electives which permit further specialization in either area.

5000 Thesis

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)

5970 Special Topics in Aviation Systems (3)

Cybernetics and Bionics (262)


Associate Professor: L. B. James, M.S. Southern California.

Space Institute, Tullahoma.
Institute of Agriculture

Webster Pendergrass, Vice President
Elbert J. Chapman, 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 to offer instruction in agriculture and the mechanic arts for the first time. Since 1869, agricultural programs at the University have been expanded to include research for the development of new knowledge and extension for dissemination of such knowledge to rural people. Thus the Institute of Agriculture has come to include the work of three main divisions: College of Agriculture, Agricultural Experiment Station, and Agricultural Extension Service.

Agricultural Experiment Station

John A. Ewing, Dean
Thomas J. Whalley, Assistant Dean
Dorsey M. Gossart, 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 the promotion of practical agriculture through fundamental and applied research on all problems affecting farmers of the state. For example, there are research projects dealing with the development of new and improved varieties of farm and garden crops, the development of improved methods for the control of crop insects and crop diseases, and the evaluation of systems for the feeding, pasturing and management of livestock. Also, much attention is given to soils and fertilizers, mechanical devices of importance on the farm, human nutrition, and various rural economic and social problems.

Priority is given to problems of special importance to the farmers of Tennessee.

The results of investigations are carried to the people in the form of bulletins, circulars, and reports, through the Agricultural Extension Service, and to the state educational system through the Colleges of Agriculture and Education. Rural life has been greatly enriched by the results of these investigations, as have the curricula of the school system.

Headquarters and the Main Station of the Agricultural Experiment Station are located at Knoxville. In addition, the Experiment Station operates research facilities at other locations in the state as follows:

UT-AEC COMPARATIVE ANIMAL RESEARCH LABORATORY

This laboratory is located about 20 miles west of Knoxville near Oak Ridge. A program of radiobiological research in the field of Agriculture is carried out by the Agricultural Experiment Station under contract with the Atomic Energy Commission. The program includes research with farm and laboratory animals, and in applied radiobiology and plant breeding.

Facilities at the laboratory include approximately 2,000 acres of land for maintaining livestock and growing plants to be used in experimental work, a research laboratory especially suited to large animal work, and a unique gamma irradiation field.

In 1962, 2,200 acres of forest land near the laboratory area were acquired by the University. An arboretum containing 250 acres has been established. Emphasis will be on collecting woody plants. In addition, this land will be used for research on recreational use of forested areas and on the adaptation of forest species to soils and other site factors.

THE UNIVERSITY OF TENNESSEE AT MARTIN

On January 1, 1965, the Agricultural Experiment Station was assigned responsibility for administration of the 600-acre farm adjacent to the Martin campus. The farm is used for both research and teaching. At the same time the School of Agriculture at Martin assumed research responsibilities and is working closely with the different departments in Knoxville in planning and executing the research program. Experiments are under way with field crops, horticultural crops, dairy cattle, and beef cattle. The primary concern is with problems of special importance to the northwestern part of the state.

BRANCH STATIONS

Dairy Experiment Station near Lewisburg contains 615 acres and is operated in cooperation with USDA-ARS. Major emphasis is breeding and nutrition of Jersey cattle.

Highland Rim Experiment Station near Springfield contains 586 acres. Major emphasis is breeding and culture of dark-fired tobacco, other agronomic crops, horticultural crops, and livestock.

Middle Tennessee Experiment Station near Spring Hill contains 1,153 acres of representative high-phosphate Central Basin soils. Studies are under way with field crops, beef cattle, sheep, and dairy cattle of the Holstein breed.

Plateau Experiment Station near Crossville consists of three farms totaling 2,150 acres. Studies with beef cattle, sheep, field and horticultural 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 near Greeneville consists of 536 acres. Extensive research on Burley tobacco is in cooperation with USDA-ARS. In addition, beef cattle and field crops are studied.

West Tennessee Experiment Station near Jackson contains 660 acres. Major emphasis is culture and breeding of cotton, other agronomic crops, horticultural crops, and breeding and feeding of dairy cattle.

FIELD STATIONS

Ames Plantation near Grand Junction includes 18,500 acres, about 10,000 acres is in forest. The land is in trust by the Ames Foundation for use by the Institute of Agriculture. Large scale experiments involve forestry, farm management, crop production, and breeding and management of beef cattle and swine.

Cumberland Forestry Field Station consists of two tracts in Morgan and Scott Counties with a total area of 9,450 acres.

Friendship Forestry Field Station is located in Hamilton County and consists of 660 acres owned by the TVA. Forestry research is conducted in cooperation with TVA.

Highland Rim Forestry Field Station near Tullahoma includes 860 acres. Research results apply generally on the Highland Rim.

Milan Field Station in West Tennessee consists of 472 acres. Research emphasis is mechanization of the production of cotton, soybeans, and horticultural crops.

46
Agricultural Extension Service

William D. Bishop, Dean
M. L. Downen, Assistant Dean
Troy W. Hinton, Assistant Dean
Mildred F. Clarke, Assistant Dean

The Agricultural Extension Service serves the entire state of Tennessee. Its educational service of the institute of Agriculture is active in every county extending information on agriculture and home economics subjects to farm families and other citizens.

This educational organization was established July 1, 1914, by an Act of Congress commonly known as the Smith-Lever Act. Staff members of the Agricultural Extension Service use a wide range of methods—farm and home visits, educational meetings, field demonstrations, publications, and mass media—in providing educational programs for people who do not have the opportunity to enroll in resident courses of instruction at colleges.

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

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

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

College of Agriculture

O. Glen Hall, Dean

Curriculum in Agriculture

Broad opportunities for young people to prepare for a future in agriculture and forestry are offered in the College of Agriculture. The college provides curricula leading to the degrees of Bachelor of Science in Agriculture, Bachelor of Science in Agricultural Engineering, Bachelor of Science in Forestry, 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 Engineers' Council for Professional Development. 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 certification to the Schools of Veterinary Medicine at the University of Tennessee and Ohio State University under the Regional Program for Veterinary Education.

Students pursuing programs leading to the degree of Bachelor of Science in Agriculture major in one of several specialized areas of agriculture offered in the college. These major areas are: Agricultural Business, Agricultural Economics, 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 outlined by the department in which he 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; and other courses are included to provide a liberal education. In all subject matter departments, there is the opportunity to select elective courses appropriate to the educational objectives of individual students. The choice of electives in each curriculum should be made with the guidance of the faculty advisor.

All academic and general requirements of the University will be met by agricultural students, and they must complete the requirements in one of the organized curricula. Each curriculum leading to the degree of Bachelor of Science in Agriculture includes the requirements of the basic curriculum for agriculture. For this degree, the minimum requirement is 198 quarter-hour credits. Students may include 6 hours of lower division military science and 9 hours of advanced military science credit in the 198 total. A minimum of 45 hours in agricultural courses is required. For the degree of Bachelor of Science in Forestry, and 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 199 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 agricultural appropriate to a specified major requirement, and approved by the major adviser, must be completed in residence to fulfill requirements of baccalaureate degrees offered in the college.

Graduate Study in Agriculture

MASTER OF SCIENCE PROGRAMS

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

A Winter Short Term for Agricultural Extension personnel and other professional agricultural workers is held each year during the last half of the winter quarter. Those attending must be accepted by the Graduate School. Students may take three courses and earn nine quarter-hour credits toward the Master of Science degree. A number of courses are offered annually in Agricultural Extension Education and in the majority of the 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
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 buildings; McClung 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 teaching and experimental work. The buildings which have been erected recently provide facilities comparable to the best in the country for the departments which they serve.

Four farms adjacent to or within eight miles of the agricultural campus are used both for instructional and experimental purposes. Morgan Farm (80 acres), Cherokee Farm (550 acres), Plant 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 main University campus so that students may make the change between classes without serious inconvenience.

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

Selection of Curriculum

Agricultural students who have determined their area of special interest may choose the curriculum most adaptable to their needs when they register as freshmen, and the adviser from that 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 the opportunities in the several fields of 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 college of agriculture for the 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 of 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.

Students who transfer to the College of Agriculture from another institution, or from another college within the University of Tennessee, should consult the Dean if in doubt as to 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 working for a degree of Bachelor of Science in Agriculture will include in their course of study the following minimum requirements. The sequence and the selection of courses not specified will be guided by the adviser.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture 1110. Introduction to Social Sciences for Agriculture</td>
<td>4</td>
</tr>
<tr>
<td>Agriculture 1120. Introduction to Agricultural Engineering</td>
<td>4</td>
</tr>
<tr>
<td>Agriculture 1140. Animal Science for Agriculture</td>
<td>4</td>
</tr>
<tr>
<td>Agriculture 1140. Plant Science for Agriculture</td>
<td>4</td>
</tr>
<tr>
<td>Agriculture 1150. Food Technology and Science for Agriculture</td>
<td>4</td>
</tr>
</tbody>
</table>

Agricultural Science. (courses listed in department curriculum) 26
English and Communications. (English 1510-20, Speech 2311, and elective 6 hours—literature or communications) 17
Mathematics 1540-50-60, (general mathematics) 12
Biological Science. (agricultural biology, botany, microbiology, or zoology) 12
Physical Science. (Chemistry 1150-20-30 or 1510-20-30 and physics or geology) 16
Social Science and Humanities. (Economics 2111-20 and electives, 12 hours—not more than 3) 18
Other Courses or Elective Hours Specified by Departments 76
TOTAL 198

Or equivalent honors courses.

The Mathematics 1640-50-60 sequence may be necessary in some courses of study.

The five basic courses in agriculture are not departmental; but the course outlines and content were prepared by a group of experienced teachers representing the appropriate subject-matter areas. They are presented primarily for the guidance of teachers who work together in developing the material in each course. The five courses are required of all agricultural students 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. These courses serve as a strong motivation for study in the physical, biological, and social sciences, and are prerequisite to advanced courses in technical agriculture.

An Honors Seminar is offered as a challenge to exceptional students who desire to explore in greater depth some special topic of unusual significance to agriculture. A team of faculty members shares in this seminar as participants and resource people. The students gain experience and are encouraged to assume responsibilities not available in formally organized courses. Association with students and faculty from all phases of agriculture in the study of a common problem provides an unusual challenge.

COURSE LOAD

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 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 constantly threaten Tennessee's dynamic agriculture.

Agricultural Economics and Rural Sociology

AGRICULTURAL BUSINESS CURRICULUM

Advisers: Professor Martin, Associate Professor Snell, and Assistant Professor Mundy

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 public and private services where major emphasis is in areas other than farm production. This program emphasizes fields related by 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 such work in crops, livestock and poultry marketing, fertilizer and feed businesses, 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.

Freshman Hours Credit

Agriculture 1110-20-30-40-50 20
English 1510-20 8
Mathematics 1540-50-60 12
Biological Science Electives 8

Sophomore

Chemistry 1110-20 or 1510-20-30 12
Economics 2110-20-30 6
Economics Electives 3
Nondepartmental Social Science and Humanities Electives 12
Psychology Electives 4
Biological Science Electives 6
Electives 6

Junior

Accounting 2110-20, 2210 9
Agricultural Economics Electives 6
Rural Sociology Elective 3
Economics 3110 3
Nondepartmental Agricultural Electives 9
Physics or Geology Elective 4
Speech 2311 4
Statistics 2100, 3220 6
Electives 6

Senior

Agricultural Economics and Rural Sociology Electives 18
Business Law 4110 3
Economics Elective 3
Finance Elective 3
Office Administration 4320 3
Speech 3021 or Communications Elective 4 or 3
Electives 16 or 17

TOTAL: 198 hours

Or equivalent honors courses.
AGRICULTURAL ECONOMICS AND RURAL SOCIETY CURRICULUM

Advisers: Professors Martin and Associate Professor Snell, Assistant Professor Mundy

This curriculum is designed to provide students with training in the social sciences as well as in the physical and biological sciences and technical agriculture. Recognition is given to the desire of many college graduates to work in agriculture where the major emphasis is in farm production and related areas. Students are prepared for positions such as farm managers, county agricultural agents, managers of farm supply and purchasing firms, agricultural journalism and farm loan agents. This curriculum also provides the necessary background for graduate work in Agricultural Economics.

Freshman
HOURS CREDIT
Ag 1110-20-30-40-50 20
'Engr 1510-20 8
Math 1540-50-60 12
Biological Science Electives 8

Sophomore
Chem 1110-20-30 or 1510-20-30 12
'Economics 2110-20-30 9
Biological Science Elective 4
English Elective 4
Nondepartmental Social Science and Humanities Electives 12
Electives 9

Junior
Agricultural Economics Electives 6
Rural Sociology Elective 3
Speech 2311 4
Finance 3110 3
Statistics 2100, 3220 and 3222 3
Economics 3110-20 6
Nondepartmental Agricultural Electives 6
Physics or Geology Elective 4
Electives 8

Senior
Agricultural Economics and Rural Sociology Electives 15
Economics Elective 3
Speech 3201 or Communications Elective 4 or 3
Nondepartmental Agricultural Electives 6
Electives 23 or 24

TOTAL: 198 hours

Students should file application for student teaching in the Agricultural Education Department at least two quarters prior to the quarter in which the student teaching is desired.

Freshman
HOURS CREDIT
Ag 1110-20-30-40 16
Introductory Biological Sciences 12
English 1510-20 6
Mathematics 1540-50-60 12

Sophomore
Ag 1150 4
Agricultural Biology 3210 4
Plant and Soil Science 2130 1
Chemistry 1510-20-30 12
Economics 2110-20 6
Psychology 2510, and Educational Psychology 3110 or equivalent 4
Microbiology 2010 4
Speech 2311 4
Physical Education or Health Electives 3

Junior
Ag 1110-20-30-40 12
Educational Psychology 3810 9
Education C & I 3020 3
Animal Science 3310 3
Animal Science 4820 4
Horticulture Elective 3
Geology or Physics Elective 4
English, Journalism, Speech Electives 6
Agricultural Mechanization 3110 3
Agricultural Mechanization Elective 3
Agricultural Electives 9

Senior
Agricultural Economics 4120 3
Agricultural Education 4350-60 15
Social Sciences and Humanities Elective 4
Agricultural Electives 10
Health Elective 3
Electives 16

TOTAL: 198 hours
*One hour must be in PE.
**Requires admission to teacher education.

Agricultural Engineering

Agricultural Engineering CURRICULUM

Advisers: Professors Luttrell and Sewell

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 minimum requirements for admission include two units in algebra, one unit in geometry (preferably including some solid geometry), and one-half unit in trigonometry. Provisions for removal of deficiencies are made for students not meeting these requirements by registration in special classes during their freshman year.

The curriculum is designed to give training in the basic fundamentals of engineering and a background in agriculture. The graduate is trained to make application of engineering principles in the field of agriculture.

Graduates can go into design of farm machinery, soil and water conservation engineering, structures, buildings, animal waste disposal systems, or materials handling and processing systems. Opportunities are also available in the field of sales engineering, dealing with equity-pretread, prefabricated structures, irrigation systems, or electrical-power systems found in agriculture.

Industry, colleges or universities, government agencies such as the Soil Conservation Service, research organizations, foreign service, all offer employment opportunities to the graduate agricultural engineer. The curriculum provides for elective courses which can be taken in the student's area of interest and prepare him for the field he desires. The curriculum is designed to prepare students desiring to undertake a graduate program in agricultural engineering.

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

Freshman
HOURS CREDIT
Ag 1110-20-30-40 3
Basic Engineering 1310-20-30 12
English Elective 2110 2
'Chemistry 1110-20-30 or 1510-20-30 12
English 1510-20 8
Mathematics 1840-50-60 12

Sophomore
Agricultural Engineering 1130 8
Biology 1210 4
Engineering Mechanics 2710-20 6
English Electives 4110 6
Graphics 1410-20 6
Mathematics 2840-50-60 12
Physics 2311-20-30 9

Junior
Agricultural Engineering 3100, 3250, 3420 7
Plant and Soil Science 2130 4
'Economics 2110-20 6
Electrical Engineering 2100-20-30 or 3110-20 and 3310 or 3150 9
Engineering Mechanics 3110, 3310 6
Engineering Mechanics 3120 or 3320 3
Engineering Mechanics 3510 or Civil Engineering 3710 3
Mathematics 3150 6
Mechanical Engineering 3110, 3320 6
Speech 2311 4

Senior
Agricultural Engineering 3350, 4150, 4220, 4310 12
Agricultural Engineering 4120-30 2
Agricultural Engineering Elective Group 6
'Humanities-Social Science Electives 12
'Technical Electives 6
Electives 10

TOTAL: 199 hours
*One equivalent honors course.
**Agricultural Engineering Elective Group: Any two of the following courses: Agricultural Engineering 3550, 4290, 4360.
***Humanities-Social Science Electives from such fields as history, economics, government, literature, sociology, psychology, or fine arts. (Not more than two areas).
*The selection of technical electives must have approval of student's adviser and the department head prior to registration in the course.

Institute of Agriculture 49
Agricultural Mechanization Curriculum

Advisers: Professors Luttrell and Shelton

Agriculture's rapid mechanization is continually increasing the demand for graduates trained in the principles dealing with application of machines, systems, and structures designed by engineers for improvement of production, handling, processing, and storing of food and fiber. The graduate agricultural mechanization specialist may be involved in making materials, handling layouts for farmsteads, testing machinery for a manufacturer, managing a feed processing plant, or working with farmers in better utilizing electrical equipment and systems while working for an electrical power distributor. Positions are also filled as a farm manager, research technician, farm service adviser; also, positions are available in the areas of machinery, farm structures and irrigation equipment sales, educational and extension work with a personnel, educational and training programs in an agriculture-connected industry.

A student is able to minor in another field by carefully selecting his elective courses. This enables the student to be better trained for a specific area of work in the technology or business fields.

**Freshman**

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
<td>Agriculture 1110-20-30-30</td>
<td>16</td>
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<tr>
<td>Agricultural Mechanization 2110</td>
<td>3</td>
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<tr>
<td>Biology 1230</td>
<td>3</td>
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<td>English 1510-20</td>
<td>8</td>
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<td>Mathematics 1540-50-60</td>
<td>12</td>
<td></td>
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<tr>
<td>Elective</td>
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**Sophomore**

<table>
<thead>
<tr>
<th>Course Description</th>
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<tbody>
<tr>
<td>Agriculture 1150</td>
<td>4</td>
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</tr>
<tr>
<td>Agricultural Mechanization 2130</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Chemistry 1110-20-30 or 1510-20-30</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Economics 2110, 2130</td>
<td>6</td>
<td></td>
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<tr>
<td>Journalism 2210</td>
<td>3</td>
<td></td>
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<tr>
<td>Physics 1210-20</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Plant and Soil Science 2130</td>
<td>3</td>
<td></td>
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<tr>
<td>Speech 2311</td>
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**Junior**

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Hours</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>Accounting 2110</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Agricultural Biology 3210</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Agricultural Mechanization 3110</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Agricultural Mechanization 3210-420</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Agricultural Mechanization 3510</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Agricultural Mechanization 3100</td>
<td>1</td>
<td></td>
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<tr>
<td>Animal Science 2810</td>
<td>3</td>
<td></td>
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<tr>
<td>Microbiology 2010</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Office Administration 2750</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Plant and Soil Science 3220</td>
<td>4</td>
<td></td>
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<tr>
<td>Humanities-Social Science Electives</td>
<td>6</td>
<td></td>
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<td>Electives</td>
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**Senior**

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<tr>
<th>Course Description</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Agricultural Economics 4610</td>
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<tr>
<td>Agricultural Economics 4710</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Agricultural Extension 3110</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Agricultural Mechanization 4120-420</td>
<td>3</td>
<td></td>
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<tr>
<td>Agricultural Mechanization 4160</td>
<td>3</td>
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<tr>
<td>Agricultural Mechanization 4210-20</td>
<td>7</td>
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</tr>
<tr>
<td>Food Technology and Science 3020 or 3840 or 4140</td>
<td>3 or 4</td>
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</tr>
<tr>
<td>Humanities-Social Science Electives</td>
<td>6</td>
<td></td>
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</tbody>
</table>

**Agricultural Extension Education**

Advisers: Professor Dotson and 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 desired emphasis in Agricultural Extension Education.

**Animal Science**

Advisers: Professors Johnson, Bietner, Chamberlain, Merriman, Murphy, Shrode, Swanson, and Assistant Professors Barth, Lidvall, McLaren, Montgomery, Richardson, Shirley, and Assistant Professors Corr and Smalling.

This curriculum is designed to prepare students for leadership careers in livestock and in related industries. Swine, poultry, sheep, dairy, 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 scientific or elect the pre-veterinary courses preparatory for specialization. Elective selection permits special training for work with feed companies, milk, egg or poultry production, managerial or marketing groups, other educational agencies, supply and equipment cooperatives, agricultural extension service, agricultural communication, public relations, and various organizations associated with agriculture.

Students have the opportunity, through course selection, to procure double majors in Animal Science with Vocational Education, Plant and Soil Science, Agricultural Economics, or other available departments.

**Freshman**

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture 1110, 1130, 1140</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Biology 1210, 1230</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Chemistry 1110, 1120 or 1510-20</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>English 1510-20</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Mathematics 1540-50-60 or 1840-50-60</td>
<td>12</td>
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**Sophomore**

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture 1120, 1150</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Animal Science 2810</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Chemistry 1130 or 1530, 1531,155</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Economics 2110-20</td>
<td>6</td>
<td></td>
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<tr>
<td>Microbiology 2010</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Plant and Soil Science 2130</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Speech 2311 and Communications Elective</td>
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**Junior**

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Non-Animal Science Agricultural Electives</td>
<td>6</td>
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<tr>
<td>Animal Science (Core required: Animal Science 3210, 3220, 3320, 3410, 3420, 3510)</td>
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<tr>
<td>Directed Electives - Evaluation</td>
<td>3</td>
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<tr>
<td>Communications Elective</td>
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<td>Electives</td>
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<tr>
<td>Humanities-Social Science Electives</td>
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**Senior**

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Hours</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>Non-Animal Science Agricultural Electives</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Animal Science 4910 (core required: Animal Science 3210, 3220, 3320, 3410, 3420, 3510)</td>
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<tr>
<td>Directed Electives - Management</td>
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<tr>
<td>Electives</td>
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<tr>
<td>Humanities-Social Science Electives</td>
<td>6</td>
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</tbody>
</table>

**Electives**

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 CURRICULUM**

Advisers: Professors Merriman, Murphy and Shrode, Associate Professor Richardson and Assistant Professor Smalling.

This curriculum is designed to guide the student in meeting admission requirements of those schools of veterinary medicine with which the State of Tennessee has contracts. These contracts allow a given number of qualified residents of Tennessee to enter
these veterinary schools each year. In cooperation with the Southern Regional Education Board, the State of Tennessee provides funds on a per student per year basis, to aid in the operation of these schools. The current contracts and the maximum number of Tennesseans presently admitted under each contract are at Auburn University, 19 students; Ohio State University, up to 3 students; and Tuskegee Institute, up to 2 students. Residence in the State of Tennessee, completion of specific subject matter requirements, and attainment of given grade point average comprise the minimum requirements for entrance in the contracting schools. 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 various schools. Each pre-veterinary medical student should, early in college, elect a possible alternate choice for career due to the lack of available spaces in schools of veterinary medicine. Although pre-veterinary requirements listed below are specifically designed to fit the Auburn-State of Tennessee contract, completion of them generally fulfills the requirements for the other regional schools. Students applying for Auburn must complete a minimum of 7 quarters and 123 hours of credit by June 15 of the year they wish to enter veterinary school. It is strongly recommended that each interested student pursue a 3-year pre-veterinary program. Inquiries concerning possible course substitutions and the combining of the pre-veterinary curriculum with a degree program should be directed to the Department's pre-veterinary advisers.

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### Institute of Agriculture 51

#### Third Year—Fall

- Chemistry 3231-39 .......................... 4
- Animal Science 3320 ......................... 3
- Electives..................................... 9

#### Third Year—Winter

- Animal Science 3380 ........................ 3
- Physics 2210 ................................ 4
- Animal Science 3810 ....................... 3
- Electives..................................... 6

#### Third Year—Spring

- Physics 2220 or 2230 ....................... 4
- Electives..................................... 12 or 13

TOTAL: 149-157 hours4

1 Consult adviser for variations in scheduling.
2 May substitute advanced nutrition of other 3000- or 4000-level Animal Science course.
3 149-157 hours for 9 quarters. All specific requirements, 7 quarters in residence, and 123 hours must be completed by June 15 of the year applicant hopes to enter Auburn's School of Veterinary Medicine.

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### Food Technology and Science

**Advisers: Professors Miles and Overcast, Associate Professors Collins and Melton.**

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, dehydrating, fermenting, preserving, etc., is taught with emphasis on basic principles rather than on specific commodity procedures. Therefore, young 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.

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### Freshman

- Agriculture 1110-30-40-50 .......................... 16
- English 1510-20 ............................. 8
- Mathematics 1540-50-80 .......................... 12
- Physics 1210-20-30 .......................... 12
- Social Science Elective ....................... 3

### Sophomore

- Agriculture 1120 .............................. 4
- Chemistry 1151-20-30 or 1510-20-30 .............. 12
- Economics 2110-20-39 ......................... 9
- Food Technology and Science 2110-20 ............ 7
- Microbiology 2110 ............................ 6
- Speech 2311 ................................. 4
- Communications or English Elective ............ 3
- Social Science Elective ....................... 3

### Junior

- Agricultural Mechanization 3510 ................. 4
- Chemistry 2320 or Nutrition 3310, Nutrition 3320-30-39 12
- Food Technology and Science 2120 .......................... 7
- Food Technology and Science 3120-20 ......... 7
- Food Technology and Science 4210 .......................... 3
- Microbiology 3810 ............................ 4

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### Hours Credit

- Plant and Soil Science 3610 .......................... 3
- Communications or English .......................... 3
- Social Science Elective .......................... 3
- Electives..................................... 12

### Senior

- Food Technology and Science 4010 .......................... 3
- Food Technology and Science 4110-20, 4310, 4510, 4920 16
- Food Science 4010 ............................ 3
- Nutrition 3410 ............................... 5
- Electives..................................... 22

TOTAL: 198 hours

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1 Mathematics 1840-50-60 are desirable alternates for students with suitable entrance scores.
2 Those students preparing for employment in commercial food industry should select business electives from such areas as agricultural economics, accounting, business law, industrial management and marketing. Student should consult with adviser before taking any elective.
3 Equivalent honors courses.

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### Forestry

**Adviser: Professor Barrett**

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

In addition to the core of required courses there are about forty-three elective credit hours for broad studies or specialized training in one or more areas of forestry. These areas and examples of related fields of study include:

- **Wildlife Management**—ecology, zoology, botany.
- **Forest Engineering**—mathematics, physics, engineering.
- **Industrial Forestry**—economics, business law, marketing, industrial management.
- **Forest Biology**—the physiology, ecology, genetics, morphology.
- **Forest Protection**—fire behavior and control, entomology, pathology.
- **Soil and Site Relationships**—geology, chemistry, plant and soil science.
- **Public Administration and Policy**—political science, human relations.
- **Forest Influences**—meteorology, watershed management, erosion control, environmental control.
- **Outdoor Recreation**—natural and social sciences.

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**Extension**—communication, general studies.

**Wood Technology and Utilization**—mathematics, physics, chemistry, engineering, wood technology.

**Forest Management**—economics, business administration, management science, computer science.

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.

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

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

FOREST RESOURCE MANAGEMENT CURRICULUM

Freshman
*Botany 1110-20 or Biology 1210-20 8
*English 1510-20 8
Forestry 1620 3
Mathematics 1450-50-60 12
Physics 1210-20 8
Speech 2311 4
*Electives 3-4

Sophomore
*Chemistry 1510-20-30 12
*Communications Electives 6-8
*Computer Science 2410 3
Economics 2110-30 8
Forestry 3020-40-50 9
Plant and Soil Science 2130-3610 7
*Electives 6-8

Junior
Accounting 2110 3
Agricultural Biology 3130 4
Agricultural Mechanization 2140-3140 5
Forestry 3110-20, 3230, 3320 14
Forestry 4402-03-04-08 14
*Electives 9-12

Senior
Agricultural Biology 3210 4
Forestry 3130, 3210 6
Forestry 4210-20-30, 4330, 4440 17
*Electives 21-28

TOTAL: 198 hours

*Botany 1210-20 is recommended in lieu of Botany for students interested in wildlife management.

*Or equivalent honors courses.

*In addition to the specified English electives a minimum of 14 credit hours will be elected in social sciences and/or humanities, not more than three areas, and Agriculture 1110 is recommended.

*A minimum of 6 hours of communications electives to be selected from a Department of Forestry approved list.

*Computer Science 2100 is accepted in lieu of 2410 for those wishing to elect additional courses in this area.

*Transfer students should check with an advisor to assure that their schedule will include courses prerequisite to the Junior Field Session.

*Enough electives must be taken to total 198 hours for degree.

WILDLIFE AND FISHERIES SCIENCE CURRICULUM

Freshman
Biology 1210-20-30 12
Mathematics 1540-50-60 12
*English 1510-20 8
*Physics 1210 4
*Electives 6

Sophomore
*Chemistry 1510-20-30 12
Economics 2110-30 6
Biological Science 2130 4
Forestry 3040 3
Plant and Soil Science 2130, 3610 7
Animal Science 3210 4
Computer Science 2410 3
*Electives 11

Junior
Zoology 3060, 4240 8
Wildlife and Fisheries Science 3230 3
Forestry 3110, 3320 7
Plant and Soil Science 3120 5
Botany 3030 4
Agricultural Mechanization 3210 3
*Electives 21

Senior
Zoology 4200, 4660 9
Wildlife and Fisheries Science 4550, 4460 8
*Wildlife and Fisheries Science 4510, 4520 8
Forestry 4210 3
*Electives 22

TOTAL: 198 hours

*Or equivalent honors courses.

*Sixty hours of electives, approved by the faculty adviser, to include:
6 hours of communications electives, with Journalism 2110, 3710 highly recommended; 12 hours of social science or humanities; and 20 hours of electives to be taken from the following courses:
- Animal Science 3220 (3)
- Animal Science 3320 (3), Animal Science 3510 (4)
- Animal Science 3520 (3)
- Biology 2110 (4)
- Biology 3120 (4)
- Botany 4310 (4)
- Forestry 4005 (3)
- Forestry 4006 (3)
- Forestry 4430 (3)
- Forestry 4440 (3)
- Physics 1220 (4)
- Zoology 3040 (5)
- Zoology 3050 (5)
- Zoology 3150 (5)
- Zoology 3230 (4)
- Zoology 4190 (4)
- Zoology 4280 (3)
- Zoology 4290 (4)
- Zoology 4500 (4)
- Zoology 4670 (4)
- Zoology 4720-29 (5)

Ornamental Horticulture and Landscape Design

Adviser: Professor Williams

Man's needs go beyond food, clothing, and shelter. He requires a degree of control over his environment, especially his immediate surroundings. Ornamental plants and their use 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: Horticulture, nursery management, turfgrass management, and landscape design.

The area of Horticulture includes the science of producing flowering plants in field and greenhouse and the art and science of using these plants for the benefit of man.

Opportunities are available as greenhouse managers, floral designers, retail salesmen, 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 nurseryman include horticultural knowledge and a business sense. Students in this area are prepared for work in nurseries, garden centers, botanical gardens, and arboretums. They may find opportunities also in research, teaching, writing, sales, and landscape maintenance.

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

Landscape design means modifying man's outdoor environment to his 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 man's 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 nurserymen, landscape maintenance, garden center operation, allied sales, highway landscaping, park development, research, teaching, and writing.

Freshman
Agriculture 1110-20-30-40-50 12
*Introductory Biological Sciences 12
*English 1510-20 8
*Mathematics 1540-50-60 12

Sophomore
*Chemistry 1110-20-30 or 1510-20-30 12
*Economics 2110-20 6
*Speech 2311 4
*Physics 1210 or 2210 4
*Geology 1510 4
*English or Communications Electives 6
*Social Science or Humanities Electives 6
Plant and Soil Science 2130 4
Orn. Hort. and Landscape Design 3010 3
Orn. Hort. and Landscape Design 3020 3

Junior
Social Science or Humanities Electives 6
Chemistry 2230 or 3211-19 4
*Nutrition 3010 4
Agricultural Biology 3130, 3120 8
Plant and Soil Science 3110 4
Plant and Soil Science 3020 3
Orn. Hort. and Landscape Design 3030 3
Orn. Hort. and Landscape Design 3110 3
Orn. Hort. and Landscape Design 4120 4
Orn. Hort. and Landscape Design Electives 7
*Electives 8

Senior
*Plant and Soil Science 3040 3
Orn. Hort. and Landscape Design 4150 or 4160 3
Orn. Hort. and Landscape Design 4210 4
Orn. Hort. and Landscape Design 4610 1
*Agricultural Electives 9
*Orn. Hort. and Landscape Design Electives 5
*Electives 23

TOTAL: 198 hours

*Or equivalent honors courses.

*Students should consult with departmental adviser for suggested electives and suggested course of study.

*Or equivalent physiology course.

*Mathematics 1840-50-60 may be substituted for students with high mathematics scores.
Plant and Soil Science

Advisers: Professors Seatz, Skold and Swingle and Associate Professors Reynolds and Smith.

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 yields of high quality products; and weed control for efficient crop production.

Soil science includes studies in soil formation and classification for a better understanding of our soil resources; soil management for optimum crop production and conservation; soil fertility for utilizing fertilizers efficiently; and basic studies in chemistry, physics, and biology as they 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. He may be broadly trained or he may choose to specialize in a more specific phase of the subject. Regardless of his 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 private industry as technical specialists, supervisors, and salesmen. 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

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture 1110-30-40-50</td>
<td>16</td>
</tr>
<tr>
<td>*English 1510-20</td>
<td>3</td>
</tr>
<tr>
<td>*Mathematics 1540-50-60</td>
<td>12</td>
</tr>
</tbody>
</table>

Sophomore

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Chemistry 1110-20-30 or 1510-20-30</td>
<td>12</td>
</tr>
<tr>
<td>*Economics 2110-20</td>
<td>6</td>
</tr>
<tr>
<td>Agriculture 1120</td>
<td>4</td>
</tr>
<tr>
<td>Plant and Soil Science 2130</td>
<td>4</td>
</tr>
<tr>
<td>Science 2311</td>
<td>4</td>
</tr>
<tr>
<td>Physics 1210 or 2210</td>
<td>4</td>
</tr>
<tr>
<td>*English and Communications Electives</td>
<td>6</td>
</tr>
<tr>
<td>*Social Science or Humanities Electives</td>
<td>9</td>
</tr>
</tbody>
</table>

Junior

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Social Science or Humanities Elective</td>
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</tr>
<tr>
<td>*Biological or Physical Science Electives</td>
<td>12</td>
</tr>
<tr>
<td>Agricultural Biology 3130 or 3210 or 4010</td>
<td>4</td>
</tr>
<tr>
<td>Chemistry 2230 or 3211-19 or Nutrition 3310</td>
<td>4</td>
</tr>
<tr>
<td>Animal Science 3310 or 3320</td>
<td>3</td>
</tr>
<tr>
<td>Plant and Soil Science 3020 or 3040</td>
<td>12</td>
</tr>
<tr>
<td>*Plant and Soil Science Electives</td>
<td>6</td>
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<tr>
<td>Nondepartmental Agricultural Electives</td>
<td>10</td>
</tr>
<tr>
<td>Electives</td>
<td>35</td>
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</tbody>
</table>

Senior

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Botany 3210</td>
<td>4</td>
</tr>
<tr>
<td>Plant and Soil Science 4910</td>
<td>1</td>
</tr>
<tr>
<td>*Plant and Soil Science Electives</td>
<td>10</td>
</tr>
<tr>
<td>Electives</td>
<td>35</td>
</tr>
</tbody>
</table>

TOTAL: 198 hours

Credit for Cooperative Work

A maximum of nine quarter hour credits may be earned by supervised employment on approved jobs. To receive credit, the student must receive the recommendation of his employer, must present a satisfactory written report, and must receive a passing grade from the University professor in charge. Employment periods shall be no less than twelve weeks. At least one quarter must be spent in study on the campus between periods of employment. Prerequisites: Junior classification, with quality grade average of 2.2 or above, and permission of the department head and the Dean of the College of Agriculture to register. Three hours credit, each quarter.

Short Courses and Special Events

Practical short courses in agriculture are offered for those who desire special training in certain fields. Some of these short courses are held on the Knoxville campus, others at the Buford Ellington 4-H Club Training Center, Milan, Tennessee, or appropriate research stations. The Resident Instructor, Research, and Extension staffs join in teaching these special courses annually and others are offered to meet immediate needs for special instruction. They are service courses and do not carry college credit.

In-service training is provided special groups, such as the teachers of vocational agriculture, through short-term courses which are offered at convenient locations in the state.

A special occasion known as Varsity Visit is held during the year. Delegates from all Future Farmers of America chapters are invited to spend a day on the agricultural campus with their advisers. Approximately 500 attend and inspect each department of the College.

Departments of Instruction

Numbers in parentheses following the course titles indicate quarter hours credit offered.

Interdepartmental Offerings

Agriculture (028)

1110 Introduction to Social Sciences for Agriculture
(4) Social sciences as they relate to agriculture—agriculture in the economy; tools of social science analysis applied to agricultural problems; agriculture, its development, relation to man, industry and government. 4 hrs. and 1 lab.

1120 Introduction to Agricultural Engineering
(4) Agricultural power and machinery fundamentals, agricultural structures, soil and water conservation controls, and agricultural uses of electricity. 3 hrs. and 1 lab.

1130 Animal Science for Agriculture
(4) Animals in Agriculture: Body systems and development, principles of inheritance, fundamentals of feeding, and function of farm animals, animal sanitation, animal products, and the relationship to public health. 3 hrs. and 2 labs.

1140 Plant Science for Agriculture
(4) Plant
5210 Plant Parasitic Nematodes (4)
5220 Plant Disease Control (3)
5230 Field Crop and Horticultural Insects (3)
5240 Insect Pests of Man and Animal (3)
5310 Special Problems in Plant Pathology or Economic Entomology (1-6)
5410 Seminar (1)

Agricultural Economics and Rural Sociology

Professors:
J. A. Martin (Head), Ph.D. Minnesota; M. B. Badenhop, Ph.D. Purdue; D. W. Brown, Ph.D. Iowa State; C. L. Cleland, Ph.D., Wisconsin; Irving Dubov, Ph.D. California (Berkeley); L. H. Keller, Ph.D. Kentucky; F. O. Leuthold, Ph.D. Wisconsin; W. P. Ranney (Emeritus), Ph.D. Minnesota; T. J. Whalley*, Ph.D. Purdue.

Associate Professors:

Assistant Professors:
B. J. Deaton, Ph.D. Wisconsin; L. C. Morgan, Ph.D. Kentucky; S. D. Mundy, Ph.D. Tennessee; B. J. Trevena, Ph.D. Tennessee.

*A distinguished professor

Agricultural Economics (047)

3120 Agricultural Prices (3) Factors determining prices of farm products. Effects of prices of varying degrees of competition and monopoly. 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.

3320 Marketing Farm Products (3) American marketing system and practices. Functions of marketing systems, functions of alternative marketing structures, functions of marketing systems, 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, rate of return, capital, land, labor, and capital to meet changing technologies; tenure arrangements and use of credit, risks, 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.

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, 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, product selection, scale of operation of agricultural firms; aggregate effects of decisions made by individual agricultural firms. Prereq: Agriculture 1110 and Economics 2120, and senior standing.

4210 Problems in Agricultural Economics (3) Supervised laboratory course in methods of collecting and analyzing information and in writing a report. Prereq: Agriculture 1110 and Economics 2120. Credit and hours arranged.

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 capital, credit problems of farmers, kinds and sources of farm credit, Agricultural insurance and taxation. Prereq: Agriculture 1110 and Economics 2120.

4320 Agricultural Policies (3) Meaning of soil conservation policy, land use policies, interrelationships of farm groups to public policy, problems growing 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 and demand for land; principles and theories of rent, property, value, and income. Prereq: Agriculture 1110 and Economics 2120.

4610 Management of Farm Supply and Marketing Firms (3) Operation 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.


4710 Agricultural Law (4) Survey of law and application to the farmer, his family, and agricultural industry; Property, contracts, torts, drainage and water rights, landlord-tenant relationships, taxation and insurance, forms of business organization, estate planning, regulatory laws, and other selected topics.

GRADUATE

5000 Thesis
5011-21 Special Problems in Lieu of Thesis (3, 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)
5610 Quantitative Methods in Agricultural Economics (3)
5710 Quantitative Methods in Agricultural Economics (3)
5710 Quantitative Methods in Agricultural Economics (3)
6000 Doctoral Research and Dissertation
6110-20-30 Seminars in Agricultural Economics (3, 3, 3)
6510 Agricultural and Rural Transformation Problems (3)
6410 Agricultural Supply Analysis (3)
6420 Marketing and Resource Use (3)
Rural Sociology (880)

3420 Rural Sociology (3) Nature of rural society; social systems concept; rural-urban differences; nature of local social controls; opinion leadership, and movement; problems of rural people; tenancy, farm labor, health, services, educational facilities, churches, local government; impact of industrialization.

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

GRADUATE

5340 Special Problems (3)

5430 Rural Sociology Seminar (3)

Agricultural Engineering

Professors: H. Luttrelf (Head), Ph.D. Iowa State; J. J. McDow, Ph.D. Michigan State, P.E.
Assistant Professors: D. O. Baxter, M.S. Missouri; F. D. Tompkins, Ph.D. Tennessee; L. R. Wilhelm, Ph.D. Tennessee, P.E.

Agricultural Engineering (068)

1130 Introductory Agricultural Engineering (3) Basic engineering principles, field of agricultural engineering, 2 hrs. and 1 lab.

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

3250 Functional Design of Agricultural Structures (3) Materials and methods in design of agricultural structures; heat and moisture relationships, insulation, ventilation; functional layout for agricultural enterprises. Prereq: 1130; Physics 2320; 2 hrs. and 1 lab.

3350 Soil and Water Conservation Engineering (3) Agricultural hydrology; analysis and design of flood and erosion control structures: terraces, vegetated waterways, dams, spillways, and drop inlets. Prereq: Engineering Science and Mechanics 3110. 2 hrs. and 1 lab.

3420 Agricultural Power Units (3) Internal combustion engines; power measurements; hydraulic systems; tractor stability; traction; hitching. Prereq: 1130; Physics 2720; Mech. Engr. 3110. 2 hrs. and 1 lab.

3520 Processing Agricultural Crops (3) Drying and curing principles, grading, mixing, cleaning, sorting, material handling, refrigeration. Prereq: 1130; Mech. Engr. 3110; Mech. Engr. 3110. 2 hrs. and 1 lab.

4120-30 Seminar (1, 1) Presentations, discussions, reports on research techniques. Prereq: Permission of department head.

4150 Design of Farmstead Systems (3) Component characteristics of materials handling systems, storage facilities, controls, product modification, and waste management equipment; integrated system design. Prereq: 3520; Prof. Coreq: Electrical Engineering 3130. 2 hrs. and 1 lab.

4220 Special Problems in Agricultural Engineering (3) Selection, analysis, solution, and report of research problem. May be repeated for maximum of 9 hours credit when engaged in Cooperative Engineering or other approved industry work. Prereq: 3100 and permission of department head.

4280 Structural Design of Agricultural Buildings (3) Structural characteristics of materials, estimating loads for farm structures; allowable unit stresses, stress analysis and design of structural members; cost estimating and economic aspects. Prereq: 3250; Engr. Mech. 3310. 2 hrs. and 1 lab.

4310 Design and Analysis of Agricultural Machinery (3) Agricultural machinery analyses; design of basic components; force analysis of field machines; hydraulic systems. Prereq: Engr. Mech. 3310, 3310. 2 hrs. and 1 lab.

4360 Drainage and Irrigation (3) Surface and subsurface drainage principles; design of open ditch and tile drainage systems; irrigation principles, methods, equipment, and systems design. Prereq: 1130; Plant & Soil Science 2130; Engr. Mech. 3110. 2 hrs. and 1 lab.

4410 Agricultural Waste Management (3) Design and management of agricultural waste handling systems including land spreading and injection, lagoons, by-product processing, and chemical disposal; effects on environmental quality of excess nutrients, bacteria, and odors associated with wastes. Prereq: 3250, Engineering Mechanics 3110 and 3310. 2 hrs. and 1 lab.

GRADUATE

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)

6310 Engineering Systems Analysis in Agriculture (3)

6610 Selected Topics in 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 lab.

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

2140 Forest Surveying (2) Instruments, methods, and computations used in determining distances, angles, 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.

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

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

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

3210 Soil and Water Conservation Facilities (3) Leveling, topographic surveying, planning, construction, and maintenance of drainage, irrigation, and erosion-control systems. Prereq: Math 1550. 2 hrs. and 1 lab.

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

3510 Agricultural Utilities and Processing Equipment (4) Electrical equipment; controls; water systems; heating and refrigerating systems; waste disposal systems. Prereq: Agri. 1120; Physics 1220. 3 hrs. and 1 lab.

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

4180 Agricultural Waste Utilization and Disposal (3) Techniques, equipment, and structures for utilizing, treating, and disposing of agricultural wastes by land spreading, lagooning, and processing. Prereq: Seminar. 2 hrs. and 1 lab.

4170 Small Engines (3) Concepts and mechanics of small gasoline engines; selection, operation, adjustment, and repair of single cylinder engines. 2 hrs. and 1 lab.

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

4210 Agricultural Machinery and Tractors (4) Agricultural machinery and power units; adaptation to agricultural practices; field efficiencies, capacities, adjustment, and servicing. Prereq.: Math 1550. 3 hrs. and 1 lab.

4220 Special Problems in Agricultural Mechanization (3) Selection, analysis, solution, and report of research problem. May be repeated for maximum of nine hours credit when engaged in approved industry work. Prereq: 3100 and permission of department head.

4270 Forest Structures and Utilities (3) Electrical service and equipment, water supply systems, sewage disposal systems, forest service structures, forest communication systems. Prereq: Agri. Mech. 2110; Math 1550; Physics 1220. 2 hrs. and 1 lab.

4280 Field and Forest Access Roads (3) Planning, construction, and maintenance of farm service roads and forest access roads and trails; culverts and bridges. Prereq: Physics 1210; Agri. Mech. 2130. 2 hrs. and 1 lab.

GRADUATE

5000 Thesis

5011-21 Special Problems in Lieu of Thesis (3, 3)

5110 Research Problems in Agricultural Mechanization (3)

5210 Electro-mechanical Systems in Agriculture (3)

5310 Instrumentation in Agriculture (3)

5410 Agricultural Machinery Systems Analysis (3)

5510 Development and Management of Small Watersheds (3)

5810 Selected Topics in Agricultural Mechanization (3)
Agricultural Extension Education (075)

Professor: R. S. Ootson (Head), Ph.D., Pennsylvania State. Associate Professor: C. E. Carter, Jr., Ph.D., Ohio State.

3110 Introduction to Agricultural Extension (3) History; philosophy; organization; teaching methods; and 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. Prerequisite: 3110, and permission of instructor. Requires living off-campus for a specified time.

GRADUATE

5000 Thesis

5011-21 Special Problems in Lieu of Thesis (3, 3)

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 (3)

5330 Supervision of Agricultural Extension Programs and Personnel (3)

Animal Science (113)

Professors: R. R. Johnson (Head), Ph.D., Ohio State; J. K. Bleiuer, Ph.D., Ohio State; C. C. Chamberlain, Ph.D., Iowa State; L. Hansen, Ph.D., Illinois; T. B. Harrison (Emeritus), M.S.A., Tennessee; H. M. Jamison, Ph.D., Tennessee; G. M. Merriman, D.V.M., Michigan State; R. L. Murphy, Ph.D., Wisconsin; R. R. Shrode, Ph.D., Iowa State; E. W. Swanson, Ph.D., Missouri; C. E. Wylie (Emeritus) A.M., Missouri.

Associate Professors: W. R. Backus, Ph.D., Tennessee; K. M. Barth, Ph.D., Purdue; E. R. Lidvall, M.S., Tennessee; J. B. McClure, Ph.D., Auburn; M. J. Montgomery, Ph.D., Wisconsin; D. O. Richardson, Ph.D., Ohio State; H. V. Shirley, Ph.D., Illinois.

Assistant Professors: J. A. Corrick, Ph.D., Pennsylvania; J. D. Smalling, Ph.D., Texas A. & M.

2610 Fundamentals of Meat Animal Evaluation (3) Criteria for live animal and carcass evaluation; market classes and grades of beef, pork and lamb; subjective and objective techniques for determining muscle and fat relationships in cattle, hogs and sheep. 1 hr and 2 labs.

2710 Introduction to Biometrical Aspects of Animal Science (3) Biometrical concepts for optimum comprehension of material presented in upper division animal science courses. Basic ideas in probability as introduction to concept of distributions. Expected values of variables as most probable values. Binomial 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; foot trimming; age determination; identification; preparing for show and sale; vaccinating and immunizing; and controlling parasites. Facilities needed in livestock management including fences, corrals, equipment, space requirements and restraining devices. 2-3 hr labs. Students with an extensive livestock background are encouraged to take a proficiency examination.

2820 Introduction to Light Horses (3) Scope and role of light horse industry: breeds—development, function and use; unsoundness; tack; introduction to management problems. May not be used by Animal Science majors to meet graduation requirements. 2 hrs and 1 lab.

2910 Anatomy and Physiology and Farm Animals (4) Skeletal and jointed, skeletal muscles, blood and microcirculation; cardiovascular, respiratory, digestive, renal and endocrine systems; demonstrations of physiochemical phenomena. Prerequisite: Biology 1210 or Agriculture 1130. 3 hrs and 1 lab.

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

3310 Introduction to Animal Nutrition and Feeding (3) Nutrient utilization, function and requirements of farm animals; animal feeds, nutrient content and factors affecting availability of nutrients from feed; beef and dairy cattle, swine and poultry. Not available to students with credit for 3320. Prerequisite: Agriculture 1130 and one quarter of organic chemistry or permission of instructor. 2 hrs and 1 lab.

3320 Animal Nutrition (3) Properties, functions, utilization and sources of essential nutrients; nutritive value determinations and their use. Prerequisite: Agriculture 1130 and one quarter of organic chemistry. 2 hrs and 1 lab.

3330 Feeds and Ration Formulation (3) Feedstuffs, additives, feeding standards, nutrient requirements and ration formulation for beef and dairy cattle, sheep, horses, swine, poultry and laboratory animals. Prerequisite: 3320. 2 hrs and 1 lab.

3410 Heredity in Animals (3) Basic chromosomal mechanism of heredity with emphasis on Mendelian principles; the principles of heredity as applied to animal genetics; cytoplasmic inheritance. Introductions to biochemical basis of heredity and to quantitative inheritance. Prerequisites: Principles of Animal Breeding 3420. 2 hrs and 1 lab.

3420 Principles of Animal Breeding (3) Genetic principles involved in breeding of economic species. Genetics, heredity, variation according to various kinds of causal difference such as differences in genetic makeup and environment. Selection and factors affecting selection and mating systems and effects on populations. Planning breeding programs. Prerequisite: 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 quarantine; herd health programs. Prerequisites: Microbiology 10, 3000 or 2610 or permission of instructor. 3 hrs and 1 lab.

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

3610 Meat Animal Selection (3) Evaluation, judging, classification and selection of beef cattle, swine, and sheep for maximum functional efficiency. Prerequisite: 2610. 1 hr and 2 labs.

3620 Dairy Cattle and Sheep Classification (3) Comparative judging, oral reasons; type classification programs. Economic value of classification ratings. 3 labs.

3630 Judging Poultry and Poultry Products (3) Grading of poultry and poultry products according to USDA standards; factors influencing quality. 1 hr and 2 labs.

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

3810 Nutrition and Management of Laboratory Animals (3) Principles of feeding, breeding and handling of animals in scientific investigations; specific species requirements; rearing and research for which best fitted; laws governing use and handling of laboratory animals. Prerequisite: Agriculture 1130 and permission of instructor. 2 hrs and 1 lab.

4110 Special Problems in Animal Science (1-4) Special research and/or special reports based on supervised independent study or review of literature dealing with subjects applicable to field of animal science; approved supervised work experiences in laboratories. May be repeated for a maximum of 9 hrs credit. Prerequisite: Senior standing and permission of instructor and Department Chair.

4210 Physiology of Lactation (3) Development, anatomy and function of mammary glands; endocrine interactions for mammary development and milk synthesis, extending yield and composition of milk. Prerequisite: 3210.

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

4320 Applied Reproduction in Farm Animals (3) Application of methods and techniques in collecting, evaluating, processing and preserving semen; insemination of females; pregnancy determination; gestation and parturition; and female infertility. Prerequisite: 3210. 1 hr and 2 labs.

4330 Feeding Systems for Ruminants and Horses (3) Application of nutrition and feeding principles in comparison of feeding systems utilized during the life cycle of cattle, horses and sheep. Prerequisite: 3320. 2 hrs and 1 lab.

4340 Feeding Systems for Poultry and Swine (3) Application of nutrition and feeding principles in comparison of feeding systems utilized during the life cycle of poultry and swine. Laboratory feeding trials to demonstrate basic nutrition concepts. Prerequisite: 3320. 2 hrs and 1 lab.

4410 Applied Animal Breeding (3) Applications of principles studied in 3420. Team taught by specialists in breeding of dairy cattle, meat animals and poultry. Prerequisite: 3420. 2 hrs and 1 lab.

4610 Advanced Beef Cattle, Dairy Cattle, Horse, Poultry, Sheep and Swine Judging (3) Specialization in judging, evaluation, selection, and presentation of oral reasons on classes of beef cattle, dairy cattle, horses, poultry and swine. Not to be repeated for credit. Prerequisite: Permission of instructor. 2 labs.

4810 Beef Cattle Production and Management (4) Integration of principles of nutrition, physiology and breeding into complete beef cattle management program. Topics will include structure of industry, enterprise establishment, systems of production, production practices and herd improvement programs. Alternatives evaluated in terms of production response, returns, profitability, herd replacement strategies. Prerequisite Senior standing and permission of instructor. Recommended course be taken after completion of Sophomore and Junior Animal Science core courses. 3 hrs and 1 lab.

4820 Dairy Cattle Production and Management (4) Integration of principles of nutrition, physiology and breeding into complete dairy cow cattle management program. Topics will include structure of industry, enterprise establishment, systems of production, production practices and herd improvement programs. Alternatives evaluated in terms of production response, returns, profitability, herd replacement strategies. Prerequisite Senior standing and permission of instructor. Recommended course be taken after completion of Sophomore and Junior Animal Science core courses. 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 program. Alternatives evaluated in terms of production responses and economic returns. Prereq: Senior standing and permission of instructor. Recommended course be taken after completion of Sophomore and Junior Animal Science core courses. 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: Senior standing and permission of instructor. Recommended course be taken after completion of Sophomore and Junior Animal Science core courses. 3 hrs and 1 lab.

4850 Light Horse Production and Management (3) 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: Senior standing and permission of instructor. Recommended course be taken after completion of Sophomore and Junior Animal Science core courses. 2 hrs and 1 lab.

4860 Lamb and Wool Production and Management (3) Integration of principles of selection, nutrition, breeding, physiology and marketing into complete lamb and wool production and management program. Topics will include structure of industry, enterprise establishment, systems of production responses and economic returns. Prereq: Senior standing and permission of instructor. Recommended course be taken after completion of Sophomore and Junior Animal Science core courses. 2 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)

5230 Advances in Mammalian Reproduction (3)

5240 Advanced Studies of the Secretion of Milk (3)

5311 Analytical Techniques in Animal Nutrition (3)

5321 Energy in Animal Nutrition (4)

5331 Proteins in Animal Nutrition (3)

5341 Vitamins and Minerals in Animal Nutrition (3)

5410 Genetics of Animal Populations (3)

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)

6311 Advanced Topics in Animal Nutrition (1-6)

6411 Advanced Topics in Animal Breeding (1-6)

6420 Animal Breeding Research Methods and Interpretation (3)

6811 Advanced Topics in Animal Products (1-6)

6910 Seminar (1)

Food Technology and Science (378)

Professors: J. Y. Miles (Head), Ph.D. Wisconsin; W. W. Overcast, Ph.D. Iowa State.

Associate Professors: J. L. Collins, Ph.D. Maryland; B. J. Demott, Ph.D. Michigan State; H. O. Jaynes, Ph.D. Illinois; C. C. Melton, Ph.D. Kansas State.

Assistant Professors: E. A. Childs, Ph.D. Georgia; S. L. Melton, Ph.D. Tennessee; M. J. Rieman, Ph.D. Kansas State.

2110 Food Regulations and Standards (3) Federal and State laws regulating food industry. Quality and grades and standards and methods of evaluating processed foods. 2 hrs and 1 lab.

2120 Food Manufacturing (4) Preparation of raw material, cleaning, grading, slicing, crushing, extracting, filtering, pumping, mixing and heat processing. Prereq: Math 11540. 3 hrs and 1 lab.

3020 Dairy Products I (4) Procurement, processing and cold storage of fluid milk. Manufacture of frozen and condensed dairy products. 3 hrs and 1 lab.

3210 Food Composition (3) Determination and study of major constituents of fresh and processed foods with attention to changes and interactions occurring during processing and storage. Prereq: Chemistry 1120. 2 hrs and 1 lab.

3220 Food Preservation (4) Survey of food industry and preservation methods for prevention of deterioration of food. Prereq: Microbiology 2610. 3 hrs and 1 lab.

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 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 cookery. 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 for a maximum of 9 hours credit. Prereq: Permission 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 hours credit. Prereq: Junior standing and permission 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.

4050 Advanced Food Composition (3) Intensive study of food constituents and changes affected by processing and storage. Prereq: 3210 and Nutrition 3320 or equivalent. 2 hrs and 1 lab.

4110 Food Plant Sanitation (3) Environment for manufacturing and preserving foods. Prereq: Junior standing. 2 hrs and 1 lab.

4120 Food Quality Assurance (3) Systems for quality assurance in food industries. Various methods including statistics used by food industries to assure desired quality of food products. Prereq: Junior standing and 3 hrs statistics. 2 hrs and 1 lab.

4210 Food Additives (3) Substances used in food manufacturing with emphasis on properties and functions. Prereq: Nutrition 3320 or equivalent.

4310 Food Packaging (3) Characteristics and applications of materials and containers to packaging requirements of food. Prereq: 3220. 2 hrs and 1 lab.

4410 Food Crop Products (3) Foods products from crops with emphasis on types, manufacturing systems, quality attributes and utility.

4820 Fermented Foods (3) Role of microorganisms in preparing foods with emphasis on development of certain desirable characteristics. Flavor, aroma, texture, and keeping quality. Prereq: Microbiology 3810. 2 hrs and 1 lab.

4840 Meat Products Manufacturing (3) Prepared meat products with emphasis on sausage making and information relating to cost control, inspection and heat science. Prereq: 3840 or consent of instructor: 1 hr and 2 labs.

4920 Physical Phenomena of Foods (4) Physical states of food materials, foams, emulsions, colloidal sols, hydrates, crystals, gels. Effects of manufacturing practices on these properties. Prereq: Consent of instructor. 3 hrs and 1 lab.

GRADUATE

5000 Thesis

5100 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

Professors: J. W. Barrett (Head), Ph.D. Syracuse; H. A. Core, Ph.D. Syracuse; E. Thor, Ph.D. North Carolina State; F. W. Woods, Ph.D. Tennessee.


Forestry (398)

1620 Introduction to Forestry (3) History of forestry; establishment, care, protection, and use of forest stands; forest products industries; organization and agencies for establishment of forest policies; forest resources.
2810 Farm Forestry (3) Management of woodland and wasteland on Tennessee farms; planting, managing, harvesting, and marketing of forest products. 2 hrs and 1 lab.

3020 Forest Environments and Ecology (3) Environments and ecology of forests and associated lands; emphasis on the application of ecological principles to contemporary problems. Available for graduate credit for non-forestry majors only. Prereq: 8 hours of biology, botany, or zoology. 3 hrs.

3040 Dendrology and Silvics of Woody Angiosperms (3) Classification, nomenclature, identification, and silvicultural characteristics of the more common woody angiosperms native to North America; native ranges, distribution patterns, 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: 8 hours basic biology or botany. 2 hrs and 1 lab.

3050 Dendrology and Silvics of Gymnosperms (3) Classification, nomenclature, identification, and silvicultural characteristics of the major North American conifers. Distribution patterns, habitat, and community relationships including classification, life history, regeneration requirements, place in succession, and management for non-forestry majors only. Prereq: 8 hours basic biology or botany. 2 hrs and 1 lab.

3110 Forest Measurements and Biometry (4) Techniques used in management of wildlife populations; linear regression; sampling of forest populations; growth and potential production. Prereq: Math 1110 or Math 1150 and Computer Science 2410 or equivalent. 3 hrs and 1 lab.

3120 Wood Technology (4) Wood properties; identification of commercial woods by macro and micro characteristics. Prereq: 3040, 3050. 2 hrs and 2 labs.

3130 Forest Protection (3) Destructive agencies; fire, insects, diseases; chemical, mechanical, and biological control; prevention and suppression. Prereq: Agricultural Biology 3210, 3130.

3210 Forest Economics (3) Supply, demand, price relationships; input-output studies; taxation, insurance. Economic aspects of multiple use. Prereq: Economics 2120.

3220 Forest Products and Utilization (3) Harvesting, processing, in stand conversion, intermediate and harvest cuts. Prereq: 3120, Chemistry 1530, Economics 2120.

3230 Wildlife Management (3) Lives and ecological relationships of wildlife; biological, social, and economic aspects of their management. 2 hrs and 1 lab. (Same as Wildlife and Fisheries Science 3230).

3320 Principles of Silviculture (3) Influence of site factors on reproduction, growth, development, and character of forest vegetation; classification of forest structure; silvicultural laws. Prereq: 3020 or Biology 2130, 3040, Plant and Soil Science 2130. 3 hrs.

3630 Re forestation and Erosion Control (3) Reproducing forest stands, nursery practices, planning, mathematical problems in erosion control; field trips. 2 hrs and 1 lab.

3730 Conservation (3) Forest resources of state, nation, and world; forests in soil and water conservation; wildlife management and recreation; conservation programs.

4002 Utilization (3) Wood-using industries; processing forest products—sawmills, tree-topper, lumber grading; pulpwood operations; forestry plans, treating plants, plantation layout, flow diagrams. Prereq: 3120.

4003 Field Methods of Timber Inventory (4) Field measurements of forest trees; timber cruising; determine forest appropriate sample design for specific purposes; tree and stand growth; site evaluation; field problems. Prereq: 3110 and 3140.

4004 Forest Practice (3) Management of forest lands by public and private organizations; "multiple-use" concept as it influences management decisions; impact of public pressure for outdoor recreation on management decisions; management principles. Prereq: 4005. Satisfactory/No Credit.

4006 Silvicultural Methods (4) Methods and application of intermediate and regeneration cuttings; site preparation, planting and seeding; modifications of cutting methods to obtain desired goods and benefits. Prereq: 3320.

4110-20-30 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) Forestry organization; planning concepts and types of plans, management; decision-making in forest resource management. Prereq: Junior Field Session.

4220 Forest-Resource Management (4) The forest as 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 forestry firm. Prereq: 4210.

4230 Forest-Resource Management Plans (4) Field problems and case studies in forest-resource management; the forest as a system; management models of forest enterprises as a producer of timber, recreational services, watershed services, and wildlife; producing multiple services; preparation of a comprehensive plan based on optimizing forest uses. Prereq: 4220.

4330 Forest Policy (3) History of forestry in United States with emphasis on development of forest resource policies; current policies influencing development and management of forest resources; brief survey of policy implications of forest resource organizations in public and private sectors. Prereq: 4014.

4340 Aerial Photography in Forest-Resource Management (3) Use of conventional aerial photographs in forest-resource management; interpretation of detail, aerial inventories, preparation of cover-type maps; uses of other remotely sensed imagery. Prereq: Civil Engr 4260 and Forestry 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 phino-types and development of seed orchards; hybridization and seed production and seed certification. Prereq: 4006, Botany 1120. 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 silvicultural characteristics of the more important species. Prereq: 4006 and 4210.

4440 Forest Recreation (3) Forest lands as a recreation resource; interrelationships of forest recreation and other management activities; development and management of forest recreation areas; socio-economic and political determinants of recreation development and management. Prereq: 8 credits in sociology and/ or economics. Junior standing. 2 hrs and 1 lab.


5230 Seminar in Forest Management (3)

5240 Seminar in Forest Genetics (3)

5250 Recreation Planning for Forests and Associated Lands (3)

5310 Seminar (1)

WILDLIFE AND FISHERIES SCIENCE (993)

3200 Wildlife Resources and Their Conservation (3) Wild animal resources of the United States; their interrelationships with soil, water, and forests and other plant life; contribution to economic and social development; importance and methods of conserving wildlife. General course for non-Wildlife and Fisheries Science majors.

3230 Wildlife Management (3) (Same as Forestry 3230)

4450 Game Mammals (4) Classification, identification, distribution, natural history, and management principles of game mammals in North America. Prereq: 3230 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: 3230 or one year of Zoology. 2 hrs and 2 labs.

4500 Problems in Wildlife and Fisheries Science (1-6) Special research or individual problem in wildlife and fisheries science. Prereq: senior standing. May be repeated to a maximum of 9 hours credit.

4510 Freshwater Fishery Biology (4) Principles and methods of fish population estimation; population dynamics; sampling techniques and equipment; warm and cold-water environments as commercial and sport fisheries. Prereq: 1 year biology and 8 hours mathematics, or consent of instructor. 3 hrs and 1 lab or field period. (Same as Zoology 4510).

4520 Management of Lakes and Ponds (4) Principles and methods of lake and pond management for commercial and sport fisheries; design, renovation, and stocking procedures; biology and culture of managed species. Prereq: 4510 or consent of instructor. 3 hrs and 1 lab or field period.

4550 Seminar (1) Review of literature. Oral and written reports. Prereq: senior standing. May be repeated to a maximum of 3 hours credit.

GRADUATE

5000 Thesis

5110 Special Problems in Wildlife and Fisheries Science (1-6)

5210 Seminar in Wildlife Conservation (3)

5310 Seminar (1)

5450 Wildlife Diseases (3)

Ornamental Horticulture and Landscape Design (740)

Professors: D. L. Williams (Head), Ph.D. Pennsylvania State; N. P. Peacock (Emeritus), Ph.D. Michigan State.

Associate Professors: L. M. Callahan, Ph.D. Rutgers; H. v.d. Werken, GAUST. Horticulture College (Frederiksoord, Holland)

Assistant Professor: J. S. Alexander, M.S. Tennessee.

3610 Landscape Gardening (3) Home ground organization and beautification; identification and
use of ornamental plants; principles of planning; preparation of plans. 1 hr and 2 labs.

3020 Home Grounds Management (3) Techniques involved in managing places around the home, outdoor propagation, transplanting, planting site selection and preparation, mechanical and chemical control, lawn care practices, and recognition of plant ailments; tools and equipment necessary to carry out management techniques. 1 hr and 2 labs.

3030 Plant Propagation (3) Physiology, methodology, and environmental requirements for propagation. 2 hrs and 1 lab.

3040 Floral Design (3) Principles and techniques in floral arranging with emphasis on arrangements for home, church, and special occasions. 1 hr and 2 labs.

3110 Greenhouse Management (3) Factors involved in management of greenhouses for production and research. Structures, soils, pest control measures, heating, ventilating, lighting, water supply, crop succession. Prereq: Junior standing and permission of instructor. 2 hrs and 1 lab.

3810-20 Plant Materials (3, 3) Identification, culture, adaptation, and landscape design values of woody ornamental trees, shrubs, vines. Need not be taken in sequence. Prereq: Botany 1130 or Biology 1230. 3 labs.

3830 Plant Materials (3) Classification, identifying features, native habitat, adaptation, and man-induced genetic changes; equipment necessary to grow ornamental plants grown as greenhouse crops, bedding plants, or perennial landscaping plants. Prereq: Botany 1130 or Biology 1230, or permission of instructor. 1 hr and 2 labs.

4120 Landscape Design I (4) Design and development of properties; planning, organization, structure, selection and use of plant and structural materials, methods of presentation, specifications. Prereq: Senior standing and permission of instructor. 2 hrs and 2 labs.

4140 Landscape Design II (4) Advanced theory of design. Pictorial and abstract approach to landscape design. Emphasis on recreational design from analysis of contemporary trends and objectives to projected needs and development of plans. Prereq: Senior standing and permission of instructor. 2 hrs and 2 labs.

4150-60 Nursery Management I and II (3, 3) Production, labor and sales management; retail and wholesale nursery; locations, layout, culture, equipment and facilities. Need not be taken in sequence. Prereq: 3030; Botany 1110, 2 hrs and 1 lab.

4180 Park Design (4) Design criteria for parks and outdoor recreation systems. Park site selection, analysis, planning and management as related to needs and natural and economic resources. Evaluation of aesthetic and functional quality of parks and their impact on environmental quality of rural and suburban communities. Prereq: 4120. 4140 recommended. 2 hrs and 2 labs.

4210 Principles of Turf Management (4) Principles of turfgrass management; history, variety selection and identification, adaptation, ecology, physiology, soil fertility and grass nutrition; basic applied fertility programs; and weed, disease, insect, and other pest relationships in turf grasses and basic pest control programs. Prereq: Plant and Soil Science 2130 and 8 hours of biological science. 3 hrs and 1 lab.

4310 Floriculture I (3) Principles and practices employed in producing cut flower crops. Application of principles of plant physiology as they control flowering, plant quality, and harvesting schedules. Prereq: 3110, Plant and Soil Science 3040 or equivalent. 2 hrs and 1 lab.

4320 Floriculture II (3) Principles and practices employed in producing floricultural crops in pots and other containers. Analysis of problems associated with growing plants in a very restricted soil volume under controlled greenhouse conditions. Prereq: 3110, Plant and Soil Science 3040 or equivalent. 2 hrs and 1 lab.

4400 Individual Problem Study (1-5) May be repeated to maximum of 10 hours credit.

4610 Seminar (1) Current problems in Ornamental Horticulture and Landscape Design. Prereq: Junior standing and permission of instructor.

GRADUATE

5000 Thesis

5011-21 Special Problems in Lieu of Thesis (3-5, 3-5)

5100 Special Problems in Ornamental Horticulture and Landscape Design

5210 Golf Course Design, Development, and Management

5310 Park and Public Grounds Management Systems

5500 Seminar (1)

Plant and Soil Science (792)

Professors:
L. F. Sestz' (Head), Ph.D. North Carolina State; F. F. Bell, Ph.D. Iowa State; H.A. Fribourg, Ph.D. Iowa State; L. M. Josephson, Ph.D. Wisconsin; W. L. Parks, Ph.D. Purdue, B. S. Pickett (Emeritus) Ph.D., Michigan State; L. N. Stolds, M.S. Kansas State; M. E. Springer, Ph.D. California (Berkeley); H. D. Swingler, Ph.D. Louisiana State.

Associate Professors:

Assistant Professors:

"Clyde B. Austin Distinguished Professor."


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: 2130, Botany 1110; Junior standing. 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.

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. 2 hrs and 1 lab.

3120 Grain and Oil Crops (3) Distribution, improvement, morphology, culture, harvesting, and utilization of corn, small grains, grain sorghum, soybeans and related crops. Prereq: 2130; Botany 1110 or 8 hours 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.

3160 Cotton and Tobacco (4) Characteristics, adaptation, improvement, culture, harvesting, and marketing of cotton and tobacco. Prereq: 2130; Botany 1110 or 8 hours biological science. 3 hrs and 1 lab.

3180 Fruit Crops Management (4) Soils, planting, cultivation, development of fruit crops plantings; pest control, harvesting, packing, storage and pruning. Prereq: Agriculture 1140, 1110; Ag Biology 3210, 3130. 3 hrs and 1 lab.

3220 Soil Management (4) Soil management for crop production including cropping systems, fertilization, and crop protection using specified soil and farming conditions. Prereq: 2310. 3 hrs and 1 lab.

3250 Soil in Forestry (3) Soil as a medium for tree growth; relation of physical, chemical, and biological properties of forest soils to forest stands. Soil properties of importance in road location, recreational development and watershed management. Prereq: 2310; Forestry 3320, 2 hrs and 1 lab.

3510-20 Commercial Vegetable Production (3, 3) Characteristics, economic importance, adaptability, and production of important vegetable crops for fresh and processing markets. Students may elect one or both of these courses. Need not be taken in sequence. Prereq: Agriculture 1140. 2 hrs and 1 lab.

3810 Interpretation of Agricultural Research (3) Statistics as applied to agriculture. Statistical methods in interpretation of research results. Prereq: Math. 1130 or equivalent.

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 various crops and non-crop situations. Prereq: 8 hrs biological science and 3 hrs organic chemistry. 3 hrs and 1 lab.

4110 Soil Chemistry (4) Colloidial soils; properties and behavior of colloidal soil materials; relations of chemical properties to plant nutrient availability. Prereq: 2130; Chemistry 2230; Physics 1210. 3 hrs and 1 lab.

4120 Principles of Crop Breeding (4) Genetic principles and techniques used in crop improvement. Prereq: 2130; Botany 1110 or permission of instructor. 3 hrs and 1 lab.

4230 Soil Analysis (3) Analytical techniques used in soil chemistry and soil fertility studies. Prereq: 4110; Chemistry 2140 or concurrent. Two 3-hr labs.

4250 Agricultural Chemicals and the Environment (4) Characteristics, use, mode of action, degradation, and environmental impact of chemicals used in agriculture, forestry, and related areas with emphasis on agricultural pesticides; environmental safeguards imposed by federal and state regulations on chemical development and use. Prereq: One-year biological sciences 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 soil surveys. Prereq: 4110. 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 to maximum of 9 hours credit.


GRADUATE

5000 Thesis
College of Veterinary Medicine

Willis W. Armistead, Dean

The College of Veterinary Medicine was established in 1974 by the Tennessee Legislature. When fully developed, the College will offer a professional curriculum leading to the degree Doctor of Veterinary Medicine (D.V.M.) and graduate studies leading to the degrees Master of Science (M.S.) and Doctor of Philosophy (Ph.D.).

Admission to the D.V.M. program of the College of Veterinary Medicine will require satisfactory completion of appropriate preprofessional courses. (See Pre-Veterinary Medicine Curriculum, College of Agriculture.) The professional program will be designed for year-round operation, four terms each year (summers included), enabling the student to earn the Doctor of Veterinary Medicine degree in eleven terms, or 33 months. The first class probably will be admitted in fall term 1976.

The College is organized in six academic departments: Animal Science (jointly with the College of Agriculture), Environmental Practice, Microbiology, Pathobiology, Rural Practice, and Urban Practice. In addition to using some existing facilities of the Institute of Agriculture, the College will construct a veterinary medical teaching hospital on the Agriculture Campus in Knoxville and animal disease research facilities on University farms. Administrative offices of the College are located in room 113 Morgan Hall.

For further information please contact:
Office of the Dean
College of Veterinary Medicine
P. O. Box 1071
Knoxville, Tennessee 37901
School of Architecture

Donald D. Hanson, Dean
William J. Lauer, Assistant Dean

The School of Architecture is a division in the University, founded in 1965 as a five-year professional curriculum offering the Bachelor of Architecture degree. In May of 1970 the School received full accreditation by the National Architecture Accrediting Board.

The primary objective of the School is to train competent architects for their chosen profession—a profession which encompasses aspects of science, technology, and the humanities. Emphasis is placed on the study of architecture as the organization of space for man's physical and psychological needs. The program is designed to help the student envision an environment for the contemporary world and to exert his influence as an architect to realize that environment. Every attempt is made to apprise the student of recent developments in science and technology that relate to the practice of architecture and to equip him with an attitude of inquiry that will allow him to adapt to changing needs following graduation. Class work is conducted in a manner to encourage creative expression and exploration. Design projects are drawn from problems in reality, and efforts are made to lend authenticity to the struggle and solution of each problem. A variety of course offerings is available to the student. The studies emphasize design—but design in the broader sense that includes the nature of form and its evolution. Supplementing the design courses are courses dealing with technology of building processes, structures, building materials, mechanical environmental systems, and professional practice.

The University has approved a three-month professional experience (March-June) occurring at the end of the fourth year for academic credit. This experience may occur in (1) an architectural office, (2) a governmental agency, (3) research activity, or other areas of environmental design. The purpose of the program is to provide insights and limited experience in the leadership aspects of the profession. During this period the student will undergo much the same exposure as a junior executive joining the firm. By agreeing to conduct such a training program, the employer essentially becomes part of this faculty and will be asked to aid in evaluating the student and his development. The program's framework encourages a close relationship between the student and the architect and should increase the student's awareness of the total activities of an architectural office.

Students in the School are also encouraged through various programs to travel extensively and study architecture on a regional, national, and international basis. A program abroad initiated in 1968 allows students to study architectural design and history in a foreign context.

An Architectural Clinic enables faculty and advanced design students to engage in design and research studies with local, state, and national clients who bring problems to the School for assistance. Frequently, research grants are obtained by the School which enable faculty to work on specific projects of a unique nature, often involving students as assistants.

Every society leaves a permanent visible record of its beliefs in the architecture of that era. Any young person who desires a part in the creation and realization of this record for his time will find a rewarding life's work in architecture.

Facilities

A list of projects approved by the Board of Trustees for construction in the near future include a new building that will accommodate Architecture and Fine Arts.

In the meantime, the design laboratories, classrooms, computer room, library, and administrative offices of the School are located in three buildings—Estabrook Hall, Melrose Annex, and Alumni Gym. It is entirely appropriate that one of the newest schools, and particularly architecture, should be temporarily housed in venerable Estabrook Hall constructed in 1898. Other disciplines that share direct interests with the School—Engineering, Fine Arts, and Industrial Arts—are also located in the building. The Melrose Annex provides additional space for upperclass research and design activities.

The principal library holdings of the School are contained in the James D. Hoskins Library. Extensive general collections and reference volumes in architecture and the fine arts are housed there. These sources are augmented by the branch library of the School where students have access to all the foreign and domestic periodicals and reference books in current use.

Faculty

Professors:
D. D. Hanson (Dean), M. Arch., Massachusetts Institute of Technology; J. W. Fortey, P.E., Docteur d'Universite de Toulouse (France); F. Grieger, M. Arch., Pennsylvania; W. J. Lauer, M.S. Arch. Eng., Iowa State, J. A. Patrick, Th.D. Trinity, Toronto.

Associate Professors:

Assistant Professors:

Instructors:
D. Pendley, B. Arch. Tennessee.
Lecturer:
M. C. Martin, T. K. Tsao, B.A. Tennessee; H. Yang, M. Arch. MIT

*On leave.
**Visiting.
Bachelor of Architecture will include the following requirements in their course of study. For exceptions and for additional specialized requirements, the student should inquire at the School of Architecture.

Pre-Architecture

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Second Year

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Third Year

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Fourth Year

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Fifth Year

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<td>Electives</td>
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TOTAL: 208 hours

Second Baccalaureate Degree Program

A program leading to a Bachelor of Architecture has been initiated to accommodate those outstanding students holding a bachelor's degree in another field. The program condenses the major professional courses into a nine- to eleven-quarter curriculum depending on the student's performance and ability. A special Committee advises, reviews student progress, and structures individual programs of study subject to approval by the Dean. Applicants must show at least a 2.5 overall grade point as well as goals and abilities appropriate to the program. A personal interview is required. Prerequisite courses include Math 1810-20 and Basic Engineering 1310-20 or Physics 2210-20, or their equivalents.

The following courses will make up the core curriculum:

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
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</thead>
<tbody>
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<td>Architecture 2610</td>
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Art 1115 or 1125 or 1135          | 4     | 1      |
Art 1815-25                       | 8     | 2      |
Mathematics 1900 or 1860           | 4     | 1      |
Basic Engineering 1330 or Physics 2290 | 3 | |
Architecture 3540                 | 3     | 1      |

Second Year

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<tr>
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Third-Year Fourth Year

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<tr>
<td>Architecture 3550</td>
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</table>

TOTAL: 157 hours

*Mathematics 1840-50 are prerequisite to the program.
*Basic Engineering 1310-20 or Physics 2210-20 are prerequisites to the program.
*Minimum of three design courses to be completed out of these five courses upon approval by the Second Baccalaureate Degree Program Committee and Dean.

Description of Courses

1010-20-30 Introduction to Architecture 
Orientation to architecture. Role in society and practice with emphasis on related fields. Contemporary and historical examples. Req. Pre-Architecture students in second-year program. 
1011-21-31 Orientation to Architecture 
Fifth-year student assumes orientation responsibility with cooperation of faculty resource person.

1110-20-30 Principles of Architecture 

1131 Principles of Architecture 
Special emphasis on design principles in preparation for advanced study in Architecture. Limited to post baccalaureate program students in place of or in addition to 1130 only. Prereq: Consent of Second Baccalaureate Degree Program Committee.

1240-50 Introduction to Structures 

1240-50 Structural Analysis and Design 

230-30 Materials and Processes 
Architectural materials and manufacturing processes. Field trips to construction sites and factories. Prefabrication, industrial design of building components.

2600 Art of Architecture 
Visual expression and communication of ideas of architecture.

2610 Design Fundamentals for Architects 
Organization of and variations in two and three dimensional systems using simple materials and techniques. Emphasis on analysis and synthesis, perception and process, and precise visual communication of an understanding of a problem, its limits, and conceptual context.
2620 Architectural Graphics (3) Drawing and presentation techniques for architects. Emphasis placed on development of visual perception and communication skills. 6 contact hours.

2700 Man and Environment (4) Architecture in history; motives and limits for contemporary interaction with built environment.


3130 Office Experience (15) Employment for one quarter in the office of a registered architect or other projects approved by the school. Prereq: Fourth-year standing in architecture.

3310 The Classical Tradition in Architecture (3)

3320 Medieval and Byzantine Architecture (3)

3330 Contemporary Architectural Practice (3)

3340 Architectural Theory: Emergence of Technology (3) Philosophical and theoretical bases on nature, and theories of design since 1500.

3350 Architecture of Non-Western Traditions (3)

3370 Tennessee Architecture (3) Immigrant traditions, regional developments, national styles, contemporary architecture.

3380 Architecture Since 1945 (3) New directions and views of the future.


3560 Contract Administration (3) Construction drawings, specifications, bonds, contracts, and other documents related to architectural practice. Project supervision techniques and contract administration procedures. Feasibility studies. Cost estimating and computer assisted analysis methods. Prereq: 3550

3610 Foreign Studies Preparation and Research (1-3) Readings, lectures, and seminars. Development of documents and format for off-campus program to follow in succeeding quarter.

3620 Foreign Studies (4) Core studies under faculty supervision in programs conducted abroad. Field trips, lectures, seminars, visits. Prereq: 3510 and enrollment in Foreign Studies Program.

3630 Independent Projects in Foreign Studies (3) Studies undertaken according to program for independent field research prepared under faculty supervision in conjunction with Foreign Studies Program. Prereq: 3610 and enrollment in Foreign Studies Program.

3700 Research Methods for Designers: Seminar (4) General introduction to a variety of research methods and techniques available to the designer, and appropriate for uncovering basic user requirements during the design process. Prereq: 2700.


4130 Case Study Thesis (6) Major design project involving interprofessional collaboration. Theme of project to be chosen from current problems of architectural significance and completed in manner that will contribute toward solution of that problem. Prereq: Fifth-year standing and approval of thesis subject.

4140 Topics in Urban Design (3-6) Studies relating to design in urban environment. May be repeated once for credit.


4260 Food and Lodging Physical Plant, Planning and Maintenance (4) (Same as Food Systems Administration 4260.)

4300 Architectural Theory: The Form of the City (3) Evolution of town planning theories, modern theory, city of today and tomorrow.

4310 Architects in Social Criticism (3) Writings which illustrate technological, political, and anthropological assumptions of some 19th- and 20th-century architects.

4320 Aesthetics in Architecture (3) Architecture among the arts; theory and philosophy of space, imagination, design and materials.

4330 Forms of Utopia (3) Ideas, spaces, and places; proposals and programs which have informed Utopian tradition; successes and failures of its architectural forms.

4340 Readings and Research in Architectural History (3) Advanced studies in special topics of architectural history.

4350 Eastern European Architecture (3) Twentieth Century architecture in Russia, Czechoslovakia, Poland, Hungary, East Germany, Rumania, Bulgaria, Yugoslavia.


4370 Seminar in Architectural-Criticism (3)

4380 Research Methods in Architectural History (3)

4390 Seminar in Medieval Architecture (3)

4410-20-30 Advanced Mechanical and Electrical Systems (3, 3, 3) Further studies in design and integration of luminous and thermal environment systems in buildings.

4510-20-30 Architectural Theory Seminar (1, 1, 1) Architectural theory and topics in fields related to contemporary architectural practice. Prereq: Fifth-year standing.

4610 Architectural Photography (3) Use of camera as design, research, and presentation medium. Techniques of building photography. Assignments in field and processing. Prereq: Third-year standing.

4620 Advanced Architectural Photography (3) Special photographic techniques and processes. Color processing and printing.

4850 Elementary Structural Matrix Methods (3) Review of matrix algebra and vectors: development of member stiffness and flexibility matrices; assembly of structure stiffness and flexibility matrices. (Same as Civil Engineering 4850 and Engineering Mechanics 4850.)


4885-88-97 Structural Innovations Design Research Laboratory (4 or 8, 4 or 8, 4 or 8) Theory and experimentation of building design utilizing innovative structural configurations and techniques. Basic structural concepts, space and form properties, and economic factors such as systems cost, and material and process optimization are emphasized. Students' activities will involve prototyping of innovative systems. Prereq: 4th or 5th year standing or consent of Instructor.

4900 Aspects of Urban Environment I (4) Interdisciplinary course in urban problems. Prereq: Consent of one of instructors. (Same as Human Services 4900, Political Science 4900, Psychology 4900, and Real Estate 4900.)

College of Business Administration

John B. Ross, Dean
C. Warren Neel, Associate Dean
Francis A. Chamblin, Assistant Dean for Graduate Programs
Liston M. Fox, Assistant Dean

Purpose—The College of Business Administration seeks to prepare men and women for positions as executives and specialists in business. Seeing the business firm as operating in a dynamic social, political, and economic environment, the College has four functions with respect to its purpose: (a) to offer its students the firm base of liberal education consistent with that possessed by all educated men; (b) to present to its students business-oriented instruction in professional fields so that they may understand the business process as a whole and the function of specific areas of business; (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.

Instruction—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, an adapter to, the larger social, economic, and political environment in which the firm exists.

Goal—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 his social responsibility as a future executive and enlightened wielder of power.

National Affiliation and Accreditation—The College of Business Administration has been a member of the American Association of Collegiate Schools of Business since 1941.

Transfer Admission

All students who have attempted 36 or more quarter hours of college level work must have a grade point average of at least 2.00 to be eligible to transfer into the College of Business Administration. This requirement applies both to students transferring from other institutions (including those of the University of Tennessee System) and to those transferring from other colleges and schools of the University of Tennessee, Knoxville.

The College of Business Administration stands ready to assist any student seeking a business education, regardless of credit hours attempted or earned, and regardless of his/her grade point average. All such students should be referred to the Office of the Dean for counseling and discussion.

Student 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 an individual basis with his program. 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 staff of the Center for Business and Economic Research engages in studies of the business and economic environment in Tennessee, the Southeast, and the Nation. The Center serves the business community, state government, individuals, and the University through dissemination of information and aids the faculty in preparing research proposals. Staff members conduct research in regional economics, public finance, demography and related socioeconomic 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, the Tennessee Survey of Business, and the Tennessee Pocket Data Book.

The Center is a member of the Southeastern Income Conference and the Association for University Business and Economic Research.

Tennessee Executive Development Program

The Tennessee Executive Development Program (TEDP) is designed to provide extensive continuing educational opportunities for executives from firms and organizations in Tennessee, the South, and nationally. The major objective of the program is 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 to 32 participants who live on campus for a total of four weeks spread over a three-month period. The fall Executive Seminar brings participants and wives 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 assignments 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 on 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 him to select a vocation, creates greater interest and incentive in his studies, enables him to earn part of expenses, and may lead to permanent employment after graduation. The student may earn a maximum of nine hours elective credit for his field work but must do a satisfactory job as determined by the employer and coordinator, including reports covering his job experiences.

Preparation for Teaching

Students enrolled in the College of Business Administration desiring to teach business 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. Many of the doctor’s degree programs leading to teaching in junior colleges and senior colleges or universities are available.

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

A student must complete the curriculum outlined by the department in which he is majoring in order to receive a degree. Where no course number is specified 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. Nondepartmental electives are considered as courses outside the student’s major department. No more than 42 hours are permitted in any one subject area.

A Management Science Option is available for students with facility and interests in mathematical applications to business. See page 120.

BUSINESS CORE REQUIREMENTS

The following core courses are required in all business curricula: Accounting 2110-20, 2210; Business Administration 4430; Business Law 4110 and 4120; Economics 2110-20-30; Finance 3110-20-30; Industrial Management 3010, 3110; Marketing 3110-20; Office Administration 2750 or Mathematics 2140 (3150 for Management Science Option) and Statistics 2100 and three hours upper-division Statistics elective or as designated by the curriculum (3450-60 for Management Science Option).

ENGLISH REQUIREMENT

The English requirement can be fulfilled by English 1510-20 and hours selected from English 2210-20-30, 2540, 2560-70-80, 2590, 2660-70-80, Speech 2311, unless specifically required by the curriculum. Any additional four hours of natural science for the Business Education curriculum in any of the following fields: Astronomy, Biology, Botany, Chemistry, Geology, or Physics.

SOCIAL SCIENCE REQUIREMENT

The social science requirement can be fulfilled by taking courses in the following fields: Anthropology, Classics, Geography, History, Human Services, Philosophy, Political Science, Psychology, Religious Studies, and Sociology.

COMPUTER SCIENCE REQUIREMENT

A computer programming course satisfies requirement; Computer Science 2410 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 with 9 hours of introductory accounting will receive 6 hours of credit in Accounting 2110-20 and 3 hours of lower-division accounting credit. These students must take at least one of their technical electives an upper-division course approved by the Accounting Department adviser, and it must not be an accounting course.

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TOTAL: 187 hours

*See adjacent column.

† May be Accounting electives or other electives specified by Accounting Department adviser.

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.

Course Code | Hours | Credit |
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*See adjacent column.
### Business Education
This program is offered in cooperation with the Department of Business and Distributive Education in the College of Education. The program requires 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 recommended.

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**TOTAL: 187 Hours**

### 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. Areas of concentration are provided in theory, international trade and economic development, industrial organization, and labor. Students majoring in economics, particularly those desiring local or national employment, should plan, whenever possible, to take graduate work.

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**TOTAL: 187 Hours**

### Finance
Curricula in the Finance Department include those in finance, banking, insurance, and real estate and urban development. Areas of concentration in the finance curriculum include business finance and finance management, investments and security analysis, public finance and fiscal policy, and monetary theory and policy.

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<tr>
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**TOTAL: 187 Hours**

### General Business
This major is intended 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:

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**TOTAL: 187 Hours**

### See page 65.
### Industrial Management

This major is designed for students interested in the field of business and manufacturing management. In general, the curriculum has been developed to include a judicious combination of technical and business courses in order to prepare the graduate for employment in an industrial enterprise. Job opportunities in this field include industrial purchasing, materials control, quality control, production control, methods analysis, and positions as foremen and production management trainees. Internships in industry are available under the Cooperative Program.

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*See page 65.*

### Logistics

Business logistics is recommended for students who desire to prepare for employment in physical distribution management or planning with industrial or marketing organizations. The overall Transportation-Business Logistics program also prepares students for the examination to become a Nationally Certified Traffic and Transportation Specialist. A number of scholarships for this curriculum are available.

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*See page 65.*
### Office Administration

**OFFICE ADMINISTRATION—GENERAL**

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**OFFICE ADMINISTRATION—SECRETARIAL**

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<tr>
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### Two-Year Secretarial Program

The two-year program in office administration is offered to high school graduates who want to prepare for secretarial work but who do not plan to complete four years of University training and earn a degree. All courses taken in this program have full University credit and may be applied toward a degree.

A certificate may be awarded to students who have completed the program with an overall average of at least 2.0, an average of 2.2 in office administration, and within the first 120 hours of credit. Information regarding the recommended sequence of courses may be obtained from the office of the department head.

This "short course" is planned for six quarters of work and may be started at the beginning of any quarter.

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<td>Office Adm. 3210 (Office Machines)</td>
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<td>Office Adm. 4710 or Computer Science 2410</td>
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<td>Mathematics 1540</td>
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<td>Physical Education</td>
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### Personnel Management

This major is designed for students who wish to prepare for employment in industrial personnel administration. Job opportunities range from general personnel work in small companies to specialized fields such as employment, wage and salary administration, job evaluation, training, and labor relations in larger enterprises.

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### Public Administration

This major is intended for students who wish to prepare for management positions in the public service. In general, it presents a combination of general education, business, and studies in governmental and business management. It is designed to give initial preparation for such governmental employment as organization and methods work, budgeting work, and personnel management.

<table>
<thead>
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<th>III</th>
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### Appendix

See page 65.
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 significant importance. Such fields include real estate brokerage, appraisal, taxation, law, property management, real estate development, mortgage lending and mortgage banking, construction, government loan guarantees, and insurance.

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Total: 187 hours

*See page 65.

Sophomore

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</table>

Total: 187 hours

*See page 65.

Transportation

A major in transportation is recommended for students who desire to prepare for employment with carriers supplying transportation services, both passenger and freight, or regulatory bodies and planning agencies of federal, state, and local governments. The overall transportation program also prepares students for the examination of the American Society of Traffic and Transportation. A number of scholarships for transportation majors are available.

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</table>

Total: 187 hours

*See page 65.

Management Science Option

The increasing use of electronic computers and modern management methods by industry and the business community has created a rapidly growing demand for persons capable of using mathematics, statistics, and computer methods for the use of quantitative techniques in solving management problems. In response to this growing demand, the College of Business Administration has established a Management Science Option which is available to qualified students who wish to prepare themselves for careers involving this type of work.

The Management Science Option is designed for students who have demonstrated a high level of ability in mathematics and are interested in applying this ability toward solving management problems. The Management Science Option is available to students majoring in accounting, general business, industrial management, logistics, marketing, personnel management, statistics, and transportation.

Accounting M.S.O.

Transfer students with 9 quarter hours of introductory accounting will receive 6 hours of credit in Accounting 2110-20 and 3 hours of lower-division accounting credit. These students must take as one of their technical electives an upper-division course approved by the Accounting Department adviser, and it must not be an accounting course.
### College of Business Administration

#### Finance M.S.O.

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**Finance M.S.O.**: May be Accounting electives or other electives specified by Accounting Department advisor.

#### General Business M.S.O.

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**General Business M.S.O.**: See page 65.

#### Industrial Management M.S.O.

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**Industrial Management M.S.O.**: See page 65.

#### Logistics M.S.O.

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<td>TOTAL: 187 hours</td>
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**Logistics M.S.O.**: See page 65.

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[See page 65.]

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[See page 65.]

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[See page 65.]
### Personnel Management M.S.O.

<table>
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<th>Course</th>
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<tr>
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<td>Business Administration 4430</td>
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<td>Transportation 4720, 4730</td>
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<td>Industrial Management 4610-20</td>
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<tr>
<td>Marketing Electives (6 hours)</td>
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<td>From 3210, 4210, 4140, 4510</td>
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<td>Economics Electives (6 hours)</td>
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<tr>
<td>from 3110, 3340, 3420, 4110</td>
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<td>Transportation Electives (6 hours) from 3310, 4910, 4910</td>
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<td>Nonbusiness Electives</td>
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<td>Transportation Upper-division Elective</td>
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<tr>
<td><em>Business Elective</em></td>
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TOTAL: 187 hours

*Includes senior level Transportation courses (not to exceed 12 hours) and/or upper division business courses.

### Statistics M.S.O.

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<th>Course</th>
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<tr>
<td>Business Administration 4430</td>
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<td>Business Law 4110-20</td>
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<td>Industrial Management 4610-20</td>
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<td>Business Electives (12 hours from Marketing 4140, 4150, 4210, 4230, 4310, 4440, 4520, 4818-28, Transportation 4720-30, Business Administration 4610)</td>
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<td>Marketing 4710</td>
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<td>Business and/or Nonbusiness Electives</td>
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<tr>
<td><em>Nondepartmental Elective</em></td>
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</table>

TOTAL: 187 hours

*Includes senior level Transportation courses and/or upper division business courses.

### Graduate Work

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, industrial management, management science, marketing, statistics, and transportation and logistics. 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 to 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 organizational
Departments of Instruction

Numbers in parentheses following the course titles indicate quarter hours credit offered.

Accounting

Professors:
N. E. Dittrich (Head), Ph.D. Ohio State, CPA; J. S. Conover (Emeritus), Ph.D., George Washington; H. G. Meyer (Emeritus), M.S., Wisconsin; W. H. Read (Emeritus), M.B.A. Northwestern; J. B. Ross (Dean), Ph.D. Alabama; B. J. George (Assistant Professor), Ph.D. Alabama, M. L. Townsend (D. J. Pennsylvania).

Associate Professors:

Assistant Professors:
P. J. Harmonlin, Ph.D. Iowa; W. H. Hawthorne, Ph.D. Tennessee; H. C. Herreing, III, Ph.D. Alabama, CPA; F. A. Jacobs, Ph.D. Georgia; P. L. Kintzele, D.B.A. Indiana; CPA; M. C. Legtering, M.S. Tennessee, CPA; N. E. Shurtz, J.D. Ohio State; R. C. Weatherwax, Ph.D. Wisconsin, CPA; J. M. Williams, Jr., M.B.A., Texas, CPA.

Subjects include cost-volume-profit analysis, budgeting concepts, and manufacturing cost systems. Prereq: 2120.

3110 Intermediate Accounting (3) Accounting principles and conventions, use of various forms of working papers, preparation of statements, analysis of and preparation of financial statements, including cash, receivables, and inventories. Prereq: 2120.

3120 Intermediate Accounting (3) Continuation of 3110. Valuation, depreciation, and amortization of various fixed assets, analysis of investment in stock, bond, and other liabilities, funds and reserves. Prereq: 3110 and Computer Science 2410 or equivalent.


3220 Managerial Cost Accounting (3) Continuation of 2210. Cost analysis for decision making and control. Subjects include accounting information for capital budgeting, inventory management, and advanced production areas. Prereq: 2210 and Computer Science 2410 or equivalent.


3510 Governmental Budgeting and Accounting (3) Theory and practice of budgeting, financial and managerial accounting concepts in reporting, planning, budgeting, and auditing for governmental and non-profit organizations. Prereq: 2210 or equivalent.

3630 Electronic Data Processing Concepts and Control (3) Elements and operation of computers in a business environment; accounting systems are emphasized. Topics include input, storage, data manipulation, output, and error control. Prereq: 2210; Computer Science 3410 or equivalent.

4110 Principles of Auditing (3) Nature of audit evidence, basic audit techniques and procedures, and internal and external audit functions. Prereq: 3130, 3630; and prereq. or coreq. Statistics 3410.

4120 Advanced Auditing (3) Legal and professional responsibilities of the auditor, evaluation of internal control, utilization of EDP and statistical techniques in auditing, and audit reports. Prereq: 4110.

4140 Reporting for Interrelated Business Entities (3) Principles and techniques of consolidated financial statements; foreign branches or subsidiaries. Prereq: 3130.


4630 Analysis and Design of Information Systems (3) General systems concepts, flow charts, analysis of planning systems studies, determination of systems objectives, development and evaluation of design alternatives, implementation, documentation, and control. Prereq: 3220 and 3630.

4950 Individual Research in Accounting (3) Special projects undertaken by undergraduate majors in accounting under direction of faculty members of professional status.

4990 Senior Seminar (3) Advanced problems in the financial accounting area are analyzed and discussed by students.

Graduate

See page 71 for information on graduate programs.

5000 Thesis

5011 Problems in Lieu of Thesis (3)

5050-60 Introduction to Financial Accounting (3, 3)

5110 Seminar in Accounting Theory (3)

5120 Seminar in Advanced Auditing (3)

5130 Seminar in Current Accounting Topics (3)

5210 Seminar in Advanced Cost Accounting (3)

5420 Seminar in Advanced Taxation (3)

5510 Governmental Accounting (3)

5630 Seminar in Administrative Accounting (3)

5810 Accounting for Control (3)

5820 Corporate Reporting Problems (3)

6000 Doctoral Dissertation and Research

6110-20-30 Doctoral Seminar in Accounting (3, 3, 3)

Business Administration (205)

1100 Business Administration (3) Introduction to business. Not open to students with more than 3 credit hours of economics.

4430 Business Policy (3) Analysis of business problems and managerial decision making through case study method and written reports. Prereq: Core requirements except business law (see page 65) and senior standing.

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 a 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 in advance. May be repeated to maximum of 9 hrs. credit.

4990-91-92 Institutional and Organizational Research (3, 3, 3) Design, implementation, and evaluation of cross-disciplinary research on organizational and institutional change. Enrollment requires membership on the Standing Committee on Improvement of Learning and Teaching in the College of Business Administration. Approval for enrollment must be secured from instructor in advance.

Graduate

See page 71 for information on graduate programs.

5310 Business Policy (3)

5410 Business and Its Societal Environment (3)

5610 Seminar in Applied Business Analysis (3)

5900 Academic Practicum (3)

6900 Research Methodology (3)

Business Law (216)


4120 Law of Business Organizations and Regulation (3) General principles of law, as these pertain to business partnerships and corporations. Effects of taxation, and treat with agencies regulating business. Prereq: 4110.

4130 Administrative Regulation of Business (3) Analyzes nature and extent business operations are controlled by administrative agencies operating at federal, state, and local levels. Includes nature of administrative agencies, jurisdiction, administrative procedure, and significant laws administered by such agencies. Prereq: 4120.

Graduate

5050 Legal Environment of Business (3)

Economics (283)

Professors:
J. R. Moore (Head), Ph.D. Cornell; R. L. Bowley, Ph.D. Texas; W. E. Cole, Ph.D. Texas; G. R. Feiwel, Ph.D. McGill (Canada); R. H. Holly, Ph.D.; M. Clark, H. E. Jensen, Ph.D.; T. M. C. W. Neale, Ph.D. London (England); F. B. Ward (Emeritus), Ph.D. Pennsylvania; R. H. Wolf, Ph.D. Vanderbilt;

On leave.

Undergraduate

2110-20 Fundamentals of Accounting (3, 3) Introduction to the field of accounting with an emphasis and practice with emphasis on preparation, reporting, and analysis of financial information. Prereq. to other courses in financial accounting except for engineering majors. Courses must be passed in sequence.

2210 Introductory Managerial Cost Accounting (3) Cost budgeting concepts and the development of accounting information for decision making.

College of Business Administration

Industrial Organization

The three-quarter sequence described below (Economics 3340, 4340 and 4350) provides a study of economic standards, the problems discussed are economics of the labor market, trade unionism, collective bargaining, and government policies with respect to labor and human resources.

3410 Principles of Labor Economics I (3) Supply of and demand for labor; wage determination; collective bargaining; consideration of unemployment, inflation, and poverty as labor problems.

3420 Principles of Labor Economics II (3) American labor law, structure of present-day labor unions, nature of collective bargaining, and dispute settlement.


4430 Labor Legislation (3) Economic background and effects of governmental regulation of labor relations, with emphasis on detailed examination of National Labor Relations Act as amended.


GRADUATE PROGRAM IN ECONOMICS

See page 71 for information on graduate programs.

Economic Theory

5050 Introduction to Economic Analysis (3)

5060 Introduction to Economic Problems and Policies (3)

5070-80 The Firm and Its Environment (3, 3)

5111-12 Microeconomic Theory (3, 3)

5121-22 Macroeconomic Theory (3, 3)

5140 Economic Theory and Practice (3)

5150 History of Economic Thought (3)

5180-90 Mathematical Methods in Economics (3, 3)
Assistant Professors:
A. L. Auxier, Ph.D. Iowa; H. S. Banton, Ill., M.S. Auburn; W. G. Goolub, Ph.D. Wisconsin; R. E. Shrewes, Ph.D. California (Los Angeles); R. A. Weir, Ph.D. North Carolina.

Prerequisites: Accounting 2110-20-30, Economics 2110-20-30, and Statistics 2100 for all courses offered in the Finance Department except Insurance 3020.

Finance (349)

3110 Money and Banking (3) Nature and functions of money and credit; analysis of monetary and credit systems; money creating role of commercial banks and the Federal Reserve Systems.

3120-30 Business Finance (3, 3) Principles of financial management. Analysis of demand for funds; internal and external supplies of funds, and their costs to the firm. 3120 is prerequisite for 3130.

4110-20 Investment Analysis (3, 3) Theory of investment value, fundamental security analysis, and valuation of specific types of securities. Prereq: 3120-30; 4110 is prerequisite for 4120; Statistics 3220.

4130 Investment Portfolio Management (3) Analysis of investment objectives, portfolio management policies applicable to individual and institutional investors. Prereq: 3120-30 or consent of instructor.

4150 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 and supply of money. Evaluation of current policies.

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: 3120-30; Statistics 3220.

4680 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 to maximum of 6 hrs credit. Prereq: Consent of department.

4990 Senior Seminar (3) Intensive investigation of specific topic in students area of concentration. Taken last quarter of senior year. Required of all students majoring in finance, insurance, or real estate.

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 and health insurance with protection, conservation, and distribution of estate assets.

4720 Employee Benefit Plans (3) Plan 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 risk.

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 and urban development. Prereq: Economics 3110.

3630 Real Estate Finance (3) Institutional and governmental procedures and techniques for financing real estate transactions. Prereq: 3610.

3640 Management and Development of Real Property (3) Real estate investment analysis and taxation. Prereq: 3630.

4110 Real Estate Appraisal (3) Theory and practices of determining real estate value. 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.

4900 Aspects of Urban Environment I (3) Interdisciplinary course in urban problems. Prereq: Consent of one of instructors. (Same as Architecture 4900, Human Services 4900, Political Science 4900, and Psychology 4900).

GRADUATE

See page 71 for information on graduate programs.

Finance

5000 Thesis

5011 Problems in Lieu of Thesis (3)

5050 Survey of Finance Functions in Business (3)

5110 Theory of Financial Management (3)

5120 Quantitative Techniques in Financial Management (3)

5130 Financial Administration (3)

5140 Seminar: Managerial Finance (3)

5210-20 Public Finance (3, 3)

5230 Government Financial Administration (3)

5320 Seminar in Federal Finance (3)

5420-30 Investments (3, 3)

5620 Taxation and Business Decisions (3)

5710 Modern Monetary Theory (3)

5720 Monetary Policy (3)

5730 Business Cycles and Financial Contrls (3)

5800 Executive-in-Residence Seminar for M.B.A. (3)

6000 Doctoral Dissertation and Research

6110-20 Seminar in Monetary Theory (3, 3)

6210-20 Seminar in Fiscal Theory and Public Finance (3, 3)

6310-20 Seminar in Monetary and Fiscal Policy (3, 3)

6410 Analysis for Financial Decisions (3)

6420 Theory of Finance (3)

6510 Seminar in Financial Management (3)
Insurance
5110 Theory of Risk Management (3)
5210 Seminar in Insurance (3)
Real Estate and Urban Development
5110-20 Seminar (3, 3)
5130 Housing and Urban Development (3)

Industrial And Personnel Management

Professors:
A. H. Kealy (Head), M.B.A., Pennsylvania;
R. W. Bohing, Ph.D. Stanford; H. W. Henry, Ph.D., Michigan;
J. M. Larson, Jr., Ph.D. Purdue;
S. K. Reed, Ph.D. Edinburgh (Scotland);
S. C. Vance, Ph.D. Pennsylvania, (Vlm. B. Stokely
Prereq: of Management); G. H. Whittlock, Ph.D. Tennessee.

Associate Professors:
R. D. Arvey, Ph.D. Minnesota; F. A. Chamblin, M.B.A. Indiana;
H. F. Dewitt, Ph.D. Texas; M. E. Gordon, Ph.D. California (Berkeley);
R. C. Maddox, Ph.D. Texas;
C. W. Neel, Ph.D. Alabama.

Assistant Professors:
J. A. Bachmann, Ph.D. Virginia Polytechnical Institute;
R. L. Dipley, Ph.D. Purdue; D. S. Fowler;
Ph.D. Georgia; D. A. Haas, Ph.D. Pennsylvania; W. B. Henderson, Ph.D. Purdue; W. W. Williams, B.S. Pennsylvania State.

*Alumni Distinguished Service Professor.

Industrial Management (566)
Nine quarter hours of general economics including Economics 2110-20 or the equivalent are prerequisite to all courses in personnel and industrial management.

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.

3120 Production Management (3) Continuation of 3110. Prereq: 3110.


4320 Organization of Industrial Enterprises (3) Organization of production function. Prereq: 3110-20 or approval of instructor.

4330 Operative Supervision (3) Production supervision with emphasis on "human" problems. Prereq: 3110-20.

4420 Advanced Industrial Problems (3) Cases in production management. Prereq: Fifteen quarter hours in major.

4460 Organizational-Industrial Psychology (3) An analytical and empirical approach to application of psychological tools and knowledge to organizations. Prereq: 3 hrs. of statistics. (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 4310.

4530 Personnel Problems Seminar (3) Case problems in personnel analyzed applying experimental method and conclusions from personnel research as reported in professional journals. Prereq: 4520.

4610-20 Management Science (3, 3) Applications of mathematical and statistical techniques to problems of production management. Must be taken in sequence. Prereq: Thirty quarter hours of mathematics and statistics, and permission of instructor.

4630 Production Planning and Control (3) Analysis of production planning and control function with application of mathematical and statistical techniques. Prereq: 3110-20.

4801-02-03 Readings and Research in Personnel Management (1, 2, 3) Prereq: 4460, Statistics 4310, and permission of instructor.

GRADUATE

See page 71 for information on graduate programs.

5000 Thesis

5050 Production Management (3)

5110 Organization Theory I (3)

5120 Organization Theory II (3)

5130 Managerial Planning and Control (3)

5170-80-90 Proseminar In Organizational Psychology (3, 3, 3)

5210 Personnel Management (3)

5220 Wage and Salary Administration (3)

5230 Human Problems In Administration (3)

5240 Personnel Research Seminar (3)

5250-60-70 Organizational-Industrial Psychology (1-3, 1-3, 1-3)

5320 Management Problems In Industrial Research (3)

5410-20-30 Production Management (3, 3, 3)

5610-20 Organizational Behavior (3, 3)

5710 Management of Foreign Operations (3)

6000 Doctoral Dissertation and Research

6110 History of Management Thought

6120 Advanced Organizational Theory

6130 Seminar in Contemporary Management Issues (3)

6250-60-70 Seminar in Organizational Psychology (3, 3, 3)

6380 Seminar in Industrial Psychology (3, 3, 3)

6800 Field Work In Industrial Psychology

Management Science (627)

2110-20 Decision Models (3) Introduction to the use of quantitative techniques in the decision-making process. Prereq: Mathematics 1130, Statistics 2100, and Mathematics 2140 or Office Administration 2750.

GRADUATE

5000 Thesis

5100 Introduction to Management Science Techniques (3)

5210-20-30 Management Science Models (3, 3, 3)

5410-20 Management Science Methods (3, 3)

5430 Application of Management Science Methods (3, 3)

5510 Optimization Theory and Techniques (3)

5610 Markov Chain Models (3)

5620 Queuing Theory (3)

5910 Management Science Problems (1-6)

6000 Doctoral Dissertation and Research

6110-20-30 Models for Production Systems (3, 3, 3)

6810 Special Topics (3)

6910-20-30 Management Science Seminar (3, 3, 3)

Marketing and Transportation

Professors:

Associate Professors:

Assistant Professors:

Marketing (632)
Nine quarter hours in general economics, including Economics 2110-20 or the equivalent are prerequisite to all courses in marketing.


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.

4140 Marketing Communications-I (3) Examination of firm's personal communications function. Managing sales force, including personal selling concepts. Special emphasis on role of sales promotion in marketing program. Prereq: 3110-20.


4310 Retailing Management (3) Structure and environment of retailing and its relationship to other parts of the economy. Research and decision making in selected areas of store management. Prereq: 3110-20.

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. Prereq: 3110-20.

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 support decision maker. Prereq: 3110-20, Statistics 4310, or 4520.
4520 Applied Marketing Research (3) Quantitative techniques, behavioral concepts, and marketing research methodology in study of consumer purchasing, sales forecasting, and other marketing problems. Prereq: 4510.

4650 Market Opportunity Analysis (3) Developing understanding of various approaches available for evaluating opportunity that may exist within a market. Thesis 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: 3110-0 and 4650 or permission of instructor. Course should be taken as close to graduation as possible.

4818-28 Honors: Marketing (3, 3) Marketing trends and developments. Advanced marketing theory and applications. Can be substituted by eligible students for other courses in marketing with consent of department. Prereq: Permission of department.

GRADUATE

See page 71 for information on graduate programs.

5000 Thesis

5050 Survey of Marketing (3)

5200 Marketing Management (3)

5220 Promotion Management and Strategy (3)

5230 Analysis and Design of Marketing Systems (3)

5300 Marketing Research (3)

5310 Quantitative Techniques in Marketing Analysis (3)

5350 Buyer Behavior Analysis for Marketing (3)

5410 Marketing Strategy (3)

5450 International Marketing Management (3)

5990 Research in Marketing (3)

6000 Doctoral Dissertation and Research

6110 Seminar in Buyer Behavior Research (3)

6210 Seminar in Marketing Models and Model Building (3)

6310 Seminar in Contemporary Marketing Issues (3)

Transportation (981)

Nine quarter hours in general economics are prerequisite to all courses in transportation. Transportation 3110-20 or permission of the instructor are prerequisite to all courses numbered above 4000.

3110 Introduction to Transportation (3) Economic, social, and political aspects of national transportation system; economic characteristics of modes of transport; regulatory problems.

3115 Business Logistics (3) Introduction to management of physical distribution and supply systems, consideration of design concepts, cost determinants, firm and environmental constraints. Prereq: 3110, Statistics 2100 or equivalent.

3120 Traffic Management (3) Concepts and problems of freight traffic management; rate-making theories; rate and classification systems. Prereq: Coreq: 3115.

3310 Transportation Rates (3) Analysis of current railroad and motor carrier tariffs, classification systems, rate systems. Prereq: 3120.

4110 Rail Transportation (3) Analysis of economic characteristics, regulatory provisions, and organizational patterns of the railroad industry.

4210 Highway Transportation (3) Analysis of economic characteristics, regulatory provisions, and organizational patterns of motor carrier industry.

4310 Water Transportation (3) Analysis of economic characteristics, regulatory provisions, and organizational patterns of water transportation system.

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 (3) Application of management decision making in transportation. Prereq: Senior standing with minimum of 18 hours in transportation.

4720 Business Logistics: System Management and Control (3) Consideration of control techniques and management decision problems in logistics operations.


4820 Current Topics in Transportation and Business Logistics (3) Seminar designed to study specific current problem area in transportation and distribution topics announced prior to offering. May be repeated once for credit. Prereq: Consent of instructor.

4830 Supervised Readings in Transportation and Business Logistics (3) Directed readings and research on subject of mutual interest to student and staff member. Prereq: Senior standing with minimum of 18 hrs of transportation.

4910 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 71 for information on graduate programs.

5000 Thesis

5050 Survey of Transportation and Logistics (3)

5110 Theory and Functions of Economic Regulation (3)

5120 Management and the Pricing Problem (3)

5130 Transportation Management Problems (3)

5210 Business Logistics (3)

5220 Physical Distribution Strategy (3)

5510 Urban Transportation Policy (3)

5910 Transportation Law and Carrier Liability (3)

5920 Current Topics in Transportation and Logistics (3)

5990 Research in Transportation and Business Logistics (3)

6000 Doctoral Dissertation and Research

6110 National Transportation Policy (3)

6210 Seminar in Transportation and Logistics Models (3)

6220 Transportation and Logistic Systems—Analysis and Simulation (3)

Office Administration (735)

Professor:
G. A. Wagoner (Head), M.S. Indiana; E. W. Davis (Emeritus), M.A., New York University.

Associate Professors:
L. M. Fox, M.S. Tennessee; A. G. Porreca, Ph.D., Boston University; D. Reese, Ph.D., Iowa; E. R. Smith, Ph.D., Ohio.

Assistant Professors:

Junior standing or approval of the department head is required for registration in courses numbered 3000 or above.

2110-20-30 Typewriting (3, 2, 2) Development of typewriting skills; special emphasis on letter writing, tabulation, and reports. First quarter for students with no previous training in typewriting. Students with one year of high school typewriting receive no credit for 2110 and should begin with 2120, students with two years, no credit for 2120 or 2130, and should begin with 2320; students with two years receive no credit for 2310 or 2320. Prereq: 2110 or equivalent; for 2230-30, grade of C in previous typewriting course. Maximum of six hours credit on any degree program.

2310-20-30 Beginning Shorthand and Transcription (3, 3, 3) Theory of Gregg shorthand; development of dictation and transcription abilities. First quarter for students with no previous training in shorthand. Students with one year of high school shorthand receive no credit for 2310 and should begin with 2320; students with two years receive no credit for 2310 or 2320. Prereq: 2110 or equivalent; for 2230-30, grade of C in previous shorthand course. 5 hrs per week.

2750 Electronic Data Processing (3) Computer programming with special emphasis on business applications. Prereq: Mathematics 1130 or equivalent.

3210 Office Equipment Problems (3) Operation of and comparative data on duplicating processes, dictating and transcription equipment, and adding and calculating machines; determining costs of machine operation. Prereq: 2140. 2 hrs and 2-2.5 hr labs.

4310 Business Letter Writing (3) Principles, practices, and mechanics of modern business letters; principles applied by solving letter-writing problems.

4320 Business Report Writing (3) Principles and mechanics of report writing, tabular and graphic presentation, basic instruction in formal research reports and thesis writing, and sources of business information.

4410-20 Advanced Shorthand and Transcription (3, 3) Improvement of ability to take dictation and transcribe mailable copy; emphasis on skill necessary to meet occupational standards. Prereq: 2330. 3 two-hour periods.

4450 Supervised Office Experience (3) Orientation to office positions by actual office work; telephoning techniques, sources of information; secretarial procedures; record keeping, and office etiquette. Prereq: 3210, 4310 or 4320; 2 three-hour periods.

4510 Office Management (3) Function of office; office building; environmental factors; office equipment; furniture and equipment; machines and supplies; selection of employees; compensation and incentive plans; job analysis, and supervision.

4520 Office Systems (3) Routines and procedures for correspondence and mailing; filing systems; oral communications; office planning and layout; systems of control.

4540 Problems in Office Management (3) Work simplification; cost control and reduction; development of standards; use and preparation of office manuals. Prereq: 3210, 4320 or approval of instructor.
4551-81 Problems in Office Management: Systems Analysis (3, 3) Prerequisite: 3210, 4320, 4520 or equivalent.

4552-82 Problems in Office Management: Form Design (3, 3) Prerequisite: 3210, 4320, 4520 or equivalent.

4553-83 Problems in Office Management: Records (3, 3) Prerequisite: 3210, 4320, 4520 or equivalent.

4554-84 Problems in Office Management: Mechanization (3, 3) Prerequisite: 3210, 4320, 4520 or equivalent.

4555-85 Problems in Office Management: Correspondence (3, 3) Prerequisite: 3210, 4320, 4520 or equivalent.

4556-86 Problems in Office Management: Supervision (3, 3) Prerequisite: 3210, 4320, 4520 or equivalent.

4557-87 Problems in Office Management: Work Simplification (3, 3) Prerequisite: 3210, 4320, 4520 or equivalent.

4558-88 Problems in Office Management: Training (3, 3) Prerequisite: 3210, 4320, 4520 or equivalent.

4559-89 Problems in Office Management: Work Measurement (3, 3) Prerequisite: 3210, 4320, 4520 or equivalent.

4710 Punch Card Methods (3) Card designing, key punching, sorting, tabulating, and preparation of reports; application to problems in fields of accounting, statistics, personnel, economics, psychology, education, and other areas of research. 3 hrs and 2 two-hr labs.

4720 Punch Card Applications (3) Problems on tabulating and collating, introduction to programming, system design, and preparation of procedure manuals and flow charts. Prerequisite: 4710 or equivalent.

GRADUATE

5011 Problems in Lieu of Thesis (3)

5050 Data Processing in Business (3)

Statistics (962)

Professors:
C. C. Thigpen (Head), Ph.D. Virginia Polytechnic; D. S. Chambers, M.B.A. Texas; R. A. McLean, Ph.D. Purdue.

Associate Professors:
C. E. Bell, Ph.D. Yale; R. S. Gartinkel, Ph.D. John Hopkins; A. A. Lassetter, Ph.D. Rutgers; J. W. Philpot, Ph.D. Virginia Polytechnic; R. D. Sanders, Ph.D. Texas.

Assistant Professors:
W. H. Olson, Ph.D. Virginia Polytechnic; D. J. Wheeler, Ph.D. Southern Methodist; M. S. Younger, Ph.D. Virginia Polytechnic.

Visiting:

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. Prerequisite: Mathematics 1560 or 1850.

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, trend, analysis, seasonal and cyclical variation. Prerequisite: 2100 or 3450.

3310-20 Industrial Statistics (3, 3) Shephard Control Charts, acceptance sampling by attributes, Military Standard sampling plans. Special applications of control charts, acceptance sampling theory and procedures. Prerequisite: 2100 or 3450.

3410 Sampling Methods (3) Expository treatment of the basic ideas of scientific sampling. Illustratively developed. Emphasis on sampling methods for accounting and marketing research. Prerequisite: Statistics 2100 or 3450.

3450 Statistics for Engineering (3) Survey of statistical methods with special application for engineering students; frequency distributions, selected sampling distributions. Some tests of significance. Cannot be taken for credit concurrently with 2100. Prerequisite: Mathematics 2840.

3460 Statistics for Engineering (3) Continuation of 3450 with emphasis on use of chi-square statistic, analysis of variance, and multiple regression analysis. Prerequisite: 3450; Mathematics 2850.

3550 Random Processes and Probability Models (3) Functions of random variables, multivariate distributions, conditional expectations, waiting time distributions; Poisson processes, life-testing, queueing, Markov processes. Introductory theory with applications. Prerequisite: 3450; Mathematics 2850.

4250 Non-Parametric Methods (3) Measures of association, two-sample tests, analysis of variance with ranked data, paired and multiple comparisons in preference testing, questionnaire evaluation. Prerequisite: 2100 or 3450.

4310 Regression and Correlation (3) Linear regression and correlation, polynomial and multiple regression, multiple and partial correlation. Prerequisite: 2100 or 3450.

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. Prerequisite: 2100 or 3450.

4750 Statistical Problems in Business (3) Case study course of statistical problems in variety of business areas. Prerequisite: Fifteen hours in Statistics and permission of instructor.

GRADUATE

Prerequisites for a major: Mathematics 2840-50-60, Statistics 3450 or equivalent.

5000 Thesis

5050-60-70 Statistical Analysis for the Behavioral Sciences (3, 3, 3)

5110 Introduction to Probability Theory (3)

5120-30 Theory of Statistical Inference (3)

5140 Theory of Least Squares (3)

5210 Stochastic Processes I (3)

5211 Elementary Statistics (3)

5311 Fundamental Concepts of Probability Theory (3)

5312 Statistical Methods (3)

5420 Intermediate Analysis of Variance (3)

5510 Applied Multivariate Analysis (3)

5610 Special Topics in Statistics (3)

6110 Multivariate Analysis (3)

6210 Stochastic Processes II (3)

Center for Business and Economic Research

STAFF

D. A. Hake (Director), Assistant Professor of Management Science, Ph.D. Tennessee

W. F. Skidmore, Assistant Director, M.S. George Washington

K. E. Quindry, Research Professor, Ph.D. Kentucky

C. B. Garrison, Associate Professor of Economics, Ph.D. Kentucky

G. W. Kronenbach, Research Associate, M.A. North Carolina
College of Communications

Donald G. Hileman, Dean
B. Kelly Leiter, Assistant Dean

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 conflicts 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 his special interests.

The American Council on Education for Journalism has accredited the News-Editorial and the Advertising programs. The College is a member of the American Association of Schools and Departments of Journalism and the Association for Professional Broadcasting Education.

Admission Requirements

Admission requirements are stated on page 17. Communications majors must demonstrate ability to use a typewriter proficiently before beginning their professional courses at the 2000 level. Students transferring into the College, either from another institution or another college in the University of Tennessee, must have at least a 2.0 average.

Majors must complete English 1510-20 with a minimum grade of C in each course before enrolling in any 2000-level (or higher) course in the College.

Majors will not be admitted to upper division (3000 and 4000) courses in the College unless they have an average of at least 2.3 in lower division courses in the College. By major these courses include: Advertising—Communications 1110, Journalism 2210, Advertising 3000; Broadcasting—Communications 1110, Journalism 2210, Broadcasting 2750, Advertising 3000; Journalism—Communications 1110, Journalism, 2210-20-30.

Curriculum

The College curriculum offers academic majors in Advertising, Broadcasting, and Journalism. 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 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 three quarter hours of practicum credit. Approval of the adviser and the department chairman must be obtained before such work is begun.

Course Load

The maximum number of hours which can be taken by an undergraduate without special permission is 19 hours. Permission to take 20 or more hours must be obtained from either the Dean or Assistant Dean of the College.

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 he has had one or two quarters at the University. He will alternate with another student working full time for his employer for one quarter and attending the University the next quarter, etc. The typical program is arranged for a five-year period, with the student spending the final three quarters of his senior year on campus.

The Cooperative Program gives the student an opportunity to gain practical experience, develops a sense of responsibility and cooperation, creates greater interest and incentive in his studies, enables him to earn part of his expenses, and 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 37916.

Equipment and Facilities

The $3,000,000 Communications and Extension Building, completed in 1969, provides extensive facilities for communications instruction.

The College has laboratories with special equipment for instruction in writing, editing, photography, advertising, and broadcasting. In addition, advanced students gain experience through summer internships or through the University's general program of publishing and broadcasting. The Office of Public Relations, campus publications such as the Daily Beacon, and the University radio station provide practice for communications majors. The Tennessee Association of Broadcasters, Tennessee Press Association, and
**Requirements for Graduation**

The Bachelor of Science in Communications is awarded to majors who complete a program of 194 hours prescribed under departmental requirements listed below. At least 140 of these hours must be taken in courses other than the major and related communications fields. At least 27 of the hours in the major must be taken at The University of Tennessee, Knoxville. Normally, no more than 52 transfer credits in the major will be applied to the 194 hours. Journalism 2210 is the only course in the major that may be taken by correspondence.

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**Undergraduate Curriculum**

**Advertising**

**Freshman**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>English 1510-20</td>
<td>8</td>
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<tr>
<td>Natural Science Electives</td>
<td>12</td>
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<tr>
<td>History 1510-20</td>
<td>8</td>
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<tr>
<td>Foreign Language Electives</td>
<td>4</td>
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<tr>
<td>Sociology 1510</td>
<td>3</td>
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<tr>
<td>Economics 2110-20</td>
<td>6</td>
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**Sophomore**

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Sociology 1520</td>
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<td>Speech 2311</td>
<td>3</td>
</tr>
<tr>
<td>Economics 2130</td>
<td>4</td>
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<tr>
<td>English Literature Electives</td>
<td>8</td>
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<tr>
<td>Mathematics 1540-50</td>
<td>6</td>
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<tr>
<td>Marketing 3160-20</td>
<td>6</td>
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<tr>
<td>Psychology 2500, 2520</td>
<td>6</td>
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<tr>
<td>Journalism 2210</td>
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**Senior**

<table>
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<tbody>
<tr>
<td>Political Science 2510-20</td>
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<tr>
<td>Anthropology Elective</td>
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<tr>
<td>Advertising 3000</td>
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<td>Advertising 3630</td>
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<td>Advertising 3670</td>
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<td>Advertising 4000</td>
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<td>Journalism 3110</td>
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<td>Psychology 3150</td>
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<td>*Professional Courses</td>
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<td>General Electives</td>
<td>10</td>
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<tr>
<td>Marketing 4210</td>
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</table>

**Total: 194 hours**

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**Broadcasting**

**LOWER DIVISION CURRICULUM**

(Required of all broadcasting majors)

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>English 151030</td>
<td>8</td>
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<tr>
<td>Natural Science Electives</td>
<td>12</td>
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<tr>
<td>History 1510-20</td>
<td>8</td>
</tr>
<tr>
<td>Foreign Language Electives</td>
<td>8</td>
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<tr>
<td>Sociology 1510-20</td>
<td>3</td>
</tr>
<tr>
<td>Communications 3110</td>
<td>3</td>
</tr>
<tr>
<td>Economics 2110-20</td>
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**Sophomore**

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>English Literature Electives</td>
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<tr>
<td>Economics 2110-20</td>
<td>6</td>
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<tr>
<td>Political Science Electives</td>
<td>3</td>
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<tr>
<td>Speech and Theatre 1441</td>
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<td>Speech 2311</td>
<td>4</td>
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<td>Broadcasting 2750</td>
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<tr>
<td>Journalism 2210</td>
<td>3</td>
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<tr>
<td>Advertising 3000</td>
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<td>Psychology 2500, 2520</td>
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**NEWS AND PUBLIC AFFAIRS SEQUENCE**

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<td>Broadcasting 3610, 3670</td>
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<tr>
<td>Broadcasting 4020 or 4021, 4030</td>
<td>6</td>
</tr>
<tr>
<td>Journalism 3110, 3410</td>
<td>10</td>
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<tr>
<td>Geography 3610</td>
<td>4</td>
</tr>
<tr>
<td>Music 1210</td>
<td>4</td>
</tr>
<tr>
<td>*Social Science and/or Humanities Electives</td>
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**Senior**

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<tr>
<td>Broadcasting 4010, 4040</td>
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<tr>
<td>Broadcasting 4021, 4670</td>
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<tr>
<td>Journalism 3110, 4410</td>
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</tr>
<tr>
<td>Communications Electives</td>
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<tr>
<td>Speech and Theatre 2031 and 3651 or 3671 (6 hours)</td>
<td>6 or 8</td>
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<tr>
<td>*Upper Division Social Science and/or Humanities Electives</td>
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<td>*General Electives</td>
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**Total: 194 hours**

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**Journalism**

**LOWER DIVISION CURRICULUM**

(Required of all Journalism majors)

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>English 1510-20</td>
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<tr>
<td>History 1510-20</td>
<td>8</td>
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<tr>
<td>Natural Science Electives</td>
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<td>Foreign Language Electives</td>
<td>8</td>
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<td>Sociology 1510-20</td>
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<tr>
<td>Communications 3110</td>
<td>3</td>
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<tr>
<td>Economics 2110-20</td>
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**Sophomore**

<table>
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<tr>
<th>Course</th>
<th>Hours Credit</th>
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<tr>
<td>English Literature Electives</td>
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<tr>
<td>Economics 2110-20</td>
<td>6</td>
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<tr>
<td>Sociology 1510-20</td>
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<tr>
<td>Communications Electives</td>
<td>9</td>
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<tr>
<td>Speech Electives</td>
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<td>*Social Science or Science Electives</td>
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**Total: 194 hours**

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**Production/Performance Sequence**

<table>
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<th>Course</th>
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<td>Broadcasting 4020 or 4030</td>
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<tr>
<td>Journalism 3110, 3410</td>
<td>6</td>
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<td>Music 1210</td>
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<td>Theatre 2111</td>
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<tr>
<td>Theatre 2221</td>
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<tr>
<td>*Social Science and/or Business</td>
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<tr>
<td>*General Electives</td>
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</tbody>
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**Additional Options**

- **Option A**: For students primarily interested in writing. Required: Journalism 3120, 3580, or 4130. Elective: Journalism 3510-20, 3560, 3910, 4130.
- **Option B**: For students primarily interested in editing. Required: Journalism 3310, 3320, 4420. Elective: Journalism 3510-20, 3810, 3910, 4130.
- **Option C**: Any approved combination of Options A and B (including the required courses of one group) for students interested in both writing and editing.
Departments of Instruction

Numbers in parentheses following the course titles indicate quarter hours credit offered.

Communications (259)

Professors:
J. B. Haskins (Director of Research), Ph.D.
Minnesota; D. G. Hillman, Ph.D.; Illinois; D. W. Holt, Ph.D.; Northwestern; B. K. Leifer, Ph.D.; Southern Illinois.

Associate Professors:
J. R. Dunn (Chairman of Graduate Studies), Ph.D.
Southern Illinois; E. W. Dunn, Jr., Ph.D.; Texas; H. H. Howard, Ph.D.; Ohio.

Graduate (202)

Professor:
D. W. Holt (Head), Ph.D. Northwestern.

Associate Professors:
W. D. Dunn, Jr., Ph.D.; Texas; H. H. Howard, Ph.D.; Ohio.

Assistant Professors:
F. A. Lester, M.A. Tennessee, Certificate, NBC Television Institute, Northwestern; I. G. Simpson, M.S. Syracuse.

UNDERGRADUATE

1110 Introduction to Communications (3) Nature, functions, responsibilities 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.

GRADUATE

5000 Thesis

5100 Introduction to Graduate Studies (3)

5120 Research Methods (3)

5130 Advanced Principles of Mass Communications (3)

5140 Communications Theory (3)

5970 Independent Study (3)

6000 Doctoral Research and Dissertation

6100 Seminar in Communication Theory (3)

6200 Seminar in Communication Topics (3)

6300 Survey Research Methods in Communications (3)

6310 Experimental Research Methods in Communications (3)

6320 Seminar in Historical Research Methods in Communications (3)

Advertising (012)

Professors:
R. Joel (Head), M.A. Wisconsin; D. G. Hillman, Ph.D.
Illinois.

Associate Professors:

UNDERGRADUATE


3630 Advertising Copy and Layout (4) Creative strategy and execution of advertisements for mass media. Problems in idea creation for advertisers. Lecture and labs. Prereq: 3000 or Marketing 4150.

3650 Basic Advertising Research (3) Use of research to appraise media, creative, and managerial problems in advertising. Introduction to secondary information sources and primary research methodology. Prereq: 3000 or Marketing 4150.

3740 Retail Advertising and Promotion (3) Planning of retail advertising and promotion; practice in retail copy and layout; selecting media; research. Prereq: 3000 or Marketing 4150.


4360 Advertising Media (3) Media, markets, and audiences. Evaluation of media in relationship to communication needs of advertisers. Prereq: 3000 or Marketing 4150.


4470 Advertising Campaigns (3) 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. Prereq: 4000 and 4360.

4510-20-30 Practicum (1, 1, 1) Prereq: 3000. Satisfactory—No Credit.

Graduate (202)

5310-20-30 Advertising Studies and Practices (3, 3, 3)

5350 Advanced Advertising Research (3)

5510-20-30 Creative Projects (3, 3, 3)

5970 Independent Study (3)
4670 Radio-Television Management (3) Business policies and practices of networks and stations. Departmental functions, cost and income figures, sales techniques, promotion, advertising agencies, and governmental regulations. Lectures by commercial broadcasters. Prereq: 2750 or consent of instructor.

4680 Broadcast Sales Management (3) Problems and practices of television and radio sales, case studies in sales development, pricing, promotion, and other areas of sales management. Prereq: 2750 or consent of instructor.

GRADUATE

5410 Educational Broadcasting (3)
5420 Educational Broadcasting Methods (3)
5510-20-30 Creative Projects (3, 3, 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: D. C. Cade (Director), Ph.D. Iowa; J. B. Haskins, Ph.D. Minnesota; J. E. Kelshoven, M.A. Louisiana State; J. M. Lath, M.A. Iowa; B. K. Leter, Ph.D., Southern Illinois; W. C. Tucker (Emeritus), M.A., West Virginia.

Associate Professors: J. A. Crook, Ph.D. Iowa State; S. L. Puep, M.S. Tennessee; E. F. Shaw, Ph.D. Stanford; F. B. Thomas, Jr., M.A. Florida; S. Z. Zeigler, Ph.D. Michigan State.

Assistant Professor: J. W. Adams, M.S. Tennessee.

UNDERGRADUATE

2210 Writing for Mass Media (3) Principles and practice of writing for major types of mass communications media. Emphasis on news. Prereq: English 1110-20-30 and, for majors in the college, Communications 1110.

2220 Reporting (4) Methods of gathering and writing facts for mass media. Emphasis on news and news features. 3 hrs and 1 lab. Prereq: 2210.

2230 Editing for Mass Media (3) Copyreading methods and practice in editing types of copy for print and broadcast media. 2 hrs and 1 lab. Prereq: 2220.

2990 Applied Mass Communications (3) Principles and practices of newswriting, reporting and editing for mass media. Intensive accelerated laboratory course for students admitted to graduate programs who have had no previous journalism or broadcast training or professional experience.

3110 Communications History (3) Development of newspapers, magazines, and broadcasting in America. Biographies of major journalists.

3120 Writing Feature Articles (3) Instruction and practice in writing feature articles for newspapers, trade journals, and magazines. Market analysis and free-lance selling. Prereq: 2210 or consent of instructor.

3220 News Editing and Display (3) Instruction and practice in making up newspapers and magazines. Advanced work in copy reading, rewriting, and headlining. Picture editing. 1 hr and 2 labs. Prereq: 2230.

3310 Graphic Arts in Journalism (3) Printing equipment and production methods. Typography, letterpress, offset, gravure, engraving, stereotyping, proofreading, copyrighting, and current developments in mechanical processes.

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.

3510-20-30 Practicum in Journalism, I, II, III (1, 1, 1) Supervised experience in news gathering and writing. Prereq: 2220.

3560 Investigative and Specialized 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.

3710 Public Relations (3) Theories and principles of public relations. Emphasis on persuasion and public opinion, the public relations process, publicity organization, techniques, and tools. Propaganda analysis.

3720 Public Relations: Advanced (3) Application of public relations principles to business and industry, government, institutions and organizations, trades and professions. Prereq: 3710.

3810 Specialized Publications (3) Business and industrial publications. Individual projects on newspapers and magazines in fields of agriculture, business and industry, engineering, home economics. Prereq: 2230 or consent of instructor.

3910 Basic Photography (3) Principles, policies, and procedures of using pictures as an editorial medium. Press and reflex cameras and flash photography. Darkroom techniques in developing, enlarging, printing. 1 hr and 2 labs. Prereq: Consent of instructor.

4130 Editorial Writing (3) Analysis of editorial policies, practices, pages. Writing of editorials, columns, paragraphs, and interpretative articles. Prereq: Senior standing.

4310 Reporting Public Affairs (3) Reporting news of courts, politics, government, finance, labor, and social agencies. 2 hrs and 1 lab. Prereq: 2230 and senior standing.


4420 Newspaper Management (3) Daily and weekly business operations. Developments in newspaper management.

4510-20-30 Practicum in Journalism, IV, V, VI (1, 1, 1) Supervised experience in news writing and editing. Prereq: 2220.

4810 Journalism in the High School (3) Functions and methods of publications. Staff organization, writing and editing techniques, editorial problems, and business management. Not open to journalism majors.

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 permission 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.

4990 Problems in Research (3) Independent work course for seniors. Intensive study of some phase of the major field, investigative procedures, report writing.

GRADUATE

5210 Government and the Press (3)
5250 Public Opinion and Mass Media (3)
5510-20-30 Writing and Editing Projects (3, 3, 3)
5590 Magazine Article Writing (3)
5710 Studies in Public Relations Communication (3)
5810 Magazine Editing and Production (3)
5950 Communications and International Development (3)
5970 Independent Study (3)
Division of Continuing Education

Joseph P. Goddard, Dean
William D. Barton, Assistant Dean

The Division of Continuing Education at Knoxville extends the academic programs and services for all colleges and schools of the Knoxville campus to the people in the area served by The University of Tennessee, Knoxville. In addition, the Division cooperates with all other campuses of The University of Tennessee in extending academic programs and services to all citizens of the state.

Conferences and Institutes

Director:
F. A. Thurman, B.A. Tennessee
Associate Director:
R. H. Rader, M.S. Tennessee
Assistant Director:
C. B. Goodin, B.S. Carson-Newman

Conferences, institutes, short courses and workshops from one day to two weeks or more in length are planned and administered by this department and the related academic departments in cooperation with business, industrial, and professional organizations. Each program is specifically designed for the needs of the group being served and may be held on the University campuses or at any other place in the state where adequate facilities and sufficient interest exist.

Off-Campus Programs

Director:
W. L. Russell, Ed.D. Tennessee
Assistant Director:
A. R. Thompson, B.A. Knoxville College

The Department of Off-Campus Programs is a service oriented administrative unit. The students toward whom that service is directed are the part-time adult students who live some distance from the UTK campus and who take part or all their courses at off-campus locations.

University Evening School (Knoxville and Oak Ridge)

Director:
S. C. Bills, Ed.D. Tennessee
Assistant Director:
R. D. Fox, B.S. Tennessee
Assistant Professors (full-time only): M. H. Cole, M.S. Tennessee; G. M. Fisher, M.S. Tennessee.
Instructors (full-time only): C. B. Maramon, B.S. Louisiana State; J. C. Sekula, Ph.D. Tennessee

The University Evening School with the cooperation of academic colleges and departments administers credit classes and support activities for those students attending in the late afternoon and evening. Programs are offered enabling working adults to pursue their educational interests and goals.

Workshops and Non-Credit Programs

Director:
D. N. Bean, Ed.D. Tennessee
Assistant Director:
R. S. Gordon, M.S. Tennessee
College of Education

James D. McComas, Dean
William H. Coffield, Associate Dean for Administration and Graduate Studies
E. Dale Doak, Associate Dean for Undergraduate Studies

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 twelve 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 in 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.

Special Services

Bureau of Educational Research and Service. Four major types of activities—research, development, educational services, and publications—are channeled through the Bureau of Educational Research and Service (BERS), located in Claxton Education Building. The research activities relate to the development of research proposals, conducting research, and assisting others in development of research proposals in the College of Education. Developmental activities relate to change efforts in curricular content and instructional methodology. Educational services include a wide list of activities such as inservice educational programs, consultant services, educational services and administrative training programs. Official publications of the College of Education are developed through the Bureau. A limited number of graduate student assistantships are available. The Educational Opportunities Planning Center, the Research Coordinating Unit, and the School Planning Laboratory are integral parts of the Bureau of Educational Research and Service.

EDUCATIONAL OPPORTUNITIES PLANNING CENTER

The Educational Opportunities Planning Center (EOPC) works with school districts in the Tennessee-Kentucky area to help meet their desegregation-related needs by assisting with needs assessment and by helping develop plans to meet the needs. Staff follow through with inservice training of local district personnel, such training directed toward solutions of curricular, human relations, and other types of problems created or compounded by school desegregation. On-site evaluation of locally installed practices and continuing cooperative evaluation of the progress of local programs are additional major efforts. This program is funded by the U.S. Office of Education.

RESEARCH COORDINATING UNIT

The Research Coordinating Unit (RCU), located on campus at 909 Mountcastle Street, is available for use by students, faculty, administrators, and all vocational educators in the state of Tennessee.

The primary objectives of the RCU are to collect and disseminate information, coordinate research, stimulate research, and conduct research in selected areas. The RCU has a library with the complete series of ERIC Documents stored on microfiche. Microfiche reader-printers are available in the library and portable readers may be checked out overnight. Computer searches of the ERIC files are also available for a nominal fee.
SCHOOL PLANNING LABORATORY

The School Planning Laboratory (SPL), located in Claxton Education Building, assists school systems and colleges in the state and in the southeastern region with problems arising from renovation of existing facilities and planning of new facilities. Course work peculiar to the field of school planning is offered through the Department of Educational Administration and Supervision. Graduate student assistantships are available each year through the Laboratory.

The Reading Center. A commitment to the concept of teaching, research, and service as the role of the University involves the Reading Center in a variety of activities. An extensive program of diagnostic and remedial reading services to children is closely tied to graduate course work and practices in reading methodology. Effective reading and study classes are offered for the benefit of the University student body. Service functions of the Center include extensive inservice and consultant services for public school reading program improvement. The Center also maintains a research reading materials center and participates in the coordination of an ERIC/CRIER Regional Information Center in reading. For further information write the Director, Reading Center, 1912 Terrace Avenue, Knoxville, Tennessee 37916.

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

For transfer into the College of Education after completion of the freshman year, a minimum grade average of 2.00 (C) is required.

Course Load—Permission for more than 20 hours in a quarter must be obtained from the Associate Dean for Undergraduate Programs. A normal course load in the College is 16-18 hours. Students employed full time in teaching or other positions may not enroll for more than six quarter hours credit per quarter. Approval for enrollment in excess of this amount must be secured from the Dean.

Admission to Teacher Education

All students who desire teacher certification, whether enrolled in the College of Education or other colleges, are required to apply for admission to the Teacher Education Program. Formal application for admission to the Teacher Education Program should be made during the second or third quarter of the sophomore year. Application forms may be obtained in the Office of the Associate Dean for Undergraduate Programs on the day of the test. Special note: Students must be admitted to the Teacher Education Program at least one quarter before completing 3010, 3030 and 3050 and other courses in the College.

Student procedures for applying for admission to the Teacher Education Program are: (1) Obtain an application form in the Dean's office during registration time at the beginning of the quarter. Speech and hearing tests are usually administered on registration days. (2) Proceed to the Speech and Hearing Center (at the corner of Yale and Stadium Drive) on one of the specified dates between the hours of 9 a.m. and 4 p.m. and complete the speech and hearing tests. Leave the application form (scan sheet) with the test administrator.

The College of Education will be informed of the speech and hearing test results. Those applicants having satisfactory speech and hearing test results, a grade point average of 2.20 or above at the termination of the previous quarter (if admitted to the University prior to Fall, 1966, a 2.00 GPA is sufficient), and their academic adviser's consent will be informed of their acceptance by a letter from the Associate Dean for Undergraduate Programs sometime during the quarter. Students not qualifying for acceptance will also be informed of their status by letter. The academic adviser's consent and confirmation of the grade point average is obtained by the Dean's office and does not entail action by the student. If a student takes the speech and hearing test and does not have the required grade point average at the time, but subsequently raises it, it will be necessary to return to the Associate Dean's office and reapply for admission to the Teacher Education Program. You will not be admitted automatically upon raising your grade point average to the required level.

The following criteria must be met by all students applying for admission to teacher education:

Scholastic Achievement—a cumulative grade point average of 2.2 (a 2.0 GPA if admitted to the University prior to Fall Quarter, 1966).

Physical Fitness—satisfactory ratings in general health, speech, hearing, and sight.

Personal-Social-Ethical Fitness for Teaching—satisfactory ratings from faculty advisers.

Admission to Student Teaching

Application for student teaching must be filed no later than the January 1 of the academic year preceding the actual experience. For example, if a student plans to student teach during the 1976-77 academic year he must make application by January 1, 1976. Application forms may be obtained in the Office of the Director of Student Teaching, 212 Claxton Education Building.

Students majoring in Special Education—Speech and Hearing and in Special Education—Hearing Impaired are required to make application for Clinical Practice or Student Teaching in the Department of Special Education and Rehabilitation and in the Office of the Director of Student Teaching. Before student teaching, the student must have fulfilled the following requirements:

1. Full admission to the Teacher Education Program no later than the quarter preceding student teaching (i.e., all conditions relative to admission satisfied).
2. Completion of the professional core courses (Education 3010, 3020, 3030, and Educational Psychology 2430 or 3810).
3. Completion of at least 90 percent of course work in the endorsement area(s).
4. Completion of the special methods courses at The University of Tennessee.
5. Completion of the Student Teaching Seminar and the September experience (non-credit).
6. Senior standing and a minimum grade point average of 2.0 on work completed at The University of Tennessee. The fifteen-hour student teaching experience is evaluated on a pass-fail basis and the hours are included in the University policy requiring a 2.0 in the last 45 hours work.

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 his adviser first. If they agree that the substitution is an appropriate one, the substitution request form should be forwarded to the Office of the Associate Dean for Undergraduate Programs, Claxton Education Building 212. Approved petitions are forwarded to the Dean of Admissions for further approval, and for filing with the Undergraduate Council.

Recommendation For Certification

The application for a professional teacher's certificate should be completed early in the final quarter before graduation. Application forms may be obtained in the Admissions Office, Administration Building, and 212 Claxton Education Building.

Tennessee State regulations stipulate that the applicant for a professional 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 his teaching field(s).
4. Completion of a methods course in each area of endorsement.
5. Fulfillment of all special recommendations of the Committee on Standards and Admissions.
Undergraduate Curricula

The College of Education 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 reciprocity privileges to graduates of institutions accredited by the National Council for Accreditation of Teacher Education (NCATE).

A core of studies provides the foundation for specialization in all teacher education curricula. In addition, approved concentrations must be completed in subject fields specifically related to the public school curriculum. A choice is to be made among programs leading to recommendation for certification at one of three levels: elementary (kindergarten-9), secondary (grades 7-12), or special subjects in grades 1-12.

Courses in Library Science are available to students who are interested in beginning positions in any library or in preparation for further graduate study in professional librarianship. The minimum requirements for full-time librarianship in any size school in Tennessee can be met through completion of the basic library service courses (3510, 3520, 3530, 4140, 4150, 4270, 4330, 4750). Endorsement as a librarian requires 27 quarter hours in library science; endorsement as a teacher-librarian requires 18 quarter hours in library science. At the undergraduate level, only a minor in 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.

Each student should work closely with his faculty adviser in planning his program of study. The chosen curriculum must be followed as outlined to assure graduation and certification, and any proposed substitution for a required course should be filed for approval before the end of the junior year.

I. Curriculum for Elementary Teachers (K-9)

Communications (12 hours)
English 1510-20 (4, 4); Speech 2021 (4) or 2311 (4) 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 Modern Foreign languages (advanced introductory level), philosophy, religious studies, Art 1815 or 1825, or Music 1210 or 1220

Mathematics (9 hours)
Mathematics 2110, 2120, 2130

Natural Science (20 hours)
8 or 12 hours in Biological Science. Recommended series are Biology 1210, 1220 (120) or Botany 1110, 1120. 8 or 12 hours in Physical Science. Recommended series are Physics 1410, 1420 (1430) or Geology 1510-20 or Astronomy 2110, 2120, 2130 or Chemistry 1110, 1120 (1130)

Social Studies (18-20 hours)
History (4 hours) - It is recommended that the history course be taken at the sophomore level. Electives (14-16 hours) from anthropology, economics, geography, political science, and sociology. Minimum of 3 areas required.

CORE PROFESSIONAL COURSES (9 hours)
Educ. C & I 3101*, 3020, 3030*

ELEMENTARY EDUCATION COURSES (36 hours)
Educ. C & I (Methods): 3281, 3291, 3292, 3293, 3294, 3295*

SPECIALIZED COURSES (18 hours)

EDUCATIONAL PSYCHOLOGY 2430 (3 hours); Art Education 2110, 2120, 2130, 2140 (6 hours); Edu. C & I 3550 (3 hours)

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, RACID, Art Education

Black Studies Courses from at least 3 different fields must be included. See Black Studies in General Catalog for specific course possibilities

Child Study Requirements plus 15-16 hours from Child Development, Psychology, Educational Psychology

Early Childhood Education Kindergarten-Grade 3. To include Educ. C & I 14450 and 4451; Educational Psychology 4760 or Child Development and Family Relationships 3210; Anthropology 2530 or upper division anthropology or sociology course above 2130; 3 hours elective from Anthropology, Child Development, Special Education 3520, or other courses dealing specifically with young children. All courses must be completed prior to student teaching. Student teaching will be in Kindergarten and Grades 1-3.

Foreign Language 16 hours
Health and Physical Education Requirements plus 15-16 hours from Health Education, Physical Education, Emotional Health, Nutrition, Zoology

Humanities Requirements plus 16 hours

Language Arts Requirements plus 16 hours in English, Speech, Journalism

Library and Information Science Requirements plus 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 hours

Middle Schools 15-16 hours, to include Educ. C & I 4340; Ed. Psychology 3810; Educ. C & I 3520 or 4280; Educ. C & I 3653 or 3653, or 3854 or 3657 or 4665 (a second methods course); Educ. C & I 4341 or 4351 or 4352; lab experience in middle school.

Music Requirements plus 16 hours

Music Requirements plus 16 hours

Social Science Requirements plus 15-16 hours

Special Education 15 hours. (If certification is desired in Special Education area of Crippling and Special Health and/or Partially Seeing additional

Requires admission to Teacher Education Program.

hours are required, including one additional quarter of student teaching.)

a) Crippling and Special Health Conditions (18 hours) Special Education and Rehabilitation 4150, 4333, 4345, 4921; Child Development 4610 or Human Services 2990, 3 hours from Special Education 3520, 4130, 4160 or 4250.

b) Partially Seeing (21 hours) Special Education and Rehabilitation 4150, 4110, 4120, 4150, 4250, 4840; Office Administration 2110 (for those lacking high school course in typewriting.)

ELECTIVES (21-25 hours)

TOTAL MINIMUM REQUIRED 191 hours

II. Curricular for Secondary Education (7-12)

GENERAL EDUCATION .......................... 69 hours

Communications (12 hours)
English 1510-20 and Speech 2311

Health and Physical Education (9 hours)
Including at least 3 hours of School Health or Public Health or Nutrition (P. E. must be represented)

Humanities (16 hours)
Arts hours from among English 2510-20-30-40-60-70-80-90, plus 12 hours of electives from anthropology, art, English literature, Library and Information Science 3510-30-40-50-60, foreign language (beyond introductory level), history (upper-division), music, philosophy, or religious studies. (NOTE: At least three fields must be represented.)

Mathematics (4 hours)

Natural Science (12 hours)
A biological science, a physical science, or a combination of the two.

Psychology (4 hours)
Psychology 2500

Social Studies (12 hours)
Two fields should be represented from anthropology, economics, geography, history, human services, political science, and sociology

CORE PROFESSIONAL EDUCATION ............... 9 hours
Educ. C & I 3101*, 3020, 3030*

SPECIALIZED PROFESSIONAL EDUCATION ....... 33 hours

Educational Psychology 3810; 6 hours of appropriate methods courses; Educ. C & I 3412; 22-23; 4710-20, 22-23; 4710-20, and 6 hours of electives selected from the College of Education. NOTE: An appropriate special methods course must be taken in each subject and/or area in which area in which endorsement is sought:

English
Educ. C & I 3657 and 3658

Foreign Language
Educ. C & I 3562 and 3563

Mathematics
Educ. C & I 3751 and 3752

Science
Educ. C & I 3654 and additional methods course

Social Studies*
Educ. C & I 3653 and additional methods course

TEACHING SUBJECT AREAS AND ELECTIVES .......... 72 hours
See outline of the programs below.

TOTAL MINIMUM REQUIRED .......................... 183 hours

PROGRAMS AVAILABLE

Program majors leading to graduation and certification for high school teaching range from the broad fields, comprehensive major to the subject major and minor combination programs.

*Includes History, Economics, Geography, Sociology, Political Science, Psychology

Mathematics 2012 recommended for students who will take only 4 hours.

Requires admission to Teacher Education Program.

At least one must be taken concurrently with a special methods course.
A. English Education

1. English with a Minor
   a. 45 quarter hours in English, including three in English language (4410, 4420, 4430). Nine of the 45 hours may be in speech, provided the student is not minoring in speech.
   b. 27 hours in some other subject which constitutes a minor. (If a student who elects to minor in a foreign language does not have two entrance credits in a foreign language from high school, he must take 36 hours in a foreign language.)
   c. 30 students enrolled in this program must take two English methods courses: Education 3657 and 3658.

B. Foreign Language Education

1. Foreign Language Area
   a. 36 quarter hours in one language with no less than 18 quarter hours of upper division courses.
   b. 27 quarter hours in another language with no less than 18 quarter hours of upper division courses.
   c. 9 hours of general and applied linguistics.

2. Foreign Language Major and Minor
   a. 45 quarter hours (9 less quarter hours if based upon 2 entrance credits from high school) and one language with no less than 27 quarter hours of upper division courses.
   b. 27 quarter hours in another subject.

C. Mathematics Education

1. Area Majors in Mathematics
   a. Mathematics and Physical Sciences (75 hours)
      (1) Mathematics (27 quarter hours) must include at least 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 selected from each of the following categories:
         (a) Algebra: Mathematics 3090, 3120, 3720, 4150, 4160, 4170
         (b) Analysis: Mathematics 3100, 3110, 4510, 4520, 4530
         (c) Geometry: Mathematics 3130, 3230, 3240, 3310
         (d) Probability: Mathematics 3050, 3060, 4560, 4660, 4670
   b. Physical Sciences—12 quarter hours in each of the following: chemistry, geology, physics**.
   c. Electives—12 additional quarter hours in physical sciences and/or mathematics.
   (4) A student may not receive credit for both Mathematics 1540 and Mathematics 1500. A maximum of sixteen hours credit may be obtained in mathematics from courses numbered below 2000.


b. Mathematics and Related Sciences (72 hours)
   (1) Mathematics (36 quarter hours)—Must Include at least 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 selected from each of the following categories:
         (a) Algebra: Mathematics 3090, 3120, 3720, 4150, 4160, 4170
         (b) Analysis: Mathematics 3100, 3110, 4510, 4520, 4530
         (c) Geometry: Mathematics 3130, 3230, 3240, 3310
         (d) Probability: Mathematics 3050, 3060, 4560, 4660, 4670
   (2) Related Sciences—12 quarter hours in physics** and 12 quarter hours in each of two of the following subjects: astronomy, biology, botany, chemistry, geology, microbiology, zoology.
   (3) A student may not receive credit for both Mathematics 1540 and Mathematics 1500. A maximum of sixteen hours credit may be obtained in mathematics from courses numbered below 2000.

Endorsements: Mathematics, General Science.

E. Science Education

1. Area Majors in Science
   a. Biological Science (72 hours minimum)
      One year sequence in two of the following:
      *Biology 1210-20, 20-30 or Botany 1110-20-40
      Biology 2110-20-30
      Microbiology 2010
   b. Biological Science Electives—Approved electives must be selected from one or more of the following:
      Botany, zoology, microbiology or biochemistry.
   c. Minimum requirement in Biological Sciences consists of 60 hours (12 hours in Chemistry required, excluding 1410 series).

Endorsements: Biology and General Science+ (Life or biological science)

b. Earth and Environmental Sciences (72 hours minimum)
   Includes 12 hrs Biological Science required, and 12 hrs Science Electives selected from Astronomy, Chemistry (excluding 1410 series), Geological Sciences, and Physics.
   - Geology - 18 hours
     - Astronomy - 8 hours
   - Physics (excluding 1410 series) - 8 hours
   - Geography (in area of physical geography) - 4 hours
   - Courses in meteorology or climatology - 4 hours
   - Courses in cartography, conservation of natural resources, oceanography, or soil science - 6 hours.

Endorsements: General Science+ (Biological, earth, or physical science courses)

C. Natural Science (72 hours minimum)
   Basic requirement of 12 hours in each of four of the following subjects:
   - Biology 1210-20-30 or Botany 1110-20-40
   - Biology 2110-20-30
   - Chemistry series (excluding 1510 series)
   - Physics (excluding 1410 series)
   - Mathematics (excluding 1020, 1202, 2020, and 2110-20-30)
   - Approved Science Electives - 24 hours minimum, including a total of six quarter hours of course work in one subject area, other than Math.

Endorsements: General Science+ (Biological or Physical Science)

2. Subject majors in Science
   The only single subject majors in science leading to teacher certification are: chemistry, physics, majors - 45 quarter hours; Minors - 27 quarter hours.

Endorsements: Major Subject

F. Social Studies Education

Program I
   Broad fields Social Science (Major 72 hours)
   Certification includes Economics, Geography, History, Political Science and Sociology,
   - 28 quarter hours in history, including eight in American history and eight in European or world history.
   - 8 quarter hours in each of the following: economics, geography, political science, and sociology.
   - 4 quarter hours in anthropology.
   - 7-8 additional quarter hours in the above-listed or related fields.

Program II
   Specific subject major (45 hours plus 27 hours for major or minor).

Minor. 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.

* Plant and animal science courses required.
** Only one freshman level biological science series permitted.
** 27 quarter hours minimum required for certification in any single area.

III. Art and Music Education

A. Art Education

GENERAL EDUCATION .............. 67-69 hours
Communications (11-12 hours)
   English 1510-20 (4, 4) 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, philosophy, foreign
   language above freshman level, upper divi-
   sion history, library service, religion, or music.
Mathematics (4 hours)
Natural Science (12 hours)
   Any twelve hours from the biological and/or
   physical sciences.
Psychology (4 hours)
   Psychology 2500 (4)
Social Studies (12 hours)
   Any twelve hours from at least two areas.
CORE PROFESSIONAL EDUCATION ......... 9 hours
   Ed. & C.I. 3010*, 3020, 3030*
SPECIALIZED PROFESSIONAL
EDUCATION ............................................. 24 hours
   Appropriate methods course(s) and student
   teaching: Ed. & C.I. 4710*, 4720*; Ed. Psych. 2430 or
   3810; and a senior elective in the College of Educa-
   tion.
TEACHING AREAS AND ELECTIVES ... 84 hours
   A. Major (60 hours)
      Art Educ. 2100, 2120, 3920, 3210, 4120, 4130,
      4150, 4160.
      Art 1115, 1125, 1135. Plus twelve quarter hours
      in a single studio area and twelve additional hours
      distributed over three other studio areas.
   B. Minor (24 hours)
      May be taken in any area offering a minor.
   TOTAL MINIMUM REQUIRED ............ 187 hours

B. Music Education
GENERAL EDUCATION ......................... 65-67 hours
Communications (11-12 hours)
   English 1510-20 (4, 4) and 3-4 hours in Speech
Health and Physical Education (9 hours)
   Activities courses in physical education plus
   School Health 3510.
Humanities (14 hours)
   Music 2310-20, literature course, and one elective
   from art, anthropology, literature, foreign language
   beyond introductory level, upper division history,
   philosophy, or religious studies.
Mathematics (4 hours)
Natural Science (11-12 hours)
   Three courses from the Biological and/or Physical
   Sciences, to include Physics 1810
Psychology (4 hours)
   Psychology 2500 (4)
Social Studies (12 hours)
   Any 12 hours, to include at least two areas.
CORE PROFESSIONAL EDUCATION ......... 9 hours
   Ed. & C.I. 3010*, 2020, 3030*
SPECIALIZED PROFESSIONAL
EDUCATION ............................................. 24 hours
   Appropriate methods course(s) and student
   teaching: 4710*, 4720*; Educ. Psych. 2430 or 3810;
   and a senior elective in the College of Education.
TEACHING AREAS AND ELECTIVES . 78-93 hours

Concentration in Vocal Music (Voice Principal)
   a. 21 quarter hours in Music Education. 1010-20;
      2110; 2411; 2421; 2423; 2433; 3130; 3150; 4420;
      4510.
   b. 55 quarter hours in Music. 1111-21-31; 1113-23-
      33; 2111-21-31; 2113-23-33; 2320-30-40; voice 22
      hours; plus piano proficiency and required
      ensembles.
Concentration in Vocal Music (Piano or Organ
   Principal)
   a. 21 quarter hours in Music Education. 1010-20;
      2110; 2411; 2421; 2423; 2433; 3130; 3150; 4420;
      4510.
   b. 61 quarter hours in Music. 1111-21-31; 1113-23-
      33; 2111-21-31; 2113-23-33; 2320-30-40; piano or
      organ 22 hours; voice 6 hours; plus required
      ensembles.
Concentration in Elementary Music Education
   (Voice Principal)
   a. 27 quarter hours in Music Education. 1010-20;
      2110; 2411; 2421; 2431; 3141-42; 3150;
      4420; 4441-42-43; 4450.
   b. 55 quarter hours in Music. 1111-21-31; 1113-23-
      33; 2111-21-31; 2113-23-33; 2320-30-40; voice 22
      hours; piano proficiency; required ensemble partici-
      pation.
Concentration in Elementary Music Education
   (Piano or Organ Principal)
   a. 27 quarter hours in Music Education. 1010-20;
      2110; 2411; 2421; 2423; 2431; 3141-42; 3150;
      4420; 4441-42-43; 4450.
   b. 61 quarter hours in Music. 1111-21-31; 1113-23-
      33; 2111-21-31; 2113-23-33; 2320-30-40; piano or
      organ 22 hours; voice 6 hours; required ensem-
      ble participation.
Concentration in Instrumental Music
   a. 26 quarter hours in Music Education. 1010-20;
      2411-12-13; 2421-22-23; 2431-32-33; 3130; 3150;
      3410; 4420; 4430.
   b. 67 quarter hours in Music. 1111-21-31; 1113-23-
      33; 2111-21-31; 2113-23-33; 2320-30-40; 3112;
      3122 or 4124; principal instrument 22 quarter
      hours; secondary instrument 6 quarter hours;
      piano proficiency; participation in required
      ensembles.
   c. Music Education 4460 is required for all students
      whose principal instrument is wind or percussion.
   TOTAL MINIMUM REQUIRED .......... 190-207 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 advisor 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: Vol Chorus; UT Singers; University
      Glee Clubs; Madrigal 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.

IV. Health, Physical Education, Recreation, and Safety

A. Concentration in Elementary Physical Education (1-9)
GENERAL EDUCATION ......................... 86 hours
Communications (11 hours)
   English 1510-20 (4, 4) and Speech 2021 or 2311
   (4)
Humanities (15 hours)
   English 2510 or 2520 (4); plus 11 hours of electives
Social Studies (15 hours)
   Sociology 1510 (4) plus 11 hours of electives
Natural Science (24 hours)
   Chemistry 1510-20, Physics 1410, and Zoology
   2920-30 and 4940
Mathematics (4 hours)
   Psychology (4 hours)
   Psychology 2500 (4)
Health and Physical Education (12 hours)
   School Health 3000 and 3420; Physical Education
   Activities (6 hours); including P. E. 2012, 2020, 2022,
   2025, 3150
CORE PROFESSIONAL EDUCATION ......... 9 hours
   Ed. & C.I. 3010*, 3020, 3030*
SPECIALIZED PROFESSIONAL EDUCATION ... 27 hours
   Ed. Psych. 2430; Educ. C.I. 4810*-.20*, 3150, 4750;
TEACHING AREAS AND ELECTIVES ....... 72 hours
Elementary Physical Education (48 hours)
   P. E. 1000; P. E. 3510; P. E. 3540; P. E. 3550;
   P. E. 3560; P. E. 3570; P. E. 3660; P. E. 3670;
   P. E. 3680; P. E. 3320; P. E. 4110; P. E. 4150;
   P. E. 3330; P. E. 4440; P. E. 3260; and 6 hours of P. E.
   elective activities.
Cognate Course and Electives (24 hours)
   CDFR 3210 and 21 hours to be used for endorse-
   ment, minor, or free electives. (None of the 21 hours
   may be taken in lower division physical education).
MINOR IN ELEMENTARY PHYSICAL EDUCATION
OPEN ONLY TO STUDENTS WITH A CON-
CENTRATION IN SECONDARY PHYSICAL ED-
UCATION:

* Requires admission to Teacher Education Program.
** The completion of 21 quarter hours of art education and 21
   quarter hours in section 2 above will be accepted as the 90%
   completion of 24 courses in the endorsement area requirement
   prior to student teaching.
B. Concentration in Secondary Physical Education (7-12)

GENERAL EDUCATION .................................. 89 hours
English 1510-20; Speech elect.; Chemistry (1510-20 suggested); Physics 1410; Zoology 2920-30 and 4940; Mathematics elective; School Health 3210; Humanities electives (15 hours) selected from: English literature; anthropology; art; foreign language; music; philosophy; religion; dance appreciation; related arts and crafts. Social Studies electives (21 hours) selected from: History; anthropology; economics; geography; political science; sociology; geology; psychology. Psychology 2500, Physical Education Activities (6 hours): P.E. 1020, 1021 or 1022, 2012, 2022, 2032.

PROFESSIONAL EDUCATION .......................... 32 hours
Education CAI 3010-20-30*, Educ. Psych. 3810; Educ. C&I 4710-20; Educ. elective (3 hours); Physical Education 3260 (Practicum, field experience - 2 hours).

SPECIALIZED PROFESSIONAL EDUCATION ........ 48 hours
P.E. 1000; 3210; 3310; 3320; 4110; 4120; 4230; 3220 or 3370; 4310; 4440 or 4450; 3330, 4410 or 3010; 3180; 3240; and 13 electives from any upper division P.E. course.

ELECTIVES .............................................. 27 hours
Hours to be used for minor, endorsement, or electives. One of the 27 hours may be taken in lower division physical education.

TOTAL MINIMUM REQUIRED ...................... 196-197 hours

C. Minor in Dance (27 hours)
P.E. 2040-50-60; 3010; 3020 or 3030; 3050; 3060; 3070; 3090; 3151; 4010; 4090, 4330 or 4340-50, 4550.

TOTAL MINIMUM REQUIRED ...................... 196 hours

D. Concentration in Recreation

GENERAL EDUCATION ................................. 97 hours

Natural Sciences (16 hours minimum) 4 hours selected from: Chemistry, Physics, General Astronomy, or Geography 3550; 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) Selected from: Mathematics 1540-50-60, 1840-50-60, 2012; Statistics 2100

Social Sciences (16 hours minimum) Sociology 1510 and 4530 At least 9 additional hours selected from: Sociology 1520, 3130, 4510, 4330, 4830, or Rural Sociology 3420 or Human Services 2690, 4900, 3300 or Political Science 2530, 2020, 2510-20, 3565-66, 3710-20-30

Behavioral Sciences (16 hours minimum) Psychology 2500 At least 12 additional hours selected from: Psychology 2520, 3120, 3850, 3650, 4550, 4610 or Educational Psychology and Guidance 2430, 2510, 2520, 4130, 4800 or Child Development and Family Relationships 2110, 3210, 3220, 4260, 4610, 4810

Communications (15 hours minimum) English 1510-20, Speech 2311 At least 3 additional hours selected from Speech 2351, 3021, Communications 1110; Journalism 2210, 3710; Educ. C&I 4750

Health and Safety (3 hours minimum)
School Health 3210 or Safety 3520

*Requires admission to Teacher Education Program.

Humanities (16 hours minimum) At least 4 hours selected from: English 2000-level and above At least 3 hours selected from History At least 9 additional hours selected from English 2000-level and above, History 2510-20, 2350, 2950, Anthropology 2520, Geography 2810, 2820, 2910-20, 3210-30, 3320-30, 4330, 4010, Philosophy 1510-20, 2530, 3315, 3630, 3910, 2550, Religious Studies 2610, 2611, 2620

Cultural Arts (12 hours minimum) 4 courses from at least 2 of the following arts: Music 1210-20, 4241-51, 4260, 4270 Theatre 1510, 3252-53-54, 3262-63 Art 2715, 1815-25 P.E. 3090, 2010 (Dance)

PROFESSIONAL RECREATION EDUCATION .................. 22-30 hours Recreation 1100, 3140, 3100, 3200, 4130, 4200, 3880, 4500

FIELD STUDY ........................................... 18-33 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: Art: Art 1115-25, 2115, 2215, 2315, 2515, 2516, Art Education 2100, 2110, 2120 Crafts: Art Education 3110, 3920, 3930, 4150, RACID 4410, 3310-20-30, 3410-20-30, 3510-20, 3710-20, 4510-20 Light 2120 Dance: Physical Education 4310, 3010-20-30, 3040, 3100, 4320 Dramatics: Theatre 1510, 1520-30, 2111, 2211-21, 2312-22-23 Music: Music Education 4410, 2110, 1010-20-30, Music 1500 through 1595 series, membership in choral or instrumental group Outdoor Recreation and Camping: Physical Education 3710, Forestry 4440, Educ. C&I 4380, 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

E. Concentration in Public Health

GENERAL EDUCATION ................................. 85 hours

Communications (12 hours) English 1510-20 (4, 4) and Speech 2311 (4)

Health and Physical Education (10 hours) Public Health 3000 (3) Public Health 3210 (3) Physical Education Electives (4)

Humanities (16 hours) English—any 4 hours from literature Anthropology 2520 (4) 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 (4, 4) or Zoology 2920-30 (4, 4)

Psychology (4 hours) Psychology 2500 (4)

Social Studies (19 hours) Economics 2110 (3) Geography 2110 (4) or 2120 (4) or Political Science 2510 (4) or 2520 (4) History 1510-20 (4, 4) or 2510-20 (4, 4) Sociology 1510 (4)

CORE PROFESSIONAL EDUCATION .................. 9 hours Ed. C&I 3010-20-30* (3, 3, 3)

SPECIALIZED PROFESSIONAL EDUCATION ........ 24 hours Education C&I 4750 (3) Education C&I 4780 (3) and 4720 (6) Educational Psychology 3810 (3) School Health 3650 (3)


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

*Requires admission to Teacher Education Program.

** Specific course requirements will appear on curriculum sheets used by faculty advisors.

V. Special Education*

GENERAL EDUCATION ................................. 82-85 hours
Communications (11-12 hours)
English 1510-20, 44, 46, and 3 hours in Speech

Health and Physical Education (9 hours)
Activities courses in physical education plus 90 minutes in Health

Humanities (15-16 hours)
At least 12 hours from literature, plus 12-11 hours of electives from anthropology, art, literature, Library and Information Science 3510-20-30, foreign language beyond introductory level, upper division history, music, philosophy, or religious studies.

Mathematics (4 hours)

Natural Science (20 hours)
Any combination of the biological and physical sciences with 12 hours from one area (biological or physical) and 8 hours from the other.

Psychology (4 hours)
Psychology 2500 (4)

Social Studies (19-20 hours)
History 1510-20, 44, 46, and 3250-20 (4, 4) plus a minimum of 11-12 hours from three of the following: anthropology, economics, geography, political science, sociology.

CORE PROFESSIONAL EDUCATION

...9 hours
Ed. C 3 & I 3010*, 3020, 3030*

SPECIALIZED PROFESSIONAL ELEMENTS

...24 hours
Appropriate methods course(s) and student teaching: Ed. C&I 4710*, 4720*; Ed. Psych 2430 or 3610; and a senior elective in the College of Education.

TEACHING AREAS AND ELECTIVES

...hours will vary according to program and endorsements.

A. Concentration in Educable Mentally Retarded

b. Special Education and Rehabilitation 3333, 3520, 4110-20-30, 4350, 4810, 4811, 4922, and 9 quarter hours Special Education and Rehabilitation electives.

c. Education 3260, 3280, Education Reading elective, Education Arithmetic elective, Education elective.

M. Educational Psychology 2430 or Psychology 3550, Educational Psychology Diagnostic Measurement elective.

d. Psychological and physical growth (6 hours) from following: Psychology 2130, 3210, 3220, Education 4860, Educational Psychology 4860, 3730, and Educational Media.

f. 9 quarter hours of general electives.

B. Concentration in Educable Mentally Retarded (Secondary)

a. Special Education and Rehabilitation 3333, 4110-20-30, 4350, 4440, 4481, 9 quarter hours of Special Education and Rehabilitation electives, Special Education and Rehabilitation (rehabilitation) elective, Educational Psychology 3810, Education Reading elective, Diagnostic Measurement elective.


c. 9 quarter hours from following: Educational Psychology 2430, 4860, Psychology 2130, 3210, 3220, Education 4860.

C. Concentration in Multiple Disabilities

Ed. Psychological 2430, a course in Diagnostic Measurement, Educational Psychology 4130 or Child Development 3220, Art Education 2100 and 3 hour elective, Music Education 2110 or 3110, Music Education 3110 or 4440, Library and Information Science 3510, Education (Ed. C&I 3010, 3020, 3160, 3260, 3280, 3350, 3720, 4260, 4280).

b. Special Education and Rehabilitation 3333, 3520, 4110 or 4210, 4130, 4150, 4160 or 4260 or 4610, 4350, 4840, 4921.

c. 18 quarter hours of General Electives.

D. Concentration in Emotionally Disturbed (Secondary)

a. Special Education and Rehabilitation 3333, 4130, 4610, 4620, 4630, 4640, 4650, Special Education and Rehabilitation electives 9 quarter hours.

b. Education Reading elective, Diagnostic Measurement, Educational Psychology 3810 and Educational Psychology 2430 or Psychology 3550.

c. 12 hours from the following: Psychology 2130, 3120, 3210, 3220, 4520, or Educational Psychology 4130 or Psychology 3650, or Any combination from Educational Psychology 4760, 4860, 3730.

d. Requirements for a minor in a subject area must be met (minimum of 24 hours).

e. Education (Ed. C&I 4720* and Special Education and Rehabilitation 4924 and one methods course in minor field.

Total Minimum Required: Total hours required for endorsement in various special education programs appear on curriculum sheets available from the faculty adviser.

E. Concentration in Emotionally Disturbed (Elementary)

General Education 

...91 hours

Communications (12 hours)

...English 1510 and 1520; Speech 1211 or 1221 or 2231.

Health and Physical Education (14 hours)

School Health 3610, Physical Education 3450; P.E. and Health electives (must include a minimum of 3 hours in each area).

Humanities (12 hours)

Literature (8 hours); Elective chosen from Philosophy, English or foreign language above freshman level, or course from Art 1815 series, or from Music 1210 series.

Mathematics (9 hours)

Mathematics 2110-20-30

Natural Science (20 hours)

8-12 hours Biological Science/Botany 1110-20-40 or Biology 1210-20-30

8-12 hours Physical Science/Physics 1410-20-30 or Geology 1510-20 or Astronomy 2110-20-30 or Chemistry 1110-20-30.

Social Studies (20 hours)

History (4 hours) chosen from 1510-20, 1610, 1950, 2510-20 (or appropriate alternative); Electives (15-16 hours) from three of the following: Anthropology, Economics, Geography, Political Science, Urban Services, or Sociology.

Psychology (4 hours)

Psychology 2500 or 2505

Core Professional Courses 

...9 hours
Ed. C&I 3010*, 3020, 3030*

Specialized Professional Education 

...105 hours
Ed. Psych 2430 and 4460 (6 hrs.)

Art Ed. 2100-2110, Music Ed. 2100-3110, Music Ed. 3150 (15 hrs.)

Ed. C&I 3260*, 3270*, 3280*, 3281*, 3350*, 3720* (18 hrs.)

Art Ed. and Rehab. 3333, 4610, 4620, 4630, 4640 (18 hrs.)


f. Student Teaching (30 hours)

Total Hours For Graduation 

...205 hours

*Requires admission to Teacher Education Program

Recommended Electives

F. Concentration in the Hearing Impaired

...8 hours

a. Specialization in Early Childhood Development

General Education 

...81-85 hours

Communications (12 hours)

...English 1510, 1520; Speech 1211 or 2311.

Health and Physical Education (10 hours)

...Anglo Health 3510, Physical Education 3450; Physical Education Electives.

Psychology 2500 (4 hours)

Humanities (15-16 hours)

...English Literature

11-12 hours electives (choose 2 areas): Anthropology, Art, History, Philosophy, foreign language (above introductory level); Religious Studies, Music, Library and Information Science.

Mathematics 2110 (3 hours)

Natural Sciences (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 (17-20 hours)

...History 1510-20 or 2510-20

...Choose 3 are: Anthropology; Economics; Geography; Political Science; Sociology.

Core Professional Education 

...9 hours
Ed. C&I 3010*, 3020, 3030*

Specialized Professional Education and Major 

...65 hours
Audiology and Speech Pathology elective (3050 recommended); 3310, 4710 (or Special Education 4240, 4710, 4930, 4960, 4990, Special Education 3333, 4310, 4260, 4210, 4220, 4230, 4250, 4260, 4280, 4290, 3430, 4370, 4870, 4871, Special Education elective, and Pre-Student Teaching Seminar.

Area of Specialization 

...30-39 hours
CDDR 4110 or 4630; choose 27-36 hours from the following: CDDR 3110, 3120, 3210 & 3220 (or Educational Psychology 2430), 3610, 4110, 4230, 4350, 4420, 4610, 4620, 4630, electives; Ed. C&I 4450, 4451; Special Education 5620.

Total Minimum Required 

...185 hours

*Requires admission to Teacher Education Program.
c. Specialization in Secondary Education

General Education ............................................. 82-83 hours

Communications (12 hours)
English 1510, 1520; Speech 1211

Health and Physical Education (9 hours)
School Health 3510 and Physical Education Electives

Humanities (15-16 hours)
English Literature; 11-12 hours electives (choose from two areas): Anthropology, Art, History, Philosophy, foreign language (above introductory level), Religious Studies, Music, Library and Information Science

Mathematics 2012 (4 hours)

Natural Sciences (20 hours)
If major is Science Ed., student must take 12 hours in the biological sciences.
8-12 hours in Biological Science

Botany 1110-20; 8-12 hours in Physical Science; Physics 1202-20; Geology 1510-20; Astronomy 2110-20; Chemistry 1110-20

Social Studies (18-20 hours)
History 3510-20

Select 3 areas: Anthropology, Economics, Geography, Political Science, Sociology

Core Professional Courses .................................. 9 hours
Educ. C 301*, 3020, 3030*

Specialized Professional Education in Mathematics 3310 and appropriate methods course for major area

Deaf Education Courses ................................. 65 hours
Audiology and Speech Pathology elective (3050 recommended); 3310, 4710 (or Special Education 4240, 4241, 4710, 4830, 5960); Special Education 3333, 4190, 4200, 4210, 4220, 4230, 4250, 4280, 4290, 4360, 4370 (or Educ. C 3521-23, 4870, 4871, Special Education elective, 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 for Graduation and Deaf Education Certification .... 192 hours

d. Specialization in Multiply Handicapped

General Education ............................................. 82-83 hours

Communications (12 hours)

English Language
School Health 3510; Physical Education 3450 and Physical Education electives

Psychology 2500 (4 hours)

Humanities (15-16 hours)

English Literature
12 hours electives -choose 2 areas: Anthropology, Art, History, Philosophy, foreign language (above introductory level), Religious Studies, Music, Library and Information Science

Mathematics 2110 (3 hours)

Natural Sciences (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 1202-20; Geology 1510-20; Astronomy 2110-20; Chemistry 1110-20

Social Studies (18-20 hours)

History 3510-20

Choose 3 areas: Anthropology, Economics, Geography, Political Science, Sociology

Core Professional Courses .................................. 9 hours
Educ. C 301*, 3020, 3030*

Specialized Professional Education in Mathematics 3310 and appropriate methods course for major area

Audiology and Speech Pathology elective (3050 recommended); 3310, 4710 (or Special Education 4240, 4241, 4710, 4830, 5960); Special Education 3333, 4190, 4200, 4210, 4220, 4230, 4250, 4280, 4290, 4360, 4370, 4870, 4871, Special Education elective, and Pre-Student Teaching Seminar.

Area of Specialization .................................... 30 hours

Selected from the following courses:
Special Education 3310, 3333, 3520, 4110, 4120, 4130, 4150, 4160, 4440, 4610, 4620, 4840, 5400, 5401, 5820, and Special Education electives.

Total Minimum Required ....................... 186 hours

*Requires admission to Teacher Education Program.

G. Concentration in Speech and Hearing

General Education ............................................. 84 hours

Communications (12 hours)

History 1510-20, Speech 2311

Health and Physical Education (9 hours)
Activities courses recommended plus Health and Physical Education electives (both areas must be represented)

Humanities (15-16 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

Mathematics elective (4 hours)

Natural Science (20 hours)
12 hours from one sequence and 8 hours from the other biological and physical science

Psychology 2500 (4 hours)

Social Studies (20 hours)

History 1510-20 or 2510-20 (8 hours) plus 12 hours representing three areas from: Anthropology, Economics, Geography, Political Science, Sociology

General Electives (6 hours)

Core Professional Education ............................. 9 hours
Educ. C 301*, 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 ............................ 65 hours
Special Education 3333, three-hour elective (4110 or 4130 recommended)

Audiology and Speech Pathology (or Special Education) 3310, 4040, 4049, 4310, 4400, 4710, 4720, 4930.

Audiology and Speech Pathology 3040, 3050, 3060, 3070, 3090, 4060, 4610, 4650.

Clinical Practicum Courses (12-15 hours)**
Audiology and Speech Pathology (or Special Education) 3420-30-40; Special Education 4341, 4342.

Total Minimum Required ...................... 183 hours

*Requires admission to Teacher Education Program.

H. Concentration in Crippling and Special Health Conditions

a. Completion of Elementary (K-9) or Secondary Education Curriculum

b. Special Education and Rehabilitation 3333, 4150, 4840, 4921;

c. Child Development 4610 or Human Services 2190;

d. Three quarter hours selected from Special Education and Rehabilitation 3520, 4110, 4120, 4150, 4250;

I. Concentration in Partially Seeing

a. Completion of requirements of Elementary (K-9) or Secondary Education Curriculum;

b. Special Education and Rehabilitation 3333, 4150, 4850, 4923;

c. Six quarter hours selected from the following: Special Education and Rehabilitation 3520, 4110, 4120, 4150, 4250, 4840;

d. Office Administration 2110 (for those lacking high school credits in typing/writing).

TOTAL MINIMUM REQUIRED:

Total hours required for endorsement in the above Special Education programs appear on curriculum sheets available from the faculty advisers.

VI. Vocational-Technical Education

A. Business Education

See Curricula for Secondary Education (7-12) p. for General Education and Professional Education requirements.
63 quarter hours in business and economics to meet five business endorsement areas approved by the department adviser. A statement of requirements and alternative programs may be obtained from the chairman of Business Education.

B. Distributive Education

GENERAL EDUCATION ............................................. 85 hours

Communications (12 hours)

English 1510-20 and Speech elective

Health and Physical Education (9 hours)
School Health 3510 and Health and P.E. electives

Mathematics (8 hours)

Mathematics 1540 and 1550

Humanities (8 hours)

Literature Elective (4) plus 12 hours humanities elective.

Natural Science (12 hours)

Biological or Physical Science sequence.

Psychology (7-8 hours)

Psychology 2500, Psychology 2520 or E. Psych. 3110

Social Studies (20 hours)

History 1510-20 or 2510-20; Economics 2110-20; 30 plus elective

PROFESSIONAL EDUCATION ............................... 42 hours


SPECIALIZED COURSES ..................................... 45 hours

Business Adm. 1110, Office Adm. 4310 or 4320; Accounting 2110; Marketing 3110-20, 4140, 4310, 4150, 4210; Finance 3120; Industrial Management 3010; Textile elective; Business Law 4110; Distributive Ed. 4140, Advertising 3000.

ELECTIVES ...................................................... 12 hours

TOTAL MINIMUM REQUIRED: ....................... 183 hours

*Requires admission to Teacher Education Program.
C. Industrial Education
GENERAL EDUCATION ........................................ 82-85 hours
Communications (11-12 hours)
English 1510-20 (4, 4) 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)
Any 4 hours from literature; plus 11-12 hours of electives from anthropology, art, literature, Library and Information Science 3510-20,30, foreign language beyond introductory level, upper division history, music, philosophy, or religious studies. (NOTE: at least three fields must be represented).
Mathematics (4 hours)
Natural Science (20 hours)
Any combination from the biological and physical sciences with 12 hours from one area (biological or physical) and 8 hours from the other.
Psychology (4 hours)
Psychology 2500 (4)
Social Studies (19-20 hours)
History 1510-20 (4, 4) or 2510-20 (4, 4) plus a minimum of 11-12 hours from three of the following: anthropology, economics, geography, political science, and sociology
CORE PROFESSIONAL EDUCATION .................................. 9 hours
Ed. CMI 3101, 3200, 3030
SPECIALIZED PROFESSIONAL EDUCATION ............................. 27 hours
Ed. Psych. 3810; and a senior elective in the College of Education.
A cumulative special professional course must be taken in each subject and/or area in which endorsement for teaching is sought.
TEACHING AREAS AND ELECTIVES ............................... 72 hours
a. 45 quarter hours in Industrial Education
b. 27 quarter hours in related fields
NOTE: For Industrial Arts endorsement, 48 hours as approved by Industrial Education advisor are required in the areas of industrial drafting, related arts and crafts, metals, wood construction, plastics, electricity, and mechanics, with not less than 12 hours in each endorsement area.
TOTAL MINIMUM REQUIRED ................................. 167 hours

* Requires admission to Teacher Education Program.

D. Agricultural Education
See page 49 for this program.

E. Home Economics Education
See page 138 for this program.

Departments of Instruction

Art and Music Education
Numbers in parentheses following the course titles indicate quarter hours credit offered.

Art and Music Education

Professors:

Associate Professors:
H. L. Gill, B.S. Milwaukee State Teachers; J. H. Jones, E.D. Columbia.

Assistant Professors:

1010-20-30 Choral Laboratory (1, 1, 1) Choral conducting; methods and materials, required of all Music Education majors. Prereq: approval of instructor.

1210-20-30 Materials, Media, and Techniques of Voice Class Instruction (1, 1, 1) Prereq: approval of instructor.

1511 Field Experiences in Teaching Music (1) Field experiences in which students perform tasks related to teaching and to teacher roles. Satisfactory-No Credit. May be repeated for credit.

2100 Basic Experiences in Classroom Music (3) Vocal, instrumental, rhythmic, listening, music reading, and creative music activities. For all music education majors. Prereq: approval of instructor, one year of Music Theory. 2 hrs and 1 lab.

2350 The Arts in the School Program (3) Art, music, and dramatics in personal and social development. Prereq: 2100; Art Education 2100, 3 labs.

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 instructional 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 instructional materials. 2 hours per week.

2431-32 Methods, Materials, and Techniques of Brass Class Instruction (2, 2) Structure, use, techniques of playing, care and repair of principal instruments in school instrumental organizations. Emphasis on techniques necessary for basic understanding and effective teaching of the instruments. Practical use of current instructional materials. 2 hours per week.

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; Educational Psychology 2430, upper division standing.

3120 Teaching Music in the Intermediate and Upper Grades (3) Singing, rhythmic, instrumental, listening, creative, and music reading activities; evaluation; materials appropriate for grades 4-6. Prereq: And Elementary Education majors. Prereq: Music 2100 or 2110, Educational Psychology 2430, and upper-diision standing.

3130 Teaching Music in the Elementary School (3) Singing, rhythmic, instrument, listening, creative, and music reading activities; evaluation; materials appropriate for grades K-6. For music education majors only. Prereq: 2110; Educational Psychology 2430 or 3810 and two years of Music Theory.

3141 Guiding Musical Learning Experience in the Primary Years (3) Course designed primarily for music education student majoring in elementary music education, in which emphasis is given to musical skills and learnings appropriate for children ages five through eighth. Prereq: 2110; and Educational Psychology 2430.

Music Education (707)

UNDERGRADUATE

1511 Field Experiences in Teaching Art (1) Field experiences in which students perform tasks related to teaching and to teacher roles. Satisfactory-No Credit. 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 hr and 2 labs.

2120 Drawing, Painting, and Design Activities in Elementary School (3) Prereq: 2100. 1 hr and 2 labs.

2120 Drawing, Painting, and Design Activities in Junior and Senior High School (3) Prereq: 2100. 1 hr and 2 labs.

3110 Crafts in the Elementary School (3) Prereq: 2100. 1 hr and 2 labs.

3210 Art in Secondary School Program (3) Program planning; materials and equipment; related to other school experiences. Classroom observation, Prereq: nine quarter hours in art education. 1 hr and 2 labs.

3511 Field Experiences in Teaching Art (1) Field experiences in which students perform tasks related to teaching and to teacher roles. Satisfactory-No Credit. May be repeated for credit.

3920 Clay in School Program (3) Exploring methods of hand-built forms, glazing, and firing procedures. Prereq: 2100. 1 hr and 2 labs.

3930 Textiles in School Program (3) Exploration of processes of weaving, stitching, batik, and silk screen. Prereq: 2100. 1 hr and 2 labs.

4120 Designing of Teaching Aids for Art in School Program (3) Design and preparation of charts, exhibitions, slides, films, and other teaching aids for art grades one through twelve. Prereq: 2100 or consent of instructor. 1 hr and 2 labs.

4130 Three-Dimensional Design in School Program (3) Exploration of wood, wire, metal, plastics, and other sculptural materials. Prereq: 2100 or consent of instructor. 1 hr and 2 labs.

4150 Lettering, Posters, and Displays in School Program (3) Design, layout, techniques and procedures. Prereq: 2100 or consent of instructor. 1 hr and 2 labs.

4160 Appreciation of the Arts in School Program (3) Prereq: 2100 or consent of instructor. 1 hr and 2 labs.

4210 Art in Special Education (3) Techniques and materials for exceptional children. 1 hr and 2 labs.

4350-60-70 Problems in Art Teaching (3, 3, 3) Prereq: Consent of instructor.

GRADUATE

5000 Thesis
5120 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)
Continuing and Higher Education (261)


Associate Professor: J. M. Peters, Ed.D., North Carolina State.

Assistant Professors: W. D. Barton, Ed.D., Tennessee; K. O. McCullough, Ph.D., Florida State.

UNDERGRADUATE

4960 Adult Education: A General Survey (3)
Surveys the historical development of the field, philosophies of adult education, agencies, programs, current issues, and literature of adult education.

GRADUATE

5000 Thesis
5110 Senior in College Teaching (3)
5230 Theory and Research in Human Learning (3)
5360-70 Problems in Continuing and Higher Education (3, 3)
5440 American Higher Education (3)
5450 Instruction in Higher Education (3)
5460 Adult Development (3)
5510 Governance of Colleges and Universities (3)
5550 Fiscal Problems in Higher Education (3)
5660 Program Planning in Adult Education (3)
5860 The Community-Junior College (3)
5955-65 Practicum in Continuing and Higher Education (3, 3, 3)
5960-70 Seminar in Continuing and Higher Education (3, 3)
6450 Community Education for Adults (3)

(See also course listings under the Departments of Curriculum and Instruction, Educational Administration and Supervision, and Educational Psychology and Guidance.)

Curriculum and Instruction (301)

Professors: J. J. Bellon (Head), Ed.D., California (Berkeley); R. K. Burns, Ed.D., Iowa; I. N. Childs (Emeritus), M.A., Missouri; E. S. Christenbury (Emeritus), Ph.D., Georgia; M. A. Christiansen, Ph.D., Kansas; D. J. Dessart, Ph.D., Maryland; H. Frandorfs, Ph.D., Illinois; L. O. Hasby, Ed.D., Columbia; A. M. Johnston, Ph.D., Chicago; A. Malik, Ed.D., Columbia; W. C. Murphy, Ph.D., Alabama; J. R. Ray, Ed.D., Tennessee; R. S. Thurman, Ed.D., George Peabody; A. L. Wantling (Emeritus), Ph.D., Ohio State; A. P. Wishart, Ph.D., Texas; W. W. Wyatt, Ed.D., Missouri.


Assistant Professors: T. W. Bland, Ph.D., Tennessee; E. C. Cagle, Ed.D., Georgia; M. M. Donnelly, Ph.D., Illinois; W. H. Hoff, Ph.D., Florida State; R. L. Hodge, Ph.D., Texas.
3281 Teaching Developmental Reading in the Elementary School (3) Prerequisites: A course in sequence designed to teach content and skills of teaching reading in the elementary school. Prereq: 3280.

3310 History of Education (3)

3320 History of Education in the United States (3)

3350 Teaching Arithmetic in the Elementary School (3) Goals, methods, materials, and evaluation. Undergraduate credit only. Prereq: Educational Psychology 330 or 330H, Mathematics 2110-20-30, admission to Teacher Education. Satisfactory-No Credit.

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. May be taken separately or concurrently by consent of instructor. Must be taken before student teaching. Prereq: see Educ. C & I, Psych. 2430 or equivalent, 3512-13—admission to Teacher Education. Satisfactory-No Credit.

3520 Books and Related Materials for Young People (3) (Same as Library and Information Science 3520.)

3521-22-23 Field Experiences in Teaching: Secondary (1, 1, 1) Field experiences in which students perform tasks related to teaching and to teacher roles. May be taken separately or concurrently by consent of instructor. Satisfactory-No Credit.

3531-32-33 Field Experiences in Teaching: Social Foundations (1, 1, 1) For description, see 3521-22-23. Satisfactory-No Credit.

3561 Teaching of Speech and Drama, Grades 7-12 (3) (For description, see 3653.)

3562 Teaching of Modern Foreign Languages: Oral Communication Skills, Grades 7-12 (3) For description see Educ. C & I 3653. This course and 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 3563. This course and Educ. C. & I 3562 are required for certification in foreign languages. Must be taken concurrently with 3562.

3653 The Teaching of Social Studies, Grades 7-12 (3) Purposes, techniques, materials, and evaluation; directed observation in public schools; preparation of syllabi and syllabus materials. Undergraduate credit only. Prereq: Educational Psychology 3810 or equivalent.

3654 The Teaching of Science, Grades 7-12 (3) For description, see 3653.

3655 The Teaching of Latin, Grades 7-12 (3) For description, see 3653.

3657 Teaching Language, Composition and Speaking, Grades 7-12 (3) For description, see 3653. Both this course and Educ. C & I 3658 are required for certification in English.

3658 Teaching Reading, Literature, and Listening, Grades 7-12 (3) For description, see 3653. Both this course and Educ. C & I 3657 are required for certification in English.

3720 Teaching Science in the Elementary School (3) For description, see 3270.

3751 Teaching of Mathematics: Numerical and Algebraic Concepts, Grades 7-12 (3) For description, see Educ. C & I 3653. 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 3653. Both this course and 3751 are required for certification in Mathematics.

4000 Mathematics Laboratories in the Elementary School (3) Introduction for elementary school teachers or prospective teachers dealing with activity-oriented mathematics laboratory materials and pedagogical strategies for increased enthusiasm, interest, and achievement in mathematics. The essence of elementary concept of learning mathematics through problem solving, project work, problem solving, and self-motivation to seek answers to posed questions.

4010 International Education: Europe and the Americas (3) International, social, philosophical, and sociological foundations for increasing acquaintance with England, USSR, France, and Germany.

4110 Philosophies of Education in Cultural Perspective (3) Education in relation to liberal, conservative, reformation, and radical currents of thought in American culture.

4150 School Library Administration (3) (Same as Library and Information Science 4150.)

4200 Creative Thinking and Expression in the Elementary School (3) Designed to give students opportunity to examine development of creative thought and to develop techniques and strategies as well as an understanding of creativity in relation to child development and self-actualization.

4210 Curriculum in Elementary School Social Studies (3) To study the development and present status of major approaches and trends in elementary school social studies. Prereq: teaching experience or student teaching.

4215 Teaching Elementary School Science (3) Methods and materials used in teaching of science in elementary school. Development of instructional materials and diagnostic/corrective programs. Not open to students with recent course or background in teaching of elementary school science.

4216 Teaching Elementary School 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.

4250 Initiating the Activities Program (3) Prereq: Educational Psychology 2430, six quarter hours of methods of teaching of elementary science, and junior or senior standing.

4260 Philosophy of Education: Introductory Studies (3) Truth, knowledge, and valuation in relation to work of the philosopher. Prereq: 3010, Educational Psychology 2430 or 3810, or equivalents.

4261 Educational Classics (3) Discussion of selected writings on education from Plato to Dewey.

4280 Diagnosis and Correction of Classroom Reading Problems (3) Prereq: 3260 or equivalent.

4300 Developmental Reading in the Secondary School (3)

4301 Teaching Developmental Reading (3) Methods and materials used in teaching of reading in the elementary school. Course deals with development of functional relationships with other curriculum areas, diagnostic work, and remedial work. Not open to students with recent course work or background in the teaching of reading.

4302 Teaching Reading to Linguistically Different Learner (3) Language characteristics and special reading problems associated linguistically different learner. Prereq: undergraduate reading course or 5300.

4340 The Junior High School and Middle School (3) To identify and analyze distinguishing characteristics of the Junior High and Middle School Curriculums.

4350-80-70 Problems in Teaching English (3, 3, 3)

4351-61-71 Problems in Teaching Mathematics (3, 3, 3)

4352-62-72 Problems in Teaching Social Studies (3, 3, 3)

4353-63-73 Problems in Teaching Science (3, 3, 3)

4354-64-74 Problems in Teaching Language Arts (3, 3, 3)

4355-65-75 Problems in General Curriculum (3, 3, 3)

4356-66-76 Problems in Instructional Materials (3, 3, 3)

4357-67-77 Problems in Teaching Foreign Languages (3, 3, 3)

4359-69-79 Problems in Teaching Conservation (3, 3, 3)

4380-90-4400 Problems in the Improvement of Instruction (2, 2, 2) Registration in special conferences, workshops, or inservice programs.

4381 Problems in Early Childhood Education (3) Prereq: for a total of 9 hrs. Six hrs can be taken concurrently.

4410 Educational Sociology (3) (Same as Sociology 4410.)

4430 Directing Learning in the Elementary School (3) For students who have had sophomore status. Must be taken with 4850. Prereq: 18 hours in education. Undergraduate credit only.

4450 Teaching in Kindergarten: Overview (3) Relationship of kindergarten to total elementary programs; goals, historical settings and current developments.

4451 Teaching in Kindergarten: Program Development (3) Curriculum planning and organization; classroom management. Prereq: Education C 4450 or permission of instructor.

4510 Teaching Modern Languages in the Elementary School (3) Trends, content, methods, and materials. Prereq: completion of a 3000-level sequence in one modern foreign language or consent of instructor.

4530 Home and School Relations (3) Study of need and techniques which can develop closer relationship between the home and school at both elementary and secondary levels. Prereq: Senior standing.

4630 Current Educational Problems (3)

4710 Student Teaching, Grades 7-12 (9) Application for student teaching must be filed not later than final quarter of junior year. Students should hold themselves available for this work in off-campus centers. Must be taken with 4720. Prereq: 3010-20-30, Educational Psychology 3810, appropriate special methods course(s), minimum grade point average of 2.0. Undergraduate credit only. Satisfactory-No Credit.

4720 Student Teaching, Grades 7-12 (6) Cooperative planning with other students and teachers; analyses of teaching practices; development of teaching competencies as a result of student teaching. Must be taken with 4710. Undergraduate credit only. Satisfactory-No Credit.

4730 Audiovisual Methods and Techniques (3) Selection, operation, and use of equipment and materials. (Same as Library and Information Science 4750 and Vocational-Technical Education 4750.)

4810 Student Teaching in the Elementary School (9) Application for student teaching must be filed not later than final quarter of junior year. Students should hold themselves available to do this work in off-campus centers. Must be taken with 4820. Prereq: 3010-20-30, 3260-70-80, 3350, 3720, Educational Psychology 2430, Library Service 3510; minimum grade point average of 2.0. Undergraduate credit only. Satisfactory-No Credit.

4820 Student Teaching in the Elementary School (9) Must be taken with 4810. Undergraduate credit only. Satisfactory-No Credit.
<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>5530</td>
<td>Curriculum Laboratory for High Schools (3)</td>
</tr>
<tr>
<td>5580</td>
<td>Curriculum Planning and Development (3)</td>
</tr>
<tr>
<td>5610</td>
<td>Educational Statistics (3)</td>
</tr>
<tr>
<td>5620</td>
<td>Problems in Direction and Supervision of Student Teaching (3)</td>
</tr>
<tr>
<td>5630</td>
<td>Practicum in the Individualization of Instruction (3)</td>
</tr>
<tr>
<td>5640</td>
<td>Newer Trends in Elementary Education (3)</td>
</tr>
<tr>
<td>5650-60</td>
<td>Curriculum Laboratory for Elementary Schools (3, 3)</td>
</tr>
<tr>
<td>5670</td>
<td>Curriculum Laboratory for Early Childhood Education (3)</td>
</tr>
<tr>
<td>5691</td>
<td>Production and Use of Audio-Visual Materials (3)</td>
</tr>
<tr>
<td>5710</td>
<td>Techniques of Research in Education (3)</td>
</tr>
<tr>
<td>5800</td>
<td>Seminar in Cooperative Curriculum Research (3)</td>
</tr>
<tr>
<td>5820</td>
<td>Seminar in the Teaching of Mathematics (3)</td>
</tr>
<tr>
<td>5825</td>
<td>Teaching Mathematics in the Middle and Junior High School (3)</td>
</tr>
<tr>
<td>5830</td>
<td>Seminar in Mathematics Education (3)</td>
</tr>
<tr>
<td>5835</td>
<td>Teaching Mathematics in the Senior High School and Community/Junior College (3)</td>
</tr>
<tr>
<td>5841</td>
<td>Trends and Issues in Early Childhood (3)</td>
</tr>
<tr>
<td>5842</td>
<td>Problems in Education: Early Childhood (3)</td>
</tr>
<tr>
<td>5843</td>
<td>Seminar in Early Childhood Education (3)</td>
</tr>
<tr>
<td>5844</td>
<td>Mathematics in Early Childhood Education (3)</td>
</tr>
<tr>
<td>5845</td>
<td>Social Studies and Science in Early Childhood Education (3)</td>
</tr>
<tr>
<td>5846</td>
<td>Language Arts in Early Childhood Education (3)</td>
</tr>
<tr>
<td>5850-60</td>
<td>Problems in Education: English (3, 3, 3)</td>
</tr>
<tr>
<td>5851-61</td>
<td>Problems in Education: Mathematics (3, 3, 3)</td>
</tr>
<tr>
<td>5852-62</td>
<td>Problems in Education: Social Studies (3, 3, 3)</td>
</tr>
<tr>
<td>5853-63</td>
<td>Problems in Education: Science (3, 3, 3)</td>
</tr>
<tr>
<td>5854-64</td>
<td>Problems in Education: Language Arts (3, 3, 3)</td>
</tr>
<tr>
<td>5855-65</td>
<td>Problems in Education: General Curriculum (3, 3, 3)</td>
</tr>
<tr>
<td>5866-76</td>
<td>Problems in Education: Instructional Materials (3, 3)</td>
</tr>
<tr>
<td>5857-67</td>
<td>Problems in Education: Foreign Languages (3, 3, 3)</td>
</tr>
<tr>
<td>5858-69</td>
<td>Problems in Education: Conservation (3, 3, 3)</td>
</tr>
<tr>
<td>5900</td>
<td>Seminar in the Teaching of English in the Secondary School (3)</td>
</tr>
<tr>
<td>5901</td>
<td>Linguistics and the Teacher of English (3)</td>
</tr>
<tr>
<td>5902</td>
<td>Teaching Composition in the High School (3)</td>
</tr>
<tr>
<td>5903</td>
<td>Teaching Fiction in the Secondary School (3)</td>
</tr>
<tr>
<td>5904</td>
<td>Teaching the Mass Media in the English Classroom (3)</td>
</tr>
<tr>
<td>5905</td>
<td>Teaching English in the Community/Junior College (3)</td>
</tr>
<tr>
<td>5906</td>
<td>Teaching Poetry in Grades 7-12 (3)</td>
</tr>
<tr>
<td>5907</td>
<td>Teaching Drama in Grades 7-12 (3)</td>
</tr>
<tr>
<td>5909</td>
<td>Instructional Theory and Design (3)</td>
</tr>
<tr>
<td>5910-20</td>
<td>Problems in Lieu of Thesis (3, 3, 3)</td>
</tr>
<tr>
<td>5950</td>
<td>Reflective Thinking: The Method of Education (3)</td>
</tr>
<tr>
<td>5960</td>
<td>Teaching Natural Science (3)</td>
</tr>
<tr>
<td>5961</td>
<td>Seminar in Science and Environmental Education (3)</td>
</tr>
<tr>
<td>5970</td>
<td>Teaching the Social Studies (3)</td>
</tr>
<tr>
<td>5980</td>
<td>Projects, Programs, and Materials in Social Studies (3)</td>
</tr>
<tr>
<td>6000</td>
<td>Doctoral Research and Dissertation</td>
</tr>
<tr>
<td>6010</td>
<td>Studies in English Education (3)</td>
</tr>
<tr>
<td>6020</td>
<td>Seminar in Teaching the Social Studies (3)</td>
</tr>
<tr>
<td>6030</td>
<td>Research and Theory in Teaching Reading (3)</td>
</tr>
<tr>
<td>6031</td>
<td>Seminar in Reading and Language Arts (3)</td>
</tr>
<tr>
<td>6040</td>
<td>Seminar in Curriculum and Instruction (1, 1, 1)</td>
</tr>
<tr>
<td>6060</td>
<td>Philosophy of Methodology in the Elementary School (3)</td>
</tr>
<tr>
<td>6070</td>
<td>Advanced Seminar in International Education (3)</td>
</tr>
<tr>
<td>6080</td>
<td>Advanced Seminar in Philosophy of Education (3)</td>
</tr>
<tr>
<td>6081</td>
<td>Phenomenology and Education (3)</td>
</tr>
<tr>
<td>6082</td>
<td>Philosophical Analysis and Education (3)</td>
</tr>
<tr>
<td>6150</td>
<td>Education as Social Policy (3)</td>
</tr>
<tr>
<td>6210</td>
<td>Seminar in Elementary School Social Studies Research (3)</td>
</tr>
<tr>
<td>6230</td>
<td>Programs for Curriculum Improvement (3)</td>
</tr>
<tr>
<td>6250</td>
<td>Seminar in History of Education (3)</td>
</tr>
<tr>
<td>6282</td>
<td>Advanced Studies in Elementary School Science (3)</td>
</tr>
<tr>
<td>6350</td>
<td>The Professional Education of Teachers (3)</td>
</tr>
<tr>
<td>6400</td>
<td>The Dynamics of Educational Change (3)</td>
</tr>
<tr>
<td>6500</td>
<td>Advanced Studies in Early Childhood Education (3)</td>
</tr>
<tr>
<td>6510</td>
<td>Advanced Studies in Elementary School Language Arts (3)</td>
</tr>
<tr>
<td>6710</td>
<td>Advanced Educational Statistics (3)</td>
</tr>
<tr>
<td>6720</td>
<td>Interpretation of Data (3)</td>
</tr>
<tr>
<td>6730</td>
<td>Theory and Evaluation in Curriculum Planning (3)</td>
</tr>
<tr>
<td>6751</td>
<td>Studies in Curriculum Theory and the Structure of Knowledge (3)</td>
</tr>
<tr>
<td>6740</td>
<td>Curriculum Workshops in Instructional Improvement (3)</td>
</tr>
<tr>
<td>6750-60</td>
<td>Problems in Curriculum and Instruction (3, 3, 3)</td>
</tr>
<tr>
<td>6850</td>
<td>Principles of Educational Leadership (3)</td>
</tr>
</tbody>
</table>

### Educational Administration and Supervision (292)

**Professors:**

**Associate Professors:**

**Assistant Professors:**
- G. W. Harris, Jr., Ph.D. Michigan; P. M. Husen, Ed.D. Stanford.

*U. T. At Nashville.*

- 5000 Thesis
- 5100 Internship in Educational Administration (3)
- 5130 Introduction to Educational Administration (3)
- 5180-90-5200 Educational Specialist Research and Thesis (3, 3, 3)
- 5220 Philosophy and Theory in Educational Administration (3)
- 5230 Seminar in the Behavioral Sciences for Educational Administration (3)
- 5290 The Politics of Education (3)
- 5310 School Administration in a Multi-Ethnic Society (3)
- 5420 District Level Administration (3)
- 5430 Building Level Administration (3)
5995 Specialized Seminar in Education Administration and Supervision: Personnel (3)
5997 Specialized Seminar in Education Administration and Supervision: Organization and Structure (3)
5998 Specialized Seminar in Education Administration and Supervision: School Law (3)
6000 Doctoral Research and Dissertation (0-12)
6040 Seminar in Educational Administration and Supervision (1, 1, 1)
6100 Internship in Educational Administration (3)
6210 Modern Trends in the Theory and Practice of Educational Administrators and Supervisors (3)
6220 Program for the Professional Preparation of Educational Administrators and Supervision (3)
6460 Personnel Problems (3)
6530 Futuristic Educational Planning Methods (3)
6550 State-Federal Relations in Education (3)
6560 Legal Foundations of Public Education (3)
6580 Seminar in Managing Conflict (3)
6600 Administration of Complex Educational Organizations (3)
6996 Specialized Seminar: School Plant (3)
6999 Specialized Seminar: Supervision (3)

Educational Psychology and Guidance (311)

Professors:
L. M. DeRidder (Head), Ph.D. Michigan; W. M. Holbert, Ph.D. Texas; E. W. McClain, Ph.D. Texas; W. A. Poppen, Ph.D. Ohio State; E. W. Schoch, Ed.D. Florida; C. L. Thompson, Ph.D. Ohio State; R. L. Williams, Ph.D. George Peabody.

Associate Professors:
D. J. Dickson, Ed.D. Oklahoma State; S. C. Dietz,* Ed.D. Arizona State; S. W. Huck, Ph.D.

Assistant Professors:

*On leave.
*MSU Center.

UNDERGRADUATE

1000 The Educational Environment and Career Choice (3) Exploration of occupations based upon analysis of self-occupational requirements; development of commitment to teaching and understanding of teaching-learning problems in the classroom. Prereq.: consent of instructor. Satisfactory-No Credit.

2000 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 six credit hours.

2430 Child Study (3) Child growth and development; study of individual children. Prereq. Psychology 2110. 3 hrs and 1 period.

2510 Child and Adolescent Study (3) Encompasses study of principles of behavior, intervention techniques, principles of child and adolescent development, special categories of children, child in relation to family and community, and methods of studying children. Prereq: Educational Psychology 1000 and Psychology 2110 or permission of instructor.

2520 Study of Self and Self-Concept (4) Study of (1) student understanding of how the self develops so that prospective teacher can better understand pupils and (2) student's increased understanding of himself. Prereq: Educational Psychology 1000, Psychology 2110, and Educational Psychology 2510 or permission of instructor.

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: Psychology 2110.

3550 Child Psychology (4) (Same as Psychology 3550.)

3730 Educational Psychology (3) Increasing effectiveness of learning. Prereq: Psychology 2110-20 or equivalent.

3810 Educational Psychology: Adolescence (3) Prereq: Psychology 2110.

4110 Psychology of Sex Role Development (3) Examination, from both a theoretical and research base, of factors which contribute to sex role development with attention to changes in sex role definition in society and role of education in these changes. Aimed at the undergraduate or graduate student with minimal background in behavioral sciences.

4130 Mental Health (3)

4350-60-70. Problems in Educational Psychology and Guidance (3, 3, 3)

4440 General Evaluation Procedures for Public Schools (3) Prereq: 2430 or equivalent.

4551-53.64-66.55-56 Student Leadership Workshops (1, 1, 1, 1, 1) Series of small group and individualized experiences to develop knowledge and skills required of students in leadership roles. Sections are designed for resident assistants, student government leaders, student activities, and other student organizations. Prereq: Permission of instructor. Satisfactory-No Credit.

4640 Standardized Testing (3) Use and interpretation of standardized group instruments in assessment of intelligence, aptitude, achievement, vocational interests and personality adjustment.

4650 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.

4760 Advanced Child Study (3) Prereq: 2430 or 3810 or permission of instructor.

4800 Psychology of the Disadvantaged Child (3) Significant behavioral differences and causes; appropriate intervention approaches.

4890 Differential Psychology (3) (Same as Psychology 4890.)

4910 Diagnostic and Corrective Teaching (3)

GRADUATE

5000 Thesis

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 (3)

5099 Field Work in School Psychology (2)

5100 Developmental Psychology (3)

5110 Psychology of Women (3)
5111-12-13 Seminar in Current Issues in School Psychology (1, 1, 1)  
5140-50-60 Psychoducational Assessment (3, 3, 3)  
5149-59-69 Practicum in School Psychology I (2, 2, 2)  
5180-90-5200 Educational Specialist Research and Thesis (3, 3, 3)  
5210 Interpretation and Evaluation of Research Reports in Educational Psychology (3)  
5220 Interpretation and Evaluation of Research Reports in Educational Psychology (3)  
5310 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)  
5550 Student Personnel in Higher Education (3)  
5560 The College Student (3)  
5570 Seminar in College Student Personnel (3)  
5720 Evaluation in Education (3)  
5750 Verbal Behavior and Classroom Learning (3)  
5780 Career Development: Theory and Research (3)  
5810 Application of Research Design in Educational Psychology and Guidance (3)  
5840 Student Appraisal (3)  
5850-60-70 Problems in Educational Psychology and Guidance (1-6, 1-6, 1-6)  
5880 Occupational and Educational Information (3)  
5890 Counseling Techniques and Practices (3)  
5897 Pre-Practicum (3)  
5910-20-30 Problems in Lieu of Thesis (3, 3, 3)  
5940 Practicum (3)  
5950-60-70 Consultation in Human Development Settings (3, 3, 3)  
5959-59-79 Practicum in School Psychology II (2, 2, 2)  
5980 Organization and Administration of Counselor Programs (3)  
5990 Practicum in College Student Personnel (3)  
6000 Doctoral Research and Dissertation  
6040 Seminar in Educational Psychology and Guidance (N/A credit)  
6310 Field Work in School Psychology: Level II (2)  
6610-20-30 Seminar in Advanced Educational Psychology (3, 3, 3)  
6650-60-70 Systems Approaches in Psychological Services (3, 3, 3)  
6680-89-79 Practicum in School Psychology III (2, 2, 2)  
6750-60-70 Problems in Psychology and Guidance (3, 3, 3)  
6810 Seminar in Counseling (3)  
6941-42-43 Practicum in Guidance, Counseling and Personnel Services (3, 3, 3)  
6944-45-46 Teaching Practicum in Educational Psychology and Guidance (3, 3, 3)  
6950 Counseling Supervision (3)  

School of Health, Physical Education, and Recreation  
George F. Brady, Director  

At the undergraduate level, professional preparation programs are offered for teachers of health, physical education, dance, and/or recreation and for administrators of public health or recreation programs. 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 School 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 Education


Associate Professors: B. L. Jones, Ed.D., California (Los Angeles).

Assistant Professors: J. A. Ahmad, Ph.D., Oregon; A. I. Pickett, M.S., Columbia; A. F. Thompson, Ph.D., Michigan.


Lecturer: C. P. McCammon, M.D., Temple.

School Health (589)

UNDERGRADUATE  
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 assessed. Required for elementary teachers. Prerequisite: 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 assessed. Prerequisite: 3410.  
4710 Workshop in School Health Education (3-6) For advanced students, teachers, school administrators, nurses and other para-medical 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, 1, 1) Individual identification and study of current problems in school health education. Extensive reading of literature required.

GRADUATE  
5000 Thesis  
5010 Problems and Practices in School Health (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)  
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 in Research in Health Education (3)  
6050-60 Seminar in Health Education (3, 3)  

Public Health (839)

UNDERGRADUATE  
1110 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. Satisfactory-No credit.  
2050 Seminar in Drug Use and Abuse (2) Intensive look at problems related to use and abuse of drugs. Satisfactory-No credit.  
3000 Foundations of Health Science (3) In-depth study of content areas relating to personal health and contemporary health problems, i.e., mood modifying products, 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 16 years of age for certification.) (Same as School Health 3210.)  
3210 Communicable and Non-communicable Diseases (3) Modern concepts of diseases; etiology of common communicable and chronic disease problems including prevention and control. Prerequisite: 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 provisions. Prerequisite: One year biological science, one course in microbiology. 2 hrs 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.  
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 death and dying as related to personal and community health.
4210 Urban and Industrial Health (3) Health problems created by a burgeoning population and the megapolises: industrial health problems of concern to management, supervisor, and industrial worker; control of occupational diseases, poisons, accidents, and other conditions incidental to industry.

4220 Communications for Better Health (3) Selection, study, and communication of 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 agencies, and use of mass media for transmitting health information.

4410 Consumer Health and Safety Education (3) Survey of major consumer health and safety problems; selecting, purchasing, and financing of safety and medical services.

4411 Instructor’s Advanced First Aid and Emergencies (3) Designed to teach first aid. Satisfactory completion qualifies one for American National Red Cross Certification as an Advanced First Aid and 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.

4420 Drug Abuse Education (3) Drug abuse problem and suspected causes; pharmacology of drug abuse and effects on society and methods of drug abuse education.

4700-10-20 Field Practice in Public Health (3, 3, 3) Field practice in public health under supervision of public health profession. Satisfactory-No Credit.

4730 Workshop in Public Health Education (3-6) 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.

4840-50-60 Problems in Public Health Education (1, 1, 1) Individual identification and study of current problems in public health education. Extensive reading of literature required.

GRADUATE

5010-20-30 Workshop in Public Health (3-6, 3-6, 3-6)

5070-80-90 Field Practice and Seminar in Public Health Education (6, 5, 5)

5110 Environmental Health (5)

5120-30 Occupational Health and Safety (5, 5)

5140 Ergonomics and Work in Occupational Health and Safety (4)

5210 Ecosystem of Public Health Education (5)

5220 Health and Wellness in the Focus of Public Health Education (2)

5410 Epidemiology (3)

5420 Administration of Public Health (3)

5430 Vital and Medical Statistics (4)

5440 Methods and Materials in Public Health Education (4)

5510 Selected Topics in Anatomy

5540 Factors in Problem Solving for Community Health (5)

5550 The Public Health Educator in Community Organization and Development (4)

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)

5740 Extended Care Unit (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)

5765 Home Care Unit (3-5)

5770 Intensive Care Unit I (3-5)

5775 Intensive Care Unit II (3-5)

5780 Intensive Care Unit III (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)

UNDERGRADUATE

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 hrs and 2 labs.

4420 Advanced Driver and Traffic Safety Education (5) Development of competency in teaching of driver education through use of simulation, multi-media 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 interrelationships in sports injury and their control; risk-taking and decision solution strategies; and contributions of sports medicine to safety. 3 hrs lecture and 2 hrs lab.

4720 Workshop in Safety (3-6) Deals with special safety education problems. For advanced undergraduate students, graduate students, teachers, supervisors, and administrators. May be repeated for credit.

GRADUATE

5000 Thesis

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)

Physical Education (764)


Associate Professors: A. V. Lay, Ph.D. Florida; H. G. Welch, Ph.D. Florida.

Assistant Professors: A. M. Kravits, M.S. Tennessee; J. M. C. Coelho, Ph.D. Wisconsin; B. G. Goodrow, Ed.D. Tennessee; D. S. Hart, M.S. Utah State; T. E. Howley, Ph.D. Wisconsin; C. J. Johnson, M.S. Tennessee; J. L. Lewis, M.S.; M. G. McCutcheon, M.S. Tennessee; B. J. Mead, Ph.D. Purdue; T. J. Sliger, M.S. Tennessee; B. G. Ulrich, M.A. North Carolina.


UNDERGRADUATE*

1000 Career Orientation and Performance Prerequisites in Physical Education (2) Introduction to physical education with special emphasis on analyzing motor skills of each student. Satisfactory-No Credit. No substitution.

1020 Physical Education: Swimming (1)

1021 Physical Education: Bowling (1)

1022 Physical Education: Basketball (1)

1032 Physical Education: Tennis (1)

2012 Physical Education: Soccer-Speedball (1)

2022 Physical Education: Volleyball (1)

2032 Physical Education: Golf (1)

2040-50-60 Dance Production (2, 2, 2) Preparation and presentation of public dance performances. Prereq: approval of instructor.

2070 Orientation in Dance—Appreciation (1) 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 Beginning Dance Techniques (2) Analytical and practical study of modern dance movements.


3040 Beginning Jazz Techniques (2) Instruction and practice in styles and techniques of jazz dance.

3050 Rhythmic Analysis (2) Emphasis on analysis of organic movement. Prereq: junior standing; consent of instructor.

3060 Beginning Dance Composition (2) Experience in creative forms of dance. Prereq: 3010.

3070 Beginning Ballet Techniques (2) Introductory course designed to acquaint student with discipline of classical ballet, cultural, and educational values, and relationship to other dance forms.

3080 Officializing Women’s Volleyball (3) Officiating based on rules of National Association for Girls and Women in Sport. National tests and ratings will be given. Both men and women are encouraged to take the course.

*See also the courses listed under “Service Program in Physical Education” later in this section.
3090 History of Dance and the Related Arts (1-2)
Dance history and the arts related to it from beginnings in primitive societies through the twentieth century.

3100 Social Dance (2)
Instruction, practice, and teaching in basic social dance steps.

3110 Athletic Coaching of Football (2)
Fundamentals and teaching techniques. Prereq: approval of instructor.

3120 Coaching of Basketball (2) Individual and team fundamentals for the high school coach; attention given to coaching, practice, and other business arrangements. Prereq: approval of instructor.

3130 Athletic Coaching of Track and Field Events (2) Techniques and training procedures. Prereq: approval of instructor.

3151 History of Dance and the Related Arts II (2)
Survey of dance and the arts related to it tracing their development in the twentieth century.

3180 Officiating Women's Basketball (3) Officiating based on rules of National Association for Girls and Women in Sport. National tests and ratings will be given. Both men and women are encouraged to take the course.

3170 Weight Control and Physical Activity (3)
Theories and practical application in principles and methods of weight control and related physical activity.

3180 Track and Field (2) Methods and practical experiences in various events of track and field. Special emphasis on teaching techniques, demonstration, progression, and analysis.

3200 Athletic Coaching of Baseball (2) Individual and team fundamentals for high school and college coach. Prereq: permission of instructor.

3210 History and Principles of Physical Education (3) Principles from basic sciences of anatomy, bacteriology, biology, chemistry, physiology, psychology, and sociology applied to health, physical education and athletic coaching.

3220 Physical Fitness Activities (3) Teaching of calisthenics, conditioning activities, and weight training with emphasis on physical 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 (2) Theory and practice in the prevention and care of basic athletic injuries. Prereq: Approval of instructor.

3260 Practicum for Physical Education Majors (1-10)
Observation and limited teaching, coaching, and leadership experiences in physical education programs. Elective to cover the last three-year period of professional preparation. May be repeated. Maximum of 10 hrs credit. Satisfactory-No Credit.

3210 Tests and Measurements in Physical Education (3) Study of elementary statistics related to measurement. Critical examination of tests used to evaluate strength, sports skills, and physical fitness.

3220 Applied Anatomy and Kinesiology (3) Bones, joints, ligaments, and muscles involved in movements, reaction of 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, supervised by physical education faculty.

3450 Physical Education in the Elementary School (3)
Movement experiences appropriate for elementary school children: planning and teaching a developmental program.

3510 Conceptual Bases for Study of Human Movement Behavior (2) Bio-physical, percepto-cognitive, and psycho-social forces causing humans to move as they do. Prereq: 1011 or 1012.

3530 The Teaching of Swimming and Lifesaving (2)
Certification in ARC Water Safety Instructor Training or Senior Lifesaving 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 relationship of changes to physical performance and skill development.


3610-20-30 Individual and Dual Sports (1, 1, 1)
Instruction, sports and physical activity, in organized adult sport and recreational activities suitable for schools, churches, or community recreation centers.

3650 Teaching Strategies and Program Implementation in Elementary Physical Education (3)
Understanding and employing teaching strategies appropriate to elementary physical education, and study of program content and implementation. Prereq: 3570.

3660 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 or Coreq: 3650.

3670 Practicum in Developmental Movement for Early Childhood (3) Experience 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.

3710 Camping (2) Theory and practice in leadership with practical experience in camp craft skills.

3880 Social Recreation (3) Theory and practice in social recreation at school, community center, clubs, and schools. Course includes folk and square dance, quiet and active games, skits, stunts, other recreational activities, and program planning. Same as Recreation 3880.

4001 Stage Movement (2) Theory and practice in stage movement for actors and dancers. Styles of movement, character and moral movement and combat.

4010 Advanced Dance Technique (2) Development, integration, and synthesis of previous dance vocabulary; emphasis on analysis and practice of dance principles; solo and group work. Prereq: 3020.

4020 Practicum in Dance Production (2) Prereq: consent of instructor.

4060 Advanced Dance Composition (2) Creation and development of ideas, themes, and dance forms; solo and group work. Prereq: 3060.

4070 Stagecraft for Dance Production (2) Equipment, light design, properties, sets, and stage management.

4110 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.

4120 Administration of Physical Education (3)
Selection of topics in organization and administration problems related to physical education programs in schools. Emphasis placed on human relations approach to solving problems and skills.

4150 Creative Rhythms for Children (3) Methods and materials for grades 1-6; 3 hrs and 1 lab.

4230 Program Planning in Physical Education (3)
Curriculum building, course construction, and lesson planning for public schools and colleges.

4310 Folk and Square Dance (2) Materials and methods for public schools, colleges, and recreation centers.

4320 Tap Dance (2) Instruction, practice, and student teaching.

4330-40-50-60 (1, 1, 1) Specialization study in selected area of Physical Education.

4410 Wrestling (2) Theoretical and practical work for prospective teacher; emphasis on safety procedures.

4440 Gymnastics (2) Development of skills on gymnastic apparatus; special emphasis on progression, safety, and teaching techniques. Prereq: 3330.

4450 Women's Gymnastics (2) Development of skills on still, vault, routine on balance beam, and exhibition gymnastics, special emphasis placed on safety, progression and teaching techniques. Prereq: 4440.

4460 The Coaching and Judging of Women's Gymnastics (3) Appreciation of techniques used in the coaching and judging 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.

GRADUATE

5000 Thesis

5110 Administrative Problems in Physical Education (3)

5120 Problems of the Curriculum in Physical Education (3)

5130 Methods in Physical Education (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 (1)

5410-20-30 Specialization in a Selected Physical Education Area (1-9)

5500 Advanced Kinesiology (3)

5510 Selected Topics in Anatomy (3)

5550 Physical Rehabilitation (3)

5580 Physical Activity and Health (5)

5600 Applied Physiology (6)

5610 Advanced Exercise Physiology (4)

5620 Experimental Techniques in Applied Physiology (3)

5650 Scientific Bases for Physical Education (3)

5810-20-30 Seminar in Physical Education (1, 1, 1)

5910-20-30 Problems and Projects in Physical Education (3, 3, 3)

6000 Doctoral Research and Dissertation

6010 Seminar in Physical Education (1)

6220 Independent Research (3)

6320 Advanced Research Techniques (3)

6410 Practicum in Kinesiology (3)

6510-20 Issues and Problems in Physical Education (3, 3)

6610 Seminar in Exercise Physiology (2)

6840 Research Participation in Applied Physiology (1-6)

6810-20-30 Practicum (2, 2, 2)
Recreation (853)

Professor:
G. F. Brady, Ph.D. Iowa
Associate Professor:
M. L. Peters, (Chairman) Ph.D. Illinois
Assistant Professors:
P. A. Borovik, M.S. Tennessee; C. J. Johnson, M.S. Tennessee.

UNDERGRADUATE

1000 Field Practice (1-6) Supervised practice in an approved agency offering leisure services. May be taken for variable credit up to 6 hours. Each one-hour credit requires 25 contact hours in the field agency. For recreation students only.

1100 Orientation to the Recreation Profession (3) Overview of types, functions, and interrelationships of delivery systems for recreation and park services.

2000 Field Practice (1-6) Supervised practice in an approved agency offering leisure services. May be taken for variable credit up to 6 hours. Each one-hour credit requires 25 contact hours in the field agency. For recreation students only. Prereq: Recreation 1000.

3000 Field Practice (1-6) Supervised practice in an approved agency offering leisure services. May be taken for variable credit up to 6 hours. Each one-hour credit requires 25 contact hours in the field agency. For recreation students only. Prereq: Recreation 1000 & 2000.

3100 Recreation Leadership Procedures (3) Principles and practice of recreation leadership: techniques and methods of working with individuals and groups in leisure activity.

3140 Philosophical Foundations of Recreation (3) Examination of recreation as personal experience: theories of play; philosophies of leisure and relationship to economy, ecology, health, government, culture, and self-realization; history of recreation movement.

3200 Planning Leisure Programs (3) Principles and methods employed in planning effective and well-balanced leisure time programs for various groups in various settings.

3880 Social Recreation (3) (Same as Physical Education 3880)

4000 Practicum in Recreation (15) Full-time practice in an approved recreation agency. Emphasis on supervisory and administrative procedures. Prereq: 1000, 2000, 3000; Senior standing.

4130 Recreation Administration (3) Introduction to recreation administration, including planning, personnel, areas and facilities, program services, finances, and public relations. Prereq: 1100, 3100, 3140.

4200 Survey of Recreation for Special Populations (3) Responsibility of recreation profession to minority groups whose leisure opportunities and needs may require special servicing.

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 of 9 hours credit with permission of the division. Prereq: Consent of instructor.

GRADUATE

5000 Thesis (9)

5140 Leisure Service Delivery Systems (3)

5150 Current Issues in Recreation (3)

5240 Therapeutic Recreation (3)

5300 Seminar in Recreation (1)

5440 Problems and Projects in Recreation (1-9)

5450 Specialized Study in Recreation (1-9)

Special Education and Rehabilitation (933)

Professors:
R. M. Frey (Head), Ed.D., Illinois; E. E. Doll, Ph.D., Pennsylvania; F. V. Essery (Emeritus), Ph.D., Michigan; W. M. Holbert, Ph.D., Texas.

Associate Professors:

Instructors:
R. F. Byum, M.S. Florida State; R. N. Freman, M.A. MTSU; W. D. Smith, M.S. Florida State; L. M. Walker, M.S. Tennessee.

Lecturers:
S. W. Mulkey, M.S. Tennessee; G. E. Reece, B.S. Memphis State.

An experience program for regular teachers, special teachers, and attendance teachers may be planned to meet the needs of exceptional children in relationship to the program of general and special education. Specialized courses may be distributed over the several areas of exceptional children with emphasis in an area of special interest or need. Facilities are available for continuous observation and participation in direct relationships with exceptional children who are hospitalized, homebound, in residential schools, special classes, or regular classes. Course sequences may be planned in the areas of (1) crippling and special health conditions; (2) acoustically handicapped; (3) mentally retarded; (4) gifted; (5) partially seeing; (6) speech correction; (7) socially or emotionally maladjusted; (8) rehabilitation
Counselor education. The specialization professional courses in special education may be taken at the undergraduate or graduate levels. For planning a program, the student should consult an adviser in his or her own area.

DISABILITY EXAMINER EDUCATION
5700 Disability Evaluation: Issues, Processes, and Programs (4)
5710-20 Medical Aspects of Disability Evaluation (4, 4)
5730 Vocational Assessment in Disability Evaluation (3)
5740 Problems/Practicum in Work Evaluation (3)
5750 Principles and Problems of Disability Evaluation (3)
5760 Seminar: Functional Capability Assessment (3)
5770-71 Current Problems in Disability Claims Evaluation (1-3, 1-3)

CRIPPLING AND SPECIAL HEALTH CONDITIONS
4110 Education of the Brain-Injured Child (3) Nature of brain-injured child; skills for identifying educational, physical, and emotional characteristics; special educational problems.
4115 Education Problems of Hospitalized and Homebound Children (3) School and home responsibility for physical care and social relationships, educational adjustment, special needs, and cooperation with related service resources.
4840 Educational Problems of the Cerebral Palsied Child at Home and School (3) Physical, social, and educational needs of cerebral palsy; evaluative techniques; related services.
4921 Student Teaching in Crippling and Special Health Conditions (3-15) Observation and supervision in practice in home, hospital, and classroom. Satisfactory-No Credit.

EDUCATION OF THE ACOUSTICALLY HANDICAPPED
4000 Rehabilitation Practicum (3) Evaluation of client data in predicting rehabilitation prognosis. Prerequisite: 4230.
4190 Speech Development of the Hearing Impaired (3) Anatomy and physiology of speech system. Relationship of hearing to speech development. Theories and techniques of speech development and improvement for hearing impaired children. Prerequisite: Speech 3090. (Same as Audiology and Speech Pathology 4190.)
4200 Practicum in Speech Development of Hearing Impaired (3) Application of theories and techniques of speech development and improvement with hearing impaired children. Prerequisite: 4190 and permission of instructor. (Same as Audiology and Speech Pathology 4200.)
4210 Language Development of the Hearing Impaired I (3) Systems by which formal language is presented. (Same as Audiology and Speech Pathology 4210.)
4220 Language Development for the Hearing Impaired II (3) Techniques; various systems by which formal language is presented. Prerequisite: 4210 or permission of instructor. (Same as Audiology and Speech Pathology 4220.)
4230 Communication Processes for the Hearing Impaired (3) Various communicative skills required by hearing impaired person; speech and language development; auditory training; speech reading, manual language and its relation to other forms of communication. Observation practicum. (Student must acquire a degree of proficiency in use of manual language.) Prerequisite: Consent of instructor.
4240 Nature of Hearing Impairments (3) Basic principles of audiology: anatomy and physiology of hearing; nature and causes of hearing loss; methods and instrumentation for assessment of hearing level; interpretation of audiograms; selection and use of hearing aids; relation of audiological services to medical and other rehabilitative disciplines. Observations and practicum.
4250 Introduction to the Education and Psychology of the Deaf (3) Offered for those planning to enter field of teaching deaf or 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 area of deaf child and adult. (Same as Audiology and Speech Pathology 4250.)
4280 Curriculum Development in Elementary and Secondary Schools for the Deaf (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, and specialized materials for curricula in teaching reading.
4410 Instructional Media for the Deaf: Materials Preparation and Utilization (9) For Institute participants only. Introduction to basic skills and techniques for producing display, film, and projection media in classrooms for the deaf. Practical applications of media to problems of educating hearing-handicapped children. Prerequisite: Consent of instructor.
4719 Audiology Laboratory (1) (Same as Audiology and Speech Pathology 4719.)
4870 Student Teaching of Audaciously Handicapped Children (9) Supervised practicum with preschool, day school, and residential pupils. Satisfactory-No Credit.
4871 Practicum with Audaciously Handicapped Children (8) Satisfactory-No Credit.
5220 Linguistics in the Education of the Auditorially Impaired (3)
5310-20-30 Manual Communication (2, 2, 2)
5410 Instrumental Media for the Handicapped: Design, Production, and Evaluation of Prototypical Curriculum Materials for the Deaf (9)
5490 Educational and Vocational Guidance of the Deaf and the Hard-of-Hearing (3)

EDUCATION OF THE EMOTIONALLY DISTURBED
4610 Nature and Characteristics of Learning and Behavior Disorders (3) Forms of academic and socially disturbing behavior, degrees of severity, possible causes, and relationships to each other. Relationships with respect to personality characteristics and developmental factors interpreted through behavioral and psychoanalytic 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. Prerequisite: 4610.
4630 Practicum in Residential Settings Serving Children with Disturbing Behavior (3) Practice in 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 curricula and reinforcement schedules. Prerequisite: 4610 and 4620 or permission of instructor.
4640 Practicum in Public School Systems Serving Children with Learning and Behavior Problems (6) Academic tutoring in a teacher/aid 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. Prerequisite: 4610 and 4620 or permission of instructor.
4740 Diagnostic and Remedial Approaches in Special Education and Rehabilitation (3) Critical examination of specialized tests and methods employed in measurement of educational needs of children and adults who are mentally retarded, learning disabled, multiple handicapped or physically handicapped.
4924 Student Teaching of the Emotionally Disturbed (9) Individual tutoring and classroom observation and teaching. Prerequisite or parallel: Education, Curriculum and Instruction 4720 or 4820. Satisfactory-No Credit.

EDUCATION OF THE MENTALLY RETARDED
4110 The Nature and Concept of Mental Retardation (3) Identification, description, and study.
4120 Education of the Mentally Retarded Child (3) Philosophy and rationale underlying the teaching and guidance of the mentally retarded; methods and materials in special and regular classes. Prerequisite or parallel: 4110.
4440 High School Programs for the Mentally Retarded (3) Trends, issues and research relating to core and work study programs.
4810 Student Teaching Mental Retardation (3) Prerequisite: Major in education of mental retardation. Satisfactory-No Credit.
4811 Student Teaching Mental Retardation (3) Prerequisite: Major in education of mental retardation. Satisfactory-No Credit.
4922 Student Teaching of the Educable Mentally Retarded (3) Observation and supervised practicum. Satisfactory-No Credit.
5111 Psychology of Mental Retardation (3)
5112 Psychology of the Severely Mentally Retarded (3)
5113 Advanced Curriculum for the Mentally Retarded (3)

EDUCATION OF THE VISUALLY HANDICAPPED
4160 Education of Partially Sighted Children (3) Curricular adjustments and materials; home visits for parents' cooperation in medical care and special needs. Prerequisite: Speech 3090.
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.
4923 Student Teaching of the Partially Seeing (3) Observation and supervised practicum in special and regular classes. Satisfactory-No Credit.

SCHOOL SPEECH AND HEARING THERAPY
3310 Articulation Disorders (3) (Same as Audiology and Speech Pathology 3310.)
4030 The Public School Speech and Hearing Program (3) Organization, administration, and procedures.
4040 Appraisal of Speech and Language Disorders (3) (Same as Audiology and Speech Pathology 4040.)
4049 Lab in Appraisal of Speech and Language Disorders (1) (Same as Audiology and Speech Pathology 4049.)
4310 Stuttering (3) (Same as Audiology and Speech Pathology 4310.)
4320 Clinical Practice in Speech Pathology (1-6) (Same as Audiology and Speech Pathology 4320.)
5401 Prescriptive Teaching for Children with Learning Disabilities (3)

5450-60-70 Experience in Teaching and Supervision of Exceptional Children (1-6, 1-5, 1-6)

5510-20-30 Administrative Practicum or Problems in Institutional Care of Children (3, 3, 3)

5550-60-70 Problems in the Education of Exceptional Children (3, 3, 3)

5620 Counseling Parents of Exceptional Children (3)

5630 Psychology of the Exceptional Child (3)

5910-20-30 Problems in Lieu of Thesis (3, 3, 3)

5970 Juvenile Delinquency and the School (3)

Vocational-Technical Education (988)

Professor: R. J. Woodin (Emeritus), Ph.D., Ohio State

Associate Professors: M. D. Miller (Head), Ed.D., Oregon State; G. A. Rice (Research Coordinating Unit), Ph.D., Ohio State; W. Cameron (Research Coordinating Unit), Ph.D., Ohio State.

GRADUATE

5040 Guidance and Pupil Personnel Services in Education (3)

5180-90-5200 Educational Specialist Research and Thesis (3, 3, 3)

5250 Issues in Vocational-Technical Education (3)

5260 Continuing Education in Vocational-Technical Education (3)

5270 Placement, Follow-up, and Evaluation Procedures in Occupational Education (3)

5300 Occupational Program Development for Disadvantaged Persons (3)

5310 Supervision of Vocational-Technical Education (3)

5850-60-70 Problems in Vocational-Technical Education (1-6, 1-6, 1-6)

6000 Doctoral Research and Dissertation

6040 Seminar in Vocational-Technical Education (1, 1, 1)

6210 Curriculum Planning in Vocational-Technical Education (3)

6220 Program Planning and Development in Vocational-Technical Education (3)

6320 Evaluation of Vocational-Technical Education Programs (3)

6310 Administration of Vocational-Technical Education (3)

6411-12-13 Internship in Vocational-Technical Education (3, 3, 3)

Agricultural Education (056)

Professors: G. W. Wiegars, Jr. (Chairman), Ed.D., Missouri; N. E. Fitzgerald (Emeritus), M.S. Cornell; A. J. Paulus (Emeritus), Ph.D. Cornell.


UNDERGRADUATE

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.

4350-60 Student Teaching in Agricultural Education (9, 6) Offered in off-campus centers. Application must be filed not later than final quarter of junior year. Courses must be taken concurrently. Prereq: 3450, 3460, 3470, consent of instructor. Undergraduate credit only. Satisfactory-No Credit.

4510-20-30 Problems in Agribusiness Education (1-6, 1-6, 1-6) Total not more than 9 hrs.

4710-20-30 Seminar in Educational Agriculture (1, 1, 1) Prereq: 4350 or consent of department head.

GRADUATE

5000 Thesis

5011-21-31 Problems in Lieu of Thesis (3, 3, 3)

5110-20-30 Current Literature (1, 1, 1)

5320-30 Agricultural Education in Off-Farm Agricultural Occupation (3, 3)
5340 Agricultural Education for First-Year Teachers (3)
5470 Adult Education in Agriculture (3)
5480 Supervision of Student Teaching in Agricultural Education (3)
5490 Supervised Occupational Experience in Agriculture (3)
5620 Teaching Agricultural Mechanization in Vocational Agriculture (3)
5750-60-70 Special Problems in Agricultural Education (3, 3, 3)

Business Education (207)

Professors: G. A. Wagoner (Chairman), M.S. Indiana; E. W. Davis (Emeritus), M.A., New York University.

UNDERGRADUATE
4010 Principles of Business Education (3) Historical background and present status; principles of vocational education applied to business education; guidance activities of business teachers.
4120 Teaching General Business Subjects (2) Materials, evaluation procedures and recent research in subject fields.
4130 Teaching Typewriting (2) Materials, methods evaluation procedures and recent research in subject fields.
4140 Teaching Bookkeeping (2) Materials, methods, evaluation procedures and recent research in subject fields.
4160 Teaching Retail Merchandising (2) Materials, methods, evaluation procedures and recent research in subject fields.
4230 Curriculum Construction in Business Education (3)
4610-20-30 Problems in Business Education (3, 3, 3)
4611 Problems in Business Education (1½)

GRADUATE
5000 Thesis
5011 Problems in Lieu of Thesis (3)
5110 Graduate Seminar: Current Problems (3)
5111-12-13 Graduate Seminar: Current Problems in Business Education (1, 1, 1)
5120 Graduate Seminar: Tests and Measurement (3)
5130 Graduate Seminar: Guidance (3)
5140 Organization and Operation of Area Vocational-Technical Schools (3)
5410-20-30 Practicum in Business Education (2, 2, 2)
5510 Evaluation of Research in Business Education (3)
5611-21-31 Problems in Business Education: Typing (3, 3, 3)
5612-22-32 Problems in Business Education: Shorthand (3, 3, 3)
5613-23-33 Problems in Business Education: Bookkeeping and Accounting (3, 3, 3)
5614-24 Problems in Business Education: Clerical Practice (3, 3, 3)
5615-25-35 Problems in Business Education: General Business (3, 3, 3)
5617-27 Problems in Business Education: Business Law (3, 3)
5618-28-38 Problems in Business Education: Administration (3, 3, 3)
5619-29 Problems in Business Education: Psychology of Skill-Building (3, 3)
6110-20-30 Current Issues in Business Education (3, 3, 3)
6210-20-30 Advanced Studies in Business Education (3, 3, 3)
6410 Higher Education for Business (3)

Distributive Education (273)

Associate Professor: C. B. Cookeley (Chairman), Ph.D. Wisconsin. Assistant Professor: D. E. McNelly, M.Ed. Central Missouri State.

UNDERGRADUATE
4110 Student Teaching in Distributive Education (9) Full-time, supervised experiences in classroom teaching, coordination, club work, and adult education. Prereq: 4310, 4320; Education 3030; Educational Psychology 3810; 4140 or equivalent. Undergraduate credit only. Satisfactory-No Credit.
4120 School and Community Relationships for the Teacher Coordinator (6) Content dependent upon teaching assignment; human relations evolving from school, parent, business, and other community contacts. Must be taken with 4110. Undergraduate credit only. Satisfactory-No Credit.
4130 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.
4140 Supervised Distributive Experience (3) Minimum 200 hours experience in approved distributive business; concurrent analytic project.
4310 Organization and Operation of Distributive Education Programs (3) Background and development; needs, federal and state legislation; curriculum, implications, establishing, evaluating, reporting, and improving the programs.
4320 Methods and Materials in Distributive Education (3) Prereq: 4310 or permission of instructor.
4330 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: 4310 and 4320.
4510-20-30 Problems in Distributive Education (3, 3, 3) Selected research problems in teaching and coordinating distributive education programs.

GRADUATE
5000 Thesis
5110 Administration and Supervision of Distributive Education (3)
5120 Organizing and Teaching Adult Distributive Education (3)
5210-20-30 Special Problems in Distributive Education (3, 3, 3)
5616-26-36 Problems in Distributive Education: Retailing (3, 3, 3)

Home Economics
Education (490)

Professors: N. P. Logan (Chairman), Ed.D. Tennessee; I. Brown, Ph.D. Ohio State.
Associate Professor: S. W. Miller, Ph.D. Ohio State.
Assistant Professor: J. H. Malmis, Ph.D. Florida State.

UNDERGRADUATE
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.
4240 Curriculum Development in Vocational Home Economics (4) Planning of curriculum and design of instruction for the classroom. Prereq: 2240, 3240. To be scheduled one of the two quarters immediately preceding student teaching.
4310 Student Teaching (6) Underlying philosophy, techniques, and materials; relation to school program and community. Satisfactory-No Credit.
4509 Field Experience in Home Economics Related Occupations (4) Supervised field experience and seminar in teaching of occupations which utilize home economics skills and knowledge. Prereq: permission of instructor. Satisfactory-No Credit.
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, 3240, 4240. Coreq: 4310, Satisfactory-No Credit.
4718-28-38 Honors: Home Economics Education (3, 3, 3) For juniors and seniors showing special ability and interest in home economics education. Prereq: permission of department head.

GRADUATE
5000 Thesis
5110 Advanced Methods of Teaching Homemaking Classes for Adults (3)
5130 Furthering Good Human Relationships in the Classroom (3)
5220 Evaluation in Home Economics (3)
5310 The Problem Method of Teaching (3)
5520 The Teaching of Home Economics in College (3)
5530 Organization of the Home Making Curriculum in Secondary Schools (3)
5610 Supervision of Home Economics in the Public Schools (3)
5810-20-30 Problems in Home Economics Education (3, 3, 3)
5910-20 Seminar in Home Economics Education (3, 3)
6150 Advanced Study of Human Relations in Education (3)
6200 Teaching of Home Economics in College (3)
6250 Supervision of State Programs of Home Economics in Vocational Schools and Classes (3)
6350 Advanced Study in Evaluation in Home Economics (3)
6400 Research in Home Economics Education (3)
6750-60-70 Problems in Home Economics Education (3, 3, 3)
Industrial Education (547)

Professors: J. L. Reed (Chairman), M.S. Oklahoma; R. W. Haskell, Ph.D. Purdue.

Associate Professors: G. D. Cheek, Ph.D. Kansas; D. V. Brown, P.E., Ed.D. Utah State.


UNDERGRADUATE

1240 Welding and Cutting Practices (3) Prereq: 1210.

1610 Engine Analysis (3) Designed to give experimental laboratory experience in automotive engine. Engine tune-up and engine overhaul techniques and procedures are studied and practiced.

1620 Graphic Communications (3) Drafting as a means of communication in technology. Orthographic and multi-view drafting, computer-aided drafting 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.

1642 General Metals (3) Basic course dealing with processes, equipment, materials, products, and organization of metal-working industries. Involves processes in machining, foundry, sheetmetal, and fabrication.

1661 General Woodworking (3) Basic course dealing with processes, tools, equipment, products organization of woodworking industry. Stresses importance of safety and using hand tools and basic machinery.

2010-20-30 Basic Experiences in Trade and Industrial Education (3, 3, 3) Methods and materials of instruction. 3 periods.

2611 Power Mechanics (3) Includes various prime movers, methods of utilization, distribution and transmission of power with internal combustion engines. Maintenance and repair of small engines is stressed.

2621 Architectural Graphics (3) Introduction to fundamentals to graphic representation and residential architecture. Light construction principles are stressed and working drawings for a residential building are developed. Prereq: 1620.

2631 Fundamentals of Applied Electronics (3) Study of semiconductors, electrical circuits, including amplifiers, oscillators, switching and timing circuits, applications including sounds in video systems, relays, control and industrial devices. Prereq: 1630.

2641 Machine Tool Processes (3) Introductory course of the function, care, set-up, operation and theory of basic machine tools. Prereq: 1642.

2652 General Plastics (3) Characteristics of thermoplastics and thermal setting materials, methods of determination and resin conversion to finished product.

2660 Furniture and Cabinet Construction (3) Comprehensive study of cases and carcass construction with emphasis placed upon furniture and built-ins. Prereq: 1661.

3010 Related Science, Mathematics, and Technology in Occupations (9) Credit may be earned only through examination. Applicants shall be limited to persons already holding a vocational teaching certificate.

3020 Manipulative Skills in Occupations (9) Credit may be earned only through examination. Applicants shall be limited to persons already holding a vocational teaching certificate.

3630 Knowledge of Related Subjects in Occupations and Personal Qualifications (9) Credit may be earned only through examination. Applicants shall be limited to persons already holding a vocational teaching certificate.

3640-41-42 Physical Testing Technology (3, 3, 3) Skills and techniques involved in radiography, metallurgy, tensile and compression testing, and other destructive and nondestructive testing methods. Undergraduate credit only.

3650-51-52 Welding, Brazing, Cutting, and Related Processes (3, 3, 3) Various types of welding equipment and fundamental techniques of welding. Undergraduate credit only.

3660-61-62 Electronic Technology (3, 3, 3) Basic principles and application of electronics. Undergraduate credit only.

3700-71-72 Industrial Mechanical Technology (3, 3, 3) Designing, testing, analyzing data, and preparing technical report on a variety of mechanical systems and equipment. Undergraduate credit only.

3800-81-82 Machining of Metals (3, 3, 3) Introduction to machine shop theory and procedures which provide machinist with the basics of using basic machine tools. Undergraduate credit only.

3110 History and Philosophy of Industrial Education (3)

3210-20-30 Part-time Programs in Cooperative Industrial Training (3, 3, 3) Principles of organization, methods, and materials.

3310 Shop Organization and Management (3)

3320-30 Materials and Methods for Teachers of Shop and Related Subjects Teachers (3, 3)

3340 School Shop Safety (3)

3610 Development and Utilization of Advisory Committees (3) Philosophy and rationale for use of craft advisory committees. Their selection, organization, implementation and utilization.

3612 Automotive Mechanics (3) Advanced laboratory experience in tune-up, overhaul, transmission, and the suspension system. Prereq: 1610.

3621 Industrial Graphics (3) Auxiliary views, sections, conventional practices, fasteners, dimensioning, working drawings and machine drafting. Prereq: 1620.

3632 Industrial Electricity and Equipment Control (3) Involves construction and application of industrial electrical equipment both single and polyphase. Production, use and control of electric current. Emphasis placed on circuit tracing, installation, maintenance, and trouble connecting industrial equipment. Prereq: 1630.

3640 Advanced General Metals (3) Provides experiences in areas of hot and cold forming of metals, molding and metal finishing, tool grinding, heat treatment, fabrication and precision measurement. Prereq: 2641.


3662 Construction Materials and Methods (3) Materials, methods, and equipment used in residential construction, including location and excavation, foundry, frame interior and exterior finishes, installation and acceptable practices in assembly. Prereq: 1661.

4073-74-75 Tool and Machine Design (3, 3, 3) Tool and machine design, calculations, design systems, and designing procedures. Undergraduate credit only.

4083-84-85 Precision Forming and Shaping of Metals (3, 3, 3) Advanced machine tool techniques related to the production of precision-made metal parts with emphasis on automatically controlled machine tools. Undergraduate credit only.

4090-91 Numerical Control (3, 3) Tooling, manual programming, automatic programming, automatic programming language, and use of automatic programmer as a computer. Undergraduate credit only.

4110 Foremanship Training by the Conference Method (3)

4120-30 Job Analysis (3, 3) Principles, practice, instructional methods.

4210 Methods of Teaching Shop and Related Subjects (3) Undergraduate credit only.

4220 Vocational Technical Laboratory Equipment Maintenance (3) Understanding of preventive maintenance, maintenance and calibration of instruments and power equipment used in industrial education shops.

4310-20 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.

4350-50-70 Problems in Industrial Education (3, 3, 3)

4410 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 parallel: 4210. 1 hr and 5 periods. Undergraduate credit only. Satisfactory-No Credit.

4420 Directed Teaching (9) Guided observation and teaching in trade, industrial, and/or technical programs in secondary, area, adult, post secondary, and junior college industrial vocational and technical curricula. Undergraduate credit only. Satisfactory-No Credit.

4510-11-12 Seminar in Industrial Education (3, 3, 3) Educational innovations, current events, problems, and other topics associated with the field of industrial education.

4520-21-22 New Developments in Industrial Education (3, 3, 3) Developments, pressing problems, and recent trends in field of industrial education as presented by a consulting instructor in conjunction with knowledgeable resource personnel.

GRADUATE

5000 Thesis

5110-20-30 Administration and Supervision of Industrial Education (3, 3, 3)

5140 Organization and Operation of Area Vocational-Technical Schools (3)

5210-20-30 Special Problems in Industrial Education (3, 3, 3)

5310-20 Methods of Research in Industrial Education (3, 3)

5410 Improving Teachers in Service (3)

5420 Advisory Committees and Apprentice Training (3)

5430 Vocational School Administration and Management (3)

5440 Advanced Methods of Teaching Skills and Technical Information (3)

5510-20-30 Seminar in Industrial Technical Education (3, 3, 3)

5540 New Developments in Industrial Technical Education (3)
College of Engineering

Fred N. Peebles, Dean
William K. Stair, Associate Dean

The engineer applies mathematical and scientific knowledge in planning economical ways of providing materials and energy in forms that are useful to mankind. 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 young men and women to the high levels of technical competence and social understanding that will enable them to fulfill their responsibilities as professional engineers.

Graduates of the B.S. curricula offered by the College may enter directly a position in industry, government, or private practice; or may pursue advanced study in the 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 of Engineering had its beginning 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 1888, it was dormant until it was revived in the Chemical Engineering Department 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 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 in about 1942. Curricula in aerospace engineering and engineering mechanics were added in 1966, and a curriculum in engineering science was added in 1967.

The first Dean of the College of Engineering, 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.

The Cooperative Engineering Program was established at The University of Tennessee in 1928. This institution was one of the early pioneers in this valuable type of education, which originated at the University of Cincinnati in 1905. The 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 of Engineering, was re-established in 1967. The Engineering Experiment Station was established in 1922.

The College of Engineering 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 taught 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, located on the south side of the campus. A laboratory building for nuclear engineering is located on the agricultural campus on the bluffs overlooking the river.

Ferris Hall. This building houses the
Cooperative Engineering Programs

COOPERATIVE ENGINEERING SCHOLARSHIP PROGRAM

The Cooperative Engineering Scholarship Program is rich in honors, opportunities, experience, and, therefore, in educational value. The program was developed during the early 1950's and was formalized and given its present name in 1957. The program is open only to those students who have demonstrated marked superiority in academic work, and in recent years very few have been admitted whose scholastic average has been significantly less than "B". In addition the student must maintain academic and work records at levels that are consistent with a scholarship program of this type if he is to remain in the program. Companies participating in this program have a high degree of assurance that cooperative students sent to them will be successful in their program. Admission to this program is at the end of the second or third quarter of the freshman year.

A brochure describing in detail all of the principles governing this program may be obtained from the Office of Cooperative Engineering Programs of the College of Engineering.

COOPERATIVE ENGINEERING PROGRAM

This program is a cooperative engineering program of the conventional type, and is open to any student in the College of Engineering who is in good academic standing, whose class work indicates that he is dependable and capable, and who is acceptable to a cooperating company. In general, admission to this program will be at the end of the second or third quarter of the freshman year, as is the case in the Cooperative Engineering Scholarship Program. In unusual cases other arrangements may be made after consultation between the University, the student, and the cooperating company.

Information concerning this program may be obtained from the Office of Cooperative Engineering Programs of the College of Engineering.

Academic schedules for both programs and for each curriculum are shown elsewhere in this section. Students in either program are expected to participate for a minimum of five quarters, and in general seven quarters is the maximum.

Binary Program

A binary program in engineering education is available at The University of Tennessee. The College of Engineering has agreements with a number of liberal arts colleges to conduct a five-year program, three years of which will be given at the liberal arts college and the last two years at The University of Tennessee in engineering. At the end of the fourth year, or the first year at The University of Tennessee, the cooperating college will confer a degree. At the end of the fifth year, the College of Engineering will give the degree of Bachelor of Science in Engineering at the branches of engineering.

Institutions cooperating with The University of Tennessee in offering this Liberal Arts-Engineering 5-2 Binomial Plan include:

Bennett College, Nashville, Tennessee
Engineering Experiment Station
F. N. Peebles, Director
William K. Stair, Associate Director

The management of the Engineering Experiment Station is vested in the President of the University, the Dean of Engineering, the Director, and the Associate Director. An advisory committee consisting of the heads of the departments of the College of Engineering and the heads of departments in allied scientific fields may assist in determining policy and procedures. Members of the faculty of the College of Engineering are available for consultation and advice in technical matters.

The Station is organized to conduct research underlying engineering practice and to aid in the developments concerning 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 may also make special arrangements with any person or company to study any technical question within the capacity of its resources, and to report the results exclusively to the company requesting the study. In such case, 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, an unclassified summary of current studies are made available to interested parties.

Curricula in Engineering

COURSE LOAD

The maximum number of hours which can be taken by an undergraduate without special permission is 19. The Dean of Engineering must give permission to take 20 hours or more.

GENERAL REQUIREMENTS

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

Chemistry. For freshman in sequence see page 169.

Transfer Credit. Every attempt will be made to give maximum credit for courses taken elsewhere and transferred to the College of Engineering. Discussions concerning the evaluation of transfer credits should be conducted with the head of the department in which the student proposes to transfer.

Program for Second B.S. Degree. Upon approval by the Dean of Engineering and the Committee on Degrees of a program of study recommended by the major engineering department, a student who already holds a bachelor's degree may obtain the appropriate first degree in engineering upon completion of a minimum of 45 quarter hours credit. The prevailing University regulations on residence and grade point averages shall apply.

Humanities and Social Studies Electives. The traditional view of the role of the humanities and social studies in the engineering curriculum was to provide a degree of personal self-development, mind expansion, and broadening of an educational experience which otherwise would be very much one dimensional. This personal development dimension is still to be nurtured and preserved, but increasing responsibilities being placed on the engineer require a knowledge of the social and well-integrated sciences to be as basic a part of his background as mathematics and the physical sciences. The future engineer will be working with contractors and government officials and his understanding of the social and political implications of his work will be a major factor in his success. He will be interacting more with the public in explaining his work as the public demands a greater participation in the decision-making processes concerning the deployment of technology.

It has been said that during the 1960's our society asked of technology "what can be done next?" It is becoming clear that during the 1970's, society will be asking "what should be done next?" It is essential that future engineers be given the basis for understanding the social and political implications of technology so that technology can be a benefit to society and not a burden. Public policies and institutions must be structured to insure that the deployment of technology is in the public interest. The alternative may be the apocalyptic prophecy recently expressed by Dr. Donald MacGillivray in a Congressional hearing at which he said, "We will go down in history as an elegant technological society struck down by biological and ecological integration for lack of ecological understanding."

Hence, the inclusion of non-technical courses in the engineering curriculum serves a three-fold need. To provide an introduction to the human aspects of the practice of engineering; to enrich the student's knowledge of the world in which he lives—its culture, behavior patterns, history, and government; and to help the student appreciate and be able to deal with the complex interaction between technology and society in the contemporary world. The last area is a new addition to the electives available to the engineering student, but is of such importance to society that it is strongly recommended that the student seriously consider electives in this area.

The burden of technology in lightening the burden of physical labor has well known and documented. The dominant attitude in our society until relatively recently was that technology is inherently good and the greater deployment of technology, the greater the overall good to society. The pitfalls of unreserved expansion of technology have recently been the subject of much debate, particularly in the realm of environmental concerns. The challenge to engineering and society as a whole which is emerging from this debate is how to maximize the potential for technology to contribute to an improvement of the human condition with minimal detrimental side effects.

In a recent workshop on social directions for technology, certain aspects of the overall problem of the interaction between technology and society were summarized as follows:

1. Our society is experiencing a conflict between a desire for "growth" and a desire for a suitable and sustainable way of life.

2. Decisions concerning technology assessment are too often made on the basis of self-interest, irrational public opinion, and incomplete or inaccurate information.

3. Our present technological capability has been largely shaped by defense and space requirements, by a consumer-oriented market, and by resource depletion to the excessive neglect of social and environmental problems.

4. The research funding pattern of the post-War II years in American universities has resulted in an imbalance between research and the pursuit of knowledge for its own sake in narrow, specialized areas and the ability to apply the results of research to real world problems.

5. The degree of interaction between agencies of government and universities in dealing with real world social problems has been inadequate in scope or ineffective in practice.

6. Uncertainty exists concerning our ability to project accurately manpower needs for the future both in terms of quantity and in terms of talents needed to function in a highly complex, technology-based society.

The College of Engineering, in recognizing the importance of these problems, assumes an obligation to include in each of the engineering curricula the problems already noted. Each student may gain further insight into his interaction with society both personally and professionally. Just as engineers show individual preference for concentration in one of the areas of engineering, they differ in their interests in the many areas of the humanities and social sciences. In order to increase the effectiveness of this interest, the College has structured the non-technical course content to allow breadth in the areas that can be selected but with sufficient depth in terms of number of courses to permit a reasonable level of evidence of comprehension in the selected area. The section which follows describes the structure of the humanities and social studies part of the engineering curriculum.

Structure of the Elective Options Program For Engineering Students in Humanities and Social Studies

In order to satisfy the needs set forth in the statement above, thirteen coherent groups of courses have been identified in three broad areas:

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. Cultures
C. History
D. Literature
E. Anthropology

Area III. Technology and Society

A. Human Habitat
B. Technology Assessment
C. Communication
D. Resources

Any group within an area permits the student insight into a different perspective into his professional responsibility to understand his field, technical skills to the benefit of mankind. Sufficient choice exists, even within a group of courses, to allow selection of those courses...
which best fulfill his particular interests. Individual departments in the College of Engineering will establish the total number of hours of humanities and social studies courses to be included in the respective curricula. The number of quarter hours required by the departments varies from 24 to 27 hours within which some courses may be specified in order to meet the particular needs of an individual department.

It is recognized that individual students may desire to take courses not on the list below. Those students should discuss their particular interests with their academic advisor. Courses and programs outlined below are approved, and although the student need not secure an advisor's approval, the benefits deriving from a discussion concerning a contemplated program may prove to be worthwhile.

Although the catalog may state prerequisites for upper division courses in the list, students are encouraged to consult the instructor since these prerequisites may be waived after consultation (particularly for better students, and for courses in Area III).

The list contains courses in departments not traditionally considered as offering courses satisfactory for completion of "non-technical" or humanistic-social electives—specifically NE 3040, ENV 3000, IE 4810. Although it has been widely recognized that the engineer has a responsibility to society, the increased awareness of the impact of technology on society has led to the realization that the cold categories of "technical" and "non-technical" electives may no longer be adequate.

Specifically, there is growing recognition that courses significant to the technology-society interaction can and should be developed within engineering colleges. The three courses listed above are of this nature and, where appropriate, are acceptable for inclusion in the Humanistic-Social Studies electives. Similar courses that might be considered by a student should be approved by the Dean's office.

Elective Options in Humanities and Social Studies

Area I. Human, Economic and Political Relationships to Engineering

A. Governance and Political Science
- Political Science 2230
- Political Science 3730
- Political Science 4110 and 4120
- Political Science 3040-50-60
- Political Science 3210-20-30
- Political Science 3530
- Political Science 3630
- Economics 3340
- Business Law 4110
- Sociology 4320
- Sociology 4330
- Sociology 4530
- History 4380

B. Economics
- Economics 2110-20 or 2118-28
- Economics 3120
- Economics 3220
- Economics 3420
- Economics 4240
- Industrial Management 4320

C. Sociology and Psychology
- Psychology 2110-20
- Psychology 3430
- Psychology 4540
- Psychology 4340

D. Human Values
- Sociology 2110-20-30
- Philosophy 3110-20-30-40-50
- Philosophy 3210-20
- Philosophy 3310
- Philosophy 3910
- Philosophy 2550
- History 4640-50-60
- Religious Studies 2020
- Religious Studies 3550
- Religious Studies 3830
- Religious Studies 3740

Area II. Society—Its Culture, History and Literature

A. Fine Arts (Note: No more than six quarter hours may be taken in the Performing Arts—Voice, Instrumentation, Band, Chorus, etc.)
- Music 1xxx (Applied Music, Ensemble, etc.)
- Music 1310-20-30
- Music 1340-50
- Music 2310-20-30
- Art 1710-20-30
- Art 3710
- Art 3711
- Art 3720
- Art 3730
- Art 3810
- Art 3840-50-60
- Theatre 1310
- English 3411-12-20-30

B. American Culture
- English 2151
- English 2141
- English 3010-20-30
- English 3080
- English 3140
- English 3430
- English 4500-60
- English 4520
- English 4650
- History 1910-20-30
- History 2210-20-30
- American Studies 3010
- History 3610-20
- History 4640-50-60
- Philosophy 1510-20
- Philosophy 3210-20
- Philosophy 3440
- Philosophy 3315
- Philosophy 3720
- Philosophy 3690
- University Studies 3010
- Art 3710
- Art 3711
- Art 3720
- Art 3730
- Art 3810
- Music 1310-20-30
- Music 1340-50
- Music 2310-20-30
- Political Science 3040-50-60
- Religious Studies 3510-20-30

C. History
- History 3411-12

D. Literature
- English 2112-22-32
- English 2141
- English 3010-20-30
- English 3080
- English 3140
- English 3940
- Comparative Literature 3010
- English 2111-21
- English 2131
- English 3070
- English 3110-20-30
- English 4010-20
- English 4050-60
- English 4310-20-30-40
- English 4620
- English 4650
- English 4720
- English 4730
- Classics 3210-20-30
- German 3210-20-30
- Russian 3210-20-30
- Religious Studies 3710

E. Anthropology
- Anthropology 2030
- Anthropology 3410
- Anthropology 4420
- American Studies 3010
- History 4640-50-60
- History 4250-60-70
- Area Specialization (only one of these can be selected):
  - Asian Studies 2010-20-30
  - History 1910-20-30

Area III. Technology and Society

A. Human Habitat
- Sociology 2110-20-30
- Sociology 2170
- Sociology 2220
- Sociology 3130
- Sociology 4110
- Sociology 4320
- Sociology 4330
- Sociology 4510
- Geography 2400
- Ag Economics 4330
- Botany 3090
- Psychology 4900
- Anthropology 4430
- University Studies 3010
- Environment Engr. 3000
- Nutrition 2000
- Public Health 3320
- Food Science 4710

B. Technology Assessment
- Political Science 3040-50
- Sociology 4330
- Psychology 4900
- Philosophy 3720
- University Studies 3010
- University Studies 4100
- Envr. Engr. 3000
- Envr. Engr. 4700
Botany 3090
Biology 2130
Economics 4260
Economics 4240
Nuclear Engr. 3040
Rural Sociology 4450
Sociology 21710
C. Communication
Speech 2310
Speech 3010
Speech 3020
Speech 3130
Psychology 3430
Sociology 3010
Philosophy 2210-20
Journalism 3710
Journalism 3770
Journalism 3110
Journalism 4410
Broadcasting 3650 or Journalism 2210
D. Resources
Economics 4260
Geology 2310
Geography 2710-20-30
University Studies 3010
University Studies 4010
Nuclear Engr. 3040
Forestry 3730

Technical Electives. Technical electives are to be selected with the advice and approval of the student's major department. In some of the curricula tabulations a choice of such electives is indicated, and regulations in regard to their selection are stated.

The Voluntary ROTC Program. Students in the College of Engineering may elect to participate in the voluntary ROTC Program. When this is done, nine quarter hours of work taken in Advanced ROTC (3000 and 4000 series) may also count as credit toward an engineering degree. Every effort will be made to ensure that no student who participates in the voluntary program will be penalized in his overall academic program in the College of Engineering.

Approval of Electives and Substitutions. Not later than the beginning of the third quarter prior to anticipated graduation, each student shall discuss with his adviser the status of his program of study. Any necessary additions to or substitutions in his program, or electives requiring special approval, shall be cleared in written form at that time, and it is each student’s responsibility to see that all necessary approvals are secured.

Agricultural Engineering

(See College of Agriculture section)

Biomedical Engineering

(Available in Engineering Science Degree Program)

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>See Basic Curriculum, Engineering Science</td>
<td>18 18 17</td>
</tr>
</tbody>
</table>

| Sophomore | Mathematics 2840-50-60 | 3 3 3 |
| Non-Tech. Electives | 3 3 |
| Physics 2310-20-30 | 3 3 3 |
| Elec. Engr. 2010-20-30, 3120 | 3 3 |
| Mech. Engr. 2170-20 | 3 3 |
| Chemist. Engr. 2140-49' | 3 3 |
| Junior | Mathematics 3150 | 3 3 |
| Met. Engr. 2110 | 3 3 |

TOTAL: 200 hours

*Not required in the cooperative program.

† Minimum of one-half (12 quarter hours) of the non-technical electives must be taken from a single group under one of the three areas of the list on pages 107-108.

Civil Engineering

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>Mathematics 1840-50-60</td>
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<tr>
<td>English 1510-20</td>
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</table>

TOTAL: 200 hours

*Not required in the cooperative program.
College of Engineering

**Electrical Engineering**

### Hours Credit

<table>
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<tr>
<th>Course</th>
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<th>II</th>
<th>III</th>
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<tbody>
<tr>
<td>Chemistry 1110-20-30</td>
<td>4</td>
<td>3</td>
<td>3</td>
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<tr>
<td>Graphics 1310-20-30</td>
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<td>2</td>
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<tr>
<td>Basic Engr. 1310-20-30</td>
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<td>Basic Engr. 1410</td>
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### Humanities-Social Science courses approved by the department

- Math/Science Elective
- Non-technical Electives
- Free Electives
- Technical Electives

### Total: 199 hours

**Electromagnetic Fields and Communications**

### Hours Credit

<table>
<thead>
<tr>
<th>Course</th>
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<th>III</th>
</tr>
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<tbody>
<tr>
<td>Elect Engr. 4200</td>
<td>3</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Elect Engr. 4570</td>
<td>3</td>
<td>-</td>
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<tr>
<td>Elect Engr. 4480</td>
<td>3</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Elect Engr. 4680-90</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Elect Engr. 4100</td>
<td>3</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Elect Engr. 4080-90</td>
<td>3</td>
<td>-</td>
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<tr>
<td>Math 4710</td>
<td>3</td>
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<tr>
<td>Math 4550</td>
<td>3</td>
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<td>-</td>
</tr>
<tr>
<td>Elect Engr. 4540</td>
<td>3</td>
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<td>-</td>
</tr>
<tr>
<td>Non-technical Electives</td>
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<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Economics 2110</td>
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</table>

**Total: 202 hours**

**Energy Conversion and Power Systems**

### Hours Credit

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<tr>
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<tbody>
<tr>
<td>Elect Engr. 4200-30</td>
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<tr>
<td>Elect Engr. 4370</td>
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<tr>
<td>Elect Engr. 4790</td>
<td>3</td>
<td>-</td>
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<tr>
<td>Elect Engr. 4610</td>
<td>3</td>
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<tr>
<td>Elect Engr. 4780</td>
<td>3</td>
<td>-</td>
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<tr>
<td>Elect Engr. 4690</td>
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<td>-</td>
<td>-</td>
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<tr>
<td>Nuclear Engr. 4610</td>
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<td>-</td>
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<tr>
<td>Elect Engr. 4020</td>
<td>3</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Elect Engr. 4810</td>
<td>3</td>
<td>-</td>
<td>-</td>
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<tr>
<td>Economics 2110</td>
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**Total: 202 hours**

**Plasma and Electro-Optics Engineering**

### Hours Credit

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</thead>
<tbody>
<tr>
<td>Elect Engr. 4460, 4470, 4480</td>
<td>3</td>
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<td>3</td>
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<tr>
<td>Elect Engr. 4020, 4690, 4500</td>
<td>3</td>
<td>-</td>
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</tr>
<tr>
<td>Elect Engr. Tech. Electives</td>
<td>3</td>
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<td>-</td>
</tr>
<tr>
<td>Economics 2110</td>
<td>3</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Elect. Engr. Tech. Electives</td>
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</tr>
<tr>
<td>Tech. Electives</td>
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<tr>
<td>Non-Tech Electives</td>
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**Total: 202 hours**

**Computer Engineering**

### Hours Credit

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<th>Course</th>
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<tbody>
<tr>
<td>Elect Engr. 4680</td>
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<td>Elect Engr. 4630</td>
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<td>Elect Engr. 4610</td>
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<tr>
<td>Math 4420</td>
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<tr>
<td>Elect Engr. Tech. Electives</td>
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<td>Elect Engr. 4620</td>
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<td>Math 4410</td>
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<td>Math 4710 or 4510</td>
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<td>Elect Engr. 4480</td>
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<td>Math 4430 or Elect. Engr. 4830</td>
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<tr>
<td>Non-technical Electives</td>
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**Total: 202 hours**

**Systems and Networks**

### Hours Credit

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<tbody>
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<td>Elect Engr. 4400</td>
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<td>Elect Engr. 4340</td>
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<tr>
<td>Elect. Engr. Tech. Electives</td>
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<tr>
<td>Non-technical Electives</td>
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**Total: 202 hours**

**Electronics and Instrumentation**

### Hours Credit

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<td>Elect Engr. 4660</td>
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<td>Elect Engr. 4350</td>
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**Total: 198 or 199 hours**

#### Notes
- During the third quarter of the junior year the student, in consultation with his adviser, should choose one of the following areas of interest. A student marked with an asterisk may be replaced by other courses approved by the student’s area adviser.
- Notice that any given senior course is offered only once every third quarter, including the summer quarter.
Engineering Science

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Appropriate courses in the College of Engineering approved by the department.

*Humanities-Social Science courses approved by the department.

*Appropriate courses approved by the department.

Upper-division courses in mathematics, statistics, natural science, or engineering approved by the department.

Industrial Engineering

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**TOTAL: 206 hours**

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Mechanical Engineering

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*Not required in the cooperative program.

*Minimum of one-half (12 quarter hours) of the non-technical electives must be taken from a single group under one of the three areas of the list on pages 107-108.

Nuclear Engineering

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| *Engineering Electives: Senior courses in Mechanical Engineering not otherwise required.
| *Technical Electives: Upper-division courses in engineering, mathematics, or physics as approved by the department.
| **Metallurgical Engineering**    |       |        |
| Freshman                         | 1     | I      |
| Math 1840-50-60                   | 4     |
| English 1510-20                   | 4     |
| Chemistry 1110-20-30              | 4     |
| Physics 2310-20-30                | 4     |
| *Non-technical Electives*         | 4     |
| **Junior**                       |       |        |
| Mech. Eng. 4310-20                | 4     |
| Mech. Eng. 4510                   | 4     |
| Mech. Eng. 4471-91                | 4     |
| Mech. Eng. 4670-80                | 4     |
| *Technical Electives*             | 4     |
| *Non-technical Elective*          |       | 4     |
| **TOTAL: 195 hours**              |       |        |

*Not required in the cooperative program.

*Minimum of one-half (12 quarter hours) of the non-technical electives must be taken from a single group under one of the three areas of the list on pages 107-108.
### Cooperative Curriculum in Aerospace Engineering

#### Students Working Spring and Fall Quarters—Group A

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## 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: 199 Hours

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TOTAL: 199 Hours

* A minimum of one-half (12 quarter hours) of the non-technical electives must be taken from a single group under one of the three areas of the list on pages 107-108.
### Cooperative Curriculum in Civil Engineering

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**Students Working Summer and Winter Quarters—Group B**

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*Humanistic-Social Studies Courses approved by the department.*

*Math/Science Courses approved by the department.*

*Technical Electives must be approved by the student’s advisor and the primary and secondary area must come from the departmental list of approved courses for 15 credits and 6 credits respectively.*
### Cooperative Curriculum in Electrical Engineering

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**TOTAL: 204-205 hours**

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**TOTAL: 204-205 Hours**
## Cooperative Curriculum in Engineering Physics

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1. To be taken from Liberal Arts track of Language, Literature and Arts, or History and Society, with at least 16 hours from courses approved for Language, Literature and Arts.
2. The Honors sequence (Physics 1318-28-38) is recommended for qualified majors.
3. To be taken in College of Engineering.
5. From Engineering, Mathematics, Computer Science, Physics, Chemistry, or Astronomy.
6. Students not planning to pursue graduate studies may substitute 3710-20-30.
### Cooperative Curriculum in Engineering Science

**Students Working Spring and Fall Quarters—Group A**

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| **SECOND YEAR**               |                            |                                 |                               |
| Math 2840 . . . . . . . .     | WORK                       | Physics 2310 . . . . . . .      |                                 |
| *Non-Tech. Elec.* . . . . .  |                            |                                 |                               |

| **THIRD YEAR**                |                            |                                 |                               |
| *Non-Tech. Elec.* . . . . .  |                            |                                 |                               |

| **FOURTH YEAR**               |                            |                                 |                               |
| Mech Engr 3440 . . . . . .   | Phy or Biol                |                                 |                               |
| *Phys Elect.* . . . . . . .  |                            |                                 |                               |

| **FIFTH YEAR**                |                            |                                 |                               |

| **TOTAL**                     |                            |                                 |                               |
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### Students Working Summer and Winter Quarters—Group B

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| **SECOND YEAR**               |                            |                                 |                               |
| Math 2840 . . . . . . . .     | WORK                       | Physics 2310 . . . . . . .      |                                 |
| *Non-Tech. Elec.* . . . . .  |                            |                                 |                               |

| **THIRD YEAR**                |                            |                                 |                               |
| Math 2860 . . . . . . . .     | Mech Engr 3311 . . . . .   | Elec 3120 . . . . . . . .       | WORK                          |
| *Non-Tech. Elec.* . . . . .  |                            |                                 |                               |

| **FOURTH YEAR**               |                            |                                 |                               |
| Mech Engr 3440 . . . . . .   | Phy or Biol                |                                 |                               |
| *Phys Elect.* . . . . . . .  |                            |                                 |                               |

| **FIFTH YEAR**                |                            |                                 |                               |

|                               |                            |                                 |                               |
|                               |                            |                                 |                               |
| **TOTAL**                     |                            |                                 |                               |
|                               |                            |                                 |                               |

*Appropriate courses in the College of Engineering approved by the Department.

*Humanities-Social Science courses approved by the Department.

*Appropriate courses approved by the Department.

*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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Cooperative Curriculum in Mechanical Engineering

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Students Working Summer and Winter Quarters—Group B

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*Humanistic-Social Studies Electives

* Mechanical Engineering Electives: Senior Courses in Mechanical Engineering not otherwise required.

* 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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### Students Working Summer and Winter Quarters—Group B

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'Total: 198 Hours

1 A minimum of one-half (12 quarter hours) of the non-technical electives must be taken from a single group under one of the three areas of the list on pages 107-108.
### Cooperative Curriculum in Nuclear Engineering

#### Students Working Spring and Fall Quarters—Group A

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#### Students Working Summer & Winter Quarters—Group B

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Departments of Instruction

Numbers in parentheses following the course titles indicate quarter hours credit offered.

Agricultural Engineering

(See College of Agriculture section)

Basic Engineering and Graphics

(Non-Departmental)

Basic Engineering (179)

Coordinator: W. T. Snyder

1310 Basic Mechanics, I (4) Forces, vector quantities, and moments; resultants of force systems; simple static equilibrium. Required of all engineering students except Engineering Physics majors. Coreq: Math 1810. 3 hrs and one 3-hr lab.

1320 Basic Mechanics, II (4) Displacement vectors; particle kinematics and projectile motion; kinetics of particles using Newton's laws, frictional forces, and impulse-momentum. Required of all engineering students except Engineering Physics majors. Coreq: Math 1820. 3 hrs and one 3-hr lab.

Coordinator: P. F. Pasqua

1330 Basic Thermodynamics (4) Work and kinetic energy; temperature, heat; first law of thermodynamics; kinetic theory of gases. Required of all engineering students except Engineering Physics majors. Prereq: 1320; Coreq: Math 1830. 3 hrs and one 3-hr lab.

1410 Engineering Computations (2) Presentation of data: elementary problem solving; use of slide rule and digital computer; treatment of error; empirical methods. Coreq: 1310. 2 hrs plus open computation lab.

1918 Honors: Basic Engineering (4) Engineering concepts for freshman honors students; uses project formalism to introduce students to engineering design, analysis, and development; to give incentive for continuing in engineering upperclass projects. Prereq: 1320.

Graphics (443)

Coordinator: M. W. Milligan

Professor: C. A. Newton (Emeritus), M.S. Syracuse.

1310-20-30 Fundamentals of Engineering Graphics (2, 2, 2) Graphical representation of three-dimensional shape and size by orthographic and pictorial projection, sketching, and dimensioning; tolerances. Problem solving utilizing spatial relationships and graphical vector analysis, and graphical presentation of engineering data. Must be taken in sequence. Two 3-hr periods or three 2-hr periods.

1410-20 Fundamentals of Engineering Graphics (3, 3) Graphical representation of three-dimensional shape and size; space relationships. Graphical presentation of engineering data. Required of all engineering students. Must be taken in sequence. One lecture and three 2-hr periods or two 3-hr periods.

1415-25 Fundamentals of Engineering Graphics (3, 3) Graphical representation of three-dimensional shape and size; space relationships. Graphical presentation of engineering data. Self-study course with tutorial assistance for those who have had high school courses with this emphasis. May be interchanged with Graphics 1410-20 courses.

Engineering Studies (338)

2100 Introduction to Engineering Methodology (4) Designed to introduce non-engineering students to representative methods utilized in engineering in design, development, operation, and evaluation of processes and products for society; use of physical laws and examples of techniques such as modeling, systems analysis, economic balances; problems of resource use and technology control; thematic approach may be used.

4100 History of Engineering (4) History of technology and engineering with emphasis on identification of and developments in major areas such as transportation, communication, energy, manufacturing, design, and materials. Relationship to social and political structures of historical periods. Open to all students.

4200 Technology Forecasting and Assessment (4) Procedures and problems in forecasting of consequences of existing and new technologies; assessment of and decisions on use of these technologies. Social, political, economic, and technological implications of consequence-based assessment and control of technology. Open to all students.

4300 The Interaction Between Science and Engineering (4) Historical-to-current analysis of interaction between science and engineering; patterns of mutual stimulation and of distinction. Open to all students.

Chemical and Metallurgical Engineering

Professors:

H. F. Johnson (Head) D.Eng, Yale, P.E.; D. C. Bogue, Ph.D. Delaware, B. S. Borie, Ph.D. Massachusetts Institute of Technology; C. H. Brooks, Jr., Ph.D. Tennessee; E. S. Clark, Ph.D. California (Berkeley); O. L. Culberson, Ph.D. Texas, H. W. Hsu, Ph.D. Wisconsin; S. H. Jury, Ph.D. Cincinnati; P. E.; C. D. Lundin, Ph.D. Rensselaer Polytechnic Inst.; A. C. Molnar, Ph.D. Kentucky; S. M. Oliver, Ph.D. Pennsylvania State; J. J. Perona, Ph.D. Northwestern; J. W. Prabos, Ph.D. Tennessee; E. Sprague, Ph.D. Tennessee; E. E. Stansbury, Jr., Ph.D. Cincinnati; J. L. White, Ph.D. Delaware.

Associate Professors:


Lecturer:

J. M. Holmes, Ph.D. Tennessee.

*On leave.

+Alumni Distinguished Service Professor.

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 choice can be made in the third year. Both curricula are arranged to provide a central core of courses for the upper division years to permit emphasis on preparation for graduate study or technical employment.

GRADUATE STUDY PROGRAMS

Graduate programs leading to the degrees of Master of Science and Doctor of Philosophy with specialization in chemical engineering or metallurgical engineering are offered.

A program leading to the M.S. and Ph.D. degrees with specialization in polymer science and engineering is conducted jointly with the Chemistry department which offers a degree with similar specialization.

These programs have been strengthened by fellowships or grants provided by industrial companies including Dow, Du Pont, General Electric, Shell, Union Carbide 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 assistantships on contracts with industry and governmental agencies. The University's special University Research Grant 1973, a Resident Graduate Program at Oak Ridge, Kingsport, and Chattanooga.

See the Graduate School Catalog for detailed information.

Chemical and Metallurgical Engineering (227)

2100 Process Principles and Materials I (4) Behavior of gases. First and second laws of thermodynamics, thermodynamic functions. One and two component phase equilibrium, phase diagrams and structures of binary systems. Inspection trip to an industrial plant, usually scheduled in fall quarter on ETA day. Prereq: Basic Engineering 1330; Chemistry 1120; Mathematics 1650. 3 hrs and 1 lab period.


2205 Process Principles and Materials III (4) Material and energy balances in chemical, inorganic and organic compounds, with emphasis on mechanisms of control of properties by chemical composition, thermal and mechanical treatment; crystallography, imperfections, and properties of heat treatment, molecular weight and particle size determinations. Prereq: 2010; Chemistry 1130. 3 hrs and 1 lab period.

2220 Analog Computer Practice (1) Introduction to fundamentals of analog programming, Analog computation facilities and analog simulation languages. Prereq: 2010; consent of instructor. One lab. Satisfaction-Non Credit.

2230 Mini Computer Practice (1) Use of mini computers. Prereq: Basic Engineering 1410, or consent of instructor. One lab. Satisfaction-Non Credit.

2240 Mini Computer Data Acquisition (1) Mini computers for data acquisition. Prereq: 2230 or consent of instructor. One lab. Satisfaction-Non Credit.

3040 Process Principles and Materials IV (4) Applications of the second law of thermodynamics to physical and chemical processes and thermodynamic cycles; applications of the Gibbs function to one, two and three phase chemical systems; use of the second law for chemical engineering design calculations. Prereq: 2020; Chemistry 1130. 3 hrs and 1 lab period.

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 and potential applications of these materials in architecture, and art. Lectures and demonstrations. Open to students in all colleges. Prereq: Introductory science course.
3230 Phase Transformations (4) Thermodynamic and structural changes in binary equilibria. Ternary systems. Kinetics and morphology of precipitation and phase transformations in simple and complex systems. Prereq: 3210 or 3 hrs and 1 lab.

3310 Biomedical Applications of Materials for Life Scientists (3) Principles of engineering materials; metals, polymers and ceramics; methods of fabrication of components; corrosion; applications of prosthetic 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. 2030 or equivalent, 3150; and Chem. 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 seminished metal products; casting; plastic forming; joining; heat treatment. Prereq: 2110 or equivalent and recommended senior standing in Mech. Engr.

4010-20 Thesis (3-6, 3-4) Investigation and report on metallurgical engineering problem. Variable credit given on completion and submission of thesis.

4230 Project Laboratory (3) Group or individual investigation of problems related to metallurgical engineering practice. May be repeated for a maximum of 9 credits. Prereq: Minimum of one course beyond 2110, 3110 or Chemet. Engr. 2030.

4240-50 Design and Analysis (3, 3) Design and laboratory sessions on analysis of materials requirements and performance in engineering structures and components. Prereq: 3120 or 4730.

4510-20 X-Ray Diffraction and Crystallography (3, 3) Laboratory and laboratory work in crystallography, projections, x-rays, diffraction phenomena and techniques, introduction to structure determinations. First quarter serves as introduction to subject. 2 hrs and 1 lab.

4610 Physical Properties of Materials (3) Electron theory of solids, types of bonding in solids; thermal, electrical, and magnetic properties of materials; mechanical properties of materials; and engineering science students.

4710 Production Metallurgy (3) Thermodynamic and kinetic principles of roasting, smelting, refining.

4730 Mechanical Metallurgy I (3) Elastic behavior. Description of stress, strain, and elastic constitutive relations. Effects of composition, microstructure, and loading on mechanical behavior. Failure by yielding. 2 hrs and 1 lab or 3 hrs. Prereq: 2110 or 3110: Math 2930; Chem. Engr. 3310: consent of instructor. Also suggested for mechanical engineering, mechanical engineering and engineering science students.

4740 Mechanical Metallurgy II (3) Fracture and brittle fracture, creep and stress rupture, fatigue, and residual stresses. Effects of state of stress, loading rate, time, temperature, and metallicurgical structure. 2 hrs and 1 lab or 3 hrs. Prereq: 3120 or 3230, and 4730 or Mech. Engr. 3850 or consent of instructor. Also suggested for mechanical engineering, mechanical engineering, or engineering science students.

4760 Casting and Welding (3) Principles and processes of casting and welding. Heat transfer, solidification, segregation, gas-metal and slag-metal interactions, thermal treatments, associated stresses. Prereq: 3120 or 3230. 3 hrs and 2 hrs and 1 lab.

4770 Mechanical Metallurgy III (3) Finite plastic strain. Plastic strain-stress relations. Kinetics 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, mechanical engineering, and engineering science majors.

**Civil Engineering**

Including Environmental Engineering

Professors:
- W. L. Greco (Head), Ph.D., Michigan State, P.E.;
- E. G. Burtell, Ph.D., Illinois, P.E.;
- N. W. Dougherty (Emeritus), M.C.E. (Cape Coral), Ph.D. in Water Resources.
- J. A. Goodwin, M.S., Kentucky, P.E. (Dean for Research);
- K. W. Heathington, Ph.D., Northwestern, P.E.;
- C. F. Laros, M.S. Virginia Polytechnic, P.E. (Director, Water Resources Center);
- K. E. Noll, Ph.D. Washington, P.E.;
- E. G. Shelton (Emeritus), M.C.E. Brooklyn Polytechnic Institute, F. C. Strake (Emeritus), M.S. Ohio State; B. A. Tschantz, Sc.D. Massachusetts Institute of Technology, P.E.;
- F. J. Wegman, Ph.D., Northwestern.

Associate Professors:
- W. L. Bogdany, Jr., Ph.D., Purdue; J. B. Burdick, Ph.D. in Civil Engineering, P.E.;
- J. B. Humphreys, Ph.D., Texas A&M,
- D. L. Jameson, Jr., M.S. Pennsylvania;
- B. D. Mark, III, Ph.D., Oklahoma State, P.E., A. M. Miner, Ph.D., Washington; A. B. Moore, M.S. Pennsylvania;
- R. R. Tiry, B.S. Marquette, P.E.

Assistant Professors:
- G. A. Briggs, Ph.D., Pennsylvania State;
- A. Chatterjee, Ph.D., California State;
- R. L. Church, Ph.D., Johns Hopkins;
- S. L. Hanna, Ph.D., Pennsylvania State;
- D. Overtor, Ph.D., Maryland;
- J. D. Womack, M.S. Pennsylvania.

Instructor:
- W. T. Davis, M.S. Pennsylvania

**BACHELOR OF SCIENCE PROGRAM**

The curriculum in Civil Engineering is designed to provide training in fundamental
MARTER OF SCIENCE PROGRAM

Graduate programs in Civil Engineering and Environmental Engineering leading to the degree of Master of Science are offered to graduates of recognized undergraduate curricula.

The general requirements for the Master's degree are stated in the Graduate School Catalog.

DOCTORAL PROGRAM

Graduate work leading to the degree of Doctor of Philosophy with a major in Civil Engineering is offered. Major fields of study include Environmental Engineering, Structural Engineering, Transportation, Construction Management, and Water Resources.

The general requirements for the Doctor's degree are stated in the Graduate School Catalog.

Civil Engineering (254)

UNDERGRADUATE

2260 Engineering Surveys I (3) Accuracy in surveying measurements; analysis of errors; control systems and datums; mapping and subdividing areas. Prereq: Math 1850.

3210 Seminar (1) Presentation and discussion of topics related to Civil Engineering.

2350 Engineering Surveys II (3) Positioning of construction facilities; modern instrumentation; electronic surveying principles. Prereq: 2260.

3180 Basic Structural Theory (3) Moments of inertia, Euler's deflection, stiffness; shear in beams; combined stresses; column theory. Prereq: 3210.

3210 Stresses in Framed Structures (3) Reactions, moments, shears and stresses in trusses and frames; beams loaded by shear; deflection of beams; restrained beams; combined stresses; column theory. Prereq: 3210.

3230 Design of Framed Structures (3) Selection of rolled beams; design of compression and tension members and plate girders. Prereq: 4410 or registration therein.

3310 Physical Properties of Soils (3) Introduction to soils as a construction material; determination of physical properties of soils, factors affecting physical properties of soils. 2 hrs lecture and 1 lab. Prereq: Engr. Mech. 3110 and 3310.

3320 Seminar (1) Presentation and discussion of topics related to Civil Engineering.

3350 Surveying Practice (3) Route surveying procedures. Two three-hour labs. Coreq: 2360.

3500 Transportation Planning (3) Emphasis on transportation problems and perspectives, both rural and urban, use of 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) Introductory course on design, construction, maintenance and operation of various transportation modes, their guideways and terminals. Prereq: Junior standing.


4110 Concrete Design (3) Reinforced concrete beams and columns; use of standard specifications. Prereq: 3160 and 3710.

4120 Concrete Design (3) Reinforced concrete continuous beams and floor slabs; footings; and retaining walls. Prereq: 4110 and 4410.

4220 Foundations and Substructures (3) Foundation explorations; 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.

4240 Structural Design (3) Plastic theory, eccentric connections, industrial building design, timber design. Two 3-Hr. periods. Prereq: 3500 and 4410.

4260 Photogrammetry (3) Methods of plotting maps from aerial photographs and stereoscopic plotting instruments; applications. Prereq: 2360, or Forestry Summer Camp for Forestry Majors.

4320-30 Seminar (1, 1) Selected topics dealing with historical, modern, and professional aspects of civil engineering. Prereq: Senior standing, or instructor.

4360 Geodesy (3) Precise geodetic surveying methods; geodetic position computation; gravity anomalies. Prereq: 2360.

4410 Deflections and Statically Indeterminate Structures (3) Deflections of beams and trusses; analysis and design of indeterminate beams, trusses, portals, and frames. Prereq: 3210 and 3160.

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: Senior standing.

4460 Land Surveying (3) Procedures of locating property boundaries; procedures to describe property, to create land divisions, and to prepare plats; laws of land surveying. Prereq: 2260 or equivalent.

4510-20 Advanced Structural Design (3) Plastic design in steel in 4510; design of typical short span highway bridges in 4520. Prereq: 3230 for 4510; 3230 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: 3230, 4110 or registration therein.

4540 Computer Utilization (3) Computer use, economic justification, and extent of use by industry. Utilization of computers for solution of civil engineering problems. Prereq: 3230 or registration therein.

4550 Engineering Behavior of Soils (3) Plastic and elastic behavior of soils, determination and use of engineering properties of in-situ soils. 2 hrs lecture and 1 lab. Prereq: 4250 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 with additives. 2 hrs 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: 2360, 3600 and 3610.

4620 Airport Planning and Design I (3) Emphasis on airport master planning. Included for consideration on the air side; runway configuration, capacity, geometric design and lighting; and on the land side are included terminal layout and design, and ground access systems and parking. Prereq: 3600, 3610.

4630 Transportation Engineering II (3) Railway, highway, pipeline, and conveyor problems in engineering. Prereq: Senior standing.

4640 Traffic Engineering (3) Characteristics of driver, vehicle and roadway and their interrelations; 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: 4600.

4660 Airport Planning and Design II (3) Integration and application of principles of airport master planning for purpose of site selection and design of an airport facility. Includes comprehensive team project, includes environmental evaluation of design, 1 lecture and 2 labs. Prereq: 4620.

4710 Portland Cement Concrete Mix Design (3) Properties and tests of portland cement concrete, methods of concrete mix design, non-destructive concrete evaluation testing, use of concrete admixtures, 2 lectures and 1 lab. Prereq: 3710.

4720 Asphalt and Bituminous Concrete (3) Properties, testing and use of asphalts and asphaltic mixes, mix design of bituminous concrete. Emphasis on use of asphalt in transportation construction projects, 2 lectures and 1 lab. Prereq: 3710.

4850 Elementary Structural Matrix Methods (3) Statics, Basic Matrix Methods, and Matrix Methods in Structural Analysis 4800. 3 lectures and 2 labs. Prereq: 4190-230-30 Special Topics Problems relating to recent developments and current practice in Civil Engineering. Prereq: Consent of instructor.

GRADUATE

5000 Thesis

5110-20 Statically Indeterminate Structures (3, 3) 5140 Statically Indeterminate Structures (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: Cement and Concrete (3) 5250 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) 5420 Structural Model Analysis (3) 5550 Soil Mechanics-Plastic Equilibrium (3) 5560 Soil Mechanics-Elastic Behavior (3) 5570 Soil Mechanics-Geesepe (3) 5610 Behavior of Steel Structures (3) 5730 Prestressed Concrete (3) 5740 Behavior of Reinforced Concrete Members (3) 5750 Behavior of Reinforced Concrete Structures (3) 5800 Urban Systems: Engineering and Management (3) 5810 Traffic Engineering—Characteristics (3) 5820 Traffic Engineering—Operations (3) 5840 Geometric Design (3)
In addition to the usual research and teaching facilities in machinery, electronics, microwaves, solid state devices and control equipments, the department has both digital and analog computers.

MASTER OF SCIENCE PROGRAM

Graduate work leading to the Master of Science degree may be completed during one academic year of full-time study or the degree may be obtained in two or three years of study in the evening.

Graduate assistantships and scholarships are available for outstanding students. Graduate assistants may obtain the Master's degree in one calendar year.

Course work leading to the degree of Master of Science in Electrical Engineering is offered in the evening. Each course meets for two and a half hours each week.

THE DOCTORAL PROGRAM

Graduate work leading to the degree of Doctor of Philosophy with a major in Electrical Engineering is offered. The department also participates in the Engineering Science doctoral program.

General policies of the Graduate School, residence, language, research, examinations, and admission to candidacy requirements are explained in the Graduate School Catalog.

UNDERGRADUATE


2030 Circuits III (3) Polyphase networks considered as networks with more than one source. Magnetically coupled circuits. Transient analysis of circuits containing more than one storage element using classical methods. Steady-state analysis of networks containing sinusoidal sources of more than one frequency. Prereq: 2020. Math 2620 concurrently. 3 hrs including biweekly lab.


3040 Fields I (3) Electrostatic and magnetostatic fields; potential and field intensity; Gauss' theorem; line integrals; vector methods. Prereq: Math 2820.

3050 Fields II (3) Magnetic fields; Ampere's law; Bio-Savart law; vector potential; integral, interaction of electric and magnetic fields, Maxwell's equations. Prereq: 3040.

3060 Fields III (3) Plane waves in free space, reflections from plane boundaries, transmission line theory, antenna radiation and transmission lines. Prereq: 3050; 3 hrs including biweekly lab.

3080 Energy Conversion (3) Magnetic circuits, transformer theory and operation, principles of electromagnetic energy conversion with emphasis on inductive and capacitive storage; analysis of induction motors and d. c. machines. Prereq: 3040. Includes 2 biweekly lab.

3090 Energy System Operation (3) Synchronous machines, their steady-state and transient analysis; power system elements; power system representations, per unit calculation, symmetrical components, and stead-state studies. Prereq: 3080. Includes a biweekly lab.


3110 Basic Electrical Engineering-Circuits and Fields (3) For non-electrical engineering majors. Prereq: Math 2820, Physics 2310-20. 3 hrs including biweekly lab.

3120 Basic Electrical Engineering-Electronics (3) For non-electrical engineering majors. Prereq: 3110. 3 hrs including biweekly lab.

3130 Basic Electrical Engineering-Machinery (3) For non-electrical engineering majors. Prereq: 3110. 3 hrs including biweekly lab.

3135 Basic Electrical Engineering Circuits - Instrumentation (3) For non-electrical engineering majors. Use of operational amplifiers for signal processing, logic systems applications, signal conditioning on-line systems, transducers, recorders, oscilloscopes; automated data collection; safety and grounding requirements. 2 labs. Prereq: 3120.

3150 Basic Control Systems (3) Systems differential equations; solution by classical method; Laplace transform method; design of control and computer systems. For non-electrical only. Prereq: 3120, Math 2610.

3180 Analog and Digital Simulation (3) Analog computing components; problem set-up and scaling linear systems; Boolean algebra; definitions, postulates theorems; canonical expansions; logic design of combinational networks. Prereq: 3010, Mathematics 3150. Coreq: 3720. 3 hrs including biweekly lab.

3190 Plasma I (3) Engineering applications of physical electronics, plasma effects and devices. Topics include: plasma physics, charge exchange, plasma light sources, laser operation and applications (electro-optics), and MHD, controlled thermonuclear fusion. Prereq: 3010 or 3150. 3 hrs including occasional labs.

3810 Electronics I—Basic Electronic Processes (3) Current conduction in semiconductors and high vacuum; theory of p-n junctions, characteristics of diodes; rectifiers and diode switches. Prereq: 3040 concurrently. 3 hrs including biweekly lab.

3820 Electronics II—Basic Electronic Devices (3) Characteristics and equivalent circuits of vacuum tubes and transistors with application to amplifier and control circuits. Prereq: 3610. 3 hrs including biweekly lab.

3830 Electronics III—Basic Electronic Amplifiers (3) Vacuum tube and transistor R-C coupled amplifiers, frequency responses of R-C coupled amplifiers, feedback, stability, gain. Prereq: 3010 and 3820 Coreq: 3720. 3 hrs including biweekly lab.

4000 Direct Current and Direct Energy Conversion (3) Basic principles, typical devices and applications for production of electrical energy by thermoelectric effects: thermionic conversion, magnetohydrodynamics, solar cells, and fuel cells. Laboratory demonstrations. Prereq: 3050, 3190 and 3810; Mech. Engnr. 2320.

4080 Microwave Electronics (3) Motion of electrons in microwave devices such as magnetrons, klystrons, traveling wave tubes and related physical devices. Microwave theory as related to laboratory measurements. Prereq: 3060, 3810. 3 hrs including biweekly lab.

4090 Propagation (3) Free space propagation; ground wave, sky wave propagation; the ionosphere; the radar equation; power requirements. Prereq: 3060.

4100 Information Theory (3) Mathematical representation of signals; sampling theorem; information measurements; channel capacity; elements of coding. Prereq: 3010 and 3100.


4340 Two-Port Networks (3) Two-port parameters. Attenuation, activity and reciprocity. Image parameters and conventional filter theory; frequency transformations; elements of modern filter theory. Maximal flat and group approximations to ideal filter and ideal delay. Prereq: Senior standing. 3 hrs including biweekly lab.


4400 Introduction to State Variable Methods (3) Application of continuous and discrete systems in the time domain including both manual and computer-aided methods: basic tools for the computer-aided design of circuits and systems. Prereq: 3720.

4410 Power System Components and Control (3) Analysis of power system components and their interconnection. Studies in control of power and frequency as well as voltage and reactive power. Prereq: 3850.

4420 Power Systems Analysis (3) System studies including load flow, faults and stability. Prereq: 3090.

4430 Transmission, Distribution, and Protection (3) System studies of transmission, distribution, and protection; consideration of over-voltages and insulation requirements; system protection against faults. Prereq: 3090.


4470 Plasma II (3) Magnetohydrodynamics. Prereq: 3190.

4480 Plasma III (3) Macroscopic plasma equations, particle orbits, interactions, oscillations and waves. Prereq: 4470.


4500 Electro-Optic Detection and Instrumentation (3) Sensitivity, resolution (frequency response) and noise concepts and of practical engineering data for both spatial recording media (e.g. 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,
4820 Introduction to Pattern Recognition (3) Role of pattern recognition within framework of artificial intelligence. Topics dealing with the design of learning and adaptive machines. Typical applications of pattern recognition to problems of practical significance. Computer simulation of elementary pattern recognition problems. Prereq: 3100, Math 2830, 3150, or permission of instructor.

4830 Image Processing by Computer (3) Principal methods for coding, storing, and processing images by means of digital computers. Computational algorithms for image operations. Prereq: 3100, Math 2830, 3150, or permission of instructor.

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 is project oriented. Prereq: Basic Engineering 1410, Computer Science 3150 or equivalent or permission 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)
5090 The Fourier Transform and Random Processes (3)
5100 An Introduction to State Variable Techniques (3)
5110 Introduction to Network Analysis (3)
5120 Introduction to Network Synthesis (3)
5130 Advanced Network Analysis (3)
5210-20 Advanced Electrical Machinery (3, 3)
5230 Advanced Electrical Machinery Applications (3)
5240-50 Linear Control System Theory (3, 3)
5260 Nonlinear Control System Theory (3)
5310-20-30 The Plasma State and Energy Conversion (3, 3, 3)
5340 Introduction to Quantum Electronics (3)
5350 Properties of Quantum Devices (3)
5360 Application of Quantum Electronics 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)
5450 Selected Topics in Power Systems (3)
5510-20-30 Linear Active Circuits (3, 3, 3)
5570-80-90 Electronic Switching Circuits (3, 3, 3)
5610-20-30 Logic Circuits and Digital Computers (3, 3, 3)
5615 Introduction to Analog Computers (3)
5625 Introduction to Switching Theory (3)
5635 Introduction to Digital Computer Design (3)
5650-60 Electronic Communication Systems (3, 3)
5670-80 Introduction to 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)

Engineering Administration

COMMITTEE:
H. L. Loveless, Chairman
J. F. Bailey
H. D. Dewhirst
F. A. Chamblin
D. W. Cravens
W. G. Sullivan
R. L. Young

A program of study leading to the degree of Master of Science with a major in Engineering Administration is offered. This program is aimed at providing education for graduate engineers in the organization and direction of work in engineering functions, at a level which requires understanding of such areas as marketing, finance, and industrial relations. It should be emphasized that this is an engineering program, aimed at preparing individuals for line management positions in construction, design, development, manufacturing, etc. where both technical and non-technical factors exert significant influence on the success of a given activity. The program does not provide the opportunity for in-depth study of any of the traditional areas of business administration, and students with such interests are advised to consider graduate programs available in the College of Business Administration.

To be admitted to Graduate School as a potential candidate for a Master's degree with a major in Engineering Administration, the applicant must submit reasonable evidence of ability to pursue graduate studies at an acceptable level of performance. In general, the applicant must have graduated from a recognized undergraduate institution in

5800 Power Transmission Lines (3)
5810-20 Electromagnetic Fields (3, 3)
5830 Linear Antennas and Antenna Arrays (3)
5840 Aperture Antennas (3)
5850 Microwave Electronics (3)
5860 Electromagnetic Wave Propagation (3)
5870 Introductory Microwave Networks (3)
6000 Doctoral Research and Dissertation
6240 Advanced Systems Theory (3)
6250 Stochastic Processes in Engineering Systems (3)
6270-80-90 Special Topics in Control Systems Theory (3, 3, 3)
6340-50-60 Special Topics in Quantum Electronics (3, 3, 3)
6500-10 Electrical Conduction in Gases and Plasma Physics (3, 3)
6520 Advanced Topics in Gasdynamic Electronics (3)
6610-20-30 Microwave Networks (3, 3, 3)
6640 Propagation in Periodic Structures
6620 Modern Control System Design (3)
6650 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)
6880-10-20 Solid State Electronics (3, 3, 3)
6910-20-30 Advanced Sequential Machine and Automata Theory (3, 3, 3)
engineering or science with a satisfactory grade point average. In addition, applicants must satisfy one of the following experience requirements: (1) at least two years of engineering experience after graduation if a full-time student or (2) current employment in engineering work if a part-time student.

THE MASTER'S PROGRAM

Minimum requirements for the Master's degree are the satisfactory completion of the following courses:

1. An Engineering Core, twenty-seven hours of graduate credit consisting of Engineering Administration 5100, at least two courses chosen from Industrial Engineering 4150, 5520, 5700, 5710 and 5720, and a complement of engineering courses normally selected from the student's undergraduate major department or from courses of other departments pertinent to this program.

2. A Business Administration Core, fifteen hours of graduate credit consisting of Accounting 5810, Business Law 5050, Finance 5050, Marketing 5050, and one of the following: Industrial Management 5130 or Transportation 5210.

3. General Electives, nine hours of graduate credit chosen from computer science, economics, engineering, management science, mathematics, psychology, statistics, and other program-related disciplines. These electives shall not include courses in business administration, other than economics, management science and statistics.

The program requirement totals fifty-one hours of graduate course credit. No thesis is required. A final examination must be passed on the work offered for the degree. Course prerequisites for the program are Accounting 5050, Computer Science 3150, Industrial Engineering 4520, and Statistics 3450 or their equivalents. None of these prerequisites may be counted as part of the 51 hours of credit offered for the degree. These course prerequisites will be waivered upon presentation of evidence of competency in the course subjects. Other prerequisite courses may be required, depending upon the electives chosen.

8100 Project in Engineering Administration (3) An in-depth study and formal report of an engineering administration topic, normally performed during the last quarter of work toward degree. For Engr. Admin. degree candidates only.

Engineering Science and Mechanics

ASSOCIATE PROFESSORS:

J. E. Akin, Ph.D. Virginia Polytechnic, P.E.; W. B. Campbell, Ph.D., P.Eng., Virginia Polytechnic, P.E.; D. C. Donney, Ph.D., Illinois; B. J. Dowdy, Ph.D., Illinois; A. H. Erastian, Ph.D., North Carolina; J. B. Forrester, Ph.D., Iowa State; R. W. Felt, Ph.D., Illinois; P. E.; W. A. Miller, Jr., Ph.D., Georgia Institute of Technology; C. J. Remenyik, Ph.D., Johns Hopkins; W. E. Stillman, Ph.D., Ohio State.

BACHELOR OF SCIENCE PROGRAM

The curriculum in engineering science will provide 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, professional 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. In the first two years students in the engineering science program study engineering, science, and mathematics. 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, and environmental sciences. 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 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 some modifications, 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 Medical Units in Memphis.

The engineering mechanics elective group focuses on analytical and experimental methods used in investigating the interaction of forces and matter. It is designed especially to develop engineers capable of engaging in research and development in industrial and governmental research laboratories. Because such preparation involves emphasis on the link between the basic sciences and engineering fundamentals, 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 focuses on a concentration 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 to some of the basic skills involved in engineering efforts aimed at solving environmental and ecological problems. This program gives the necessary background on which students can develop a higher level of competence in this specialty during professional practice or through formal graduate study.

The basic engineering science curriculum provides an opportunity to study significant blocks of the engineering science areas recognized by the American Society for Engineering Education such as (1) mechanics; (2) electrical science, electric and magnetic fields, circuits, and electronics; (3) thermodynamics and statistical mechanics; (4) materials science; (5) information science; (6) 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 space sciences and 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 expected to develop, in concert with a faculty adviser, a statement of objectives and a course plan for the Upper Division years.

MASTER OF SCIENCE AND DOCTORAL PROGRAMS

Graduate programs leading to the degree of Master of Science and Doctor of Philosophy with a major in engineering science are offered. These programs are intended to meet the need for professional men and women with fundamental training in engineering and some special interest in research, development, or teaching. They are designed for graduates with B.S. degrees in specific engineering fields who wish to extend their engineering and scientific knowledge in one or more of the following areas of study: (1) mechanics of solids; (2) mechanics of fluids; (3) thermodynamics; (4) transfer and rate mechanisms; (5) electromagnetic theory; (6) circuit theory; (7) nature and properties of materials; (8) aerospAce; (9) nuclear transport phenomena; (10) system control theory.

The graduate programs in engineering science are administered by a committee composed of professors from the various departments of the College of Engineering.

MASTER OF SCIENCE PROGRAM IN ENGINEERING MECHANICS

Graduate work leading to the Master of Science with a major in Engineering Mechanics is offered. Students normally elect their major subjects in either solid mechanics, fluid mechanics, or materials. The M.S. level courses include advanced mechanics of materials, elasticity, dynamics, experimental
mechanics, orbital mechanics, thermal stresses, ideal fluid theory, boundary flow, and turbulence.

THE DOCTORAL PROGRAM IN ENGINEERING MECHANICS

Graduate work leading to the degree of Doctor of Philosophy with a major in Engineering Mechanics is offered. Areas of specialization include elasticity, plates and shells, solid friction, and vibrations, experimental mechanics, material theory, high-speed boundary layer theory, and turbulent shear flow. The Department also participates in the Engineering Science Doctoral Program. General policies of the Graduate School relating to admission, residence, examinations, and research are explained in the Graduate School Catalog.

Engineering Science and Mechanics (335)

UNDERGRADUATE

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. (Prerequisite: transfer students.) Coreq: College Physics (Mechanics); Coreq: Math 1830 or equivalent.

2710 Statics (3) Resultants of force systems; static equilibrium of structural elements and space frames; belt friction; first and second moments. Prereq: 2705 or Basic Engineering 1310, Math 1830.

2720 Dynamics (3) Absolute and relative kinematics of rigid bodies; kinetics of rigid bodies using Newton's laws, work-energy, and impulse-momentum. Prereq: 2705 or Basic Engineering 1305, Math 2610; Coreq: Math 2810.

3110-20-30 Fluid Mechanics (3, 3, 3) Basic laws of fluids; effects of viscosity and compressibility; empirical analysis; Navier-Stokes equations; boundary-layer concepts; potential flow. Must be taken in sequence. Prereq: 2720; Math 2610, 2820. Coreq for 3120: Mech. Engr. 3311 or equivalent.

3310-20 Mechanics of Materials (3, 3) Concepts of stress and strain, stress-strain relations, and Mohr's circle; stresses and displacements in thin-walled pressure vessels, shafting; determinate, indeterminate, and plane stress analysis; beam analysis; column theory. Must be taken in sequence. Prereq: Basic Engineering 1330.

3311 Mechanics of Materials (4) Concepts of stress and strain, stress-strain relations, and Mohr's circle; static analysis of members; area moment of inertia; stress and displacement analysis of axially-loaded members; torsion; bending. Not for departmental graduate credit. Prereq: Basic Engineering 1310; Coreq: Math 2850.

3410 Introduction to Biomedical Engineering (4) Designed to introduce the facets and opportunities of Biomedical Engineering, and to provide basic terminology and background knowledge for further courses in the field. Subjects include anatomy, physiology, biomaterials, mathematical models of body systems, etc. Coreq: Math 2840 or consent of instructor.

3420 Introduction to Clinical Engineering (3) Designed to train students in life sciences, health professions, and engineering in use and applications of medical instruments. Body systems are introduced, and instruments used in care of those systems are explained and demonstrated. Prereq: 3410, or consent of instructor.

3430 Perspectives on Medical Ceramics (3) Details development of implant material from both an engineering and a medical viewpoint. Demonstrates relationship between mechanical properties of biomaterials and environments. Audiovisual aids and models are used to reinforce lecture topics. Prereq: 3410 and Metallurgical Engineering 2110.

3439 Medical Ceramics Laboratory (1) Surgical observations and laboratory experiments to illustrate design and application parameters. Design project or paper required. Coreq: 3430.

3510 Materials of Engineering (3) Mechanical properties of engineering materials; behavior of materials under load; 3 hrs. and 2 hrs. 1 lab. Prereq: 3310 and Metallurgical Engineering 2110 or 3110.

3520 Materials Behavior and Chemical Process Environment Design (3) (Same as Metallurgical Engineering 3520).

3700 Dynamics (4) Kinematcs of rigid bodies; mass moments of inertia; coulomb friction; kinetics of rigid bodies using force, mass, acceleration; work-energy; impulse-momentum. Not for departmental graduate credit. Prereq: 2705 or Basic Engineering 1320; Coreq: Math 2850.

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, Math 2820.


4011 Project in Design and Development (3) Investigation, design, and report of an engineering science problem. Prereq: Senior standing.

4420 Engineering Aspects of Infection Control (3) Biomedical engineer's role in infection control will be related to hospital and clinical activities. Fluid flow phenomena, pressure measurement methods, and basic bacteriological and mycological tests will be demonstrated. Course identifies new and critical role for biomedical engineer in health care systems, and includes analysis of hospital facilities and monitoring systems. Prereq: 3410, or consent of instructor.

4430 Orthopaedic Biomechanics (3) Introduction to engineering principles and applications in orthopaedics and rehabilitation. Topics include statics, Newton's laws of motion, stresses in simple sections, engineering materials, and biological materials. Prereq: Consent of instructor.

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 1810-20 or consent of instructor.

4520 Biomedical Fluid Mechanics (3) Discusses hydrodynamic forces in biological systems. Prereq: knowledge in fluid mechanics and fluid transport in biological systems. Properties of human blood and blood vessels, determinants of cardiac performance, analysis and measurement of flow and pressure in arteries, venous and lymphatic systems, methods of study of circulatory system, mechanics of microcirculation. Applications to areas of bone, thrombosis, and fluid dynamics of heart assist devices. Prereq: 4500 or a course in fluid mechanics or consent of instructor.

4529 Biomedical Fluid Mechanics Laboratory (2) Measurement and recording of flow characteristics in biological system. Project and/or term paper required. Coreq: 4520.

4530 Biomechanics (3) Discusses mechanics of the body and locomotor system, analysis of mechanical properties of living tissues, biomechanics of injury and prosthesis, material compatibility of prosthetic devices and biomechanical problems related to impact. Prereq: 4500 or consent of instructor.

4610 Experimental Stress Analysis (3) Basic concepts on stress, techniques, and instrumentation of resistance strain gages; theory and techniques of brittle coating methods; introduction to other stress analysis methods. Prereq: 3305, EE 2020 or 3120. 2 hrs. and a 3-hr. lab.

4620 Dynamic Data Acquisition (3) Instrumentation of measuring systems for dynamic events and responses; signal conditioning; oscillographs, oscilloscopes, and magnetic tape recording; telemetry and data processing. Prereq: 2720, 3310, EE 3120 or 3820. 2 hrs. and a 3-hr. lab.

4630 Introductory Photomechanics (3) Introduction to photomechanics, photoelastic coating method, Moiré method, interferometry, and holography. Prereq: 3310, Physics 2320. 2 hrs. and a 3-hr. lab.


4810-20-30 Engineering Analysis (3, 3, 3) Integration of fundamental physical laws and mathematical methods of analysis with emphasis on application to realistic engineering problems. Prereq: 3110, 3310, and Math 3150.

4850 Elementary Structural Matrix Methods. (Same as Civil Engineering 4850 and Architecture 4850.)

4910-20 Special Engineering Science Topics (3, 3). Problems related to recent developments and practice. Open to juniors or seniors with consent of instructor. May be repeated for credit once.

GRADUATE

5000 Thesis

5110-20 Fluid Dynamics (3, 3)

5130 Introduction to Turbulence (3)

5140 Intermediate Fluid Mechanics Laboratory (3)

5180 Finite Element Structural Analysis (3)

5220 Mechanics of Viscous Flow (3)

5230 Non-Newtonian Fluid Mechanics (3)

5270 Hydrodynamic Stability (3)

5310-20-30 Advanced Mechanics of Materials (3, 3, 3)

5410-20 Theory of Elasticity (3, 3)

5430 Thermal Stresses (3)

5440 Theory of Linear Viscoelasticity (3)

5530-40 Photoelasticity (3, 3)

5710-20 Advanced Dynamics (3, 3)

5730 Advanced Vibrations (3)

5740 Vibrations of Continuous Media (3)

5750 Orbital Mechanics (3)

5860 Introduction to Continuum Mechanics (3)

5890 Structural Mechanics (3)

5840 Perturbation Methods in Mechanics

5880 Introductory Finite Element Methods (3)

5910 Special Topics in Engr. Mechanics (3)

6000 Doctoral Research and Dissertation

6110-20 Advanced Topics in Fl. Mech. & Convective Transfer (3, 3)

6230-40-50 Theory of Turbulence (3, 3, 3)

6310 Theory of Plates (3)

6320 Theory of Shells (3)

6330 Theory of Elasticity (3)

6340 Theory of Plasticity (3)

6610 Photoelasticity (3)

6710 Impact and Stress Waves in Solids (3)

6800 Advanced Continuum Mechanics (3)

6810-20 Energy Methods (3, 3)

6840 Nonlinear Mechanics (3)

6910 Special Topics in Engineering Mechanics (3)
Engineering Physics (778)

Professor W. M. Bugg (Head); Physics Staff as shown on page 193.

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 listed in tabular form on page 109. Descriptions of the physics courses are found on page 194.

Industrial Engineering (558)

Professors:  D. C. Doulet (Head), M.S. Tennessee, P.E.; H. P. Emerson (Emeritus), S. B. Massachusetts Institute of Technology, P.E.; R. M. LeForge, M.S. Georgia Institute of Technology, P.E.; H. L. Loveless, M.S. Tennessee, P.E.

Associate Professors:  D. H. Hutchinson, Ph.D. Georgia Institute of Technology; J. R. Buchan, M.S. Georgia Institute of Technology; H. M. Pike, Ph.D. Florida; J. N. Snider, Ph.D. Ohio State.

Assistant Professors:  W. W. Claycombe, Ph.D. Virginia Polytechnic; M. L. Eaton, M.S. Clarkson, M. K. Goodman, M.S. Tennessee, P.E. (Kingsport); W. G. Sullivan, Ph.D. Georgia Institute of Technology, P.E.; T. M. West, M.S. Tennessee, P.E.

Lecturer:  R. C. Durham, M.S. Tennessee.

The undergraduate curriculum in industrial engineering is a program training the engineer for the design, analysis, operation and control of systems of men, materials, processes and machines. These systems include the individual work place, the production line, the manufacturing process, inventories and the enterprise as a whole. Through a set of technical electives, a special area related to industrial engineering such as computer science, statistics, human factors or operations research can be developed by the senior student. The curriculum also provides a foundation of course work in the physical and social sciences.

The goal of industrial engineering is increased productivity and economy in all types of human activity.

MASTER 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 adviser. A minor is usually taken in an area related to industrial engineering, and a thesis is required. The program is open to graduates of recognized curricula in all fields of engineering.

A non-thesis program of 45 hours of course work plus a three-hour project is also available and open to graduates in engineering or science. Basic courses (5110, 5300, 5500, 5510, 5530, 5540) are 36, hours of the total and are identical to the basic courses in the program for thesis students. An option is selected from manufacturing, health systems, operations research, human factors or decision processes. Each option requires 9 hours of industrial engineering electives, 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.

UNDERGRADUATE

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 (1) Introduction to model building. Techniques of developing decision making models, computer programming, input and output, system simulation techniques, and concept of optimization. Prereq: Basic Engineering 1410.

2310 Motion and Time Study (3) Design of work methods, including analysis, improvement, timing of work, and development of labor standards. Laboratory work included. For non-Industrial Engineering students. Prereq: Junior standing.

2320 Work Methods and Design (3) Job analysis, job evaluation, design of work structure, design of work-place layouts, flow charting, activity chart and analysis, and methods improvement. Laboratory work included. Prereq: Basic Engineering. Laboratory work included. For non-Industrial Engineering students. Prereq: Junior standing.

2320 Work Measurement (3) Use of work measurement tools such as time study, predetermined time systems, work sampling, historical data analysis, Construction of time formulas, development of standard time data, use of learning curves, and design of wage incentive systems. Laboratory work included. Prereq: 3220 and Statistics 3450.

2410 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.


2440 Quality Control (3) Application of statistical methods to control quality of manufactured parts and techniques of inspection. Prereq: 3430.

3510 Introduction to Operations Research I (3) Introduction to methodology of operations research and the application of operations research to industrial problems. Topica 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 simplex method, the transportation problem, and the assignment problem), and dynamic programming. Prereq: Mathematics 4050 and Computer Science 3150.

3530 Introduction to Operation Research III (3) Introduction to random processes and use of probabilistic methods in replacement and industrial inventory problems. Prereq: 3430 and 3510.


4060 Production and Inventory Systems (3) Fundamentals and applications of statistical forecasting for manufacturing; quality control problems, analysis and control techniques, production planning procedures, economic start quantity analysis, and production scheduling and control models. Overall production process as an integrated system. Prereq: 3510 and 3520.

5080 Forecasting Methods in Industrial Engineering (3) Application of technological forecasting techniques to industrial engineering problems. Includes moving averages and exponential smoothing, linear and polynomial regression models, autoregressive time-series analysis, Delphi methods and other selected industrial forecasting methods. Prereq: 4040.

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 Trade-off analysis, multi-project control, and computer programs. Prereq: 3430.


4200 Production Facilities Planning (3) Facilities planning including plant layout, materials handling and service area design. Prereq: 4520, 3520, 3510.

4230 Scheduling Systems (3) Performance measures for job shop and flow shop scheduling, including both static and dynamic conditions, as well as techniques for producing generation schedules. Deterministic and probabilistic dispatching conditions. Prereq: 3520.

4240 Predetermined Time Systems (3) Work design and measurement using a predetermined time system such as Methods Time Measurement, Basic Motion Time Study, or Work Factor. Theory and application. Prereq: 3230.

4250 Work Measurement Applications (3) Application of learning curves, queuing theory, standard data methods and incentive systems to the design of industrial work situations. Prereq: 3230.

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 selection or replacement of equipment. Decisions among engineering alternatives, involving capital recovery, economic life of equipment, and rate of return on investment.

4530 Case Studies in Engineering Economy (3) Extension of basic engineering economy principles to actual problems faced by competitive firms and regulated industries. Real case studies taken from literature form basis of classroom discussion. Out-of-class assignment is made which involves working with local companies to evaluate make or buy options, leasing versus cash purchases, equipment replacement studies, energy source economies, etc. Prereq: 4520.

4540 Industrial Development (3) Factors other than mechanical or chemical which enter into successful establishment of manufacturing enterprise. Cost and location studies, studies on determination of the commercial feasibility of new plants or projects.
Mechanical and Aerospace Engineering

PROFESSORS:

ASSOCIATE PROFESSORS:

ASSISTANT PROFESSORS:
R. V. Arminoff, Ph.D. Virginia Polytechnic Institute; S. E. Backer, Ph.D. North Carolina State, P.E.;

INSTRUCTOR:
J. H. Kananitha, M.S. Massachusetts.

*Alumni Distinguished Service Professor. *Space Institute, Tullahoma.

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 three years and to a certain extent during the fourth year, the curricula provide for training and study in the basic sciences and engineering sciences common to these engineering fields. In the senior year an opportunity is provided for the student to apply this fundamental knowledge to mechanical or 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.

GRADUATE STUDY PROGRAMS
Graduate programs leading to the degrees of Master of Science and Doctor of Philosophy. Specialization in mechanical engineering or aerospace engineering are available to graduates of recognized undergraduate curricula in mechanical or aerospace engineering and graduates of other curricula who satisfy the necessary prerequisite courses. Students applying for entrance into the doctoral program must display evidence of ability to perform and report independent research. The Master's thesis may be offered as such evidence. The general requirements for advanced degrees are summarized in the Graduate School Catalog.

Mechanical Engineering (650)
UNDERGRADUATE
2040 Introduction to Mechanical Engineering (1) Presentation and discussion of topics related to mechanical engineering. Satisfactory-No Credit.
3000 Energy-An Overview (4) Introduction to available energy resources, recovery and utilization; power generation techniques including conservation schemes and emphasis on the relationship between human interaction associated with energy; primarily for non-engineering students.
3040 Seminar (1) Presentation and discussion of topics related to Mechanical Engineering. Prereq: Junior standing. Satisfactory-0 Credit.
3110-20 Applied Engineering Thermodynamics (3, 3) Energy and laws governing energy transformations; thermodynamic properties; application to mechanical engineering. Prereq: Basic Engr., 1330, Math 1830; for non-departmental engineering students.
3511 Engineering Thermodynamics (3) Energy and laws governing energy transformations; thermodynamic properties. Prereq: Basic Engr., 1330, Math 1830.
3320-30 Engineering Thermodynamics (3, 3) Properties of gases and gas mixtures; chemical reactions; equilibrium; applications to mechanical engineering problems. Prereq: 3311.
3410 Fluid Flow (3) Development of continuity, momentum, and energy principles for fluid systems; applications to mechanical and aerospace engineering problems. Prereq: Basic Engineering 1330, Math 2920.
3520-30 Thermal Sciences (3, 3, 3) Fundamental principles of thermodynamics and transport phenomena as applied to engineering design. For nondepartmental majors. To be taken in sequence. Prereq: Math 2820 and Basic Engr. 1330.
3620 Mechanics of Machinery (3) Newton's laws; work, energy, impact; single degree vibrating systems. Prereq: 3610.
3630 Mechanics of Machinery (3) Multiple degree vibratory systems; nonlinear dynamic forces; balancing; vibration isolation. Prereq: 3620, 3910.
4010 Thesis (3) Problem investigation and report. Prereq: Senior standing.
4150 Energy Conversion Systems (3) Direct and indirect techniques of energy conversion, solar, and nuclear energy systems. Prereq: 3330, 3440, 4510.
4160 Energy Conversion Systems (3) Economic and technical design parameters as applied to power plants for public utilities or industrial applications. Selected design and layout problems. Prereq: 4140, 4420.
Aerospace Engineering (018)

UNDERGRADUATE

2040 Introduction to Aerospace Engineering (1) Presentation and discussion of topics related to Aerospace Engineering. Prereq: SAT-ACT-Navy-Credit.

3040 Seminar (1) Presentation and discussion of topics related to Aerospace Engineering. Prereq: Juniors standing. Satisfactory-No-Credit.


4010 Thesis (3) Problem investigation and report. Prereq: Senior standing.

4110 Aerodynamic Fundamentals (3) Atmosphere, dynamics and thermodynamics of perfect gases, fluid flow types, airflow theory, wing theory, drag. For non-aerospace engineering majors only. Prereq: Permission of instructor.

4120 Aircraft Propulsion and Performance (3) Propellers, propulsion systems for aircraft, static performance and special performance problems, maneuver, control surfaces, stability and control. For non-aerospace engineering majors only. Prereq: 4110.

4210 Compressible Flow (3) One-dimensional internal flow; shock and expansion waves; friction and nonadiabatic flow. Prereq: 3510, Mech. Engr. 3320.

4220 Low Speed Aerodynamics (3) Potential flow theory, kinematics and dynamics of perfect fluids; analysis and design of aerodynamic bodies. Prereq: 3510 and Mech. Engr. 3910.

4230 Viscous Flow (3) Boundary layer theory; laminar and turbulent flow; compressibility effects; numerical solution methods. Prereq: 3510 and Mech. Engr. 3910, 4420.


4310 Seminar (1) Discussion of topics related to engineering; includes inspection trips to industrial plants. Prereq: Senior standing. Satisfactory-No-Credit.

4320 Seminar (1) Presentation and discussion of topics related to engineering. Prereq: Senior standing.

4471-81-91 Experimental Aerospace Engineering (3, 3, 3) Experimental methods and measurements including instrumentation, controls, analog devices, flow measurement, physical property measurement, testing standards and planning, conducting and analyzing and reporting experimental tests. Prereq: For 4471—3320, 3410, 3440, 3650; for 4481—91—4471, and 4420 or registration therein.

4810 Internal Combustion Engines (3) Thermochanical principles and fundamental concepts of internal combustion and propulsion engines. Combustion, detonation; equilibrium; dissociation. Analysis of internal combustion engine and comparison of fuel use and real fluids. Prereq: 3330, 3440.


4910-20-30 Selected Topics in Mechanical Engineering (3, 3, 3) Problems related to developments in mechanical engineering and practice in mechanical engineering. Prereq: Consent of instructor.

GRADUATE

5000 Thesis

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)

5410-20-30 Research in Mechanical Engineering (3, 3, 3)

5510-20-30 Mechanical Engineering Design (3, 3, 3)

5540-50-60 Advanced Strength of Materials (3, 3, 3)

5610-20-30 Experimental Stress Analysis (3, 3, 3)

5640-50-60 Advanced Machine Design (3, 3, 3)

5670-80-90 Dynamics of Machinery (3, 3, 3)

5710 Metal Machining (3)

5810-20-30 Rocket Propulsion Systems (3, 3, 3)

5840-50-60 Turbo-Machinery Systems (3, 3, 3)

5900 Selected Engineering Problems (3-9)

5950 Seminars (1)

5990 Special Topics in Mechanical Engineering (1-3)

6000 Doctoral Research and Dissertation

6110-20 Advanced Topics in Fluid Mechanics and Convective Transfer (3, 3)

6130-40 Advanced Radiation Heat Transfer (3, 3)

6240-30 Selected Topics in Thermodynamics (3, 3, 3)

6610-20-30 Engineering Vibrations (3, 3, 3)
Nuclear Engineering (716)

Professors: P. F. Pasqua (Head), Ph.D. Northwestern, P.E.; W. H. Jordan, Ph.D. California Institute of Technology; T. W. Kerlin, Jr., Ph.D. Tennessee; H. G. MacPherson*, Ph.D. California (Berkeley); J. E. Mott, Ph.D. Minnesota; J. C. Robinson, Ph.D. Tennessee; P. N. Stevans, Ph.D. Northwestern, P.E.

Associate Professors: T. J. Hoffman, Ph.D. Tennessee; J. T. Mihalceo, Ph.D. Tennessee; H. C. Roland, Ph.D. Tennessee; O. L. Smith, Ph.D. Missouri.

*On leave

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.

MASTERS OF SCIENCE PROGRAM

A graduate program leading to a degree of Master of Science is available to graduates of recognized undergraduate curricula in engineering and physics. Each applicant will be advised as to the necessary prerequisite courses before he enters the program.

The general requirements for the Master's degree are summarized in the Graduate School Catalog.

DOCTORAL PROGRAM

A program leading to the Ph.D. degree is available in Nuclear Engineering. For details, see the Graduate School Catalog.

UNDERGRADUATE

3210-20-30 Seminar (1, 1, 1) Presentation and discussion of topics related to Nuclear Engineering. SATISFACTORY-No Credit.

3030 Introduction to Reactor Analysis (3) Nuclear reactions and radiations, cross section, fission process, diffusion and slowing down, steady state reactor theory criticality condition, reflected reactors. Prereq: Physics 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 methods; Laplace transform method; frequency response, stability, and control. Prereq: 3030.

3210-20 Thermodynamics (4, 4) Properties and laws of thermodynamic systems. First and second laws used to analyze power plant systems—both fossil and fission. Prereq: Math 2880 and Basic Enger. 1330.

3730 Momentum Transport (4) Development of differential and integral momentum equations; elementary theory of turbulence, applications to piping systems, pumps and nuclear reactors. 3 loca. and one lab. Prereq: Math 4710.

4110-20-30 Introduction to Nuclear Reactor Theory (3, 3, 3) Nuclear structure; radioactive decay laws; 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 Thermocoupler Systems (3) Fusion reactions; properties of plasmas; plasma containment; plasma diagnostics; thermocoupler devices. Prereq: Physics 3730; Math 4550.

4210-20 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.

4440 Engineering Applications of Radioisotopes (3) Production and properties of isotopes; industrial applications, isotopic power sources; irradiation processing. Prereq: Physics 3730.


4530 Reactor Simulation Laboratory (3) Simulation of reactor design and operation with analog computer; reactor kinetics, single and multiphase reaction, reactivity coefficients, poisoning, control rod calibration, power reactor; subcritical assembly. Prereq: 4120.

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 (3) 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 (3) Hydrodynamics and heat transfer in boiling systems; boiling crisis; fuel element thermal design, steam generator design. Prereq: 4710.

4730 Reactor Reactor Design (3) First order reactor design, integration with nonnuclear 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 kinetics 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

5110-20-30 Transport Processes in Nuclear Engineering (3, 3, 3)

5140 Two-Phase Flow and Heat Transfer (3)

5210 System Dynamics (3)

5220 Reactor System Dynamics (3)

5230 Experimental Methods in Reactor Dynamics (3)

5240 Reactor Instrumentation (3)

5710-20-30 Nuclear Design (3, 3, 3)

5740 Reactor Shielding (3)

5790 Radiation Shielding (3)

5840-50 Fast Breeder Reactors (3, 3)

5910-20 Advanced Nuclear Reactor Design (3, 3)

5970 Special Topics in Nuclear Engineering (3)

5980 Nuclear Engineering Practice (3-12)

6000 Doctoral Research and Dissertation

6110-20-30 Selected Topics in Reactor Theory (3, 3, 3)

6140 Radiation Shielding (3)

6150 Radiation Shielding (3)

6310-20-30 Seminar in Nuclear Engineering (2, 2, 2)
Home Economics is an integral part of The University of Tennessee's academic program in its three major functions of teaching, research, and extended services. The College ranks among the top five colleges of Home Economics in the nation in enrollment and first in the number of Master's degrees granted. Much of the qualitative and quantitative growth of the College is due to its highly qualified faculty and staff who, being aware of the current community problems and needs, have made its programs relevant to the goals and aspirations of today's students.

Today's students are seeking professional positions in which they can better serve people—individuals, families, consumers—to help them predict and solve problems arising from the increasingly rapid changes occurring in the society in which we live. The basis of the College's professional programs is to prepare young men and women to serve the needs of people in their many varied environments and different stages of life.

The philosophy of the College might best be stated as follows: Home Economics, while it does seek knowledge which describes and analyzes, is not content with only studying "what is," but also is concerned with promoting "what can and should be" in order to enhance the quality of life and well-being of people and societies. The College's mission is twofold: its graduate programs are geared toward research producing alternative solutions to technical and social problems which are and will be encountered by the people who are to be served; its undergraduate programs prepare students to work with people in a professional capacity and to direct them to the needed information so that they may make use of what has been learned in serving as professional agents of change.

The University of Tennessee pioneered as one of the first institutions of higher education in the South 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 six departments with curricula leading to the Bachelor of Science degree: Child Development and Family Relationships; Food Science, Nutrition, and Food Systems Administration; Home Management, Equipment and Family Economics; Related Art, Crafts and Interior Design; and Textiles and Clothing. The undergraduate program in Home Economics Education is offered in cooperation with the College of Education and the Home Economics Extension Education program is offered in cooperation with The Institute of Agriculture. 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, 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 Merrill-Palmer Institute for Human Development and Family Life in Detroit, Michigan. Credits earned may be applied toward a Bachelor of Science degree in most 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 day care facilities, because one of the most urgent problems in today's urban society is the need for appropriate child day care facilities staffed with well-trained, competent staff. Opportunities for Home Economics graduates with special interest in preschool programs are numerous and continue to increase.

Each Summer the Craft Workshop in Gatlinburg, Tennessee, is made possible through cooperative efforts between the Related Art, Crafts and Interior Design Department and the Pi Beta Phi Arrowmont School of Crafts. In addition to providing advanced instruction in designer-created crafts through classes taught by nationally known craftsmen, this workshop has been expanded to a full-fledged program serving as a training center for artists and craftsmen from throughout the United States. Also, cooperation with national and local craft organizations has so stimulated the work of craftsmen throughout the area that their work has gained national recognition.

The U. S. Department of Agriculture Textiles and Clothing Research Laboratory is a 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 selection 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 number in each case is "4910 International Study Tour" of the department designated for the tour and is offered for 6 credit hours at the
undergraduate level. At the graduate level, Home Economics 5100 International Studies is a seminar arranged 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 Food Science, Nutrition, and Food Systems Administration Department 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 Food Systems Administration students and for food service programs those in the Food Science curriculum.

The Food Systems Administration program includes a four-year Coordinated Undergraduate Program in Dietetics for those students interested in health care facilities, and a Food and Lodging program to meet the need for administrators in the restaurant, resort, and tourist industry. Students in the Coordinated program receive clinical experience integrated with courses during the senior year in hospitals and other health care facilities. The Food and Lodging program offers coordination of theory and experience with industry during all four years. Graduates of the Coordinated program will be eligible for membership in the American Dietetics Association (ADA) and for application for ADA registration. The Nutrition program is affiliated with the Child Development Center, UT Center for Health Sciences, Memphis, for special study in mental retardation and developmental disorders. A liaison is maintained with the Knox County Health Department to provide concurrent field experience for students in the Community Nutrition option.

All Departments of the College conduct basic and applied research which may be supported 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 opportunities for training and research.

Workshops on special topics of current import are offered periodically 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 re-training as faculty resources permit. The program includes short courses, workshops, evening courses, and special video-tape and tele-course courses. Individually planned graduate programs should be arranged with the appropriate Department Chairperson.

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 modern 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 an infant day care center, nursery school classrooms for 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 Resort 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.

Food Science, Nutrition, and Food Systems Administration facilities include well-equipped laboratories for basic food science, experimental food science, experimental nutrition (animal), and chemistry for graduate and undergraduate students. A reading room and audio-tutorial laboratory provide opportunity for independent study.

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 offices and laboratories are located in the Home Economics Building.

The Home Management, Equipment and Family Economics Department has well-equipped laboratories and classrooms for the study of both large and small household equipment, housing, and family

The Related Art, Crafts and Interior Design Department facilities include provisions for study, regular classroom laboratory and studio experiences. Laboratories for crafts and interior design 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 consumers. 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 Home Economics Education Curriculum leading to certification will be furnished upon request. Graduate students interested in meeting certification requirements should consult the Head of the Department of Home Economics Education.

Transfer and graduate students who desire to qualify for vocational certification in Home Economics should state this when applying for admission so that their credits may be evaluated in terms of their goal.

A joint program in Early Childhood Education is currently under consideration by the Department of Child Development and

Family Relationships (College of Home Economics) and the Department of Curriculum and Instruction (College of Education). Pending adoption of a joint program, students enrolled in either of these departments may take additional coursework in areas supplementary to their existing programs in either department. Such arrangements should be made early in a student's program as possible. Additional information may be obtained by contacting either the Department of Curriculum and Instruction or the Department of Child Development and Family Relationships.

Educational Programs For Home Economics Extension Education

Students interested in careers as Home Economics extension agents have many opportunities for employment in service to urban and rural families. Special programs of study can be arranged for such students in cooperation with the Institute of Agriculture. The student selects a major in one of the curricula offered by the College of Home Economics. Elective courses may be selected by the student from those recommended by a joint advisory committee of the College of Home Economics, the College of Agriculture, and the Home Economics unit of the Agricultural Extension Service.

Summer Field work experience, coordinated by the Department of Agricultural Extension Education, is available to selected students with a minimum 2.5 grade point average. The student must enroll in Agricultural Extension Education 3110 during the fall or spring quarter of the junior year prior to enrolling in Agricultural Extension Education 4110-20 Field Studies in the summer quarter (see page 56 for course descriptions). Six hours credit are awarded for summer Field Studies during which the student works ten weeks as a Junior Assistant County Agent of the Tennessee Agricultural Extension Service.

Students interested in this program should contact the administrative assistant in 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 Development and Family Relationships (CDDR)

Food Science, Nutrition, and Food Systems Administration (FSNFSA)

Food Science and Food Systems Administration

Option 1—Coordinated Undergraduate Program in Dietetics (ADA)

Option 2—Food Science
A final grade of C or better will be recorded as satisfactory. Assuming that courses vary in credit from three to four hours, the maximum satisfactory or no credit hours which could be counted toward the minor is 12. When the student wishes to take a satisfactory or no credit course, the student must so indicate at the time of registration.

The purpose of this option is to encourage the able student to go beyond the limits of those courses in which he or she usually does well and, motivated by the student’s own intellectual curiosity, explore subject matter in which the student’s performance may be somewhat less outstanding than his or her work in preferred subject fields.

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 of Home Economics.

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 of Home Economics. The annual cost to the student for this insurance coverage is $4.00 (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.

Education 3810 should be elected in the sophomore year by those students majoring in the Vocational Home Economics Education curriculum. This course is a prerequisite for other required courses in education.

Psychology 2500 is a prerequisite for Education 3810.

For majors in the Food Science and Food Systems Administration, Nutrition or Textiles curricula, Nutrition 3310 should be taken preferably in the sophomore year and not later than the first quarter of the junior year. The following courses are fundamental to Home Economics and are required in all curricula:

### Home Economics 1010 Home Economics as a Profession
- **First Quarter:** Freshman

### Home Management, Equipment and Family Economics 1120 Management and Its Contribution to Family Living
- Freshman

### Related Art, Crafts and Interior Design 1410 Introduction to Design
- Freshman

### Food Science and Nutrition 2000 Cultural and Scientific Aspects of Foods and Nutrition
- Sophomore

### Child Development and Family Relationships 2110 Human Socialization
- Sophomore

### Textiles and Clothing 3410 Cultural and Functional Aspects of Textiles and Clothing
- Junior

### Home Economics 4000 Seminar
- Senior

### Professional Curriculum in Child Development and Family Relationships

This curriculum is appropriate for persons wishing to begin preparation for the following types of positions: nursery school teacher, kindergarten teacher, in a day care center or center for culturally deprived children; worker with handicapped children; entry-level positions in social work; or graduate work in this area.

### Freshman
- **Chemistry 1110-20-30 or 1510-20-30**
- **English 1110-20**
- **Home Economics 1010**
- **HMEFE 1120**
- **Mathematics 1540 and choice of following:**
  - Philosophy 1510 or Philosophy 2510 or Philosophy 2520 or Philosophy 2530
  - or eight hours of a foreign language
- **Music 1210 or Art 1815 or Art 1825**
- **RACID 1410**
- **Psychology 2500**
- **Electives**

### Sophomore
- **Anthropology 2530**
- **CDFR 2110**
- **English 2120 or 2520 or 2530 or 2540**
- **Food Science 2000 and Nutrition 2000**
- **Microbiology 2100**
- **Sociology 1150**
- **Speech 2211 or Journalism 2210**
- **Zoology 2920-30**
- **Economics 2110-2120**
- **Electives**

### Junior
- **CDFR 3110-20**
- **CDFR 3210-20**
- **Nutrition 3020**
- **Political Science 2510**
- **Text & Clsc 3410**
- **Psychology 3120 or 2450 or 3550**
- **Electives**

### Senior
- **Home Economics 4000**
- **CDFR 3510**
- **CDFR 4110**
- **CDFR 4230 or 3130**
- **CDFR 4260 or 3520**
- **CDFR 4610 or 4630**
- **HMEFE 3420 or 4210**
- **RACID 4410**
- **Text & Clsc 3420**
- **Electives**

**TOTAL: 188 hours**

### Professional Curriculum In The Department of Food Science, Nutrition, and Food Systems Administration

**Food Science and Food Systems Administration**

**OPTION 1, COORDINATED UNDERGRADUATE PROGRAM IN DIETETICS (ADA)**

The Coordinated Undergraduate Program in Dietetics (ADA) curriculum is concerned with combining the academic and clinical experiences, within a four-year program.
Students receive the Bachelor of Science degree and are eligible for membership in the American Dietetics Association and to apply for registration.

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<th>Freshman</th>
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<tbody>
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<td>English 1510-20</td>
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<tr>
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<td>HMEFE 1120</td>
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<td>English 2510 or 2520</td>
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<tr>
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<tr>
<td>Microbiology 2010</td>
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<td>Zoology 2920-30</td>
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<td>Economics 2110, 2130</td>
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<td>FSA 3110</td>
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<td>Food Science 4010 or Nutrition 4110</td>
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<tr>
<td>Psychology 4480 or Economics 4342</td>
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<td>Accounting 2110 or Computer Science 2410 or Plant and Soil Science 3610 or Statistics 2100</td>
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<tr>
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</table>

TOTAL: 190 Hours

**OPTION 2, FOOD SCIENCE**

The Food Science curriculum is concerned with the scientific and technical aspects of Food Science to man and his environment. Emphasis is placed on the application of the 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.

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<thead>
<tr>
<th>Freshman</th>
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<td>Chemistry 1110-20-30 or 1510-20</td>
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<tr>
<td>English 1510-20</td>
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<td>Food Science 1010</td>
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<td>HMEFE 1120</td>
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<td>Mathematics 1540-50 or 1840-50</td>
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<td>CDFR 2110</td>
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<td>Economics 2110, 2130</td>
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<tr>
<td>English 2510 or 2520 or 2530 or 2540</td>
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<td>Food Science 2510</td>
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<td>Food Science 2000 and Nutrition 2000</td>
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<td>Microbiology 2010</td>
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<td>Speech 2311</td>
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<tr>
<td>Journalism 2210</td>
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<tr>
<td>Electives in Social Science</td>
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TOTAL: 190 Hours

**OPTION 3, FOOD AND LODGING ADMINISTRATION**

The Food and Lodging Administration curriculum is concerned with meeting the expressed top management needs of the food and lodging industry. This curriculum will provide a professional program for both men and women who will assist students gain breadth of knowledge, perspective, flexibility, and creativity to meet the changing environment of complex management problems in the food and lodging industry of today.

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<tr>
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<th>Hours</th>
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<tr>
<td>Math 1540-50</td>
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<td>Food Science 1010</td>
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<tr>
<td>Food Systems Administration 2910</td>
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<tr>
<td>Statistics 2100</td>
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<td>Speech 2311</td>
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<tr>
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<td>English 2510 or 2520 or 2530 or 2540</td>
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<tr>
<td>Economics 3420 or 4110</td>
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<tr>
<td>Microbiology 2010</td>
<td>4</td>
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<td>Accounting 2110-20, 2210</td>
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<td>Food Systems Administration 3200</td>
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<tr>
<th>Junior</th>
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<tr>
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<td>Marketing 3110-20</td>
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<td>Economics 3420</td>
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<td>FSA 4130</td>
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<td>FSA 4150</td>
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<td>Electives or Food Science 4040</td>
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<tr>
<td>Computer Science 2410</td>
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<tr>
<td>Electives</td>
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TOTAL: 190 Hours

*Natural Science Electives (a 12-hour sequence) from one of the following areas: Biology 1210-20, Chemistry 1510-20, or Physics 1410-20.*

*Select one of the following Food Science course sequences: Chemistry 1510-20 (as natural science elective), Food Science 2000 and Nutrition 2000, Food Science 2510 or any natural science elective, Nutrition 1230, Food Science 4000 and Food Science 4040.*

*Social Science Electives (8 hours with 2 courses from one area of the following: Anthropology, Sociology, Geography, Psychology, or Political Science).*

**NUTRITION**

**OPTION 1, NUTRITION SCIENCE**

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 a dietetic internship, to become a clinical nutrition specialist.

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<thead>
<tr>
<th>Freshman</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Chemistry 1110-20-30 or 1510-20-30</td>
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<td>English 1510-20</td>
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<td>RACID 1410</td>
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<tr>
<td>Sociology 1510</td>
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<tr>
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<td>3</td>
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<tr>
<td>Journalism 2210</td>
<td>3</td>
<td></td>
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<tr>
<td>Microbiology 2010</td>
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<tr>
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<tr>
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<tr>
<td>Zoology 3050-60, 3920</td>
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<tr>
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*Or English 2560 or 2570 or 2580.*
### Professional Curriculum in Vocational Home Economics Education

The curriculum in Vocational Home Economics Education is planned in cooperation with the College of Education. Successful completion of the requirements of this curriculum results in recommendation for certification to teach vocational home economics in secondary schools in Tennessee.

Total requirements for admission to teacher education, to student teaching and for recommendation for Certification are listed on page 84. The State Board for Vocational Education and the United States Office of Education approve programs for vocational education. Only students who have a major in the Vocational Home Economics Education curriculum meet certification requirements; students who have a major in other curricula in the College of Home Economics do not meet certification requirements.

All freshman, sophomore, and junior required courses must be completed before a student engages in student teaching. Home Economics Education 4240 must be scheduled within one of the two quarters immediately preceding the quarter in which student teaching is scheduled. Fifteen quarter hours credit are earned in student teaching; the course numbers are Home Economics Education 4310 and 4610. This curriculum will prepare students for graduate study in home economics education; however, it is not a requirement for graduate study in home economics education.

### OPTION 2, COMMUNITY NUTRITION

This curriculum is designed for those students interested in community services or graduate work in Public Health Nutrition.

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<td>Home Economics 4010</td>
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</tr>
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<td>Mathematics 1540</td>
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<tr>
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<tr>
<td>Psychology 2500</td>
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</tr>
<tr>
<td>RACID 4140</td>
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<td>Sociology 1510</td>
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<td>Microbiology 2010</td>
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<td>Plant and Soil Science 3610</td>
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<td>Political Science Elective</td>
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<td>Food Systems Administration 4130</td>
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<td>Home Economics 4000</td>
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<td>Nutrition 4030</td>
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<tr>
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<td>Nutrition 4530</td>
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<tr>
<td>Electives</td>
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</table>

TOTAL: 188 hours

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### Professional Curriculum in Home Management, Equipment and Family Economics*

This curriculum prepares students for the following types of positions: home economist with gas and electricity distributors, appliance firms and builders: home demonstration agent; family economist with social action programs, for example, public welfare, Social Security, Food Stamp, urban development and public housing; or graduate work in preparation for college teaching and research or positions in Cooperative Extension or social action programs requiring advanced training.

This curriculum also enables the student to choose electives for the specialized training needed for a journalistic career in family economics, housing and equipment.

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<thead>
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<td>P.E. or Health electives</td>
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<td>1 Electives</td>
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<tr>
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<tbody>
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<td>RACID 3110</td>
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<tr>
<td>Text. &amp; Cl. 3420</td>
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<td>HMEFE 4430</td>
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</table>

TOTAL: 190 hours

*See page 85 for humanities requirements.
*Choose courses in History, Anthropology, Geography, Political Science, Sociology, or Child Development 2110.
*Requires admission to Teacher Education Program.

---

*Curriculum administered by Departments of Child Development and Family Relationships, and Related Art, Crafts, and Interior Design.
### Options in Crafts

The curriculum in Crafts offers two options, General Crafts and Crafts Specialization in one of the following media: fiber, metal, or clay. Students in the professional crafts program (option 3 and 4) will follow the same curriculum during their freshman and sophomore years and prescribed optional courses of study during their junior and senior years.

Graduate and undergraduate students in the area of crafts have an unique opportunity to participate in the summer program at the Arrowmont School of Crafts, Gatlinburg, Tennessee; credit is granted through The University of Tennessee, Knoxville. Instructors at the school are nationally and internationally recognized designer-craftsmen who offer, in many instances, different approaches to those of the resident faculty; this further enriches the student's program of study. Craft courses are not offered on the Knoxville campus in the Summer Quarter. Therefore, students attending UT during the summer for crafts study are required to attend the Arrowmont School of Crafts and to pay the additional registration, tuition, and laboratory materials fees required by that school.

### Option 2, Professional Interior Design

The following curriculum provides for those students who are primarily interested in becoming professional interior designers.

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<td>HMEF 1120</td>
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<td>CDFR 2110</td>
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<td>Electives</td>
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<td>Collateral area electives</td>
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<tr>
<td>Textiles and Clothing 3420</td>
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<td>RACD 3255-56</td>
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<td>senior</td>
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<tr>
<td>HMEF 4310</td>
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<td>RACD 4155-56</td>
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**TOTAL: 191 hours**

### Option 3, General Crafts

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<td>CDFR 2110</td>
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<td>English 2510-20</td>
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<td>Sociology 1510</td>
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<td>RACD 2210</td>
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<td>RACD Craft Electives (Beginning)</td>
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**TOTAL: 190 hours**
**OPTION 4, CRAFTS SPECIALIZATION (Fiber, Metal, and Clay)**

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<tr>
<td>HMEFE 1120</td>
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<td>RACID 1410</td>
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</tr>
<tr>
<td>Art 1815-25</td>
<td>8</td>
</tr>
<tr>
<td>Art History Electives</td>
<td>4</td>
</tr>
<tr>
<td>Psychology 2500</td>
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<td>Electives</td>
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**Sophomore**

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<td>English 2510-25</td>
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<td>Sociology 1510</td>
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<td>RACID 2210</td>
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<td>Economics 2110-20-20</td>
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**Junior**

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**Senior**

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<tr>
<td>RACID Craft Electives (Beginning and Advanced)</td>
<td>9 hours in area of concentration</td>
</tr>
<tr>
<td>Electives</td>
<td>12</td>
</tr>
</tbody>
</table>

**Total:** 190 hours

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**Graduate Study Programs in the College of Home Economics**

Graduate study programs lead to the degree of Master of Science with a major in Child Development and Family Relationships; Food Science; Food Systems Administration; Home Economics Education; Home Management, Equipment and Family Economics; Nutrition; Related Art, Crafts and Interior Design; and Textiles and Clothing. Graduate study programs lead to the degree of Doctor of Philosophy in Home Economics with three options: Interdisciplinary, Food Science, and Nutrition. Food Systems Administration may be taken as a concentration in the Food Science doctoral option. Graduate programs provide advanced specialized training as needed in each area for College and University teaching, for leadership positions in governmental and professional agencies and in the various professions in business, for secondary school and adult teaching, for research and for extended services.

Information regarding graduate assistantships, fellowships, and general requirements for admission to graduate study may be obtained from the Department Chairperson in the area of the student's major interest or the Dean of the College of Home Economics for the Interdisciplinary doctoral option.

An application for admission and two official transcripts should be submitted directly to the Graduate School. In addition, application is made to the Department of Home Economics. Those students desiring to major in Child Development and Family Relationships, the Interdisciplinary doctoral option, or Home Economics Education are required to take the Graduate Record Examination.

For a complete description of the Graduate Program in the various areas of Home Economics, see the Graduate School Catalog, including the list of available major and minor areas.

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**Professional Curriculum in Textiles and Clothing**

**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.

**Freshman**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry 1110-20-30 or 1510-20-30</td>
<td>12</td>
</tr>
<tr>
<td>English 1510-20</td>
<td>8</td>
</tr>
<tr>
<td>Home Economics 1010</td>
<td>1</td>
</tr>
<tr>
<td>HMEFE 1120</td>
<td>3</td>
</tr>
<tr>
<td>Psychology 2500</td>
<td>4</td>
</tr>
<tr>
<td>RACID 1410</td>
<td>3</td>
</tr>
<tr>
<td>Sociology 1510</td>
<td>4</td>
</tr>
<tr>
<td>Speech 2311</td>
<td>4</td>
</tr>
<tr>
<td>Textiles and Clothing 1190</td>
<td>5</td>
</tr>
<tr>
<td>Electives</td>
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**Sophomore**

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Accounting 2110</td>
<td>3</td>
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<tr>
<td>Anthropology 2530</td>
<td>4</td>
</tr>
<tr>
<td>CDFR 2110</td>
<td>3</td>
</tr>
<tr>
<td>Economics 2110-20-20</td>
<td>6</td>
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<tr>
<td>English 2510 or 2520 or 2530 or 2540</td>
<td>4</td>
</tr>
<tr>
<td>Food Science 2000 and Nutrition 2000</td>
<td>3</td>
</tr>
<tr>
<td>Journalism 2210</td>
<td>5</td>
</tr>
<tr>
<td>Textiles and Clothing 2110</td>
<td>3</td>
</tr>
<tr>
<td>Textiles and Clothing 3420</td>
<td>3</td>
</tr>
<tr>
<td>Zoology 2920-30</td>
<td>5</td>
</tr>
<tr>
<td>Electives</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total:** 191 hours

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**OPTION 2, TEXTILE TECHNOLOGY**

This curriculum is appropriate for persons wishing to prepare for positions as research technicians and for graduate study leading to college teaching and research in textiles.

**Freshman**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemistry 1110-20-30 or 1510-20-30</td>
<td>12</td>
</tr>
<tr>
<td>English 1510-20</td>
<td>8</td>
</tr>
<tr>
<td>Home Economics 1010</td>
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<tr>
<td>HMEFE 1120</td>
<td>3</td>
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**Sophomore**

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<th>Course</th>
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<td>Chemistry 3211-19 or 3310</td>
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<td>CDFR 2110</td>
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<td>English 2510 or 2520 or 2530 or 2540 (choose 2)</td>
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</tr>
<tr>
<td>Food Science 2000 and Nutrition 2000</td>
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<tr>
<td>Math 1540-50-60 or 1840-50-60</td>
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</tr>
<tr>
<td>Sociology 1510</td>
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<tr>
<td>Text. and Cl. 3420</td>
<td>3</td>
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<td>Zoology 2920-30</td>
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**Junior**

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<td>*Humanities Electives</td>
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<tr>
<td>Journalism 2210</td>
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</tr>
<tr>
<td>Physics 2210-20 or 1210-20</td>
<td>8</td>
</tr>
<tr>
<td>Statistics 2210 or 3450</td>
<td>3</td>
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<td>Text. and Cl. 3410</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>12</td>
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**Senior**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Home Economics 4000</td>
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</tr>
<tr>
<td>HMEFE 2430, 4830</td>
<td>6</td>
</tr>
<tr>
<td>RACID 3130</td>
<td>3</td>
</tr>
<tr>
<td>Textiles and Clothing 3440, 4540, 4280, 5220 (choose 3)</td>
<td>9</td>
</tr>
<tr>
<td>Textiles and Clothing 4220</td>
<td>4</td>
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<tr>
<td>Textiles and Clothing 4010, 4120, 4140, 4120</td>
<td>12</td>
</tr>
<tr>
<td>Electives</td>
<td>12</td>
</tr>
</tbody>
</table>

**Total:** 189 hours

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**Graduate Study Programs in the College of Home Economics**

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**Departments of Instruction**

Numbers in parentheses following the course titles indicate quarter hours credit offered.

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**Child Development and Family Relationships (245)**

**PROFESSOR:**

R. L. Higbee

**ASSOCIATE PROFESSORS:**

J. L. Kipper (Head); Ph.D., Michigan State

L. C. Cunningham, Ph.D., Michigan State

V. M. Nordquist, Ph.D., Tennessee

**ASSISTANT PROFESSORS:**

S. L. Tapperson, Ph.D., Kansas; P. White, Ed.D., Tennessee

M. Varner, Ph.D., Wisconsin

**INSTRUCTOR:**

S. Teets, M.S., Tennessee
UNDERGRADUATE

2110 Human Socialization (3) Human development with emphasis on socialization process from infancy through adolescence in family, school and peer group settings. 3 hrs. An additional lab (2 hrs) for majors.

2120 Male-Female Relations (1) Cultural, social, and psychological examination of roles and interactions between men and women. 3 hrs. An additional lab (2 hrs) for majors.

2410 Human Sexuality (2) Dimensions of human sexuality as examined through cultural, social, and psychological influences.

3110 Program Planning for Preschool Children (3) Philosophies and objectives of preschool education. Planning intellectual experiences appropriate to age and background of the child; emphasis on natural and social sciences. Prereq: 2110 or equivalent. 2 hrs and 1 lab (2 hrs).

3120 Creative Experiences for Preschool Children (3) Emphasis on role of creative and play materials to provide optimum educational environment for young children. Prereq: 3110 or consent of instructor. 2 hrs and 1 lab (2 hrs).

3130 Music and Literature for Preschool Children (3) Development of creativity through language, music and books. Criteria for selection of books and records. Prereq: 3110 or consent of instructor. 2 hrs.

3210 Child Development I (3) Comprehensive view of the child from birth through six years of age emphasizing the influence of various aspects of development—biological, cognitive, personality, social—emphasizing factors influencing developmental outcomes. Prereq: 2110, 4 hrs psychology or equivalent. 3 hrs. 1 hr observation per week.

3220 Child Development II (3) Growth and development of the child from six to twelve years of age emphasizing the influence of family and community. Special attention given to different social and cultural settings. Prereq: 2110, 4 hrs psychology or equivalent. 3 hrs. 1 hr observation per week.

3510 Courtship and Marriage (3) Socialization toward marriage and patterns of marital Interaction.

3520 The Family and The Adolescent (3) Problems of growth and development during teen years; role of parents and other adults in fostering adolescent development. Upper division students only. Prereq: 2110 or 4 hrs psychology or 4 hrs sociology.

3610 Observation and Experience in Preschool Programs (3) For non-CDPR majors. Observation; guidance and feedback in classrooms, schools and day care centers; planning and participation in activities appropriate for young children outside preschool. Prereq: 2110 or equivalent. 2 hrs and 2 labs (2 hrs each).

4110 Experiences in Preschool Program (8) For majors in child development. Increasing responsibility for planning and guiding groups of children in nursery school under direction of head teacher. Prereq: 3110 and 3120 or 3130. 2 hrs and 3 labs (4 hrs each).

4230 Development in Infancy (3) Development during prenatal period and first fifteen months of life. Interaction between infant and his environment. Review of research relating to childrearing practices and prediction of later behavior. Prereq: 2110 and Zoology 2830 or equivalent.

4280 Development in Late Stages of Life Cycle (3) Adult life in our society. Adjustment to internal and environmental changes through middle and aged years. Prereq: 2110, 4 hrs psychology, and 4 hrs sociology or equivalent.

4350 Advanced Child Development (3) Survey of selected theories relevant to child development with emphasis on research literature and research methodology. Prereq: 4 hrs psychology and 6 hrs child development or equivalent.

4420 Learning Experiences with Parents (3) Dynamics of parent-teacher 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: 3610 or 4110 or equivalent.

4430 Family Relationships (3) Interpersonal relationships among family members and societal roles.

4610 The Child in the Community (3) Needs of children; community agencies meeting these needs; visits to agencies contributing to welfare of children. Prereq: Senior standing, 2110 or equivalent.

4620 Administration of Programs for Young Children (3) Staffing, financing, planning, scheduling, and financing for day care of infants and young children. Prereq: 2110, 4 hrs psychology or equivalent. 4110 or equivalent.

4630 Field Work in Child Development or Family Relationships (3-15) Opportunity for students to work in nursery schools or community agencies having programs for children, youth, or adults concerned with education for family living. May be repeated for credit. Prereq: Consent of department head. Hrs arranged.

4710 Contemporary Developments (1-3) Student or staff initiated course for study of special topics pertinent to the field; topics selected to be determined in consultation with instructor with departmental approval. Elective credit only. Prereq: permission of instructor. May be repeated with departmental approval for credit up to 9 hrs.

4810 Afro-American Families (3) Historical background, contemporary family structure and relationships; emerging needs and programs.

4840 Generational Relations and Family Life Styles (3) Historical, economic, and social experiences of different generations; the influence on relevant factors within and across generational groups; and implications for family life.

4878-88 Honors Child Development and Family Relationship (3, 3, 3) Individual special problems for juniors and seniors showing special ability and interest in child development and family relationships.

GRADUATE

5000 Thesis

5110-20 Field Work in Family Life (3, 3, 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 Interaction and Emotionally Disturbed Families (3)

5510 Survey of Research in Child Development and Family Relationships (3)

5530 Research Methods in Child Development and Family Relationships (3)

5540 Teaching-Learning Process in Preschool Programs (3)

5550 Supervision in Preschool Programs (3)

5620 Nursery School Administration (3)

5630 Seminar in Infant Development (3)

5640 Teaching Child Development and Family Relationships (5)


5810-20-30 Special Problems in Child Development and Family Relationships (1-3, 1-3, 1-3)

5840 Family Planning Programs (3)

5910-20-30 Seminar in Child Development and Family Relationships (1-3, 1-3, 1-3)

6410 Theories of Family Interaction (3)

6540 Seminar in Programs for Infants and toddlers (3)

6610-20 Contingency Management Programs for Disadvantaged Children (6, 6)

FOOD SCIENCE, Nutrition, and Food Systems Administration

PROFESSORS: M. R. Gram (Head), Ph.D. California (Berkeley); E. Bachevra, Ph.D. Kansas State; R. M. Buckley (Emeritus), M. A. Columbia; A. M. Campbell, Ph.D. Cornell; E. L. Darwell, Ph.D. Kansas State; L. E. Wright, Ph.D. University of Minnesota; T. E. Gross, (Emeritus), Ph.D. Purdue; F. L. McLeod (Emeritus), Ph.D. Columbia; L. M. Oland, Ph.D. Wisconsin; D. S. Rhode Island; R. R. Savage, Ph.D. Wisconsin; F. A. Schofield (Emeritus), Ph.D. Michigan; J. T. Smith, Ph.D. Missouri.


FOOD SCIENCE (386)

UNDERGRADUATE

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. Offered in cooperation with Nutrition Department and must be taken concurrently with Nutrition 2000. Prereq: 12 hours of natural science.

2510 Nature of Food (3) Classification on basis of composition, type of systems, structure, and consistency, source, food components and their interactions. Prereq: 1010, Chemistry 1530 or equivalent. 2 hrs and 1 lab.

3020 Food and the Consumer (3) Economic considerations in food management, including food economy, quality, consumer acceptability, and convenience. Prereq: 3 hrs Economics. 2 hrs and 1 lab.

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 3300. 2 hrs and 1 lab.

4000 Origin of Food and Foodways (3) Food origin and development of individual and group foodways. Prereq: 8 hrs social science or humanities.

4010 Introductory Experimental Food Science (3) Physical and sensory evaluation in experimental fad, high protein foods, and batter and dough systems. Prereq: 3510. 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.

4040 Food in Contemporary Society (3) Consumer's options, responsibility and potential influence with respect to food supply.

4530 Field Experience (3-15) Planned educational experiences in selected food systems laboratories. Prereq: Consent of Instructor. Hrs and credit arranged.
GRADUATE

5000 Thesis

5110-20 Advanced Physiological Chemistry (4, 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 Disabilities (3)

5700 Current Programs and Trends in Nutrition (1-3)

5800 Problems in Nutrition (1-3)

5950-60 Seminar (1, 1)

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)

UNDERGRADUATE

2910 Seminar in Food and Lodging Administration (2) Overview of field of food and lodging and professional curriculum. Contacts with industry through field trips and guest speakers.

3110 Quantity Food Procurement, Production and Service (5) Application of principles necessary for determining needs, purchasing, storing, producing and serving foods in volume. Prereq: Food Science 1010 or 2510; Economics 2130 or consent of instructor. 3 hrs 2 lab.

3220 Internship in Food and Lodging Administration (5) Planned educational experience in selected food and lodging operations. Prereq: 2910, 3110.

3310 Introduction to Food Systems Administration (3) Management functions and techniques incurred in quantity food procurement, production, and service. Observations and simulations of food systems. Prereq: Consent of Instructor. Not open to Food Systems Administration majors. 2 hrs 1 lab.

3320 Occupational Food Service Management (2) Effective use of management resources in food service systems. Prereq: 3110 or permission of Instructor.

3920 Survey of Diets (1) Introduction to dietics and to career opportunities; and role of dietitian in health delivery systems. Concurrent with Nutrition 3920. Prereq: Junior standing.

4130 Food Systems Administration (3) Functions of management applied to food service systems. Prereq: 3110.

4140 Food Systems Personnel Development (3) Development of training programs for food systems personnel. Prereq: 4130 or consent of instructor.
Home Economics (481)

Professor: L. M. Oland (Dean), Ph.D. Wisconsin, D.Sc. Rhode Island.
Associate Professor: J. L. Cunningham (Coordinator for Interdisciplinary Doctoral Option), Ph.D. Michigan State.
Assistant Professors: V. S. Anderson (Assistant Dean), M.S. Tennessee; M. N. Perry (Dean for Graduate Studies), Ph.D. Tennessee.

UNDERGRADUATE

1010 Home Economics as a Profession (1-3) Scope of the profession of Home Economics; educational and professional preparation; personal qualities required and satisfaction to be gained from various careers within the profession. Satisfactory-No Credit.

4000 Senior Seminar (2-15) Personal application of interrelated 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. Junior or senior standing. May be repeated to a maximum of 15 hrs credit. Satisfactory-No Credit.

4710 Contemporary Developments (1-3) Recent advances in specified areas of Home Economics, their implications for Home Economics and related professions. Consent of instructor. Hrs. arranged. May be repeated with departmental approval for credit up to 9 hrs.

4910 International Study Tour (6) See page 134. Prereq: Consent of instructor.

GRADUATE

5060 Practicum (1-12)
5710-20-30 Current Programs and Trends in Home Economics (1-3, 1-3, 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)

Home Economics Education (490)

Professors: N. P. Logan (Head), Ed.D. Tennessee; L. Brown, Ph.D. Ohio State.
Associate Professor: S. Miller, Ph.D. Ohio State.
Assistant Professors: J. H. McInnis, Ph.D. Florida State.

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 102 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. The Home Economics Education Curriculum is designed to provide the requirements for certification in vocational home economics. The curriculum is listed on page 138.

Home Economics Extension Education (471)

Professors: G. E. Goertz (Acting head), Ph.D. Kansas State; R. S. Dotson (College of Agriculture), Ph.D. Pennsylvania State; L. M. Oland, Ph.D. Wisconsin, D.Sc. Rhode Island.
Assistant Professors: M. N. Perry (Acting Head), Ph.D. Tennessee; C. E. Carter (College of Agriculture), Ph.D. Ohio State.

UNDERGRADUATE

3110 Methods in Home Demonstration Work (3) Organization, educational responsibility, objectives, methods and evaluation of Cooperative Extension Work. Prereq: Psychology 2500 or equivalent.

4110 Home Demonstration Methods 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 Home Demonstration Methods 4120. Prereq: 3110 and consent of instructor.

4120 Home Demonstration Methods with Youth (3) Procedures and techniques in working with youth. Taken as an off-campus course of field training together with Home Demonstration Methods 4110. Prereq: 3110 and consent of instructor.

1130 Methods and Techniques in Home Demonstration Work (3) Individual, group, mass and indirect methods in Agricultural Extension Work. Prereq: 3110, 2 hrs and 1 lab.

4710 Contemporary Developments (1-3) Student or staff initiated course for study of special topic(s) pertinent to the field; topics selected for study determined by students and instructor with departmental approval. Elective credit only. Prereq: Consent of instructor. Hrs. arranged. May be repeated with departmental approval for credit up to 8 hrs.


GRADUATE

5000 Thesis
5210 History, Organization, Objectives and Philosophy of Cooperative Extension Work in Agriculture and Home Economics (3)
5220 Development of Programs in Cooperative Extension Work in Agriculture and Home Economics (3)
5230 Evaluation in the Programs of Cooperative Extension Work in Agriculture and Home Economics (3)
5810-20-30 Special Problems in the Field of Home Demonstration Methods (1-3, 1-3, 1-3)
5910-20-30 Seminar in Home Demonstration Methods (1-3, 1-3, 1-3)

Home Management, Equipment, and Family Economics (499)

Professors: M. L. Bishop (Emeritus), Ph.D., Cornell; L. J. Gassett (Emeritus), Ph.D., Purdue; E. L. Speer (Emeritus), M.A., Columbia.
Associate Professor: L. M. Mamer, M.S. Iowa State.
*Administered by departments of Child Development and Family Relationships, and Related Arts, Crafts, and Interior Design.

GRADUATE

5000 Thesis
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)
5700 Current Programs and Trends in Food Systems Administration (1-3)
5800 Problems in Food Systems Administration (1-3)
5860 Field Experience (3-9)
5990 Seminar in Food Systems Administration (1-3)
6110 Advanced Topics in Institution 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)

College of Home Economics 143
ARROWMONT SCHOOL OF CRAFTS
(See page 139.)

Lecturers:

*Alumni Distinguished Service Professor.

UNDERGRADUATE

1120 Management and Its Contribution to Family Living (3) Decision-making process, relationships among decisions; principles of organization for implementing decisions; evaluation procedures; factors affecting management process; application of management principles to problems.

2430 Equipment in the Home (3) Principles underlying operation and construction of household equipment; processes and supplies involved in using and caring for equipment; recent developments; estimation of costs; simple maintenance. 1 hr and 2 labs.

3280 Home Nursing and Family Health (3) Maintenance of individual and family health; prevention of illness; principles and techniques applicable to care of the sick and injured at home. Prereq or coreq: Zoology 2930. 2 hrs and 1 lab.

3420 Family Economics (3) Management of family income and resources. Private and public measures to improve income position and reduce income insecurity. Prereq or coreq: Economics 2120.

3440 Demonstration Techniques in Household Equipment (3) Planning and presenting demonstration equipment, emphasizing performance, maintenance, and cost; developing and using visual aids. Prereq: Speech 2311. 1 hr and 2 labs.

4110 Home Wiring and Lighting Requirements (3) Service of electricity in modern homes; evaluation of lighting and wiring plans in terms of family desires and need for equipment. 1 hr and 2 labs.

4210 Family Finance (3) Analysis of alternate ways of meeting financial problems encountered during life cycle of family.

4220 Conserving Time and Energy in the Home (3) Application of management principles to homemaking activities; evaluation of equipment, work centers and work procedures in terms of time and energy demands. Adaptations for the handicapped.

4280 Advanced Home Nursing (3) Health care and prevention of illness in infants and the aged. Prereq: Zoology 2930. 2 hrs and 1 lab.

4310 Family Housing Problems (3) Housing requirements of families. Reading and judging house plans; effective use of space; maintenance problems; housing regulations and restrictions; site selection and neighborhood development; financing procedures. Prereq: 6 hrs from Economics 2110-20-30.

4330 Care and Repair of Household Equipment (3) Care of equipment to give maximum service in relation to operation and service cost; understanding of common repair problems. Prereq: 2430. 1 hr and 2 labs.


4710 Contemporary Development (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: Permission of instructor. May be repeated with departmental approval for credit up to 9 hrs.

4830 Consumers and the Market (3) Factors important to homemakers as family purchasing agents; standardization of goods; grading, branding, labeling; advertising; consumer practices affecting costs; specific household commodity information.

4978-88-98 Honors: Home Management,

Equipment and Family Economics (3, 3, 3) Individual special problems for juniors and seniors showing special ability and interest in Home Management, Equipment and Family Economics. Admission only upon recommendation of head of department. A's arranged.

GRADUATE

5000 Thesis

5110 Consumption and Standards of Living (3)

5120 Housing Programs and Policies (3)

5210 Home Nursing for Teachers (3)

5220 Management of Family Finances (3)

5310 Management of Time and Energy in the Home (3)

5320 Experimental Methods in Household Equipment (3)

5330 Environmental Requirements for Family Work Centers (3)

5420 Consumer Economics (3)

5510 Home Management Residence Supervision (3)

5610 Theories of Management in the Family Environment (3)

5710-20-30 Current Programs and Trends in Home Management, Equipment, and Family Economics (1-3, 1-3, 1-3-1)

5810-20-30 Special Problems in Home Management, Equipment, and Family Economics (1-3, 1-3-1, 1-3)

5910-20-30 Seminar in Home Management, Equipment, and Family Economics (1-3, 1-3, 1-3)

Related Art, Crafts, and Interior Design (858)

Professors: R. G. Bakemore (Head), Ph.D. Florida State; J. S. Falsetti, M.S. Ohio State; M. G. Heard, M.A. Columbia.

Associate Professor: W. Moran, M. S. Wisconsin.


Instructor: L. A. Clinard, M.S. Tennessee.

UNDERGRADUATE

1210 Art of Dress (3) Application of design principles to selection and coordination of clothing and accessories. Influence of individual figure problems, personality expression, occasions, on selection. 2 hrs and 1 lab.

1410 Introduction to Related Arts (3) Presence of art in immediate environment; design used in daily living by cultures different from ours; emphasis on awareness of design. 2 hrs and 1 lab.

2110 Fundamentals of Interior Design (3) Drawing skills, symbols, terminology, and tools used in interior design. Prereq: 1410. 1 hr and 2 labs.

2111 Design of Interior Spaces (3) Interior design in two and three dimensions, additional emphasis on symbols, tools and design terminology. Prereq: 2110 or consent of instructor. 1 hr and 2 labs.

2112 Color in Interior Design (3) Application of color to the interior; development of skills for various media and tools used in color planning; effects of color on interior spaces. Prereq: 2111 or consent of instructor. 2 hrs and 1 lab.

2115 Fundamentals of Interior Design I (6) Introduction to basic drafting techniques, symbols and terminology used in interior design presentations.

2116 Fundamentals of Interior Design II (6) Residential space planning of micro-environments with special emphasis on perspective and rendering techniques as a means of communication of design concepts. Opportunity for individual experimentation.

2210 Creative Design (4) Comparison and criticism of design; requirements for individuality within the limits of appropriateness; appreciation of basic principles in selecting and combining objects; original design experimenting with elements of space, texture, color, and different methods for creating effective designs. Prereq: 1410 or equivalent. 1 hr and 2 labs.

3110 Beginning Interior Design (3) Individual and design factors influencing selection, arrangement and combination of furnishings to derive the greatest satisfaction from homes and places of work. Prereq: 1410 or equivalent. 1 hr and 2 labs.

3120 Historic Interiors (3) Furniture and interiors of the past as influenced by social, economic and political background; recent adaptations of historic design.

3125 Historic Interiors (5)

3130 Color (3) Experimentation in color systems and their significance to mood and personality. Effective use of color sources in display, costume, and interior design for personality expression. 1 hr and 2 labs.

3210 Advanced Costume Design (3) Design in costume with emphasis on original designing; some rendering techniques for layouts. Prereq: 1210. 1 hr and 2 labs.
3250 Residential Interiors I (3) Studio work dealing with limited living areas, efficiency apartments, mobile homes; design analysis and planning. Prereq: 2112 or consent of instructor. 1 hr and 2 labs.

3251 Residential Interiors II (3) Residential interiors, floor plans and perspectives; emphasis on interior design and cost as related to the client. Prereq: 3250 or consent of instructor. 1 hr and 2 labs.

3252 Commercial Interiors (3) Understanding relationships between people and their environment; emphasis on commercial structures such as offices and shops; commercial design analysis and planning. Prereq: 3251 or consent of instructor. 1 hr and 2 labs.

3255 Residential Interiors I (6) Design of single family residential structure based on analysis of occupant activities and environmental needs; includes production of detailed construction drawings and specification of interior furnishings and finishing materials. Prereq: 2116 or permission of instructor.

3256 Residential Interiors II (6) Studio problems dealing with residential interiors other than single family detached dwelling; includes high-rise apartment, condominium, hotel, motel, dormitory remodeling existing structures, etc. Emphasis on working with individual’s and/or family’s specific needs and budget. Prereq: 3255 or permission of instructor.

3260 Professional Procedures (3) Preparation of Interior Design majors for in-field training. Emphasis on business practices and procedures as related to interior design. Prereq: Junior standing, Interior Design majors, and consent of department.

3310 Metal Design I (4) Experimenting with metals and techniques, stressing relationship of design to functional and aesthetic problems and use of tools. Prereq: 1440 or equivalent. 1 hr and 2 labs.

3320 Metal Design II (4) Principles of metal design; possibilities and limitations of materials, techniques, tools and equipment. Prereq: Junior standing, Interior Design majors, and consent of department.

3330 Metal Design III (4) Advanced experiences in metalwork, emphasizing relationship of design to process and imaginative use of art elements in metal design. 1 hr and 2 labs.

3340 Metal Design IV (4) Advanced experiences in metalwork, emphasizing relationship of design to process and imaginative use of art elements in metal design. Prereq: 3320 or equivalent. 1 hr and 2 labs.

3410 Weaving I (4) Creative design in elementary weaving techniques on a variety of looms; basic weaving patterns, including and creating drafts; designing wefts for various materials; assembling a loom; threading and tie-up of a loom; mechanical aspects of weaving process. Prereq: 1440 or equivalent. 1 hr and 2 labs.

3420 Weaving II (4) Same as 3410 except designing, techniques and materials are explored in rug weaving. 1 hr and 2 labs.

3430 Weaving III (4) Advanced weaving techniques with emphasis on color and texture. Prereq: 3420. 1 hr and 2 labs.

3510 Textile Design (4) Fundamental principles of textile design, using a wide range of processes and materials. Emphasis on silk-screen and block print methods. Prereq: 1410 or equivalent.

3520 Textile Design (4) Study of resist processes in textile design: waxing, batik, and resin resist methods are emphasized. Works of contemporary designers in the field are discussed, as well as examples from the past. Prereq: 1410 or equivalent.

3610 Wood Design (4) Basic skills and appreciation for design developed through wood carving and the making of small household objects and toys. Prereq: 1410 or equivalent. 1 hr and 2 labs.

3620 Wood Design (4) Continuation of 3610. 1 hr and 2 labs.

3710 Enameling I (4) Exploring possibilities and limitations of vitreous enamels. Designing and creating enamelled metalwork and jewelry using a variety of materials and techniques. Contemporary and past enameling. Prereq: 1410 or equivalent. 1 hr and 2 labs.

3720 Enameling II (4) Advanced techniques; exploration of design, color and texture. Further study of art of enamelist, past and present. Prereq: 3710 or equivalent. 1 hr and 2 labs.

4130 Contemporary Design (3) Furnishings and interiors; economic, technological and sociological influences on development of design; changing conditions and interchanges of spaces and furnishings. Significant designers and their work.

4140 Exhibition Design (4) Display of Craft and Interior Design problems in relation to materials, props, and methods of display. Emphasis on knowledge and application of design principles as they relate to promotion, design construction, display and evaluation for two and three dimensional displays. Annual student craft and interior design exhibit culminates quarter. Prereq: 1410 or equivalent.

4150 Interior Space Planning I (3) Studies in large scale commercial interior design; apartment houses, office buildings, institutions; understanding factors that influence design of concentrated and mass spaces. Prereq: 3252 or consent of instructor. 1 hr and 2 labs.

4151 Interior Space Planning II (3) Man as related to interiors of mobile units; airplanes, mobile homes, trains, ships; interior effects of various materials and movements of people in their environment. Prereq: 4150 or consent of instructor. 1 hr and 2 labs.

4152 Interior Space Planning III (3) Interior design evaluation as related to contemporary technology and materials used in space or environment planning. Emphasis on individual projects. Prereq: 4151 or consent of instructor. 1 hr and 2 labs.

4155 Interior Space Planning I (6) Analysis, planning and production of interior environment; includes contract specifications. Prereq: 3256 or equivalent.

4156 Interior Space Planning II (6) Studio problems involving large scale non-residential interior spaces such as restaurants, transportation stations, stores, institutions, etc. Prereq: 4155 or permission of instructor.


4310 Crafts in America (3) Craft movement; factors that contributed to growth and development. Educational, social, economic, political and therapeutic values of crafts. Place of craftsman in society as producer, teacher, designer for industry.

4410 Craft Media (4) Possibilities and limitations of variety of craft media; understanding educational and social aspects of craft work. Designing and executing craft problems using inexpensive materials and tools. 3 labs.

4420 Leather Design (4) Relationship of design to function, techniques and materials. Creating leather objects of original design. Prereq: 1410 or equivalent. 1 hr and 2 labs.

4430 Plastics (4) Possibilities and limitations of various plastics; methods of fabrication; relation of design to function, processes, types of material and use of tools. Prereq: 1410 or equivalent. 1 hr and 2 labs.

4510 Ceramics I (4) Possibilities and limitations of clay techniques and use of tools. Designing and making pottery forms using coil, slab and throwing techniques; decorating by slip, underglaze, sgrafitto, incising and combing; preparation of simple glazes, setting and firing kilns. Prereq: 1410 or equivalent. 1 hr and 2 labs.

4520 Ceramics II (4) Further study in designing, building, decorating, preparing and glazing tiles and pottery. Role of the potter and the potter of the past. Prereq: 4510 or equivalent. 1 hr and 2 labs.

4530 Ceramics III (4) Advanced design and relation to function, materials, tools and techniques. Further study of history of pottery and contributions of contemporary ceramic art to architecture and interior design. 1 hr and 2 labs.

4610 Studio Problems in Interior Design (3) Problems for seniors with special ability and interest in Interior Design. May be repeated to a maximum of 9 hours. Prereq: Senior standing and permission of department.

4620 Studio Problems in Leather Design (4) Problems for juniors and seniors with special ability and interest in leather design. May be repeated to a maximum of 12 hours. Prereq: 4 hours of leather design or permission of department.

4630 Studio Problems in Metal Design (4) Problems for juniors and seniors with special ability and interest in metal design. May be repeated to a maximum of 12 hrs. Prereq: 12 hrs of metal design or equivalent and permission of department.

4640 Studio Problems in Weaving (4) Problems for juniors and seniors with special ability and interest in weaving. May be repeated to a maximum of 12 hrs. Prereq: 12 hrs of weaving or equivalent and permission of department.

4650 Studio Problems in Textile Design (4) Problems for juniors and seniors with special ability and interest in textile design. May be repeated to a maximum of 12 hrs. Prereq: 8 hrs of textile design or equivalent and permission of department.

4660 Studio Problems in Wood Design (4) Problems for juniors and seniors with special ability and interest in wood design. May be repeated to a maximum of 12 hrs. Prereq: 8 hrs of weaving or equivalent and permission of department.

4670 Studio Problems in Enameling (4) Problems for juniors and seniors with special ability and interest in enameling. May be repeated to a maximum of 12 hrs. Prereq: 8 hrs of enameling or equivalent and permission of department.

4680 Studio Problems in Plastics (4) Problems for juniors and seniors with special ability and interest in plastics. May be repeated to a maximum of 12 hrs. Prereq: 4 hrs of plastics or equivalent and permission of department.

4690 Studio Problems in Ceramics (4) Problems for juniors and seniors with special ability and interest in ceramics. May be repeated to a maximum of 12 hrs. Prereq: 12 hrs of ceramics or equivalent and permission of department.

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 student and instructor and approved by departmental approval. Elective credit only. Prereq: Permission of instructor. May be repeated with departmental approval for credit up to 10 hrs.

4798-98-98 Honors: Related Art and Crafts and Interior Design (3, 3, 3) Problems for juniors and seniors with special ability and interest in Related Art and Crafts and Interior Design. Admission only upon recommendation of head of Department, available in house furnishings, costume design, or crafts. Hrs arranged.

GRADUATE

5000 Thesis

5040 Seminar in Design (3)

5050 Advanced Design Studio (3)

5120 Historic Interior Design (3)

5210 Furniture Appreciation (3)

5310 Interior Design (3)

5330 Craft Design (3)

5341-51-61 Metal Design I, II, III (4, 4, 4)

5342-52-62 Weaving I, II, III (4, 4, 4)

5343-53-63 Textile Design I, II, III (4, 4, 4)

5344-54-64 Wood Design I, II, III (4, 4, 4)

5349-59-65 Enameling I, II, III (4, 4, 4)

5346-56-66 Plastics I, II, III (4, 4, 4)

5347-57-67 Ceramics I, II, III (4, 4, 4)

5368 Ceramics-GLaze Calculation (4)
5396 Ceramics-Kiln Construction (4)
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)
5610 Furniture Design (3)
5810-20-30 Problems in Related Art, Crafts and Interior Design (1-3, 1-3, 1-3)
5910-20-30 Seminar in Related Art, Crafts and Interior Design (1-3, 1-3, 1-3)

The following periodically are offered only at the Arrowmont School of Crafts, Gatlinburg, Tennessee.

2211 Creative Design (1-4) Content same as 2210. May be repeated for credit.
3311 Metal Design (1-4) Content same as 3310. May be repeated for credit.
3321 Metal Design (1-4) Content same as 3320. May be repeated for credit.
3331 Metal Design (1-4) Content same as 3330. May be repeated for credit.
3411 Weaving (1-4) Content same as 3410. May be repeated for credit.
3421 Weaving (1-4) Content same as 3420. May be repeated for credit.
3431 Weaving (1-4) Content same as 3430. May be repeated for credit.
3511 Textile Design (1-4) Content same as 3510. May be repeated for credit.
3521 Textile Design (1-4) Content same as 3520. May be repeated for credit.
3611 Wood Design (1-4) Content same as 3610. May be repeated for credit.
3621 Wood Design (1-4) Content same as 3620. May be repeated for credit.
3711 Enameling (1-4) Content same as 3710. May be repeated for credit.
3721 Enameling (1-4) Content same as 3720. May be repeated for credit.
4311 Crafts in America (1-4) Content same as 4310. May be repeated for credit.
4411 Craft Media (1-4) Content same as 4410. May be repeated for credit.
4421 Leather Design (1-4) Content same as 4420. May be repeated for credit.
4431 Plastics (1-4) Content same as 4430. May be repeated for credit.
4511-21-31 Ceramics (1-4, 1-4, 1-4, 1-4) Content same as 4510-20-30. May be repeated for credit.
4621 Studio Problems in Leather Design (1-4) Content same as 4620. May be repeated for credit.
4631 Studio Problems in Metal Design (1-4) Content same as 4630. May be repeated for credit.
4641 Studio Problems in Weaving (1-4) Content same as 4640. May be repeated for credit.
4651 Studio Problems in Textile Design (1-4) Content same as 4650. May be repeated for credit.
4661 Studio Problems in Wood Design (1-4) Content same as 4660. May be repeated for credit.
4671 Studio Problems in Enameling (1-4) Content same as 4670. May be repeated for credit.
4681 Studio Problems in Plastics (1-4) Content same as 4680. May be repeated for credit.
4691 Studio Problems in Ceramics (1-4) Content same as 4690. May be repeated for credit.
5331 Craft Design (1-4) Content same as 5330. May be repeated for credit.
5411 Advanced Problems (1-4) Content same as 5410. May be repeated for credit.
5441-51-61 Metal Design (1-4, 1-4, 1-4, 1-4) Content same as 5411-51-61. May be repeated for credit.
5443-53-63 Textile Design (1-4, 1-4, 1-4, 1-4) Content same as 5443-53-63. May be repeated for credit.
5444-54-64 Wood Design (1-4, 1-4, 1-4, 1-4) Content same as 5444-54-64. May be repeated for credit.
5445-55-65 Enameling (1-4, 1-4, 1-4, 1-4) Content same as 5445-55-65. May be repeated for credit.
5446-56-66 Plastics (1-4, 1-4, 1-4, 1-4) Content same as 5446-56-66. May be repeated for credit.
5447-57-67 Ceramics (1-4, 1-4, 1-4, 1-4) Content same as 5447-57-67. May be repeated for credit.
5811-21-31 Special Problems in Related Art, Crafts and Interior Design (1-4, 1-4, 1-4, 1-4) Content same as 5810-20-30. May be repeated for credit.
5911-21-31 Seminar in Related Art, Crafts and Interior Design (1-4, 1-4, 1-4, 1-4) Content same as 5910-20-30. May be repeated for credit.

Textiles and Clothing (971)

Professor:
A. J. Trece (Head), Ph.D. Ohio State.
Associate Professor:
C. J. Noel, Ph.D. Notre Dame.
Assistant Professor:
M. F. Miller, Ph.D. Pennsylvania State.
Instructor:
B. C. Henderson, M.S. Purdue; M. A. Stacy, M.S. Tennessee.

UNDERGRADUATE

1140 Clothing Construction I (3) Principles of fitting and pattern alteration as applied to individual garments with emphasis on design quality and construction compatibility. Prereq: RACCID 1210. 1 hr and 2 labs. Inexperienced students will be required to attend an extra lab session.
1150 Clothing I—Selection and Construction (5) Application of design principles in selection and construction of garments for the individual including emphasis on design and construction compatibility, pattern alteration, and fitting. 2 hrs and 3 labs. Inexperienced students will be required to attend an extra lab session.
2110 Fashion (3) How fashion works, from designer to consumer; fashion trends and cycles.
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) Cultural, socio-psychological functional and technological developments in textiles and clothing. Prereq: 3 hrs of the following: child development and family relationships, economics; 4 hrs sociology or anthropology or psychology.
3420 Textiles I (3) Consumer-oriented study of textiles, emphasizing fibers, fabric constructions and finishes in relation to use, serviceability and care of apparel and household fabrics. Prereq: 12 hrs Chemistry or Physics or Biology or Botany. 2 hrs and 1 lab.
3440 Clothing II—Advanced Construction (3) Comparative study and investigation of fabrics, designs and processes utilizing basic principles including some elementary flat pattern. Prereq: 1140. 1 hr and 2 labs.
3450 Consumer Issues: Clothing for Contemporary Families (3) Problems of clothing consumption encountered during various stages of family life cycle. Prereq: Juniors and Seniors.
3460 Design Analysis I (3) Interpretation of dress design terminating in finished garments developed through media of flat pattern, Prereq: 3440. 1 hr and 2 labs.
3470 Tailoring (4) Evaluation and use of tailoring methods and equipment; applications of finishing and completion of tailored wool garments. Prereq: 3440. 3 labs.
4010 Textiles II (3) Recent textile developments with emphasis on man-made fibers, new construction techniques and finishes. Opportunity for individual investigation. Prereq: 3420.
4120 Textile Economics (3) Economic background of textile and apparel industry with emphasis on production and distribution. Current national and international problems. Prereq: 3420; Economics 2110-20.
4140 Introduction to Textile Testing Methods (3) Methods and equipment used in physical testing as approved by recognized textile groups. Prereq: 3420. 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.
4240 Design Analysis II (3) Interpretation of dress design terminating in finished garments developed through the media of draping. Prereq: 3460. 1 hr and 2 labs.
4280 Historic Costume (4) Development of costume from ancient to modern times with consideration of historic, social and economic settings.
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.
4630 Introduction to Field Experience in Merchandising (3) Fashion merchandising, interviews with store personnel, placement for field experience. Prereq: 2110, Economics 2110-20, junior standing, major in merchandising. Offered Spring Quarter only. Credit not given for both 4620 and 4210.
4630 Field Experience in Merchandising (9) Off-campus, supervised experience in a cooperative program with business establishments which merchandise textiles and/or apparel. Prereq: 4620, senior standing, major in merchandising. 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. 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 selected to be determined by students and instructor with department approval. Enrollment by credit only. Prereq: Permission of instructor. May be repeated with departmental approval for credit up to 9 hrs.
4975-88-98 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
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)
5810-20-30 Special Problems in Textiles and Clothing (1-3, 1-3, 1-3)
5910-20-30 Seminar in Textiles and Clothing (1-3, 1-3, 1-3)
6110-20-30 Selected Issues in Textiles and Clothing (3, 3, 3)
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 Law College is to prepare students for the private practice of law, its total mission is more broadly conceived. The College of Law exposes students to the legal issues of our society enabling them to develop analytical skills in respect to 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 as well.

The coordinated program of the College of Law has three dimensions. Teaching and learning, research into and appraisal of our legal institutions, and service to the community each plays a significant role in the College of Law as a modern law center.

The teaching and learning element of legal education at the College of Law 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, administrative regulation, techniques of trial and appellate advocacy, and the roles and responsibilities of the lawyer as he advises and represents his clients.

While proper consideration is given to the problems of Tennessee law, the course of study is conducted with a view toward providing an awareness and understanding of the regional and national perspective so as to prepare our students for service in any state.

The College of Law 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, consultative, and other type services to legal institutions and groups within the state, the College of Law seeks to participate in the development and improvement of the society in which its students may eventually practice law.

In combination, the direction and objectives of the Law 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 1950 the College of Law has occupied a building especially designed for teaching, study, and research in the law. In the spring of 1971 the Law 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, courtroom, 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 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 its practical settings 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, Clinic 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, totalling together more than 90,000 catalogued volumes. The Library is under the supervision of a law librarian who is trained in law and library science. The physical facilities, the collection of books, and the library staff combine to make the Law Library of The University of Tennessee one of the best in the South. Law students also have the use of the collections in the University Graduate Library, which is located across the street from the Law Library, and the Undergraduate Library a few blocks away.

Degree of Doctor of Jurisprudence

The degree of Doctor of Jurisprudence will be conferred upon candidates who complete, with the required average, nine quarters of resident law study and who have 126 quarter hours of credit, including all required courses, and moot court participation. The required average is 2.0 and that average must be maintained on the work of all nine quarters.
and also in the last three quarters. Averages are computed on weighted grades. Grades are on a numerical basis of from 0.0 to 4.0. A grade of 0.5 or below is a failure.

The satisfactory completion of trial and appellate moot court participation is required of all candidates for the degree of Doctor of Jurisprudence.

**Satisfactory/No Credit Option**

1. Course eligibility.
   a. Required courses may not be taken on a Satisfactory/No Credit basis.
   b. Courses taken on a Satisfactory/No Credit basis may not be used to satisfy area requirements.

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 quarters in which the student completes (receives a grade in) at least 10 hours on a regular grade basis.
   c. Students electing the Satisfactory/No Credit basis must meet all requirements imposed on students taking a course on a regular grade 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 his grade shall be recorded as "S" and will not be used in determining his 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 three 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 three quarters of academic study. A full-time student who fails to achieve an overall average of at least 2.0 upon completion (receipt of grade) of a three quarters of academic study shall be excluded. A student who obtained permission to vary the first-year full course load shall be excluded if such student fails to achieve an overall average of at least 2.0 upon completion (receipt of grade) of all required first-year courses, or upon completion of 40 hours, whichever first occurs.

**Maximum Course Load Per Quarter**

18 hours is the maximum for Law School. If a student does not satisfactorily complete 12 hours in a quarter, then for the remainder of his studies he is restricted to 16 hours per quarter.

**Admission**

Information regarding admission, financial aid, academic policies, extracurricular activities, and student services is available in the College of Law Bulletin. Students interested in the College of Law should obtain a copy of the Bulletin from the Office of the Dean, The University of Tennessee, College of Law, 1505 West Cumberland Avenue, Knoxville, Tennessee 37916. Completed application should be received before March 15 of the year of expected admission.

**Program of Instruction**

**Professors:**


**Associate Professors:**


**Assistant Professors:**


**Instructors-Staff Attorneys:**

G. Bailey, J.D. Georgetown; R. Belfon, J.D. Howard; K. F. Carroll, J.D. Tennessee; C. Eshbaugh, J.D. Tennessee; J. V. Humphrey, J.D. Tennessee; R. J. LaFevior, J.D. Tennessee; K. A. Tollison, J.D. Tennessee.

*Alumni Distinguished Service Professor.

**On leave.**

The following program is designed to give the student an adequate preparation for the practice of law. From twelve to fifteen hours of classroom work a week are required of all full-time students. The required courses will be taken as early in the law course as possible or as scheduled by the law faculty.

**REQUiRED COURSES**


**8020 Contracts I** (5) The basic agreement process and legal protections afforded contracts. Problems of offer and acceptance, interpretation, illegality, and the statute of limitations.

**8030 Contracts II** (4) Continuation of study begun in Contracts I. Concentrating on remedies, conditions, impossibility and the role of third party beneficiaries, assignment and delegation, and discharge.

**8040 Criminal Law** (4) Course on substantive aspects of criminal law. General principles applicable to all criminal conduct, then specific analysis of particular crimes. Substantive defenses to crimes, including insanity, duress, ignorance, necessity, legal duty, self-defense, and duress.

**8050 American Legal History** (3) Examination of historical development of the law, legal institutions, legal profession, and legal education from colonial times to present. Historical relationship of legal system to society emphasized.

**8070 Legal Process** (3) 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 advocate. Legislative interpretation.

**8110-11-12 Research and Writing I, II, III,** (2, 2, 2) This three-quarter sequential offering is designed to provide the student with progressively more sophisticated involvement in legal research and writing. Fundamentals of Legal Bibliography with an emphasis upon technical writing skills. Research skills will be an integral part. Among other components to be included are preparation of a client letter, drafting of pleadings, contracts and other instruments. The preparation of a memorandum of law, and preparation and presentation of an appellate argument (written and oral). Classes would be divided into small sections, and individual criticism given on all work submitted. Lectures on research writing and advocacy skills will be included.


**8140 Property II** (5) The recording system, title assurance, easements, nuisance, lateral support, water rights, zoning, and eminent domain.

**8150 Problems and Perspectives in Law** (2) First-year seminar in which the law student is introduced to some current problems in law and society; topics will vary from year to year; each group will number around 25; the student will be able to select topics of most interest to him (subject to coordinating with other seminar offerings 2nd and 3rd years); these seminars in course may be by research paper, field study, problem analysis or other appropriate areas.

**8180 Torts I** (4) Intended interference with the person, assault and battery, false imprisonment, negligence and standard of care, proof of negligence, Affirmative defenses, immunities, actual causation, and contributory causes.


**8300 Constitutional Law I** (4) 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.

**8310 Constitutional Law II** (4) Freedom of expression, association and religion, Fourteenth Amendment rights excluding 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.

Either 8300 or 8310 will satisfy the Constitutional Law requirement. One must be taken for that
purpose and the other may be taken as an elective.

8345 Juvenile Law Seminar (3) After examining the unique history and philosophy of juvenile justice system, course will consider jurisdiction, judicial and extra-judicial functions of juvenile court, and various defense strategies. Students will present written research papers, analyze judicial opinions and materials from fields of history, sociology and psychology. Knox County Juvenile Court will serve as a primary resource. Professional staff from the Court will participate in seminar on regular basis.

8660 Legal Profession (3) Role of the lawyer in society; 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, advocacy and its limitations, fees, and disciplinary procedure.


ELECTIVE COURSES

8060 Criminal Process I (3) Due process, equal protection, arrest, search and seizure, wire tapping and electronic eavesdropping, entrapment, right to counsel, self-incrimination, interrogation and confessions, exclusionary rules.


8210 Agency and Partnership (4) Principal and agent. Master and servant. Authority, unauthorized transactions, notice, ratification, restitution. Parties to transactions in individual and partnership areas. Partnership creation, dissolution, and termination, distribution of profits and losses, rights of parties and devices to reduce risk. The Uniform Partnership Act.

8240 Arbitration Seminar (3) Arbitration of labor agreements. Negotiation of collective bargaining agreements, and role of lawyers and arbitrators in the process. When course is not offered, law students, with law faculty permission, may elect Economics 4000.


8280 Conflict of Laws (5) Jurisdiction, foreign judgments and orders of foreign courts; legislative constitutional limitations, renvoi, and classification.

8320 Constitutional Law Seminar (2) Study and discussion of current constitutional law problems. Orals in class are required. Constitutional Law is a prerequisite.

8330 Sex Discrimination and the Law (3) Study of judicial, legislative and administrative materials relating to discrimination in employment, education, domestic relations, property, consumer rights, welfare and criminal law. Term paper or oral examination required in addition to written examination.

8340 Creditors' Rights (3) Bankruptcy, fraudulent

8400 Criminal Law Seminar (3) Advanced problems in Criminal Law and Administration of Justice.

8530 Damages (3)

8360 Family Law (4) Survey of laws affecting the formal and informal family relationship. Topics include premarital disputes, ante nuptial contracts, creation of children, adoption, marriage, legal effects of marriage, support obligations within the family, legal separation, annulment, divorce, alimony, property, custody of children, voluntary child support, adoption, abortion, and illegitimacy.

8360 Equity (4) Jurisdiction and power of courts of equity. Specific performance, injunctions.

8400 Estate Planning (3) 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: 8500 and 8400. In addition, recommended that student have had as many of following courses as possible: Wills, Private Corporations, Taxation (Income), Partnerships and Trusts.

8420 Evidence I & II (3,3) Rules regulating introduction and exclusion of oral, written, and demonstrative evidence, including relevancy, competency, impeachment, hearsay, privilege, judicial notice, presumptions, and burden of proof.

8480 Federal Courts (4) Jurisdiction of federal courts over the various federal and state judicial systems, including nature of judicial power, federal questions, diversity, removal, jurisdictional amount, state of federal or state law, habeas corpus, abstention, enjoining state proceeding, appellate jurisdiction and joinder of parties and claims.

8480 Environmental Law (4) Survey course examining federal and state statutory schemes for air and water quality, together with other general legislation such as the federal and state statutes for Environmental Quality Control Act. Selected introduction to rule and scope of federal, state and local agencies in enforcement and proposing new laws and regulations.

8500 Future Interests (4) The law of future interests, including reversion, remainders, possibilities of reverter and rights of entry, executory interests, construction of limitations, and rule against perpetuities.

8510 Government Contracts (3) 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 foreign corporation, engaging in business within a foreign country, and acquisition or annuization of contracts or concessions. Prereq: 8500, 8533.

8530 International Law I (3) International agreements, disputes, obligations of states, nationality, territory, jurisdiction and immunity.

8531 International Law II (3) International claims, expropriation, force and war.

8532 Jurisprudence Seminar (3) Comparative examination of legal theories, including natural law, idealism, historical jurisprudence, utilitarianism, analytical jurisprudence, sociological jurisprudence, legal realism, and the policy science approach.

8540-42 Labor Relations Law I, II, III (3,3,3) Evolution of labor relations laws, rights of self-organization; employer and union unfair labor practices; strikes; boycotts and picketing; collective bargaining; public employee labor relations; internal union affairs; individual rights in labor relations; employment discrimination, family care, worker's compensation and the antitrust laws. Courses recommended in sequence, but one offering may be elected.

8550 Labor Relations Law Seminar (3) Study and discussion of selected labor relations law problems.

8560 Law, Language and Ethics (4) An intermediate level jurisprudence-type course. Law is the mind's attempt to define, direct, and administer human activity. Exploration of ethical values underlying formal legal reasoning and statement. Analysis of judicial reasoning and legal concepts through the methods of epistemology.


8580 Law and Current Problems Seminar (2-3) Credit hours determined at the option of instructor.

8590 Legal Accounting (2) A course designed to familiarize law students with accounting problems and techniques, and principles limiting the use and understanding accounting information.

8600 Legal Clinic I (3) Participation in legal clinic work supplemented by classroom discussion and exercises. Under supervision by the faculty and staff the student adapts himself to law office routines, interviews clients, negotiates settlements, prepares pleadings, files papers and motions in court. Emphasis is placed on fact gathering, effective interviewing techniques, and development of professional skills. One-hour classroom work. Assigned work in Legal Clinic.

8620 Clinic II (3) Substantial civil and criminal litigation under faculty supervision. Students participate in the process from investigation through trial to post conviction remedies. Seminar-type classroom work relating to litigation will also be required.

8630 Clinic III (3) Clinic III is divided into components under direction of faculty supervisors. Components include, but are not limited to, Economic Development (legal counseling for new business entities within low-income communities); Law Reform (including both litigation and legislative reform); and Advanced Advocacy (litigation of the more complex or more subtle cases). Students represent and counsel actual clients. Seminar-type classroom work may be required.

8640 Legal Draftsmanship (2) Independent drafting by students under direct supervision of instructor.

8670 Legal Writing. Elective course, with consent of instructor. In fundamentals of legal writing. One hr credit on a satisfactory-no credit basis.

Advanced legal research and writing, with consent of instructor, on a regular grade basis. hrs and credit arranged.

8680 Legislation (3) Approximately half the course is devoted to traditional methods of legislative analysis. The remainder of the course is devoted to class project in which students examine selected provisions for legislative reform from preliminary research, through a legislative hearing, to final drafting, parliamentary debate, and veto.

8690 Modern Land Use Law (3) Land use planning, nuisance, zoning, and eminent domain.

8700 Local Government Law I (3) Distribution of power between state and local governmental units. Sources of authority for limitation on local government operations. Creation of local governmental units and determination of their boundaries. Home Rule Act.
8705 Local Government Law (3) Problems presented by fragmentation of local government units. Current solutions to include government as authorized by Tennessee law. Problems in the financing of local services. Current constitutional issues (e.g., school financing and land use control). Influence of federal programs on local government finance and decision making.

8710 Oil and Gas Law (3) Selected materials on nature of interest, conveyancing, royalties, grants and reservations, leases, and taxation.

8720 Advanced Constitutional Law (3) Select problems or perspectives in constitutional law. Designation is intended to cover numerous approaches which involve use of instructors from other disciplines such as history, political science, economics, sociology. Prereq: 8300 and 8310 or permission of instructor.

8740 Private Corporations I (3) History and nature of the corporation; selection of appropriate form of business enterprise; judicial and legislative regulation; promoters and reincorporation transactions; corporation procedures; defective incorporation; disregard of the corporate entity; rights and management duties of shareholders, directors, and officers.

8760 Private Corporations II (3) Corporate finance; rights, duties, and liabilities respecting securities; special problems of close corporations; dividends and purchase by corporation of its own shares; fundamental corporate changes (sale of assets, mergers, etc.); shareholders’ derivative actions.


8790 Advanced Legal Bibliography and Research Techniques (2) A survey of materials not covered in Research and Writing I. Included will be use of U.S. government documents, preparation of legislative histories for state and federal legislative materials, specialized research tools in areas of taxation, labor law and international law.

8800 Sales (3) Art. 2 (Sales) and Art. 7 (Documents of Title) of the Uniform Commercial Code.

8810 Security Transactions (3) Brief survey of suretyship and guaranty. Art. 9 (Security Interests in Personal Property) of the Uniform Commercial Code.

8820 Securities Regulation (3) Advanced problems of governmental regulation of issuance of securities.

8830 Social Legislation and Employee Benefits (3) A study of legal problems arising under such programs as worker’s compensation, wage and hour laws, unemployment compensation, public assistance, Social Security, and Medicare.


8850 Seminar in Law and Mental Health (3) Composed of equal number of law and medical students. Assigned readings. Pairs of law and medical students to prepare papers. Jointly taught by professor and psychiatrist.


8865 Taxation (Income) II (3) Corporate reorganizations; methods of corporate distributions; sale of corporate business; other income tax problems; partnerships, and other business organizations.

8870 Seminar in Business Planning (3) Selected problems on corporate and tax aspects of business planning and transactions.

8885 Civil Procedure Ill (4) Post trial motions, appellate record, appeals and relief from judgments, final process, res judicata and estoppel. Emphasis upon Tennessee and Federal practice.

8890 Seminar in Environmental Protection (3) 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. Attention will also be given to special environmental concerns of the region, e.g., TVA operations, strip mining, forest management, wildlife preserves.

8910 Administrative Law Seminar (3) Indepth study of principles of administrative law not covered in basic courses, as discretion, choice of adjudication of rulemaking, to develop administrative policy, consistency in administrative action.

8920 Trade Regulation (4) A study of the common law and statutory regulation of trade. Monopolization and restraint of trade; mergers and acquisitions; price fixing; resale price maintenance; and other problems arising under federal anti-trust laws.

8930 Seminar in Consumer Protection (3) Selected problems in consumer protection.

8935 Law and Medicine Seminar (3) 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) medical-legal aspects of euthanasia; (5) other more specific matters such as legal import of medical profession’s various canons of ethics.

8940 Civil Procedure II (4) Discovery, matters preliminary to trials, trials, instructions, verdicts, and judgments. Emphasis upon Tennessee and Federal practice.

8945 Trial Moot Court I (1) Experience and training in trial of law and equity cases. Third-year students will act as counsel in all aspects of trial practice. Knox County Circuit Court Judges serve as judges of Trial Moot Court. Satisfactory-No Credit.

8950 Trial Moot Court II (1) Training in trial of a law suit.

8955 Seminar in Trade Regulation (3) Selected problems of current import, e.g., franchising, conglomerates.

8960 Trusts (4) Trusts: nature, creation, transfer, termination, modification, and administration.

8965 Unfair Trade Practices (3) Business torts and unfair competition and trade practices. Trademark, trade name, and copyright protection. Prereq: Trade Regulation.

8975 Water Law (3) Survey study in water law, including case studies and water law doctrines. Letter grade given to non-law students. (Same as Environmental Engineering 4610 and Water Resources Development 4810.)


8985 Directed Research (1-3) Independent research by a student or students under direct supervision of instructor. Student may take course maximum of once each year in last two years of study.

8990 Land Finance Law (3) Financing devices such as mortgages, deeds of trust and land contracts, problems involved in transfer of interests subject to these devices, and problems incurred in event of default. Consideration also directed to contemporary problems arising in such areas as condominiums, cooperatives, housing subdivisions and shopping centers.

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 of Law 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.
College of Liberal Arts

Alvin H. Nielsen, Dean
Charles W. Keenan, Associate Dean
Boyd L. Daniels, Assistant Dean for
Student Academic Affairs
Charles O. Jackson, Assistant Dean for
Curriculum and Instruction

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 wide-ranging concern with the life of the mind. It emphasizes the breadth of human knowledge, perceived not only in terms of the traditional categories of the humanities and the natural and social sciences but also in broader perspectives which extend across academic fields and reach beyond the boundaries of a college of liberal arts. It also stresses depth of learning, thereby seeking to acquaint the student with the rigors of the intellectual process.

Through a study of the liberal arts one thus learns to participate in an intellectual tradition which is independent of particular teachers and which guides one in the choice of subjects for investigation and in the interpretation of those subjects. With time the individual begins to apprehend the great outlines of knowledge, the principles upon which it rests, the scale of its parts, and its 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 throughout 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 talents 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 Triad: language, literature, and the arts; history and society; science and mathematics. These three great well-springs 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 of Liberal Arts 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 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 his or her 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 his 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 Communication Design, Drawing, Painting, Oil and Watercolor, or Printmaking and Sculpture are available in the Art Department office.

(3) BACHELOR OF MUSIC

The program leading to the Bachelor of Music degree prepares students for graduate study and for positions in which a professional degree is required. The degree is offered with a major in Music which has concentrations in Music Theory, Composition, Music History.
Advisers in the Liberal Arts Advising Center, 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 his or her 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 of Liberal Arts. Requirements for this degree and the several curricular programs which lead to it will now be discussed in detail.

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 of these courses numbered 2000 or above;
(3) Appropriate course work to satisfy the broad requirements of the Triad (Basic Program, Individualized Program, and Pre-Professional Program only);
(4) One or more concentrations consisting of at least 36 credit hours in courses numbered 2000 or above, as specified by the major departments or appropriate committees or advisers.

Note: Students who elect to develop two major concentrations may use courses which are suitable for Triad credit and credit in the second concentration to meet simultaneously requirements in both areas. In all other cases, the same course may not satisfy more than one Triad requirement, nor may any course taken to satisfy a Triad requirement also be counted as part of the major. A course which satisfies a Triad requirement may also serve as prerequisite or corequisite for a major, however. Students may not use courses to meet requirements simultaneously in two majors or in a major and minor. A minimum grade of C must be earned in every course counted as part of the major. Students transferring from other institutions must complete at least 12 credit hours in the area of concentration at The University of Tennessee, Knoxville.

Study of science and mathematics develops in the student an inquiring attitude toward the natural environment and confidence in his ability to understand scientific explanations of diverse phenomena. These ends may be realized through an understanding of the empirical and the rational in scientific 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 beliefs, philosophies, and the development of civilization.

SPECIFIC REQUIREMENTS IN THE TRIAD

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<th>(1) Language, Literature, and the Arts</th>
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<td><strong>(a) Writing Proficiency</strong></td>
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<td>Each student is required to demonstrate his ability to use the English language effectively and coherently, in one of the following four ways:</td>
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<td>(i) By completion of English 1510-20 or 1518-28 or 1111-21-31.</td>
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<td>(ii) 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.</td>
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<td>(iii) By passing (normally after completing one quarter of freshman English at The University of Tennessee, Knoxville) a proficiency examination in writing, administered by the Department of</td>
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English in cooperation with the Committee on Writing Standards. (iv) By completing 4 hours of freshman English for a minimum of 6 hours in courses which require substantial emphasis on writing. The writing-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 in 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) 8 hours of literature in a foreign language at the 3000-level or above. Prerequisite to this option is intermediate-level competence in the language, demonstrated by diagnostic (non-credit) 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 (non-credit) or proficiency (credit) examination or by completing 8 credit hours beyond the introductory sequence, (or an approved equivalent) in that language, and 8 hours of literature in English (originally in English or in translation) drawn from the list of courses published by the Committee on Language, Literature, and the Arts, available in 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, genres, or movements. Suggested programs are published by the Committee on Language, Literature, and the Arts and are available in the Liberal Arts Advising Center; students may also propose individual programs to the committee for consideration.

Note: In options (i) and (ii), those who take the diagnostic examination will not receive credit toward graduation but will be exempted from the portion of the requirement satisfied by the examination. Those who take the 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, thus 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. Satisfactory completion of the final quarter of the first year sequence of college level foreign language study, normally in the freshman year, is necessary to remove this deficiency.

(2) History and Society
Each student must complete 24 hours of course work in this area including:
(a) One 8-hour sequence from the several survey courses offered by the Department of History or in a comprehensive interdisciplinary sequence having a substantial emphasis on history;
(b) 8 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 categories (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:
(i) One of the following two options:
   (a) An 8-hour sequence in a biological science;
   (b) An 8-hour sequence in a physical science.
(ii) 16 hours 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 CONCENTRATION
In many ways the most important part of each student's program is the major concentration, for it is in this intensive study of one more or less limited field of knowledge that the individual begins to find his or her niche in the world of intellectual endeavor. The major concentration may be drawn from the offerings of a single department or it may bring together related concerns of two or more departments. In the 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 specified majors available to students in the Basic Program vary from a minimum of 36 to a maximum of 56 credit hours in courses numbered 2000 and above, including prerequisites and requirements (i.e., supporting courses in other departments or areas). Insofar as consistent with the objective of a total program balanced reasonably between broad area requirements in the Triad, the major concentration, and supplementary courses, the student may elect as many courses as he or she wishes in any department or area.

Majors Available
In The Basic Program

Anthropology
Audiology
Biology
Botany
Chemistry
Computer Science
Cultural Studies
Economics
English
French
Geography
Geology
German
Greek
History
Human Services
Italian
Latin
Mathematics
Microbiology
Music
Philosophy
Physics
Political Science
Psychology
Religious Studies
Russian
Spanish
Speech Pathology
Speech & Theatre
Sociology
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 concentration and in the Triad. This dimension of the student's experience in the University represents that freedom within which his or her 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 his elective courses are:
(1) Additional courses in the major field;
(2) A related minor concentration in another department or area or in another college of the University (24 or more credit hours in courses numbered 2000 or above; see Note below);
(3) A concentration in the arts;
(4) An off-campus quarter.

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

Note: Minors are available in most of the departments and areas in which majors are offered, and also in the following:
Asian Studies
Biochemistry
Comparative Literature
Physical Sciences
Bioclinic
Portuguese
Comparative Literature
Women's Studies

Minors may be developed in other colleges of the University, but they must be approved by petition. Students transferring from other institutions must complete at least 6 of the 24 credit hours required for a minor at The University of Tennessee, Knoxville.
II. Individualized Program

The Basic Program described above will meet the educational needs of most of the students enrolling in the College of Liberal Arts. Some, however, come with particular strengths in their preparation or with special interests which do not coincide with the departmental or interdepartmental majors specified in the Basic Program. For these students the Individualized Program has been established as a means of attaining a closer correlation between student needs and academic program.

Students in the Individualized Program will normally satisfy the broad requirements of the Triad, just as do those in the Basic Program, although some latitude is provided for substitutions approved by the student's adviser and the Dean of the College. The point at which the greatest degree of individualization takes place, however, is in the area of concentration. Although the quantitative aspect of the area of concentration is the same as for the major in the Basic Program (i.e., a minimum of 36 hours in courses numbered above 2000), there is no restriction in principle on the choice of courses of which it is comprised. The student may design his own program in consultation with an adviser, and submit it for consideration to the Committee on the Individualized Program. The proposed course 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 consult the program director, Dr. Harry Jacobson (Ayers Hall).

III. College Scholars Program

A limited number of freshmen, entering transfer students with less than 60 credit hours, and resident students with less than 90 credit hours are invited each year to enter the College Scholars Program. Selection is based on previous academic record, test scores, recommendations, a written essay, and, except for freshmen, an interview. Admission is competitive. A student must have completed two quarters in the program; continuation depends upon the maintenance of a satisfactory record (normally 3.25 or above) and evidence of continued motivation and interest.

The College Scholars Program affords the highest degree of freedom to the student in developing a meaningful curriculum. Each student's program is worked out individually with a special adviser; together they determine what kinds of course work and/or other learning experiences (e.g., independent study, off-campus involvement, study abroad) best fulfill the student's objectives and at the same time help him or her achieve the kind of liberal education the College believes is important for every student. Participants in the program will be granted certain privileges in the use of library and in registration for courses and will also be eligible to submit research or creative writings for inclusion in the projected annual publication of the College Scholars Program.

Each College Scholar will normally enroll in one or more general or departmental honors courses each quarter. In the final two years of the program he or she will elect to work for either General Honors, involving independent study and research on a topic chosen in consultation with the adviser and resulting in an honors thesis or project report, or Departmental Honors, following in this case the honors program prescribed by the particular department. For further information consult the program director, Dr. Harry Jacobson (Ayers Hall).

IV. Preparation For The Health Professions

Pre-Dental
Pre-Dental Hygiene
Pre-Medical
Pre-Medical Record Administration
Pre-Medical Technology
Pre-Nursing
Pre-Pharmacy
Pre-Physical Therapy
Other Health Professions

Pre-health professional programs are available for students who plan a career in one of the health professions. The programs preparing students for the study of medicine, dentistry, and pharmacy include the specified courses required for admission to the respective colleges of The University of Tennessee Center for the Health Sciences at Memphis (UTOCHS), as well as those required for the Bachelor of Arts degree in the College of Liberal Arts at UT, Knoxville. The pre-medical technology program prepares students to undertake professional training during the fourth year of study at The University of Tennessee Center for the Health Sciences at Memphis. Other pre-health professional programs—dental hygiene, medical record administration, nursing, pharmacy, and physical therapy—are offered for those students who are planning to pursue professional training in health professional areas which lead to an undergraduate degree from UTC&H but not to a degree from UTK.*

NOTE: The UT Center for the Health Sciences is a state-supported institution and by legislative intent is required to admit all qualified Tennessean prior to considering out-of-state applicants. At the present time there are more qualified Tennessee applicants than there are places available; therefore, out-of-state applications are not being considered. The only exception to this policy is the non-resident applicant who is the son or daughter of an alumnus or alumnna or of the UT Center for the Health Sciences and who has completed all of the undergraduate work at a college in the University of Tennessee system and is otherwise qualified competitively.

Admission to any program at the UT Center for the Health Sciences or to the Medical Technology Program at the UT Memorial Research Center and Hospital is at the discretion of that program's admissions committee. Admission to the University of Tennessee, Knoxville, 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 (220 Ayres Hall) or the Coordinator of the Health Professions Office (218 Ayres Hall) for more information about the programs outlined below. Bulletins describing the various pre-health professional programs, including a detailed listing of requirements, may be obtained from the Health Professions Office, 218 Ayres Hall.

PRE-DENTAL PROGRAM

The College of Liberal Arts 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 on the curriculum outlined below. In the three-year program the student must complete at least 135 credit hours while enrolled in the College of Liberal Arts, and the B.A. degree is granted upon satisfactory completion of the first year of study at the UT Center for the Health Sciences. In the four-year program the degree is granted upon completion of 180 or more credit hours while enrolled in the College of Liberal Arts, the B.A. degree is granted upon satisfactory completion of the first four years of study at the UT Center for the Health Sciences.

The requirement for a major is waived for those completing their fourth year at UT, Memphis. Students in either the three- or four-year program must complete the last 45 hours of credit in residence at the University of Tennessee, Knoxville, before entering the UT Center for the Health Sciences.

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
1English 1510-20 ........................................ 8
2Fine Arts 1110-20 ...................................... 8
3Mathematics 1550-60 or 1840-50 .............. 8
4History I (Language, Literature & 
program) .................................................. 8
5Elective .................................................. 8

Total Hours 48

*Students wishing to prepare for professional training at institutions other than The University of Tennessee Center for the Health Sciences should consult the catalog of those institutions to determine the specific preparation required for admission.
Sophomore
Biology 1110-20-30 or Zoology 1118-28-38........... 12
Chemistry 3211-21-31 & 3219-29-39.............. 12
Triad I.............................................. 6
Triad II............................................ 12
*Elective........................................ 4

48

Junior
Physics 2210-20-30.................................. 12
Triad I.............................................. 8
Triad II............................................ 4
*Electives........................................ 15

39 (Total 135)

Senior
Completion of major program and B.A. requirements............ 45
Completion of one year at the UT Center for the Health Sciences

48

PRE-DENTAL HYGIENE PROGRAM

An Associate of Science Degree in Dental Hygiene is granted by the UT Center for the Health Sciences upon completion of a program which includes 45 credit hours of prescribed courses in the College of Liberal Arts and six quarters of study at Memphis. The pre-dental hygiene program may change to a bachelor's degree program in the future. Therefore, pre-dental hygiene students are encouraged to consult with a health professions adviser in the Liberal Arts Advising Center or the Coordinator of the Health Professions Office concerning the status of the program.

PRE-MEDICAL PROGRAM

The College of Liberal Arts 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 of Liberal Arts, and the B.A. degree is granted upon satisfactory completion of the first year of study at the UT Center for the Health Sciences. 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 requirement for a major is waived for those taking their fourth year at Memphis. 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 the UT Center for the Health Sciences.

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
*English 1510-20.................................. 8
*Chemistry 1110-20-30................................. 12
*Mathematics 1840-50................................ 12
Triad I (Language, Literature & the Arts)............. 8
Triad II (History & Society)......................... 8
Elective........................................... 4

48

Sophomore
Biology 1210-20-30 or Zoology 1118-28-38 ............ 12
Chemistry 3211-21-31 & 3219-29-39.............. 12
Triad I.............................................. 8
Triad II............................................ 4
*Elective........................................ 15

39 (Total 135)

Senior
Completion of major program and B.A. requirements............ 45
Completion of one year at the UT Center for the Health Sciences

48

PRE-MEDICAL RECORD ADMINISTRATION PROGRAM

Admission to the medical record administration program at the UT Center for the Health Sciences, leading to a Bachelor of Science degree from UTC at Memphis, requires completion of 135 hours of prescribed courses. Classes are admitted in September; applications must be filed by April 15. The selection process usually includes interviews with members of the faculty.

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

PRE-MEDICAL TECHNOLOGY PROGRAMS

The College of Liberal Arts offers two programs leading to the study of medical technology:

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

2. The Pre-Medical Technology Program leading to a degree of Bachelor of Science in medical technology from UTC at Memphis.

Science-Medical Technology Curriculum

The Science-Medical Technology Curriculum is a three-year program consisting of a minimum of 135 credit hours in the College of Liberal Arts. Students who complete this curriculum satisfactorily may apply for admittance to the course of study in medical technology at the University of Tennessee Memphis Medical Research Center and Hospital in Memphis. Successful completion of this course, which results in the granting of 50 credit hours, makes the student eligible for a Bachelor of Arts degree with a major in medical technology from UT. In addition, a Certificate of Laboratory Training will be awarded by the UT Memorial Research Center and Hospital. Students will then be eligible for examination by the Board of Registry of the American Society of Clinical Pathologists in order to be certified as registered medical technologists.

Freshman
*English 1510-20.................................. 8
*Biology 1210-20-30 or Zoology 1118-28-38........ 12
*Chemistry 1110-20-30................................. 12
*Triad I (Language, Literature & the Arts)............ 8
*Triad II (History & Society)......................... 8

48

Sophomore
Chemistry 3211-21-31 and 3219-29-39.................. 12
*Mathematics...................................... 4
*Biology 2110-20.................................. 8
Microbiology 3000-06................................ 6
Triad I.............................................. 8
Triad II............................................ 8

45

*Or equivalent honors courses
*Many colleges of medicine require, and others strongly recommend preparation in calculus; therefore, students preparing for the study of medicine are strongly encouraged to include 1840-50 in their programs. In some cases, Mathematics 1550-60 may be substituted.
*Although not specifically required by the College of Medicine, the Health Professions Advisory Committee strongly recommends that students include additional work in Chemistry (2140-49 or 4910-20-30), in Zoology (3050 and 3080), and in Microbiology (3000-09).
*Or equivalent honors courses.
*Students who have had considerable background in biology in high school (e.g., two years of biology or an unusually good one year course) and have completed general chemistry may be eligible to go directly into Biology 2110 or 2120. Consult the coordinator of the Biology program for more information. Such students must indicate at least eight hours in biological science in their electives to satisfy the requirement for admission to the medical technology course of study.
*Pre-medical technology students are encouraged to complete entire mathematics sequence (1550-60 or 1840-50). Calculus is required if graduate work is planned.
**PRE-MEDICAL PROGRAM**

Students planning to seek admission to the medical technology course of study at the UT Center for the Health Sciences in Memphis must complete 135 credit hours of prescribed courses while enrolled in the College of Liberal Arts. The program at Memphis is 12 months in length and leads to the degree of Bachelor of Science in Medical Technology from UTCHS. Classes are admitted in January and July and application must be made one year in advance.

Students interested in the medical technology program of study at UTCHS are encouraged to consult with a health professions advisor in the Liberal Arts Advising Center at the Health Professions Office for 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 requirement for admission to the College of Nursing at the UT Center for the Health Sciences is 48 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 three years in length.

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

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

**NOTE:** A degree program in nursing is also available at the University of Tennessee, Knoxville, through the School of Nursing. Information may be obtained from the Dean of the School of Nursing.

**PRE-PHARMACY PROGRAMS**

The College of Liberal Arts offers three programs preparing students for the study of pharmacy at the UT Center for the Health Sciences in Memphis. The Bachelor of Science in Pharmacy degree is conferred by UTCHS upon completion of three years of professional study at Memphis following any of the three programs.

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

The three-year and four-year programs, which lead to a Bachelor of Arts degree from the University of Tennessee, Knoxville, as well as to the professional degree in pharmacy from the UT Center for the Health Sciences, 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 of Liberal Arts, and the B.A. degree is granted upon satisfactory completion of the first year of study at Memphis. In the four-year program the 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 requirement for a major is waived for those taking their fourth year at Memphis. Students in either the three- or four-year program must complete the last 45 hours of credit in residence at the University of Tennessee, Knoxville, before enrolling in the College of Pharmacy.

**PRE-PHYSICAL THERAPY PROGRAM**

Admission to the physical therapy program at the UT Center for the Health Sciences, leading to the degree of Bachelor of Science in Physical Therapy from UTCHS, requires completion of 135 hours of prescribed courses while enrolled in the College of Liberal Arts. The program in Memphis is 15 months in length.

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

**OTHER HEALTH PROFESSIONS**

- Cytotechnology
- Histotechnology
- Optometry
- Radiologic Technology
- 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 180 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) communication design, (2) drawing, (3) painting, (4) oil, (5) watercolor, (6) printmaking, and (7) sculpture. The Bachelor of Fine Arts degree and its major will be recorded as follows:

- Bachelor of Fine Arts
- Major: Studio Art

**Core Curriculum:**

The core program is required of all B.F.A. candidates. It is designed to give a broad area background, in both studio and art history, at the earliest possible time. This background, during the freshman and sophomore years, gives a foundation upon which the student may build, and an opportunity to become acquainted with the various artistic disciplines. This gives each student the understanding to better plan his or her own program during the remaining two years. Unless otherwise stated, the core program is nonsequential, but should be completed by the end of the first two years. Core courses are as follows:

**Art History:**
- Art 2715 .......... 4
- A minimum of 13 hours other art history courses .... 13
STUDIO HONORS COURSES

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

A. Grade-point average of 3.2 in studio art courses
B. Portfolio of class and/or outside work
C. Recommendation of the studio faculty, and/or approval of the instructor

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

Bachelor of Music

The Department of Music offers the degree of Bachelor of Music with concentrations in Music Theory, Composition, Music History and Literature, Piano Literature, and Applied Music (voice—solo, chamber—woodwind, brass and percussion instruments—multiple woodwind instruments). The study is designed to prepare students for graduate study or for positions in music for which a professional degree is required.

Students who plan to work for this degree are assigned an adviser in the Department of Music at the time they enter the program. Continuation in the program at the 3000 level requires the achievement of an average of 2.5 or better on all music courses taken. The minimum requirement for the degree is 180 credit hours, including the specified courses outlined below.

Note: In addition to the concentrations offered in the Bachelor of Music curriculum, a major in music with a concentration in either Music History and Literature or Applied Music is available in the Bachelor of Arts curriculum.

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MUSIC THEORY

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MUSIC HISTORY/LITERATURE

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MUSIC HISTORY/LITERATURE (3000-level and above)

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ELECTIVES

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MUSIC HISTORY AND LITERATURE

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TOTAL: 180 hours

*Prerequisite to 2000 level courses for B.F.A. program.*
### College of Liberal Arts

#### ORGAN

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TOTAL: 180 hours

#### PIANO LITERATURE

**Freshman**

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<tr>
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<tbody>
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**Sophomore**

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TOTAL: 180 hours

#### VOICE

**Freshman**

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**Sophomore**

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<tr>
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TOTAL: 180 hours

#### STRINGS

**Freshman**

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**Sophomore**

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<td>Music 3111</td>
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<tr>
<td>Music 4012-84-94</td>
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**Junior**

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<thead>
<tr>
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TOTAL: 180 hours

#### PIANO

**Freshman**

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<td>(3000-level and above)</td>
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TOTAL: 180 hours

**Sophomore**

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
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<td>Music 3040-50-60</td>
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<td>Music 3111</td>
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<td>Music 4012-84-94</td>
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<tr>
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<tr>
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**Junior**

<table>
<thead>
<tr>
<th>Course</th>
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**Senior**

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TOTAL: 180 hours

**Sophomore**

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<tbody>
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<td>Music 2120-20-30</td>
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<tr>
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**Junior**

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<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Music 2340</td>
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**Senior**

<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Music 2340</td>
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</table>

TOTAL: 180 hours
### Bachelor of Science in Chemistry

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

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

#### COOPERATIVE PROGRAM IN CHEMISTRY

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

#### CURRICULUM REQUIREMENTS

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<tbody>
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<td>Hours</td>
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<tr>
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</table>

**TOTAL: 180 hours**

*Note: The curricula in Strings, Woodwinds, Brass, and Percussion; Multiple Woodwinds; and Voice allow 12 hours of ensemble credit to apply toward Electives. This is in addition to the hours in Ensemble listed in the tabular resumes.*
Public Administration

Students who wish to prepare for an administrative career in the public service are advised to take the following courses above those needed to satisfy the triad requirements. This special curriculum leads to a Bachelor of Arts degree with a major in Political Science augmented by extensive supportive work in Economics, Accounting and Finance.

Freshman

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<tr>
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Sophomore

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<td>Political Science 3565-66</td>
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<tr>
<td>Accounting 2110-2120, 2210</td>
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Senior

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<td>Accounting 3510</td>
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<tr>
<td>Finance 4350-60</td>
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</table>

Detailed information regarding the curriculum in public administration may be obtained in the office of the Department of Political Science.

1 Or equivalent honors courses.
2 May 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 . Detailed information about courses and curricula, as well as requirements for admission, will be found in the catalog of the School of Social Work.

Teaching

Students in the College of Liberal Arts who wish to be certified for secondary school teaching must satisfy state certification requirements as well as all degree requirements of the College of Liberal Arts, and must be recommended for certification by the College of Education. The College of Education is approved by the National Council for Accreditation of Teacher Education (NCATE); recommendation for certification by the College therefore in effect certifies the student in thirty 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 speech and hearing as determined by tests administered by the Speech and Hearing Center; (3) recommendation of the student's adviser.

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 December 31 of the year preceding the academic year in which the student teaching will be undertaken. Those planning to teach during the 1976-77 academic year must apply by December 31, 1975.

Curricula for students seeking teacher certification should include the following:

1) English 1510-20 or 1518-28
2) 16 hours, representing at least 3 fields, including:
   (a) 4 hours of 2000-level English
   (b) 12 hours of the student's choice from anthropology, art, English literature, Library and Information Science 3510-20-30, foreign language (beyond the elementary level), history (upper division), music, philosophy, or religious studies
3) Language, Literature, and the Arts: 0-24 hours, the number of hours and choice of courses depending upon the options selected and the choices made in (2) above
4) History and Society:
   (a) One of the 8-hour historical sequences in category (a) of the triad list
   (b) Psychology 2500 or 2518
   (c) 4 hours from anthropology, economics, geography, human services, political science or sociology courses on the triad list
   (d) 0-8 additional hours of the student's choice from courses on the triad list, the number of hours depending upon choices made in (2) above
5) Science and Mathematics:
   (a) One of the 8-hour natural science sequences in category 1 or 2 of the triad list
   (b) 4 additional hours of natural science courses in categories 1 and 2
   (c) 4 hours of mathematics courses in category 4
   (d) 8 additional hours of the student's choice from courses on the triad list
   (e) Speech 2311
   (f) 9 hours in health and physical education, including at least 3 hours of school health, public health, or nutrition and 2 hours of physical education
6) Professional Education courses:
   (a) Education C&I 3010-20-30
   (b) Educational Psychology 3810
   (c) 6 hours of appropriate methods courses
   (d) Education C&I 3521-22-23
   (e) Education C&I 4710-20 (student teaching)
   (f) 6 hours of electives from the College of Education
9) Additional courses necessary to complete Liberal Arts major(s)
10) Additional courses required for certification in teaching subject area(s) (Consult Certification Clerk, 212 Claxton Education Building)
11) Electives to reach total of 180 hours, including at least 60 upper division hours, required for graduation

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 17.

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 Assistant Dean for Student Academic Affairs (218 Ayres Hall).

The 17 credit limit was one of three means chosen to implement a 1972 decision by the College faculty to reduce the average number of courses carried by students. A second means has been to introduce four-credit courses into the curriculum on a broader scale than ever before. Using such courses the credits achieved by students each quarter would remain substantially the same as in quarters prior to this innovation but would be generated with fewer courses. A final means has been to decrease the total number of hours required for the degree. The goal of the load reduction is to provide an opportunity for a deeper, more thorough learning experience in the courses which are taken.

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 level.

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 involvement, 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 of Liberal Arts, although individual departments may limit the number of hours which may be applied toward a specific major.
Independent Study

Certain educational goals may best be met through independent study done by an individual under the direction of a faculty member. Students who wish to do such independent work should obtain the approval of the faculty members and the departments concerned prior to undertaking 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 of Liberal Arts, 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 of Liberal Arts. One avenue is through group programs arranged and supervised by departments of the College on a full-quarter or summer-term basis. A second is through group programs conducted abroad by other academic institutions to which UTK students may with approval enroll for credit. Assistance in identification and registration in such programs may be obtained through the Overseas Study Information Service located in the University's Division of International Education. A third opportunity is through individualized programs under the 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 Medical Units at Memphis. Each quarter the Student Academic Affairs Office issues the Liberal Arts Quarterly Bulletin in order to keep students informed about changes in the College curriculum as well as matters relating to registration, courses, and requirements.

Office of Black Studies

The Office of Black Studies, 1629 Melrose Avenue, cooperates with the various departments and colleges of the University with respect to the development of curricular changes and innovations which incorporate the Black experience into academic and extracurricular programs of the institution, supplies information on financial assistance for Black students, and serves as the focal point for the coordination and development of an improved and expanded Black Studies Program at the University.

Bureau of Public Administration

The University has established in the College of Liberal Arts 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 place 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 prosenium 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. Hunter Hills Theatre, located in the foothills of the Great Smoky Mountains near Gatlinburg, is an outdoor theatre in which performances are offered during the summer months.

Instructional Facilities

The College of Liberal Arts 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), South College (psychology), Hesler (biological sciences), Physics (physics and astronomy), Geology-Geography (geology and geography), and Dabney and Buehler (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 Offices is in 226 Ayres Hall and houses the office of the Dean/Associate Dean as well as the office of Curriculum and Special Programs. The Student Academic Affairs Office is in 218 Ayres Hall. The Liberal Arts Advising Center is in 220 Ayres Hall.

Departments of Instruction

Numbers in parentheses following the course titles indicate quarter hours credit offered.

American Studies

See Cultural Studies.

Anthropology (122)

Professors:

W. M. Bass (Head), Ph.D. Pennsylvania; A. K. Guth, Ph.D. Michigan; P. W. Parmalee, Ph.D. Texas A & M; Associate Professors:

C. H. Faulkner, Ph.D. Indiana; I. Harrison, Ph.D. Syracuse; R. L. Jantz, Ph.D. Kansas, H. M. Lindquist, Ph.D. Kansas; N. F. Reidl, Ph.D. Vienna.

Assistant Professors:

F. H. Smith, Ph.D. Michigan; P. M. Thomas, Jr., Ph.D. Tulane.

Research Associate Professor:

M. C. R. McCulloch, Ph.D. Pennsylvania.

Research Assistant Professor:

G. F. Schroedl, Ph.D. Washington State.

UNDERGRADUATE

A major in anthropology consists of 39 hours, including the 2510, 2520 and 2530 introductory courses. Of the remaining 27 hours, majors are required to take a minimum of six hours of 3000-level or above courses in each of these subfields: Physical Anthropology, Archaeology, and Cultural Anthropology. A minor in anthropology consists of 27 hours including the 2510, 2520, 2530 introductory courses.

Students enrolled in the College of Liberal Arts prior to Fall Quarter, 1972, who are under
the previous B.A. or B.S. curricula will find requirements for a major or minor in the 1972-73 or earlier general catalog.

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

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

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

2610 Genetics and Society (3) (Same as Botany 3070.)

3410 Principles of Cultural Anthropology (3) Basic concepts and objectives in study of culture. Range of cultural phenomena and approaches to its study. Prereq: 2530 or permission of instructor.

3440 Religion of Primitive Peoples (3) Religions of nonliterate peoples. Place of religion in their social and cultural systems. Prereq: 2530 or permission of instructor. (Same as Religious Studies 3440.)

4350 Community Studies in Complex Culture (3) Review of comparative urban and village communities and methodologies used in community studies. 2530 recommended.

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

3510 Peoples and Cultures of Mainland Asia (3) Ethnographic survey of indigenous cultures of mainland Asia. Cultural diversity and human ecology in a real perspective. Prereq: 2530 or permission of instructor.

3520 Peoples and Cultures of South America (3) Ethnographic survey of aboriginal cultures of South America. Prereq: 2530 or permission of instructor.

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. Prereq: 2530 or permission of instructor.

3540 North American Indians (3) Ethnographic survey of cultures of Arctic, Northwest, Plains and Eastern areas. Emphasis on cultural differences of peoples occupying these areas during pre-colonial periods and their adaptation to changing environments. Prereq: 2530 or permission of instructor.

3555 Cherokee Ethno History (3) Survey of socio-political aspects of Indian social organization and external relationships from first European contact to present. Emphasis on 18th and 19th centuries.

3560 Peoples and Cultures of Oceania (3) Survey of nonliterate societies and cultures in Indonesia, Australia, Micronesia, Melanesia, and Polynesia. Migrations and settlement. Prereq: 2530 or permission of instructor.

3580 Peoples and Cultures of Mesoamerica (3) Ethnographic survey of aboriginal peoples and post-conquest changes in Indian cultures. Emphasis on analysis of small rural communities using modern village studies as source material. Prereq: 2530 or permission of instructor.

3610 Archaeology of United States and Canada (3) Survey of prehistoric peoples north of Mexico from initial occupation to European contact. Prereq: 2530 or permission of instructor.

3620 European Prehistory I (3) Cultural development of the Paleolithic, Mesolithic, and Neolithic periods. Prereq: 2520 or permission of instructor.

3630 European Prehistory II (3) Cultural development during the Mesolithic Ages. From close of Neolithic through Iron Age. Prereq: 2520 or permission of instructor. 3620 and 3630 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 Europeans. Prereq: 2520 or permission of instructor.

3710 European Folk Culture (3) Traditional aspects of life as expressed in technology, beliefs, art, and folklore, under changing historical and socio-economic conditions. Prereq: 2530 or permission of instructor.

3800 Language and Culture (3) Relationship between linguistic categories and patterns of culture. Knowledge of linguistics not required. Prereq: 2530 or permission of instructor.

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

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

3920 Principles of Physical Anthropology (3) Survey of materials and methods in physical anthropology. Prereq: 2510.

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 world history. Prereq: 2510 or permission of instructor. Cases of racial problems concerning blood groups, race mixture, constitution growth and nutrition. Prereq: 2510 or permission of instructor.

3930 Human Identification (3) Introduction to techniques in identification of human skeletal material in Forensic Medicine.

4101 Foreign Study (1-18) See page 162.

4102 Off Campus Study (1-16) See page 161.

4103 Independent Study (1-16) See page 162.

4200 Contemporary North American Indians (3) Survey of Indian cultures from initial Euro-American contact to present; emphasis on culture change, U.S. Government Indian policy, reservation life. Prereq: 2530, 3540 or permission of instructor.

4210 Ethnographic Research Techniques (3) Methods of collecting, ordering, and utilizing data. Prereq: Permission 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 in the structuring of social ethics in intervention schemes, and of organization of planned change in applied programs. Intensive analysis of selected case studies. Prereq: 2530.

4250 Medical Anthropology: Lecture (3) Survey of medical anthropological research on Western and non-Western cultural aspects of health, disease, treatment, death, and related concepts. Focus on analyses and descriptions of anthropological fieldwork.

4259 Medical Anthropology: Laboratory (3) Fieldwork in medical anthropology. Emphasis on 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.

4300 Readings in Anthropology (1-9) Intensive reading, problem oriented. For anthropology majors with senior standing. Others by permission of instructor. May be repeated to a maximum of 9 credit hrs.

4304 Field Work in Archaeology (3-9) Practicum work surveying, excavating, processing, and analyzing of data; intensive reading. Prereq: 2510-20-30, and permission of instructor. May be repeated to a maximum of 9 credit hrs.

4305 Field Work in Cultural Anthropology (3-9) Practicum devoted to fieldwork methods, ethnographic fieldwork reporting, survey and interview techniques, and devising and carrying out own fieldwork projects. Prereq: 2510-20-30 and permission of instructor. Strongly recommended: 4210. May be repeated to a maximum of 9 credit hrs.

4360 Field Work in Physical Anthropology (3-9) Practicum in collection and analysis of human biological data. May include either skeletal or living populations. Prereq: 2510-20-30, and permission of instructor. May be repeated to a maximum of 9 credit hrs.

4410 Non-Western Education: Anthropological Approaches (3) Analysis of problems resulting from application of Western models of education in developing societies and in aboriginal communities within industrialized societies (e.g. American Indians).

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

4430 Personality and Culture (3) Analysis of relation between individual, society and culture. Application of psychological techniques in cross-cultural studies. Cultural differences and their influence on group behavior. Prereq: 2530 or permission of instructor.

4440 Urban Anthropology (3) Survey of theoretical and methodological issues anthropologists encounter researching cross cultural urban settlement. Focus is on anthropological perspective and urban problems and planning. Prereq: 3450 or permission of instructor.


4490 Cross-Cultural Survey of Sex Roles and Behavior (3) Examination of sex roles and sex behavior from cross-cultural and diachronic viewpoints. Draws disparate and scattered studies together and attempts to arrive at conclusions on questions as how sex roles are learned, the parameters of acceptable sexual behavior and degrees of tolerance for sexual deviation in various cultures.

4500 Peoples of China I: Chinese Society Before 1839 (3) Anthropological survey of Chinese society and culture during pre-Shang, dynastic, and early Western contact periods. Prereq: 2530 or permission of instructor. Recommended: 3510 or an East Asian course.

4510 Peoples of China II: Chinese Society After 1839 (3) Anthropological survey of Chinese society and culture in the period of Western contact, rejection of the West, and development of modern, communist Chinese society and culture. Prereq: 2530 or permission of instructor. Recommended: 4500 or an East Asian course.

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

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

4570 Peoples of Southeast Asia (3) Survey of representative ethnic groups and indigenous cultures of mainland and island Southeast Asia. Problems of contemporary culture changes. Prereq: 2530, permission of instructor, or an East Asian course.

4580 Asians in the Americas since 1520 (3) Analytical specific historical, cultural, religious, social, political factors, and motivations in Asian immigration to North, Central and South America. Assimilation pressures and enclaves are major topics. Major focus is on United States.

4590 Peoples of Japan (3) Analysis of cultural diversity and unity of peoples of Japan. Prereq: 2530 or permission of instructor. Recommended: 3510 or an East Asian course.
art is required of art history majors; knowledge of art history is required of studio majors.

The department reserves the right of acquisition of student studio work.

UNDERGRADUATE

Major: Art History—Consists of 36 hours in Art History courses numbered above 2000. Courses numbered above 2000 in the following areas may be included also in the 36 hours: Greek and Roman art and archaeology, aesthetics, history and theory of architecture (School of Architecture), and up to eight hours in studio courses in the Department of Art. Undergraduate work in Art History is enhanced by a knowledge of at least one foreign language. Graduate work normally requires a reading knowledge of at least two foreign languages.

Major: Art (Concentration in Studio) - Art 1115-25-35 and Art 2715, and eight additional hours of art history are prerequisite to a major of 36 hours of courses numbered 2000 and above, including a minimum of 21 hours in upper division courses.

Minor: none offered.

Students enrolled in the College of Liberal Arts prior to Fall Quarter, 1972, who are under the previous B.A. or B.S. curricula will find requirements for the various majors or minors in Art in the 1972-73, or earlier general catalog.

For information regarding the Bachelor of Fine Arts degree, see page 157.

1115-25-35 Studio Fundamentals (4, 4, 4) 1115—Drawing and the illusion of space; 1125—Surface composition and color; 1135—Real space and volume. For art, architecture, related arts and art education majors. Others with permission of instructor only.

1815-25 World Art (4, 4) A survey; 1815—pre-history to 1400; 1825—1400 to present.

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

2105 Introduction to Drawing (4) Prereq: 1115.

2115 Drawing II (4) Prereq: 2105. May be repeated for a maximum of 8 credit hrs.

2116-17 Intermediate Design (4, 4) 2116—Motion picture as primary tool of research; 2117—Color theory and application. Prereq for 2117: 1115-25-35.

2205 Introduction to Painting (4) Oil, acrylic and watercolor. Prereq: 1115-25-35 for art majors.

2215 Painting II (4) Oil and acrylic. Prereq: 2205. May be repeated for a maximum of 8 credit hrs.

2315 Watercolor II (4) Prereq: 2205. May be repeated for a maximum of 8 credit hrs.

2405 Introduction to Sculpture (4) Prereq: 1115-25-35 for art majors.

2415 Sculpture II (4) Prereq: 2405. May be repeated for a maximum of 8 credit hrs.


2515-25 Graphic Design (4, 4) 2515—Lettering and layout; 2525—Production. Prereq: 2505 for 2515; 2515 for 2525.

2516 Advertising Design (4) Fundamentals of lettering and layout for newspaper, magazine, television, and outdoor advertising. Non-art majors only.
2545-55-65 Photo-Graphica (4, 4, 4) Introduction to art of Photography.

2805 Introduction to Printmaking (4) Relief, lithography, intaglio, and serigraphy. Prereq: 1115-25-35 for art majors.

2615 Intaglio II (4) May be repeated for a maximum of 8 credit hrs.

2616 Lithography II (4) May be repeated for a maximum of 8 credit hrs.

2617 Serigraphy II (4) May be repeated for a maximum of 8 credit hrs.

2715 Survey of Contemporary Art (4) 1945 to present.

2725 Black Art (4) Black artists in society. Emphasis on contemporary art forms.


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) May be repeated for a maximum of 12 hours. Prereq: 8 hours of 2115.


3215 Painting III (4) May be repeated for a maximum of 12 hours. Prereq: permission of instructor.

3315 Watercolor III (4) May be repeated for a maximum of 12 hours credit. Prereq: permission of instructor.

3415 Sculpture III (4) May be repeated for a maximum of 12 hours.

3515 Visual Communications I (4) Graphic design: theory and techniques of problems solving for printed material. Prereq: 2525.

3516 Typography (4) Principles and techniques of typographic and printing as a fine art medium. May be repeated for a maximum of 12 hours.

3517 Airbrush (4) Techniques and creative applications. May be repeated once for credit.

3525 Visual Communications II (4) Advanced pictorial perception, concepts, and techniques for design. Prereq: 3525.


3615 Intaglio III (4) May be repeated for a maximum of 12 hours.

3616 Lithography III (4) May be repeated for a maximum of 12 hours.

3617 Serigraphy III (4) May be repeated for a maximum of 12 hours.

3705 Northern European Painting: 1350-1600 (4) Painting and printmaking of the low countries, France, Germany, and England. Includes international style Manuscripts. Van Eyck, Bosch, Durer, Holbein, and Bruegel.

3715 Early Italian Renaissance Art: 1300-1500 (4) Painting, sculpture, and architecture. Includes Giotto, Masaccio, Donatello, Brunelleschi, Alberti, Botticelli, and Leonardo.

3716 Late Italian Renaissance Art: 1500-1600 (4) Painting, sculpture, and architecture. Includes Leonardo, Raphael, Michelangelo, Bramante, Titian, and the Manierists.

3725 History of Baroque and Rococo Art I (4) Art and architecture of Italy, Spain, Portugal, and Latin America in Seventeenth and Eighteenth centuries. Emphasis on Rembrandt, Vermeer, Rubens, Georges de la Tour, Poussin, Watteau, Wt silence, the urban development of Paris, Leningrad, London, and Bath.

3735 History of Nineteenth Century Painting in Europe and America (4)

3736 History of Twentieth Century Painting in Europe and America (4)

3745 History of Modern Architecture in Europe and America (4)

3746 History of Modern Sculpture in Europe and America (4)

3755-56-57 Studies in Art History (4, 4, 4) Concentration in selected areas. Prereq: 12 hours of art history or permission of instructor.

3765 History of American Art (4) Art from the Colonial Period to present day.

3775-76-77 History of Art (4) Art of Indian Asia and the Far East. 3775-Indian Asia; 3776-China; 3777-Japan.

3811 Introduction to Museology (3) Concepts, practices and historical development of museums of art, archaeology, anthropology and science. (Same as Anthropology 3811).

3945 Cinematography (4) Familiarization with photographic processes and basic production techniques, artistic potential of film, aesthetic problems and challenges of the medium. May be repeated for a maximum of 12 hours.

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

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

4011 Foreign Study (1-16) See page 162.

4102 Off-Campus Study (1-16) See page 161.

4103 Independent Study (1-16) See page 162.

4115 Drawing IV (4) May be repeated for a maximum of 12 hours. Prereq: 12 hours of 3115.

4215 Painting IV (4) May be repeated for a maximum of 12 hours. Prereq: permission of instructor.

4315 Watercolor IV (4) May be repeated for a maximum of 12 hours. Prereq: permission of instructor.

4415 Sculpture IV (4) May be repeated for a maximum of 12 hours.


4545 Visual Communications Seminar (2) Political, social, economic, and moral problems of contemporary designer. Prereq: 4515.

4615 Intaglio IV (4) May be repeated for a maximum of 12 hours.

4616 Lithography IV (4) May be repeated for a maximum of 12 hours.

4617 Serigraphy IV (4) May be repeated for a maximum of 12 hours.

4855-56-57 Reading and Research in Art History (2, 2, 2) Individual problems. Prereq: 16 hours of Art History, junior or senior standing, and permission of instructor.

4875-76-77 Studies in Oriental Art History (4, 4, 4) Concentration in selected areas.

GRADUATE

There are two advanced degrees available in this department: Master of Arts and Master of Fine Arts. In addition to meeting requirements of the Graduate School, applicant must have an undergraduate major in art or outstanding proficiency. Examples of his work will be requested. For additional information regarding these programs, write to the head of the department.

5011-21-31 Exhibition in Lieu of Thesis (3, 3, 3)

5110-20-30 Drawing and Composition (3, 3, 3)

5140 Drawing and Composition (3, 3, 3)

5210-30-40-50-60 Oil Painting (3, 3, 3, 3, 3)

5310-20 Watercolor Painting (3, 3, 3)

5340-50-60 Watercolor (3, 3, 3)

5410-20-30-40-50-60 Sculpture (3, 3, 3, 3, 3, 3)

5510-20-30-40-50-60 Communication Design (3, 3, 3, 3, 3, 3)

5610-20-30 Intaglio (3, 3, 3)

5611-21-31 Lithography (3, 3, 3)

5612-22-32 Serigraphy (3, 3, 3)

5770 Seminar in Art History (3)

5855-56-57 Reading and Research in Art History (2, 2, 2)

5900 Seminar in Art Criticism (3)

Asian Studies

See Cultural Studies.

Astronomy

See Physics and Astronomy.

Audiology And Speech Pathology (160)

Professors: H. L. Luper (Head), Ph.D. Ohio State; S. Adler, Ph.D. Ohio State, C. W. Asp, Ph.D. Ohio State, D. M. Lipscomb, Ph.D. Washington; H. A. Peterson, Ph.D. Illinois; B. Silverstein, Ph.D. Purdue.

Associate Professors: P. J. Carnes, Ph.D. Iowa; I. V. Nabelek, Ph.D. Czech Technical, Prague.

Assistant Professors: T. O. Davidson, M.A. Tennessee; C. J. Farrell, M.A. Tennessee; T. P. Marquardt, Ph.D. Washington.


UNDERGRADUATE

General Information. One of mankind’s most significant developments has been the acquisition of organized systems of communication. Basic to most human language systems has been dyadic oral-aural communication. The Department of Audiology and Speech Pathology offers course work in the scientific study of oral-aural communication with special attention to variations considered normal or different. Many of the courses offered in the department cover information that should be valuable to students planning to enter any social service discipline. Suggested electives for non-departmental majors include: 3040, 3060, 3200, 4610, 4710, 4730 and 4750.
Majors: The two majors (Audiology and Speech Pathology) allow the student to select among 3 or more concentrations. Note carefully the distinction in requirements for each of the concentrations within each major. Students should consult with a departmental advisor concerning recommended electives.

All concentrations within the department are pre-professional; that is, they are preparatory to graduate work and to professional certification in some aspects of communicative disorders. The Master's Degree is required for most professional certifications and employment positions. Students desiring school certification in speech and hearing or education of the deaf should consult the Department of Special Education and Rehabilitation for specific requirements.

A major in Audiology may be met by completing the requirements for either of the following two concentrations:

A. Concentration in Clinical Audiology. Consists of Audiology and Speech Pathology 3040, 3060, 4710, 4720, 4740, 4930, 4450 plus not less than 15 or more than 35 credit hours from the following: 3050, 3200, 3310, 4040, 4060, 4320, 4330, 4730, 4750, 4940; Psychology 2500, 2520.

B. Concentration in Aural Rehabilitation. Consists of Audiology and Speech Pathology 3040, 3050, 3060, 3200, 3310, 4040, 4060, 4450, 4610, 4710, 4720, 4730, 4740, 4930, 4940.

A major in Speech Pathology may be met by completing one of the following concentrations:

A. Concentration in Clinical Speech Pathology. Consists of Audiology and Speech Pathology 3040, 3050, 3060, 3200, 4650, 4710; Psychology 2500, 2520; Anthropology 2530, 3410, Sociology 3220, 3330, and CDFR 4810.

B. Concentration in Cultural Language Differences. Consists of Audiology and Speech Pathology 3040, 3050, 3060, 3200, 4650, 4710; Psychology 2500, 2520; Anthropology 2530, 3410, Sociology 3220, 3330, and CDFR 4810.

C. Concentration in Pediatric Language Disorders. Consists of Audiology and Speech Pathology 3040, 3050, 3060, 3200, 4040, 4060, 4610, 4710, 4720, 4730, 4940; Special Education 4110, 4120, 4130, and 4610.

Students enrolled in the College of Liberal Arts prior to Fall Quarter, 1972, who are under the previous B.A. or B.S. curricula will find requirements for a major or minor in Audiology or Speech Pathology in the 1972-73 or earlier general catalog.

3200 Speech and Language Development (3) Speech and language development in the normal child and implications of this process on diagnosis of speech and language problems. Prereq: Psychology 3550 or Education 2430.

3310 Articulation Disorders (3) Etiology, diagnosis, and treatment of articulatory defects. Prereq: 3040 and 3050. (Same as Special Education 3310.)

4040 Appraisal of Speech and Language Disorders (3) Diagnostic procedures for children and adults with speech and language problems. Concurrent enrollment in 4040 required for majors. (Same as Special Education 4040.)

4049 Lab in Appraisal of Speech and Language Disorders (1) Observation and practice with diagnostic tests. Concurrent enrollment in 4040 required. (Same as Special Education 4049.)

4060 Speech Science II (3) Anatomy and physiology of speech production; clinical applications of speech science research. 2 lectures and 1 2-hour lab per week.

4101 Foreign Study (1-16) See page 162.

4102 Off Campus Study (1-16) See page 161.

4103 Independent Study (1-16) See page 162.

4190 Speech Development of the Hearing Impaired (3) Prereq: 3050 (Same as Special Education 4190.)

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

4210 Language Development of the Hearing Impaired I (3) (Same as Special Education 4210.)

4220 Language Development of the Hearing Impaired II (3) (Same as Special Education 4220.)

4250 Introduction to the Education and Psychology of the Deaf (3) (Same as Special Education 4250.)

4310 Stuttering (3) Nature and treatment of stuttering. Review of various theories of stuttering, and their interaction. Review of psychotherapy and counseling procedures. (Same as Special Education 4310.)

4320 Clinical Practice in Speech Pathology (1-6) Prereq: 3040, 3050, 3310, 4040, and permission of instructor. Satisfactory-No Credit. (Same as Special Education 4320.)

4330 Clinical Practice in Speech Pathology (1-6) Prereq: 3040, 3050, 3310, 4040, and permission of instructor. Satisfactory-No Credit. (Same as Special Education 4330.)

4340 Clinical Practice in Speech Pathology I (1-6) Prereq: 3040, 3050, 3310, 4040, and permission of instructor. May be repeated for credit. Satisfactory-No Credit. (Same as Special Education 4340.)

4400 Voice Disorders (3) Etiology, diagnosis, and treatment of organic and functional voice disorders. Prereq: Speech Pathology 3040 and 3060. (Same as Special Education 4440.)

4450 Clinical Practice in Audiology I (1-6) Prereq: 4720, 4930, or 4940. Satisfactory-No Credit. (Same as Special Education 4450.)

4460 Clinical Practice in Audiology II (1-6) Prereq: 4720, 4930, or 4940. Satisfactory-No Credit. (Same as Special Education 4460.)

4470 Clinical Practice in Audiology (1-6) Prereq: 4720, 4930, or 4940. May be repeated for credit. Satisfactory-No Credit. (Same as Special Education 4470.)

4520 Speech Pathology (3) Independent study of special problems in speech pathology. Prereq: permission of instructor.

4550 Problems in Speech Pathology (3) Prereq: permission of instructor.

4560 Problems in Audiology (1-6) May be repeated to a maximum of 6 hrs credit. Prereq: permission of instructor.


4650 Speech and Language of the Culturally Different Child (3) Discussion of speech and language differences of children of various minority groups, of different ethnic and class membership and from different geographic regions; their causes, and their effects upon educational programs.

4710 Introduction to Audiology (3) Fundamental aspects of hearing, including physics of sound, anatomy and physiology of ear, etiology and rehabilitation of hearing loss and psychological ramifications of sensory loss. (Same as Special Education 4710.)

4719 Audiology Laboratory. Prereq: Permission of instructor. Undergraduate credit only. (Same as Special Education 4719.)

4720 Audiology (3) Assessment of auditory function by pure tone and speech audiometric procedures. (Same as Special Education 4720.)

4730 Medical Audiology (3) Survey of medical aspects of audiology pertaining to pathologies encountered in medical environments, with emphasis on specific etiologies. Prereq: 4710.


4750 Noise in the Environment (3) Discussion of extent to which noise problem exists, introduction to methods of noise measurement, basic techniques in sound and vibration abatement, acoustical factors, and physiological concomitants in noise stimulation. Knowledge of acoustics is advisable.

4930 Aural Rehabilitation: Speechreading and Auditory Training (4) Speechreading as a receptive language process and development of maximum use of residual hearing in acoustically handicapped. (Same as Special Education 4930.)

4939 Laboratory in Aural Rehabilitation (1) Same as Special Education 4939.

4940 Advanced Aural Rehabilitation (3) Prereq: 4930 or permission of instructor. (Same as Special Education 4940.)

GRADUATE

5000 Thesis

5040 Advanced Clinical Practice in Audiology (1-6)

5050 Practicum in Aural Habilitation and Rehabilitation (1-6)

5060 Anatomy and Physiology of Speech (3)

5070 Anatomy and Physiology of Hearing (3)

5071 Physiological Acoustics (3)

5100 Comparative Anatomy of Peripheral Auditory Structures (3)

5110 Introduction to Research in Speech and Hearing (3)

5119 Instrumentation in Speech and Hearing Science (3)

5200 Seminar on Stuttering (3)

5201 Aphasia (3)

5320-30 Advanced Clinical Practice in Speech Disorders (1-6, 1-6, 1-6)

5350-60-70 Advanced Clinical Practice in Speech Diagnosis (1-6, 1-6, 1-6)

5380 Cerebral Palsy (3)

5390 Cleft Palate (3)

5440 Hearing Aid Evaluation (3)

5450 Sound Measurement and Analysis in Hearing Conservation (3)

5460 Differential Diagnosis of Auditory Disorders (3)

5470 Impedance Measurement in Audiology (3)

5500 Seminar in Audiology (3, 3, 3, 3)

5503 Seminar in Advanced Audiological Procedures (3)
4119 Cellular and Comparative Biochemistry Laboratory (2) Basic biochemical procedures of general application in biochemistry and molecular biology. Prereq: 1 quarter of analytical chemistry. Prereq. or coreq.: 4110.

4210-20 Introduction to Physical Biochemistry (3, 3) 4210—Introduction to Thermodynamics; phase stability and phase change; chemical potential; osmotic pressure; activity and the Debye-Hückel model; equilibrium; mass action, and enthalpy of hydration. 4220—Elements of statistical mechanics, diffusion, collision theory; chemical kinetics and transition state theory; higher order kinetics; specialized kinetics of enzymatic processes; some bio-polymer considerations. Prereq. Math 1810-20-30; Chemistry 3211-21-31; and an introductory course in biochemistry.

4230 Introduction to Physical Biochemistry (3) Physical characterization of macromolecules; polarized light, absorption and fluorescence, sedimentation and transport, hydrodynamics, electrophoretic mobility, light scattering, and structural x-ray crystallography of proteins and nucleic acids. Prereq: 4220 or Chemistry 3450, or equivalent.

4500 Independent Research in Biochemistry (1-6) Special experimental problems under direction of staff member. Limited to undergraduates, and by permission of instructor. Prereq. or coreq: 4110-20, 4119.

GRADUATE

The Master's Program

Master's degree requirements are found in the Graduate School Catalog. Candidates usually should offer an undergraduate major in either biology or chemistry.

The Doctoral Program

Requirements for the Doctor's degree are found in the Graduate School Catalog. An incoming student must present an undergraduate major in either chemistry or biology.

5000 Thesis

5110 The Metabolism of Nitrogen Containing Compounds (3)

5120 Membranes, Compartmental, and the Regulation of Energy Metabolism (3)

5130 Protein Structure and Enzyme Function (3)

5220 Structures and Functions of the Nucleic Acids (3)

5230 Protein Synthesis and its Role in Metabolic Regulation (3)

5300 Graduate Research Participation (3-9)

5310-20-30 Experimental Techniques (2, 2, 2)

5450 Special Topics (1-3)

6000 Doctoral Research and Dissertation

6110 Enzyme Kinetics and Mechanisms of Enzyme Action (1)

6120 Functions of the Vitamins (1)

6130 Functions of the Trace Elements (1)

6210 Structure and Function of Macromolecules (1)

6220 Biochemical Genetics (1)

6230 Metabolic Regulation (1)

6310 Biological Energy Transformations (1)

6320 Antigen-antibody Interactions (1)

6330 Biochemistry of Specialized Physiological Processes (1)

6410-20-30 Current Topics in Biochemistry (2, 2, 2)

Biology (190)

Coordinator: K. J. Monty

A major in Biology may be met by completing one of the following two concentrations.

A. Concentration in Cell Biology. Consists of Biology 2110, 2120, 2130, Chemistry 3211-21-31, 3219-29-39, Biochemistry 4110-20, and 12 hours from approved upper division courses in Biology or Microbiology, and Zoology.1 Prerequisites to this concentration are: Biology 1210-20-30 or Botany 1110-20 or 1118-28 or Zoology 1118-28; Chemistry 1110-20-30. Corequisites are: Math 1840-50; a year sequence in Physics (except 1410-20-30); and Chemistry 2140-49.

B. Concentration in Organismal and Systems Biology. Consists of Biology 2110-20-30, Chemistry 3211-21-31, 3219-29-39, and 18 hours from approved upper division courses in Biochemistry, Botany, Microbiology, and Zoology.2 Prerequisites to this emphasis are: Biology 1210-20-30 or Botany 1110-20 or 1118-28 or Zoology 1118-28; Chemistry 1110-20-30. Corequisites are: Math 1840-50 or 1540-50-60 (Math 1840-50 is recommended choice); a year sequence in Physics (except 1410-20-30) or Geology 1510-20.

Note: Students majoring in Biology are advised to exercise care in fulfilling the Science and Mathematics trial requirements. Math 1840-50 and Chemistry 1110-20-30 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 193).

Minor: Consists of Biology 2110-20-30 and 12 hours of upper division courses chosen from the list below. Biochemistry 4110-20, 4119-29; Botany, any 3000- or 4000-level courses; Microbiology, any 3000- or 4000- level courses; Zoology, any 3000- or 4000- level courses except 3010-20-30. (In meeting the upper division minimum requirement, not more than 10 hours may be credited from any one biological science department, and not more than 4 hours of research courses may be credited. Prerequisites for the minor are Introductory Biology courses (Biology 1210-20-30 or Botany 1110-20 or 1118-28 or Zoology 1118-28); Chemistry 1110-20-30. Note: Certain upper division courses require organic chemistry or other prerequisites - consult the catalog description in each case.

Students enrolled in the College of Liberal Arts prior to Fall Quarter, 1972, who are under the previous B.A. or B.S. curricula will find requirements for a major in the 1972-73 or earlier general catalog.

1Biochemistry 4119-29; Botany, any 3000- or 4000-level courses (except 3030, 3070, 3090); Microbiology 3000-09, 3071-79, 4111-21, 4120-20-30, 4352-29, 4811-19, Zoology 3050, 3060, 3080, 3150, 3320, 4010, 4050, 4110-20-30, 4250, 4280, 4310, 4369, 4380, 4390, 4450, 4610-20. (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.)

2Biochemistry 4111-20-29, Botany, any 3000- or 4000-level courses (including those more than one from 3030, 3070, 3090); Microbiology, any 3000- or 4000-level courses; Zoology, any 3000- or 4000-level courses except 3010-20-30 and 3090. (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.)

Bacteriology

See Microbiology.

Biochemistry (188)

Professors: J. K. Monty (Head), Ph.D. Rochester; E. Churchich, Ph.D. Sheffield (England); T. P. Salo, Ph.D. Michigan. Associate Professor: J. G. Joshi, Ph.D. Poona (India).

Assistant Professors: R. H. Feinberg, Ph.D. California (Berkeley); S. W. Hawkins, Ph.D. Chicago; B. C. Klíme, Ph.D. Michigan State.

UNDERGRADUATE

No major is offered, although course work in Biochemistry is applicable to majors in Biology and Chemistry.

For the Bachelor of Arts Degree with a minor in biochemistry, the following courses are required: Chemistry 2140-49, 3211-21-31, 3219-29-39, and Biochemistry 4110-20 and 4119-29. Additional credits from Biochemistry 4210-20-30 and/or 4510-20-30 are desirable. Students enrolled in the College of Liberal Arts prior to Fall Quarter, 1972, who are under the previous B.A. or B.S. curricula will find requirements for a minor in the 1972-73 or earlier general catalog.

4110-20 Cellular and Comparative Biochemistry (4, 4) Electrolyte behavior; chemistry and structure of proteins; enzyme behavior and biological function; catabolism and energy capture; synthetic metabolism; nucleic acid function; protein synthesis and biochemical genetics; regulation of biological processes. Must be taken in sequence. Prereq.: Chemistry 3211-21-31 and an introductory course in biology (i.e., Biology 1210-20-30 or Botany 1110-20-30). Three lectures and discussion.
allowed for minor credit. Prerequisites to this minor are Botany 1110-20, 1140 or 1118-28 or Biology 1210-20-30*. Corequisites are 4 hours of upper division courses in a related biological science (Zoology, Microbiology, Biochemistry, Agricultural Biology, Forestry or Plant and Soil Science).

Students enrolled in the College of Liberal Arts prior to Fall Quarter, 1972, who are under the previous major- or B.S. curriculum find requirements for a major or minor in the 1972-73 or earlier general catalog.

1110-20 Fundamentals of Botany (4, 4) Nature and development of plants, including processes, structure, life histories, inheritance, ecology and importance to man. Enroll in sequence for desirable. Two 1-hour discussions and approximately 3 hours audio-tutorial laboratory per week. Students may not receive credit for both Botany 1110-20 and Biology 1210-20-30.

1118-28 Honors: Fundamentals of Botany (6, 6) Honors course designed for superior students in beginning botany. Open to freshmen with a score of 27 or better on natural science section of American College Testing Program and sophomores who have cumulative grade point average of 3.25 or 3.5 in the sciences or who are approved through an interview with member of botany faculty. Students receiving C or D in 1118 must transfer to 1110. Three 2-hr lecture-lab-discussion periods. Must be taken in sequence.

1140 Selected Topics in General Botany (4) Areas will include plant growth, population genetics, environmental interactions and impact of human activities on biological resources. Lectures, laboratory, field trips and individual projects. Two hours lecture-discussion and 4 hours laboratory per week. Occasional field trips. Prereq: Botany 1110-20 or Biology 1210-20-30.

3010-20 Plants in Evolution (4, 4) Monera to angiospermae; emphasis on evolutionary relationships, morphology and development. Not for botany graduate credit. Prereq: 6 hrs in biological sciences.

3030 Field Botany (4) Study of plants in natural environments including plant identification, collection, preservation and basic ecological concepts. Prereq: 6 hrs in biological sciences. Not for botany graduate credit.

3050 Socio-Economic Impact of Plants (3) Significance of plants in origin and development of human cultures, evolution of cultivated plants, and role of plants in present civilizations. Occasional field trips. Not for botany graduate credit.

3070 Genetics and Society (3) An introduction to genetics, anthropology and evolution with emphasis on their implications for human society. (Same as Anthropology 3070.)

3090 Biology and Human Affairs (3) Basic principles involved in deterioration and preservation of an environment in which man and his cultures may survive. Not for botany graduate credit. (Same as Zoology 3090.)

3130 Introductory Plant Pathology (4) Same as Agricultural Biology 3130.

3210 Introductory Plant Physiology (4) Organismal physiology of plants; water relations, mineral nutrition, morphogenesis, elements of metabolic processes, effect of age, light, natural rhythms, temperature and other environmental factors. Lecture and lab. Not for Botany graduate credit. Prereq: One year general chemistry and one year of a biological science.

4000 Tutorial in Botany (2) Individual, independent study under guidance of selected staff. By permission of the department. May be repeated with permission of the department.

4030 Principles of Plant Evolution (4) Principles of plant specialization, emphasizing phylogenetic relationships at present-day taxa. Prereq: 3010-20.

Chemistry (235)

Professors: D. A. Shirley (Head), Ph.D. Iowa State, N. S. Bowman, Ph.D. Princeton; C. A. Buschler (Emeritus), Ph.D. Ohio State, W. E. Bull, Ph.D. Illinois; C. J. Collins, Ph.D. Northwestern; J. A. Dean, Ph.D. Michigan; J. F. Eastham, Ph.D. California (Berkeley); M. F. Minnosta; C. W. Keenan (Associate Dean), Ph.D. Texas; D. C. Kleinfehler, Ph.D. Princeton; M. H. Lietzke, Ph.D. Wisconsin; R. Livingston, Ph.D. Cincinnati; G. Mamantov, Ph.D. Louisiana State; A. D. Melvain (Emeritus), Ph.D. Penn State; G. D. O'Keelley, Ph.D. California (Berkeley); G. K. Schwerdt, Ph.D. Illinois; G. P. Smith, Ph.D. Virginia; A. H. Smith, Ph.D. Harvard; W. T. Smith (Emeritus), Ph.D. Ohio State, W. A. Van Hook, Ph.D. Johns Hopkins; T. F. Williams, Ph.D. London (Emeritus); J. H. Wood (Emeritus), Ph.D. North Carolina State.

Associate Professors: J. E. Bloom, Ph.D. Manchester (England); J. Q. Chambers, Ph.D. Kansas; C. A. Lane, Ph.D. California (Berkeley); J. W. Larsen, Ph.D. Purdue; R. M. McElroy, Ph.D. Oregon; P. C. Pearson, Ph.D. California (Berkeley); E. L. Webry, Ph.D. Purdue.

Assistant Professors: J. L. Adcock, Ph.D. U. Texas; R. G. Gaunheid, Ph.D. Stanford; F. A. Grimm, Ph.D. Cornell; G. W. Kabalka, Ph.D. Purdue; J. F. Kissler; D. F. Akron; L. J. Magid, Ph.D. Tennessee; R. M. Pagen, Ph.D. Wisconsin; F. M. Schell, Ph.D. Indiana; C. Woods, III, Ph.D. N. Carolina State.

1On leave.
2Alumni Distinguished Service Professor.

There are two alternative routes for the student to take in designing his program for a B.A. degree 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 160.), but with more opportunity for selection of electives outside the department and more freedom in science. Unlike the Bachelor of Science in Chemistry degree, the B.A. degree using Concentration A is not approved by the Committee on Professional Training of the American Chemical Society.

Concentration B is designed for students who have career objectives in fields other than Chemistry, but in fields where Chemistry has direct applications, such as medicine, dentistry, pharmacy, law, business and engineering. This concentration, supplemented by appropriate courses from other areas, is suitable for students planning careers in these areas. Concentration B is specifically designed to provide more elective hours which may be chosen in fields which are related to Chemistry. Concentration B is not appropriate for students intending to become professional chemists.

The prerequisites consist of Chemistry 1110-20-30, Mathematics 1540-50-60 or 1840-50-60 and any one of the following natural science options: (a) Physics 2210-20-30 or 2510, 2310-20-20, or Biology 1510-20-20, or Biology 1210-20-30, or Biology 2110-20 and Microbiology 3000, 3008; (b) Botany 1110-20. The concentration consists of Chemistry 2140, 2149, 3211-21-31 or 3511-21-31 (latter recommended), 3219-29-39 or 3219, 3529-39 (latter recommended), 3420-20-30, 3429 plus at least 10 hours of additional upper division work in Chemistry. (Up to six hours of Biochemistry 4000-level and above or Geology 4610 may be applied to the ten hour requirement). A minor in chemistry shall consist of the successful completion of 24 hours of chemistry courses numbered 2000 and above including Chemistry 2140-49 (4 hours) and at least one of the following sequences: Chemistry 3211-3221-3231, 3219-3229 (or 3529)-3239 (or 3539) (12 hours) or Chemistry 3410-3420-3430 (9 hours) or Chemistry 4910-4920-4930.

Students enrolled in the College of Liberal Arts prior to Fall Quarter, 1972, who are under the previous B.A. or B.S. curricula will find requirements for a major or minor in the 1972-73 or earlier general catalogs.

For information regarding the Bachelor of Science in Chemistry degree and the cooperative program in chemistry, see page 180.

Freshman Sequences. The sequence which meets all requirements of a year of general chemistry is 1110-20-30. The 1510 and 1610 series have more limited applications. The 1510 series emphasizes organic and biochemistry and may be used as a prerequisite for 2230 and 3810. The 1610 series is for non-science majors.

It is possible to move from one sequence to another if permission for substitution is obtained in advance. For example, a student who finds the freshman course to complete the 1510 series after having completed 1510 or 1610 may obtain permission to substitute either 1510 or 1610 for 1110 provided he has approval of the Chemistry Department and then he may follow the 1130 sequence. However, no quarter of the 1510 or 1610 sequences may be substituted for 1120. Credit may be received for only one of the courses 1110, 1510 or 1610; and only one of 1520 or 1620.

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 superior student who has already made considerable progress in science and wishes to be placed on placement test scores and the high school chemistry grade. A grade of A or B in 1128 also gives credit for 1138 with the same grade. A student receiving a grade below B in 1118 will complete this year's work by taking 1120-30. A student receiving a grade of C or D in 1128 must take 1130 to get the full 12 hours 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 for the head of the department for permission to take a proficiency examination in one or more quarters in chemistry. The examination is made on the examination, credit will be allowed for the quarter (or course) for which the exam was taken.

UNDERGRADUATE

1110-20-30 General Chemistry (4, 4, 4) General course of theoretical and descriptive chemistry for students entering modern chemistry. 1110—Modern atomic theory, chemical bonding, stoichiometry and quantitative treatment of gas laws. 1120—Quantitative aspects of solution chemistry, kinetics, chemical equilibria, and thermochemistry. 1130—Descriptive chemistry of nonmetallic and metallic elements, electrochemistry and introduction to organic and biochemistry. Must be taken in sequence. 3 hrs and 1 lab.

1118 Honors: General Chemistry (4) (See explanation above.) 3 hrs and 1 lab.

1128-38 Honors: General Chemistry (4, 4) (See explanation above.) 3 hrs and 1 lab.

1410 Chemistry for Nurses (4) Inorganic, organic, and biochemistry. Prereq: 1410. 3 hrs and 1 lab.

1420 Chemistry for Nurses (4) Aromatic compounds and biological chemistry. Prereq: 1410. 3 hrs and 1 lab.

1510-20-30 General Chemistry (4, 4, 4) Introductory course in chemistry; topics related 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 equilibria. Introduction to organic chemistry, alkanes, unsaturated and aromatic hydrocarbons. 1530—Structure and reactions of various organic functional groups. Introductory biochemistry—amino acids and proteins, carbohydrates, lipids, nucleic acids. Must be taken in sequence. 3 hrs and 1 lab.

1610-20 Chemistry and Society (4, 4) Chemistry for nonscience majors. Basic principles of chemistry: particle nature of substances, their structures and chemical changes. Must be taken in sequence. 3 hrs and 1 lab.

1630 Chemistry and Society (4) The impact of chemistry on modern society, with selected topics in geochemistry, biochemistry, organic chemistry and radiochemistry. Prereq: 1 year of General Chemistry or 1620. 3 hrs and 1 lab.


2149 Analytical Chemistry (1) Experiments on topics discussed in 2140. Coreq 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. Not open to chemistry majors or minors.

3000 Searching the Chemical Literature (2) Use of abstract journals, reference, compendia, books, chemical journals and other sources of chemical information. 2 hrs. Open only to upper division chemistry majors.

3211-21-31 Organic Chemistry (3, 3, 3) Compounds of carbon and their reactions, reaction mechanisms, spectroscopic and other physical properties. Must be taken in sequence. Coreq: 2131. Corresponding laboratory (3219-29-39) 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.

3429-39 Physical Chemistry Laboratory (1, 1) Gases, liquids, chemical equilibria, solutions, phase equilibrium, reaction kinetics and electrochemistry. The corresponding courses (3420 and 3430) are corequisites. 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. Corresponding laboratory: 3219-29-39 or 3219, 3529-39 is a corequisite; latter is recommended.

3529-39 Organic Chemistry Laboratory (1, 1) Laboratory work is done in 3221-31. Similar to 3229-39 except designed for students who have need for operating knowledge of various spectroscopic and physical techniques. Corresponding lecture (3521-31 or 3221-31) is a corequisite for students not having credit for the lecture.

3610 Radioactivity and Its Applications (3) Radioactive materials in tracer and therapeutic applications. Radioactive decay, detection apparatus and techniques, tracer procedures and safety precautions in agriculture, biology, medicine, nutrition, etc. Not for credit by chemistry or physics majors or minors. Prereq: Math 1130 or equivalent, 1 lab. X Y General Chemistry.


4119 Physical Chemistry Laboratory (1) Solutions, phase equilibria, reaction kinetics and spectroscopy. The corresponding course 4110 is corequisite.

4160-70 Intermediate Physical Chemistry (3, 3) Designed for entering graduate students who have had one year of physical chemistry. 4160--The three laws of thermodynamics, phase equilibria and solutions. 3420-Equilibria. 4170--Gas laws, 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; spectroscopic techniques. Prereq: 2140-48.

4219 Advanced Analytical Chemistry Laboratory (1) Experiments on topics discussed in 4210. Coreq 4210.

4220 Advanced Analytical Chemistry (3) Electroanalytical methods of analyses (including polarimetry, coulometry, polarography, and voltammetry); magnetic resonance methods; mass spectrometry; and X-ray absorption and fluorescence techniques. Prereq: 3140-49; 3420 or 4920 recommended.

4229 Advanced Analytical Chemistry Laboratory (1) Experiments on topics discussed in 4220. Coreq 4220.

4240 Physical Inorganic Chemistry (3) Theoretical concepts leading to an understanding of inorganic chemistry; quantum theory of the atom; principles of molecular electron structure and elementary nuclear chemistry. Prereq: 3410-20-30, 4110.

4310 Intermediate Inorganic Chemistry (3) Application of theoretical concepts to inorganic elements, their chemical states, and their reactions. Prereq: 4220.
following general courses may be substituted for language courses at the discretion of the department: Classics 3210-20, 3310-20, 4010. 4110 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 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 6 hours of Latin courses with permission of the 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 for language courses at the discretion of the department: Classics 3210-20-30, 3310, 3320, 3330. Students enrolled in the College of Liberal Arts prior to Fall Quarter, 1972, who are under the previous B.A. or B.S. curricula will find requirements for a major or minor in the 1972-73 or earlier general catalog.

1610-20 Beginning Greek (4, 4) 2610 Plato (4) 2620 Homer: Odyssey (4) 2630 Homer: Iliad (4) 2640 Greek New Testament (4) Prereq: 1620 or permission of instructor.

3010 Lyric Poetry (3) 3020 Herodotus (3) 3030 Euripides (2) 4020 Aeschylus: Sophocles (3) 4030 Demosthenes (3) 4040 Aristotle (3) 4050-60-70 Directed Readings in Greek (3, 3, 3) GRADUATE

Graduate courses in Classics include wider reading of Greek or Latin authors in a selected field, more detailed study of one of the great departments of classical literature, and development of background for appreciation of Greek or Roman life and literature.

5000 Thesis 5110-20-30 Greek Epic, Homer (3, 3, 3) 5210-20-30 Greek Drama (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 6 hours of Latin courses with permission of the 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. Students enrolled in the College of Liberal Arts prior to Fall Quarter, 1972, who are under the previous B.A. or B.S. curricula will find requirements for a major or minor in the 1972-73 or earlier general catalog.

Placement Examination: Students who transfer to The University of Tennessee from other colleges and students who enter with high school units in Latin should register for the course 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 their registration is indicated by the results.

Proficiency Examinations. Students who have acquired a knowledge of Latin through private study or tutoring should request a proficiency test. A student who earns a grade of B or better in this examination is eligible for credit toward graduation. A student who omits any course in a sequence may receive credit for it by passing the appropriate proficiency examination.

Certification for Teaching Latin in Tennessee. Consult Certification Clerk, Room 212, Claxton Education Building.

1510-20 Beginning Latin (4, 4) 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. 3110-20-30 Survey of Latin Literature (3, 3, 2) Open to those who have had three or four years of high school Latin.

3410 Plautus; Terence (3) 3420 Tacitus; Pliny (3) 3430 Tibullus; Propertius (3) 4110 Seneca, Essays and Letters, or Tragedies (3) 4120 Horace, Satires and Epistles (3) 4130 Catullus; Martial (3) 4310 Readings from Medieval Latin (3) 4320-30 Selected Readings from Latin Literature (3, 3) May be repeated for credit.

GRADUATE

5000 Thesis 5310 Seminar in Caesar (3) 5410-20-30 The Latin Epic, Lucretius, Virgil, Lucan (3, 3, 3) 5510-20-30 Roman Comedy, Plautus, Terence (3, 3, 3)

GENERAL COURSES

2710 Greek Etymology (4) Origin and derivation of words. Greek stems most commonly found in English language with special attention to words in scientific and technical vocabularies.

2720 Latin Etymology (4) Origin and derivation of words. Latin stems most commonly found in English language with special attention to words in scientific and technical vocabularies.

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 2420.

2910-20 Survey of Greek Literature in English Translation (4, 4) 2910—Homer, lyric poetry. Herodotus. 2920—Thucydides, Plato, literature of the age of Alexander.

3210-20-30 Greek and Roman Mythology (3, 3, 3) Lectures, detailed studies, reading, and reports. Ancient religious and psychological concepts and influence on later thought and literature. (Same as Religious Studies 3210-20-30.)

3310 Greek Art and Archaeology (3) Remains of ancient Crete and other Greek areas. Recent excavations in Mycenaean and Troy. Illustrated lectures.

3320 Greek Art and Archaeology (3) Masterpieces of Greek sculpture and architecture. Illustrated lectures.

3330 Roman Art and Archaeology (3) Ruins of Pompeii and of ancient Rome. Roman remains in England, France, Spain, etc. Illustrated lectures.

3340 Cities of the Greek and Roman World (4) Archaeological survey of Greek and Roman cities from 3000 B.C. to 500 A.D. with emphasis on development of city planning and quality of life. Such cities as Mycenae, Athens, Priene, Alexandria, Rome, and Lepcis Magna will be studied.

3350 Shrines and Sanctuaries of the Greek and Roman World (4) Survey of major shrines and sanctuaries of Greek and Roman world with emphasis on architectural remains. Such sites as Olympia, Epidaurus, Paestum, Cumae, Praeneste, and Baalbek will be considered. Readings in selected classical authors will add to understanding of place of great shrines and sanctuaries in Greek and Roman life.

4010 Greek Drama in English Translation (3) Survey of dramatic masterpieces of Greek literature.

4101 Foreign Study (1-16) See page

4210 Teaching of Latin (3) Carries no language credit. For description see Education, Curriculum and Instruction, 3656.

4220 Seminar in Classical Studies (3) Special problems in literatures and other arts of Greece and Rome. For graduate students and advanced undergraduates. May be repeated for credit with permission 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 permission of department.

GRADUATE

5620 Problems in Old World Archaeology (3)

Comparative Literature

See Cultural Studies.

Computer Science (263)

Professors: R. T. Gregory (Head) Ph.D. Illinois; R. E. Cline, Ph.D. Purdue; F. Donaldson (UT Science Institute); Ph.D. Texas; R. J. Pfleger, Ph.D. Auburn; G. R. Sherman, Ph.D. Purdue.

Associate Professor: C. E. Hughes, Ph.D. Pennsylvania State.

Assistant Professors: R. M. Alken, Ph.D. Northwestern; C. Haung, Ph.D. Suny (Buffalo); S. R. Jordan, Ph.D. Wisconsin; R. P. Lainius, Ph.D. Wisconsin; C. R. Pfieger, Ph.D. Pennsylvania State; J. R. Pinkert, Ph.D. Wisconsin; M. G. Thompson, Ph.D. Duke.

Computer Science offers undergraduate major and minor concentrations 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, 194 Alumni Hall or from the Liberal Arts Advising Center, 220 Ayres Hall.

Major: A major in Computer Science consists of 3150 or 3155, 4410-20-30, 4510; 15 hours from Category A; and 9 hours from Categories A and/or B. (A): CS 3030, 4010-20, 4510-60-70, 4610-20, 4850, 4910. (B) Actng: 2110-20; CS 3010, 3410, 3610, 3810; Indus. Engr. 3510-20-30; Math: 4220-30; Philos. 3810 (or Math 3100); Stat: 3450 (or Math 3050 or Math 4650). CS 4980-90 may be counted in Category B.
only when designated by the department as acceptable for CS majors. Coreq: Math 2840-50-60 or honors sequence 2848-58-68.

Minor: A minor in Computer Science consists of Computer Science 4410, 4420, 4430 plus 15 hours chosen from the following set of Computer Science courses: 2010 or 2410, 3010, 3150*, or 3158, 3410, 4010, 4320, 4330, 4510, 4610, 4620, 4850.

UNDERGRADUATE

1810-20-30 Elementary Computer Programming (1, 1, 1) Elementary computer programming using FORTRAN or comparable scientific programming languages and a business environment. Coreq: Math 2840-50 or 1848-58. 

2010 Introduction to Computer Programming (4) Computer as a tool of varied uses in modern world; emphasis on basic programming in FORTRAN. Students write programs to solve problems. Prereq: Math 1550 or 1560. Intended primarily for freshmen in Business Administration.

2810-20-30 Computer Programming (1, 1, 1) Problems in computer programming in FORTRAN or comparable scientific programming languages. Must be taken in sequence. Prereq: Math 1550 or its equivalent previously taken. Prereq: 1830 or equivalent.

3010 Computers and Society (3) History of computers, computer systems, capabilities of a computer, applications in artificial intelligence, humanities, social sciences, sciences and engineering, computing in foreign countries, computer-assisted instruction, future advances in computing, careers in computers. Prereq: Math 2850 or cores: Math 2860. Not for credit if Math 3155 or C.S. 3155 previously taken. (Same as Math 3150).

3150 Application of Digital Computers in Engineering and Science (3) Formulation of numerical problems for solution by digital computers and solution of these digital problems using FORTRAN and other digital computer languages and programming in various digital computer languages. Prereq: Math 2850 and coreq: Math 2860. Not for credit if Math 3155 or C.S. 3155 previously taken. (Same as Math 3150).

3155 Introduction to Numerical Analysis (3) Mathematics and development of techniques for numerical analysis appropriate for use on digital computers. A knowledge of FORTRAN is assumed. Prereq: Math 2850 and coreq: Math 2860. Not for credit if Math 3150 or C.S. 3150 previously taken. (Same as Math 3155).

4100 Computer Programming - Commercially Oriented (3) Computer programming in business-oriented language, such as COBOL. Prereq: Math 1550. Not for graduate credit.

4101 Computer Concepts and Control (3) Elements, operating, and control of computers in a business environment. Topics include input, storage, data manipulation, output, flowcharting, and error control. Prereq: 3410 and Accounting 2210.

4410 Discrete Structures and Logical Foundations of Computing (3) Sets, relations, ordering, Boolean algebra, propositional logic, functions and computability, functions, graph theory and its applications to computer systems; set theoretical characterizations of computing machines and machine languages. Prereq: 3150 or permission of instructor.

4020 Introduction to Algorithms, Languages, and Automata (3) Introduction to finite automata, regular languages, context-free languages, pushdown automata, Turing machine, formal languages and grammars. Prereq: 4010 or equivalent.

4150-60-70 Intermediate Applied Programming for Electrical Engineering and Science (3, 3, 3) Floating point numbers and floating point arithmetic on modern computers. Error analysis of floating point operations. Applications to the study and analysis of specific numerical algorithms such as least squares and min-max solutions to linear systems. Use of package programs in numerical software. Prereq: Math 3150 or equivalent. Must be taken in sequence.

4510 Computation in Statistical Analysis (3) Use of digital computer in standard statistical analyses, such as frequency tabulations, percentiles and data reduction, correlation and regression, analyses of variance. Elementary programming in a problem-oriented scientific language, e.g., FORTRAN. Prereq: Statistics 1700 or equivalent. 3 lectures. Not for credit for persons who have credit for a computer course.

4320 File Maintenance and Data Processing (3) Applied programming in area of students' primary interest, using the digital computer. To be directed jointly by Computer Science faculty and students' faculty advisor and written reports. Prereq: Math 3320 or equivalent. 1-3 hrs. (Not for credit for Computer Science Majors.) May be repeated for a maximum of nine hours credit.

4140 Computer Organization and Programming I (3) Problem formulation and advanced programming in procedure oriented languages such as FORTRAN and PL/I; operation and control of digital computers. Assumes knowledge of FORTRAN programming language. Prereq: 2010, 3150, or 3030 or permission of instructor.


4510 Data Structures and Nonnumeric 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, program generation and program generation structures. Prereq: 4420 or consent of instructor.

4610-20 Operating Systems (3, 3) Hardware interrupt systems and concurrent operation of input/output operations, simple input/output systems and program management, multiprogramming systems, memory management, protection, resource allocation and control, job management and task management, real time systems, time sharing systems, paging; virtual memory, schedulers, reliability; multiprocessing systems, graceful degradation, life management services, system accounting. Prereq: Math 4430.

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

4910 System Management (3) System analysis and design; system implementation; system justification; personnel in systems; perspective on systems. Prereq: Math 4420 or equivalent.

4980-90 Special Studies in Computer Science (1-4, 1-4) Credit determined at time of registration. May be repeated for credit to a maximum of 9 hours with permission of department. Prereq: recommendation of computer science staff.

GRADUATE

5000 Thesis

5010 Computer Assisted Instruction (3)

5050 Computer Modeling and Simulation of Physical Systems (3)

5110-20 Numerical Computer Applications (3, 3)

5210 Introduction to Artificial Intelligence (3)

5410 Theory of Formal Languages (3)

5420 Formal Languages and Their Relation to Automata (3)

5430 Compiler Design (3)

5540-50 Topics in Small Computer Systems (3, 3)

5750-80 Advanced Operating Systems (3, 3)

5710-20 Automatic Theory (3, 3)

5810 Information Organization and Retrieval (3)

5840-50 Introduction to Pattern Recognition (3, 3)

5910-20-30 Special Topics in Computer Science (1, 1-3, 1-3)

5970-80-90 Seminar (1-3, 1-3, 1-3)

Cultural Studies

Director: Dr. Charles Jackson

The ideal curriculum encourages not only proficiency in a given field of knowledge but also the comprehension of similarity and complementarity between areas of intellectual endeavor. One answer to the need for fusion and integration of knowledge is the interdisciplinary program. The College has joined the resources of several departments to offer a Cultural Studies major with concentrations in American Studies, Black Studies, Greek and Roman Civilization, Latin American Studies, Medieval Studies, and Women's Studies.

Cultural Studies (265)

4000 Selected Interdisciplinary Cultural Topical (1-12) Acceptable for credit in any Cultural Studies concentration or minor with the permission of the Director of Cultural Studies and the respective chairperson. May be repeated for credit up to a maximum of 12 hours.

4101 Foreign Study (1-18) Acceptable for credit in any Cultural Studies concentration or minor except Black Studies. Registration by consent of Director of Cultural Studies and the respective chairperson. See page 162.

4102 Off-Campus Study (1-18) Acceptable for credit in any Cultural Studies Concentration or minor except Black Studies. Registration by consent of Director of Cultural Studies and the respective chairperson. See page 162.

4103 Independent Study (1-18) Acceptable for credit in any Cultural Studies concentration or minor except Black Studies. Registration by consent of Director of Cultural Studies and the respective chairperson. See page 162.

American Studies (099)

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

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

3010 The American Character (3) Study of why and how Americans are as they are, drawing upon vast literature which deals with these questions.

4010 Selected Topics in American Studies (3) Seminar on topic to be determined by instructor, using an interdisciplinary approach.

Asian Studies (145)

Minor: Asian Studies 2510-20 is prerequisite to a minor which consists of 24 hours from the following courses selected in such a way as to present work in at least three of the following 9 areas: Anthropology 3510, 4500-10, 4570, 4590; Arabic 3610; Art 3775-76-77, 4875-78-77; Geography 3870; History 3760, 3810-20-30, 4870-80-90; Music 4260; Philosophy 3650, 3660, 3670; Religious Studies 3650, 3660, 3670; Political Science 3621-22; Religious Studies 3680, 3770, 4870; Spanish 4050-50-70. Students completing the minor successfully will upon application to the program chairperson be awarded the Asian Studies certificate in acknowledgement of the work. For further information consult the chairman of the Asian Studies Committee, Dr. Stephen Young.

2510-20 Asian Studies (4, 4) Introduction to cultures of Asia. Emphasis on Islamic countries, India, China, and Japan. Readings in translation from classical literature together with study of religion, art, music, and philosophy. 2510—Islamic countries and India. 2520—China and Japan.

1521-22 Elementary Chinese (4, 4) Must be taken in sequence.

2521-22 Intermediate Chinese (4, 4) Prereq: 1521-22 or equivalent or permission of instructor; must be taken in sequence.

3000 Selected Topics in Asian Studies (4)

Black Studies (195)

The Black Studies concentration and minor offer in-class, independent, and off-campus study to foster knowledge of the Black experience through a traditional academic approach as well as experiential learning. Concentration: History 1950-60 is prerequisite to a Black Studies concentration which consists of Black Studies 2010-20, Black Studies 4200, and 24 additional hours at the upper division level taken from the courses in the Black Studies curriculum. In addition to courses with Black Studies numbers, courses from at least two other departments must be selected from the list below. Minor: Black Studies 2010-20 and 16 additional hours at the upper division level taken from the courses in the Black Studies curriculum. In addition to courses with Black Studies numbers, courses from at least two other departments must be selected from the list below.

For further information consult the chairman of the Black Studies Committee, Mr. Marvin Peek.

2010-20 Introduction to Black Studies (4, 4)

3630-40 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, compusatory programs, decentralization, voucher systems; Black Studies and Freedom Schools will be discussed. 2010-20, History 1950-60 recommended. Prereq: consent of instructor.

4101 Foreign Study (1-16) See page 162.

4102 Off-Campus Study (1-16) See page 161.

4103 Independent Study (1-16) See page 162.

4200 Senior Seminar (4)

4830 Black Women in American Society (4) Historical and contemporary socio eco-political factors in American society as they relate to the Black woman. History 1950-60 recommended. Prereq: consent of instructor.

Anthropology 3530 Peoples and Cultures of Africa (3)

Anthropology 3930 Biology of the Races of Man (3)

Art 2725 Black Art (4)

CFDR 4310 The Afro-American Family (3)

English 2540 The Literature of Black America (4)

English 4610-20-30 Black Literature (3, 3, 3)

Geography 3380 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 3550 Religion and Racism in America (4)

Religious Studies 3560 Black Religion in America (4)

Sociology 3330 Race, Class, and Power (3)

Sociology 4810 Comparative Study of Race and Intergroup Relations (3)

Sociology 4820 American Minority Ethnic Groups (3)

Sociology 4980 Seminar on Poverty and Alienation (3)

Speech 4582 Black Rhetoric (4)

Recommendations for the concentration and the minor:

1. 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.

2. Students should seek academic advising from the Chairman of Black Studies for courses for the concentration or the minor which relate to career plans, preparation for graduate study, and relationship to the second major.

3. Those with a concentration and a minor are strongly encouraged to combine classroom and experiential learning through careful selection of courses, e.g. Human Services 4400 and/or Black Studies 4102.

Comparative Literature (260)

This Cultural Studies minor consists of 24 hours of work including Comparative Literature 3010, Classics 4010, Classics 4510, and 15 hours in literature courses numbered above 3000 in at least two literatures. Foreign language majors may take these 15 hours in literature in translation, but all others must take these 15 hours in a foreign language above the 3000 level. In addition to the courses listed below and literature courses offered by the participating language departments, certain courses in the departments of Philosophy, Religious Studies, and Speech and Theatre may be accepted by the Comparative Literature Committee towards the minor.

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

3010 Introduction to Comparative Literature (3)

English 2540 The Literature of Black America (4)

English 4610-20-30 Black Literature (3, 3, 3)

Geography 3380 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 3550 Religion and Racism in America (4)

Religious Studies 3560 Black Religion in America (4)

Sociology 3330 Race, Class, and Power (3)

Sociology 4810 Comparative Study of Race and Intergroup Relations (3)

Sociology 4820 American Minority Ethnic Groups (3)

Sociology 4980 Seminar on Poverty and Alienation (3)

Speech 4582 Black Rhetoric (4)

3011 Comparative Literature (3, 3, 3) Content varies; may be repeated for credit.

5012 Comparative Theories of Literature (3)

5022 Approaches in Comparative Literature (3)

5031 Studies in Comparative Literature (3)

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

Classics 4010 Greek Drama in English Translation (3)

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

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

English 3710 Literature of the English Bible (3)

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

English 4720 Folklore (3)

English 4730 Popular Ballad (3)

English 4950 Approaches to Literature (3)

English 5860 Introduction to Literary Research (3)

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

German 4030 German Drama in English Translation (3)

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

German 4050 The Faust Legend (3)

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

Romance Languages 4010 Masterpieces of French Literature in English Translation (3)

Romance Languages 4020 Masterpieces of French Drama in English Translation (3)
4970 Senior Seminar (3) Selected topics in Latin American Studies. May be repeated with permission of instructor.

Medieval Studies (674)

A concentration in Medieval Studies focuses upon society and culture from the collapse of the Roman Empire to the sixteenth century. Such a concentration offers the opportunity to deepen one's self-awareness and broaden one's view of the range of human possibilities by studying a very different and remote culture—its conditions of life, social and political institutions, values and ideals, and modes of perception and expression.

A concentration in Medieval Studies consists of Medieval Studies 2010 and 4010 and 28 hours of upper division courses concerned primarily with the medieval experience, divided among the following three categories: (1) History, Philosophy, Political Science, and Religious Studies; (2) Language and Literature; (3) The Arts—History of Art, Architecture, Music, and Speech and Theatre. Courses should not be selected at random but should either form a related pattern (for example, courses in the literature and history of Medieval England or Italy, etc.) or should revolve around a particular discipline or a closely related discipline (for example, courses in the History of Art and Architecture). A minor in Medieval Studies consists of Medieval Studies 2010 and 4010 and 16 additional hours distributed among the categories listed above for the major concentration. Each student's program, major or minor, must be approved in advance by the Medieval Studies Coordinating Committee, chairperson Sarah Bianshe, 11 McClure.

It is strongly recommended that students selecting the Medieval Studies concentration choose a foreign language option for the Triad requirement (options 1 or 2). 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, 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 given on the following page.

Russian and East European Studies (887)

There are two approaches for the student to take in designing a program with a concentration in Russian and East European Studies:

Track I is designed for students whose major interest is in a career in the academic world or some branch of government service. Prerequisites to this track are Russian 2510-20 and 2640-50. The track consists of Economics 4000; Geography 3880; six hours from History 3470-80-90, 4470; 4480 and 4490; Political Science 4815 and four hours from Political Science 3631-32, 3715; Russian 3110-20-30 or 3810-20-30; and six hours from Russian 3210-20-21-30, 3240, 3250, 3280.

Track II is designed for students whose major interest is in a career in the world of international business and/or finance specifically oriented toward trade with the Soviet Union and Eastern Europe. Prerequisites to this track are Russian 2510-20 and 2640-50. The track consists of Economics 3210, 4000, and 4230; three hours from History 3470-80-90 and three hours from History 4480, 4490, or Geography 3880; Political Science 4815 and four hours from 3631-32, 3715; Russian 3110-20-30 or 3810-20-30; Marketing 4230; and Finance 4420.

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

4010 Selected Topics in Russian and East European Studies (3) An approved course on a selected topic using a comparative approach.

Women's Studies (994)

Minor: Consists of Women's Studies 2010-20 and 16 hours in appropriate courses numbered 3000 or above. Supporting courses are drawn from several departments and colleges on the UTK campus. A list of available courses will be published annually by the Women's Studies Committee. For further information consult the chairperson of Women's Studies, Dr. Suzanne Kurtz.

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 humanism; 2020 employs that of social sciences.

Ecology (278)

J. Frank McCormick, Director.


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 biology, social sciences, mathematics and engineering. Research opportunities in both fundamental
and applied ecology are intended to prepare students for academic careers as well as professional positions in industry or government. The Environmental Sciences Division of the Oak Ridge National Laboratory and the Tennessee Valley Authority provide advisors and research facilities. The Great Smoky Mountains, Cumberland Plateau, valley and ridge topography, TVA lakes and wild rivers provide locally a spectrum of natural habitats and consequent biological diversity which is truly unique. In addition, faculty research programs provide opportunities for student research elsewhere on this continent and abroad.

ADMISION

Requirements for admission to this program are: (1) admission to the Graduate School of The University of Tennessee; (2) at least 12 quarter hours of college chemistry, 9 quarter hours of college mathematics, 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, 408 10th Street, University of Tennessee, Knoxville, Tennessee 37916.

COURSES ACCEPTABLE

IN PROGRAM

Agricultural Biology

4010 Biology of Soil Microorganisms (4)

4510 Freshwater Fishery Biology (4)

4520 Management of Lakes and Ponds (4)

Botany

4510 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)

Ecology

5000 Thesis

5100 Special Problems in Ecology (1-3)

5210-20-30 Principles of Ecology (2, 2, 2)

5310 Ecology for Planners and Engineers (3)

5320 Implementation of Environmental Policy (3)

6000 Doctoral Research and Dissertation

6100 Special Topics in Ecology (3)

Economics

4200 Economics of Resources (3)

Environmental Engineering

4700 Air Pollution-Air Resources Management (3)

Forestry

4005 Forest Ecosystems (3)

4450 Game Mammals (4)

4460 Game Birds (4)

5210 Seminar in Wildlife Conservation (3)

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<tr>
<th>Medieval Studies—Course Listing</th>
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<tbody>
<tr>
<td><strong>Category #1 History, Philosophy, Political Science and Religious Studies</strong></td>
</tr>
<tr>
<td>History</td>
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<td>3411 (3)</td>
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<td>3710 (3)</td>
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<td>3780 (3)</td>
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<td>4710-20-30 (3, 3, 3)</td>
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<td>Philosophy</td>
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<td>Political Science</td>
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<td>Religious Studies</td>
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<td>3411 (3)</td>
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<td>4610 (4)</td>
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<tr>
<th><strong>Category #2 Language and Literature</strong></th>
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<tbody>
<tr>
<td>Classics</td>
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<tr>
<td>Comparative Literature</td>
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<td>4050-60-70 (3, 3, 3)</td>
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<td>English</td>
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<td>4480 (3)</td>
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<td>French</td>
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<td>4350-60-70 (3, 3, 3)</td>
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<td>German</td>
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<td>3210 (3-4)</td>
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<td>3240 (3)</td>
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<td>Italian</td>
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<td>4330 (3)</td>
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<td>4010 (3)</td>
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<td>Spanish</td>
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<th><strong>Category #3 The Arts</strong></th>
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<td>Architecture</td>
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<td>4010 (1-8)</td>
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<td>Art</td>
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<td>2735 (4)</td>
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<td>3715 (4)</td>
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<td>3705 (4)</td>
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<td>Music</td>
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<td>4280 (3)</td>
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<td>4290 (3)</td>
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<td>Theater</td>
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Economics (283)

See Faculty list, page 72-73.

Economics courses offered in the Department of Economics of the College of Business Administration provide opportunity for a major or minor in Liberal Arts. See page 73 for description of the courses available.

Information regarding requirements for a major or minor in Economics under the revised B.A. curriculum may be obtained in the departmental office or in the Liberal Arts Advising Center, 220 Ayres Hall.

Students enrolled in the College of Liberal Arts prior to Fall Quarter, 1972, who are under the previous B.A. or B.S. curricula will find requirements for a major or minor in the 1972-73 or earlier general catalog. Latin American Studies. See Cultural Studies.

Russian and East European Studies. See Cultural Studies.

English (339)


*Alumni Distinguished Service Professor.
*John C. Hodges Professor.
*Visiting.
*On Leave.

UNDERGRADUATE

Major: (36-39 hours) Two courses in English at the 2000-level are prerequisite to a major, which consists of the following requirements:

(1) English 2150 should be taken as soon as possible after the student has elected English as a major.

(2) Upper Division courses in English (27 hours)

Nine English courses at the 3000 and 4000 level should be distributed over a broad spectrum of British and American Literature, either

(a) by taking 15 hours in the British and American upper-division surveys (9 hours in English 4990 and 6 hours from English 3010-20-30) and the remaining 12 hours in individual author and genre courses or in English linguistics; or

(b) by taking 6 hours each from the courses listed below under categories A, B, and C; with the remaining 9 hours arranged to form a coherent program.

Three hours of advanced writing (Category D below) may fulfill a part of either (a) or (b) above.

(3) Additional courses in literature or language (6-9 hours), either

(a) 6-8 hours of 3000 level literature in a foreign language; or

(b) 8-9 hours of comparative literature or foreign literature in translation, at least half at the upper-division level.

(4) Corequisites-English majors must complete the equivalent of the second (2000-level) year of a foreign language—Special Programs for the Major—The Departmental Committee on the Major is empowered to approve the individualized

programs developed by students in consultation with their advisors. These programs need not necessarily fulfill all of the requirements listed above.

Honors Program—For students who qualify, the English Department offers a program of individualized study in the fourth year, culminating in a senior thesis and comprehensive examination. If these two are passed with grades of B or better, the student will be graduated with honors in English.

CLASSIFICATION OF UPPER-DIVISION ENGLISH COURSES FOR THE MAJOR

A. To the Eighteenth Century: 3510, 3520, 3530, 3710, 3910-20, 4010-20, 4410-20, 4510, 4730, 4850, 4860, 4910-20.


C. Nineteenth and Twentieth Century: 3030, 3070, 3080, 3140, 3150, 3210-20, 3411-12-20-30, 3930, 3940, 4060, 4210-20-30, 4320-30-40, 4620, 4652, 4660, 4680.

D. Advanced Writing: 3450, 3460, 3470, 3830, 4960.

Minor: 24 hours, including at least 18 at the upper-division level.


Certification for Teaching English and Speech in Tennessee

Consult Certification Clerk, Room 212, Claxton Education Building.

General Prerequisites English 1510-20 or equivalent are prerequisite to all English courses numbered above 2000.

1111 Written and Oral English for Foreign Students (8) Rapid review of structural grammar structures and pronunciation with intensive oral and written drill. Required during the first quarter of residence of all foreign students (graduates, undergraduates, and transfer students) who are not exempted from it on basis of English Proficiency Examination required of every new foreign student. Meets 10 hours a week.

1112 Written and Oral English for Foreign Students (3) Emphasis on more advanced structures of English grammar and on paragraph writing. Required during first quarter of residence of foreign students who on English Proficiency Examination demonstrate need for work in English structure, but not at intensive level of English 1111. Meets five hours a week.

1121 English Composition for Foreign Students (3') Composition and reading for students whose native language is not English. Emphasis on organization, paragraphing and element structure, with attention to grammar and mechanics. Open to graduate students. Prereq: 1112 or recommendation based on English Proficiency Examination.

1131 English Composition for Foreign Students (3') Typical writing problems encountered by foreign undergraduate and graduate students, with attention to library research and use of research papers. Open to graduate students. Prereq: 1121 or recommendation based on English Proficiency Examination.

*English 1112-21-31 replaces English 1510-20 for undergraduate foreign students.
1510-20 English Composition (4, 4) Writing, revising, conferences; intensive reading for meaning and ways of expressing meaning. 1510—Writing with emphasis on organization, paragraph structure, style; attention to grammar and mechanics. 1520—Writing based on reading of literature, use of library and preparation of documented papers. Must be taken in sequence.

1518-28 Honors: English Composition (4, 4) For students planning on basis of placement scores and high school record. Must be taken in sequence.

1550 Research Writing (2) Use of library, forms of documentation, preparation of research paper. Prereq: English 1510-20 or the equivalent.

1520 Colloquium for English Majors (3) Introduction to methods and objectives of literary study; conferences to plan student program in major. 1520-20 English Masterpieces (4) 2510—To the mid-eighteenth century. 2520—Since the mid-eighteenth century.

2530 American Masterpieces (4)

2540 The Literature of Black America (4) Poetry, fiction, drama. Emphasis on twentieth century.

2560-70-80 Literature of the Western World (4, 4, 4) 2560—Ancient and medieval. 2570—Through the eighteenth century. 2580—Nineteenth and twentieth centuries.

2590 Special Topics (4) Content varies. Each section will deal with specific topic as it is embodied in works from several historical periods and literary genres. Topics will be announced.

2640-50 English Culture (4, 4) 2640—Beginnings to the late eighteenth century. 2650—From the late eighteenth century to the present.

2660 Introduction to Drama (4) Study of selected plays to provide critical tools necessary for understanding of drama.

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

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

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

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

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


3140 The Short Story (3) Selections vary.

3150 Melville (3)


3310 Women Writers in England and America (3) Emphasis upon the literary consciousness of women in the nineteenth and twentieth centuries.

3411-12-20-30 Modern Drama (3, 3, 3, 3) 3411—Continental to 1930. 3412—Continental since 1930. 3420—British. 3430—American. (Graduate credit normally limited to students in Speech and Theatre.)

3440 Literature and Film (3) Aesthetic relationships, emphasis upon media comparison.

3450 Writing of Fiction (3) Practice based upon analysis of modern fiction. (Sophomores admitted with instructor's written permission.)

3460 Advanced Fiction-Writing (3) Prereq: English 3450 and permission of instructor.

3470 Writing of Poetry (3) Practice based upon analysis of poetry.

3510 Sixteenth-Century Prose and Poetry (3) More and Wyatt to Spenser.

3520 Elizabethan Drama (3) Marlowe, Jonson, and others.

3530 Jacobean Drama (3) Beaumont and Fletcher to Massinger and Shirley.

3610 Restoration and Eighteenth Century Poetry (3) Emphasis upon Dryden and Pope.

3620 Restoration and Eighteenth-Century Drama (3) Dryden through Sheridan.

3630 Restoration and Eighteenth Century Prose (3) Defoe, Addison, Steele, Swift, and others.

3670 Age of Johnson (3)

3710 Literature of the English Bible (3) (Same as Religious Studies 3710)

3830 Expository Writing (3) Practice based upon analysis of modern essays. (Not offered for graduate credit; sophomores admitted with instructor's written permission.)

3910-20-30 Comparative Literature (3, 3, 3) 3910—Ancient 3920—Medieval and Renaissance. 3930—Modern.

3940 Novel of the Contemporary Western World (3) Proust, Joyce, Mann, and others.

4010-20 Shakespeare (3, 3) 4010—Early plays, c. 1590-1601, including / Henry IV, Twelfth Night, and Hamlet. 4010—Later plays, 1601-1613, with emphasis upon tragedies and dramatic romances.

4050-60 American Novel (3, 3) 4050—From earliest sentimental novels through Brown, Cooper, and Kennedy, and major figures to 1875. 4060—From Henry James and Mark Twain through Faulkner and Hemingway.

4101 Foreign Study (1-16) See page 162

4102 Off-Campus Study (3-12) See page 161.

4103 Independent Study (3-12) See page 162.

4118-28-38 Honors: Senior (3, 3, 3) Admission by permission of department.

4210-20-30 Victorian Poetry (3, 3, 3) 4210—Tennyson and Pre-Raphaelites. 4220—Browning. 4230—Arnold, Clough, Fitzgerald, and others.

4310-20-40 The British Novel (3, 3, 3) 4310—Defoe to Jane Austen. 4320—Scott to Thackeray. 4330—George Eliot to Galsworthy. 4340—James Joyce to present.

4410 Introduction to Study of English Language (3)

4420 History of English Language (3)

4430 Modern English Grammar (3) Prereq: 4410, 4420, or consent of instructor.

4440 Language in Society (3) Methodology and significant discoveries of sociolinguistics in America.

4450 Varieties of American English (3) Theories, methodologies, and findings of American dialectology.

4460 Special Topics in English Linguistics (3) May be repeated for credit with permission of depart- ment.

4510 Introduction to Literary Criticism (3)

4610-20-30 Black Literature (3, 3, 3) Trends and developments.

4651 Southern Literature from 1585 to 1860 (3) Beginning of writing in the South, especially in its relations to formation of regional or southern tradition in literature.

4652 Southern Literature from 1860 to 1970 (3) Humorists, local colorists, and realists of later nineteenth century and New South, emphasis upon southern flowering of 1920-1950, recent trends.

4660 Emerson and Thoreau (3)

4680 American Humor through Mark Twain (3)

4720 Introduction to Folklore (3)

4730 The Popular Ballad (3)

4850 Milton (3) Emphasis on major poems.

4860 Seventeenth-Century Prose and Poetry (3) Bacon and Donne to Marvell.

4910-20 Chaucer (3, 3) 4910—Early poems and Troilus and Criseyde. 4920—The Canterbury Tales.

4950 Approaches to Literature (3) Basic knowledge and techniques necessary to understand and evaluate various kinds of imaginative literature.

4960 Advanced Composition and Rhetorical Analysis (3) Reading and analysis of selected prose models, study of rhetorical principles, practice in various forms of writing.

4990 Survey of British Literature (9) Lectures, extensive reading, comprehensive examination on major works of British literature from Beowulf to middle of twentieth century.

GRADUATE

5000 Thesis

5110-20-30 Tutorial in English (1, 1, 1)

5150 Old English Prose (3)

5210-20-30 Readings in American Literature from Colonial Period to Present (3, 3, 3)

5410-20-30 Readings in Middle English Literature (3, 3, 3)

5510-20 Readings in Literary Criticism from Plato and Aristotle to Present (3, 3)

5810-20-30 Readings in English Literature of Nineteenth Century (3, 3, 3)

5710-20-30 Readings in English Literature of Eighteenth Century (3, 3, 3)

5810-20-30 Readings in English Literature of Renaissance (3, 3, 3)

5880 Introduction to Literary Research (3)

5910-20-30 Readings in English and American Literature of Twentieth Century (3, 3, 3)

6000 Doctoral Research and Dissertation

6110-20-30 Studies in Elizabethan Literature (3, 3, 3)

6150 Old English Poetry (3)

6160 Beowulf (3)

6170 Studies in Middle English (3)

6181-82-83 Studies in the English Language (3, 3, 3)

6210-20-30 Studies in American Literature (3, 3, 3)

6241 Studies in Colonial American Literature (3, 3, 3)

6242 Studies in Colonial American Literature (3, 3, 3)

6250-60 Studies in Bryant, Longfellow, Lowell, Holmes, Whittier, and Twa (3, 3)

6270-80 Studies in American Fiction (3, 3)

6310-20-30 Studies in Victorian Literature (3, 3, 3)

6410-20-30 Studies in Modern Period (3, 3, 3)

6510-20-30 Studies in Spencer and Milton (3, 3, 3)

6810-20-30 Studies in English Romanticism (3, 3, 3)

6710-20-30 Studies in Eighteenth-Century Literature (3, 3, 3)

6810-20-30 Studies in Drama and Theatre (3, 3, 3)

6890-20-30 Studies in Twentieth-Century Literature (3, 3, 3)

French

See Romance Languages
Geography (415)

Professors:  
E. H. Hammond (Head), Ph.D., California (Berkeley);  
S. R. Jumper, Ph.D., Tennessee;  
R. G. Long, Ph.D., Northwestern;  
T. H. Schmudder, Ph.D., Wisconsin.

Associate Professors:  
C. S. Aiken, Ph.D., Georgia;  
L. W. Brinkman, Jr., Ph.D., Wisconsin;  
J. B. Rehefer, Ph.D., Louisiana State.

Assistant Professors:  
T. L. Bell, Ph.D., Iowa;  
J. R. Carter, Ph.D., Georgia W. N. Cherry, M.S., Tennessee;  
D. W. Cooke, M.S., Tennessee.

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 4100, 4210, 4710 and 4990, and an additional 24 hours selected from courses at the 3000- and 4000-level. At least one course must be selected from each of groups A, B, C, D and D below:

A. Physical Geography: 3520, 3530, 4540, 4550

B. Economic Geography: 3410, 3430, 3490, 4610, 4630

C. Cultural Geography: 3450, 3610, 3660, 4240

D. Regional Geography: 3790, 3800, 3810, 3840, 3870, 3980, 3910, 3920, 3930

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

Students wishing to major or minor in geography are strongly urged to consult with a departmental undergraduate advisor. Through choices available within the structure of the major and by appropriate selection of electives outside the department, each student may develop a coherent program in accordance with his 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 or the history, culture or economy of a particular area.

Students enrolled in the College of Liberal Arts prior to Fall Quarter, 1972, who are under the previous B.A. or B.S. curricula will find requirements for a major or minor in the 1972-73 or earlier general catalog.

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. Must be taken in sequence. Not open to students who have taken 1110-20.

1720-30 Elements of Geography (3, 3) Role of places and patterns in understanding man in his environment. Man and his activities.

1810-20 Geography of the Natural Environment (4, 4) Characteristics and processes of earth’s surface and lower atmosphere; their interaction to produce world pattern of distinctive environments significant to man. Must be taken in sequence. 1810 not open to students who have taken 1710.

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

2200 Meterology (4) Introduction to dynamic atmosphere and resulting weather events. Nature of individual weather elements, their measurement and analysis over time and space. Not open to students who have taken 3510.

2400 Geography of Population (4) World population pattern; regional socio-economic characteristics and demographic trends; relationship to resource base. Not open to students who have taken 4410.

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


3430 Urban Geography (4) Concepts and theories concerning development and significance of systems of cities and urban 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 America.

3490 Conservation and Management of Resources (4) Policies, problems, and prospects of resource availability and utilization. Emphasis on locational relationships. Not open to students who have taken 4640 or 4650.

3520 The Atmospheric System and Man (4) Overview of general circulation system leading to world patterns of climates. Role of climate in agriculture, architecture, human comfort, and economic activity.

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

3610 Political Geography (4) Importance of geographic factors in understanding political relations within and between nations; specific implications of political decision-making process; geography of administrative units.

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

3790 Geography of Middle America (4) Covers Mexico, Central America, and the West Indies.

3800 Geography of South America (4)

3810 Geography of Europe (4)

3830 Geography of Africa (3)

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 Southwest Pacific.

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

3880 Geography of the Soviet Union (4)

3910 Regional Geography of United States and Canada (4) Major physical, economic, and social distributions and their relationship to the distinctive character of regions of United States and Canada. Not open to students who have taken 3710 or 3720.

3920 Geography of the American South (4)

3930 Geography of Tennessee (4)

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

4100 Quantitative Methods in Geography (4) Geographic applications of statistical techniques, point pattern analysis and analysis of areal units. Prereq: Mathematics 3000 or permission of instructor.

4101 Foreign Study (1-18) See page 162.

4102 Off-Campus Study (1-18) See page 161.

4103 Independent Study (1-18) See page 162.

4210 Problems in Regional Geography (4) Definition and development of general concept and its place in field of geography. Methods and examples of regionalization. Each student works independently on specific problem in regionalization. (Not open for credit to graduate majors in geography.)

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 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).

4540 Geographical Analysis of Land-Surface Form (4) Properties of land surface, their significance and factors that control regional variation. Emphasis upon techniques of analysis and classification, applicable also to other geographical phenomena. 3530 or 4510 recommended.

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 permission of instructor.

4630 Geography of Agriculture (4)

4710 Cartography (4) Map construction, map reproduction, and practice in map drawing.

4720 Data Mapping (4) Methods of representing spatial distributions by maps and graphs. Mappable data may include phenomena as diverse as birth rates, voting patterns, and air pollution levels. Prereq: Junior standing or permission 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: Permission of instructor.

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

Master’s Program
The general requirements for the Master's degree are given in the Graduate School Catalog.

Doctoral Program

General requirements for Doctor's degree are given in the Graduate School Catalog.

5000 Thesis
5150 Introduction to Geographical Research (3)
5190 Research Design to Field Problems (4-6)
5170 Geographical Concept and Method (3)
5200 Special Problems in Geography (3)
5250 Advanced Historical Geography (3)
5260 Advanced Cultural Geography (3)
5310 Advanced Regional Geography of United States (3)
5320 Advanced Regional Geography of the South (3)
5410-20 Advanced Economic Geography (3, 3)
5450 Advanced Industrial Geography (3)
5520 Advanced Urban Geography (3)
5550 Advanced Physical Geography (3)
5610 Selected Topics in Climatology (3)
5710 Seminar in Geography (3)
5720 Topics in Quantitative Geography (3)
5910 History of Geography (3)
5915 Regional Geomorphology (4)
6000 Doctoral Research and Dissertation
6110-20 Seminar in Economic Geography (3, 3)
6220-30 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

Professors:
D. W. Byerly, Ph.D., Tennessee; J. H. Rule, Ph.D., Missouri; W. P. Steub, Ph.D., Iowa State.

Assistant Professors:
K. A. Taylor, Ph.D., Lehig; K. R. Walker, Ph.D., Yale.

The Department of Geology 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 major requirements set forth below are designed to provide geology majors with a broad base from which qualified students may proceed to specialization 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 his program by a departmental advisor. A list of advisors is available in the departmental office.

UNDERGRADUATE

Major: Geology 1510 and 1520 are prerequisite to a major which consists of Geology 3160, 3260, 3360, 3370 and at least 24 hours selected in addition in upper-division courses in Geology chosen to include at least twelve 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 1510 and 1520 are prerequisite to a minor which consists of at least twenty-four hours in courses numbered 2000 and above.

Students enrolled in the College of Liberal Arts prior to Fall Quarter, 1972, who are under the previous B.A. or B.S. curricula will find requirements for a major or minor in the 1972-73 or earlier general catalog.

Geology (424)

1000 Frontiers in Earth and Planetary Sciences (4)
Recent developments in earth science of interest to the public. Designed for non-majors; treats popular topics such as discoveries on moon by Apollo missions, earthquake prediction, and drifting of continents.

*Mathematics 1840-50 has prerequisites of 2 years high school algebra and one semester of trigonometry or equivalent. Students who are deficient in these subjects may need to take Mathematics 0150 and/or 1500 prior to enrolling in Mathematics 1840-50. Consult Mathematics section of this catalog or the Department of Mathematics for details.

1510 Geoscience I (4) Introduction to study of the earth's surface, emphasis upon its materials and processes which change it. 3 hrs and 1 2-hr lab or field period.
1520 Geoscience II (4) Continuation of Geoscience I emphasizing changes of the earth and its inhabitants throughout time. Prereq: 1510. 3 hrs and 1 2-hr lab or field period.
1810-20 Introductory Geology (4, 4) Introductory course sequence emphasizing geologic principles and methods of study, 1810-Earth, its materials and processes that change it, 1820-Origin and development of earth and life upon it. Designed for students with strong interest in science, course is taught by team of specialists, each representing a major area in his area of specialization. Laboratory and field trips provide opportunities to apply principles and methods of study to specific geologic problems. Must be taken in sequence. Students having begun 1810 may change into 1810-20 sequence and vice versa. 3 hrs. and one 2-hr. lab or field period.
2130 Geological History of the Earth (4) Origin and evolution of continents, atmosphere, oceans and earth's inhabitants with emphasis on physical history of North America. Prereq: 1520. 3 hrs and 1 lab or field period.
2210 History of Life on Earth (4) Chronological account of origin and evolution of life, its environment, and societal patterns. Not intended for Geology majors. 3 hrs and 1 lab or field period.
2610 Introductory Geology for Engineers (3) Materials and structure 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 oceans and their biological and physical processes within ocean basins and their contained water and sediment masses. 1510 or 1810 recommended.
3160 Introduction to Earth Materials (4) Introduction to study of minerals, rocks, and soils. Laboratory includes study of rocks and soils, and analysis of identification of important rock-forming and economic minerals and major rock and soil types. Prereq: 1510. 2 lectures and 2 labs.
3180 Mineralogy (4) Classification and identification of silicates, carbonates, and associated minerals. Minerals as phases in natural systems. Laboratory includes hand specimen, chemical and x-ray methods of identification. Prereq: 3160. Chemistry 1110-20 or equivalent. 2 lectures and 2 labs.
3210-20 Invertebrate Paleontology (4, 4) Systematic review of important invertebrate fossil groups. 3210—Protista to Brachiopoda, including sponges, coelenterates and bryozoans. 3220—Phoronida to Hemichordata, including annelids, molluscan, and echinoderms. May be taken separately or in any order. Prereq: 3260; Biology 1110-20 or permission of instructor. 3 hrs and 1 lab or field period.
3250 Micro paleontology (4) Microscopic remains of animals and plants with special emphasis on stratigraphically important groups. Prereq: 3210 or permission of instructor. 3 hrs and 1 lab.
3260 Protozoology (4) Introduction to principles and materials of paleontology as applied to interpretation of earth history. Prereq: 1520; Biology 1210-20, or permission of instructor. 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
groups and (2) chronological succession and geographic distribution of past floras on earth. Prereq: 1520 or 2210; Botany 3010-20 or permission of instructor. 3 lectures and 1 lab or field period. (Same as Botany 4240)

4310 Geologic Mapping (3) Interpretation of maps and methods of geologic mapping. Prereq: 12 quarter hours of Geology.

4370 Tectonic Styles (4) Elements, habitats, and geotectonic causes of basic styles of tectonic deformation are presented on maps, sections, aerial photographs and fabric diagrams. 3 lectures and 1 seminar or lab. Prereq: 3370 or permission of instructor.

4460 Geologic Photography and Photogrammetry (4) Principles of terrestrial and aerial geologic photography, including photographic principles and practice, geometry of terrestrial and aerial and image interpretation. Prereq: 3370 or permission of instructor. 3 lectures and 1 lab.

4510 Principles of Geomorphology (4) Gradational processes acting on earth's surface and landforms produced. Prereq: 1110-20 or permission of instructor. 3 hrs and 1 lab.

4610 Principles of Geochemistry (4) Application of chemical principles to geologic problems. Emphasis on crystal chemistry and relation between basic atomic structure and distribution and behavior of elements in the earth's crust. Prereq: Chemistry 1110-20 (equivalent required). Recommend 3160.

4650 Mineral Phase Equilibria (3) Principles of phase chemistry and application of phase equilibria studies in rock-forming mineral systems as aid to understanding conditions of formation and modification of rocks. Prereq: 3310 or permission of instructor.

4860 Electron Microprobe Analysis: Theory and Application (3) Techniques and applicability of electron probe in chemical analysis; emphasis on applications in the earth sciences. Prereq: 3310 or permission of instructor. 2 lectures and 1 lab.

4710 Petrophysics (3) Fluid, heat, electric current and pressure flow through rock masses in a potential field. Stress-strain behavior of rock as a function of temperature and pressure. 3 lectures a week. Prereq: 3310, Mathematics 1830, Physics 1330. Recommended: Mathematics 2610 and 2820.

4760 Global Tectonics (3) Earth's gravity field, seismology and internal structure of earth; geodynamic field, paleomagnetism, radioactivity and age of earth; earth's internal heat, creep and tectonics. 3 lectures a week. Prereq: 4115 or permission of instructor.

4810 Special Problems in Geology (1-4) Prereq: Permission of instructor. May be repeated to a maximum of 4 hours credit.

GRADUATE

Master's Program

General requirements for Master's degree given in the Graduate School Catalog.

Doctoral Program

General requirements for Doctor's degree given in the Graduate School Catalog.

5000 Thesis

5050 Geochemistry of Ore Mineral Deposits (3)

5060 Experimental Geochemistry (3)

5069 Experimental Geochemistry Laboratory (1-3)

5120 Geophysics-Gravity and Magnetic Methods (4)

5130 Geophysics-Seismic Exploration Methods (4)

5210-20 Special Problems in Geology (1, 2-4, 1-4).

5290 Quaternary Problems (4)

5310 Principles of Stratigraphy (4)

5320-30 Advanced Historical Geology (3, 3)

5340 Seminar in Local Stratigraphy

5350-60 Selected Topics in Geology (1, 1)

5370 Regional and Field Tectonics (4)

5460 Photogeologic Interpretation (4)

5510 Optical Mineralogy (4)

5520 Igneous Petrology (4)

5530 Metamorphic Petrology (4)

5540 Non-carbonate Sedimentary Petrology and Basin Analysis (4)

5550 Carbonate Sedimentology (4)

5630 X-ray Diffraction and Spectroscopy (4)

5640 Clay Mineralogy (4)

5650 Thermodynamics for Geologists (3)

5660 Chemical Geochemistry (3)

5670 Geochemical Prospecting (3)

5710 Advanced Paleontology (4)

5750 Petrophysics (3)

5810 Geology of Fuels (3)

5820 Metallic Mineral Deposits (4)

5830 Non-metallic Mineral Deposits (4)

5840 Ore Microscopy (4)

5850 Regional Studies in Economic Geology (3)

5915 Regional Geomorphology (4)

6000 Doctoral Research and Dissertation

6110-20-30 Seminar in Stratigraphic Geology (3, 3, 3)

6210-20-30 Seminar in Paleontology (3, 3, 3)

6310-20-30 Seminar in Structural Geology (3, 3, 3)

6410-20-30 Seminar in Mineralogy (3, 3, 3)

6510-20-30 Seminar in Petrology (3, 3, 3)

6610-20-30 Seminar in Economic Geology (3, 3, 3)

6710-20-30 Seminar in Geochemistry (3, 3, 3)

6810-20-30 Seminar in Economic Geology (3, 3, 3)

Germanic and Slavic Languages

Professors:
H. Kraitz (Heidelberg), Ph.D. Ohio State; H. W. Fuller, Ph.D. Wisconsin; E. T. Hancock (Emeritus), Ph.D. Bonn (Germany); R. L. Hillier, Ph.D. Cornell; R. L. Nordaleck, Ph.D. Ohio State; J. C. Osborne, Ph.D. Northwestern.

Associate Professors:

Assistant Professors:
J. S. Elliott, Ph.D. Michigan; D. M. Faust, Ph.D. Indiana; N. A. LaMunce, Ph.D. Wisconsin; C. J. Mallory, Ph.D. Chicago.

Instructors:

UNDERGRADUATE

Placement Examination: Students who have had previous work in German or Russian
either in high school or in another college should register for the course in which they would normally be placed. During the first week of the quarter a placement test will be given, and students will be advised if a change in registration is indicated.

Proficiency Examinations: Students who have acquired a knowledge of German or Russian through private study, tutoring, residence in foreign countries, or the like, should request a proficiency test. A student earning a grade of C or better on such a test will receive credit for a limited number of courses. Superior students are encouraged to proceed as rapidly as their achievement permits. Students who omit any course in a subject for which they 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 the University of Tennessee. For qualified students, the department also offers German 4101 Foreign Study and Russian 4101 Foreign Study. See page 162. Students should consult the department before registering for the foreign study course.

German

Major: Majors or Minors in German should carefully prepare their programs in consultation with the departmental faculty adviser. German 2510-20 or 2520-40 or the equivalent is a prerequisite to the major and minor. The major concentration shall consist of at least 36 hours of German in courses numbered above 2000, usually including German 3110-20-30 (or 3410-20-30), 3810-20-30, 9 hours of German literature in courses numbered above 4000 and 9 additional hours of courses numbered above 3000, excluding 3010-20-30 and courses in English translation.

It is recommended that German majors also take History 1510-20 or 3710-20-30 and 8 hours of Sophomore English. Majors are also strongly encouraged to minor in some other area of the humanities.

German 2510-20, 2520-40 or its equivalent is a prerequisite to the minor. The minor concentration shall consist of at least 24 hours of German in courses numbered above 2000, which will normally include German 3110-20-30 (or 3410-20-30), and 15 additional hours of courses numbered above 3000, excluding 3010-20-30 and courses in English translation.

Russian

Major: Russian majors should carefully prepare their programs in consultation with the departmental faculty adviser. Russian 2510-20 or its equivalent is a prerequisite to the major. Russian 2640-50 is a corequisite to the major. The major itself consists of 36 hours of Russian courses, including Russian 3110-20-30, 3810-20-30, 9 hours from Russian 3210-20-21-30, 3240, 3250, 3260, and 9 hours of courses numbered above 4000. It is recommended that majors also take History 3470-80-90 and 9 hours of sophomore English. Majors are urged to consider a minor in some other area of the humanities.

Minor: Russian 2510-20 or its equivalent is a prerequisite to the minor. The minor consists of 28 hours of Russian courses, including 8 hours from Russian 2640-50 and/or 3210-20-21-30, 3240, 3250, 3260 and 18 hours to be taken from Russian 3110-20-30, 3810-20-30 and courses numbered above 4000.

Students enrolled in the College of Liberal Arts prior to Fall Quarter, 1972, who are under the previous B.A. or B.S. curricula will find requirements for their major in the 1972-73 or earlier general catalog.

Russian and East European Studies. See Cultural Studies.

Certification for Teaching German and Russian in Tennessee

Consult Certification Clerk, Room 212, Chlaxton Education Building.

German (433)

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

1518-2518-28 Honors: Elementary and Intermediate German (4, 4) Must be taken in sequence. Freshmen are admitted on the basis of high school average and performance on the American Placement Testing Program. Upperclassmen must have a B average. A grade of C or above must be achieved in 1518 in order to continue with 2518. A student obtaining a grade of D or better in 1518 may continue with German 1520. This sequence is equivalent to 1510-20 and 2510-20 and its completion allows the student to enter all 3000 level German courses.

2510-20 Intermediate German (4, 4) Must be taken in sequence. Students who have had two units of German in high school or one year in college and who wish to continue Intermediate German after some lapse of time are given the opportunity of enrolling in a five-hour per week section of German 2510-20. In this class they will have the benefit of a controlled review of the basic essentials of Elementary German.

2530-40 Intermediate German (4, 4) For students in Science-Medical Curriculum or B.S. Curricula in natural science; must be taken in sequence.

3010-20-30 Elements of German for Upper Division and Graduate Students (3, 3, 3) For graduate students preparing for language examinations. Upper Division undergraduates desiring reading knowledge of second foreign language. Prereq. Two years of some foreign language in college or permission of department. Undergraduate credit only. No credit for students having completed 1110-20-30.

3110-20-30 Introduction to German Literature (3, 3, 3) Prereq: 2130 or equivalent.

3410-20 Readings in Modern and Contemporary German Literature (3, 3) Prereq: 2310 or equivalent.

3610-20 German Civilization (3, 3, 3) Prereq: 2130 or equivalent.

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

ADVANCED UNDERGRADUATE AND GRADUATE

4101 Foreign Study (1-16) See page 162.

4102 Off-Campus Study (1-13) See page 161.

4103 Independent Study (1-16) See page 162.

4110-20-30 Studies in Classical and Modern Writers (3, 3, 3) Content varies. May be repeated for credit with permission of department. Prereq: 9 hours of 3000 courses (exclusive of 3010-20-30, 3210-20-30, 3310) or equivalent.

4140-50 Selected Topics in German Literature from 1150 to the Present (2-3) Prereq: 9 hours of 3000 courses (exclusive of 3010-20-30 and 3210-20-30) or equivalent.

4160 Studies in German Authors (3) Life and works of six outside authors, not a figure. Content varies. May be repeated for credit. Prereq: 9 hours of 3000 courses (exclusive of 3010-20-30 and 3210-20-30.)

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

4210-20-30 Studies in German Literary Types (3, 3, 3) 4210—Lyric Poetry, 4220—Drama, 4230—Narrative Prose. Prereq. 9 hrs of 3000 courses (exclusive of 3010-20-30, 3210-20-30, 3310) or equivalent.

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

4260 Introduction to Historical and Comparative Linguistics (3) Linguistic change, proto-languages. Phonological and morphological change. Cultural, historical, sociological influences upon the development of language. Semantic change. Lexicography. All these topics copiously illustrated by selected examples from Indo-European languages. Prereq: 9 hrs of upper division English, or 9 hrs of upper division courses in a modern or ancient language (exclusive of German and French). 2110-30, 2130-30, 2210-30, and 2710-30, or 2720-30. Prereq: 9 hrs of 3000 courses in Latin and Greek requiring no knowledge of these languages, or permission of department. (Same as Russian, French and Spanish 4260.)

4270 Introduction to Germanic Linguistics (3) Phonetics and phonemics of German. German grammar and Germanic morphology from a descriptive point of view. Diaclects of German. Introduction to study of other Germanic languages.

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

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 permission of department.

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

GENERAL COURSES

2640-50 Culture of German-Speaking Peoples (4, 4) Studies in culture and history of German-speaking peoples from their first contact with Romans to the present. Readings are in English language.

3210-20-30 German Literature in English Translation (3-4, 3-4, 3-4) No foreign language credit. No change in credit hours after add deadline. Students opting for 4 credits will be expected to present an appropriate amount of extra work that required for 3 hours.

3240 Old Norse Literature in English Translation (3-4) Prose readings of sagas of Norwegian kings, great Icelandic family sagas, and Viinland sagas, narrating discovery of America around the year 1000. Mythological and heroic poems of the Edda.

3250 Modern Scandinavian Literature in English Translation (3) Introduction to modern literature of Sweden, Norway, Denmark, and Iceland. Representative readings by such writers as Ibsen, Strindberg, Lageriib, Hamsun, Vesaas, Lagerkvist, Bang, Nexo, Laxness.

3260 German Drama in English Translation (3) From Lessing to present.

3270 Modern German Novel in English Translation (3) From 1900 to present; Remarque, Hesse, Mann, Kafka, Frisch, B5i, Grass. No foreign language credit.
3280 Goethe’s Faust in English Translation (3) Intensive study of Faust I and II and survey of criticism and interpretations of the work. No foreign language credit.

3310 Dramas of Bertolt Brecht (3-4) Chronological survey 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 twentieth century drama. Works are read in English translation. No foreign language credit.

4050 The Faust Legend (3) Survey of development of the legend from Faust chappbook to present, excluding Goethe’s Faust. No foreign language 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 School Catalog.

5000 Thesis

5100 German Phonetics and Advanced Grammar (3)

5160 Introduction to German Semantics (3)

5200 Prossemear (3)

5210-20-30 College Teaching of German (1, 1, 1)

5410-20-30 Medieval German Language and Literature (3, 3, 3)

5510 German Humanism and Reformation (3)

5520 German Baroque Literature (3)

5530 The Enlightenment and the Rococo (3)

5540 German Classicism (3)

5550 Goethe’s Faust (3)

5560 German Romanticism (3)

5570 German Realism and Naturalism (3)

5580 Modern German Literature (1889-1945) (3)

5590 Modern German Literature (1945-Present) (3)

5600 German Literary Theory and Criticism (3)

5610-20-30-40-50-60 Directed Readings in German Language and Literature (3, 3, 3, 3, 3, 3)

5710 Introduction to Old Norse (3)

5720 Readings in Old Norse Prose (3)

5730 Readings in Old Norse Poetry (3)

6000 Doctoral Research and Dissertation

6100 Gothic (3)

6120-30 Old High German (3, 3)

6140 Old Saxony (3)

6210-20-30-40-50-60 Seminar in German Literature (3, 3, 3, 3, 3, 3)

6310-20-30 Seminar in German and Germanic Philology (3, 3, 3)

**Russian (886)**

**UNDERGRADUATE**

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

1610-20 Elementary Serbo-Croatian (4, 4) Must be taken in sequence.

2510-20 Intermediate Russian (4, 4) Must be taken in sequence.

2670-86 Intermediate Serbo-Croatian (4, 4) Must be taken in sequence.

3010-20-30 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 yrs of some foreign language in college or permission of department. Undergraduates credit only. No credit for students having completed 1110-20-30 or equivalent.

3110-20-30 Introduction to Russian Literature (3, 3, 3) 3110—Russian Poetry. 3120—Russian Short Stories. 3130—Russian Short Novels.

3310 Russian Scientific and Technical Literature (3) Prereq: 2130 or equivalent.

3810-20-30 Russian Composition and Conversation (3, 3, 3) Practice in writing and speaking; grammar review and vocabulary building.

**ADVANCED UNDERGRADUATE AND GRADUATE**

4010 Selected Topics in Russian and East European Studies (3) Interdisciplinary seminar on selected topic using comparative approach.

4101 Foreign Study (1-16) See page 162.

4102 Off-Campus Study (1-16) See page 161.

4103 Independent Study (1-16) See page 162.

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


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

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

4270 Introduction to Slavic Linguistics (3)

4310-20-30 Advanced Studies in Russian Language (3, 3, 3) Intended primarily for students majoring or minoring in Russian who are 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 student of Russian.

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 relating to student’s major field. Prereq: 9 hrs of 3000 level courses in Russian (exclusive of 3010-20-30, 3210-20-30, or equivalent).

**GENERAL COURSES**

2640-50 Background and Main Currents of Russian Culture (4, 4) A broad interdisciplinary approach to the appreciation of the language, religion, literature, art, music, history, geography, and social preconditions of Russia. No knowledge of Russian required. May not be taken for foreign language credit.

3210-20-21-30 Survey of Russian Literature in English Translation (3-4, 3-4, 3-4, 3-4, 3-4) 3210—Russian realism; development of nineteenth-century novel; selections from works of Pushkin, Lermontov, Leskov, Goncharov, Chernyshevsky, and others. 3220—Works of Leo Tolstoy. 3221—Works of F. M. Dostoevsky.

3320—Twentieth-century Russian literature; on eve of revolution and under Soviets.

3324 The Russian Drama in English Translation (3-4) Selections from works of Konvitz, Gribedov, Pushkin, Gogol, Ostrovsky, Turgenev, Chekhov, and others.

3325 The Works of Ivan Turgenev and Anton Chekhov in English Translation (3-4)

3326 Russian Folklore in English Translation (3-4)

3327 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.)

**Greek**

See Classics.

**Greek And Roman Civilization**

See Cultural Studies.

**Hebrew**

See Religious Studies.

**History (462)**

Professors: L. P. Graf (Head), Ph.D. Harvard; G. Brooker, Ph.D. Minnesota; E. V. Chmielewski, Ph.D. Harvard; H. S. Fink (Emeritus), Ph.D., Princeton; Y.-P. Hao, Ph.D. Harvard; A. G. Haas, Ph.D. Chicago; R. W. Haskins, Ph.D. California (Berkeley); J. W. Hoffmann (Emeritus), Ph.D., Chicago; M. M. Klein, Ph.D. Columbia; R. C. Marius, Ph.D. Yale; R. Stephans (Emeritus), Ph.D., Indiana.

Associate Professors: P. H. Bergeron, Ph.D. Vanderbilt; J. D. Bing, Ph.D. Indiana; J. C. Daniel, Ph.D. Maryland; R. E. Dunan, Ph.D. California (Berkeley); C. O. Jackson (Assistant Dean of the College of Liberal Arts), Ph.D. Emory; C. W. Johnson, Ph.D. Pennsylvania; P. A. Marr, Ph.D. Harvard; M. J. McDonald, Ph.D. Pennsylvania; J. Muldowney, Ph.D. Yale; P. J. Pinckney, Ph.D. Vanderbilt; E. H. Trainer, Ph.D. Emory; W. B. Wheeler, Ph.D. Virginia.


* * * Distinguished Professor.

*On leave.

**UNDERGRADUATE**

**Major:** History 1510-20 (or honors equivalent) is prerequisite to a major which consists of 36 hours including 8 hours of History 2510-20 and 28 hours of upper-division courses chosen so that the student presents a minimum of 8 upper-division hours in two of the following groups: (a) European; (b) United States; (c) Other Areas; e.g. Latin American, Asian, etc. Students may use only two of the three History Colloquia (4010, General; 4011, European; 4012, American) toward the 36 hours of the major. (Honors Major) Consists of 45 hours: 36 hours of courses including group requirement in Major statement and History 4018-28-38; plus History 3018-28-38.
4770 Cities and Urbanization in American History (3) Origins, growth and influence of American cities in development of the nation, from colonial era to present.

4710-20-30 Medieval History, 500-1400 (3, 3, 3) 4710—Early Medieval period to Revival of Empire in 962. 4720—962 to Renaissance of twelfth century. 4730—Renaissance of twelfth century to Italian Renaissance.

4740 The City in Europe, ca. 1200, 1900 (3) Survey of European urban growth, with comparative analysis of major periods of urbanization of thirteenth and nineteenth centuries. Emphasis on relationship between demographic, economic and social foundations of cities and political and cultural developments.

4770-80 Austria and Central Europe (3, 3) 4770—To 1867. 4780—Since 1867.

4811-21 History of Japan (4, 4)

4840 History of Mexico (3)

4850 History of the Caribbean (3) Caribbean region from discovery and colonization to contemporary times.

4870-80-90 China (3, 3, 3) 4870—Cultural History of China. 4880—History of Modern China. 4890—History of Contemporary China.


GRADUATE

A student who enrolls in the Graduate School with intention of obtaining an advanced degree in history shall have completed an undergraduate major in history or its equivalent.

The Master's Program

General requirements for the Master of Arts and Master of Arts in College Teaching, degrees are found in the Graduate School Catalog.

The Doctoral Program

General requirements for the Doctor's degree are found in the Graduate School Catalog.

5000 Thesis

5211-12-13-14-15-16-17-18-19 M.A. Reading Courses (3, 3, 3, 3, 3, 3, 3, 3, 3, 3)

5221-22-23-24 M.A. Reading Courses (3, 3, 3, 3)

5240 Introduction to Historical Research (3)

5250 European Historiography (3)

5260 American Historiography (3)

5271-72-73 Teaching of College History (0, 0, 3)

5280 Philosophy and Methodology (3)

5300 Topics in History (3)

5350 U.S. and the Far East (3)

5360 Topics in American Foreign Relations (3)

5410 Topics in Early Modern European History (3)

5440 Revolution and Restoration in Central Europe, 1780-1850 (3)

5444 Topics in French History (3)

5445 Topics in Nineteenth Century European History (3)

5450 Topics in Twentieth Century European History (3)

5480 Topics in Russian History (3)

5510 Topics in Tudor-Stuart England (3)

5520 Topics in Modern English History (3)

5550 Reaction and Reform in England, 1780-1848 (3)

5560 Anglo-Irish Relations (3)

5640 Topics in American Social and Cultural History (3)

5645 Topics in American Urban History (3)

5650 Topics in American Westward Movement (3)

5660 Topics in Negro History (3)

5670 Topics in American Colonial History (3)

5675 Topics in the Early National Period of American History (3)

5680 Topics in Nineteenth Century American History (3)

5690 Topics in Twentieth Century American History (3)

5710 History of Crusades (3)

5720 Topics in Medieval History (3)

5740 Topics in European Urban History (3)

5750 Topics in Ancient History (3)

5780 Topics in German National Socialism (3)

5810 Topics in Andean History (3)

5820 Topics in Mexican History (3)

5850 Topics in Chinese History (3)

5860 Topics in Japanese History (3)

5910-20 Topics in Southern History (3, 3)

6000 Doctoral Research and Dissertation

6210-20-30-40 Directed Readings (3, 3, 3, 3)

6300 Seminar in Special Studies (3)

6310 Seminar in Tennessee History (3)

6350 Seminar in American Diplomatic History (3)

6410-20 Seminar in Western Europe (3, 3)

6440 Seminar in French History (3)

6480 Seminar in Russian History (3)

6510 Seminar in English History (3)

6610 Seminar in American Colonial History (3)

6620 Seminar in Era of American Revolution (3)

6640 Seminar in Social and Cultural History of the United States (3)

6650 Seminar in American Westward Movement (3)

6710 Seminar in Medieval Institutions (3)

6740 Seminar in the Crusades (3)

6770 Seminar in Central European History (3)

6810 Seminar in Latin American History (3)

6910 Seminar in the Civil War Era (3)

6930 Seminar in Twentieth-Century America (3)

6940 Seminar in History of the South (3)

6960 Seminar in Negro History (3)

Honors Program (509)

Director: Dr. Harry Jacobson

Non-Departmental

The following courses are restricted to students who have been selected to participate. Invitation to participate in Honors 1118 is based on high school averages, test scores, and applications. Participation in Honors 1128 or 1138 and in the upperclass courses is based upon college averages and interviews.

1118-28-38 Honors: Freshman—Men and Ideas (2-4, 2-4, 2-4) 1118—The Nature of Man; the individual and his philosophical and aesthetic development. 1128—Cosmos and Micro-cosmos, the study of man's physical environment. 1138—Human Organization; man in society.

2118-28-38 Honors: Sophomore—Special Problems Seminar (2-4, 2-4, 2-4) 2118—The Humanities; 2128—The Natural Sciences; 2138—The Social Sciences. These seminars focus on selected problems in the respective disciplines. The specific topics will vary from year to year.

3118-28-38 Honors: Junior—Colloquium (2-4, 2-4, 2-4) Small group studies of selected topics.

4101 Honors: Foreign Study (1-16) See page 162. and Director of Special Programs. Primarily for College Scholar students.

4102 Honors: Off-Campus Study (1-16) See page 161 and Director of Special Programs. Primarily for College Scholar students.

4103 Honors: Independent Study (1-16) See page 162 and director of Special Programs. Primarily for College Scholar students.

4118-28-38 Honors: Senior—Colloquium (2-4, 2-4, 2-4) Small group studies of selected topics.

4998 Honors: College Scholars Studies (2-16) Designed for College Scholars working on their senior thesis, project, or performance. May be repeated for a total of 16 credit hours.

Human Services (532)

Assistant Professor: R. F. Kronick (Director), Ph.D. Tennessee.

Instructors: J. E. Everett, M.S.W. Michigan; F. Spicuzza, M.S. W. Tennessee; N. Wright, M.S.W. Pittsburgh.

Major: 45-52 hours

Requirements: Human Services 2520, 3100, 3300, 4220, 4220, 4400.

In addition, four courses from the following alternative areas (one course from each of the four areas):

I. Culture and Personality

American Studies 3010; Anthropology 3410, 3930, 4740; Audiology & Speech Pathology 4650; Child Development 3210, 3220, 4810; Educational Psychology 4110, 4800; Psychology 3120, 3550, 3650, 4510; Sociology 3130, 4820.

II. Complex Organizations

Political Science 3565, 4665, 4666; Religious Studies/Sociology 4940; Sociology 4560, 4610, 4620.

III. Research and Statistics

Computer Science 3010; Psychology 3150; Sociology 4140, 4150, 4170, 4180.

IV. Community and Society

Economics 3220, 3410; Geography 3430; Human Services 3300; Political Science 3710, 3720, 3730, 4580, 4590; Public Health 3330; Religious Studies 3550, 3600, 3610; Rural Sociology 3420; Sociology 3300, 3330, 4230, 4320, 4350, 4540, 4550, 4830, 4930, 4950.

Total Hours Credit ............ 48-52

Students enrolled in the College of Liberal Arts prior to Fall Quarter, 1972, who are under the previous B.A. or B.S. curricula will find requirements for a major in the 1972-73 or earlier general catalog.

2690 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. 2690 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 structures of region. Recommended: Anthropology 4740.

3300 Human Needs and Services (4) Consideration of basic needs of people in urban-industrial society (e.g., income, housing, medical care) and societal
responses to those needs in the form of voluntary and governmental organizational and agency service.

4100 Deviant Behavior as a Product of Labeling (4)
Course is designed to show human services worker the role he plays in maintaining the deviance or deviant role of client. Clients he is serving. Settings considered will include crime, delinquency, health, and blindness.

4101 Foreign Study (1-18) See page 162.
4102 Off-Campus Study (1-18) See page 161.
4103 Independent Study (1-16) See page 162.

4220 Human Services Methodologies (4) Introduction to some specific helping techniques, essential to administration and delivery of human services.

4229 Special Topics in Human Services (4) Examination of specific issues, methods, values, and trends which have implications for helping practitioners, e.g. art therapy, behavior modification, counseling skills, self awareness training. Content varies, topic to be determined by instructor; may be repeated up to 12 credit hours.

4400 Human Services Field Work (8) Practical field experiences in appropriately organized and directed human services settings. Designed to offer the student the opportunity to learn and develop specific helping skills and to become exposed and involved in the roles and functions of social services, to provide some direct services in a supervised learning situation. For majors only; must be repeated once. Satisfactory-No Credit. Prereq: permission of instructor.

4400A Aspects of Urban Environment I (3) Interdisciplinary course in urban problems. Prereq: permission of one instructor. (Same as Architecture 4900, Political Science 4900, Real Estate 4900, Psychology 4900.)

Italian
See Romance Languages.

Latin
See Classics.

Latin American Studies
See Cultural Studies.

Mathematics (641)

Professors:
L. K. Barrett (Head), Ph.D., Pennsylvania;
G. E. Albert (Emeritus), Ph.D., Wisconsin;
J. S. Bradley, Ph.D., Iowa; R. E. Cline, Ph.D., Purdue;
D. J. Deasart, Ph.D., Maryland; E. D. Eaves (Emeritus), Ph.D., Texas; H. Fredson, Ph.D., Illinois;
D. A. Gardiner, Ph.D., North Carolina State;
D. B. Hinton, Ph.D., Tennessee;
A. S. Householder (Emeritus) Ph.D., Chicago;
H. T. Mathews, Ph.D., Tulane; D. D. Miller, Ph.D., Michigan; R. J. Millman, Ph.D., Auburn;
F. W. Stallman, Ph.D., Germany.

Associate Professors:
J. H. Carruth, Ph.D., Louisiana State; C. E. Clark, Ph.D., Louisiana State; R. J. Daverman, Ph.D., Wisconsin; J. W. Hedell, Ph.D., Iowa; L. S. Husch, Ph.D., Florida State; A. G. Klassen, Ph.D., Nebraska;
Y. Kuo, Ph.D., Cincinnati; R. M. McConnel, Ph.D., Duke; F. M. Mogilev, Ph.D., Wisconsin; B. S. Rajput, Ph.D., Illinois; K. C. Reddy, Ph.D., Indian Institute of Technology; P. W. Schafer, Ph.D., Maryland;
J. Smith, Ph.D., California (Berkeley); L. H. Turner, Ph.D., Purdue; W. R. Wade, Ph.D., California (Riverside); C. G. Wagner, Ph.D., Duke.

Assistant Professors:
W. E. Haver, Ph.D., SUNY at Binghamton;
G. S. Jordan, Ph.D., Wisconsin; W. F. Keigher, Ph.D., Illinois; K. P. Kimble, Ph.D., Ohio State;
J. E. Leech, Ph.D., California (Los Angeles);
R. W. Leppert, Ph.D., Kentucky; R. L. Lessy, Ph.D., California Institute of Technology; D. R. Peterson, Ph.D., Michigan State; W. H. How, Jr., Ph.D., Wisconsin; R. J. Rowlette, Ph.D., Virginia;
S. M. Serbin, Ph.D., Cornell; R. P. Sperber, Ph.D., Eidg. Technischen Hochschule; C. C. Travis, Ph.D., California (Davis).

Instructors:
E. S. Carlson, M.A., Alabama; C. G. Doss, M.A., Tennessee.

*On leave
*Space Institute-Tallahassee.

UNDERGRADUATE
Place 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 in two years of high school algebra, one year of geometry and one semester of trigonometry or equivalent. Students who present an ACT score below 23 in mathematics are urged to complete 1500 with a grade of C or better before taking 1840 (or 1842). Students who have not had high school trigonometry should take 1015 before (or concurrently with) 1840 (or 1842). Students who present an ACT score of at least 32 in mathematics and a high school average of at least 3.00 are eligible for the honors course 1848. Prospective mathematics majors who meet these requirements are particularly encouraged to enroll in 1848. (Exceptions to the eligibility criteria for 1848 are possible. Interested students should see the Department Head in Ayres Hall, Room 12.)

The prerequisites for 1540 are two years of high school algebra or one year of algebra and one year of geometry. Students who present an ACT score below 18 in Mathematics may take 1540 but are advised to take Algebra Refresher Parts I and II, in the Workshops and Non-Credit Programs, (or equivalent elsewhere) and make at least B, or to make a passing grade in Algebra Refresher, Parts I and II, in the Workshops and Non-Credit Programs (or equivalent elsewhere). Students who have taken 2 years of high school algebra and 1 year of high school geometry and who present an ACT score in Mathematics of at least 26 (or those who earned at least a grade of 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 Workshops and Non-Credit Programs, (or equivalent elsewhere).

A student may not receive credit for both 1540 and 1500. A maximum of sixteen hours credit may be obtained in mathematics from courses numbered below 2000.

Honors Courses: The current practice of the department is to offer honors versions 1848-58-68 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 or the department head (in all cases subject to the approval of the department head).

Proficiency Examinations: Students who have taken calculus in high school are encouraged to inquire at the Mathematics office in Ayres 121 about the possibility of taking a proficiency examination for parts of, 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).

Major: To major in mathematics, a student must complete the Basic Requirements and Advanced Requirements listed below:

1. Basic Requirements:
   a. 2840-50-60; or 2848-58-68; or 2540-50-60, 2610, and 2860.
   b. 3810, preferably taken during the sophomore year. Students who take 2648-58-68 may substitute any 3 or 4 hour mathematics course numbered 3050 or above for 3810.

2. Advanced Requirements:
   a. 21 additional hours in mathematics courses numbered 3050 or above, including a senior seminar (4910 or 4920) and at least two of the following sequences:
   b. 9 additional hours in courses from the following list: Mathematics courses numbered 3050 or above; Computer Science 4010, 4020, 4410, 4420, 4430, 4450; Curriculum and Instruction 3751, 3752, 3753, 3752, 3752, 3752; Physics 3210, 3220, 3250, 4410, 4420, 4430, 4420, 4220, 4250; Statistics 3450.

Minor: Consists of 2840-50-60 (or 2848-58-68; or 2540-50-60, 2610 and 2860) and at least 12 hours in courses numbered 3050 or above.

Students enrolled in the College of Liberal Arts prior to Fall quarter, 1972, who are under the previous B.A. or B.S. curricula will find requirements for a major or minor in the 1972-73 or earlier ones.

Program Planning for Majors: Mathematics majors have considerable freedom in determining how they will meet the Advanced Requirements of the major. In order to offer some guidance in program planning, the Mathematics Department has designed several sample programs which majors may wish to follow. A brief description of these programs appears below; more detailed information about the many additional programs which the department may design in the future is available in Ayres 121.
Completion of the courses suggested in any of the following programs will meet (and, in some cases exceed) the Advanced Requirements for a major in mathematics.

All students who intend to pursue graduate studies in the mathematical sciences are strongly urged to study French, German, or Russian for at least two years.

Program 1. This program is designed for students who have a general interest in mathematics and do not plan to become professional mathematicians. Supplemented by appropriate non-mathematical courses, such a program might be followed, for example, by pre-medical or pre-law students, or by those who plan to enter business after graduation. Suggested courses: Mathematics 3150, 3050-60, 3780-30, 3330, 4510-20, 4120, senior seminar, 6 hours of math electives.

Program 2. This program emphasizes pure mathematics and is designed to prepare students for graduate work in any of the mathematical sciences. Suggested courses: Mathematics 3150, 3920-30, 4510-20-30, 4120, 4150-60-40, 6500, 4-7 hours of math electives. The honors courses 4518-28-38 and 4158-68 are especially recommended. Since 4158-68 begins only in the fall quarter, students who wish to enroll in this sequence should take 4120 during their sophomore or junior years.

Program 3-A. This program emphasizes numerical mathematics, and is designed to prepare the student for employment in industry. Suggested courses: Mathematics 3150, 4220-30, 4610, 4060-70, 4250, Computer Science 4410, Mathematics 4990 or Computer Science 4330, senior seminar, 6 hours of math electives selected from 4540, 4550, 4560, 4820, 4840, 4710.

Program 3-B. This program emphasizes numerical mathematics and is designed to prepare the student for graduate work in numerical mathematics or computer science. Suggested courses: Mathematics 3150, 4220-30, 4610, 4060-70, 4150-20-30, 4250, Computer Science 4410, Mathematics 4990 or Computer Science 4330, senior seminar.

Program 4-A. This program emphasizes operations research, probability, and mathematical statistics, and is designed to prepare the student for employment in business or industry. Suggested courses: Mathematics 3150, 4540, 4060-70, 4560-70, 4750-60-70, Statistics 3450, Industrial Engineering 3510-20-30, senior seminar, 3 hours of math electives.

Program 4-B. This program emphasizes operations research, probability, and mathematical statistics, and is designed to prepare the student for graduate work in one or more of these areas. Suggested courses: Mathematics 3150, 4540, 4060-70, 4560-70, 4750-60-70, 4510-20-30, 4750-60-70, Industrial Engineering 3510-20-30, senior seminar.

1500 Precalculus Mathematics (4) Function concept and use of functional notation. Properties of functions and their graphs. Polynomial, exponential, logarithmic, and trigonometric functions. Prerequisite: 2 years of high school algebra; and equivalent of one-half yr of trigonometry or taking Mathematics 0150 concurrently.

1540 College Algebra (4) Sets, real and complex number systems, exponential and logarithmic functions, systems of linear equations and inequalities, quadratic equations, conics, determinants, and matrices. Prerequisite: 3 years of high school algebra and one year of geometry.

1550-60 Introductory Calculus-General Mathematics (4) Differential and integral calculus, with emphasis on applications. Prerequisites: 3 years of high school algebra and one year of geometry.

1630 Analytic Geometry (5) Straight line; plane curves, polar coordinates; parametric equations, line and plane in three dimensions; review of trigonometry and applications. Prerequisite: 2 years of high school algebra and one year of trigonometry or equivalent.

1840-50-60 Single Variable Calculus (4, 4, 4) Functions, graphs, slope of a curve, definition of a derivative, limits, derivatives of algebraic functions, implicit differentiation, chain rule, differentials, continuity, applications of derivatives, maxima and minima, indefinite integral, area, definition of definite integral, Fundamental Theorem of calculus, application of the definite integral, logarithmic, exponential, and trigonometric functions and their derivatives. Techniques of integration, plane analytic geometry, polar coordinates. Must be taken in sequence. Prerequisite: Two years of high school algebra one year of trigonometry or equivalent.

1842-52-62 Single Variable Calculus with Computer Support (5, 5, 5) Same coverage of calculus as 1840-50-60 supplemented with computer. Elementary FORTRAN is introduced and applied to problems from following areas: computer evaluation of functions; limit operation; application of limits to definition of derivative; approximation via differences; approximate solution of equations by bisection, secant methods and Newton's method; rectangular, trapezoidal, and Simpson's rules for numerical integration; Euler's method for initial value problems. Prerequisite: Two years high school algebra, one year geometry, and one semester of trigonometry or equivalent.

1848-58-68 Honors: Single Variable Calculus (4, 4, 4) Honors course for students who have had trigonometry; emphasis on basic placement test scores and high school record. Students receiving a grade below B in 1848 will complete the year's work in calculus by taking 1850-60. Special sections of 1858 will be made available for students who perform well in 1840. Must be taken in sequence.

1900 Selected Topics (4) Applications of definite integration, improper integration, approximation; simultaneous linear equations; matrix inversion; elementary linear programming; infinite series; descriptive statistics and probability; applications of mathematics, especially recommended for Architecture majors. Prerequisite: 1810-20. If a student wishes to continue his study of calculus beyond 1900, he should consult the mathematics department.

2012 Basic Concepts of Elementary Mathematics (4) Sets, theory of arithmetical operations, elementary geometry, some fundamental logical and set-theoretical concepts. Basic geometrical concepts, elementary analytic geometry. Applications. May not be taken for credit if concurrently or previously taking Mathematics 1510, 1590, 1630, 1810, 1818, 1840, 1848, 2110, 2410, 2412, 2540, 2710. Primarily for secondary education students.

2020 Great Ideas in Mathematics (4) Course for nonscience majors designed to expose the student to ideas which have had a significant impact on the development of mathematics, its role in the physical sciences, and its relationship to civilization in general. Selected topics may include: The Greeks and mathematics as logic; the number concept; irrational numbers; the coordinate geometry; Newton and Leibnitz and the mathematics of motion; Non-Euclidean Geometry; the infinite. Prerequisite: High school algebra and geometry and an interest in cultural mathematics.

2110-20-30 Structure of the Number System (3, 3, 3) 2110-Set theory, whole numbers, integers. 2120-Inverses, order properties, rational numbers. 2130—Elementary number theory, rational and irrational numbers. Euclidean geometry. Must be taken in sequence. Prerequisite: 1 year high school algebra and at least sophomore standing in Elementary Education, College of Education, or consent of instructor.

2412-22 Finite Mathematics (4, 4) Logics and sets, combinatorics and probability, vectors and matrices, elementary optimization and game theory, applications to simple problems in the behavioral and social management sciences. Prerequisite: 2 years of high school algebra or one year of algebra and one year geometry.

2512 Calculus Refresher (4) Functions, graphs, limits, derivatives, mean value theorem, antiderivatives, the definite integral, properties of the integral. For students who have had some previous exposure to Differential and Integral Calculus. Prerequisite: 1190 or 1500 or equivalent and permission of instructor.

2540-50-60 Calculus (4, 4, 4) Calculus sequence for students who have completed 1560 or students who have a significant introduction to calculus in high school. Definition of a derivative; derivatives of algebraic functions, the chain rule, differentials, continuity; applications of derivatives; Rolle's Theorem, the Mean Value Theorem, maxima and minima, indefinite integrals and applications, the definite integral and applications, Fundamental Theorem of Integral calculus. Derivatives and integrals of transcendental functions, methods of integration, parametric equations, vectors, differentiation of vectors, scalar and vector products, equations of lines and planes. Partial differentiation, directional derivatives, the chain rule, the total differential, maxima and minima, line integrals, exact differential equations and applications, cylindrical and spherical coordinates, series, tests for convergence, power series, Taylor's series. Prerequisite: Math 1560 or at least one semester of high school calculus.

2610 Introduction to Differential Equations (2) Variables separable, homogeneous, exact, and linear first order equations. Integrating factors. Second order linear equations with constant coefficients. Prerequisite: 1830.

2710-20-30 Calculus (5, 5, 5) For students who have had a separate course in analytic geometry. 2710-Functions, graphs, limits, derivatives of algebraic functions, applications, antiderivatives. 2710-20—Definite integral. 2810-Coordinate systems, transcendental functions, methods of integration, hyperbolic functions, vectors in 2-space, 2710-30 —Element vectors, 3-space, applications, partial differentiation, multiple integrals, series. Must be taken in sequence. Prerequisite: 1830 or equivalent.

2840-50-60 Multivariable Calculus and Matrix Algebra (4, 4, 4) 2840-60—Differential equations, vectors and parametric equations, solid analytic geometry, dot and cross products, lines, planes, cylindrical and spherical coordinates, series, convergence tests, power
3200 Non-Euclidean Geometry (3) Foundations of non-Euclidean geometry with emphasis on hyperbolic 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 (3) Primarily for students in secondary mathematics education. Course covers elementary calculus from advanced viewpoint with emphasis on proofs of basic theorems. Topics covered include limits of sequences and functions, continuous functions, derivatives, definite integrals, fundamental theorem of integral calculus. Prereq: 1550-60 or 1860.
3780-90 Introduction to Combinatorial Theory (3, 3) Introduction to problems of arrangement and selection, with emphasis on discrete systems. Enumeration by recurrence relations and generating functions, graph theory, finite geometries and finite fields, partitions. Prereq: Math 2800 or permission of instructor.
3810 How to Prove It (3) Course is designed to improve understanding of nature and methods of mathematical proof by means of practice and participation in seminar setting. Variable content but will include certain standard topics such as elementary set theory, relations and functions, and mathematical induction. Coreq: 2850 or 2560.
3920-30 Topology of Euclidean Spaces (4, 4) Topics will include topology of line and plane, separation properties, compactness, connectedness, completeness, and uniform continuity for metric spaces, homomorphisms, and topological invariants. Must be taken in sequence. Prereq: 2860 and 3810, or 2688.
3960 Studies in Mathematics (1-4) Credit determined at registration. May be repeated for credit with permission of department; maximum 9 hours credit. Prereq: permission of instructor.
4050 Matrix Algebra and Applications (3) Matrices, elementary operations, systems of linear equations, vector spaces, determinants, eigenvalues and eigenvectors. Prereq: 2850 or 2560 or permission of instructor.
4060-70 Matrix Algebra and Applications (3) Eigenvalues and eigenvectors, singular values and singular vectors, unitary and similarity transformations, quadratic forms, vector and matrix norms, Jordan canonical form, and related topics. Prereq: 2860 or 4050.
4101 Foreign Study (1-16) See page 162.
4102 Off-Campus Study (1-16) See page 161.
4120 Linear Algebra (3) Abstract vector spaces, linear transformations, and their matrices, systems of linear equations and determinants, inner products, and diagonalization of symmetric matrices. Prereq: 2860 or 4050.
4150-60 Abstract Algebra (3, 3) Equivalence relations and partitions, properties of integers, elementary theory of groups, and polynomial rings, integral domains, divisibility, unique factorization. Must be taken in sequence. Prereq: 2860 or 4050.
4250 Elementary Complex Variables (3) Complex numbers, Cauchy's theorem, the Cauchy integral formula, Laurent series, residues and their applications. Prereq: 2860. Coreq: 4000-level mathematics course recommended.
4510-20-30 Introduction to Analysis (3, 3, 3) Real number systems; continuity; functions; uniform continuity and convergence; integration; differentiation; functions of several variables; related theorems. Must be taken in sequence. Prereq: 2850.
4540 Infinite Series and Functions of Several Variables (3) General theory, power series and Taylor's formula, uniform convergence. Partial differentiation, line integrals, double and triple integrals of several variables. Lagrange multipliers. Prereq: 2860.
4550 Partial Differential Equations (4) Fourier series; Fourier integral; orthogonal functions; the vibrating string; solution by series; heat flow, Bessel functions. Prereq: 2860, 4610 or 4710 recommended.
4610-20-30 Ordinary Differential Equations (3, 3, 3) 4610 Separation of variables, second order equations. Power series solutions and special functions. Regular singular points, Frobenius method, and Laplace transformations. 4620-30 Numerical methods for ordinary differential equations and the matrix exponential. 4640-50 Special topics which may include existence and uniqueness, oscillation theory, Liapunov stability, singular perturbations, and asymptotic expansions. Prereq: 4610, 2860 or 4050; 4620 or 4650; 3150 or 3155; 4630: 4610 or permission of instructor.
4640 Calculus of Finite Differences (3) Real difference equations, application to problems in engineering and physics. Prereq: 4610 or 4615.
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: 2860.
4710 Vector Analysis (3) Fundamental operations, bases, vectors, dot and cross products, line integrals, surface integrals, line and surface integrals, divergence and curl of vector fields, line and surface integrals, divergence theorem of Gauss, and Stokes theorems. Prereq: 2860.
4750-60-70 Introductory Probability Theory (3, 3, 3) 4750-Elementary combinatorial analysis, probabilites in discrete sample spaces, conditional probability and stochastic independence, binomial, Poisson, hypergeometric and normal distributions, 4760-Expectation, conditional expectation and characteristic function of random variables, infinite sequences of random variables, the weak and strong laws of large numbers, and the central limit theorem. 4770-Marcov chains and stochastic processes. 4780-Numerical optimization; steady-state and stationary processes; Stochastic processes: Poisson, birth and death processes; Kolmogorov equations. Prereq: Math 2840-50-60.
4810 Elementary Number Theory (3) Divisibility; congruences; Fermat's and Wilson's theorems; primitive roots; indices, quadratic reciprocity. Prereq: 2860 or permission of instructor.
4910 Senior Seminar (1-2) Credit determined at registration. May be repeated for credit with permission of department; student may offer a maximum of 4 hours credit from 4910 and 4920 combined. Prereq: Senior standing.
4920 Senior Seminar (1-2) Credit determined at registration. May be repeated for credit with permission of department; student may offer a maximum of 4 hours credit from 4910 and 4920 combined. Prereq: Senior standing.
4980 Readings in Mathematics (1-3) Open to superior students with permission 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 permission of department; maximum 9 hours credit. Prereq: Recommendation of member of Mathematics professional staff and consent of department.

GRADUATE

The Department of Mathematics offers four advanced degrees. In order to become a candidate for any one of these the student must first be admitted to The Graduate School. The Master of Arts and Master of Science degree programs presuppose a Bachelor's degree with a major in mathematics. The Master of Mathematics degree is intended primarily for teachers of high school mathematics. Applicants for admission to this program must take the Graduate Record Examination and must have either (a) certification for teaching secondary mathematics or (b) successful elementary or secondary school teaching experience. The Doctor of Philosophy degree program presupposes a Bachelor's or Master's degree with a strong major in mathematics. This program is intended to train professional mathematicians for a career of teaching and scholarly work in colleges and universities or work in industry. Further details on all of these programs are in the Graduate School Catalog.

5000 Thesis
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)
5110-20-30 Theory of Functions of Complex Variable (3, 3, 3)
5150 Foundations of Analysis (3)
5160 Foundations of Analysis (3)
5170 Foundations of Analysis (3)
5210-20-30 Theory of Functions of A Real Variable (3, 3, 3)
5240-50-60 Linear Analysis (3, 3, 3)
5270 Stability Theory and Liapunov's Direct Method (3)
5310-20-30 Introduction to Higher Geometry (3, 3, 3)
5340-50-60 Numerical Treatment of Algebraic and Transcendental Equations (3, 3, 3)
5430 Integral Equations (3)
5440 Calculus of Variations (3)
5450-60-70 Introduction to Partial Differential Equations (3, 3, 3)
5480-90 Mathematical Programming (3, 3)
5500 Lattice Theory (3)
5510-20-30 Introduction to Higher Algebra (3, 3, 3)
5540 Galois Theory (3)
5560-70-80 Theory of Matrices in Numerical Analysis (3, 3, 3)
5590 Theory of Rings (3)
5610-20-30 Mathematical Methods in Physics (3, 3, 3)
5640 Numerical Methods in Physics (3)
5650-60 Numerical Methods (3, 3)
5710-20-30 Tensor Analysis (3, 3, 3)
5750-60-70 Advanced Mathematical Statistics (3, 3, 3)
5810-20-30 Number Theory (3, 3, 3)
5910-20-30 Elementary Topology (3, 3, 3)
5940-50-60 Introduction to Algebraic Topology (3, 3, 3)
5990 Graduate Reading in Mathematics (1-3)
5991 Seminar Analysis (3)
5992 Seminar Topology (3)
5993 Seminar Algebra (3)
5994 Seminar Foundations (3)
5995 Seminar Applied Mathematics (3)
6000 Doctoral Research and Dissertation
6050-60-70 Metamathematics (3, 3, 3)
6210-20-30 Linear Analysis (3, 3, 3)
6250 Length, Area, and Measure (3)
6260 Laplace and Fourier Transforms (3)
6270 Divergent Series (3)
6450-60-70 Partial Differential Equations (3, 3, 3)
6510-20-30 Modern Algebra (3, 3, 3)
6540-50-60 Theory of Semigroups (3, 3, 3)
6570-80 Theory of Groups (3, 3)
6590 Group Representations (3)
6610-20-30 Advanced Ordinary Differential Equations (3, 3, 3)
6750-60-70 Probability Theory (3, 3, 3)
6810-20-30 Topological Algebra (3, 3, 3)
6910-20-30 Modern Topology (3, 3, 3)
6991 Seminar Analysis (3)
6992 Seminar Topology (3)
6993 Seminar Algebra (3)
6994 Seminar Foundations (3)
6995 Seminar Applied Mathematics (3)

MEDIEVAL STUDIES

See Cultural Studies.

MICROBIOLOGY (169)

Professors:

Associate Professors:
T. C. Montie; Ph.D. Maryland; W. S. Riggsby, Ph.D. Yale.

Assistant Professors:
J. M. Becker, Ph.D. Cincinnati; R. V. Miller, Ph.D. Illinois.

UNDERGRADUATE

Major

1. Major prerequisites and corequisites
Chemistry 2140 and 2149 (Analytical Chemistry and Laboratory) 4
Chemistry 251 and 3319-29 (Organic Chemistry and Lab) 12

2. Courses in the major:
Biological 2110 (General Genetics) 4
Biological 2120 (Cell Biology) 4
Microbiology 3000 (Introduction to Microbiology) 4
Microbiology 3009 (Introduction to Microbiology Lab) 2
Microbiology 4111 (The Bacterial Cell) 3

Seventeen (17) hours from the following list of upper division courses in Microbiology as follows: 3 hours from Group A; 3 hours from Group B; 4 hours from Group C; and 7 hours from any courses in Groups A, B, C, or D.

Group A:
Microbiology 3061 (Pathogenic Microbiology) 3 hrs
Microbiology 3071 (Immunology) 3 hrs

Group B:
Microbiology 4521 (Virology) 3 hrs
Microbiology 4811 (Genetics of Bacteria and Viruses) 3 hrs

Group C:
Microbiology 3069 (Pathogenic Lab) 2 hrs
Microbiology 3079 (Immunology Lab) 2 hrs
Microbiology 4112 (Bacterial Physiology Lab) 2 hrs

Microbiology 4529 (Virology Lab) 2 hrs
Microbiology 4811B (Bacterial Genetics Lab) 2 hrs

Group D:
Microbiology 3810 (Food Bacteriology) 4 hrs
Microbiology 3820 (Yeasts and Molds) 3 hrs
Microbiology 4210 or 4220 or 4230 (Special Problems in Microbiology) 3 hrs

Microbiology 4130 (Taxonomy of Bacteria) 3 hrs
Any courses from Group D plus additional courses from groups A, B, or C .... 7
Any 5 hours of courses listed in Natural Sciences and Mathematics in the College of Liberal Arts or the College of Agriculture .... 5

Total Hours Required: 54

2010 Microbiology (4) Fundamental concepts and applications of microbiology with laboratory demonstration. Course meets needs of programs that require only a single course in Microbiology. Not open to students who have taken other Microbiology courses.

2110 Microbiology for Student Nurses (4) Introductory course offered only to student nurses in diploma program of hospitals affiliated with The University of Tennessee. Microbiological principles as they apply to nursing care of the patient, epidemiology of infection, and principles of immunity and allergy. 3 hrs and 1 lab.

2610 General Microbiology (5) Introductory course designed for students in School of Nursing and pre-veterinary medicine. Survey of general properties of bacteria, viruses, and fungi including study of pathogenicity, immunity and applied bacteriology. Laboratory exercises designed to parallel lecture course. 3 hrs. and 2 labs.

3000 Introduction to Microbiology (3) Eucaryotic and procyarotic protists, viruses, microbial growth, bacterial structure, bacterial and viral genetics, pathogenesis, immunity and applied microbiology. Prereq: Chemistry 1110-20-30, Biology 2120. Prereq or coreq: Biology 2110.

3009 Introductory Microbiology Laboratory (2) Laboratory exercises designed to accompany 3000.

3061 Pathogenic Microbiology (3) Disease producing microorganisms including bacteria, rickettsia, chlamydia, and fungi. Prereq: 3000 and 3009.

3069 Pathogenic Microbiology Laboratory (2)
Techniques for isolation, cultivation, and identification of pathogenic microorganisms. Prereq or coreq: 3061.

3071 Immunology (3) Basic principles and mechanisms involved in resistance to infectious disease; allergy and anaphylaxis. Must be taken concurrently with 3079 by Microbiology majors. Open to graduate students in other biological sciences without prerequisites. Prereq: 3000 and 3009 or permission of instructor.

3079 Immunology Laboratory (2) Laboratory procedures involving several species of animals, and techniques used in immunology research. Prereq: or coreq: 3071.

3088 Serological Methods (3) Practical procedures in serology and Clinical Immunology. Prereq. or Coreq: 3071.


3820 Yeasts and Molds (4) Morphology, taxonomy, and physiology of yeasts, actinomycetes, and fungi of industrial importance. Prereq: 2010 and Chemistry 2230 or 3211, or permission of instructor. 2 hrs and 2 labs.

4010 Biology of Soil Microorganisms (4) Same as Agriculture Bio 3690.

4101 Foreign Study (1-16) See page 162. No more than 3 hours may be applied toward a major or minor in Microbiology. May be repeated to a total of 16 hours.

4102 Off-Campus Study (1-16) See page 161. No more than 3 hours may be applied toward a major or minor in Microbiology. May be repeated to a total of 16 hours.

4103 Independent Study (1-16) See page 162. No more than 3 hours may be applied toward a major or minor in Microbiology. May be repeated to a total of 16 hours.

4111 Physiology of Bacteria (3) Cell chemistry and structure; growth, nutrition, and metabolism of microorganisms. Prereq: 3000, 3019, and 12 hrs of organic chemistry.

4112 Bacterial Physiology Laboratory (2) Prereq or coreq: 4111.

4130 Taxonomy of Bacteria (3) Bacterial classification. Prereq: 3000 and 3008. 3 hrs.

4200 Special Problems in Microbiology (2-6) Individual study. Enrollment in the program of a faculty member, independent study projects. Project is undertaken under direction of faculty member with approval of department. Prereq: more than 3 credit hours in this sequence may be used toward a major in Microbiology.

4444 Seminar in Microbiology (1) May not be applied towards a major in Microbiology. Prereq: senior standing, permission of instructor. Satisfactory/No Credit.

4521 Virology (3) Spectrum of bacterial, animal and plant viruses is presented with special emphasis on a comparison of infectious cycles and molecular concepts of replication. Prereq: 3000 and 3009 and Biochemistry 4110-20 or permission of instructor.

4529 Virology Laboratory (2) Laboratory procedures for isolation, handling and culturing of both animal and bacterial viruses. Methodology for conduct of molecular studies of virus replication is presented. Prereq or coreq: 4521.


4819 Bacterial and Viral Genetics Laboratory (2) Laboratory exercises designed to accompany 4811. Coreq: 4811, or prereq: General Genetics.

4820 Medical Mycology (2) Disease causing fungi; cytology; physiology, pathogenesis and immunity; emphasis on methodology of isolation and identification. Prereq: 3000, 3009, and 3820 or permission of instructor.

4829 Medical Mycology Laboratory (2) Prereq or Coreq: 4820.

GRADUATE

5000 Thesis

5130 Topics in Taxonomy (3)

5310-20 Selected Topics in Microbiological Research (3, 3, 3)

5360 Topics in Immunology and Immunohemostasis (4)

5400 Seminar in Microbial Physiology (1)

5410 Seminar in Immunology (1)

5510-20 Research Problems (3, 3, 3)

5630 Microbial Metabolism (3)

5720 Microbial Physiology (3)

5730 Pathogenesis of Infectious Disease (3)

5750 The Oncogenic Viruses (3)

5760 The Bacterial Viruses (3)

5830 Seminar in Microbial Pathogenesis (1)

5850 Seminar in History of Microbiology (1)

5910-20 General Seminar (1, 1, 1)

5940 Seminar in Microbial Genetics (1)

5970 Seminar in Virology (1)

6000 Doctoral Research and Dissertation

6410 Concepts of Immunity (3)

6720 Advanced Topics in Microbial Physiology (3)

6730 Advanced Topics in Microbial Pathogenesis (3)

6740 Advances in Virology (3)

6760 Advanced Topics in Microbial Genetics (3)

6810-20 Problem Seminar (1, 1, 1)

Medical Technology (669)

Courses listed below are open only to qualified students. This program has completed the first three years of the Science-Medical Technology Curriculum, described on page 156, and who have been approved by the Pre-Medical Advisory Committee.

4011-12 Microbiology (6, 6) Laboratory work in bacteriology, mycology, and parasitology. Emphasis on pathogenic bacteria and fungi, their sources, methods of culture, techniques of identification, and evaluation of diagnostic 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 biochemistry, including overview of principles and instrumentation with emphasis on practical laboratory applications of analytical procedures, specimen collection and handling, significance of results, and quality assurance. Includes blood gas analysis, sero-diagnostic and immunodiagnostic procedures (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 (6, 6) Principles, theories, techniques, and instrumentation related to the qualitative and quantitative evaluation of cellular elements of blood and other body fluids; factors of hemostasis, quantitative chemical analysis of urine and renal function studies. Emphasis is placed on microscopic identification of cells and the significance and correlation of laboratory data.

4041-42 Immunohematology (4, 4) Theory and practice in blood bank operation. Erythrocyte antigens and their normal and abnormal immunology. Standard technical practices used in evaluating blood typing, cross-matching and antibody detection. Preparation and components for transfusion. Safety control methods standard to an efficient blood bank are important part of course material.

4050 Nuclear Medicine (2) Physical characteristics, characteristics and use of short half-life radioactive materials. Emphasis placed on in vitro and in vivo diagnostic medical uses and/or radiation safety.

4060 Histology (1) Overview of techniques of preparation of cells and the role of histopathology in clinical diagnosis.

4071 Orientation and Basic Techniques (1) Designed to facilitate transfer of students 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 major laboratory instruments, review of laboratory math and introduction to quality control procedures. Portions of course extend beyond entire clinical year.

4072 Principles of Supervision and Education in Medical Technology (2) Consists of seminars in basic principles of management, supervision and education theories and methods. There will be comprehensive examination covering the entire course.

Music (698)


Associate Professors: W. Bommelje, M.M. tulsa; M.F. Johnson, B. Of Mus. Oberlin Conservatory, M.M. Northwestern; W. L. Michalopolous, M.A. Columbia; D. M. Pederson, Ph.D. Iowa; W. P. Scarlett, M.M. Indiana State; C. S. Young, Ph.D. North Carolina.


*On leave.*

The Department of Music offers curricula leading to the Bachelor of Music degree which is designed to prepare students for graduate study and for professional positions, and the Bachelor of Arts degree with a major in Music, designed for those students whose interests are strong but essentially
non-professional. Information regarding requirements for the B.M. degree may be found on page 158. Information regarding requirements for the majors and minors under the revised B.A. curriculum may be obtained in the departmental office.

**Major:**

(a) **Concentration in Applied Music** - consists of Music 2000, 2111-21-31, 2113-23-33, 2310-20-30-40, 27 hours in Applied Music at the 2000-3000-4000 level (9 hours each), and Junior and Senior recitals. Prerequisites are Music 1111-21-31, 1113-23-33, and 3 quarters of study in Applied Music at the 1000-level.

(b) **Concentration in Music History and Literature** - consists of Music 2111-21-31, 2113-23-33, 2310-20-30-40, and 27 upper division hours in Music History and Literature. Prerequisites are Music 1111-21-31, 1113-23-33, and 1340.

**Minor:**

(a) **Concentration in Applied Music** - consists of Music 2000, 2111-21-31, 2310-20-30-40 and 18 hours in Applied music at the 2000-3000-4000 levels (6 hours each). Prerequisites are the same as those for the major.

(b) **Concentration in Music History and Literature** - consists of Music 2111-21-31, 2310-20-30-40 and 18 upper division hours in Music History and Literature. Prerequisites are the same as those for the major.

Students enrolled in the College of Liberal Arts prior to Fall Quarter 1972 who are under the previous B.A. curricula will find the requirements for a major and minor in the 1972-73 or earlier general catalog.

The Bachelor of Science in Music Education, designed for preparation for institutional teaching, is administered by the Department of Music Education. See page 86 for requirements.

**UNDERGRADUATE**

**General**

1000 Fundamentals of Music Theory (2) Theory and practice of basic elements of music. 3 hrs.

1010-20-30-40-50-60 Class Piano (1, 1, 1, 1, 1, 1) For music and music education majors only. Must be taken in sequence. Course may be waived by successful completion of Piano Competency Examination. Waived courses must be substituted with an equivalent number of quarters of study in Music 1580 or above.

1015 Class Voice (1) For music and music education majors only. May be repeated for credit.

2000 Solo Class (9)

2055-85-75 Diction for Singers (2, 2, 2) Sounds by phonetic symbols. Opera and art songs used for examples. Performance practice.

3000 Junior Recital (0)

3010-20-30 Elementary and Intermediate Piano Literature (1, 1) Piano music from elementary grades through Intermediate. Prereq: permission of instructor.

3011-21-31 Organ Literature (1, 1, 1) Organ music from preclassical period to present. Prereq: permission of instructor.

3022-23 Song Literature (2, 2, 2) Study of literature from 1750 to present with emphasis on performance practices. 3012—Classical and Romantic German Art Song; 3022—French and Russian Songs; 3032—Late German and contemporary songs. Prereq: 2075 and permission of instructor.

3014-24 Woodwind Literature (2, 2) Prereq: permission of instructor.

3015 Percussion Literature (1) Prereq: permission of instructor.

3040-50-60 Advanced Piano Literature (2, 2, 2) Piano music from preclassical period to present. Prereq: permission of instructor.

3041 Keyboard Harmony (2) Melody harmonization, figured bass representation, and improvisation. Prereq: 1131-1133, and keyboard proficiency at the 2000 level.

3051 Organ Improvisation (2) Prereq: 3041 and organ proficiency at the 2000 level.

3044-54 Brass Literature (2, 2) Prereq: permission of instructor.

3081 Church Service Playing (2) Accompanying on the organ, conducting from the organ, general church service playing. Prereq: permission of instructor.

3199 Electronic Music Techniques (3) Introduction to composed and computerized music; historical background, theoretical concepts, tape and synthesizer usage. Prereq: permission of instructor.

3597-4597-5597 Composition with Electronic Media (1-1, 1-1, 1-1, 1-1) May be repeated for credit. Prereq: 3199 and permission of instructor.

4000 Senior Recital (0)

4001 Organ Design (3) Historical, tonal and mechanical principles of organ design.

4010-20-30 Piano Techniques (1, 1, 1) Problems of piano playing; development of piano technique; style and interpretation; program building. Prereq: permission of instructor.

4011-21-31 Organ Techniques (1, 1, 1) Problems of organ playing; development of technique; problems in style, interpretation and registration; program building. Prereq: permission of instructor.

4012-12-32 Principles of Vocal Pedagogy (1, 1) Examination and evaluation of concepts and approaches to teaching singing (past and present) and related teaching materials. Collaborative laboratory experiences accompany the study. Prereq: permission of instructor.

4050 Advanced Instrumental Conducting (3) Development of knowledge and skills in instrumental conducting and study of various periods and composers and relationship of different styles to the conductor's art; musical analysis and practice in conducting. Prereq: Music Ed 4430 or equivalent.

4080 Choral Conducting (3) Development of knowledge and skills in choral conducting; study of various periods and composers and relationship of different styles to the conductor's art; musical analysis and practice in conducting. Prereq: Music Ed 4420 or equivalent.

4070-80-90 Opera Production (1, 1, 1) Problems of lyric stage; casting, program selection, production procedures, opera administration. Prereq: permission of instructor and student participation in practical direction of opera and other works for lyric stage.

4074-84 Church Music Seminar (3, 3) History and philosophy of church music; liturgies and liturgical music; church music administration. Prereq: permission of instructor.

**MUSIC THEORY AND COMPOSITION**

1110-20-30 Composition I (2, 2, 2) Melodic invention in simple form. Should be taken concurrently with 1111-21-31. Must be taken in sequence. Prereq: permission of instructor.

1111-21-31 Harmony I (3, 3, 3) Study of harmonic materials of music from 1700-1880. Exercises in writing and analysis. Must be taken in sequence. Prereq: 1000 or knowledge of fundamentals of music.

1112-22-33 Sight Singing and Ear Training I (1, 1, 1) Should be taken concurrently with 1111-21-31. Must be taken in sequence. 2 hrs per week. Prereq: 1000 or knowledge of fundamentals of music.

2111-21-31 Harmony II (3, 3, 3) Materials of music 1880 to present. Exercises in writing and analysis. Must be taken in sequence. Prereq: 1111 or equivalent.

2113-22-33 Advanced Ear Training I (1, 1, 1) Should be taken concurrently with 2111-21-31. Must be taken in sequence. 2 hrs per week. Prereq: 1113.

3111-21-31 Tonal Counterpoint (3, 3, 3) Contrapuntal techniques of eighteenth century, with emphasis on works of J.S. Bach. Must be taken in sequence. Prereq: 2131.

3112 Instrumentation (3) Basic techniques in scoring for voices; brass, woodwind, and string choirs; and percussion. Prereq: 2131.

3113 Analysis I (3) Study and practice in analysis of structural analysis. Prereq: 2131 or equivalent.

3114-24 Choral Arranging (3, 3) Analysis of scores and writing of arrangements for choirs. 3114—male and female chorus; 3124—mixed chorus. Prereq: 3112 or permission of instructor.

3122 Orchestration (3) Advanced techniques in instrumental writing with emphasis on scoring for the concert orchestra. Prereq: 3112 or permission 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: permission of department head.

4101 Foreign Study (1-16) See page 162.

4111-21-31-41 Analysis of Music Literature (3, 3, 3, 3) Detailed examination of musical compositions by historical period with emphasis on harmony, thematic material, form and structure. Traditional and contemporary analytical techniques. 4111—1600-1750; 4121—1750-1825; 4131—1825-1900; 4141—1900 to present. Prereq: 3112.

4112 Twentieth-Century Compositional Techniques (3) Styles and compositional devices from Debussy to present. Analysis of scores; idiomatic writing. Prereq: 2131 or equivalent.

4113 Pedagogy of Music Theory (3) Techniques, methods and materials involved in college-level theory programs. Prereq: permission of instructor.

4114 Stage Band Arranging (3) Analysis of scores and scoring for the stage band. Prereq: 3112 and permission of instructor.

4115 Variation (3) Study and application of variation procedures. Prereq: 3123 or equivalent.

4116 Set Structure in Musical Composition (3) Theory of sets and its application to analysis of music. Prereq: permission of instructor.

4124 Band Arranging (3) Study and application of techniques employed in scoring for the marching and concert bands. Prereq: 3112 or equivalent.

4134 Band Transcription (3) Technique and application of transcribing keyboard and orchestra music for concert band; editing and rescoring. Prereq: 3112 or equivalent.

**MUSIC HISTORY AND LITERATURE**

1210-20 Orientation in Music—Appreciation (4, 4)

1210—Study of styles, history, techniques, and aesthetic principles of music; 4th Century to 20th Century. 1220—In-depth study of music literature and representative composers' styles; 16th Century to 20th Century. Prereq: 1210 or 1220.
1340 Introduction to Music Literature (3) 
Acquaintance with basic terms of music and accepted masterworks through chronological approach. For music majors and minors only.

2310-20-30-40 History of Music (3, 3, 3, 3) 2310—1600; 2320—1600-1800; 2330—1800-1900; 2340—1900 to present. Requires musical background. Must be taken in sequence. Prereq: permission of instructor.

3230 The Concerto (3) Survey of literature from seventeenth century to present.

3240-50 The Symphony (3, 3) Survey of symphonic literature from Mannheim School to present.

3260-70 Chamber Music (3, 3) Survey of chamber music from 1750 to present.

3271-81 History of Opera (3, 3) Dramatic, vocal and orchestral elements in operas of Italian, French, and German schools. 3271—1600-1800; 3281—1800 to present.

3340 Oratorie (3) Choral works other than those appropriate for use in church.

3350 Introduction to Afro-American Music (4) History of African music, blues, gospel, music and jazz with emphasis on Black artists and their contributions.

4200 Independent Study in Music History and Literature (1-3) May be repeated for credit. Prereq: permission of department head.

4210-20 Nineteenth-Century Music (3, 3) Music from 1810 to 1914. 4210—musical trends from Beethoven through Wagner; 4220—musical nationalism and post-Romantic instrumental and vocal styles.

4230-40 Contemporary European Music (3-3) 4230—music from 1890 to World War II. Debussy, Stravinsky, Schoenberg, Hindemith, Bartok, and others. 4240—serial music, post-World War II music (Berio, Boulez, Stockhausen and others).

4241-51 American Music (3, 3) 4241—from Colonial times through the music of Ives; 4251—from 1930 to present (Copland to Cage). Prereq: 1310-20-30 or equivalent.

4260 Introduction to Ethnomusicology (3) Basic attitudes and techniques of ethnomusicology. Survey of music cultures of the Pacific, Near East, Asia and Africa. Prereq: 1310-20-30 or equivalent.

4270 Evolution of Jazz (3) Study of origin, development and styles of jazz music and its exponents. Prereq: 1310-20-30 or equivalent.


4290 Gregorian Chant (3) Chants of Latin rite. Masses and Offices examined as functional music as well as by type.

4310 History of Art Song (3) Survey of art song from Fifteenth Century to 1930.

4315 Wind Chamber Music (3) Study of wind chamber music from 18th through 20th Century. Focus placed on style interpretation, rehearsal techniques, programming and musical significance, both historical and theoretical.

4340-50 Works of Bach (3, 3) Detailed examination of sonatas, chamber, keyboard, and orchestral works; cantatas, motets, Passions and oratorios. 4340—instrumental works; 4350—vocal works.

APPLIED MUSIC 
Applied study is classified as Principal or Secondary.

Students studying their principal (major) instrument register for credit appropriate to their program, 2-4 credit hours; students studying a secondary instrument register for 1 hour 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 private instruction per week or its equivalent in class instruction. Applied music courses do not permit non-credit registration nor may students elect non-conventional grading.

Non-music students will be accepted at the secondary level if they meet audition requirements established by area faculty (piano, voice, violin, etc.) and instruction time is available.

Undergraduate students seeking entrance to applied music courses must be concurrently registered for no less than nine credit hours in academic courses. Graduate students must be concurrently registered for no less than six credit hours in academic courses. Exceptions to these requirements may be made with the approval of the Department Head. If applied music registration is necessary to completion of degree requirements.

Advancement in applied music is measured by proficiency (Jury) examination. Students who do not meet proficiency requirements at any level may be required to continue study at that level. Course level and credit hours will be determined by the applied faculty.

All students studying applied music at the principal level are required to register for Music 2000 Solo Class. The requirements for this course are to attend scheduled concerts, recitals, master, repertoire, and solo classes and to perform at least once each quarter as partial fulfillment of applied music credit requirements.

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

Applied Music fees are not refundable after lessons have been scheduled.

1500-2500-3500-4500-5500 Flute (1-4) May be repeated for credit.

1505-2505-3505-4505-5505 Oboe (1-4) May be repeated for credit.

1510-2510-3510-4510-5510 Bassoon (1-4) May be repeated for credit.

1515-2515-3515-4515-5515 Clarinet (1-4) May be repeated for credit.

1520-2520-3520-4520-5520 Saxophone (1-4) May be repeated for credit.

1525-2525-3525-4525-5525 Horn (1-4) May be repeated for credit.

1530-2530-3530-4530-5530 Trumpet (1-4) May be repeated for credit.

1535-2535-3535-4535-5535 Trombone (1-4) May be repeated for credit.

1540-2540-3540-4540-5540 Baritone (1-4) May be repeated for credit.

1545-2545-3545-4545-5545 Tuba (1-4) May be repeated for credit.

1550-2550-3550-4550-5550 Percussion (1-4) May be repeated for credit.

1555-2555-3555-4555-5555 Voice (1-4) May be repeated for credit.

1580-2580-3580-4580-5580 Violin (1-4) May be repeated for credit.

1585-2585-3585-4585-5585 Viola (1-4) May be repeated for credit.

1570-2570-3570-4570-5570 Cello (1-4) May be repeated for credit.

1575-2575-3575-4575-5575 String Bass (1-4) May be repeated for credit.

1580-2580-3580-4580-5580 Piano (1-4) May be repeated for credit.

1585-2585-3585-4585-5585 Harpsichord (1-4) May be repeated for credit.

1590-2590-3590-4590-5590 Organ (1-4) May be repeated for credit.

1595-2595-3595-4595-5595 Guitar (1-4) May be repeated for credit.

2599-3599-4599-5599 Composition (2, 3, 3) May be repeated for credit. Prereq: permission of instructor.

ENSEMBLES 
All students studying applied music are required to perform in a major musical organization each quarter. String, woodwind, brass, and percussion students must be enrolled in an instrumental organization; voice students in a choral organization, opera workshop, or opera theatre.

A student's preference for musical organization will be honored whenever possible, but factors considered in making the assignment will include playing ability, specific needs of various organizations, and previous performance experience at the University.

3000-5600 Small Ensemble (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.

3608-5608 Trombone Choir (1, 1) May be repeated for credit.

3607-5607 Tuba Ensemble (1, 1) May be repeated for credit.

3610-5610 Percussion Ensemble (1, 1) May be repeated for credit.

3612-5612 Baroque Ensemble (1, 1) May be repeated for credit.

3620-5620 U. T. Singers (1, 1) May be repeated for credit.

3630-5630 Chamber Singers (1, 1) May be repeated for credit.

3632-5632 Collegium (1, 1) May be repeated for credit.

3634-5634 Saxophone Choir (1, 1) May be repeated for credit.

3640-5640 Opera Theatre (1, 1) May be repeated for credit.

3642-5642 Opera Workshop (1, 1) May be repeated for credit.

3650-5650 Concert Band (1, 1) May be repeated for credit.

3652-5652 Campus Band (1, 1) May be repeated for credit.

3654-5654 Varsity Band (1, 1) May be repeated for credit.
Organizational Psychology Programs

See Graduate School.

Philosophy (745)

Professors:
J. W. Davis (Head), Ph.D., Emory; R. B. Edwards, Ph.D., Emory; R. H. Herrmann, Ph.D., Mainz (Germany); M. H. Moore (Emeritus), Ph.D., Chicago; D. Van de Vate, Ph.D., Yale.

Associate Professors:
R. E. Aquino, Ph.D., Northwestern; L. C. Bébak, Ph.D., Nebraska; B. R. Dumas, Ph.D., Arkansas.

Assistant Professors:
J. O. Bennett, Ph.D., Tulane; P. A. Bowman, Ph.D., Indiana; G. G. Blankert, Ph.D., Michigan; S. M. Cohen, Ph.D., Northwestern; K. A. Emmett, Ph.D., Ohio State; G. C. Graber, Ph.D., Michigan; J. W. Gravender, Ph.D., Texas; H. P. Hennin, Ph.D., Georgia; B. C. Lafer, Ph.D., Yale.

Instructor:
M. L. Osborne, M.A., Bryn Mawr.

Philosophy seeks to understand man, his 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 implies a balanced program in the humanities, natural and social sciences. Graduate students should read French or German, preferably both; other ancient or modern languages are useful and for some advanced work necessary.

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.

Students enrolled in the College of Liberal Arts prior to Fall Quarter, 1972, who are under the previous B.A. or B.S. curricula will find requirements for a major or minor in the 1972-73 or earlier general catalog.

American Studies. See Cultural Studies.

Russian and East European Studies. See Cultural Studies.

2510-20 Elementary Logic (4, 4)
2510—Traditional or modern deductive logic, informal fallacies, uses of language, definitions. (3810 is recommended for introductory to students with mathematical aptitude.) 2520—Inductive reasoning; elements of scientific method and statistical inference.

3111 History of Ancient Philosophy (4) Pre-Socratic through Aristotle.

3121 History of Hellenistic, Roman, and Medieval Philosophy (4)

3131 History of Seventeenth and Eighteenth Century Philosophy (4)

3141 History of Nineteenth and Early Twentieth Century Philosophy (4)

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 nineteenth century, 3312—Late nineteenth century to present.

3315 American Ideals (4) Ideological variants in American scene.

3320 Philosophy of Law (4) Nature, sources, function of law.

3330 Philosophy of History (4) Speculative and critical aspects of philosophy of history.

3410 Philosophical Ideas in Literature (4) Philosophic assumptions and implications in major literary works.

3420 Philosophy of Literature (4) Study of the nature, functions, value and epistemic principles of literary arts.

3440 Social Ethics (4) Ethical theory as related to politics, economics, education, law, religion and the family.

3510 Existentialism (4)

3550 Marxism as Philosophy (4)

3611 Religious and Philosophical Issues in Medical Ethics (4) (Same as Religious Studies 3611.)

3630 World Religions (4) (Same as Religious Studies 3630.)

3650 Philosophy and Religion in India (4) (Same as Religious Studies 3650.)

3660 Buddhist Philosophy and Religion (4) (Same as Religious Studies 3660.)

3670 Religion and Philosophy in China and Japan (4) (Same as Religious Studies 3670.)

3690 Philosophy of Religion (4) Analysis of basic issues of religion. (Same as Religious Studies 3690.)


3740-50 Conceptual History of Science (4, 4) 3740—The Scientific Revolution: historical evolution of thought in astronomy, mechanics, and philosophy of the nature of nature to Newton. 3750—The Development and Decay of Newtonian Science: historical evolution of thought on the nature of matter and of light, and on that of life. Prereq: Eight hours of physical science or permission of instructor.

3770 Introduction to Philosophy of Science (4) Standard topics in philosophy of science; scientific method, nature of laws and theorems, problem of induction, explanation, measurement. No background in logic is presupposed.

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

3910 Contemporary Aesthetics (4) Philosophical discussion of contemporary art.

4000 Special Topics (4) A student- or instructor-initiated course to be offered at convenience of Department. Subject matter to be determined by
5710-20 Studies in Metaphysics (4, 4)
5910-20-30 Research (4, 4, 4)
8000 Doctoral Research and Dissertation
6050-60 Seminars in Advanced Logic and Philosophy of Logic (4, 4)
6110-20-30 Seminars in History of European Philosophy (4, 4, 4)
6150-60 Seminars in History of American Philosophy (4, 4)
6250 Seminar in Philosophy of Religion (4)
6310 Seminar in Axiology (4)
6350-60 Seminars in Ethics and Metaethics (4, 4)
6510-20 Seminars in Epistemology (4, 4)
6550 Seminar in Philosophy of Science (4)

Physical Sciences

Major: None offered.
Minor: Consists of the following courses:
- Prerequisites to this minor concentration are Mathematics 1940-50 and Philosophy 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.

1Mathematics 2800 is a prerequisite for these courses.

Physics and Astronomy

Professors:


Research Assistant Professors: L. Adler, Ph.D. Tennessee; R. S. Thoe, Ph.D. Connecticut.

Astronomy (150)

UNDERGRADUATE

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 stars clusters and nebulae. It is recommended that the courses be taken in sequence. 4 hrs 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 hrs lecture-discussion; 2 hrs lab per week. Coreq: Math 1810-20-30 or equivalent.

1110-20-30 Astrophysics (3, 3, 3) Physics of stars and interstellar matter, planets and interplanetary matter; atmospheres, interiors, and evolution; nebulae, pulsars, quasars, and black holes. 3 hrs lecture-software and their determination. Current developments. Approach will be interdisciplinary. Approvable for majors in Physics. Prereq: Physics 2350 and permission of instructor.

Physics (773)

UNDERGRADUATE

The undergraduate program in physics is designed to give the student a wide background which will permit him readily to specialize 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 Mathematics 1840-50-80 are prerequisites to a major in Physics which includes the following courses: Physics 2318-28-38, Mathematics 2840-50-60; Physics 3210-20; either Physics 3710-20-30 or 4110-20-30; 4210-20, and at least six hours from 3510-20-30, 3610-20, 4230-40, 4510-20-30, 4540-50. Physics 1310-20 or Basic Engineering 1310-20-30 may be substituted for Physics 1318-28-38 and Physics 2310-20-30 may be substituted for Physics 2318-28-38 as a graduation requirement. Transfer students from other schools or from other departments may substitute 2510 and one quarter of an upper division physics course for 1318-28-38.

A major in Physics with a concentration in Health Physics includes Physics 2310-20-31, 2318-28, 3210-20, 3710-20-30, 4210-20, 4710-20-30, and Mathematics 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 consists of 24 hours of courses including 2318-28-38 and the remainder from physics courses numbered 3000 or above. Substitution provisions in the major statement apply also to the minor.
An Engineering Physics Curriculum is also offered. The program is described on page 130 and listed in tabular form on page 109.

1210-20-30 Introductory Physics (4, 4, 4) General course for students who find college courses in the physical sciences. Concepts of physics developed by observation of phenomena and logic rather than mathematics. Specific areas covered in the first quarter are mechanics, heat, and energy. In the second quarter wave motion, sound, electricity, and magnetism, and light and color are discussed. In the third quarter the main emphasis is on modern physics. It is recommended that the courses be taken in sequence. Corr: Math 1310-20-30, and a survey of Classical Physics and are recommended as an introduction to the discipline for Liberal Arts non-science majors.


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 course the student is introduced to the principles of mechanics, electricity, and wave motion 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 the principles are applied in more detail to such topics as nuclear energy, cosmology, atmospheric and oceanic phenomena, drifting currents and waves, and sea level motion. 4 hours lecture-discussion.

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-discussion.

1810 Physics of Music (4) Production, transmission, and reception of sound waves. Frequency, intensity, timbre. Basic acoustics of instruments and voice. 4 hrs lecture and demonstration.


2240-50-60 Elements of Physics for Architects (4, 4, 4) 2240-Mechanics, Properties of Fluids, Heat: Coreq: Math 1850. 2250-Thermodynamics, Sound and Wave Motion, Optics; Coreq: Math 1850. 2260-Electricity and Magnetism, Modern Physics: Basic physical principles with applications, particularly as applied in architecture. Limited to students in the School of Architecture. Should be taken in sequence.


2318-28-38 Honors: Fundamentals of Physics: Electricity, Waves and Optics, Modern Physics (4, 4, 4) Honors course designed for selected students admittance to junior standing. Specific areas covered in the first quarter are mechanics, heat and energy. In the second quarter wave motion, sound, electricity, and magnetism, and light and color are discussed. In the third quarter the main emphasis is on modern physics. It is recommended that the courses be taken in sequence. Corr: Math 2610, 2810-20, 3 hrs lecture-discussion, 2 hrs lab per week.

2510 Mechanics and Heat (5) Kinematics, Newton's Laws, momentum, rotation, calorimetry, thermodynamics, and applications of heat to simple physical and chemical problems. Prereq: 2210 or 2220 or calculus and 2310 or 2320 or instructor's permission.

2510-20-30 Concepts of Modern Physics (3, 3, 3) Modern ideas of atomic structure and the structure of matter and energy; credit for majors. Prereq: 2310 or 2320 or instructor's permission.

2510-20-30 Laboratory Measurements (3, 3, 3) Laboratory measurements of fundamental physical quantities. Theory and experiment are necessary. Prereq: 2310 or 2320 or 2510-20-30, and calculus; 3510 or 3520 and 3530. 3 labs.

2610-20 Electronics (3, 3) Electronic components and circuits of interest to physicists. Prereq: 2310 or 2320 or 2510-20-30 and calculus. 3 labs.

2630 Nuclear Electronics Laboratory (3) Elementary circuits of interest in nuclear instrumentation are designed and built, and their characteristics are tested as a function of various parameters. Prereq: 2610-20.

3640-50-60 Health Physics Practicum (3, 3, 3) Instrumentation; legal aspects and practice of health physics; vision testing and other medical examinations. Prereq: 2510 or 2520 or 3640 or 3710. 3 hrs lecture and 2 hrs laboratory.

3710-20-30 Introduction to Atomic and Nuclear Physics (3, 3, 3) 3710—Relativity and early quantum theory, atomic and molecular physics; 3730—Nuclear physics. Prereq: Math 2860 and Physics 2320 for 3710; 2338 or 3710 for 3720-30.

3999 Junior Seminar (1-3) Topic of current interest. May be repeated for credit with permission of department.


4140 Elementary Nuclear Physics (3) General properties of nuclei, two-nucleon systems, nuclear forces, nuclear models, nuclear reactions, nuclear disintegrations and beta-decay, nuclear spin and magnetism. Prereq: 3730 or 4120.

4160 Physical Acoustics (4) Considerations fundamental to detailed investigation of any branch of acoustical science. Qualitative introduction to the infrasonic, the audible, the ultrasonic, and the hyperasonic ranges of frequencies. 3 hrs and 1 lab. Prereq: 2310-20-30.

4210-20-50 Electricity and Magnetism (3, 3, 3) Intermediate level electric circuits; 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 2830.

4230-40 Geometrical and Physical Optics (4, 4) Lectures, problems, and experiments in geometrical (4230) and physical (4240) optics. Prereq: 2320 and calculus. 3 hrs, 1 lab.

4510-20-30 Atomic Physics Laboratory (3, 3, 3) Experiments in fundamental particle physics and electromagnetic radiation with matter; theory and characteristics of various detectors; statistics of counting, nuclear properties. Experiments illustrate recent techniques for investigating the nucleus and nuclear radiation. 1 hr. lecture, 6 hrs lab. Prereq: 2330.


4710-20-30 Introduction to Health Physics (3, 3, 3) Radioactivity, interaction of electromagnetic radiation with matter, characteristics of charged particles, nuclear reactions, neutron activation, interaction of charged particles with matter, point kernel and extended sources, X-rays and gamma rays, neutron activation, interaction of charged particles with matter. 2 hrs lecture, 3 hrs laboratory. Prereq: 2330.

4918-38-48-56-68-78-88-98 Honors: Research and Independent Study (1 hr each) Designed for excellent undergraduate majors. Provides opportunity for research and independent study with faculty guidance. Special permission of department is required. Maximum credit 9 hrs.

4999 Senior Seminar (1-3) Topic of current interest. May be repeated for credit with permission of department.

GRADUATE

The Master's Program

General requirements for the Master's Degree are found in the Graduate School Catalog.

The Doctoral Program

General requirements for the Doctor's degree are found in the Graduate School Catalog.

5000 Thesis

5080 Graduate Research Participation (3)

5110-20-30 Introduction to Theoretical Physics (3, 3, 3)

5210-20-30 Advanced Modern Physics (3, 3, 3)

5240 Electronic Properties of Solids (3)

5250 Electromagnetic Properties of Solids (3)

5310-20-30 Advanced Dynamics (3, 3, 3)

5410-20-30 Electromagnetic Theory (3, 3, 3)

5440 Experimental Methods of Infrared and Raman Spectroscopy (3)

5450 Radiation Chemistry (3)

5510-20-30 Advanced Thermodynamics and Statistical Mechanics (3, 3, 3)

5610-20-30 Mathematical Methods in Physics (3, 3, 3)

5840 Numerical Methods in Physics (3)

5720 Physics of Polymetric Molecules (3)
Political Science (801)

Professors:
T. D. Ungs (Head), Ph.D. Iowa; R. S. Avery, Ph.D. Northwestern; D. H. Carlisle, Ph.D. North Carolina; L. L. Durisch (Emeritus), Ph.D. Chicago; L. S. Greene, Ph.D. Wisconsin; V. R. Iredell, Ph.D. Chicago; D. D. Nimmo, Ph.D. Vanderbilt; N. Plass, Ph.D. Utah; N. M. Robinson, Ph.D. Syracuse; O. H. Stephens, Jr., Ph.D. Johns Hopkins; D. M. Weiborn, Ph.D. Texas.

Associate Professors:
R. B. Cunningham, Ph.D. Indiana; J. W. Dodd, Ph.D. Tulane; A. A. Elliott, Ph.D. Columbia; A. H. Hopkins, Ph.D. Syracuse; P. S. Kronenberg, Ph.D. Pittsburgh; S. J. Daofty, Ph.D. Columbia; T. McN. Simpson, Ill.; Ph.D. Johns Hopkins; T. A. Smith, Ph.D. Ohio State.

Assistant Professors:
G. C. Evans, Ph.D. Columbia; B. P. Greene, Ph.D. Indiana; J. P. Jones, Ph.D. Tennessee; R. L. Peterson, Ph.D. Yale; R. E. Robson, Ph.D. Maryland; B. D. Rogers, Ph.D. Indiana; P. R. Schulman, M.A. Johns Hopkins.

Instructors:

BUREAU OF PUBLIC ADMINISTRATION

Professors:
T. D. Ungs (Director), Ph.D. Iowa; H. Plass (Associate Director), Ph.D. Illinois.

Associate Professor:
R. S. Kronenberg, (Associate Director, Nashville), Ph.D. Pittsburgh.

Assistant Professors:
B. P. Greene, Ph.D. Indiana; R. E. Robson (Assistant Director), Ph.D. Maryland; B. D. Rogers, Ph.D. Indiana.

Instructor:
F. R. Inson,* M.A. Suny.

* Nashville.

UNDERGRADUATE

A major consists of forty hours: eight hours at the 2000 level or in Political Science courses not used for triad credit but included on the History and Society list; thirty-two hours in courses numbered above 3000. Upper division courses on the triad list may be counted in the latter group. The thirty-two hours should 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, Political theory and methodology.

A minor consists of twenty-four hours: eight hours as specified in the major statement, plus sixteen hours numbered above 3000. Upper division courses on the triad list may be counted in the latter group.

Students enrolled in the College of Liberal Arts prior to Fall Quarter, 1972, who are under the previous B.A. or B.S. curricula will find requirements for a major and minor in the 1972-73 or earlier general catalog.

Public Administration. See pages 68 and 161.

American Studies. See Cultural Studies.

Asian Studies. See Cultural Studies.

Russian and East European Studies. See Cultural Studies.

2020 Introduction to Political Science (4) A variety of the basic substantive concepts and concerns of political science.

2510-20 United States Government and Politics (4, 4) 2510—Foundations: the Constitution, federalism, separation of powers, campaigns, and elections, parties, interest groups, the media, public opinion. 2520—Institutions: Executive, legislative, judiciary, and bureaucracy at national, state, and local levels.

2518-28 Honors: United States Government and Politics (4, 4) Honors course designed for students of superior 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 B in 2518 is necessary for entrance into 2528.

2530 Tennessee Government and Politics (4)

3170-80 U.S. Foreign Policy Processes (4, 4) Processes whereby U.S. foreign policies are made and implemented, focusing on interaction within federal bureaucracy and roles of the President, Congress, the press, and public opinion.

3545-46 United States Constitutional Law (4, 4) 3545—Analysis of judicial review, constitutional powers of President and Congress, federalism, sources of regulatory, and constitutional protection of political rights. 2510-20 desirable as a preceding course. 3546—Study of civil rights and liberties, with emphasis on judicial interpretation of First Amendment freedoms, rights of the accused, racial equality, and the right of privacy.

3555 Minority Group Politics in the United States (4) Content varies from quarter to quarter. May be repeated up to a maximum of 8 hours credit with permission of Department.

3557 Politics and the Environment (4) Examination of formulation and implementation of public policies relating to physical environment, with emphasis upon water and air pollution control.

3585 Introduction to Public Administration Organization and Management (4) Organization and decision-making theory, line and staff services, politics of organization, leadership, personnel and fiscal management, administrative responsibility. 2510-20 desirable as preceding course. (Same as Water Resources Development 3565).

3586 Public Administration and the Policy-Making Process (4) Public bureaucracies and the policy-making process, their political environments, administrative problems associated with policy-making. 2510-20 desirable as preceding course.

3615-16 Dynamics of Black African Politics (4, 4)

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

3625-26 Latin American Government and Politics (4, 4)

3630 Administration of Government Enterprises (3) Problems of special government enterprises, such as TVA.

3631-32 Government and Politics of the Soviet Union (4, 4)

3635-36 Politics in Western Democracies (4, 4) Political culture, patterns, and institutions of Western democracies.

3641-42 Government and Politics of Middle East and North Africa (4, 4)

3655 Political Change in Developing Areas (4) Characteristics and problems of political changes, with primary focus on developing areas.

3701-02 Introduction to International Relations (4, 4) 3701—Methodology and background. 3702—International processes and institutions including war, diplomacy, law, and organization.
3705 Contemporary Diplomatic and Military Problems (4) Analysis of current international events.

3710-20-30 State, Regional, and Local Government 3710—Constitutional, institutional, and political structure; 3720—Government organs and their relationships; 3730—Functions and administration.

3715 Contemporary Problems of Soviet Foreign Policy (4) 3801-03-03-04 Studies in Political Thought (4, 4, 4, 4) 3801—Classical Greek and Roman political thought. 3802—From Augustine to Luther: Emphasis on problems and theories of religion and politics. 3803—Machiavellian through the Enlightenment. 3804—Political theories of industrial and technological societies; 19th and 20th centuries.

4101 Foreign Study (1-16) See page 162.

4102 Off-Campus Study (1-16) See page 161.

4103 Independent Study (1-16) See page 162.

4140-20 Administrative Law (3, 3) Powers of, procedures of, controls over administrators.

4535-36 Political Attitudes, Opinions and Communication (4, 4) Nature, development, formation and distribution of politically relevant attitudes and opinions; role of leadership, persuasion, and communication in opinion-policy process.

4540-50 Presidency, Congress and Public Policy (4, 4) The Presidency and Congress within framework of policy-making process.

4545-46 The Judicial Process (4, 4) The study of courts as components of political systems, and public policy formulation through judicial decision-making. 2510-20 desirable as preceding courses.

4575 Special Topics in United States Government and Politics (4) May be repeated up to a maximum of 6 hours credit with permission of Department.

4580-00 The Urban Polity (4, 4) Analysis of political institutions and processes in metropolitan areas; urban problems and politics.

4610 The Budgetary Process (3) Fiscal planning, budget and expenditure processes in government, their policy and administrative implications.

4620 Public Personnel Administration (3) Development of the merit system in government, career systems, public personnel management functions, organization for personnel management.

4630 Problems in Public Management (3) Selected problems in internal and external communication and information systems in government and public access to information.

4655-68 Policy-Making in Democracies (4, 4) Comparative approach to theory and process of making public policies.

4675 Special Topics in Comparative Government and Politics (4) May be repeated up to a maximum of 8 hours credit with permission of Department.


4711 International Law (4) 4740-50-60 Politics and Elections (3, 3, 3) 4740-50—Structure and function of party system; nominations and campaigns. 4760—Voting behavior of the electorate.

4815 Contemporary Soviet Marxism-Leninism (4) Soviet applications of Marxist-Leninist theory.

4831-32-33 The Systematic Study of Politics (4, 4, 4) Scope, methods and procedures of analysis in political science; intended primarily for seniors intending to pursue graduate work and entering graduate students who have not had such a course.

4875 Special Topics in Political Thought (4) May be repeated up to a maximum of 8 hours credit with permission of Department.

4900 Aspects of Urban Environment I (3) Interdisciplinary course in urban problems. Prereq: Permission of one instructor. (Same as Architecture 4900, Human Services 4900, Psychology 4900, and Real Estate 4900).

4975 Seminar in Political Science (4) Selected research for seniors; primarily for majors. May be repeated up to a maximum of 8 hours with permission of Department.

GRADUATE

The Master's Program

See requirements in the Graduate School Catalog.

The Doctoral Program

General requirements for the degree of Doctor of Philosophy are described in the Graduate School Catalog.

5000 Thesis

5110-20 Seminar in Political Theory (3, 3)

5210-20 Seminar in World Politics (3, 3, 3)

5211 Directed Readings in Political Science (3)

5250 Seminar in African Politics (3)

5270-80-90 Seminar in Politics of Development (3, 3, 3)

5310-20-30 Seminar in Comparative Government (3, 3, 3)

5340-50-60 Seminar in Latin American Government (3, 3, 3)

5370-80 Seminar in Soviet Politics and Government (3, 3)

5410-20-30 Seminar in Public Law (3, 3, 3)

5440-50 Theory and Analysis of U.S. Foreign Policy Processes (4, 4)

5510-20 Seminar in International Organization (3, 3)

5540 Seminar in Comparative Public Administration (3)

5550 Seminar in Administration in Developing Countries (3)

5600 Public Administration (3)

5605 Research and Methodology in Public Administration (3)

5610-20 Seminar in Organization Theory (3, 3)

5611-21-31 Seminar in State-Local Administration (3, 3, 3)

5630 Seminar in Technology and Public Policy (3)

5640-50-60 Seminar in Metropolitan Areas (3, 3, 3)

5641 Seminar in Contemporary Public Policies (3)

5670-80 Seminar in Policy Analysis (3, 3)

5710 Seminar in Politics of Administration (3)

5740 Seminar in Organizational Analysis (3)

5750 Seminar in Public Management (3)

5760 Seminar in TVA Public Personnel Management Practices (3)

5770 Practicum in Public Administration (3)

5780 Seminar in Fiscal Management (3)

5810 The American Political Process (4)

5820 The American Political Process (4)

5910-20-30 Methodology and Bibliography (3, 3, 3)

6000 Doctoral Research and Dissertation

6210 Advanced Studies in International Politics (3)

6310 Advanced Studies in Political Theory (4)

6410 Advanced Studies in International Organization (3)

6430 Advanced Studies in Jurisprudence (3)

6440-50-60 Advanced Studies in Comparative Politics (3, 3, 3)

6510-20-30 Advanced Studies in American Constitutional Law (3, 3, 3)

6610-20-30 Advanced Studies in Public Administration (3, 3, 3)

6710 Directed Research in Political Science (3)

6810-20-30 Advanced Studies in the Political Process (3, 3, 3)

Psychology (830)

Professors:

W. H. Catoun (Head), Ph.D. California (Berkeley);

G. M. Burgwardt, Ph.D. Chicago; J. F. Byrde, Ph.D. Tennessee; E. E. Curtis (Emeritus), Ph.D.;

H. A. Dillard, Ph.D. Southern Illinois; J. E. Leonard, Ph.D. Syracuse; L. Handler, Ph.D. Michigan; State, J. E. Lubin, Ph.D. Chicago; J. W. Mitchell (Director, Research Center), Ph.D. Michigan; K. R. Newton, Ph.D. Tennessee;

H. R. Pollio, Ph.D. Michigan; J. E. Porter, Ph.D. Yale; N. L. Rasch, Ph.D. Pennsylvania; F. Samejima, Ph.D. Keio (Japan); R. R. Shadrer, Ph.D. Tennessee;


Associate Professors:

H. S. Bacon, Ph.D. Tennessee; J. C. Pagen, Ph.D. Kansas; L. F. Droppleman, Ph. D. Catholic; H. R. Friedman, Ph.D. Tennessee; S. J. Handel, Ph.D. Johns Hopkins; W. G. Morgan, Jr, Ph.D. Tennessee; W. M. Simmons, M.S.W. Tennessee; A. S. Webster, Ph.D. Tennessee.

Assistant Professors:


UNDERGRADUATE

Major:

[Concentration in General Psychology] Designed to give students a broad and current background in the science and application of psychological methods and principles. It is particularly suited for students who desire a liberal education concentrating on psychology. This emphasis will consist of Psychology 2500, 8 hours from 2520-30-40, Psychology 3150, at least 2 hours of laboratory, field, or practicum courses, and 32 or more hours of upper division psychology courses.

[Concentration in Academic Psychology] Designed to prepare students for advanced work in the scientific, professional, and college level teaching areas of psychology. Course work will consist of Psychology 2500 plus one course from 2520-30-40, Psychology 3150, and 8 hours of laboratory, field, or practicum courses, and 20 or more hours of upper division psychology courses of which at least 12 hours should be at the 4000 level.

Prerequisites are Biology 1220-30 and Mathematics 1540-50-60 or 1840-50-60 or equivalents. It is strongly suggested that Triad and elective courses also be taken in other areas of the behavioral sciences such as sociology, anthropology, and political science.

Minor: A minor in Psychology shall consist of Psychology 2500 and 20 additional hours from 3000 and 4000 level courses.

Students enrolled in the College of Liberal Arts prior to Fall Quarter, 1972, who are under the previous B.A. or B.S. curricula will find requirements for a major or minor in the 1972-73 or earlier general catalog.

Honor Program in Psychology. A two-year (Junior-Senior) program leading to the B.A. degree. Objective of the Honor Program is to enable superior students to accelerate their development of his grasp of science of
psychology. Program encourages independent study.

Eligibility: Selection of participants is determined by departmental Undergraduate Honors. Correlated student should apply to the Psychology Department. Successful applicants usually have a G.P.A. of at least 3.0 and have completed Psychology 2500, 2520 or equivalent. Requirements: 3150 and two quarters of laboratory psychology 4948-58-68 and Psychology 4978-88-98. Completion of 4996 is dependent upon submission of an acceptable Honors research thesis and passing of a final Honors Examination.

2500 General Psychology (4) An introduction to community, sensory, affective, cognitive and social behavior, methods, and contributions of the major movements and ideas which define contemporary psychology.

2518-28 Honors: General Psychology (4, 4) First quarter an enriched survey of general psychology. Second quarter participation in psychological research, either individually or group arranged. Prereq, for 2518: Minimum ACT Composite 28; GPA 3.2. Prereq, for 2528: admission by permission of department.

2520 Biological Foundations of Behavior (4) Survey of theories and research pertaining to the biological foundations of individual behavior. General Psychology recommended.

2530 Introduction to Social Psychology (4) Human behavior and experience in social context. Emphasis upon social factors which influence individual behavior. Recommended: 2110.

2540 Psychology of the Individual (4) Study of individuals, their behavior, and the progressive changes in behavior that occur in natural environments; introduction to personality, developmental and abnormal psychology. Recommended: 2110.

3106 Undergraduate Field Work in Psychological Services (1-4) Supervised fieldwork experience in community agencies, agencies, and private practice. May be repeated for credit to maximum of 8 hours; no more than 6 credit hrs may be applied toward major. Prereq: 9 hrs upper division psychology and permission of instructor. Satisfaction-Not Credit.

3120 Social Psychology (4) General survey of theories, methods and research findings on individual behavior in a social context. Prereq: 2500.

3129 Laboratory Psychology Laboratory (2) Prereq or coreq: 3120.

3150 Psychological Statistics (5) Introduction to basic statistical methods used in research.

3210 Learning and Thinking (4) Study of theoretical and empirical basis of learning and thinking. General Psychology recommended.

3219 Laboratory in Learning and Thinking (2)

3220 Motivation and Emotion (4) Current theories, approaches and their development.


3319 Laboratory Methods in Psychology, I (2) Laboratory methods in research investigation of individual and group. Prereq or coreq: 3319.

3430 Psychology of the Consumer (4) Origins and principles of marketing and commercial activity of the consumer choice. Prereq: 2530 recommended.

3550 Child Psychology (4) Origin and principles of behavior in infancy and childhood; physical, intellectual, social, emotional, and language behavior of the normal child. 2540 recommended.

3559 Laboratory in Child Psychology (2) Field and laboratory studies of child development. Coreq: 3550.

3616-26 Human Relations (0, 4) Experience and study of human relations in dyadic, small and large group situations. Primarily experiential. No credit until sequence is completed. Satisfaction-No Credit.

3650 Abnormal Psychology (4) Constitutional and environmental factors in abnormal behavior; neurotic and psychotic reactions; nontechnical discussion of diagnostic and therapeutic methods. 2540 recommended.

3660 Sociopsychological Approaches to Abnormal Behavior (4) Social learning approaches to description and change of maladaptive behavior, including behavioral variables in historical and current conceptions, descriptions of the varieties, and detailed study of techniques for changing deviant behavior. Prereq: 2540.

4101 Foreign Study (1-16) See page 162.

4102 Off-Campus Study (1-16) See page 161.

4103 Independent Study (1-16) See page 162.

4107 Experience in Individualized Instruction (2) Supervised participation as a tutor in individualized instruction. Prereq: permission of instructor. May be repeated once. Satisfaction-No Credit.

4109 Undergraduate Research (1-6) Permission of instructor. May be repeated for credit to maximum of 16 hrs.

4120 Topics in Social Psychology (4) Intensive analysis of selected research topics. Prereq: 3120 or Sociology 3130. (Same as Sociology 4120).

4230 Sensory Processes and Perception (4) Survey of sensory and perceptual processes with emphasis on auditory and visual. Prereq: 2510: 2520 recommended.

4239 Laboratory in Sensory Processes and Perception (2) Prereq or coreq: 4230.

4340 Human Factors in Man-Machine Systems (4)

4460 Organizational-Industrial Psychology (3) Same as Industrial Management 4460.

5150 Personality Theories (4) Prereq: 3650 or 3660.

5159 Research in Personality (4) Discussion and demonstration of research on individual as it relates to major theoretical issues and to substantive areas of investigation. Prereq: 3150 or equivalent and senior standing.

5420 Personality and Social Systems (4) Prereq: 2540.

4550 Psychology of Aging (4) Behavioral changes from maturity through old age. Prereq: permission of instructor.

4610 Group Processes (3) Study and experience of theory and techniques of group processing and facilitation. Those participating in 4610 are expected to continue into 4620 and 4630. Prereq: 3616-26 and permission of instructor.

4620-30 Seminar in Group Processes (0, 6) Didactic and laboratory experience for those qualified for further training as group facilitators. Prereq: 4610 and permission. No credit given until sequence is completed.

4640 Psychological Tests and Measures (4) Theory and construction of individual and group measures. Survey of various methods of assessment of intelligence, personality, special abilities, and educational achievement. Prereq: 3150.

4650 Symbolic Processes (4) Logic of signs and symbols, directed and associative thinking, memory, problem-solving, and concept formation; nature, use, and development of language. Prereq: 3210 or permission of instructor.

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.
Prospective majors are encouraged to begin to construct their own plans of study as early as possible. Some may desire eventually to pursue graduate study in religion, philosophy, history, literature or professional theological training. It is advisable to begin coordinating one's course work early in this case. Other students may desire a broad, comprehensive program of undergraduate courses combining humanistic and social-scientific studies, looking forward to entry into such careers as government service, social work, medicine, journalism, law, urban planning or personnel work. Whatever the long-range goal may be, students are urged to formulate their own plans of study, in consultation with department faculty. Further details are available in the departmental office.

Minor: Twenty-four hours of courses at the 3000 level and above. It is suggested that students minor in Religious Studies discuss their programs with a member of the department faculty.

Students enrolled in the College of Liberal Arts prior to Fall Quarter, 1972, who are under the previous B. A. or B. S. curricula will find requirements for a major or minor in the 1972-73 or earlier general catalog.

2610 Religion and Culture: Religions in History (4) Introduction to the study of religion through selected historical traditions, East and West.

2611 Religion and Culture: Ancient Near Eastern Religions (4) An alternative to 2610. Students may not receive credit for both 2610 and 2611.

2620 Religion and Culture: Contemporary Issues (4) Introduction to the study of religion through selected religious problems and alternatives in the modern and post-modern world.

HISTORY AND LITERATURE OF RELIGIONS

3011 Phenomenology of Religion (4) Examination of recurrent forms, themes and patterns in history of religions, such as gods, cosmic heroes, initiations and ascensions.

3021 Religious Myth, Symbol, and Ritual (4) Study of interrelation of myths, symbols, and rituals among preliterate peoples through a specific myth, such as solar, lunar, and communal.

3061-71 History of Western Religious Thought and Institutions (4, 4) 3061—First Century to the Thirteenth Century, 3071—Thirteenth Century to 1900. (Same as History 3061-71.)

3110 Ancient Israel's Historical and Religious Traditions (4) Political, religious and cultural history and traditions of ancient Israel from earliest period to Exile.

3120 The Rise of Judaism (4) Political, religious and cultural history and traditions of exilic and post-exilic Israel and early Judaism through 135 A.D. Later literature of Old Testament, Apocrypha, and Dead Sea Scrolls.

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

3270 Russian Philosophical and Theological Thought (4) (Same as Russian 3270 and Philosophy 3270.)
PROBLEMATIC OF RELIGION

3600-10 Religious Ethics (4, 4) Historical and critical survey of religious ethics; basic theories and their application in social problems.

3611 Religious and Philosophical Issues in Medical Ethics (4) Explores ethical issues in medicine such as abortion, euthanasia, human experimentation, and fairness in health care delivery and the doctor-patient relationship. (Same as Philosophy 3611).

3620 Topics in Religious Ethics (4) Examination of particular theoretical issues and social problems from perspectives of various 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 by the religious notion of literature. Relation of religious and moral considerations to problems of literary criticism. Relation of religious notions 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 the influence of Hindu and Buddhist thought on Western thinkers.

3780 The Literature of Dissent (3) Critique of religion in Western thought. Aspects of atheism, rebellion, and revolution in such thinkers as Lucretius, Spinoza, Voltaire, Feuerbach, Marx, Nietzsche, Russell, and Carmack.

4101 Foreign Study (1-16) See page 162.

4102 Off-Campus Study (1-16) See page 161.

4103 Independent Study (1-16) See page 162.

4111-21 Modern Religious Philosophies (4, 4) Examination of the religious implications of major thinkers and movements. 4111—Nicholas of Cusa to Hume, 4121—Kant and the nineteenth century. Prereq: 9 credit hours of philosophy other than logic. (Same as Philosophy 4111-21).

4370-71 Theoretical Issues in Medical Ethics (4, 4) (Same as Philosophy 4370-71).

4410 American Religious Thought (4) Selected figures, movements and problems in American religious thought from colonial period to present.

4610 Topics in Western Religious Thought and Institutions (4) Selected figures, issues, and institutions. Seniors and graduate students only, except by permission of Department. Prereq: 3061-71. May be repeated for credit to a maximum of 12 hours.

4810-20-30 Readings and Research in Religious Studies (3, 3, 3)

4850 Preseminar in Religious Studies (3) For advanced students in religious studies; staff of Department will participate. Specific topics, e.g., nature and function of myth in religion, problems of transcendence, integrating various disciplines involved in study of religion. Prereq: Permission of instructor. May be repeated for credit. Maximum 9 hrs.

4940 Sociology of Religion (3) Same as Sociology 4940.

4950 Theory of Religion (4) Elements for construction of a theory of religion drawing on resources from fields of psycho-history, social psychology, sociology of religion, cultural anthropology, theology, and comparative religion.

4960 Tradition, Change and Modernity in 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.

4700-50-60 Eastern Seminars (3, 3, 3) Philosophy, morphology, syntax of classical Semitic, Studies from the Mahabharata and the Hitopadesa.


4840 Readings in Selected Languages Related to Religious Studies (3) Prereq: Permission of instructor. May be repeated for credit. Maximum 9 hrs.

Romance Languages

Professors:

Associate Professors:

Assistant Professors:
W. H. Heflin, Jr., Ph.D. Florida State; K. D. Levy, Ph.D. Kentucky, M. G. Petrovsky, Ph.D. Kentucky, C. R. Pinsky, Ph.D. California (Berkeley).

Instructors:
C. A. Almeida, M.A. Middlebury, C. G. Cox, M.A. Tennessee; E. M. Johnson, M.Ed. Goucher, M. H. Robotics Center, B.A. Sorbonne, Paris (France); S. T. Salmen, M. A. Tennessee, P. A. Wilson, M.A. Tufts.

Placement Examination: Students who have had two or more years' work in French, Italian, or Spanish in high school or one year's work in another college should register in French, Italian, 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 residence in foreign countries, or the like should initiate a request for a proficiency test in the Office of the Dean of Admissions. A student earning a grade of C or better on such a test will receive credit for a limited number of courses. Superior students are encouraged to proceed as rapidly as their achievement permits.

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
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.

Major: (Majors in French, Italian or Spanish) must take at least 36 hours in courses numbered 3000 or above (except French 3010-20-30, Italian 3010, and any course in English translation which is offered by the department). All students must have the following courses or their equivalent (with permission of the department): 8 hours of a survey (or "aspects") of literature, 3510-20 (French majors may take 3610-20); 3 hours of conversation and composition (3410); 3 hours of phonetics, (Italian 4210, Spanish 4210). Students whose primary interest is literature would complete the major with 9 hours of literature at the 4000-level; 3 hours of language (3420 or 3430) and 9 hours of conversation and civilization. Students whose primary interest is language would complete the major with 9 hours of language (3420-30 or 4220-30 in French or Spanish, French (Spanish) 4250, 4260, 4270, or Italian 4320) 6 hours of literature at the 4000-level; 6 hours of language, literature, or civilization. With permission of the department, students may substitute Foreign Study (4101) for certain courses in this program; students with a special interest, such as Comparative Literature, may make certain substitutions with permission of the department.

Minor: (Any of the Romance languages.) Consists of 24 hours in courses numbered above 3000 (all the same restrictions apply as for the major concentration). All students pursuing a minor must complete the same 14 hours which are prescribed for students who are taking the major. The remaining 10 hours of the minor may be selected from either the track described in the major concentration for the student with a primary interest in literature, or 10 hours from the track described in the major concentration for the student with a primary interest in language. Students pursuing a minor are strongly advised to consult with a departmental advisor: There is no major in Portuguese, but a minor is offered.

Students enrolled in the College of Liberal Arts prior to Fall Quarter 1972, who are under the previous B.A. or B.S. curriculum will find requirements for the various majors or minors in the 1972-73 or earlier general catalog.

Latin American Studies. See Cultural Studies.
Certification for Teaching French or Spanish in Tennessee
Consult Certification Clerk, Room 212
Claxton Education Building.

UNDERGRADUATE

Arabic (127)

1510-20 Spoken Arabic (4, 4) Must be taken in sequence. Discretion of major instructor. Class meetings and 2 laboratory periods.
2510-20 Elementary Modern Standard (4, 4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.
3510-20 Intermediate Modern Standard (4, 4)
3610 Islamic Literature in English Translation (4) Survey from origins to modern period of major Islamic literatures, especially Arabic, Persian, and Turkish. Readings include The Arabian Nights, The Rubaiyat of Omar Khayyam and Gibran's The Prophet.
4101 Foreign Study (1-16) See page 182.

French (405)
1510-20 Elementary French (4, 4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.
1518-28 Honors: Elementary French (4, 4) Honors course for students of superior ability. 1518 not open to students who have taken French in high school. Freshmen are admitted on the basis of a diagnostic test or conversation and performance. The class will be held to a maximum of 15 so that each student may receive more attention. This class will cover the normal French program for the first year, but will be enriched whenever possible. Students will be expected to spend the normal amount of time in preparation. Those who find the course too difficult may easily transfer to a regular class. Potential majors and minors in French are urged to take this course. Students who pass 1510 with a grade of B or higher may take 1528 instead of 1520.
2510-20 Intermediate French (4, 4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.
2518-28 Honors: Intermediate French (4, 4) Honors course for students of superior ability in French. Incoming freshmen are admitted on the basis of a diagnostic test, high school average, and performance on the ACT. This class will be held to a maximum of 15 so that each student may receive more attention. Students will follow an enriched program with continuing emphasis upon speaking ability with special emphasis on reading, including literary selections. Must be taken in sequence. Students who earn an A or B in 2518-28 automatically receive credit for French 3000. Prereq: French 1510-20, 1518-28, or equivalent.
2610-20 Panorama of French Culture (4, 4)
2610—Four Roman times to the Revolution: Einhard's Geschichte, Song of Roland, St. Louis, Joan of Arc, Montaigne, Moliere, Louis XIV, Rousseau, 1820—The Modern Age. Stendhal, Zola, Sartre, developments in the arts.
3000 French Transition (2) Development of literary and linguistic skills necessary for satisfactory work in courses above 3000. Recommended for all students intending to take upper-division French, especially those intending to major.
3010-20-30 Elements of French for Upper Division and Graduate Students (3, 3, 3) For graduate students preparing for language examinations, and upper division undergraduates depending on rear-reading knowledge of second foreign language. Prereq: Two years of some foreign language in college or permission of department. This class is designed for credit only. No credit for students having had 1110-20-30 or equivalent. No auditors.
3240 Women in French Culture (4) Influential role of women in shaping French history and culture. Feminists (George Sand); royal mistresses (Mme. de Maintenon, Intellectuales (Mme. de Staël)); actresses (Sarah Bernhardt); scientists (Marie Curie) will be among the important figures studied.
3410-20-30 Intermediate Composition and Conversation (3, 3, 3) Grammatical analysis of modern French. Practice of grammatical principles and their application in translations from English to French, both written and oral; exercises in free composition. Prereq: 2130.
3510-20 Aspects of French Literature (4, 4) Prereq: 2520 or equivalent. Recommended for literature majors.
3610 Survey of French Literature (4, 4) May be taken in place of 3510-20. Prereq: 2520 or equivalent.
4010 Masterpieces of French Literature in English Translation (3) No foreign language credit.
4200 Masterpieces of French Drama in English Translation (3) No foreign language credit.
4101 Foreign Study (1-16) See page 182.
4110-20-30 French Literature of the Seventeenth Century (3, 3, 3) Prereq: 2130 or equivalent.
4150 Theatrical French (1-3) Performance in one or more French plays. May be repeated for credit with permission of department. Prereq: 2130 or equivalent and permission of the instructor.
4160-70-80 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 hrs of courses on 3000-level.
4120-20-30 Phonetics and Advanced Grammar (3, 3, 3) Prereq: 2130 or equivalent.
4250 Introduction to Descriptive Linguistics (3) Phonetics and phonology, morphology and syntax. Types of languages, linguistic groups, dialects and dialect geography. Application of descriptive linguistics—field linguistics, dialect, study; its practical use in learning languages and in language teaching. Introduction to transformational grammar. Prereq: 9 hrs of upper division English, or 9 hrs of upper division courses in a modern or ancient language (exclusive of German and French 3010-20-30, courses in literature in translation, and general courses in Latin and Greek requiring no knowledge of these languages), or permission of department. Prereq: 2130 or equivalent.
4260 Introduction to Historical and Comparative Linguistics (3) (Same as Spanish, German and Russian 4260).
4270 Romance Linguistics (3) Development of classical Latin through various Latin and major Romance languages. (Same as Spanish 4270.)
4310-20-30 French Literature of Eighteenth Century (3, 3, 3) Prereq: 2130 or equivalent.
4350-60-70 Medieval French Literature (3, 3, 3) Medieval works in modern French texts. Prereq: 2130 or equivalent.
4410-20-30 French Civilization (3, 3, 3) Prereq: 2130 or equivalent.
4510-20-30 French Literature of Nineteenth Century (3, 3, 3) Prereq: 2130 or equivalent.
4618-28 Honors: Readings in French Literature (3, 3) For students who have completed 3130 or equivalent and have at least 3.0 on all university work. No credit for grading less than B.
4640-50-60 French Literature of Sixteenth Century (3, 3, 3) Prereq: 2130 or equivalent.
4710-20-30 French Literature of Twentieth Century (3, 3, 3) Prereq: 2130 or equivalent.
5000 Thesis
5011 Techniques in Literary Analysis (2)
5110-20-30 Old French (3, 3, 3)
5151-61-71 Bibliography and Methods of Research (1, 1, 1)
5210-20-30 French Literature of Sixteenth Century (3, 3, 3)
5310-20-30 French Directed Readings (3, 3, 3)
5550-60-70 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)
5510-20-30 The French Drama (3, 3, 3)
5610-20-30 Trends in Contemporary French Literature (3, 3, 3)
5650-60 Advanced Syntax and Stylistics (3, 3)
5670 Problems in Romance Linguistics (3)
5710-20-30 Seminar in French Literature (3, 3, 3)
5910 Literary Criticism: Foundations of Romance Criticism (3)

Italian (594)

UNDERGRADUATE

1510-20 Elementary Italian (4, 4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.
2510-30 Intermediate Italian (4, 4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.
2610-20 Panorama of Italian Culture (4, 4)
2610—Survey of Italian culture from Roman era through the 17th Century. 2620—Survey of Italian culture in the 18th, 19th, 20th Centuries.
2000 Italian Transition (2) Development of literary and linguistic skills necessary for satisfactory work in courses above 3000. Recommended for all students intending to take upper-division Italian, especially those intending to major.
3210-20-30 Civilization and Culture (3, 3, 3) Prereq: 2120 or equivalent.
3310-20-30 Italian Literature in English Translation (3, 3, 3)
3310—Sicilian School, the Florentine School, Dante, Petrarch, Boccaccio, Machiavel, Ariosto, Tasso. 3320—From the Baroque through Nineteenth century, commedia dell’arte, Vico, Leopardi, 3330—Twentieth century, Carducci, Pirandello, Quasimodo, D’Annunzio, Croce, Moravia.
3410-20-30 Advanced Grammar, Composition, and Conversation (3, 3, 3) Laboratory work, drills, and tapes. Prereq: 2120 or equivalent.
3510-20 Aspects of Italian Literature (4, 4) Prereq: 2520 or equivalent. Recommended for literature majors.
4010-20 Italian Drama in English Translation (3, 3)
4010—La commedia dell’arte and major works of MachiavelI, Metastasio, Alfieri, Goldoni.
4020—Twentieth century theatre: operatic drama, the Grottesca, Pirandello, De Filippo, Prati.
4050-60-70 Dante and Medieval Culture (3, 3, 3)
Readings and lectures in English for students majoring or minoring in other departments. Readings, reports, and term papers in Italian for students majoring or minoring in Italian. (Same as Comparative Literature 4050-60-70.)
4101 Foreign Study (1-16) See page
4110-20-30 Anthology of Italian Literature (3, 3, 3) Prereq: 3130 or equivalent.
4150 Theatrical Italian (1-3) Performance in one or more Italian plays. May be repeated for credit with permission of department. Prereq: 2130 or equivalent and permission of instructor.
4160-70-80 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 hrs of courses on 3000 level.
4220 Petrarch (3) Prereq: 3130 or equivalent.
4230 Boccaccio (3) Prereq: 3130 or equivalent.
4330 History of Italian Language (3) Prereq: 3130 or equivalent.
4410-20-30 Literature of the Rinascimento (3, 3, 3)
From Pulci to Tasso, the Quattrocento and the Cinquecento. Prereq: 3130 or equivalent.
4510-20 Literature of the Ottocento (3, 3)
From Foscolo to D’Annunzio. Prereq: 2130 or equivalent.
4530 The Modern Novel (3) Prereq: 2130 or equivalent.
4540 The Modern Theater (3) Prereq: 2130 or equivalent.
4610 Contemporary Theater (3) Prereq: 2130 or equivalent.
4620 Contemporary Poetry (3) Prereq: 2130 or equivalent.
4630 Contemporary Prose (3) Prereq: 2130 or equivalent.

GRADUATE

See Graduate School Catalog for requirements.

5000 Thesis
5011 Techniques in Literary Analysis (2)
5151-61-71 Bibliography and Methods of Research (1, 1, 1)
5610-20-30 Readings in Italian Literature (3, 3, 3)
5710-20-30 Seminar in Italian Literature (3, 3, 3)

Portuguese (811)

UNDERGRADUATE

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 Aspects of Portuguese Literature (4, 4) Prereq: 2520 or equivalent. Recommended for literature majors.
4101 Foreign Study (1-16) See page 162.
4310-20-30 Directed Readings in Brazilian and Portuguese Literature (3, 3, 3) May be repeated with permission of instructor.

Spanish (924)

UNDERGRADUATE

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 conference with the instructor, high school average, and performance on the ACT. This class will be held to a maximum of 15 so that each student may receive more attention. This class will cover the normal Spanish program for the first year, but will be enriched whenever possible. Students will be expected to spend only the normal amount of time in preparation. Those who find the course too difficult may easily transfer to a regular class. Potential majors and minors in Spanish are urged to take this course. Students who pass 1518 with a grade of B or higher may take 1520 instead of 1520.
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. This class will be held to a maximum of 15 so that each student may receive more attention. Students will follow an enriched program with continuing emphasis upon speaking ability and with special emphasis on reading, including literary selections. Must be taken in sequence. Students who earn an A or B in 2528 automatically receive credit for Spanish 3000. Prereq: Spanish 1510-20, 1518-28, or equivalent.
2610-20 Panorama of Hispanic Culture (4, 4)
2610—Peninsular 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 (2) Development of literary and linguistic skills necessary for satisfactory work in courses above 3000. Recommended for all students intending to take upper-division Spanish, especially those intending to major.
3010-20-30 Spanish and Spanish American Literature in English Translation (3, 3, 3)
3410-20-30 Intermediate Composition and Conversation (3, 3, 3) Not offered for graduate credit.
3510-20 Aspects of Spanish Literature (4, 4) Prereq: 2520 or equivalent. Recommended for literature majors. Not offered for graduate credit.
3610-20 Survey of Spanish Literature (4, 4) May be taken in place of 3510-20 or 3710-20. Prereq: 2520 or equivalent.
3710-20 Aspects of Spanish American Literature (4, 4) May be taken in place of 3510-20 or 3610-20. Prereq: 2520 or equivalent.
4030 Masterpieces of Spanish Literature in English Translation (3) No foreign language credit.
4040 Spanish Drama 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 162.
4110-20-30 Spanish Literature of the Golden Age (3, 3, 3) The picaresque novel; Cervantes, the Comedia.
4150 Theatrical Spanish (1-3) Performance in one or more Spanish plays. May be repeated for credit with permission of department. Prereq: 2130 or equivalent and permission of instructor.
4160-70-80 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 hrs of courses on 3000 level.
4210-20-30 Phonetics and Advanced Grammar (3, 3, 3) Prereq: 2130 or equivalent.
4250 Introduction to Descriptive Linguistics (3) (Same as French, German and Russian 4250).
4260 Introduction to Historical and Comparative Linguistics (3) (Same as French, German and Russian 4260).
202 College of Liberal Arts

4270 Romance Linguistics (3) (Same as French 4270).

4410 Spanish Civilization (3) Prereq: 2130 or equivalent.

4420-30 Latin American Civilization (3, 3) Prereq: 2130 or equivalent.

4450-60-70 Studies in Modern Spanish Style (3, 3, 3) Prereq: 4410-20-30 or permission of instructor.

4510-20-30 Spanish Literature of Nineteenth Century (3, 3, 3) Prereq: 2130 or equivalent.

4618-28-38 Honors: Readings in Literature (3, 3, 3) For students who have completed 3130, 3330, or equivalent and have at least 3.0 on all university work. No credit for grade less than B.

4710-20-30 Spanish Literature of Twentieth Century (3, 3, 3) 4710—Nondramatic Prose. 4720—Drama. 4730—Lyric Poetry. Prereq: 2130 or equivalent.


GRADUATE

The Master's Program

See Graduate School Catalog for requirements.

5000 Thesis

5011 Techniques in Literary Analysis (2)

5110-20-30 Old Spanish (3, 3, 3)

5151-61-71 Bibliography and Methods of Research (1, 1, 1)

5210-20-30 The Early Spanish Novel (3, 3, 3)

5211-20 Don Quijote (3, 3)

5231 The Exemplary Novels, Perverses y Siglamunda (3)

5250-60 The Generation of '98 (3, 3)

5270 The Contemporary Novel (3)

5310-20-30 Directed Readings (3, 3, 3)

5311-21-31 Special Topics in Spanish or Spanish American Literature (3, 3, 3)

5510-20-30 Spanish Theatre After the Golden Age (3, 3, 3)

5550-60-70 Golden Age Theater (3, 3, 3)

5610 Spanish American Prose to 1900 (3)

5611-21 Spanish American Lyric Poetry (3, 3)

5620-30 The Modern Novel in Spanish America (3, 3, 3)

5631 Spanish American Essay (3)

5650-60 Advanced Syntax and Stylistics (3, 3)

5670 Problems in Romance Linguistics (3)

5810-20-30 Spanish Lyric Poetry (3, 3, 3)

5910 Literary Criticism: Foundations of Romance Criticism (3)

6000 Doctoral Research and Dissertation

6210-20-30 Seminar in Spanish Literature (3, 3, 3)

6310-20-30 Seminar in Latin American Literature (3, 3, 3)

Russian

See Germanic and Slavic Languages.

Russian and East European Studies

See Cultural Studies.

Sociology (915)

Professors: J. A. Black (Head), Ph.D. Iowa; D. J. Champion, Ph.D. Purdue; W. E. Cole (Emeritus), Ph.D., Cornell; L. E. Boston, Ph.D. Vanderbilt; L. Eberole (Vice Chancellor for Planning and Administration), Ph.D. Pennsylvania; W. B. Jones (Emeritus), Ph.D., Vanderbilt; J. B. Knox (Emeritus), Ph.D., Harvard.

Associate Professors: D. M. Barz, Michigan State; D. Clelland, Michigan State; D. W. Hastings, Ph.D., Massachusetts; T. C. Hood, Ph.D. Duke; S. E. Wallace, Ph.D. Minnesota; P. L. Wuebben, Ph.D. Wisconsin.

Assistant Professors: J. M. Brooks, Ph.D. Ohio State; S. Kurb, Ph.D. Illinois (Chicago); S. J. Miller, Ph.D. Kansas; S. E. Nygaard, Ph.D. Iowa; H. P. Perlin, Ph.D. British Columbia; N. E. Snow, Ph.D. Illinois (Urbana).

Instructors: S. H. Ambler, M.A. Ohio State; D. Harris, M.A. Tennessee; T. J. Weirath, M.A. Wisconsin (Madison).

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.

Students majoring in the College of Liberal Arts prior to Fall Quarter, 1972, who are under the previous B.A. or B.S. curricula will find requirements for a major or minor in the 1972-73 or earlier general catalog.

Social Work: Students concentrating 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 catalo.

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 (3) Processual analysis of such collective phenomena as crowd behavior, social epidemics, fads, fashions, popular crazes, and mass movements; nature of the public, functional analyses of public opinion; problems of democracy as viewed from standpoint of organizing collective action.

3020 Advanced Principles of Sociology (3) Consideration of basic sociological concepts and propositions with attention to their empirical validity and research utility.

3030 Political Sociology (4) Sociological analysis of American political system. Attention given to consideration of concept of power, elitist-pluralist controversy, end-of-ideology debate, and related topics.

3110 Social Psychology (3) Social basis of human behavior; socialization; social status and social roles; personality; social adjustment.

3140 Deviance and the Social Order (3) 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 Sociology of Sex Roles (3) Sociological examination of the structure of current American sex roles utilizing various theoretical perspectives, e.g., role theory and bargaining. Development and effects of organized reactions to sex role expectations and social movements such as feminism are considered.

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 (3) Origin and ethnology of the family; background of modern American family; the nuclear family; social changes and the family; social pathology of the family; reorganization and future of the family system.

3320 Sociology of Mass Communication (3) Sociological dimensions of mass media and mass communication, nature of mass communications organizations as bureaucratic structures, and effects of mass communication on social behavior are examined.

3330 Prejudice and Racism in the United States (3)

4000 Special Topics (3) Student-generated course offered at convenience of Department upon student initiative. Scope of subject matter determined by student and instructor with approval of Department. Elective credit only. Prerequisite determined by Department.

4010 History of Sociological Thought (3) Introductory survey of development of field of sociology to its emergence as a separate discipline. Major emphasis will be on work of leading sociologists to time of Comte.

4020 Sociological Theory (3) Survey and analysis of development of sociological theory from time of Comte to present.

4030 Society and Law (3) General treatment of social origins and consequences of law and legal process. Particular emphasis is placed on problems of law and social change, and on structure and functioning of legal sanctions. Some attention is paid to law, legal ideologies, and practices in formal organizations and primitive societies.

4040 Current Topics in Social Psychology: Theory and Research (3) Problems, topics and issues in current research and theory in social psychology. Particular topics for quarter to be determined by instructor.

4102 Off-Campus Study (1-16) See page 161.

4103 Independent Study (1-16) See page 162.

4110 Population Problems (3) Demographic factors and social structure; trends in fertility, mortality, population growth, migration, distribution, and composition; population policy.

4120 Topics in Social Psychology (4) (Same as Psychology 4120)

4130 Sociology of Punishment and Corrections (3) Traces development of correctional movement, develops a critical sociological perspective on contemporary correctional programs, and provides overview of evaluative research in corrections.

4140 Introduction to Social Research (3) Scientific method applied to social phenomena; formulating testing hypotheses; techniques for collecting data; measuring social variables; interpreting research findings. Lectures and laboratory.

4150 Elementary Statistical Methods (3) 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.

4170 Cross Cultural Studies in Demographic Research (3)

4180 Selected Issues in Methodology (3) Compares and contrasts various sociological approaches to research and analysis.
4940 Sociology of Religion (3) Interrelationship of society, culture, and religion.
4950 Family Systems (3) Examination of the family as a unit of interacting individuals.
4970 Senior Seminar (3) Recommended that course be taken during quarter of graduation. For sociology majors only. Prereq: Senior standing.
4980 Seminar on Poverty and Alienation (3) Factors contributing to condition of poverty and social consequences of being poor.
4988 Honors: Sociology (3) Intensive study and research under faculty direction, including writing of senior thesis. Course credit may be split into two quarters. Candidacy is open only to majors who have shown a marked capability for independent study and have grade point averages of at least 3.0 in the College of Liberal Arts and 3.2 in the Department. Prereq: Senior standing.

GRADUATE

Standards for graduate majors and minors are prescribed by the Graduate School and by the Department.

Students who do not have adequate preparation in sociology may be required to take additional courses at the undergraduate level prerequisite to graduate study.

The Master’s Program

The general requirements for the Master’s degree are given in the Graduate School Catalog. A detailed statement of requirements is given in the Department’s graduate manual.

The Doctoral Program

General requirements for the degree of Doctor of Philosophy are described in the Graduate School Catalog. A detailed statement of requirements is given in the Department’s graduate manual.

5000 Thesis

5040 Methodological Issues in Social Research (3)

5050 Seminar in Political 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)

5240 Theory and Research in Human Migration (3)

5250 Selected Topics in Migration Research (3)

5310 Seminar in Methods of Sociological Research (3)

5320-30 Social Statistics (3, 3)

5520 Seminar in Criminological Theory (3)

5530-40 Seminar in Community (3, 3)

5550 Seminar on 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 Seminar in Occupations (3, 3, 3)

5640 Social Structure and Personality (3)

5670 Social Organization (3)

5720 Small Group Theory and Research (3)

5730 Seminar in Research Problems in Intergroup Relations (3)

5810 Seminar in Race and Culture (3)

5910 Seminar in Urban and Regional Sociology (3)

5920 Seminar in Social Attitudes (3)

5930 Sociology of Law (3)

5950 Seminar in Population Theory (3)

5960 Demographic Techniques (3)

5970 Sociology of Development and Modernization (3)

6000 Doctoral Research and Dissertation

6040 Experimental Research (3)

6050 Experimental Methods in Sociology and Social Psychology (3)

6070 Problems in Field Research (3)

6080 Research Problems in the Study of Social Groups (3)

6090-8100 Survey Design and Analysis (3, 3)

6120 Selected Topics in Deviance and Law (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)

6300 Advanced Studies in Inter-group Relations (3)

6510 Advanced Issues in Criminological Theory (3)

6520 Sociology of Deviance (3)

6550 Advanced Studies in Community (3)

6610-20-30 Seminar in Formal Organization (3, 3, 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


Associate Professors: T. P. Cooke, Ph.D. Florida State; R. Cothran; J. F. Fields, M.A. Ohio State; N. W. Henshaw, Ph.D. Pittsburgh.

Assistant Professors: R. S. Ambler, Ph.D. Ohio State; J. E. Buckley, Ph.D. Northwestern; N. C. Cook, M.A. Alabama; M. Custer; M.F.A. Wisconsin; R. C. Field, M.A. Miami (Ohio); S. L. Fish, Ph.D. Oklahoma; R. W. Glenn, Ph.D. Northwestern; A. J. Harris, Ed.D. Tennessee.

UNDERGRADUATE

Major: The major, Speech and Theatre, offers three areas of concentration as follows:

Concentration in Speech: Eight hours from Speech 1211, 1221, Speech and Theatre 1441 are prerequisite to a concentration which consists of 8 hours from Speech 2021, 2311, (or 3551 by permission), 2331, 2351; thirty additional hours in Speech courses numbered 2000 and above, twelve hours of which may be in cognate areas approved by the Department.

Concentration in Theatre: Theatre 1520-30 is prerequisite to a concentration which consists of Theatre 2111, 2211-21, 3252-53-54; twenty-four additional hours of Theatre courses numbered 2000 or above, twelve hours of which may be in cognate areas approved by the Department.

Concentration in General Speech: Designed for students who anticipate teaching in broadly based high school programs or who desire a wide exposure to the whole discipline of Speech. Prerequisite is a minimum of six hours selected from Audiology and Speech Pathology 3040, Broadcasting 2750, Communications 1110, Speech 1211, 1221, and Theatre 1441, Theatre 1510. The concentration consists of Speech 2311 (or 3551 by placement); four hours selected from Speech 2021, 2331, 2351; thirty-six additional hours in courses numbered 2000 and above, no more than twenty of which can be in any one department or division (Audiology and Speech Pathology, Broadcasting, Speech, and Theatre, or Theatre). At least twenty-four hours must be earned in courses numbered 2000 and above.

Each program at least twenty hours must be earned in courses numbered 3000 and above.

Minors: 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 above 2000. Theatre 1520-30 is prerequisite to a minor in Theatre which consists of 24 hours in Theatre courses numbered above 2000.

Students enrolled in the College of Liberal Arts prior to Fall Quarter, 1972, who are under the previous B.A. or B.S. curricula will find requirements for a major or minor in the 1972-73 or earlier general catalog.

Certification for Teaching Speech or Speech and English. Consult Certification Clerk, Room 212 Claxton Education Building.

GRADUATE

The Department of Speech and Theatre offers the Master of Arts (M.A.) and Master of Arts in College Teaching (M.A.C.T.) degrees. Requirements for these degrees are described in the Graduate School Catalog.

Speech (493)

UNDERGRADUATE

1211 Introduction to Rhetoric and Public Address (4) Major themes of communication from Plato to present; methods for describing and evaluating public address.

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 Deliberation in Assemblies (4) Various techniques for coming to collective decisions; parliamentary procedure.

2351 Interpersonal Communication (4) Communications theory and application to informal, face-to-face situations.

2410-20-30 Intercollegiate Forensics (1, 1, 1) Supervised work in tournament debate. Prereq: Permission of instructor.

3011 Persuasion (4) Persuasive discourse: its psychological, sociological, and cultural dimensions.

3021 Group Communication (4) Communication theory in its application to small groups, especially discussion groups; Communication barriers, nonverbal communication, group dynamics. Prereq: 2331.

3410-20-30 Intercollegiate Forensics (1, 1, 1) Continuation of 2410-20-30. Prereq: Permission of instructor.

3541 Rhetorical Theory and Criticism (4) Survey of Western rhetorical theory; contemporary approaches to criticism of public address. Recommended: 2111.

3551 Advanced Public Speaking (4) Speech forms: principles and practice of speech composition.

4222 Advanced Argumentation and Debate (4) Prereq: 2331 or permission of instructor.

4611 Quantitative Research Methods in Speech Communication (4) Designing experiments; planning field studies; using statistical analysis.

4551 Southern Oratory (4) Historical and critical study of public address in the South.

4560 Rhetoric of the Women's Rights Movement (4) Historical and critical study of public address in campaigns for women's rights from the 1830's to the present.

4571 British Oratory (4) Historical and critical study of British public address.

4582 Public Discussion of Race (4) History and criticism of racial advocacy in America.

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: Permission of instructor.


4999 Colloquium in Speech Communication (1) May be repeated for credit.

GRADUATE

5140 Communications Theory (3)
5210 Studies in Group and Interpersonal Communications (3)
5220 Quantitative Projects in Speech Communications (3)
5430 Studies in Tennessee Oratory (3)
5440 Problems in Industrial Communications (3)
5450 Studies in Collection and Use of Recorded Discourse (3)

5550-60-70 Studies in Persuasion (3, 3, 3)
5750-60-70 Studies in Rhetoric (3, 3, 3)

Theatre (976)

UNDERGRADUATE

1510 Introduction to Theatre (4) Theatre as expression: materials and techniques. Non-technical introductory course for general student, not available for credit to theatre majors.

1520-30 Fundamentals of Play Production (4, 4) 1520—Play analysis and arts of performance (acting and directing); 1530—Arts of performance and physical production.

2111-21 Acting (4, 4) Readings, Improvisations, and scene study; voice and movement for the stage; basic rehearsal techniques. Prereq: permission of instructor for 2121.

2121-21 Stagecraft (4, 4) 2211—Techniques of scenery construction, 2221—Fundamental methods of stage lighting. Crew assignments on major productions.

2321 Basic Stage Costuming (4) Costume history and its application to the stage; basic techniques in costume construction.

3112-22 Advanced Acting (4, 4) Prereq: permission of instructor.

3511-52 Major Productions (4, 4) Supervised work on productions at Hunter Hills Theatre. Available only to members of summer company by permission of instructor.

3221-22 Introduction to Scene Design (4, 4) Descriptive drawing as an approach to three-dimensional design; theatrical graphic standards; problems in stage design with reference to lighting, movement, scale, and style. Prereq: 2211-21 or permission of instructor. Must be taken in sequence.


3262-63 History of the American Theatre (4, 4) Development of the theatre as social institution in American life. 3262—From its beginnings to 1900. 3263—From 1900 to present.

3261-22 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 permission of instructor.

3451-52 Play Directing (4, 4) Must be taken in sequence. Prereq: 2211.

3511-12 Introduction to Costume Design (4, 4) Costumes as expression of character on stage; the application of costume history to specific design projects. Prereq: 2211 or permission of instructor.

4133-34 Special Problems in Acting (4, 4) Advanced exercises in voice and movement; preparation of major role under performance conditions. Prereq: 3211-22 and permission of instructor.

4571-52 Major Productions (4, 4) Continuation of 3151-52. Available for credit only to theatre majors. Prereq: permission of instructor.

4573 Outdoor Repertory Productions (4) Supervised work on productions at Hunter Hills Theatre. Available only to members of summer company by permission of instructor.

2421-42 Advanced Scene Design (4, 4) Play interpretation through scenic means; setting as environment for dramatic action. Must be taken in sequence. Prereq: 3221-22 and permission of instructor.
University Studies (984)

(Non-Departmental)

University Studies deal with important contemporary topics which are sufficiently comprehensive to require study and attention of students and faculty from more than one college. They are open to all qualified members of the university community.

3010 Technology and Society (3) Interdisciplinary lectures and discussions concerning science and technology, their interaction with contemporary social and political institutions and their impact upon human life. May be repeated for credit to maximum of 9 hours.

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. C. Daniel, Jr. (Head), Ph.D. Colorado; D. L. Balling, II., Ph.D. Oklahoma State; J. G. Carpenter, Ph.D. Pennsylvania; A. C. Cole, Ph.D. Ohio State; C. C. Congdon, M.D. Michigan; R. C. Fraser, Ph.D. Minnesota; N. Ganzlof, Ph.D. Wisconsin; B. Hochman, Ph.D. California (Berkeley); J. C. Howell, Ph.D. Cornell; A. W. L. Hume, Ph.D. Virginia; M. M. Ketchel, Ph.D. Harvard; J. N. Liles, Ph.D. Ohio State; C. A. Shivers, Ph.D. Michigan State; J. T. Tanner, Ph.D. Cornell; S. R. Tipton (Emeritus), Ph.D. Duke.

Associate Professors:
R. M. Bagby, Ph.D. Illinois; K. D. Burnham, Ph.D. Iowa; D. A. Etner, Ph.D. Minnesota; K. W. Jeon, Ph.D. London (England); J. R. Kennedy, Ph.D. Iowa; H. Welch, Ph.D. Florida; M. C. Whiteside, Ph.D. Indiana; G. L. Whitson, Ph.D. Iowa.

Assistant Professors:
B. B. Coulson, Ph.D. Illinois; D. J. Fox, Ph.D. Johns Hopkins; M. A. Handel, Ph.D. Kansas State; A. M. Jungreis, Ph.D. Minnesota; J. A. McCauley, Ph.D. California (Davis); C. J. Mclachlan, Ph.D. Wisconsin; G. L. Vaughan, Ph.D. Duke.

*Alumni Distinguished Service Professor.

UNDERGRADUATE

Prerequisites to upper division courses: Biology 1210-20-30 is a prerequisite 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.

Major: Consists of Biology 2110, 2120, 2130, 18 hours of upper-division Zoology courses (except 3010-20-30), and 12 hours of Chemistry at the 2000-level or above.

Prerequisites to this major are: Biology 1210-20-30 or Zoology 1110-20-30 or 1816-28

*Zoology 1110-20-30 was discontinued in 1972, but if previously taken, may count toward the major.

Students with 2 years of high school biology and satisfactory ACT scores may enter the major, with permission of the department, after the freshman year sequence and enter Biology 2110, 2120, 2130 directly (see course listing under Biology).
3071 Immunology (3) (Same as Microbiology 3071.)
3080 Principles of Animal Physiology (5) Physiology of organ systems of animals including man. Prereq: Biology 2100, Zoology 2321, Physics 2210-20-30 recommended. 3 hrs and 1 lab.
3090 Biology and Human Affairs (3) (Same as Botany 3090.)
3110 General Entomology (5) Introduction to insects: basic structure, development, behavior; classification of insect orders and representative families; interpretation and use of keys. Prereq: Biology 2130, or permission of instructor. 3 hrs and 2 labs.
3150 Invertebrate Zoology (5) Biology of invertebrates (except insects) with emphasis on ecology and behavior. Prereq: Biology 2130. 3 hrs and 2 labs.
3220 Physiology of Reproduction (3) (Same as Animal Science 3220.)
3320 Histology (4) Study of animal tissues. Prereq: Biology 2120. 3 hrs and 2 labs.
3410 Bioethics (3) Relationship between biological discoveries and human values. Open discussion of selected dilemmas arising from new knowledge about medicine, behavior, resources, and technology.
3920 Hormones and Endocrine Function in the Human (4) Basic course in human endocrinology with emphasis on the practical diagnosis of hormone levels for analysis of glandular function and treatment of endocrine abnormalities. 3 lectures and 1 discussion. Prereq: a course in physiology.
4007-4010-11-12-13-14-15-16-17. Minicourse in Zoology (Z) 2, 2, 2, 2, 3, 3, 3, 4, 4, 4 Selected, advanced topics in Zoology, concentrated in time and subject matter. Consult departmental listing for actual topics offered. Prereq: As posted. May be repeated for credit.
4050 Developmental Biology (4) Experimental morphogenesis, fertilization, cellular interactions, hormonal effects and related topics with examples drawn primarily from invertebrates and vertebrates. Prereq: 3050. 2 hrs and 2 labs.
4110-20-30 Undergraduate Research Participation (2, 2, 2) Experience in active research projects under supervision of research staff members. Prereq: Junior or senior standing and prior permission of instructor.
4140 Practicum in Zoology (1-3) Participation in practical aspects of zoology in community institutions, governmental organizations and industry. Approximately 5 hrs involvement per week. Prereq: Biology 2110, 2120, 2130 and senior standing.
4190 Mammalogy (4) Classification, evolution, distribution, population, behavior, 2 hrs and 2 lab or field periods. (Not open to students with credit for 3190.)
4200 Ichthyology (5) Classification, collection and identification, distribution, life histories, and economic importance of fishes. Prereq: Biology 2130, or permission of instructor. 2 hrs and 2 lab or field periods. (Not open to students with credit for 3200.)
4210 Cell Physiology (5) Development of modern concepts in cell physiology from point of view of information, metabolism and control, examining kinetics and integration of cellular activities. Prereq: Cell Biology or any Physiology, and Organic Chemistry. Biology 3000 recommended. 3 lectures and 1 lab.
4240 Animal Ecology (4) Environmental factors determining distribution and numbers of animals; intra-specific relations; problems and methods. Prereq: Biology 2130. 2 hrs and 2 labs.
4250 Comparative Animal Physiology, I (3) Environmental physiology. Survey of primary mechanisms and their relation to ability of animals to survive in diverse physical environments. Prereq: 3090. 3 hours.
4259 Comparative Animal Physiology Laboratory, I (1) Prereq: 3080 and permission of instructor. Coreq: 4250.
4260 Comparative Animal Physiology, II (3) Sensory, effector and integrative physiology. Prereq: 3080.
4269 Comparative Animal Physiology Laboratory, II (1) Prereq: 3080 and permission of instructor. Coreq: 4260.
4280 Comparative Endocrinology (5) Comparative analysis of the physiology and morphology of endocrine glands in vertebrates and invertebrates. Their role and interaction in maintenance of the organism. Prereq: 3080 or 3060. 3 hrs and 1 (3 hr) lab.
4290 Herpetology (4) Classification, distribution, life histories, collection and identification of amphibians and reptiles primarily of local species. 2 hrs and 2 lab or field periods. (Not open to students with credit for 3210.)
4300 Ornithology (4) Morphology, physiology, behavior, reproduction, populations, evolution, field identification. 2 hrs and 2 labs or field periods. (Not open to students with credit in 3230.)
4310 Animal Cytology (4) Structure and function of cells and their components; emphasis on mitosis and meiosis. 2 hrs and 2 labs. Recommended: Biology 2110.
4320 Microtechnique (4) 3320 recommended. 2 hrs and 2 labs.
4369 General Genetics Laboratory (2) Mainly Drosophila experiments designed to illustrate basic principles of inheritance. Prereq: Biology 2110. 2 labs.
4410 General Parasitology (4) Morphology, taxonomy, and ecology of parasitic worms and protozoa, with emphasis on host-parasite relationships. 3 hrs and 1 lab. Prereq: Biology 2130 or permission of instructor.
4430 Medical Entomology (4) Distinctive morphological features, distribution, life histories, and control of arthropods that parasitize man or serve as vectors of human pathogens. Prereq: Agricultural Biology 3210 or Biology 2130. (Not open to students with credit for 3430.)
4450 Protozoology (4) Morphology, taxonomy, and physiology of protozoa in relation to fundamental biological concepts. Recommended: Biology 2120. 2 hrs and 2 labs.
4510 Freshwater Fishery Biology (4) (Same as Agricultural Biology 4510.)
4610-20 Comparative Animal Pathology (2, 2) Abnormal morphological changes and their causes. 4620—Cell and tissue changes. 4620—Organ, organ system, and organism changes. Recommended: 3080, 3320, 3060.
4619-29 Comparative Animal Pathology Laboratory (2, 2) 4619—Cell and tissue changes. 4629—Organ, organ system, and organism changes. Coreq: 4610-20.
4680-70 Limnology (4, 4) 4660—Effects of origin, age, and location of lakes on their physical and chemical nature. 4670—Lake communities, productivity and pollution. Prereq: Chemistry 1110 20-30 and Biology 2130; Botany 1110-20-30 and Physics 1210-20-30 recommended. 3 hrs and 1 lab (4670). Must be taken in sequence, except with permission of instructor. Not open to students with credit in 3650 or 4650.
4700 Arachnology (4) Biology of spiders, mites, scorpions, and relatives. Prereq: 3110 or 3150. 2 hrs and 2 labs.
4720 Comparative Animal Behavior (4) Methods and principles. (Same as Psychology 4720.)
School of Nursing

Sylvia E. Hart, Dean

The School 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 baccalaureate level and as a part of a state-wide 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 program offered by the School of Nursing 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 being, 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 Degree in Nursing, 12 quarters of full-time study or their equivalent are required. Students may enroll in nursing courses following successful completion of 30 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.

GRADING POLICY:

The Satisfactory-No Credit option is not permitted for any nursing course.

The minimum acceptable grade for any required Nursing course is a "C." Any 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 the 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."

If a student receives an "Incomplete" 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 course 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 PROCEDURE

1) Nursing students must achieve a course grade of "C" or better in all required lower division courses, exclusive of electives.
2) When the student has completed all
required lower division courses, having met the above stated grade requirement. However, she or he must submit a petition for admission to upper division courses to the Progression Committee in the School of Nursing. The Progression Committee will review the record of each student who has submitted a petition in order to verify that the student has successfully completed all lower division requirements. The School of Nursing will then notify, in writing, those students who are eligible to begin upper division nursing courses.

Student petitions for admission to upper division courses must be submitted to the Progression Committee during the Spring Quarter which immediately precedes the Fall Quarter in which they expect to enter the upper division. The deadline for submitting a petition is the drop deadline date for each Spring Quarter.

3) Students who expect to enroll in the University of Tennessee, Knoxville School of Nursing, once they have completed lower division requirements elsewhere, should contact the Student Advising Coordinator at the UTK School of Nursing as soon as they begin their lower division courses. Transfer students who believe they have met lower division requirements should submit a petition to begin upper division courses as soon as they are admitted to the University.

4) Transfer students who have been accepted by the University must complete all course requirements identified in the School of 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.

| COURSE LOAD |
| The maximum credit hours per quarter allowed for any student without special permission is 18. |

BACHELOR OF SCIENCE IN NURSING CURRICULUM

The following curriculum leads to the Bachelor of Science in Nursing Degree. A minimum of 189 quarter hours of credit is required.

- **Freshman**
  - Chemistry 1510-20-30: 12 hours
  - English 1510-20: 6 hours
  - Mathematics 1540: 4 hours
  - Psychology electives: 8 hours
  - Sociology electives: 8 hours
  - "Electives": 8 hours

- **Sophomore**
  - Zoology 2920-30: 6 hours
  - Microbiology 2810: 5 hours
  - Biology 2110: 4 hours
  - Economics 2110: 3 hours
  - Psychology 3550, 3210: 8 hours
  - Anthropology electives: 8 hours
  - "Electives": 12 hours

- **Junior**
  - Nursing 3000, 3010, 3110, 3150, 3210, 3330: 30 hours
  - Nutrition 3020: 3 hours
  - HMEFE 3240: 3 hours
  - "Electives": 10 hours

- **Senior**
  - Nursing 4220, 4250, 4420, 4440: 4560, 4660, 4760, 4860: 35 hours
  - Psychology 3150: 5 hours
  - CPRF 4610: 3 hours
  - "Elective": 4 hours

**TOTAL: 189 hours**

- At least 18 of the elective hours must be in Humanities courses.

**Faculty**

- **Professor:** S. E. Hart (Dean), Ph.D. New York.
- **Associate Professors:** K. J. Kant, Ph.D. Illinois; B. M. Reid, M.S.N. Columbia; J. A. Thompson, M.S.N. Indiana.
- **Assistant Professors:** S. S. Blowers, M.Ed. Rochester; M. T. Boynton, M.S.N. Emory; P. A. Brown, M.S.N. Indiana; E. S. Caro, M.S.N. Carolina; K. P. Conton, M.S.N. S.U.N.Y. Buffalo; D. H. Goodfellow, M.S.N. S.U.N.Y. Buffalo; V. M. Kramper, M.S. Colorado; B. W. Lowes, M.S. Tennessee, J. N. Mendoza, M.S.N. Emory; D. R. Odle, M.S.N. Emory; K. L. Palmer, M.S. Wisconsin; M. A. Pierce, M.P.H. Tennessee, E. J. Rice, M.S.N. Emory; B. J. Riley, M.S. Ohio State; S. L. Sugg, M.S.N. Pennsylvania; J. W. Wagner, M.S.N. Yale.

**3000 History and Philosophy of Nursing (3)** Survey of the history of health care delivery and nursing practice. Examination of various philosophical systems which have had an impact upon nursing education and nursing practice.

**3010 Nursing Process (6)** Theory and related laboratory experiences necessary for the development of basic nursing skills. Includes exploration of the expanding role of the professional nurse, the life process in man, the health-illness continuum, determinants and indices of health, and the principles underlying the more common skills associated with nursing practice. 3 hrs, 1 lab. For nursing majors only.


**3150 Basic Nursing and Family Health (6)** Nursing needs of families in childbearing and childrearing phases of development. Principles of human growth and development and family dynamics. Laboratory experiences in a variety of clinical, community, and home settings with focus on family health assessment with opportunity for planning, implementing and evaluating nursing care for women in various stages of uncomplicated pregnancy and for their newborn infants. 3 hrs, 3 lab. PreReq: 3010; Coreq: 3110. For nursing majors only.

**3210 Basic Nursing of the Acutely Ill Child and Adult (6)** Theory and clinical laboratory experiences related to nursing care of patients whose health problems require hospitalization. Physiological and behavioral deviations which underlie or are associated with the more common, relatively uncomplicated acute illnesses of children and adults. Clinical laboratory experiences with opportunity to apply knowledge and skill to care of patients in acute care settings as well as to provision of continuity of care for those patients and their families. 3 hrs, 3 lab. PreReq: 3010, 3110. For nursing majors only.

**3330 Nursing in Psychosocial Disturbances (6)** Nursing needs of patients and families whose primary health problems are psychosocial or behavioral. Equal emphasis on prevention, promotion and rehabilitation. Principles from the behavioral and developmental sciences are reinforced, expanded, and applied. Laboratory provides opportunities to apply these principles in a variety of settings to the care of individuals and families with actual or potential behavioral health and mental health problems. 3 hrs, 3 lab. PreReq: 3010, 3110. For nursing majors only.

**4220 Advanced Nursing of the Acutely Ill Child and Adult (6)** The more serious and complicated health problems requiring hospitalization. Analysis of physiological and behavioral deviations which underlie or are associated with more complex and critical illnesses. Laboratory experiences with opportunity to apply increasing knowledge and skill to care of acutely ill patient with more complex
health problems as well as to provision of continuity of care for these patients and their families. 3 hrs, 3 lab. Prereq: All 3000-level nursing courses or their equivalent. For nursing majors only.

4420 Advanced Nursing and Family Health (4) Nursing needs of families in crisis. Further exploration of theories of human growth and development and family dynamics with emphasis on those physiological and behavioral deviations which produce critical and complex family health problems. Laboratory experiences to further refine and expand the skills necessary for comprehensive family health assessment as well as to develop specialized skills necessary to provide quality nursing care to those patients and their families who are experiencing such health problems as complications of child bearing, congenital anomalies and developmental disorders. 2 hrs, 2 lab. Prereq: All 3000-level nursing courses or their equivalent. For nursing majors only.

4440 Scientific Inquiry in Nursing (3) Introduction to a language of research, types of research designs, methodological approaches, sampling, data analysis and significance of findings. Evaluation of existing and ongoing nursing research studies. Prereq: Psychology 3150, senior standing. For nursing majors only.

4560 Nursing in the Community (6) Content and laboratory experiences with focus on health patterns, needs and problems of the community. Particular emphasis on the health assessment of small and large groups, comparison of variations in health needs and patterns within and between communities, involvement in preventive and promotive community health education programs and evaluation of community health programs at the national, state and local levels. 3 hrs, 3 lab. Prereq: All 3000-level nursing courses or their equivalent. 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: Senior standing. For nursing majors only.

4760 Management of Health Care (4) Theories of administration, supervision, organization, management, and leadership as they apply to the delivery of health care services. Emphasis on role of the nurse in health care management and delivery. Laboratory experiences to develop skills necessary to function as an effective member of the health team. 2 hrs, 1 lab. Prereq: Senior standing. 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. 2 hrs and 2 labs. (4 hrs. each). Prereq: all 3000 level nursing courses or their equivalent or permission of instructor.

4880 Independent Study in Nursing (3) In-depth study of some aspect of nursing in which student has developed special interest. Study is pursued independently, utilizing guidelines developed by the student with appropriate faculty guidance, supervision and evaluation. Prereq: Senior standing. For nursing majors only.
Independent Departments

Department of Air Force Aerospace Studies (094)

Air Force ROTC Program

Professor of Air Force Aerospace Studies:
Colonel S. C. Beck (Head) M.S. George Washington.

Assistant Professors:
Major G. D. Johnson, M.B.A. George Washington;
Major B. P. Lilly, M.A. Middle Tennessee State;
Capt. J. D. Howell, Sr., M.B.A. Eastern New Mexico;
Capt. W. L. Pendergrass, M.B.A. Tennessee; Capt.
W. C. Shearer, M.A. Newark State.

GENERAL INFORMATION

Any student may enroll voluntarily in Air Force ROTC at the same time as registration for other undergraduate courses. There is no active duty obligation resulting from enrollment in the first two years of AFROTC classes unless the student is on AFROTC scholarship.

AIR FORCE ROTC SCHOLARSHIP PROGRAM

Scholarships are available to qualified students who enroll in the four-year cadet program. These scholarships cover full tuition, all fees, and reimbursement for all required books. In addition, cadets are paid $100.00 per month during the entire period of the scholarship. Scholarships are awarded to cadets on a competitive basis for two through four years at all levels of the Air Force ROTC program, including college freshmen, sophomores, and juniors. High school seniors should contact their guidance counselors to apply for four-year scholarships not later than 31 December each year. Applicants for two-, or three-year scholarships should contact the Professor of Air Force Aerospace Studies early in their freshman year on campus.

PURPOSE OF THE AIR FORCE ROTC

The Air Force ROTC Program is designed to qualify for commissions those college men and women who desire to serve in the United States Air Force. The program provides education that will develop skills and attitudes vital to the professional Air Force officer. Upon graduation from the University and the Department of Air Force Aerospace Studies, students are commissioned second lieutenants in the United States Air Force Reserve. Opportunities exist throughout the initial period of active duty for the graduate to receive a Regular Commission in the Air Force and to pursue commissioned service as a career.

UNIVERSITY CREDITS

The following credits are granted for Air Force Aerospace Studies work and are creditable toward a degree in some colleges. See respective PAS for further information.

Aerospace Studies 1000 series (Freshman)—
6 quarter hours per year
Aerospace Studies 2000 series (Sophomore)—
6 quarter hours per year
Field Training Academics (Sophomore)—
3 quarter hours
Aerospace Studies 3000 series (Junior)—
9 quarter hours per year
Flight Instruction Ground School
3 quarter hours
Aerospace Studies 4000 series (Senior)—
9 quarter hours per year.

COURSES AVAILABLE

The first two years (freshman and sophomore) of the Air Force Curriculum are known as the General Military Course. The last two years of the curriculum (junior and senior) are known as the Professional Officer Course.

Flight training is offered free of charge to qualified male pilot applicants who are senior AFROTC cadets. The cadet receives twenty-five hours of flight instruction. University credit is granted for the Ground School portion of the Flight Instruction Program.

Field Training is offered at Air Force bases across the country. Normally, this is the cadet's first extended exposure to an Air Force environment. It is here that the cadet receives junior officer and leadership development training. Also at this time, the Air Force has an opportunity to personally evaluate each cadet as a potential member of its officer corps. Four-year ROTC members are required to complete a four-week session and two-year applicants attend a six-week session, adding two intensive weeks of academics comparable to the academics taught in Aerospace Studies 1000 and 2000 courses. Credit is granted for this two-week period, provided the student registers for credit, attends five one-hour pretraining sessions before attending Field Training, and attends two one-hour seminars conducted during the Fall Quarter following completion of Field Training.

ELIGIBILITY FOR THE PROFESSIONAL OFFICER COURSE (FOR PURPOSE OF EARNING A COMMISSION)

(Junior and Senior Years)

All cadets enrolled in the Professional Officer Course (junior and senior years) of the Air Force ROTC (for purpose of earning a commission) must:

a. Have either completed the General Military Course (freshman and sophomore years), or the off-campus, six-week Field Training; or have the required amount of prior military service.

b. Have two academic years of college remaining (either graduate or undergraduate).

c. Execute a written agreement with the Government to complete the program, contingent upon remaining qualified and in school; and to attend the off-campus, four-week Field Training between the sophomore and junior years and to accept an Air Force Reserve Commission, if tendered.

d. Be selected by the Professor of Air Force Aerospace Studies and the President of the University or his duly authorized representative.

e. Meet certain specified age, mental, and physical requirements.

EXEMPTIONS FOR PREVIOUS ROTC, PREVIOUS ACTIVE MILITARY SERVICE, OR CERTAIN CIVIL AIR PATROL AWARDS

A student may request exemption from portions of the General Military Course on the
following bases: (1) previous honorable active military service in any branch of the Armed Services; (2) at least two years of high school ROTC; or (3) holds certain awards in the Civil Air Patrol. Each student will be on an individual basis, and no University credit is given for those hours or portions of the General Military Course exempted.

PAG ENTRIPLETS

All cadets enrolled in AFROTC are furnished texts and uniforms by the Government through the Air Force Material Command, University of Tennessee. Enrollees are required to deposit $35.00 as security to the University against loss or damage of uniforms or equipment for which the University is accountable to the Government. At the completion of AFROTC, or when the student withdraws from the program, with the exception of a nominal fee covering the cost of shoes, the deposit is returned to the student provided he obtains a proper clearance for uniforms and equipment. Professional Officer Course cadets receive a subsistence allowance of $100.00 per month, or the equivalent, for 20 months. In addition they are paid mileage to and from Field Training, plus pay commensurate with active duty rates for the six-week session. A four-week Field Training is normally required between the sophomore and junior years for those students enrolled in the four-year program. A six-week camp is required for two-year applicants.

ACTIVE DUTY COMMITMENTS

Commissioned graduates will be required to serve five years active duty with the Air Force after completion of flying or navigator training. Nonflying officers will be required to serve four years of active duty.

CONDUCT, ORGANIZATION, AND ADMINISTRATION

Air Force Regulations provide for the following: "For the effective conduct of instruction at civilian colleges and universities, subject to coordination with general institutional regulations and arrangements and the approval of the head of the institution, the Professor of Air Force Aerospace Studies will be empowered to draft the rules and orders relating to the organization, control, and training of the members of the AFROTC and the appointment, promotion, and reduction of Cadet Officers and Cadet Non-Commissioned Officers."

The Department of Air Force Aerospace Studies sponsors the following organizations: (1) Arnold Air Society, a national honor society; for outstanding AFROTC cadets. Named in honor of General "Hap" Arnold. (2) Angle Flight. National auxiliary of the Arnold Air Society. Composed of selected cadets who are interested in enhancing the esprit, morale, and appearance of the Air Force ROTC. (3) Honor Team. Provides interested cadets an opportunity to serve as honor guard for all official Cadet Corps functions. (4) Air Command Flight. Provides opportunity for additional military training for those cadets volunteering to participate.

Curriculum

1210-20-30 Air Force Aerospace Studies (2, 2, 2) United States Military Forces in the contemporary world; history, function, and employment of U.S. Military and defense systems. 1 hr and 1 lab (Corps Training).

1240 Air Force Aerospace Studies (3) United States Military Forces in the contemporary world; history, function and employment of U.S. Military and Defense Systems. Course enables students to fulfill all freshman Air Force Aerospace Studies and requirements within one academic quarter. 3 hrs and 3 hrs of lab (Corps Training).

2210-20-30 Air Force Aerospace Studies (2, 2, 2) Survey of development of Air Power; nature of military conflict; air power as an element of national security; concepts and doctrine governing employment of air power; changing mission of defense establishment; employment of air power in military, non-military, and strategic operations. 1 hr and 1 lab (Corps Training).

2235 Air Force Aerospace Studies (3) Department of Defense and role of military in national policies; nature and principles of war; assessment of military policies and strategies of Soviet Union and China; role of alliances in U.S. defense policies. Course fulfills all sophomore Air Force Aerospace Studies requirements within one academic quarter. 3 hrs and 3 hrs of lab (Corps Training).

2240 Field Training (Academic Program) (1-4) Role of United States Military Forces in contemporary world, with particular attention to United States Air Force, its organization and mission, various components of military power, organization of America's defense structure, policies of major powers, and elements and processes in making of defense policy. Conducted at Field Training bases in the country. Approximately 60 class hrs.

3210-20-30 Air Force Aerospace Studies (3, 3, 3) The role and function of the professional officer in a democratic society, socialization process, public attitudes, and values orientations associated with professional military service; requisites for maintaining national security forces; decision-making processes of Department of Defense, political, economic, and social constraints affecting formulation of U.S. defense policy; impact of technological and international developments upon strategic preparedness; emphasis on developing communication skills.

2320 Flight Instruction Ground School (Private Pilot) (3) Part of Air Force ROTC Flight Instruction Program and is designed to prepare student to operate aircraft safely as a pilot. A secondary objective is to enable student to pass FAA private pilot's written examination. Thirty quarter hrs of classroom instruction. Seven subject areas covered are: Preflight Facts—Acquaints student with factors affecting flight; Meteorology—student learns 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 navigational aids; Airman's Information Manual and Federal Air Regulations—Covers rules and regulations that must be known to operate safely and legally.

3250 Flight Instruction Ground School (Instrument) (3) Modified Sanderson Ground School course consisting of audiovisual aids in instruction. Discussion of Federal Aviation Regulation (FAR) instrument flight rules; flight exam and emphasizing safety in operation of small aircraft. Course is based on the Cessna-150 aircraft; however, it can be applied to other aircraft. Provides necessary instruction for Federal Aviation Agency (FAA) written examination for instrument pilot's license. Concurrent flight training is not necessary, but is advisable, and can be arranged through local flight instructors or certified flight instructors.

3255 Commercial Pilot (3) Audio and visual presentation supplemented with discussion of following topics: Advanced Flight Computer; Advanced Meterology; Advanced VFR Navigation and Radio; Commercial Pilot Federal Aviation Regulations and Examinations; Alcohol, Drugs, and Flight Effects; Oxygen, Altitude, and the Body; Weight and Balance, and Oxygen Systems. Course provides necessary instruction to take Federal Aviation Agency (FAA) written examination for Commercial Pilot's License.

4210-20-30 Air Force Aerospace Studies (3, 3, 3) Air Force leadership at junior officer level, including theoretical, professional, and legal aspects, with attention to command, control, and military management functions, principles, and techniques are covered. 3 hrs and 1 lab (Corps Training).

Department of Military Science (688)

Army Reserve Officers' Training Corps

Professor of Military Science: Colonel W. D. Quinon (Head), M.B.A. Alabama.

Assistant Professors of Military Science: Lieutenant Colonel G. L. Moeller, M.S. Troy State; Majors J. W. Camp, M.B.A. Tennessee; K. C. Carey, M.S. Tennessee; N. D. Hair, M.S. Rulesburg State; W. F. Martin, B.S. Nebraska (Omaha); J. S. Stathamson, M.A., Nebraska (Omaha); Captain V. C. Pangie, M.S. Tennessee.

UNIVERSITY ROTC PROGRAM

The University of Tennessee offers a voluntary ROTC program leading to appointment as an officer in the United States Army.

PURPOSE AND OBJECTIVE

The purpose is to provide professional education which will prepare student 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 art and science; to develop in them a basic understanding of associated professional knowledge and 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 November or December 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.

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—6 quarter hours (MS 4000)

BASIC ACADEMIC REQUIREMENT FOR APPOINTMENT AS SECOND LIEUTENANT
Academic prerequisites for appointment as Second Lieutenant in the United States Army through the ROTC Program are 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 narrowly restricted (excluding Military Science Core Curriculum) with few elective options, any conflict in scheduling or course selection will be resolved in favor of academic degree requirements.

MILITARY SCIENCE CORE CURRICULUM

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Military Studies</td>
<td>18</td>
</tr>
<tr>
<td>M.S. 1110 Fundamentals of Military Organization</td>
<td>3</td>
</tr>
<tr>
<td>Management</td>
<td></td>
</tr>
<tr>
<td>M.S. 2110-20 Advanced Leadership and Management</td>
<td>6</td>
</tr>
<tr>
<td>Advanced Military Studies</td>
<td>32</td>
</tr>
<tr>
<td>M.S. 3110-20-30 Advanced Leadership and Management</td>
<td>12</td>
</tr>
<tr>
<td>and M.S. 4110-20-30 Seminar in Leadership and</td>
<td></td>
</tr>
<tr>
<td>Management</td>
<td>12</td>
</tr>
</tbody>
</table>

TOTAL: 39 hours

SUBSTITUTION
The following courses may be substituted for military courses with permission of the ROTC Department head:
- Industrial Management 4460 or Psychology 3450: or Psychology 4610; History 4380 for M.S.4130.
- Certain other upper division courses may be substituted with permission of PMS.

OTHER ACADEMIC COURSES
Since each degree field at UT 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 the 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 deans of the separate Schools and Colleges.

ENROLLMENT AND CONTINUANCE REQUIREMENT
The general requirements for enrollment and continuance in the ROTC program are:

1. Basic Course—M.S I and II
   a. Be a citizen of the United States.
   b. Be physically qualified.
   c. Be not less than sixteen years of age and have not reached twenty-three years of age at the time of enrollment.

2. Advanced Course—M.S III and IV
   a. Complete the Basic Course, or an off-campus six-week Training Course, or have the required amount of prior military service.
   b. Have two academic years of college remaining (either graduate or undergraduate).
   c. Be enrolled as a full-time student, either at UT 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 their academic adviser.

ADVANCED MILITARY STANDING FOR MILITARY TRAINING
On the basis of previous honorable active military service in any branch of the Armed Services, or participation in the Junior ROTC Program at Secondary Schools, a student may request exemption from portions of the Basic Course. Exemption allowed will be determined on the merit of academic adviser.

EMOLUMENTS
All students enrolled in the Army ROTC program are furnished certain texts and uniforms by the Army through the Military Property Officer at UT. Students enrolled in the ROTC Advanced Course receive an allowance of $100 per month during the academic year. While attending the ROTC summer studies, each cadet receives approximately $420 plus meals, clothing, and requisite special equipment.

SELECTIVE SERVICE STATUS
The Selective Service laws provide for certain deferments (draft exemption) for students seeking a commission in the Army through the ROTC curriculum.

COURSES AVAILABLE
The curriculum of the Army ROTC program is designed to qualify the cadet for appointment as an officer. Selection for assignment to the various branches of the Army is based upon:

a. The personal interests of the cadet.

b. The major course of study.

c. Academic accomplishment.

d. Leadership potential.

e. The needs of the Service.

Under this system a cadet may be commissioned in any branch for which he or she is qualified and in which a need for officers exists. After graduation and commissioning, the officer will attend a service school for further specialized military training which will qualify him or her for the Branch to which he or she is assigned.

Flight training, which includes 35 hours of ground instruction and 35 hours of flight instruction, is offered to physically qualified senior ROTC cadets. The cadet may qualify for a Federal Aviation Agency approved private pilot’s license upon successful completion of the flight training course. This program is offered at no cost to the cadet.

Cursriculum

1110 Fundamentals of 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.


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 exercise. Discussion of ROTC Advanced Cadet. PreReq: 2110.

3110-20-30 Advanced Leadership (4, 4, 4) Applied leadership to include operation of the military team, electronic communications, land navigation, small unit leadership and internal defense/development. Two field trips. Leadership Laboratory: Philosophy of organization and operation of military in tactical and administrative roles. PreReq: 2120.

4000 Army ROTC Summer Camp (8) Six-week encampment (forty-four hours of instruction are
scheduled each week) is a prerequisite to commissioning and normally scheduled upon completion of 3130. Camp is conducted at an Army installation with instruction presented by ROTC faculty from colleges and universities. Course of instruction is an extension of leadership and management curricula. Prereq: 3130.

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 permission 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.

4140 Flight Instruction (6) Flight and ground instruction including fundamentals of air discipline, solo, dual, basic instrument and cross-country flying, meteorology, aerial navigation and radio procedures. Prereq: Enrolled in 4110 or permission of Department Head and physically qualified according to Army standards.
Division of Continuing Education

Vice President for Continuing Education:
Charles H. Weaver, Ph.D. Wisconsin

Associate Vice President for Continuing Education:
Kenneth D. Wright, Ph.D. Ohio State

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 82 of this catalog.

Joint University Center (UT/MSU)

Director:
T. L. Weber, M.A. Memphis State.

Assistant Director:
H. Sammons, B.S. Tennessee.

Assistant Professors (full time only):
P. A. Flowers, M.A. Ohio State; C. R. McEntire, M.S. Kansas State College.

Instructors (full time only):
P. Breland, M.A. Alabama; E. M. Brown, M.A. Memphis State; E. K. Miller, M.A. Alabama.

The Joint University Center is administered cooperatively by The University of Tennessee and Memphis State University, and the Division has coordinative and developmental responsibilities only.

Center For Extended Learning

Director:
C. W. Hartsell, Ed.D. Tennessee

Assistant Directors:

Correspondence Instruction: This statewide department extends instructional services of the University from all campuses to the citizens of the state. Courses are offered in the traditional correspondence format and in conjunction with Radio Services, Television Services, and the Teaching Materials Center. Courses may be started at any time.

College Credit Courses: The same courses with the same instructors as in resident classes on various campuses, offering full degree credit.

College Entrance Courses: To remove entrance deficiencies or to complete high school requirements.

Non-Credit Courses and Certificate Programs: In areas of general interest and in technical, business, or professional fields.

Send for a catalog giving information on enrollment, costs, books, and credit. Address: University Correspondence Instruction, The University of Tennessee, Knoxville, Tennessee 37916. Telephone (615) 974-5135.

Cable College: College credit courses offered via cable.

Clep Open Center: To administer College-level Examination Program tests each month.

Independent Reading: Contact staff in departments where courses are offered. This program offered through CEL.

Statewide Media Programs: Courses by radio and television for credit.

Undergraduate Cooperative Education:
Alternate periods of study and related work experience in all degree fields.

Head Start State Training Office

Director:
L. C. Biggs, M.S. Wisconsin

State Training Officer:
M. U. Cole, B.A. Tuscalum

Training Officers:
R. F. Blum, B.S. Bradley University; A. E. Chervin, B.S. Tennessee; D. A. Henry, M.P.S. Western Kentucky University; N. W. Moore, B.S. Northwestern

Coordinator:
A. M. Albrecht, M.S. Tennessee

Field Staff - Leadership Development:
R. Cathey, M.S. Luther Illinois University; R. C. Malott, B.S. University of Rhode Island; S. T. Teets, M.S. Tennessee

SUPPLEMENTARY TRAINING

Research Coordinator At UTC:
P. J. Printz, M.A. Missouri

Training Officers:
V. H. Galyon, B.S. Tennessee; W. S. Judd, M.S. Tennessee

The State Training Office of Head Start is a program of services to the twenty area Head Start Programs in Tennessee. The services include organizing training programs for personnel of the various local programs, development of special workshops, publication of newsletter, and organizational work with parents of children in the Head Start program. This office provides training through the coordination of the Leadership Development Program, Head Start Supplementary Training and the State Training Office grants.

Library Services

Director:
D. J. Harkness, M. A. Columbia.
This is a statewide service, administered by the system Division, and has four major facets.

**Package Library Service** provides material for use by clubwomen, teachers, librarians, and other individuals in preparing talks and papers, and in doing special study and reference work. Books from the Extension Library and the University Library are loaned to individuals within the state and to students taking courses by correspondence. Study club outlines, bibliographies, suggestions for club yearbooks, reading lists, and information-reference service are provided.

**Club Program Service** includes a series of program manuals on historical, literary, and bibliographical subjects designed to help clubwomen, teachers, and librarians in their research and study in informal adult education.

**Drama Loan Service** makes it possible for directors of drama in schools, colleges, universities, Little Theatres, and church drama groups to borrow copies of one-act and three-act plays and materials for special days for reading and examination. Information on sets, costumes, and the original Broadway productions, along with material on playwrights, actors, and actresses, is also available.

**School Program Service** includes aids to teachers, librarians, and directors of speech and drama through package libraries, drama loans, and production aids.

**Publications**

Publications are a direct means of extending to Tennesseans the information resulting from studies by University departments and various extension materials designed for general enrichment of civic, cultural, and economic understanding. The *University of Tennessee Continuing Education Series* is used as an outlet for these materials. A list of available titles, most of them free to Tennessee residents, may be had upon request.

**Radio Services**

**Director:**
R. A. Shirley, M.A. Tennessee.

**Assistant Director:**
N. L. Dryer, B.M. Indiana.

**Staff:**

This department is under the system Division and conducts an extensive statewide program of adult education and information by radio, offering hundreds of different cultural and educational experiences. Its activities may be grouped into three categories:

1. **WUOT**, the University’s 100,000-watt stereo FM station, operating eighteen hours a day every day of the year, with a high quality and varied program of music, public affairs discussion, drama, and documentation from local, state, national, and international sources. The station is a member of the National Public Radio Network.

2. A network of over 150 Tennessee radio stations which provide without charge the time for over 22,000 quarter-hour programs on subjects of public interest, with production, duplication on audio tape, and distribution accomplished by the department. Its close contact with all broadcasting, and its staff and facilities equip the department ideally for work with the other campuses in the production, duplication, and distribution of audio materials for educational use. It will upon request assist all of the campuses in communications development.

3. A technical service which includes highspeed duplication of reel-to-reel or cassette audio tapes for university departments, recording conferences and workshops, audio consulting, and educational radio consulting.

**Teaching Materials Center**

**Director:**
J. T. Benton, M.S. Tennessee.

This department, a system Division unit, 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 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.

**Production Manager:**
W. R. Terry, B.A. Tennessee.

**Chief Engineer:**
D. L. Bower.

**Coordinator, VERM:**
E. D. Wood, B.S. Tennessee.

**Producers:**
S. H. Gordon, B.S. Tennessee; W. P. Wilson, B. S. Tennessee.

Television services, a system department, includes the complex closed-circuit administration and production work which results in many lower division resident classes being taught to some 8,000 students by television on the campus; the production of 196 half-hour programs each year on WSKY-TV, the State Department of Education station in East Tennessee; and instruction for three resident courses in broadcasting for the College of Communications. The department jointly administers an off-campus secondary school accelerated college entrance program by television tape and the Video Tape Electrowriter Remote Mode program of graduate studies in engineering.
The books, periodicals, non-print and any other materials contained in the 6 UTK library units are available to all students, faculty and staff of The University of Tennessee, Knoxville. Included among the holdings are 1,175,000 books, more than 575,000 microforms, 2,500 audiotapes, 300 slide carrousels, 100 video-cassettes, 5700 phonodiscs, more than 1.5 million manuscripts, and various ephemeral materials.

The library in its 6 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 loan, documents, 4000/5000-level reserves, newspapers, 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 audiotapes, slides, and video-cassettes.

Other libraries serving specialized areas are: Agriculture in Morgan Hall; Law in the Taylor Law Building; Music in the Music Building; and Science/Engineering in Dabney-Buehler.

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. Ongoing evaluation and building of the collections is the responsibility of the Collections Development Librarian.

While most materials are selected by faculty, recommendations for purchase are invited from all students and staff. Copies of Your Libraries, the general library handbook for students, and the Faculty Library Handbook are available at all libraries.
Urban and Public Affairs

Vice President for Urban and Public Affairs:
C. E. Smith, A.M. Peabody

Associate Vice President for Urban and Public Affairs:
A. B. Blasoe, Jr., Ph.D. Florida

Administrative Assistant:
C. C. Woods, J.D. Tennessee

Institute For Public Service

Executive Director
R. S. Hutchinson, M.B.A. Chicago

Assistant Director
L. R. Rogers, B.S. Tennessee

Manager of Information Services:
T. B. Ballard, B.S. Tennessee

Manager of Program Development And Evaluation:
B. S. Barker, M.A. Texas

Manager of Request-for-Service System:
W. S. Evans, B.S. Tennessee

Business Manager:
G. W. Baskette

The Institute for Public Service was established in 1971 within the office of the Vice President for Urban and Public Affairs. 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 and the campuses of the University system.

The Institute is headquartered in Knoxville and maintains regional offices in Chattanooga, Columbia, Cookeville, Jackson, Johnson City, Martin, Memphis and Nashville. The Institute is comprised of the system-level public service operations listed below.

Government-Industry-Law Center

Executive Director:
R. S. Hutchinson, M.B.A. Chicago

Associate Director:
L. R. Rogers, B.S. Tennessee

R. J. Plummer, County Law Enforcement Consultant

The Government-Industry-Law Center was created as a division of the University by the Eighty-Third General Assembly (1963). The purpose of the Center is to serve as liaison between the State and local governments and the University, coordinating the needs of government and industry with the resources of the University. In addition to this coordinating function, the Government-Industry-Law Center serves as a clearinghouse for public service projects undertaken for the State by any unit of the University system.

County Technical Assistance Service

Executive Director:
R. J. Harris, B.S. Lambuth.

Executive Assistant to Director:
D. A. Rizer, M.A. Arkansas

Director of Field Services:
J. H. Westbrook, Jr., B.S. Tennessee

Senior Legal Specialist:
T. W. Graham, J.D. Tennessee

Legal Specialists:
W. C. McIntyre, J.D. YMCA Law School, Miss C. D. Wiggins, J.D. Tennessee

Senior Law Enforcement Consultant:
G. L. White

Law Enforcement Consultant:
W. G. Hall, B.S. Middle Tennessee State

Financial Specialist:
T. D. McAnulty, M.A. Austin Peay State

Engineering Specialist:
C. R. Phebus, M.S. Vanderbilt

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, tax assessment and collection, law enforcement, improvements and public works, and in any and all matters relating to county government. This program shall be carried on in cooperation with and with the advice of counties in the state acting through the Tennessee County Services Association and its Board of Directors, which is recognized as their official agency or instrumentality."

The Service is headquartered in Nashville, with regional offices in Chattanooga, Columbia, Cookeville, Jackson, Johnson City, Knoxville and Martin.

Municipal Technical Advisory Service

Executive Director:
V. C. Hobday, Ph. D. Syracuse

Assistant Director:
J. P. Hartman, M.P.A. Tennessee

Specialist Consultants:
W. K. Joines, B.S. Tennessee Polytechnic (Finance and Accounting); J. Karab, B.S. Tennessee (Municipal Information); F. E. Kirk, B.S. In C.E. Southern Methodist (Public Works); J. H. Leuty, B.S. Tennessee Polytechnic (Finance and Accounting); R. A. Love lace, M.P.A. Kansas (Intergovernmental Affairs); J. A. Fitzgerald, B.A. Memphis State (Police); A. C. Lock Jr., B.S.C.E. Oklahoma State (Public Works); G. Musick (Police); D. W. O'Byrne, J.D. Tennessee (Ordinance Codification); W. D. Swanner, J.D. Tennessee (Ordinance Codification); E. Pette, J.D. Tennessee (Municipal Law); J. M. Crabtree, Jr., B.S. Tennessee Tech (Personnel);
The Seventy-Fifth 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, consulting, and field services to municipalities in problems relating to fiscal administration, accounting, tax 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, personnel, and police administration. The state is divided into nine districts and a Municipal Consultant is assigned to each district. Most of the staff are located in the headquarters office on the Knoxville campus; regional offices are maintained in Chattanooga, Cookeville, Jackson, Martin, Memphis and Nashville. This program is carried on in cooperation with the Municipal League of Tennessee.

Center for Industrial Services

Executive Director:
R. E. Harris, M.S., Tennessee, P.E.

Assistant Director:
E. S. Blemenspiel, B.S. Tennessee, CM-AST&T.

Senior Field Engineers:
R. L. Higher, M.S. Tennessee, Technological, P.E.; R. E. Rinella, B.S. Tennessee, P.E.

Field Engineers:
S. E. Clapp, M.B.A. Tennessee
P. L. Dannelley, M.B.A. Memphis State
R. E. Eddy, M.B.A. East Tennessee State
J. R. Ross, B.A. Seneca (Pa.)
C. R. Vanders, B.S. Middle Tennessee State

Counselor:
J. Logan, M.B.A. Arkansas

Industrial Engineer:
T. C. Parsons, M.S. Tennessee

Reference Librarian:
L. C. Heer, M.S.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 were to render service to the industries in this state by providing information, data, and materials related 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 qualified personnel; and by cooperating with the Governor's Staff Assistant for Industrial Development and the Tennessee Industrial and Agricultural Commission 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 the firm's performance. Field engineers experienced in manufacturing operations take the initiative in encouraging the upgrading and expansion of Tennessee industry by counseling with management in their plant environment.

The Center for Industrial Services is headquartered in Nashville. Regional offices are maintained in Chattanooga, Columbia, Cookeville, Jackson, Johnson City, Knoxville, Martin and Memphis.

Center For Government Training

Director:
D. M. Sullivan, M.P.A. Southern California

Associate Director:

Assistant Directors:
E. K. Smith; J. W. Fort; M.A. Austin Peay; G. T. Hilmes, Jr.; B.S. Belmont.

Program Administrator:
M. D. Traughber, B.S. Middle Tennessee State

Regional Managers:
R. H. Cummings, Jr., B.S. Tennessee; D. J. Edmondson, B.S. Tennessee; P. J. Gigon, B.S. Belmont; A. C. North, Jr., B.S. Middle Tennessee State.

State Program Consultant:
J. F. Roop, M.S. Indiana

The Center for Government Training has responsibility for providing professional assistance and establishing training and career development programs for state and local government employees throughout the state. Headquarters are maintained in Nashville, but decentralized programs are developed in various sections of the state. 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 clearinghouse for information relative to public service personnel education and training programs. In addition, the Center serves as the central administrative agency in a state-wide local government training network which includes four campuses of the University and the six senior institutions in the Board of Regents’ system.

Technical Assistance Center

Director:
J. T. Brothers, B.A. Bellevue.

The Technical Assistance Center was created in March, 1970. It is funded in part by a grant from the Economic Development Administration of the U. S. Department of Commerce.

The Center gives assistance to small businesses or individuals engaged in the manufacturing industry, development districts, local governments, or economic development groups in activities which will promote the economic development of the eastern portion of the state. Priority is given to projects within 35 counties which have been designated by EDA as Redevelopment Areas.

Assistant given includes: economic feasibility studies, market studies, management review and assistance, and management seminars and conferences.

The technical work of the Center is performed by faculty and students of the University.

Civil Defense Education Program

Director:
H. V. Price, M.S. Tennessee.

Assistant Directors:

The purpose of the Civil Defense Program is to assist the state, county and municipal governments throughout Tennessee in the development of operational readiness to cope with disasters, natural or man-made. Activities include courses, conferences, consultations, workshops, simulation exercises and surveys, each designed specifically to meet local needs.

Participants and enrollment, generally, are local government officials, civil defense staff personnel, community agency leaders, emergency services personnel, and representatives from industry and private institutions.

Training requirements are established cooperatively with the State Division of Civil Defense and Emergency Preparedness, and the Defense Civil Preparedness Agency, Department of Defense.

Title I, Higher Education Act of 1965 (State Agency)

Director:
P. R. Martin, Jr., A.B. Western Carolina.

Administrative Assistant:
Mrs. N. J. Harrell, M.S. Tennessee.

The Governor of Tennessee has designated The University of Tennessee as the State Agency to administer the Community Service and Continuing Education Program under Title I of the Higher Education Act of 1965. Within the University the State Agency for Title I was established to administer this adult education program.
The Community Service and Continuing Education Program under Title I authorizes the allotment of federal funds to the States for the purpose of strengthening community service and continuing education programs of colleges and universities in order to assist people in the solution of community problems, with particular emphasis on urban and suburban problems.

The Governor and the President of UT have jointly appointed a 16-member State Advisory Council for Title I to work with the State Agency in implementing this program. This Council is composed of leaders from higher education, business, government, and the community.

Through the Tennessee State Plan and annual program amendments, the State Agency for Title I, with the advice of the Advisory Council, establishes priorities among problem areas, approves all project proposals from colleges and universities, and allocates available funds to qualified institutions of higher education.

Environment Center

Director:
J. H. Gibbons, Ph.D. Duke

Director, Appalachian Resources Project:
R. A. Bohm, Ph.D. Washington (Missouri)

The Environment Center was created to encourage and support UT faculty and students to become involved in interdisciplinary studies to provide alternative solutions to problems related to energy and the environment. The Center provides assistance to faculty interested in developing research and public service projects; manages research and development projects that involve several disciplines; and assists Tennessee government and industry in specific problems related to energy and environment. It also participates in the Statewide Consumer Education Program, especially in developing material.

An important part of the Center is the Appalachian Resources Project which was initiated to investigate the fiscal, environmental and human costs of coal production in Appalachia.

The Center is supported jointly by the Institute for Public Service and UT, Knoxville through the Office of the Vice Chancellor for Graduate Studies and Research.

Transportation Center

Director:
K. W. Heathington, Ph.D. Northwestern

Associate Director:
F. W. Davis Jr., Ph.D. Michigan State

Assistant Directors:
D. H. Jones, M.S. Tennessee
R. L. Perry, M.S. Tennessee

The mission of the Transportation Center is to encourage and facilitate interdisciplinary research in all phases of transportation, to provide public service of a transportation-related nature, and to manage the research program for the Tennessee State Department of Transportation.

The Center works with all modes of transportation, including water, rail, air, highways and mass transportation, and with the movement of both goods and people in consideration of transportation’s impact on the total environment as well as the technical aspects of a problem.

The Center is supported jointly by the Institute for Public Service and UT, Knoxville through the Office of the Vice Chancellor for Graduate Studies and Research.
THE UNIVERSITY OF TENNESSEE GENERAL SUMMARY 1973-1974

Administration

Trustees:
Appointed by the Governor .................................................. 16
Ex-Officio ................................................................. 5

Officers of Administration:
President ................................................................. 1
Vice Presidents .......................................................... 8
Assoc./Asst. Vice Presidents ........................................... 5
Chancellors ................................................................. 5
Vice Chancellors and Provost ........................................... 14
Assoc./Asst. Vice Chancellors .......................................... 6
Deans and Directors ..................................................... 132

Full-Time and Part-Time Faculty

<table>
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<tr>
<th></th>
<th>Center for the Health Sciences*</th>
<th>Chattanooga</th>
<th>Knoxville</th>
<th>Martin</th>
<th>Nashville</th>
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Instruction, Research, and Public Service

Officers of the Agricultural Experiment Station .................... 20
Officers of the Engineering Experiment Station .................... 2
Officers of the Agricultural Extension Service .................... 441
(Includes County Agents)
Lecturers ............................................................ 123
Graduate, Research, and Teaching Assistants, Fellows, Trainees 1,331
Officers of the Memorial Research Center and Hospital ........... 51

*Includes three vice presidents as duplicates.
**Includes UTMCRL.
## STATEWIDE ENROLLMENT SUMMARY

**Summer 1973 - Spring 1974**

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<td>33,298</td>
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</table>

**NOTE:** The enrollment data in this statewide summary of The University of Tennessee System represents an unduplicated count of students enrolled for degree credit. Students enrolled only on an non-credit or audit basis are not included.

---

*bDoes not include UT's student enrollment at the Memphis Joint University Center.

bDoes not include 4,011 students (unduplicated) in correspondence courses during FY 1974.
<table>
<thead>
<tr>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Regulations, 8</td>
</tr>
<tr>
<td>Accelerated Program, 21</td>
</tr>
<tr>
<td>Accounting, 65, 69, 72</td>
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<td>Knoxville, 8</td>
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<td>Statewide, 7</td>
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<tr>
<td>Summary, 220</td>
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</tr>
<tr>
<td>Education, 49, 91, 101</td>
</tr>
<tr>
<td>Engineering, 49, 55, 108, 112, 121</td>
</tr>
<tr>
<td>Experiment Station, 46</td>
</tr>
<tr>
<td>Extension Education, 50, 56</td>
</tr>
<tr>
<td>Extension Service, 47</td>
</tr>
<tr>
<td>Food Technology and Science, 51, 57</td>
</tr>
<tr>
<td>Forestry, 51, 57</td>
</tr>
<tr>
<td>Institute of, 46</td>
</tr>
<tr>
<td>Interdepartmental Courses, 53</td>
</tr>
<tr>
<td>Mechanization, 50, 55</td>
</tr>
<tr>
<td>Ornamental Horticulture and Landscape Design, 52, 58</td>
</tr>
<tr>
<td>Plant and Soil Sciences, 53, 59</td>
</tr>
<tr>
<td>Short Courses, 53</td>
</tr>
<tr>
<td>Veterinary Medicine, College of, 60</td>
</tr>
<tr>
<td>Air Force Aerospace Studies, 210</td>
</tr>
<tr>
<td>Advanced, 21</td>
</tr>
<tr>
<td>American Studies, 172</td>
</tr>
<tr>
<td>Animal Science, 50, 56</td>
</tr>
<tr>
<td>Anthropology, 162</td>
</tr>
<tr>
<td>Arabic, 200</td>
</tr>
<tr>
<td>Architecture, 61</td>
</tr>
<tr>
<td>Army, 21, 211</td>
</tr>
<tr>
<td>Arrowmont School of Crafts, 144</td>
</tr>
<tr>
<td>Art: 164</td>
</tr>
<tr>
<td>Education, 86, 91</td>
</tr>
<tr>
<td>Exhibitions, 35</td>
</tr>
<tr>
<td>Asian Studies, 173</td>
</tr>
<tr>
<td>Assistantships, 39</td>
</tr>
<tr>
<td>Astronomy, 193</td>
</tr>
<tr>
<td>Athletics, 36</td>
</tr>
<tr>
<td>Audiology and Speech Pathology, 165</td>
</tr>
<tr>
<td>Auditors, 20, 24</td>
</tr>
<tr>
<td>Automobile Regulations, 35</td>
</tr>
<tr>
<td>Average, Required, 20</td>
</tr>
<tr>
<td>Aviation Systems, 45</td>
</tr>
<tr>
<td>Awards, 28</td>
</tr>
<tr>
<td>Bachelor of Arts, 152, 153</td>
</tr>
<tr>
<td>Bachelor of Fine Arts, 152, 157</td>
</tr>
<tr>
<td>Bachelor of Music, 152, 158</td>
</tr>
<tr>
<td>Bachelor of Science in Chemistry, 153, 160</td>
</tr>
<tr>
<td>Bachelor's Degree, Requirements, 20, 153</td>
</tr>
<tr>
<td>Bands, University, 36</td>
</tr>
<tr>
<td>Banking, 65</td>
</tr>
<tr>
<td>Binary Engineering Program, 105</td>
</tr>
<tr>
<td>Biochemistry, 167</td>
</tr>
<tr>
<td>Biology, 167</td>
</tr>
<tr>
<td>Botany, 168</td>
</tr>
<tr>
<td>Broadcasting, 36, 79, 80</td>
</tr>
<tr>
<td>Business Administration, College of, 64</td>
</tr>
<tr>
<td>Business Administration, 72</td>
</tr>
<tr>
<td>Business and Economic Research, Center for, 64, 77</td>
</tr>
<tr>
<td>Business Law, 72</td>
</tr>
<tr>
<td>Business: Cooperative Program, 65</td>
</tr>
<tr>
<td>Education, 66, 90, 102</td>
</tr>
<tr>
<td>General, 86, 70</td>
</tr>
<tr>
<td>Calendar, 4</td>
</tr>
<tr>
<td>Carousel Theatre, 35</td>
</tr>
<tr>
<td>Center, University, 32</td>
</tr>
<tr>
<td>Center for Extended Learning, 214</td>
</tr>
<tr>
<td>Center for the Health Sciences, 15, 155</td>
</tr>
<tr>
<td>Chemical Engineering, 108, 121, 122</td>
</tr>
<tr>
<td>Chemistry: 169</td>
</tr>
<tr>
<td>Cooperative Program, 180</td>
</tr>
<tr>
<td>Child Development, 136, 140</td>
</tr>
<tr>
<td>Choral Groups, 36</td>
</tr>
<tr>
<td>Church Centers, 34</td>
</tr>
<tr>
<td>Civil Defense Education Program, 218</td>
</tr>
<tr>
<td>Civil Engineering, 108, 113, 123, 124</td>
</tr>
<tr>
<td>Classics, 170</td>
</tr>
<tr>
<td>Classification of Students, 20</td>
</tr>
<tr>
<td>Clothing, Textiles and, 140, 146</td>
</tr>
<tr>
<td>College Scholars Program, 155</td>
</tr>
<tr>
<td>Communications, 80</td>
</tr>
<tr>
<td>Communications, College of, 78</td>
</tr>
<tr>
<td>Comparative Literature, 173</td>
</tr>
<tr>
<td>Computer Science, 171</td>
</tr>
<tr>
<td>Computing Center, 37</td>
</tr>
<tr>
<td>Conferences and Institutes, 82</td>
</tr>
<tr>
<td>Continuing and Higher Education, 92</td>
</tr>
<tr>
<td>Continuing Education, Division of:</td>
</tr>
<tr>
<td>Knoxville, 82</td>
</tr>
<tr>
<td>Statewide, 214</td>
</tr>
<tr>
<td>Cooperative Programs:</td>
</tr>
<tr>
<td>Agriculture, 53</td>
</tr>
<tr>
<td>Business Administration, 65</td>
</tr>
<tr>
<td>Chemistry, 160</td>
</tr>
<tr>
<td>Communications, 78</td>
</tr>
<tr>
<td>Engineering, 105, 111</td>
</tr>
<tr>
<td>Correspondence Directory, 15</td>
</tr>
<tr>
<td>Correspondence Study, 21, 214</td>
</tr>
<tr>
<td>Counseling, Student, 18, 34</td>
</tr>
<tr>
<td>County Technical Assistance Service, 217</td>
</tr>
<tr>
<td>Course Changes in Registration, 19</td>
</tr>
<tr>
<td>Course Numbers and Levels, 19</td>
</tr>
<tr>
<td>Crafts, 139, 144</td>
</tr>
<tr>
<td>Credit Hours, 18</td>
</tr>
<tr>
<td>Cultural Opportunities, 35</td>
</tr>
<tr>
<td>Cultural Studies, 172</td>
</tr>
<tr>
<td>Curriculum and Instruction, 92</td>
</tr>
<tr>
<td>Cybernetics and Bionics, 45</td>
</tr>
<tr>
<td>Dean's List, 28</td>
</tr>
<tr>
<td>Degrees, 22, 39</td>
</tr>
<tr>
<td>Deferred Payment Service Fee, 23</td>
</tr>
<tr>
<td>Dental Hygiene, 156</td>
</tr>
<tr>
<td>Dentistry, 155</td>
</tr>
<tr>
<td>Deposits, Military, 23</td>
</tr>
<tr>
<td>Distributive Education, 90, 102</td>
</tr>
<tr>
<td>Doctor of Education Degree, 39</td>
</tr>
<tr>
<td>Doctor of Jurisprudence Degree, 148</td>
</tr>
<tr>
<td>Doctor of Philosophy Degree, 39</td>
</tr>
<tr>
<td>Dormitories, 24</td>
</tr>
<tr>
<td>Dropping Courses, 19</td>
</tr>
<tr>
<td>Ecology, 174</td>
</tr>
<tr>
<td>Economics: 66, 72, 176</td>
</tr>
<tr>
<td>Agricultural, 48, 54</td>
</tr>
<tr>
<td>Family, 138, 143</td>
</tr>
<tr>
<td>Education:</td>
</tr>
<tr>
<td>Administration and Supervision, 94</td>
</tr>
<tr>
<td>Agriculture, 49, 91, 101</td>
</tr>
<tr>
<td>Art, 86, 91</td>
</tr>
<tr>
<td>Business, 66, 90, 102</td>
</tr>
<tr>
<td>Continuing and Higher, 92</td>
</tr>
<tr>
<td>Curriculum and Instruction, 92</td>
</tr>
<tr>
<td>Section</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Distributive, 90, 102</td>
</tr>
<tr>
<td>Elementary, 85</td>
</tr>
<tr>
<td>Health and Safety, 87, 96</td>
</tr>
<tr>
<td>Home Economics, 91, 102, 135, 138, 143</td>
</tr>
<tr>
<td>Industrial, 91, 103</td>
</tr>
<tr>
<td>Music, 86, 91</td>
</tr>
<tr>
<td>Physical, 87, 97</td>
</tr>
<tr>
<td>Psychology and Guidance, 95</td>
</tr>
<tr>
<td>Recreation, 87, 99</td>
</tr>
<tr>
<td>Secondary, 85, 161</td>
</tr>
<tr>
<td>Special, 88, 99</td>
</tr>
<tr>
<td>Vocational-Technical, 90, 101</td>
</tr>
<tr>
<td>Educational Administration and Supervision, 94</td>
</tr>
<tr>
<td>Educational Psychology and Guidance, 95</td>
</tr>
<tr>
<td>Educational Research and Service, Bureau of, 83</td>
</tr>
<tr>
<td>Electrical Engineering, 109, 114, 125</td>
</tr>
<tr>
<td>Elementary Teaching, 85</td>
</tr>
<tr>
<td>Employment, Student, 26</td>
</tr>
<tr>
<td>Engineering: Administration, 127</td>
</tr>
<tr>
<td>Aerospace, 108, 111, 131</td>
</tr>
<tr>
<td>Agriculture, 49, 55, 108, 112, 121</td>
</tr>
<tr>
<td>Basic, 121</td>
</tr>
<tr>
<td>Binary, 105</td>
</tr>
<tr>
<td>Biomedical, 108, 128</td>
</tr>
<tr>
<td>Chemical, 108, 121, 122</td>
</tr>
<tr>
<td>Civil, 108, 113, 123, 124</td>
</tr>
<tr>
<td>Cooperative, 105, 111</td>
</tr>
<tr>
<td>Electrical, 109, 114, 125</td>
</tr>
<tr>
<td>Environmental, 125</td>
</tr>
<tr>
<td>Experiment Station, 106</td>
</tr>
<tr>
<td>Graphics, 121</td>
</tr>
<tr>
<td>Industrial, 110, 117, 130</td>
</tr>
<tr>
<td>Mechanical, 110, 118, 131</td>
</tr>
<tr>
<td>Metallurgical, 110, 119, 122</td>
</tr>
<tr>
<td>Nuclear, 110, 120, 133</td>
</tr>
<tr>
<td>Physics, 109, 115, 130, 194</td>
</tr>
<tr>
<td>Science, 110, 116, 128</td>
</tr>
<tr>
<td>Science and Mechanics, 128</td>
</tr>
<tr>
<td>English, 176</td>
</tr>
<tr>
<td>Enrollment Summary, 221</td>
</tr>
<tr>
<td>Entrance Requirements, 15–18</td>
</tr>
<tr>
<td>Environment Center, 219</td>
</tr>
<tr>
<td>Environmental Engineering, 125</td>
</tr>
<tr>
<td>Equipment, Home Economics, 138, 143</td>
</tr>
<tr>
<td>Etymology, Greek and Latin, 171</td>
</tr>
<tr>
<td>Evening School, 15, 82</td>
</tr>
<tr>
<td>Examinations: Admission, 15</td>
</tr>
<tr>
<td>Advanced Placement, 18</td>
</tr>
<tr>
<td>Proficiency, 18, 21</td>
</tr>
<tr>
<td>Expenses, 22</td>
</tr>
<tr>
<td>Experiment Stations: Agricultural, 46</td>
</tr>
<tr>
<td>Engineering, 106</td>
</tr>
<tr>
<td>Extension Service, Agricultural, 47</td>
</tr>
<tr>
<td>Extracurricular Activities, 32</td>
</tr>
<tr>
<td>Faculty, 11</td>
</tr>
<tr>
<td>Faculty Advising, 18</td>
</tr>
<tr>
<td>Failures, 18</td>
</tr>
<tr>
<td>Family Economics, 138, 143</td>
</tr>
<tr>
<td>Family Housing, 40</td>
</tr>
<tr>
<td>Family Relationships, 136, 140</td>
</tr>
<tr>
<td>Fees and Expenses, 22</td>
</tr>
<tr>
<td>Fellowships, 39</td>
</tr>
<tr>
<td>Finance, 66, 70, 74</td>
</tr>
<tr>
<td>Financial Aid, 25</td>
</tr>
<tr>
<td>Fine Arts, 152, 157</td>
</tr>
<tr>
<td>Food Science, Nutrition, and Food Systems Administration, 136, 141, 142</td>
</tr>
<tr>
<td>Food Service, 24</td>
</tr>
<tr>
<td>Food Technology and Science, 51, 57</td>
</tr>
<tr>
<td>Foreign Study Courses, 162</td>
</tr>
<tr>
<td>Forestry, 51, 57</td>
</tr>
<tr>
<td>Fraternities: Honorary and Professional, 30</td>
</tr>
<tr>
<td>Social, 34</td>
</tr>
<tr>
<td>French, 200</td>
</tr>
<tr>
<td>General Business, 66, 70</td>
</tr>
<tr>
<td>Geography, 178</td>
</tr>
<tr>
<td>Geology, 179</td>
</tr>
<tr>
<td>German, 181</td>
</tr>
<tr>
<td>Germanic and Slavic Languages, 180</td>
</tr>
<tr>
<td>Glee Club, 36</td>
</tr>
<tr>
<td>Government-Industry-Law Center, 217</td>
</tr>
<tr>
<td>Government Training, Center for, 218</td>
</tr>
<tr>
<td>Grades, 18</td>
</tr>
<tr>
<td>Graduate School: 38</td>
</tr>
<tr>
<td>Biomedical Sciences, 39, 41</td>
</tr>
<tr>
<td>Degrees Available, 39</td>
</tr>
<tr>
<td>Library and Information Science, 42</td>
</tr>
<tr>
<td>Planning, 43</td>
</tr>
<tr>
<td>Social Work, 43</td>
</tr>
<tr>
<td>Space Institute, 38, 45</td>
</tr>
<tr>
<td>Water Resources Development, 44</td>
</tr>
<tr>
<td>Graphics, 121</td>
</tr>
<tr>
<td>Greek, 170</td>
</tr>
<tr>
<td>Greek and Roman Civilization, 174</td>
</tr>
<tr>
<td>Guidance, 18, 34</td>
</tr>
<tr>
<td>Head Start Training Office, 214</td>
</tr>
<tr>
<td>Health Education, 96</td>
</tr>
<tr>
<td>Health, Physical Education and Recreation, School of, 96</td>
</tr>
<tr>
<td>Health, Public, 96</td>
</tr>
<tr>
<td>Health, School, 96</td>
</tr>
<tr>
<td>Health Service, 34</td>
</tr>
<tr>
<td>Health, Student, 18, 34, 37</td>
</tr>
<tr>
<td>Hearing and Speech Services, 35</td>
</tr>
<tr>
<td>High School Subjects, Credit, 15, 17</td>
</tr>
<tr>
<td>Historical Background, University, 14</td>
</tr>
<tr>
<td>History, 182</td>
</tr>
<tr>
<td>Home Demonstration Agents, 138</td>
</tr>
<tr>
<td>Home Economics: Education, 91, 102, 135, 138, 143</td>
</tr>
<tr>
<td>Graduate Study, 140</td>
</tr>
<tr>
<td>Vocational Certification, 135</td>
</tr>
<tr>
<td>Home Management, 138, 143</td>
</tr>
<tr>
<td>Honorary Fraternities, 30</td>
</tr>
<tr>
<td>Honors and Awards, 28</td>
</tr>
<tr>
<td>Honors Categories, 21</td>
</tr>
<tr>
<td>Honors Courses, 20</td>
</tr>
<tr>
<td>Honors Program, 182</td>
</tr>
<tr>
<td>Horticulture, 52, 58</td>
</tr>
<tr>
<td>Hospital: Memorial Research Center, 37</td>
</tr>
<tr>
<td>Student Health Service, 34</td>
</tr>
<tr>
<td>Hour, Quarter, 18, 20</td>
</tr>
<tr>
<td>Housing, 24</td>
</tr>
<tr>
<td>Human Services, 182</td>
</tr>
<tr>
<td>Hunter Hills Theatre, 35, 162</td>
</tr>
<tr>
<td>Identification Card, 23</td>
</tr>
<tr>
<td>Incompletes, 18</td>
</tr>
<tr>
<td>Independent Study, 162</td>
</tr>
<tr>
<td>Industrial Education, 91, 103</td>
</tr>
<tr>
<td>Industrial Engineering, 110, 117, 130</td>
</tr>
<tr>
<td>Industrial Management, 67, 70, 75</td>
</tr>
<tr>
<td>Industrial and Personnel Management, 75</td>
</tr>
<tr>
<td>Industrial Services, Center for, 218</td>
</tr>
<tr>
<td>Insurance, 67, 74</td>
</tr>
<tr>
<td>Insurance, Student, 22</td>
</tr>
<tr>
<td>Intercollegiate Programs, 39</td>
</tr>
<tr>
<td>Interior Design, 139, 144</td>
</tr>
<tr>
<td>International Education, Division of, 35</td>
</tr>
<tr>
<td>International Student Affairs, 32</td>
</tr>
<tr>
<td>International Students, Admission, 15</td>
</tr>
<tr>
<td>Italian, 201</td>
</tr>
<tr>
<td>Joint University Center, 214</td>
</tr>
<tr>
<td>Journalism, 79, 81</td>
</tr>
<tr>
<td>Labor Economics, 73</td>
</tr>
<tr>
<td>Landscape Design, 52, 58</td>
</tr>
<tr>
<td>Late Registration, 23</td>
</tr>
<tr>
<td>Latin, 171</td>
</tr>
<tr>
<td>Latin American Studies, 174</td>
</tr>
<tr>
<td>Law, College of: 148</td>
</tr>
<tr>
<td>Admission Requirements, 149</td>
</tr>
<tr>
<td>Library, 148</td>
</tr>
<tr>
<td>Learning Research Center, 37</td>
</tr>
<tr>
<td>Legal Clinic, 148</td>
</tr>
<tr>
<td>Liberal Arts, College of: 152</td>
</tr>
<tr>
<td>Anthropology, 162</td>
</tr>
<tr>
<td>Art, 164</td>
</tr>
<tr>
<td>Audiology and Speech Pathology, 165</td>
</tr>
<tr>
<td>Biochemistry, 167</td>
</tr>
<tr>
<td>Biology, 167</td>
</tr>
<tr>
<td>Botany, 168</td>
</tr>
<tr>
<td>Chemistry, 169</td>
</tr>
<tr>
<td>Classics, 170</td>
</tr>
<tr>
<td>Computer Science, 171</td>
</tr>
<tr>
<td>Cultural Studies, 172</td>
</tr>
<tr>
<td>Ecology, 174</td>
</tr>
<tr>
<td>Economics, 66, 72, 176</td>
</tr>
<tr>
<td>English, 176</td>
</tr>
<tr>
<td>Geology, 178</td>
</tr>
<tr>
<td>Geographical Science, 179</td>
</tr>
<tr>
<td>Germanic and Slavic Languages, 180</td>
</tr>
<tr>
<td>History, 182</td>
</tr>
<tr>
<td>Honors Program, 184</td>
</tr>
<tr>
<td>Human Services, 184</td>
</tr>
<tr>
<td>Mathematics, 185</td>
</tr>
<tr>
<td>Microbiology, 188</td>
</tr>
<tr>
<td>Music, 158, 189</td>
</tr>
<tr>
<td>Philosophy, 192</td>
</tr>
<tr>
<td>Physics and Astronomy, 193</td>
</tr>
<tr>
<td>Political Science, 195</td>
</tr>
<tr>
<td>Psychology, 196</td>
</tr>
<tr>
<td>Religious Studies, 198</td>
</tr>
<tr>
<td>Romance Languages, 199</td>
</tr>
<tr>
<td>Sociology, 202</td>
</tr>
<tr>
<td>Speech and Theatre, 203</td>
</tr>
<tr>
<td>University Studies, 205</td>
</tr>
<tr>
<td>Zoology, 205</td>
</tr>
<tr>
<td>Library: Continuing Education, 214</td>
</tr>
<tr>
<td>Law, 148</td>
</tr>
<tr>
<td>University, 216</td>
</tr>
<tr>
<td>Library and Information Science, 42</td>
</tr>
<tr>
<td>Literature, Comparative, 173</td>
</tr>
<tr>
<td>Loan Funds, 25</td>
</tr>
<tr>
<td>Logistics, 67, 70</td>
</tr>
<tr>
<td>Maintenance Fee, 23</td>
</tr>
<tr>
<td>Management, Industrial, 67, 70, 75</td>
</tr>
<tr>
<td>Management Science, 75</td>
</tr>
<tr>
<td>Management Science Option, 69</td>
</tr>
<tr>
<td>Marketing, 67, 71, 75</td>
</tr>
<tr>
<td>Marketing and Transportation, 75</td>
</tr>
</tbody>
</table>
Pre-Physical Therapy, 155, 157
Pre-Veterinary Medicine, 60
Press, University of Tennessee, 37
Proficiency Examinations, 18, 21
Psychological Clinic, 162
Psychology, 196
Psychology and Guidance, 95
Public Administration: 68, 161
Bureau of, 162
Public Health, 96
Public Service, Institute of, 217
Publications:
Student, 36
University, 37
Quarter Hour, 18
Radiation Biology, 38
Radio Services, 215
Readmission, 20
Real Estate and Urban Development, 69, 74
Recreation, 87, 99
Recreation, Office of, 32
Refund of Fees, 24
Registration Dates, 4
Rehabilitation, 99
Related Art, Crafts, and Interior Design, 139, 144
Religious Influences, 34
Religious Studies, 198
Requirements:
Academic, 18
Admission, 15
Bachelor's Degree, 20
Correspondence Work, 21
Doctor of Education Degree, 39
Doctor of Jurisprudence Degree, 148
Doctor of Philosophy Degree, 39
Grades, 18
Health, 18
High School Units, 15, 17
Master's Degree, 38, 39
Parking, 35
Personnel Forms, 21
Residency, 15
Research Organizations, 11
Residence Halls, 24
Residence Requirements, 15
Residency Classification, 15
Romance Languages, 199
R.O.T.C.:
Advanced, 212
Air Force, 210
Army, 211
Rural Sociology, 48, 54
Russian and East European Studies, 174
Russian, 181, 182
Safety, 97
Scholarships, 25
School Health, 96
Science, Engineering, 110, 116, 128
Science-Medical Technology, 156
Secondary Teaching, 85, 161
Secretarial Program, Two Year, 68
Short Courses, Agriculture, 53
Singlers, UT, 36
Social Fraternities and Sororities, 34
Social Work, 43
Sociology, 202
Rural, 48, 54
Sororities, 34
Space Institute, 38, 45, 105
Spanish, 201
Special Education, 88, 99
Special Students, 16
Speech and Theatre, 203
Speech Pathology, Audiology and, 165
Sports, 32, 99
Statistics, 69, 71, 77
Stokely Athletics Center, 36
Student Affairs and Services: 32
Activities Office, 32, 34
Career Planning and Placement Service, 35
Counseling Center, 34
Employment, 26
Financial Aid, 25
Health Service, 34
Insurance, 22
International Student Affairs, 32
Loans, 25
Organizations, 34
Publications, 36
Special Services, Office of, 34
Traditions, 37
Study Abroad, 162
Summer Quarter, Fees and Expenses, 24
Supply Store, 32
Teachers:
General Information, 20, 84, 161
Elementary, 85
Secondary, 85, 161
Teaching Materials Center, 215
Technical Assistance Center, 218
Technical Education, 99, 101
Television Services, 215
Tennessee Executive Development Program, 64
Textiles and Clothing, 140, 146
Theatre, Speech and, 203
Theatres, University, 35, 162
Theology, 161
Traditions, 37
Transfer Students, 15, 16, 20
Transportation, 69, 71, 76
Transportation Center, 219
Transportation, Marketing and, 75
Trustees, 6
Tuition, 22, 23
Unclassified Students, 15
Undergraduate Degrees, 20, 22
University Center, 32
University Studies, 205
Urban and Public Affairs, 217
Vehicle Operation and Parking, 35
Veterinary Medicine, 60
Vocational Certification, Home Economics, 135
Vocational-Technical Education, 90, 101
Water Resources Development, 44
Wildlife and Fisheries Science, 52, 58
Withdrawals, 19
Women's Studies, 174
WUOT, 36
Zoology, 205