Majors and Degree Programs

College of Agriculture
- Agricultural Economics: M.S., Ph.D.
- Agricultural Engineering: M.S., Ph.D.
- Agricultural Extension: M.S.
- Agricultural Mechanization: M.S.
- Animal Science: M.S., Ph.D.
- Entomology and Plant Pathology: M.S.
- Forestry: M.S.
- Ornamental Horticulture and Landscape Design: M.S.
- Plant and Soil Science: M.S.
- Wildlife and Fisheries Science: M.S.

College of Business Administration
- Accounting: M.Acc.
- Business Administration: M.B.A., J.D.-M.B.A., Ph.D.
- Economics: M.A., Ph.D.
- Management Science: Ph.D.
- Statistics: M.S.

College of Communications
- Communications: M.S., Ph.D.

College of Education
- Adult Education: M.S.
- Agricultural Education: M.S.
- Art Education: M.S.
- Business Education: M.S.
- College Student Personnel: M.S.
- Curriculum and Instruction: M.S., Ed.S., Ed.D.
- Educational Administration and Supervision: M.S., Ed.S., Ed.D.
- Educational Psychology: M.S., Ed.D.
- Educational Psychology and Guidance: Ed.S.
- Guidance: M.S., Ed.D.
- Health Education: M.S., Ed.D.
- Industrial Education: M.S., Ed.D.
- Physical Education: M.P.H.
- Public Health: M.S.
- Recreation: M.S., Ed.S.
- School Health Education: M.S.
- Special Education: M.S.
- Vocational Rehabilitation Counseling: M.S.
- Vocational-Technical Education: M.S., Ed.S., Ed.D.

College of Engineering
- Aerospace Engineering: M.E., M.S., Ph.D.
- Chemical Engineering: M.S., Ph.D.
- Civil Engineering: M.S., Ph.D.
- Electrical Engineering: M.S., Ph.D.
- Engineering Science: M.S., Ph.D.
- Environmental Engineering: M.S.
- Environmental Science: M.S.
- Industrial Engineering: M.E., M.S.
- Mechanical Engineering: M.E., M.S., Ph.D.
- Metallurgical Engineering: M.S., Ph.D.
- Nuclear Engineering: M.E., M.S., Ph.D.
- Polymer Engineering: M.S., Ph.D.

College of Human Ecology
- Child and Family Studies: M.S.
- Consumer Studies and Housing: Public Policy: M.S.

College of Liberal Arts
- Anthropology: M.A., Ph.D.
- Art: M.F.A.
- Audiology: M.A.
- Biochemistry: M.S., Ph.D.
- Botany: M.S., Ph.D.
- Chemistry: M.S., Ph.D.
- Computer Science: M.S., Ph.D.
- English: M.A., Ph.D.
- French: M.A.
- Geography: M.S., Ph.D.
- Geology: M.A.
- German: M.A.
- German Language and Literature: M.A.
- History: M.A., Ph.D.
- Mathematics: M.Math., M.S., Ph.D.
- Microbiology: M.S., Ph.D.
- Music: M.Mus., M.A.
- Philosophy: M.A., Ph.D.
- Physics: M.S., Ph.D.
- Political Science: M.A., Ph.D.
- Psychology: M.A., Ph.D.
- Public Administration: M.P.A.
- Sociology: M.A., Ph.D.
- Spanish: M.A., Ph.D.
- Speech and Hearing Science: Ph.D.
- Speech and Theatre: M.A.
- Speech Pathology: M.A.
- Theatre: M.F.A.
- Zoology: M.S., Ph.D.

College of Nursing
- Nursing: M.S., Ph.D.

School of Biomedical Sciences
- Biomedical Sciences: M.S., Ph.D.

School of Library and Information Sciences
- Library Science: M.S.L.S.

School of Planning
- Planning: M.S.P.

College of Social Work
- Social Work: M.S.S.W., Ph.D.

Additional Majors and Degree Programs
- Majors and Degree Programs
- Intercollegiate

Other Degree Programs:
- M.S.
- M.S., Ph.D.
- M.S., M.S.
- M.S., Ph.D.
School of Biomedical Sciences, Biology Division, ORNL, P.O. Box Y, Oak Ridge, Tennessee 37831. Consult the Graduate Catalog for listing of graduate level courses.

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

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

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

Medical Biology
UNDERGRADUATE
4110-20-30 Undergraduate Research Participation (2.2) Experience in active biomedical research projects under supervision of faculty. Students may conduct their own research projects within designated areas. Prereq: Junior or Senior standing; prior consent of faculty member. S/NC grading only.

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

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

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

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


Assistant Professors: M. H. Karrenbrock, Ed.D. University of Georgia; M. S. Stephenson, Ph.D. North Texas State.

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

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

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

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

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

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

4140 Libraries and Librarianship (3) Librarianship as an occupation: its organization, responsibilities, problems, and prospects.

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

4160 School Library Media Program Management (3) Attitudes, knowledge and skills necessary to manage a school library media program at building and district levels. Curricular services and role of school library media program in curriculum development. Application technology to program implementation. Prereq: 4150 or consent of instructor. S.

4270 Organization of Library Collections (3) Acquisitions, cataloging, and maintenance of library collections.

4310 History of the Book (3) History of writing and various methods of bookmaking from earliest times through 19th century.

4320 Adult Materials and Reading Interests (3) Fiction and subject categories, popular and standard; evaluation of materials to meet adult interests: consideration of selection aids.

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

4750 Utilization of Instructional Media (3) (Same as Educ. C & I 4750 and Vocational-Technical Education 4750.)

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

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

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

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

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


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

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

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

UNDERGRADUATE
4100 Survey of Planning (3) History of city development and planning with special attention to the U.S. experience in urban and other levels of planning, State of the art, the process, the comprehensive plan, and the implementation devices. Planning issues in society. Not for credit for Master of Science in Planning degree. (Same as Urban Studies 4100.)
Space Institute

Kenneth E. Harwell, Dean
Arthur A. Mason, Associate Dean

The Space Institute is a graduate education and research institute established in 1964 on a 365 acre lakeshore campus in Middle Tennessee. UTSI has evolved into an internationally recognized institution for graduate study and research in engineering, physics, mathematics, and computer science. The accredited academic programs and educational policies of the Space Institute have their origins in appropriate departments of The University of Tennessee, Knoxville. The more than 40 faculty members of the Institute carry out these accredited academic programs through classroom teaching, informal seminars, active research, and directing the research of their students in an environment of creative work and advance study. Programs are available to students devoting full-time effort toward M.S. and Ph.D. degrees or those interested in continuing education for updating and broadening knowledge and those who wish to pursue post-doctoral research.

Graduate degree programs are available with majors in Aerospace Engineering, Aviation Systems, Computer Science, Electrical Engineering, Engineering Science, Industrial Engineering (Engineering Management Concentration), Mathematics, Mechanical Engineering, and Physics. In addition to the fundamental studies characteristic of each discipline, research opportunities are available in many areas including aerodynamics, atmospheric science, fluid mechanics, computer graphics, knowledge engineering, energy conversion processes, thermal sciences, space systems, remote sensing, propulsion, computational fluid dynamics, and other aspects of atmospheric and space flight.

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

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

Transportation Center

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

Assistant Directors:
TENNESSEE SCHOLARS PROGRAM

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

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

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

University-wide Honors Courses

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

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

University Honors (983)

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

2118-28-38 Honors: Second Year (4,4,4) Small seminar classes taught by faculty from all the undergraduate colleges of the university. Not open to first year students; open to all other students with a GPA of 3.25 or greater. Topics vary. May be repeated.

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

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

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

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

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

3018-28-38 Tennessee Scholars Seminar (1,1,1) Sequence limited to and required of all Tennessee Scholars each year. Maximum 12 hours. S/NC grading only.
W. W. Armistead, Vice President
B. H. Pentecost, Assistant Vice President

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

**Agricultural Experiment Station**

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

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

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

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

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

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

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

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

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

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

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

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

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

**West Tennessee Experiment Station** is located at Jackson. Major emphases are all phases of production on agronomic crops produced in the western part of the state. In addition, research deals with problems asso-
Agricultural Extension Service

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

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

Extension staff members develop and carry out programs to meet the specific needs of the residents of their counties. They work with both adults and youth. Educational activities for boys and girls are carried out through 4-H Clubs which are organized in schools and in communities. County, state, and federal governments cooperate in carrying out the Agricultural Extension Service program. The United States Department of Agriculture, the State of Tennessee, and each county government provide the financial support. Any county which appropriates funds for the program may have an office located there to serve its residents. Most offices are located in county seat towns. Headquarters for the Agricultural Extension Service is at Knoxville and district administrative offices are located in Cockeville (Knoxville), Chattanooga, Nashville, and Jackson.

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

College of Agriculture

O. Glen Hall, Dean  
Gary Schneider, Assistant Dean

Curricula in Agriculture

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

A pre-professional curriculum in veterinary medicine is offered in the college. This program is designed to prepare students for admission to the College of Veterinary Medicine located on the Knoxville campus. Students pursuing programs leading to the degree of Bachelor of Science in Agriculture major in one of several specialized areas of agricultural science. Some of the major areas are agricultural business, agricultural economics and rural sociology, agricultural education, agricultural mechanization, animal science, food technology and science, 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; 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 selection of electives in each curriculum should be made with the guidance of the faculty advisor.

All academic and general requirements of the University as stated in the front section of this catalog must be met by agricultural students, and they must complete the requirements in one of the organized curricula. Students transferring into the College of Agriculture from other than the UTK campus must have a grade point average of 2.0. Each curriculum leading to the degree of Bachelor of Science in Agriculture includes the requirements of the basic curriculum for agriculture. For this degree, the minimum requirement is 198 quarter-hour credits. A minimum of 45 hours in agricultural courses is required. For the degrees of Bachelor of Science in Forestry and the Bachelor of Science in Wildlife and Fisheries Science, the minimum requirement is 196 quarter-hour credits. For the degree of Bachelor of Science in Agricultural Engineering, the minimum requirement is 200 quarter-hour credits.

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

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

Satisfactory/No Credit Courses

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

Graduate Study in Agriculture

MASTER OF SCIENCE PROGRAMS

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

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

DOCTORAL PROGRAMS

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

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

Facilities

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

Four farms adjacent to or within eight miles of the agricultural campus are used both for instructional and experimental purposes. Morgan Farm (80 acres), Cherokee Farm (550 acres), Plant 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, wildlife and fisheries. Transportation by bus is provided for classes of agricultural students from the agricultural campus to the University farms and other facilities where instruction may be given. Transportation by bus is provided between the agricultural campus and the main University campus so that students may make the change between classes without serious inconvenience.

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

Selection of Curriculum

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

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

A very careful choice of electives enables a student with an above average academic record to complete one of the triple majors by satisfying all the requirements in each curriculum. For this purpose, the advisors of each curriculum should be consulted, the dean of the College of Agriculture should be informed, and each advisor should maintain a complete record of the student's progress. The multiple major will normally require more than 186 hours credit for graduation.

Optional Minors: Agricultural students may choose one or more minors in any agricultural field or in other colleges recorded on their transcripts without regard to course overlap among majors and minors. A minor in a department of the College of Agriculture requires a minimum of 24 credit hours in courses numbered 2000 and above with the majority of credit hours at the 3000 and 4000 levels. At least 12 of the credit hours required for the minor must be completed at UT. Specific requirements are listed by each department offering a minor. Minors offered in the College of Agriculture are open to students of other colleges who have the approval of their advisor and department.

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

**BASIC CURRICULUM FOR AGRICULTURE**

All students except those majoring in Food Technology and Science and Plant and Soil Science working for the 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 advisor.

<table>
<thead>
<tr>
<th>Hours Credit</th>
<th>Course Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture 1110</td>
<td>Introduction to Social Science for Agriculture</td>
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<tr>
<td>Agriculture 2120</td>
<td>Introduction to Agricultural Engineering</td>
</tr>
<tr>
<td>Agriculture 1130</td>
<td>Animal Science for Agriculture</td>
</tr>
<tr>
<td>Agriculture 1140</td>
<td>Plant Science for Agriculture</td>
</tr>
<tr>
<td>Agriculture 1150</td>
<td>Food Technology and Science for Agriculture</td>
</tr>
<tr>
<td>Agriculture, courses listed in department curricula</td>
<td></td>
</tr>
<tr>
<td>English 1010 or 1011 or 1020 or 1032 or 1033, Speech 2311, elective 5 hours literature or communications</td>
<td></td>
</tr>
<tr>
<td>Mathematics 1030-40-50-60 (mathematics)</td>
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<tr>
<td>Biological Science, (entomology and plant pathology, agronomy, microbial or zoology)</td>
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<tr>
<td>Physical Science, (Chemistry 1110-20-30 or 1510-20-30 or physics or geology)</td>
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<tr>
<td>Social Science and Humanities</td>
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<tr>
<td>Economics 2510-20 and electives, 10 hours—not more than 3 areas</td>
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<tr>
<td>Other Courses or Electives</td>
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</tr>
<tr>
<td>Total</td>
<td>198</td>
</tr>
</tbody>
</table>

1Or equivalent honors courses
2The Mathematics 1540-50-60 sequence may be necessary in some courses of study.
3Exception—See Agricultural Business and Agricultural Economics.

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 by a team of teachers who work together in developing material in each course. The five courses are required of all agricultural students, except those majoring in Food Technology and Science and Plant and Soil Science, 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 introduction to the 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 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 as advisors. 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 agricultural education 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 Economics and Rural Sociology**

**AGRICULTURAL BUSINESS CURRICULUM**

Advisors: Professors Martin, Brooker, McLemore, Mundy. Associate Professors: Park. Assistant Professor: Markley.

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 their positions in management, sales and services where major emphasis is in areas other than farm production. This program emphasizes particularly those capacities needed for the management phases of agricultural business. Course offerings in the College of Business Administration have been used freely in this curriculum.

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

Minor in Agricultural Business consists of 30 credit hours including Economics 2510-20, Agricultural Economics 3120 or 3320, Agricultural Economics 3410 or Accounting 2110, Agricultural Economics 4120 or 4610, 13 hours of Agricultural Economics and Rural Sociology electives.

<table>
<thead>
<tr>
<th>Hours Credit</th>
<th>Course Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture 1110-30-40-50 and 2120</td>
<td></td>
</tr>
<tr>
<td>Biology 1210-20</td>
<td>20</td>
</tr>
<tr>
<td>English 1010 or 1011 or 1020 or 1032 or 1033</td>
<td>9</td>
</tr>
<tr>
<td>Mathematics 1540-50-60 or 1840-50-60</td>
<td>12</td>
</tr>
<tr>
<td>Sophomore</td>
<td></td>
</tr>
<tr>
<td>Agricultural Economics 2410</td>
<td>3</td>
</tr>
<tr>
<td>Biological science elective</td>
<td>4</td>
</tr>
<tr>
<td>Chemistry 1110 or 1510-20 or Physics 1210-20 or Geology 1410</td>
<td>16</td>
</tr>
<tr>
<td>Computer Science 1410 or 1510 or Office Administration 2750</td>
<td>3 or 4</td>
</tr>
<tr>
<td>Economics 2510-20</td>
<td>8</td>
</tr>
<tr>
<td>Non-departmental social science and humanities electives</td>
<td>4</td>
</tr>
<tr>
<td>Speech 2561 or 2561</td>
<td>4</td>
</tr>
<tr>
<td>Statistics 2100</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>4 or 5</td>
</tr>
<tr>
<td>Accounting 2110-20-30</td>
<td>9</td>
</tr>
<tr>
<td>Agricultural Economics 3320</td>
<td>3</td>
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<tr>
<td>Agricultural economics and rural sociology electives</td>
<td>3</td>
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<tr>
<td>Economics 3110</td>
<td>3</td>
</tr>
<tr>
<td>Journalism 2210</td>
<td>3</td>
</tr>
<tr>
<td>Non-departmental agricultural electives</td>
<td>6</td>
</tr>
</tbody>
</table>
The curriculum in agricultural education is planned in cooperation with the College of Education. All agricultural education courses are offered in the College of Education.

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

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

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

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

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

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

**Freshman**

**Hours Credit**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Agriculture 1110-30-40-50 and 2120</td>
<td>20</td>
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<tr>
<td>Biology 1210-20</td>
<td>8</td>
</tr>
<tr>
<td>English 1010 or 1011; 1020; 1031 or 1032 or 1035</td>
<td>8</td>
</tr>
<tr>
<td>Mathematics 1540-50-60 or 1840-50-60</td>
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**Sophomore**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Agricultural Economics 2410</td>
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</tr>
<tr>
<td>Biological science elective</td>
<td>4</td>
</tr>
<tr>
<td>Chemistry 1110-20 or 1510-20 and Physics 1210-20 or Geology 1410</td>
<td>12</td>
</tr>
<tr>
<td>Computer Science 1410 or 1510 or Office Administration 2790</td>
<td>3 or 4</td>
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<tr>
<td>Economics 2510-20</td>
<td>8</td>
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<tr>
<td>Non-departmental social science and humanities electives</td>
<td>4</td>
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<tr>
<td>Speech 2361 or 2311</td>
<td>4</td>
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<tr>
<td>Statistics 2100</td>
<td>3</td>
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<tr>
<td>Electives</td>
<td>4 or 5</td>
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**Junior**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Agricultural Economics 3120</td>
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<tr>
<td>Agricultural economics and rural sociology electives</td>
<td>6</td>
</tr>
<tr>
<td>Economics 3111-12-20 or Economics 3110-20 and 3 hours economics electives</td>
<td>8</td>
</tr>
<tr>
<td>Non-departmental agricultural electives</td>
<td>6</td>
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<tr>
<td>Non-departmental social science and humanities electives</td>
<td>8</td>
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<tr>
<td>Rural Sociology 3420</td>
<td>3</td>
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<tr>
<td>Statistics 3110</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>12</td>
</tr>
</tbody>
</table>

**Senior**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Agricultural Economics 4140, 4320 and 4330</td>
<td>9</td>
</tr>
<tr>
<td>Agricultural economics and rural sociology electives</td>
<td>6</td>
</tr>
</tbody>
</table>

**Economics electives** 3

**English 4140**

**Finance 3510**

**Non-departmental agriculture**

**Speech 3021**

**Statistics 3220**

**Electives** 12

Total: 198 hours

AGRICULTURAL ENGINEERING CURRICULUM

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

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

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

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

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

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

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

**Freshman**

**Hours Credit**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Agriculture 1110-30-40-50 and 2120</td>
<td>20</td>
</tr>
<tr>
<td>Biology 1210-20</td>
<td>8</td>
</tr>
<tr>
<td>English 1010 or 1011; 1020; 1031 or 1032 or 1035</td>
<td>8</td>
</tr>
<tr>
<td>Mathematics 1540-50-60 or 1840-50-60</td>
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**Sophomore**

<table>
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<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>Agriculture 2120</td>
<td>4</td>
</tr>
<tr>
<td>Entomology and Plant Pathology 3210</td>
<td>4</td>
</tr>
<tr>
<td>Plant and Soil Science 2130</td>
<td>4</td>
</tr>
<tr>
<td>Chemistry 1510-20-30</td>
<td>12</td>
</tr>
<tr>
<td>Economics 2510-20</td>
<td>8</td>
</tr>
<tr>
<td>Psychology 2500, and Ed. &amp; Counsel. Psychology 3002 and equivalent</td>
<td>8</td>
</tr>
<tr>
<td>Microbiology 2910-11</td>
<td>4</td>
</tr>
<tr>
<td>Speech 2311</td>
<td>4</td>
</tr>
<tr>
<td>Physical education or health electives</td>
<td>3</td>
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</table>

**Junior**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Education 3450-60-70</td>
<td>9</td>
</tr>
<tr>
<td>Ed. &amp; Counsel. Psychology 3001</td>
<td>9</td>
</tr>
<tr>
<td>Educational C &amp; I 3021</td>
<td>2</td>
</tr>
<tr>
<td>Animal Science 3310</td>
<td>3</td>
</tr>
<tr>
<td>Animal Science 4820</td>
<td>4</td>
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</tbody>
</table>

**Horticulture electives** 3

**Geology or physics elective** 4

**English, Journalism, speech electives** 5

**Agricultural Non-departmental electives** 3

**Agricultural Mechanization elective** 3

**Agricultural electives** 8 or 9

**Health elective** 3

**Plant and soil science or ornamental horticulture and landscape design elective** 3 or 4

**Electives** 10

Total: 198 hours
Agricultural Mechanization Curriculum
Advisors: Professors Luttrell, Bledsoe, Henry, Oll, Tompkins, and Wilhelm.

The agricultural mechanization curriculum is administered by the Department of Agricultural Engineering and leads to the degree of Bachelor of Science in Agriculture. The curriculum prepares students to apply principles, techniques, and systems of engineering, agricultural science, and business to the broad industry of agriculture. Agricultural mechanization courses encompass power and machinery, electrical and processing, structures and environment, and soil and water conservation. Students, with assistance from their advisor, may structure their program to obtain either a broad or a highly specialized education.

Graduates are employed in industry, government, and educational institutions, generally in the areas of management, promotion, sales, and training related to agricultural products, materials, and services. Minor in Agricultural Mechanization consists of 28 hours as follows: 2110, 2130, 3110, 3120, 3220, 4210, and any three (3) courses from the following: 3510, 3560, 4160, 4170, 4810. Prerequisites will not be waived.

Agricultural Extension Education
Advisors: Professors Dickson and Carter.

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

Animal Science
Advisors: Professors Barth, Erickson, Lidwell, McLaren, Montgomery, Shafer, Shrode; Associate Professors Backus, Hitchcock, Kattech, Heitman, Masincupp, Robbins, Walle; Assistant Professors Bell, Godkin, Oliver, and Smalling.

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

Students have the opportunity, through appropriate course selection, to obtain double majors by combining the animal science curriculum with another curriculum. Students majoring in the animal science curriculum may if they desire arrange to minor in various other curricula. The requirements for these minors shall be stipulated by the department supervising that particular curriculum. Students majoring in one curriculum may opt to minor in animal science. A minor in animal science consists of 28 credit hours including 2610, 2610, 3210, 3010, 3410, 3510 and one 3600 course and one 4800 course.

Requests for substitution of similar courses in biology or zoology will be considered on an individual basis. It is suggested that the
The University of Tennessee should check the requirements of those specific schools. Students intending to apply to The University of Tennessee College of Veterinary Medicine must complete a minimum of 120 hours. They must complete their pre-veterinary requirements by the end of the spring quarter of the year in which they are applying. It is strongly recommended that each interested student plan to pursue a three-year pre-veterinary program. Inquiries concerning possible course substitutions and the combining of the pre-veterinary program with a degree program might be directed to the department's pre-veterinary advisors. It is possible for students who are accepted into the College of Veterinary Medicine at the end of their junior year to receive a B.S. in Agriculture with a major in animal science upon successful completion of the first year in the College of Veterinary Medicine (3 and 1 program). See the College of Veterinary Medicine section in the Graduate Catalog for additional information.

A suggested schedule for the Pre-veterinary Medicine—Animal Science student is given below which will (1) allow for the completion of the pre-veterinary requirements by the end of the third year, and (2) allow the student to make normal progress toward completing the requirements for a major in agriculture with a minor in animal science and (3) to complete the requirements for the 3 and 1 program. It is strongly recommended that the student carry a normal load of at least 16 to 18 hours per quarter. See College of Veterinary Medicine admissions requirements for the professional program in the College of Veterinary Medicine.

First year Hours Credit

Mathematics 1540, 1550, 1560, 1570 12
Biology 1210-20 12
Chemistry 1110-20 12
Agriculture 1150 4
Humansities electives 4
Total: 42

Second year

Chemistry 3211-21-31 9
Chemistry 3219-29-39 3
Physics 2210-20 3
Agriculture 1110 4
Economics 2510 4
Speech 2311 3
Animal Science 2610, 2620, 3210, 3310, 3410 24
Electives 2
Total: 53

Third year

Biochemistry 4110-20 8
Microbiology 2910-19 8
Economics 2510 4
Social sciences electives 2
Humansities electives 6
Animal Science 3420, 3910, 3900 level evaluation (3 hrs.), 4800 level production management (4 hrs.) 17
Electives 10
Total: 50

Total: 198 hours

1 Or equivalent honors courses.
2 Electives allow students to select an area for specialization. Those interested in production would select additional courses in agriculture; in business administration, economics, agricultural economics, finance, and accounting; in research in chemistry, zoology, physics, and statistics, etc. Electives should be chosen with career objectives in mind and in consultation with the advisor.

Pre-veterinary Medicine Option Curriculum

Advisors: Professors Barth, Erickson, Lidvall, McLaren, Montgomery, Richardson, Shirley, Shrode; Associate Professors Backus, Heitman, McLaren, Montgomery, Richardson, Shirley, Southard, Hilty, Pless, Hitchens, Kattash, Masincup, Robbins, Wafer, Assistant Professors Bell, Godkin, Oliver, Smalley, and others.

This program is designed to guide the student in meeting the admissions requirements of The University of Tennessee College of Veterinary Medicine. The completion of specific subject matter requirements and the attainment of a satisfactory grade point average comprise the minimum requirements for entrance into the professional curriculum of the College of Veterinary Medicine. However, each year the number of applicants is much greater than the number of available spaces. Therefore, meeting or surpassing the minimum requirements does not assure acceptance by the College of Veterinary Medicine, and each pre-veterinary medical student should, early in the college career, select a possible alternative career choice.

The admission requirements listed below are those required by The University of Tennessee College of Veterinary Medicine. Their completion will generally fulfill the requirements for other veterinary colleges.

Students applying to veterinary schools other than The University of Tennessee should check the requirements of those specific schools. Students intending to apply to The University of Tennessee College of Veterinary Medicine must complete a minimum of 120 hours. They must complete their pre-veterinary requirements by the end of the spring quarter of the year in which they are applying. It is strongly recommended that each interested student plan to pursue at least a three-year pre-veterinary program. Inquiries concerning possible course substitutions and the combining of the pre-veterinary program with a degree program might be directed to the department's pre-veterinary advisors. It is possible for students who are accepted into the College of Veterinary Medicine at the end of their junior year to receive a B.S. in Agriculture with a major in animal science upon successful completion of the first year in the College of Veterinary Medicine (3 and 1 program). See the College of Veterinary Medicine section in the Graduate Catalog for additional information.

A suggested schedule for the Pre-veterinary Medicine—Animal Science student is given below which will (1) allow for the completion of the pre-veterinary requirements by the end of the third year, and (2) allow the student to make normal progress toward completing the requirements for a major in agriculture with a minor in animal science and (3) to complete the requirements for the 3 and 1 program. It is strongly recommended that the student carry a normal load of at least 16 to 18 hours per quarter. See College of Veterinary Medicine admissions requirements for the professional program in the College of Veterinary Medicine.

First year Hours Credit

Mathematics 1540, 1550, 1560 12
Biology 1210-20 12
Chemistry 1110-20 12
Agriculture 1150 4
Humansities electives 4
Total: 42

Second year

Chemistry 3211-21-31 9
Chemistry 3219-29-39 3
Physics 2210-20 3
Agriculture 1110 4
Economics 2510 4
Speech 2311 3
Animal Science 2610, 2620, 3210, 3310, 3410 24
Electives 2
Total: 53

Third year

Biochemistry 4110-20 8
Microbiology 2910-19 8
Economics 2510 4
Social sciences electives 2
Humansities electives 6
Animal Science 3420, 3910, 3900 level evaluation (3 hrs.), 4800 level production management (4 hrs.) 17
Electives 10
Total: 50

Total: 198 hours

1 Or equivalent honors courses.
2 Electives allow students to select an area for specialization. Those interested in production would select additional courses in agriculture; in business administration, economics, agricultural economics, finance, and accounting; in research in chemistry, zoology, physics, and statistics, etc. Electives should be chosen with career objectives in mind and in consultation with the advisor.

Animal Science Curriculum with a Pre-veterinary Option

This program is designed for students accepted by the UT College of Veterinary Medicine after one or two undergraduate years who wish to obtain a B.S. in Agriculture with a major in animal science upon completion of the first year in the College of Veterinary Medicine. The student will need to complete the requirements as established by the College of Veterinary Medicine. In addition, the student needs to complete the courses listed above, including Economics 2510-20 and, under electives, complete Agriculture 1150 or equivalent food technology and science course; Plant and Soil Science 2130; agriculture other than animal science, six hours. (suggested: Agriculture Mechanization 4160, Food Technology and Science 3840, Entomology and Plant Pathology 3210, Plant and Soil Science 3140). In addition, the following general requirements must be met in order to meet certain rules of UTK and the College of Agriculture in granting degrees:

1. The last 45 hours of the three-year program must be taken at UTK.
2. At least 18 hours of upper-division technical agriculture must be taken at UTK.
3. The student must complete the first year in the UT College of Veterinary Medicine and with the substitution of appropriate courses from the first year and the completion of a minimum of 186 hours will be granted a B.S. in Agriculture with a major in animal science. It is the student's responsibility to complete the above requirements and to initiate the request for the degree.

Entomology and Plant Pathology

Advisors: Professors Southards, Hilty, Pless.

No undergraduate curriculum exists in the Dept. of Entomology and Plant Pathology, but a program leading to the Master of Science degree with a major in entomology and plant pathology is available (see the Graduate Catalog). Courses in general entomology, plant pathology, soil microbiology, and plant parasitic nematodes are available to agricultural students. The department is currently composed of two major disciplines: economic entomology and...
plant pathology. The primary objective of offering a major at the graduate level is to provide training in those disciplines which deal with the natural hazards that are the major causes of losses in agricultural production. The training gives such a graduate the foundation necessary for coping with the myriad insect and plant disease problems that constantly threaten Tennessee's dynamic agriculture.

**Food Technology and Science**

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

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

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

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

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**Forestry, Wildlife and Fisheries**

Advisor: G. Schneider

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

**FOREST RESOURCE MANAGEMENT OPTION**

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 in association with forest lands. Benefits are derived from the multiple resources of the forest: wood, water, wildlife, recreation, forage, and environmental amenities. Foresters are managers of these resources. Thus, our principal instructional objective is to provide the broad education needed to deal effectively with the complex of forest resources.

**FOREST RESOURCE MANAGEMENT OPTION**

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

- Forest Biology
- Forest Business Management
- Forest Economics
- Forest Engineering
- Forest Inventory
- Forest Recreation

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**FOREST RECREATION OPTION**

The Forest Recreation Option provides students with opportunities to obtain an education in preparation for professional positions in the planning, development, interpretation, and management of private and public forested lands for recreational purposes. Students are also exposed to the basic philosophy and principles associated with leisure time and its use and the relationship of forest resources to the enjoyment and utilization of leisure time.

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**Teaching Program**

The University has over 21,000 acres of land and facilities available to the students interested in wildlife management. A special problem course provides an opportunity for practical training in college facilities and other industries cooperating in conducting tours and demonstrating industrial processes.

Upon completion of the four-year forestry curriculum the degree of Bachelor of Science in Forestry (B.S.F.) is awarded. A minor in Forestry consists of 24 credit hours from any courses having a Forestry designation. Prerequisites will not be waived.

- **Freshman**
  - Hours Credit
  - 1Botany 1110-20 or Biology 1210-20
  - 2English 1010 or 1011; 1020; 1031 or 1032
  - 3Forestry 1620
  - 4Forestry 3000
  - 5Mathematics 1700, 1841-51
  - 6Physics 1210 and 1220 or 2210 and 2220
  - 7Speech 2311
  - 8Electives

- **Sophomore**
  - Hours Credit
  - 1Chemistry 1510-20-30
  - 2Computer Science 1510
  - 3Economics 2510-20
  - 4Forestry 3020-40-50
  - 5Forestry 3030
  - 6Plant and Soil Science 2130, 3610
  - 7Electives

- **Junior**
  - Hours Credit
  - 1Accounting 2110
  - 2Agricultural Mechanization 3120
  - 3Forest Science 3060, 3110-20, 3230, 3260, 3320
  - 4Forest Economics 3030, 3040
  - 5Speech 2331
  - 6Electives

- **Senior**
  - Hours Credit
  - 1Forest Science 3240
  - 2Forest Science 4150, 4210-20-30, 4330, 4340
  - 3Entomology and Plant Pathology 4030 or 4410, or Geography 3510
  - 4Electives

**Total: 198 hours**

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1. Biology 1210-20 is recommended in lieu of botany for students interested in wildlife management.
2. Or equivalent honors courses.
3. Enough electives must be taken to total 198 hours including a minimum of 6 hours of communications electives selected from a Department of Forestry, Wildlife and Fisheries approved list and a minimum of 11 hours of social science and/or humanities.

**FOREST RECREATION OPTION**

The Forest Recreation Option provides students with opportunities to obtain an education in preparation for professional positions in the planning, development, interpretation, and management of private and public forested lands for recreational purposes. Students are also exposed to the basic philosophy and principles associated with leisure time and its use and the relationship of forest resources to the constructive utilization of leisure time.

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**Freshman**

- Hours Credit
  - 1Botany 1110-20 or Biology 1210-20
  - 2English 1010 or 1011; 1020; 1031 or 1032
  - 3Forestry 1620
  - 4Forestry 3000
  - 5Mathematics 1700, 1841-51
  - 6Physics 1210 and 1220 or 2210 and 2220
  - 7Speech 2311
  - 8Electives
**Forestry 3220, 3020, 3110, 20, 3129, 3320, 3000**

- **Electives:** 8

**Industrial Engineering 2320**

- 3

**Economics 2510-20**

- 8

**Chemistry 1510-20-30**

- 12

**Communications elective**

- 3

**Senior**

- Industrial Engineering 4060, 4200, 4520

- 10

- Entomology and Plant Pathology 3210

- 4

- Forestry 4150, 4540-50-60

- 14

- Accounting 2110

- 4

- Humans-society social science electives

- 6

- Technical electives

- 12

- Electives

- 6

**Total: 202 hours**

- **Or equivalent honors courses.**

<table>
<thead>
<tr>
<th>Hours Credit</th>
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<tr>
<td>3</td>
<td>Industrial Engineering 3610-20-30; 3430-40</td>
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<td>Engineering Graphics 1410</td>
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<tr>
<td>6</td>
<td>Humans-society social science electives</td>
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<tr>
<td>6</td>
<td>Communications elective.</td>
</tr>
<tr>
<td>3</td>
<td>Senior</td>
</tr>
<tr>
<td>10</td>
<td>Industrial Engineering 4060, 4200, 4520</td>
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<tr>
<td>4</td>
<td>Entomology and Plant Pathology 3210</td>
</tr>
<tr>
<td>4</td>
<td>Forestry 4150, 4540-50-60</td>
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<tr>
<td>4</td>
<td>Accounting 2110</td>
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<tr>
<td>6</td>
<td>Humans-society social science electives</td>
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<td>6</td>
<td>Technical electives</td>
</tr>
<tr>
<td>6</td>
<td>Electives</td>
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</tbody>
</table>

**Total: 198 hours**

- **Or equivalent honors courses.**

**Ornamental Horticulture and Landscape Design**

**Advisor: Professor Crater**

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

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

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

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

Landscape means modifying the outdoor environment for the greatest use, comfort, and enjoyment. It not only means the use of trees, shrubs, and other plant material to accomplish this goal, it also implies having an understanding of the requirements for working, recreation, and housing. Empha-
apply to the soil and to a better understanding of its properties and proper use.

The plant and soil scientist must have a knowledge of the basic physical and biological sciences and, in addition, be trained in communication skills. The scientist may be broadly trained or may specialize in a more specific phase of the subject. Regardless of interest, many good jobs are available for the well-trained plant and soil scientist.

Employment opportunities differ depending upon the individual’s type of training and interest. For the person who is scientifically inclined, positions are available in research with both public and private agencies. For those who wish to apply their knowledge to the solution of practical problems, positions are available with the Agricultural Extension Service as extension agents or as specialists, with the Soil Conservation Service, Forest Service, Farmers Home Administration, Production Credit Association, and other public agencies. Many plant and soil scientists are employed in private industry as technical specialists, supervisors, and salespersons. Banks and other financial institutions employ plant and soil scientists as appraisers and farm managers. Others may farm on their own, manage farms for others, or work in foreign agricultural programs. Certainly, plant and soil science is basic to all agriculture, and people trained in this important field will find many opportunities to serve in modern agriculture.

A minor in Plant and Soil Science consists of 24 credit hours including 2130, 4410, and at least 15 elective hours to be taken by electing two (2) courses from Group A and two (2) courses from Group B. 3610 will not be accepted as a course to meet minor requirements.

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

**Freshman**  
<table>
<thead>
<tr>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
<td>Agriculture 1140</td>
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<td>Agriculture 1110 or 2110</td>
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<tr>
<td>Junior classification, with grade point average of 2.2 or above</td>
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**Sophomore**  
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<tr>
<td>English 1010 or 1020, 1031 or 1032, 1033</td>
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<tr>
<td>1840-50-60</td>
<td>12</td>
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<tr>
<td>Physics 1210 or 2210 or Geology 1410</td>
<td>4</td>
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<tr>
<td>Social science or humanities electives</td>
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**Junior**  
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<td>Agricultural electives</td>
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<tr>
<td>Math 1110-20-30 or 1510-20-30</td>
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<tr>
<td>Speech 2311</td>
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</tr>
<tr>
<td>English or communications electives</td>
<td>5</td>
</tr>
<tr>
<td>Social science or humanities electives</td>
<td>7</td>
</tr>
<tr>
<td>Plant and Soil Science 2130</td>
<td>4</td>
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**Senior**  
<table>
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<th>Hours</th>
<th>Credit</th>
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<tr>
<td>English and communications electives</td>
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<tr>
<td>Agronomy 2210</td>
<td>4</td>
</tr>
<tr>
<td>Plant and Soil Science electives</td>
<td>12-16</td>
</tr>
</tbody>
</table>

**Total: 198 hours**

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**Credit for Cooperative Work**

A maximum of nine quarter hours of credit may be earned by supervised employment on approved jobs. To receive credit, the student must receive the recommendation of the employer, present a satisfactory written report, and must receive a passing grade from the University professor in charge. Employment periods shall be not less than 12 weeks. At least one quarter must be spent in study on the campus between periods of employment. Prerequisites: Junior classification, with grade point average of 2.2 or above, and permission of the department head and the dean of the College of Agriculture to register. Three credit hours each quarter.
Institute of Agriculture/Agriculture

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 Instruction, Research, and Extension staffs join in teaching these special courses annually, and others are offered to meet immediate needs for special instruction. These 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 advisors. Approximately 500 attend and inspect each department of the College.

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

Departamental Programs

Agricultural Economics and Rural Sociology

Professors:

- J. A. Martin (Head), Ph.D., Minnesota; M. B. Badenhop, Ph.D., Purdue; J. R. Brooker, Ph.D., Florida; C. L. Cleland, Ph.D., Wisconsin; Irving Dubov, Ph.D., California; Burton L. H. Keeler, Ph.D., Kentucky; T. H. Kindl, Ph.D., Kentucky; F. O. Leuthold, Ph.D., Wisconsin; D. L. McLemore, Ph.D., Clemson; B. M. Meaner, Ph.D., Purdue; S. D. Mundy, Ph.D., Tennessee; B. H. Pentecost, J. D., Tennessee; W. P. Ramney (Emeritus), Ph.D., Minnesota; C. E. Sappington, Ph.D., Illinois; T. J. Whately, Ph.D., Purdue;

- Associate Professors:
  - C. M. Cuskade, Ph.D., Michigan State; R. H. Crr, Ph.D., Illinois; W. M. Park, Ph.D., V.P.I. & S.U.;
  - R. W. Todd, J. D., Tennessee;

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

Agricultural Economics (047)

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

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

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

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

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

4440 Farm Income Tax Management (3) Legal and economic concepts and problems in organizing and managing a farm business within the framework of federal and state laws. Recognizing problem areas, utilizing tax planning incentives, and avoiding tax traps that may be encountered in organizing the business and operating and transferring the farm. Prereq: Junior standing. 3 hrs. W.

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

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

4140 Agricultural Production Economics I (3) Application of Micro-economic theory to problem of resource allocation, production, and pricing scale of operations of agribusinesses; farm marketing, pricing, and marketing of agricultural products; economic interpretation of technical and economic production relationships. Prereq: Agriculture 1110 and Economics 2520. F.

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

4240 World Agriculture and Trade (3) Economic bases of world agricultural production and trade: resource location and tenure, land tenure policies, and commercial policy. Prereq: Agriculture 1110 and Economics 2520, or consent of instructor. F.

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

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

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

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

4610 Management of Farm Supply and Marketing Firms (3) Operations of firms selling farm supplies and merchandising agricultural products. Emphasis on accounting data on farm price programs. Prereq: 3120 or 3320 or consent of instructor. W.

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

Rural Sociology (880)

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

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

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

Agricultural Engineering

Professors:

- H. Luttrell (Head), Ph.D., Iowa State; B. L. Bledsoe, Ph.D., Oklahoma State, P.E.; Z. A. Henry, Ph.D., North Carolina State, P.E.; J. J. McDow, Ph.D., Michigan State, P. E.; J. I. Sewell (Assistant Dean, Ag Experiment Station), Ph.D., North Carolina State, P. E.; C. E. Shelton, M.S., Virginia Polytechnic; P. E.; D. F. Tompkins, Ph.D., Tennessee, P.E.; L. R. Wil- helm, Ph.D., Tennessee, P.E.
Agricultural Engineering (066)

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

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

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

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


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

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

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

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

4250 Electronic Applications in Agricultural Engineering (3) Design aspects of analog and digital electronics as applied to Agricultural Engineering. Study of theoretical parameters and controlling those parameters. Theory and characteristics of digital electronics using modern technology for realization of design problems in Agricultural Engineering, 2 hours and 1 lab. W.

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

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

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

4640 Design of Agricultural Machinery (3) Functional requirements of agricultural machinery. Elements of machine component design; synthesis of mechanisms, mechanical and hydraulic drives. Team effort in completing machine design project. Prereq: 3640 or consent of instructor. 1 hr. and 2 labs. S.

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

Agricultural Mechanization (080)

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

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

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

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

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

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

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

3220 Agricultural Structures (3) Functional planning of structures; environmental control, construction methods, properties of building materials, and cost estimation. Prereq: Math 1560. 2 hrs. and 1 lab. S.

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

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

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

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

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. W.

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

4210 Agricultural Machinery and Tractors (4) Agricultural machinery and power units, adaptation to agricultural practices, operation, maintenance, and servicing. Prereq: Math 1550. 3 hrs. and 1 lab. W.

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

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

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

Agricultural Extension Education (075)

Consult the Graduate Catalog for listing of graduate level courses.

Animal Science (113)

Professors:

D. O. Richardson (Head), Ph.D. Ohio State; K. M. Barth, Ph.D. Rutgers; M. C. Bell, Ph.D. Oklahoma State; J. K. Bieter (Emeritus), Ph.D. Colorado State; C. C. Brown (Emeritus), Ph.D. Iowa State; B. H. Erickson, Ph.D. Kansas State; O. G. Hall, Dean (College of Agriculture) Ph.D. Iowa State; S. L. Hansard (Emeritus), Ph.D. Florida; E. R. Likivis, M.S. Tennessee; T. P. McDonald, Ph.D. Tennessee; J. B. McLaren, Ph.D. Auburn; J. K. Miller, Ph.D. Georgia; M. J. Montgomery, Ph.D. Wisconsin; G. M. Merriman (Emeritus), D.V.M. Michigan State; R. L. Murphy (Emeritus), Ph.D. Ohio State; H. Y. Song (Emeritus), Ph.D. Pennsylvania; R. W. Backus, Ph.D. Iowa State; R. T. Tugwell (Emeritus), Ph.D. Kansas State.

Associate Professors:


Assistant Professors:

B. A. Bell, Ph.D. N.C. State; G. A. Baumbach, Ph.D. Florida; P. J. Corbin, Ph.D. Michigan State; B. C. Cullen, Ph.D. Minnesota; J. D. Godkin, Ph.D. Massachusetts; S. P. Oliver, Ph.D. Ohio State; J. D. Smalling, Ph.D. Tennessee; J. D. Smalling, Ph.D. Texas A & M.

Animal Science/Institute of Agriculture 65

2610 Fundamentals of Food Animal Evaluation (4) Core crash course on principles that apply to all animals in 6 grades of cattle, poultry and poultry products, lamb and wool, and swine; subjective and objective techniques. Prereq: Microbiology 2010-11 or 2010-19 or consent of instructor. 3 hrs. and 1 lab.

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


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

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

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

3610 Nutrition and Management of Laboratory Animals (3) Principles of feeding, breeding, and handling of animals in scientific investigations; specific species' requirements, peculiarities, and research for which best fitted; laws governing use and handling of laboratory animals. Prereq: 1130 and consent of instructor. 2 hrs. and 1 lab.

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

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

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

4230 Applied Reproduction in Farm Animals (3) Application of methods and techniques in collecting, evaluating, processing, and preserving semen; insemination of females; pregnancy determination; gestation and parturition; male and female infertility. Prereq: 3220 and permission of instructor.

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

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

4610 Advanced Beef Cattle, Dairy Cattle, Horse Poul- try, Sheep, and Swine Judging (2) Specialization in judging, evaluation, selection, and presentation of oral reasons on classes of beef cattle, dairy cattle, horses, poultry, sheep, and swine. May not be repeated for credit. Prereq: Consent of instructor. 2 labs.

4610 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 responses and economic returns. Prereq: Completion of animal science sophomore or junior core courses or consent of instructor. 3 hrs. and 1 lab.

4830 Pork Production and Management (4) Integration of principles of selection, nutrition, breeding, physiology, and management into complete pork production and management program. Topics will include structure of industry, enterprise establishment, systems of production, production practices, and herd improvement program. Alternatives evaluated in terms of production responses and economic returns. Prereq: Completion of animal science sophomore and junior core courses or consent of instructor. 3 hrs. and 1 lab.

4840 Poultry Production and Management (4) Structure of poultry industry; organization and management of poultry enterprises including rearing, housing, feeding, processing, and marketing. Prereq: Completion of animal science sophomore and junior core courses or consent of instructor. 3 hrs. and 1 lab.

4850 Light Horse Production and Management (4) Integration of principles of nutrition, physiology, and breeding into light horse management program. Topics include structure of industry; systems and practices of production; nutrition and management programs; tack, equipment, and facilities for both pleasure owners and commercial producers. Alternatives evaluated in terms of production responses and economic returns. Prereq: Completion of animal science sophomore and junior core courses or consent of instructor. 3 hrs. and 1 lab.

4860 Lamb and Wool Production and Management (4) Integration of principles of selection, nutrition, breeding, physiology, and marketing into complete lamb and wool production and management program. Topics will include structure of industry, enterprise establishment, systems of production, production practices, and economic returns. Prereq: Completion of animal science sophomore and junior core courses or consent of instructor. 3 hrs. and 1 lab.

4910 Seminar (2) Review of literature and presentations on special topics and current research in animal science field. Prereq: Senior standing. 1 hr. and 1 lab.

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

Entomology and Plant Pathology (341)


Associate Professor:  E. C. Barnard, Ph.D. Georgia.

Assistant Professors:  B. R. Reddick, Ph.D. Clemson; M. H. Windham, Ph.D. North Carolina State.

2600 Introduction to Forest Protection (4) (Same as Forestry 3060).

3130 Plant Pathology (4) Principles of plant patholo- gy illustrated by diseases of common agricultural crop plants. Prereq: Botany 1120 or Biology 1220. 3 hrs. and 1 lab. (Same as Botany 3130.) F, S.

3210 Economic Entomology (4) Structure, life histo- ry, habits, and principles of control of important insect pests in gardens, orchards, and household. 3 hrs. and 1 lab. F, S.

3220 Aciology (2) Biology of the honey bee, with emphasis on beekeeping equipment and apiary manage- ment practices relative to polination of crops and production of honey and beeswax. W.
4030 Dairy Products II (4) Principles in the manufacture of butter, cheese, and special dairy products. Prereq: 3020. 3 hrs. and 1 lab. A, S.

4130 Food Chemistry I (3) Minerals, fats, oils, and vitamins in food as affected by processing and storage. Prereq: Nutrition and Food Sciences 3150 or equivalent. 2 hrs. and 1 lab. A, S.

4140 Food Chemistry II (3) Reactions of proteins, carbohydrates, and natural food colorants in food materials. Protein structure, food enzymology, and browning reactions. Effects of storage and processing on proteins and carboxylates with emphasis on nutritional value and functionality. Prereq: Nutrition and Food Sciences 3150 or equivalent. 2 hrs. and 1 lab. F.

4200 Food Processing I (4) Prevention of spoilage and deterioration of foods. Methods of preservation. Prereq: Agriculture Mechanization 3510. 3 hrs. and 1 lab. F.

4210 Food Additives (3) Substances used in food manufacturing with emphasis on properties and functions. Prereq: Nutrition and Food Sciences 3150 or equivalent. F.

4310 Food Packaging (3) Characteristics and applications of materials and containers to packaging requirements and methods of packaging foods. Prereq: 2300. 2 hrs. and 1 lab. S.

4400 Food Processing II (5) Design of food quality assurance programs with emphasis on sanitation. Application of general analytical techniques, regulations and unit operations to quality control in the food industry. Prereq: 3110. 3 hrs. and 1 lab. S.

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

4420 Bakery Products (3) Baking ingredients and their interactions during production and storage of bakery products. Prereq: 4130 and Chemistry 2230 or equivalents. 2 hrs. and 1 lab. A, S.

4810 Food Microbiology II (4) Standard methods for the examination, cultivation, and identification of bacteria associated with food processing, food spoilage, and food poisoning. Prereq: 3810. 2 hrs. and 2 labs. W.

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

4920 Analysis of Physical Properties of Foods (4) Physical states of food materials, water, viscosity, colloids, gels, foams, crystals, color, and quantitative changes induced by processing. Prereq: 4200 and Agricultural Mechanization 3510 or consent of instructor. 3 hrs. and 1 lab. W.

4940 Advanced Meat Science (3) Qualitative and quantitative characteristics of meat and poultry as related to palatability, cooking, preservation, packaging, and merchandising. Prereq: Food Technology and Science 3840. A, F.

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

### Forestry, Wildlife and Fisheries

#### Forestry (396)

1620 Introduction to Forestry (3) History of forestry; establishment, care, protection, and use of forest stands; forest products industries; organization and agencies for establishment of forest policies; forest resources. F.

2500 Conservation of Renewable Natural Resources (3) Land, water, plants, and animals and their interrelationships that form the biologic and ecological base for decisions about utilization of renewable natural resources; uses and abuses of forest, recreation, wildlife, and fisheries resources, including management alternatives and aspects of pollution. S

3000 Current Events in Renewable Natural Resources (1) Current events influencing forestry, wildlife, and fisheries management. Perspectives from other disciplines and professions which are affected by and which influence natural resource management. Extended view of natural resources, their allocation and management. Professional development and education for the disciplines of forestry, wildlife and fisheries. 1 hr. May be repeated. Maximum credit 4 hrs. S (Same as Wildlife and Fisheries Science 3060) W.

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

3040 Forests and Trees of Eastern North America (4) Forest formations and associations of North America east of the Great Plains; dendrology and silvics of the trees that comprise them. Emphasis will be on identification, nomenclature, and species relationships. With natural forest color labs plus one weekend field trip. Available for graduate credit. F.

3050 Forests and Trees of Western North America (3) Forest formations and associations of North America west of the Great Plains; dendrology and silvics of the trees that comprise them. Largely an audio-visual presentation with emphasis on edaphic, topographic, and climatic site variables as they control species distributions. Available for graduate credit for non-forestry majors only. Prereq: 8 hrs. basic biology or botany. 2 hrs. and 1 lab. W.

3060 Introduction to Forest Protection (4) Biology of forest insects and diseases, including impact on forest ecosystems, control principles and techniques, silviculture implications: principles of forest fire including behavior, weather influence, prevention, control organizations: biological, economical, and sociological impacts of forest fires. 3 hrs. and 1 lab. (Same as Entomology and Plant Path. 3060) W.

3110 Forest Measurements and Biometry (4) Measurement of individuals in animal and plant populations; linear regression, sampling of forest populations; growth and potential production. Prereq: Plant and Soil Science 366. 3 hrs. and 1 lab. Available for graduate credit for non-forestry majors only. W.

3120 Wood Technology (2) The fundamental structure, properties and use of wood. Prereq: 3040, 3050 (3050 may be taken concurrently) 2 hrs. and 2 labs.

3125 Wood Identification (2) Macro and micro identification of important commercial softwoods, hardwoods, and foreign woods. Will include student use of microscopes, hand lenses and an interactive wood identification program on the University computing system.

3220 Forest Products and Utilization (3) Harvesting, processing, marketing factors in stand conversion, intermediate and harvest cuts. Prereq: 3120. F.

3240 Introduction to Forest Recreation (3) Concepts
of leisure time in recreation. Historical development of forestry organizations. Forestry resources: development, management, and administration of forest recreation areas and systems. W.

3250 Ecological Problems of Forest Recreational Land (3) Examination of major forms of ecological impacts upon recreation land including emphasis on impact to vegetation, soil, and water quality; consideration of monitoring methods and management alternatives. Weekend field trip is required. Prereq: 3202 or equivalent, or consent of instructor. Plant and Soil Science 2130 recommended. 2 hrs. and 1 lab. F.

3260 Forest Land Use and Society (3) Past and present overviews of forest utilization in the U.S. from sociocultural and environmental perspectives. Relations and societal factors influencing forest resource use including land ownership. World forest resource uses, and markets. Implications of alternative futures for forest resources. F.

3320 Principles of Silviculture (3) Influence of site factors of reproduction, growth, development, and character of forest vegetation; classification of forest structure; silvicultural laws. Prereq: 3202 or Biology 2130; 3040; Plant and Soil Science 2130. 3 hrs. W.

4002 Utilization (3) Wood-using industries; processing forest products-sawmills, tree-log lumber grading; pulping operations, flooring plants, treating plant-, plant- plant layout, flow diagrams. Prereq: 3120 or permission of instructor. S.

4003 Field Methods of Timber Inventory (4) Field measurements of forest trees; timber cruising; determin stacked product or specific purposes; tree and stand growth; site evaluation; field problems. Prereq: 3110 and Agricultural Mechanization 3120. S.

4004 Forest Practice (3) Management of forest lands by public and private organizations; "multiple-use" concept as it influences management decisions; impact of public pressure for outdoor recreation or management decisions; management prescriptions. Prereq: 3202, 4006. S/NC. S.

4006 Silvicultural Methods (4) Methods and application of intermediate and regeneration cuts; site preparation, planting and seeding, modifications of cutting methods to obtain desired goods and benefits. Prereq: 3060, 3320, 4002, 4003. S.

4007 Applied Forest Surveying, Road Construction, and Timber Harvesting (3) Application of surveying and road layout and construction techniques to forestry problems. Interpretation and use of maps and aerial photographs in forestry field work. Discussion of various equipment and techniques. Considerations in logging equipment selection and use. Prereq: Ag. Mech. 3120. S.

4020 Forest Watershed Management (3) Water as a forest resource; roles of forests in the hydrologic cycle; control of water quantity, quality, and regimes; rainfall and water planning. Prereq: 3320 or consent of instructor. 3 hrs. Two overnight field trips. W.

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. E.

4150 Forest Resource Economics (3) Application of economic analysis to forest resource utilization. Principles of micro-economic analysis; timber production economics; economic analysis of forest industries, forestry projects. Prereq: Econ. 2520 and senior standing, or permission of instructor. F.

4210 Forestry Organization and Administration (3) Planning, organizing, and leadership concepts and cases; problem analysis and decision making in forest resource management. Prereq: Senior standing in forestry or an associate degree in business science or consent of instructor. 2 hrs. and 1 lab. W.

4220 Forest Resource Management (3) Decision-making principles, emphasizing forestry as an integration of resource uses. Models of forestry as a system at the local, regional, and state levels. Timber, watershed, and wildlife; producing multiple services; preparation of a complete plan based on optimizing forest uses. Prereq: 4210. S.

4240 Interpreting Forest Resources (3) Principles and problem solving in interpreting forest resources; importance of environmental interpretation to management of forest resources; development and administration of interpretive services. Overnight field trip required. Prereq: 3240 or equivalent. 2 hrs. and 1 lab. S.

4330 Forest Policy (3) History of forestry in United States with emphasis on development of forest resource policies; current policies influencing development and management of forest resources; brief survey of policy implications of forest resource organizations in public and private sectors. Prereq: 4404. W.

4340 Aerial Photography in Forest-Resource Management (3) Use of conventional aerial photographs in forest-resource management; interpretation of detail, aerial inventories, preparation of ortho-plans, uses of other remotely sensed imagery. Prereq: 3110 or equivalent. 1 hr. and 2 labs. S.

4420 Forest Tree Improvement (3) Forest tree improvement related to silviculture; nature and purposes of tree improvement; basic concepts of breeding, tree cytology and population genetics; importance of seed source; variation, selection of superior phenotypes, and development of seed orchards; hybridization; seed production and seed certification. Prereq: 4006 or consent of instructor. 2 hrs. and 1 lab. S.

4430 Regional Silviculture of the United States (3) Factors that influence silvicultural management of important tree species in North America. Importance of forests and forestry to a region; physiography, geology, soils, climate and weather, sites and site types, ecology, problems of protection, and silvical characteristics of the more important species. Prereq: 4006 or consent of instructor. F.

4440 Forest Recreation (3) Forest lands as a recreation resource; interrelationships of forest recreation and other management activities; development and management of forest recreation areas; socioeconomic and political determinants of recreation development and management. Possible overnight field trips required. Prereq: 6 credits in sociology and/ or economics. Junior standing. 2 hrs. and 1 lab. S.

4450 Recreational Behavior in Forest Environment (3) Review of sociological and psychological theories relevant to forest recreation planning, management, and administration: Implication and application of behavioral concepts to forest recreation problems, and review of methodologies for assessing recreational behavior. Prereq: 3240 and 6 hrs. in behavioral psychology and/or sociology, or consent of instructor. 3 hrs. W.

4540 Wood Drying and Preservation (4) Concepts of wood drying including wood-moisture relations, specific gravity, and moisture content; and shrinkage. Discussion of commercial drying practices. Relationship of wood moisture content to attack by wood-destroying organisms. Methods and materials used in commercial treating systems. Prereq: 3120, Math 1851, Physics 1220 or consent of instructor. 3 hrs. and 1 lab.

4550 Wood Composites and Gluing (4) Fundamentals of plywood and composite product manufacturing. Wood adhesive technology. Application of gluing to the manufacture of wood and composite products. 3 hrs. and 1 lab. Overnight weekend plant trips may be required. W.

4560 Forest Products Marketing and Measurement (3) Discussion of market structure for various sectors of the forest products industry; structural changes in forestry; lumber, pulp and paper, wood composites, and treated products; measurement systems used by industry for the sale and transfer of these products. Prereq: 3250, 4150, or consent of instructor. S.

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

Wildlife and Fisheries Science (933)

2100 Introduction to Wildlife and Fisheries Science (2) History and philosophy of wildlife and fisheries management including the value of wild animals in the modern world; roles of research, management, public relations, and law enforcement in the conservation of wildlife and fisheries resources. Prereq: Forestry 1620, 6 hrs. of Botany/Biology.

3000 Current Events in Renewable Natural Resources (1) Current events influencing forestry, wildlife, and fisheries management. Perspectives from other disciplines and professions which are affected by and which influence natural resource management. Extended views of natural resources, their allocation and management. Professional development and education for the disciplines of forestry, wildlife, and fisheries. 1 hr. May be repeated. Maximum credit 4 hrs. S/NC. (Same as Forestry 3000) W.

3200 Wildlife Resources and Their Conservation (3) Wild animals of the United States; their interaction with water, forests, and other plant and animal life; contribution of wild animals to the economy; wild animals and society. General course for wildlife and fisheries science majors only. F.

3320 Wildlife Management (3) Lives and ecological relationships of wild animals; biological, social and economic aspects of their management. Available for graduate credit for non-forestry and non-wildlife and fisheries science majors only. F.

3830 Law Enforcement in the Natural Resources (3) Law Enforcement as an integral part of natural resource management; fundamentals and general principles of state and federal laws and regulations governing natural resource management. Prereq: 3230.

4450 Game Mammals (4) Classification, identification, distribution, natural history, and management principles of game mammals in North America. Prereq: 3230. S.

4460 Game Birds (4) Biology, classification, identification, distribution, and management of game birds in North America. Prereq: 3230 or one year of zoology. 3 hrs. and 1 lab plus one weekend field trip. W.

4470 Field Techniques in Wildlife Management (3) Capturing, handling, wildlife, wildlife restoration, controlling wildlife damage, and habitat management for wildlife. Prereq: 4450, 4460 or consent of instructor. 1 hr. and 2 labs.

4500 Problems in Wildlife and Fisheries Sciences (1-4) Special research or individual problem in wildlife and fisheries science. Prereq. Senior standing. May be repeated. Maximum 9 credit hrs. E.

4510 Fish Populations (4) Principles and methods of fish population estimation; sampling techniques and equipment; population dynamics; age and growth. Prereq: Biology 3130, 8 hrs. mathematics, or consent of instructor. 3 hrs. and 1 lab or field period. W.

4520 Fisheries Management (4) Methods of warm and cold water fisheries management including techniques of biological assessment, public relations, habitat manipulation, and stocking. Prereq: Biology 3130 or consent of instructor. 3 hrs. and 1 lab or field period. S.

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

Ornamental Horticulture and Landscape Design (740)

Graduate Catalog

Consult the

Graduate Catalog

for listing of graduate level courses.

Ornamental Horticulture and Landscape Design (740)

Consult the

Graduate Catalog

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Horticulture College (Federickswood, Holland); D. B. Williams, Ph.D. Pennsylvania State.


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

2230 Environmental Horticulture (3) An introduction to awareness of and appreciation for ornamental plants around and in the home. Design and management of home landscapes including selection, buying, effective use, and care for trees, shrubs, ground covers, turfgrass, herbaceous landscape plants and house plants. 3 hrs.

3030 Plant Propagation (3) Physiology, methodolo-
gy, and environmental requirements for propagation. Prereq: 8 hrs. of biological science. 2 hrs. and 1 lab.

3040 Floral Design (3) Principles and techniques in flower 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 succes-
sion, and schedule for fundamental and advanced courses. 2 hrs. and 1 lab.

3120 Turfgrass Management (4) Practical turf-grass management; cultivar selection, identification, and estab-
lishment. Lawns, lawnsmowers, mowing and irrigation practices, and thatch control; pest identification and control. Prereq: Plant and Soil Science 2130 and 8 hrs. biological sciences. 3 hrs. and 1 lab.

3130 Professional Practices in Ornamental Horticultu-
re (3) Application of management and marketing practices for greenhouses, nurseries, flower shops, garden centers, plant stores, and landscaping firms. Investigating of practices and the solution of prob-
lems as they relate to the students' areas of interest in the establishment and operation of floricultural, nur-
sey, landscape planning and maintenance enterprises, including compliance with governmental regulations and other operational practices specific to the orna-
tmental horticulture industry. 3 hrs.

3410 Basic Floriculture (3) Principles and practices employed in producing major cut flowers and potted plant crops. Application of principles of plant physi-
ology as they relate to control of flowering, harvesting and irrigation practices, and plant health and post-harvest quality. Prereq: 3110, and Plant and Soil Science 3040 or equivalent. 2 hrs. and 1 lab.

3510 Grounds Maintenance and Management (4) Identification and management of environmental concerns; control, irrigation, soil amendments, transplanting, cli-
mate protection, pest control; calibration, maintenance and use of equipment; schedules and management prac-
tices. Prereq: 2230. 2 hrs. and 2 labs.

3610 Fundamentals of Landscape Design (4) Devel-
opment of basic graphic skills and techniques of plan delination, Fundamentals of the process theory of design, site analysis, program development, design synthesis. Introduction to site layout, topographic inter-
pretation, landscape construction materials and landscape design, site maintenance of awareness and sensitivity to landscape elements. 1 hr and 2-3 hrs. labs.

3620 Intermediate Landscape Design (4) Applica-
tion of skills and knowledge acquired in 3610 to a variety of landscape projects. Refinement of graphic skills. History of landscape design as it relates to contemporary applications. Technical aspects of plant-
ing design and implementation. Use of plant materials in design of small and moderate scale landscape situ-
tions. Prereq: 3610, 3810 or equivalent. 1 hr and 2-3 hrs. labs.

3630 Landscape Construction and Contracting (4) Application of construction methods, materials and practice concerned with landscape installation and contracting. Site layout procedures, erosion, drainage, landscape construction materials; application through detail design drawings and small scale projects. Landscape design, planting, irrigation systems, and bidding procedures. Prereq: 3310, 3610; Ag. Mech. 2130 recommended. 1 hr. and 2-3 hrs. labs.

3810 Basic Landscape Plants (4) Identification, classifica-
tion, adaptation, culture, and landscape design uses for basic design trees, shrubs, vines, and ground covers. Prereq: 8 hrs. of botany or biological science and Agriculture 1140. 2 hrs. and 2 labs.

3820 Supplementary Landscape Plants (3) Identification, classification, adaptation, culture, and landscape design uses for ornamental trees, shrubs, vines. Prereq: 3810. 1 hr. and 2 labs.

3830 Interior Plants (3) Identification, classification, adaptation, culture and interior uses for foliage and flowering plants. 1 hr. and 2 labs.

4150 Nursery Production (4) Modern methods of pro-
ducing liners, field and container grown woody ornamental plants. History and evolution of nursery industry and modern production recommendations for woody ornamental plants. Prereq: 3030, 3810 and Plant and Soil Science 2130. 2 hrs. and 2 labs.

4160 Nursery Management (3) Modern management methods for wholesale and retail nurseries. garden centers, and landscape contractors. Prereq: 3120. 2 hrs. and 1 lab.

4180 Park Design (4) Design criteria for parks and outdoor recreation systems. Park site selection, anal-
ysis, planning, and management as related to needs and environmental conditions. Evaluation of aesthetic and functional quality of parks and their impact on environmental quality of rural and subur-
ban communities. Prereq: 3810. 2 hrs. and 2 labs.

4190 Advanced Landscape Design (4) Comprehensive application of landscape design skills and knowledge through the development of a major project. Analysis, programming, planting design, construction detailing, estimating, specifications, contracts and bidding includ-
ing total project package. Prereq: 3510, 3620, 3630, 1 hr and 2-3 hrs. labs.

4220 Advanced Turfgrass Management (5) Princi-
ples and scientific basis of turfgrass culture: adaptation, ecology, cultural practices, and management. Climatic influences on grass culture; physiology of clipping and water management; traffic effects and compaction; and the physiological influences of pest infestations and control measures. Prereq: 3210. 3 hrs. and 1 lab.

4320 Specialty Floriculture (3) Specific practices in the production of major cut flowers and potted plant crops. Production methods for scheduling flowering or vegetative growth of specialty florist crops in con-
trolled environments. Prereq: 3410. 2 hrs. and 1 lab.

4400 Individual Problem Study (1-5) May be repeat-
ed to a maximum of 10 credit hrs.

4610 Seminar (1) Current problems in ornamental horticulture and landscape design. Prereq: Junior standing and consent of instructor.

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

Plant and Soil Science (792)

Professors: W. L. Parks (Acting Head), Ph.D. Purdue; F. F. Bell (Emeritus), Ph.D. Iowa State; D. L. Coffey, Ph.D. Purdue; B. V. Conger, Ph.D. Washington State; H. A. Fribourg, Ph.D. Iowa State; L. S. Jeffery, Ph.D. North Dakota State; L. M. Josephson (Emeritus), Ph.D. Wisconsin; B. S. Pickart (Emeritus), Ph.D. Michigan State; J. H. Reynolds, Ph.D. Wisconsin; L. F. Seatz (Emeritus), Ph.D. North Carolina State; L. N. Skolud (Emeritus), MA; M. E. Springer (Emeritus), Ph.D. California (Berka-
ley); H. D. Swingle (Emeritus), Ph.D. Louisiana State.

F. L. Allen, Ph.D. Minnesota; D. E. Deyton, Ph.D. North Carolina State; W. A. Kruager, Ph.D. Illinois; D. E. Lieben, Ph.D. Kansas State; R. D. Potter, Ph.D. Michigan; R. D. Michael, Ph.D. Michigan State; R. J. Lewis, Ph.D. North Caro-

Assistant Professors: J. G. Gravelle, Ph.D. Purdue; C. E. Sams, Ph.D. Michigan State.

2120 World Food Production and Cropping Systems (3) Introduction to world crop plants and cropping systems with emphasis on origin and development, current technology and practices, and future (role, challenges, demands, landers, problems) of agri-
culture. F.

2130 Soils (4) Nature and properties of soils. Physical, chemical, biological processes in soils and their influence on plant growth. Prereq: Chemistry 1120 or 1520 or 1620. 3 hrs. and 1 lab. F, S.

3110 Soil Fertility and Fertilizers (4) Properties of soils in relation to plant nutrient availability and uptake. Methods of soil fertility evaluation and principles of fertiliz-
ers. Prereq: 2130. 3 hrs. and 1 lab. W.

3120 Grain and Oil Crops (3) Distribution, improvement, morphology, culture, harvesting, and utilization of corn, small grains, grain sorghum, soybeans, and related crops. Prereq: 2130; 8 hrs. biological science. 2 hrs. and 1 lab. W.

3140 Forage Crops (4) Characteristics, adaptation, improvement, management, and utilization of grasses and legumes for pasture, hay, and silage production. Prereq: 2130; 8 hrs. biological science. 3 hrs. and 1 lab. F, S.

3150 Cotton and Tobacco (4) Characteristics, adap-
tation, improvement, culture, harvesting, and marketing of cotton and tobacco. Prereq: 2130; 8 hrs. biological science. 3 hrs. and 1 lab. F.

3173 Vegetable Crops (4) Characteristics, economic importance, adaptability and production of vegeta-
tables for fresh and processing markets with emphasis on both warm and cool season crops. May be taken for graduate credit by non-majors only. Prereq: 2130; 8 hrs. of biological science. 3 hrs. and 1 lab. S.

3180 Fruit Crops Management (4) Soils, planting, cultivation, development of fruit crops plantations; pest control, harvesting, packing, storage and pruning. Prereq: 2130; 8 hrs. biological science. 3 hrs. and 1 lab. S.

3500 Soils in Forestry (3) Soils as a medium for tree growth; relation of physical, chemical, and biological properties of soils to tree growth and management of forest stands. Soils properties of importance in road location, recreational development, and watershed management. Prereq: 2130; Forestry 3220. 2 hrs. and 1 lab. W.

3410 Soil and Plant Analysis (3) Applied methods of soil and plant analysis as they relate to crop nutrition and soil evaluation including sampling procedures, sample preparation, soil physical and chemical analysis, and plan mineral content. Prereq: 3110. 1 hr. and 2 labs. W. Not for graduate credit.

3150 Statistics for Agricultural Research (3) Applic-
ation of statistics to interpretation of agricultural research. Notation, descriptive statistics, probability, distributions, confidence intervals, students ' t and chi-

3610 Practicum in Plant and Soil Science (3-4) Spend one quarter working with agricultural related enter-
prises with area of work being related to a student's career interest. Requires consent of 3-person faculty-
administering committee and of academic advisor.
May not be used as a 3000-level prerequisite for any course in Plant and Soil Science. May not be taken for graduate credit. PSS majors only. E.

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

4120 Principles of Crop Breeding (4) Genetic principles and techniques used in crop improvement. Prereq: Biology 3110 or equivalent. W.

4250 Agricultural Pesticides (4) Regulation of pesticide development, manufacture, transportation, marketing and use. Structure, use, mode of action, degradation and environmental impact of pesticides used in agriculture, forestry and related areas. Prereq: 1 year biological sciences and 1 year chemistry. 3 hrs. and 1 lab. F.

4320 Soil Formation, Morphology, and Classification

(4) Soil parent materials, basic pedogenic processes, soil forming processes, soil morphology and interpretation of morphology, taxonomic classification of soils. Use of soil surveys. Prereq: 2130. 3 hrs. and 1 lab. S.

4350 Soil Survey (2) Techniques of mapping soils, development of mapping legends and documentation and testing of mapping unit descriptions and interpretations. 1 hr. and 1 lab. Prereq: 4320 or concurrent. S.

4400 Problems in Plant and Soil Science (1-6) Special research or library problems in some phase of plant and soil science. May be repeated. Maximum credit 9 hrs. E.

4410 Crop Physiology and Ecology (4) Application of the principles of plant physiology and ecology to crop production. Effects of environmental factors (light, heat, water, soil, etc.) on physiological processes (respiration, photosynthesis, germination, flowering, etc.) Prereq: Botany 3210; 2130 and any PSS course at 3000-level except 3610. 3 hrs. and 1 lab. W.

4710 Principles of Weed Science (4) Principles of cultural, biological, and chemical control of weeds, effects on environment, principles of herbicide selectivity and activity, types of herbicides and specific recommendations for various crop and non-crop uses. Prereq: Agric. 1140 or 1120; Organic Chem. 2130 and any PSS course at 3000-level except 3610. 3 hrs. and 1 lab. S.

4910 Seminar (1) Review of literature. Oral and written reports. W.

GRADUATE Consult the Graduate Catalog for listing of graduate level courses.
The School of Architecture offers a program of professional studies which prepares its graduates for the practice of architecture. While emphasizing knowledge and skills required by architects in guiding the processes of building, the school is especially concerned that its students learn that kind of good judgment which particularly distinguishes the architect from all other professionals who serve the building industry. Therefore, the student is regularly called upon to pay attention to cultural, philosophical and ethical issues that appropriately concern the architect in performance of the art of building. The student is also required to discover and understand the principles by which our physical universe appears to operate in order to know the science of building as fully as possible. It is important for the student to learn the characteristics of the natural environment while learning the physical behavior of materials in structures. Furthermore, the program of the school is concerned with preparing the student to be adaptable to change. An understanding of society is important as we see it developing in sometimes surprising ways. This places special demands upon the architect. Consequently the program of the School emphasizes the process of learning with the intent of enabling its graduates to adapt to the changing circumstances of our world. How to learn about architecture is as important a matter for the student as learning itself.

Facilities

In the spring of 1981, a new building housing the School of Architecture and shared by the Art Department was completed. The Art and Architecture Building contains all the primary activities of the school. Expressly designed for the school in an open architectural competition, the building has received widespread recognition and has become one of the models sought out by other schools.

The building was designed by the Knoxville architectural firm of McCarty, Bullock, Holsapple, Inc. It contains as its major feature a large interior mall or street. Opening off this large gathering space, which serves as a campus focal point, are amply designed classrooms, a reference library which contains extensive slide collections and other reference materials, computer rooms, faculty offices, lecture rooms, administrative offices, an elaborate darkroom, workshop, and a gallery in which architecture as well as art exhibits are mounted.

The principal library holdings of the school are located in the James D. Hoskins Library, with additional volumes in the Undergraduate Library. A reading and reference room is maintained in the Art and Architecture Building.

Financial Assistance for Students

A number of scholarships are made available each year through the Architecture Endowment Fund, the Annual Fund and the Tennessee Architecture Foundation. Other scholarships have been funded by the Masonry Institute of Tennessee, the General Shale Corporation and other architectural firms, manufacturers of building materials, and other construction related industries. Scholarships are also available through the national headquarters of the American Institute of Architects. Honor students in all the upper four years are eligible for this aid, but it is primarily awarded to student’s of third- and fourth-year standing.

Lecture Program

Throughout the academic year, the school organizes an extensive series of special lectures by experts in architecture and related subjects. Students are expected to attend regularly and benefit from this opportunity to hear the leading people of the field. The lectures are open to the University community and the public as well.

Included in the series is the ROBERT B. CHURCH MEMORIAL LECTURESHIP. Named for the school’s second dean, it has become widely respected in the field as an honor to be appointed to this lectureship. The most prominent architects from around the world are brought to the school with income from the endowment.

Other important lectures are sponsored by the General Shale Corporation the Masonry Institute, the Architecture Annual Fund. Annually in the spring quarter a special program called TAAS, "The Annual Architecture Spring Thing" is arranged. Within a period of one week the entire school participates in special lectures, seminars, exhibits, and informal gatherings. Featured are discussions by a series of visiting experts. TAAS is an event organized by students.

Publications

Students in the school each year publish The University of Tennessee Journal of Architecture. Continuing several years of excellent publications covering work of the school and current thinking in the field, this journal has become a widely recognized part of the school’s participation in the profession.

Foreign Studies Program

Each year the school offers at least two opportunities for foreign study to its students. In cooperation with the Danish International Student Committee a program is regularly offered in Copenhagen taught by outstanding Danish architects and educators. Exchange programs are established with Royal Melbourne Institute of Architecture, Melbourne, Australia and Chongquing Institute of Architecture and Engineering, Chongquing, Sichuan Province, China.

Within the school faculty, a person is assigned responsibility to lead a program in Europe each year at varied locations. These are designed to include visits to prominent new architectural sites and major historic locations. Most recently for two years the school has offered a program in Yugoslavia in which students and faculty from the Universities of Belgrade and Zagreb join students and faculty from Tennessee in study.
Studies abroad, which are arranged to include a full quarter's credit for advanced students, include design, history and theory of architecture, and directed independent study.

Requirements for Progression to Second-Year Architecture
(1) Satisfactory completion of first-year architectural program with grade point average at least 2.3; exceptions may be made by petition only;
(2) Approval by the School of Architecture no later than June 15 preceding the start of the second year.

Students must maintain an overall 2.3 grade point average by the end of 51 hours (attempted) in order to maintain "full status" in the program. Delinquent students must be put on "temporary status" for one quarter. These students will have one quarter to raise the overall GPA to 2.3 or have minimum 2.3 on each quarter's work until overall average is raised to 2.3. If the GPA is not brought up to 2.3, the student will be dropped from the architecture program.

Third-Year Prerequisites
Students are required to have all first- and second-year requirements satisfactorily completed before entering the third-year design courses, Architecture 3100-3200-3300. Students progress and design work in second year will be reviewed by a committee of the faculty determining their readiness for advancement to third year. Students who register for a third-year design course holding first- or second-year deficiencies may be required to drop the course at any point during the quarter.

Progression to 4000-level Courses
Architecture students must have attained third-year standing in the school before being admitted to any 4000-level course, with the exception of 4000 Service Practicum. Students must complete all requirements of the curriculum through the third year before entering 4100.

Minor
An undergraduate minor in architecture is offered in order to enable students in other colleges to pursue studies in architecture which are relevant to their major areas of concentration. The minor will consist of not more than 21 hours of credits with a minimum grade point average of 2.3. If the GPA is not raised to 2.3, the student will be dropped from the program. These students will have one quarter to raise their GPA to 2.3 or have minimum 2.3 on each quarter's work until overall average is raised to 2.3. If the GPA is not brought up to 2.3, the student will be dropped from the architecture program.

Program Description
The curriculum for the Bachelor of Architecture degree includes a combination of required and elective courses which offer the student both a solid professional program of study and a sound general education. While the majority of the courses are designated as required, students may use the available architecture electives to expand their knowledge in areas of special interest. Academic credit architecture electives allow students to broaden their education in areas of general interest: the humanities, natural sciences, social sciences or arts. All electives are to be taken only with the approval of the student's advisor.

Curricula for Architecture
All students studying for a Bachelor of Architecture degree will include the following requirements in their course of study. Students are not allowed to enroll simultaneously in two design courses. For any additional specialized requirements, the student should refer to the Student Handbook of the School of Architecture and the student's advisor.

SERVICE PRACTICUM REQUIREMENT
A three-month, non-credit internship in an architect's office is required. Upon petition, work in an engineer's, or contractor's office or related work may be approved by the school. This work must be evidenced by a letter from the employer indicating type and quality of student's work and time of employment prior to the fifth year. (See course description for Architecture 4000.)

Foreign students may need to obtain immigration and naturalization service of employment authorization before service practicum begins. To obtain authorization, foreign students should take their I-54 form to the Office of International Student Affairs not more than 60 days nor less than 30 days before the anticipated starting dates. Beginning service practicum employment without INS authorization constitutes unauthorized employment and may jeopardize a foreign student's continued stay in the United States.

Approved Elective
Satisfactory/No Credit Courses
These courses, if successfully completed, will count as hours for graduation, although neither S nor NC grades will be calculated in the student's grade point average. Satisfactory

<table>
<thead>
<tr>
<th>Course Load</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architecture 1100, 1200, 1300</td>
<td>3</td>
</tr>
<tr>
<td>Architecture 1101, 1201, 1301</td>
<td>3</td>
</tr>
<tr>
<td>English 1010 or 1011, 1020; 1031, 1052, or 1053</td>
<td>3</td>
</tr>
<tr>
<td>Math 1840-50-60 or Math 1550-60</td>
<td>4</td>
</tr>
<tr>
<td>Phil. 2510</td>
<td>4</td>
</tr>
<tr>
<td>History 1510-20</td>
<td>4</td>
</tr>
<tr>
<td>Approved Elective</td>
<td>4</td>
</tr>
<tr>
<td>Satisfactory/No Credit Courses</td>
<td></td>
</tr>
<tr>
<td>Architecture 2100', 2200', 2300'</td>
<td>4</td>
</tr>
<tr>
<td>Architecture 2101, 2201, 2301</td>
<td>2</td>
</tr>
<tr>
<td>Architecture 2114, 2214, 2314</td>
<td>4</td>
</tr>
<tr>
<td>Architecture 2207, 2307</td>
<td></td>
</tr>
<tr>
<td>Physics 2240-50-60</td>
<td>4</td>
</tr>
<tr>
<td>Approved Elective</td>
<td>3</td>
</tr>
<tr>
<td>Third Year</td>
<td></td>
</tr>
<tr>
<td>Architecture 3100', 3200', 3300'</td>
<td>6</td>
</tr>
<tr>
<td>Architecture 3107</td>
<td>3</td>
</tr>
</tbody>
</table>
Bachelor of Architecture as a Second Degree

A curriculum leading to a Bachelor of Architecture degree is available to students who already hold a bachelor's degree in an advanced degree field in another field. This program begins with intensive initial study in architecture and is possible to complete within three years. A minimum of 9 quarters residency is required. The degree is the first professional degree recognized for purposes of eventual qualification for the license to practice architecture.

Applicants must provide a transcript of previous academic work and must have attained at least a 2.5 overall grade point average. Appropriate goals and abilities must be shown by the applicant as well.

Second Degree students are required to submit a portfolio which demonstrates a proficiency in freehand and orthographic drawing skills prior to taking 1190 Basic Architecture I. If an otherwise qualified student does not have these skills, he or she can come to the School of Architecture the summer before entering the Second Degree Program and take an intensive drawing course which will fulfill the prerequisite.

SECOND DEGREE PROGRAM MINIMUM REQUIREMENTS

<table>
<thead>
<tr>
<th>First Year</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architecture 3114, 3214</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Architecture 3115, 3215, 3316</td>
<td>4</td>
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</tr>
<tr>
<td>Architecture 3217, 3317</td>
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<tr>
<td>Architecture elective</td>
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<td>3</td>
</tr>
<tr>
<td><strong>Fourth Year</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Architecture 4101, 4201, 4301</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Architecture 4123, 4313</td>
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<tr>
<td>Architecture 4116</td>
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<td>Architecture elective</td>
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<tr>
<td><strong>Fifth Year</strong></td>
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<tr>
<td>Architecture Course Electives</td>
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<tr>
<td>Architecture 4501</td>
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<td>3</td>
</tr>
<tr>
<td>Approved electives</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

| **Total: 245 hours** |

*Students are not allowed to enroll simultaneously in two of these design courses.

To be admitted to the third year the student must submit work for review by a designated committee of faculty of the school. A GPA of 3.0 in Architecture 1190, 1290, 1390, 3100, 3200, 3300 is required along with an overall 2.5 GPA.

Approved Electives List

<table>
<thead>
<tr>
<th>Approved Electives</th>
<th>First &amp; Second Year Students</th>
</tr>
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<tr>
<td>Architecture 4501, 4502, 4503</td>
<td>3</td>
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<tr>
<td>Architecture 4123, 4313</td>
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<tr>
<td>Architecture 4116</td>
<td>4</td>
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<tr>
<td>Architecture elective</td>
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<tr>
<td>Approved Electives</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Approved Electives</th>
<th>Fourth &amp; Fifth Year Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architecture 4501, 4502, 4503</td>
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</tr>
<tr>
<td>Architecture 4123, 4313</td>
<td>3</td>
</tr>
<tr>
<td>Architecture 4116</td>
<td>4</td>
</tr>
<tr>
<td>Architecture elective</td>
<td>3</td>
</tr>
<tr>
<td>Approved Electives</td>
<td>3</td>
</tr>
</tbody>
</table>

Faculty

Professors:
R. F. Knight (Dean), M. Arch. Harvard; G. Anderson, M. Arch. Illinois; G. Conley, B. Arch. Harvard; J. W. Fortey, P. E. Doctorate d'Universite de -

Associate Professors:

Assistant Professors:

110 Design Drawing (3) Principles of design through graphic presentation of field observations. Techniques of freehand sketching and abstract graphic communication applied to local examples of buildings and sites. Exercises related to discussions in 1100. Training introduced which relates development of critical vision with drawing skill and the student's imaginative capabilities.

111 Introduction to Architecture (3) Examination of scope and definition of architecture. Introduction to graphic, intellectual, and professional background. The field in relation to contemporary society, the building industry, and allied design professions. Architectural design as a creative process. Orientation to courses and programs of the school. F.


1291 Second Degree Program: Architecture Seminar (2) Theory and practice of architecture. Orientation to the profession and program of the school. Coreq: 1190. F.

1200 Architectural Graphics (4) Descriptive geometry and constructed architectural drawings: plan, section, elevation, isometric, axonometric, and perspective. Conventional architectural drawing symbols. Emphasis is on basic discipline required for clear communication of architectural ideas. Introduction to computer graphics. Prereq: 1100 and 1101. W.

1201 Visual Design Principles (2) Basis of visual order: proportion, scale, balance, figure-ground relationships, and rhythm. Study of two and three-dimensional forms. Light, shadow, and color. Creative abstract exercises and sketches to focus on basic architectural principles. Prereq: 1100 and 1101. W.
response to spatial and structural requirements. Prereq: 2200 and 2201; coreq: 2300. S.

2307 Architectural History II (3) Development of west- ern architecture from a medieval period through the Baroque. Prereq: 2207. E.


3100 Architectural Design I: Review (6) Two or more building projects creatively occur, focusing architectural principles covered in first and second year courses. Concept diagrams, constructed drawings, and models for presentation of design solutions. Prereq: 2200 and 2301. F.

3107 Architectural History III (3) Study of the modern movement from its roots in Romanticism, Neo-Clas- sicism, and the Industrial Revolution through the work of modern movement masters, with applications to current design issues. Prereq: 2307. E.

3114 Structures in Wood and Steel (4) Introduction to analysis and design of simple steel and wood struc- tures based upon specific loading requirements. Use of construction documents, handbooks, and design tables — selection of structural members. F.

3116 Environmental Control (4) Human physiological response to heat, light, and sound in buildings. Study of climatological factors which affect buildings; intro- duction to heating, ventilating, and air conditioning. W.

3200 Architectural Design II: Concepts (6) Building concepts, form, and image developed through develop- ment and presentation of designs for buildings of moderate complexity. Preliminary structure, material- ized choice, energy considerations, and environmental setting. Solution to issues of site and context. Complete sketches, drawings, and models at site and building scales required. Prereq: 3100. W.

3214 Structures in Masonry and Concrete (4) Intro- duction to analysis and design of simple reinforced concrete and masonry structures based upon specific loading conditions. Use of construction and building codes, handbooks, and design tables. Prereq: 3114. W.

3216 Mechanical Systems in Architecture (4) Con- tinuation of the study of heating, ventilating, and air conditioning systems, including health and fire protection systems. Prereq: 3116. W.

3217 Materials and Processes of Construction (4) Architectural materials and their use in building con- struction. W.

3300 Architectural Design III: Details (6) Design concept developed in detail, with consideration of alternative structural and environmental systems. Full scale detail studies. Drawings and models showing structure, details, and their relation to overall building design. Prereq: 3200; coreq: 3317. S.


3317 Structural and Mechanical Applications (4) Anali- ysis and selection of structural and mechanical systems for a specific case study to integrate technical infor- mation into a unified design solution. Prereq: 3214 and 3216; coreq: 3300. S.

4000 Service Practicum (0) A non-credit internship for minimum of 3 months duration to be completed prior to fifth year. E.

4100 Advanced Architectural Design I (6) Large- scale building projects creatively occur, focusing historical and contemporary examples. Examination of basic urban design issues and exemplary design approaches through lectures, readings, essays, and sketch studies. F.


4200 Advanced Architectural Design II (6) Resolution of a functionally complex program. Concept formulation in the design of large-scale buildings. Growth, flexibility and energy conservation as issues. Prereq: 4100. W.

4213 Professional Practice I (3) Principles and meth- ods of economics and management for architectural offices: project production, cost analysis, budgeting, office and construction management. F, W, S.

4300 Advanced Architectural Design III (6) Design of prototypical mixed-use projects in a complex setting. Emphasis on movement systems, economic paramete- ters, and constraints. Course sections may be housed in off-campus locations. Prereq: 4200. S.

4313 Professional Practice II (3) Legal responsibili- ties of architects: contract documents, contract administration, codes and zoning regulations, liabili- ty, and insurance. Prereq: 4213. F, W.

4400 Special Design Studies (6) Faculty initiated studies and projects which are approved by the Dean and may be repeated. Maximum credit 12 hours. E.

4410 Foreign Studies (6) Research and design projects conducted in various locations abroad. F, SU.

4415 Urban Design (6) Appropriate community form and urban design frameworks responding to specific community conditions and aspirations. Off-campus locations.

4420 Architectural Design Innovation (6) Design projects emphasizing investigation of experimental approach- es to architectural design. Consideration of new building types, innovative design concepts or alternative design methods.

4430 Architecture and Preservation (6) Rehabilitation, restoration, and adaptive uses of existing buildings.

4440 Development and Design (6) Design conse- quences of feasibility studies, economics, finance, marketability, environmental impact, and social con- siderations in development of real property.

4445 Design Service in Communities (6) Studies conducted under direction of architect or expert in an allied profession who are approved by the Dean and project organizations or agencies of government, and public groups. Off-campus locations. Not a Design Course elective.

4450 Working Drawings (6) Preparation of detailed working drawings. Study of selected historical and current docu- ments for typical architectural projects. Not a Design Course elective.


4480 Structural Innovations (6) Building design with innovative structural configuration and technology. May be repeated. Maximum credit 12 hours.

4481 Architecture-Engineering Laboratory (6) Archi- tectural projects with emphasis on engineering systems. Directed research applications of new structural con- cepts. Not a Design Course elective.


4501 Architectural Programming (3) Emphasis is placed on learning to ask essential questions and to identify critical basic issues in design. Examination of infor- mation sources and their proper use. Formulation of project objectives and requirements. Verbal, written, and diagrammatic presentation illustrating a basic design approach, concept, and method. Preparation for 4500. This course should be taken the quarter immediately preced- ing 4600 Comprehensive Architectural Design Project. W.

4600 Comprehensive Architectural Design Project (6) Development of design for complex buildings with attention to clarity of concept. Search for appropriate form and structure, technical requirements and design of details. Full complement of visual and written pre- sentations which support students' arguments for design concept and its development. Required review by fac- ulty representing all areas of the architecture program. Prereq: 4860 and satisfactory completion of all required hours in design courses. S.

4731-32 Earthquake Resistant Structure I, II (4, 4) Analysis and design of structures to resist earth- quake effects. Earthquakes phenomena. Vibrations of single degree structural systems. Resonance and damp- ing. Introduction to dynamic analysis of structures, instrumentation and structural response. Frame and shear wall behavior. Groundstructure interaction. Prereq: Consent of instructor. (Same as Civil Eng. 4731-32.) 4731-SU, 4732-W.

4801 American Architecture (3) Development of North American architecture from arrival of immi- grants in 1607 until 1860. W.

4802 American Architecture (3) Stylistic periods from the Gothic Revival through the twentieth centu- ry. S.

4803 Oriental Architecture (3) The eastward expansion of the Fertile Crescent to the Indus Valley. Hindu, Buddhist, and Mughal architecture in India. Architec- ture in China and Japan from the earliest beginnings. A.

4804 The International Style (3) Architecture of the International Style 1922-1952 with antecedents and influences. A.

4805 Indigenous Architecture (3) Study of worldwide "anonymous" architecture reliant upon climatic con- ditions, availability of materials, and economic level of society. Consideration of indigenous structures through twentieth century vernacular. A.

4806 History of Architectural Technology (3) Build- ing materials and construction techniques from antiquity to the present. A.

4807 Tennessee Architecture (3) History of settle- ment patterns and building in Tennessee. F.

4808 History of the City (3) Examination of historical changes in urban form and design. Survey, case studies.

4809 Literature of Architecture (3) Survey of archi- tectural writing. Relationship between literature and design.

4810 Aesthetics in Architecture (3) Philosophies of art underlying the practice of architecture. F, W, S.

4811 Special Topics in History, Theory and Criticism (1-4) Special topics in history-related subjects. May be repeated. Maximum credit 6 hours.

4812 East European Architecture (3) Twentieth cen- tury architecture in Russia, Czechoslovakia, Poland, Hungary, East Germany, Rumania, Bulgaria, Yugo- slavia, S.

4813 Medieval Architecture (3) History of architec- ture from the decline of Rome to the beginning of the Renaissance. A.

4814 Forms of Utopia (3) Ideas and architectural expres- sions of Utopian movements.

4815 Criticism Seminar (3) Theories, function, and techniques of architectural criticism. S.

4816 Architects in Social Criticism (3) Writings which illustrate technological, political, and anthropological assumptions of some nineteenth and twentieth cen- tury architects.

4817 Architecture since 1945 (3) Recent architectural developments and views of the future. F.
College of Business Administration

C. Warren Neel, Dean
Roger L. Jenkins, Associate Dean for Graduate Programs
Clyde R. Keller, Associate Dean for External Affairs
John R. Moore, Associate Dean
Richard C. Reizenstein, Associate Dean for Undergraduate Programs
John E. Riblett, Director,
Management Development Programs
David A. Hake, Director, Center for Business and Economic Research

The College of Business Administration
seeks to prepare men and women for positions as executives and specialists in business. Seeing the business firm as operating in a dynamic social, political, and economic environment, the college has four functions with respect to its purpose: (a) to offer its students the firm base of liberal education needed by all educated people; (b) to present to its students business-oriented instruction in professional fields so that they may understand the business process as a whole and the function of specific areas of business in particular; (c) to associate closely with other colleges of the University in order to improve the understanding of its students by offering them an opportunity to learn from psychology, sociology, and other areas related to behavior of people; (d) to develop in its students the ability to see their four years in the college as the initial step to a lifetime commitment to personal growth and intellectual maturity through continuing education.


The nationally recognized body which accredits programs in business administration is the American Assembly of Collegiate Schools of Business (AACSB). The college has been a member of AACSB since 1941, and both its undergraduate and graduate programs are fully accredited. In addition, the AACSB has accredited the following accounting programs: B.S., M. Acc., M.B.A.

Association and Progression

Students wishing to receive a degree in business administration must seek association with the College. Details of the requirements for association are found on page 15 of this catalog.

Student Advising Center

The College of Business Administration maintains a Student Advising Center. The center is staffed with full-time academic advisors to assist freshman and sophomore students on an individual basis with their programs. Junior and senior students are assigned to advisors from the faculty of the student's selected major. The objective of working with students individually is to assist them with their personal needs for academic information and to prepare them for self-sufficiency in responding to their questions and concerns.

Center for Business and Economic Research

The staff of the Center for Business and Economic Research engages in studies of the business and economic environment in Tennessee, the Southeast, and the nation. The center serves the business community, state government, individuals, and the University through dissemination of various kinds of economic and socio-economic information and supports the faculty of the College in seeking funding for research projects and, through its Computer Resources Group, provides support for integration of technology in the College of Business Administration. Staff members conduct research in regional economics, public finance, demographics, and related socio-economic problems. The center publishes results of its research and that of others, in monograph form, so that significant developments in the various business disciplines can achieve widespread exposure. In addition, the center staff develops research on business and economic problems for governmental organizations and private industry. As periodicals, the center publishes the Tennessee Statistical Abstract and the Survey of Business

The center is a member of the Southeastern Economic Analysis Conference and the Association for University Business and Economic Research.

Management Development Programs

The College's continuing education efforts are coordinated through its Management Development Programs. Management Development Programs emphasizes consistent high quality programming, small class size, outstanding faculty, and a highly participatory style of instruction. The programs range from customized 'in plant' programs to the four-week University of Tennessee Executive Development Program (TEDP).

The Tennessee Executive Development Program, tailored to the needs of upper-level managers, has a strategic focus. Its major objectives are to develop executives for increasingly higher levels of management responsibility and to sharpen existing executive skills needed for comprehensive decision-making and leadership. The Management Development Program, designed for mid-level managers, is more operational in scope. It is appropriate for both the experienced manager who has not had advanced management training and the individual being developed for a mid-level position. Other programs include: (1) The Institute for Productivity Through Quality, which teaches the
techniques of statistical process control in an intensive 130-contact-hour program for both managers and executives; (2) the Senior Institute for Productivity Through Quality, a one-week program which provides a strategic overview of statistical management; (3) the Administrative Services Institute for Productivity Through Quality, a two-week program which applies the philosophy and tools of statistical management to non-manufacturing environments; (4) the Executive Development Program for Distribution Managers, which focuses on providing the distribution manager with an intensive exposure to contemporary management approaches; and other programs designed to meet the continuing education needs of business and industry.

Cooperative Program in Business
The College of Business Administration offers qualified students who have completed at least one year of work at the University and whose grades conform to the standards set by the college the opportunity to participate in the Cooperative Program in Business. This program, under the direction of a coordinator, combines classroom study with practical experience. Effort is made to place students in jobs which offer maximum educational and financial advantages. Students alternate quarterly between work in business or industry and study at the University.

The Cooperative Program gives the student an opportunity for practical experience, develops a sense of responsibility and cooperation, helps in selecting a vocation, creates greater interests and incentive in studies, enables earning part of expenses, and may lead to permanent employment after graduation.

The student may earn a maximum of nine hours of elective credit for field work but must do a satisfactory job as determined by the employer and coordinator, including reports covering job experiences. Arrangements for credit should be made prior to the quarter of cooperation.

All students interested in the program are referred to the Cooperative Education Office, Alumni Hall.

Preparation for Teaching
Students desiring to teach business, economics, or distributive subjects in the secondary schools of Tennessee may follow majors in accounting or marketing and also meet the requirements for certification by the State Department of Education.

Students should consult an advisor in distributive education regarding the proper courses.

A Management Science Option is available to students with faculty and interests in mathematical applications to business. See page 81.

NOTE: Students are advised to consult the University's degree requirements as stated in the front section of this catalog as well as the requirements for the college or department.

BUSINESS CORE REQUIREMENTS
The following core courses are required in all business curricula: Accounting 2110-20-30 (2110-20, 3210 for accounting and management majors); Business Administration 4430, Business Law 4110 and 4120; Economics 2510-20; Finance 3510 (Political Science 4370 for public administration majors), 3120-30; Management 3010, 3110 (3010, 3111 for management majors); Marketing 3110-20; Business Administration 2750 or Computer Science 1410 (3150 for Management Science Option); and Statistics 2100 and three hours of upper-division statistics elective or as designated by the curriculum (3450-60 for Management Science Option).

ENGLISH REQUIREMENT
The English requirement can be fulfilled by English 1010, 1011 or 1019; 1020, and either 1031, 1032, or 1033, as well as hours selected from English 2510-20, 2531-32-33, 2590-70-80, 2660-70-80. Speech 2311 or 2361, unless specified in the curriculum, may be used to satisfy four of the elective English hours required. English courses beyond the 1000-level may be taken in any order. Students making a B average in freshman English are permitted to substitute for the 2000-level courses listed above any upper-division courses which the Department of English will allow them to take.

NATURAL SCIENCE REQUIREMENT
The natural science requirement can be fulfilled by an eight-hour sequence in any of the following fields: astronomy, biology, botany, chemistry, geography 1810-20, geology, or physics.

SOCIAL SCIENCE REQUIREMENT
The social science requirement can be fulfilled by selecting from the following courses: Anthropology 2510-20-30; Geography 1810-20, 2110-20-30; History 1510-20 (1518-28), 1610-20, 1950-60, 2510-20 (2518-28); Honors 1138; Human Services 2690; Philosophy 1510-20, 2310, 2510-20; Political Science 2020, 2510-20 (2518-28); Psychology 2500 (2518), 2530-40; Religious Studies 2610 (2611), 2620, and Sociology 1510-20.

In order to qualify for the Bachelor of Science in Business Administration degree, a student must have been accepted by the College of Business Administration at The University of Tennessee, Knoxville. These must include a minimum of 15 hours of required upper-division courses taken in a particular concentration. Acceptance of the minor must have approval of the student's college of enrollment. Minors are unavailable to College of Business Administration students.

Course Load
The normal course load for a quarter is 15-17 hours. The number of hours which may be taken by a freshman is 18. Other students may take 19. In unusual circumstances permission to take a course load in excess of these maximums may be granted by the Associate Dean for Undergraduate Programs in Business Administration.

Requirements for All Curricula
In order to qualify for the Bachelor of Science in Business Administration degree, a student must have completed the following core courses outlined by the major department. Where no number course is indicated or where a choice is allowed, the student will fulfill the requirement by selecting from specified courses. Where electives are provided, the courses taken must meet the approval of the advisor. Non-departmental electives are considered as courses outside the student's major department. No more than 42 hours are permitted in any one subject area.

A maximum of 30 credit hours of unconventionally graded (S/NC, P, etc.) courses may be applied to the total credit hours required for a degree of Bachelor of Science in Business Administration. Such credit hours may be used to meet only the requirements identified in the curriculum as 'non-business electives,' 'non-departmental electives,' 'business and/or non-business electives,' and 'business electives.'

A Management Science Option is available for students with facility and interests in mathematical applications to business. See page 81.

NOTE: Students are advised to consult the University's degree requirements as stated in the front section of this catalog as well as the requirements for the college or department.

Accounting
The curriculum provides students with a general education, a general business education, and a general exposure to the primary areas of accounting. Students completing the curriculum are eligible to begin careers in public accounting, industry, and government.

Students desiring greater depth or wishing to specialize in certain areas of accounting are encouraged to seek admission to the Master of Accountancy program during their junior or senior years. Together, the undergraduate accounting program and the Master of Accountancy constitute a five-year opportunity that fulfills the current educational recommendations of the American Institute of Certified Public Accountants.

Transfer Students: A minimum of 30 quarter hours of required upper-division courses in Business Administration courses must be completed in residence at The University of Tennessee, Knoxville. These must include a minimum of 15 hours of accounting courses numbered 3000 or above and must include Accounting 4110, 4140, 4430, and 4630. Transfer students with nine quarter hours of introductory accounting will receive six hours of credit in Accounting 2110 and three hours of lower-division accounting credit. Junior standing is prerequisite to all management courses.
FINANCIAL PLANNING SERVICES — This curriculum provides fundamental and advanced courses covering subjects which are essential in preparing persons for entry into the fields of financial planning services including Personal Financial Planning, Estate Planning, Investment, Retirement Planning, and Employee Benefits.

Transfer Students: A minimum of 30 quarter hours of required upper-division College of Business Administration courses must be completed in residence at The University of Tennessee, Knoxville. These must include a minimum of 12 hours of finance courses. Accounting 2110-20-30 (or 3210 for 2130), Economics 2510-20 and Statistics 2100 are prerequisite to all courses offered by the finance department.

Finance

This major is for students interested in careers in the broad field of finance. The major allows flexibility for students (aided by their department faculty advisor) to tailor their programs to fit their particular career goals and prepare for one (or more) of the following specialty areas:

INVESTMENT MANAGEMENT — This specialty area leads to career opportunities in stock brokerage or investment counseling. In addition, students prepare for investment analysis and portfolio management positions, with commercial banks, investment banks, mutual funds, and insurance companies.

REAL ESTATE — Courses in this area are designed for students who are interested in the many fields of business and government where real estate is of significance. Such fields include real estate brokerage, appraising, taxation, law, property management, real estate development, mortgage lending and mortgage banking, construction, government loan guarantees, and insurance.

CORPORATE FINANCIAL MANAGEMENT — Career opportunities in this area include: corporate financial forecasting, planning, and control; managing cash, short-term borrowing, and short-term investment positions of the firm; capital project analysis; and long-term financing decisions.

BANKING AND FINANCIAL INSTITUTIONS — Courses in this area prepare students who are 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.

INSURANCE AND RISK MANAGEMENT — This concentration is designed to prepare students for entry into careers in insurance and business or public risk management. Opportunities include marketing, agency or home office sales, and management of those pure risks which threaten the solvency and operational efficiency of a business or the provision of cost efficient services by a governmental body.

General Business

This major is for those who desire a broad business background without excessive 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 above.

Transfer Students: A minimum of 30 quarter hours of required upper-division College of Business Administration courses must be completed in residence at The University of Tennessee, Knoxville. These must include a minimum of 12 hours of accounting, economics, and finance courses. Junior standing is prerequisite to all management courses.

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Hours Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>English 1010 or 1011; 1020; 1031 or 1032 or 1033...</td>
<td>3 3 3</td>
</tr>
<tr>
<td>Mathematics 1540-50-60 or 1840-50-60...</td>
<td>4 4</td>
</tr>
<tr>
<td>Economics 2510...</td>
<td>4 4</td>
</tr>
<tr>
<td>Business Law 4110-20...</td>
<td>3 3</td>
</tr>
<tr>
<td>Business Administration 4430...</td>
<td>3 3</td>
</tr>
<tr>
<td>Economics electives...</td>
<td>6 6</td>
</tr>
<tr>
<td>Business and/or non-business electives...</td>
<td>6 6</td>
</tr>
</tbody>
</table>

Total: 178 hours
required upper-division courses in residence at the University of Tennessee, Knoxville to include Management 4600, 4610, Accounting 4430, and Computer Science 4510.

Transfer Students: A minimum of 30 quarter hours of required upper division College of Business Administration courses must be completed in residence at The University of Tennessee, Knoxville. These must include at least 15 hours of management courses including 4210, 4320, 4460.

Management

This major is designed for students interested in management. All students complete a set of courses designed to provide a basic understanding of management of business organizations and also complete one of the following concentrations:

1. Management Information Systems Concentration - designed for students who wish to prepare for careers in operations in manufacturing and service industries, including the specific fields of materials management, scheduling and control, work measurement, quality assurance, and supervision.

2. Personnel Management - designed for students who wish to prepare for careers in personnel management, including the specialized fields of employment, wage, salary administration, job evaluation, training, and human resources management.

3. Office Systems Management - designed for students who wish to prepare careers in word processing, information systems, and various administrative support functions.

4. General Management - designed for students who desire careers in management, but who do not wish to specialize in operations, personnel, or office systems. This concentration allows flexibility so that students tailor their programs of study to fit their career goals by selecting from a set of both departmental and non-departmental courses.

Management Information Systems Concentration - designed for students who desire a career in management information, combining a broad business education with a strong technical background in computer information systems. This program prepares students for a role in identifying information requirements of organizations and preparing the technical design of information systems to meet these needs. Transfer students must complete a minimum of 30 quarter hours of

Business and/or non-business electives 7 7 7
Management 4110-20 4 4 4
Management Concentration elective 3 - -

Total: 187 hours

Marketing

This major is designed to prepare students for careers with companies engaged in the marketing of consumer and industrial goods and their distribution by manufacturers, wholesalers, and retailers. The curriculum trains students for positions in sales, advertising, promotion, research, and marketing management. The integrated sequence of courses enables students to obtain broad training in the analysis of marketing decision problems.

Transfer Students: A minimum of 30 quar-

See Requirements for All Curricula.
ter hours of required upper-division College of Business Administration courses must be completed in residence at The University of Tennessee, Knoxville. These must include the following required marketing courses: 3310, 3920, 3410, 4610, 4710.

Economics 2510-20 are prerequisites to all marketing courses. Economics 3110-20 or the equivalent are prerequisites to all other 3000- and 4000-level marketing courses.

Freshman

Hours Credit

English 1010-20; 1031 or 1032 or 1033........3 3 3
Mathematics 1540-50-60 or 1840-50-60........4 4 4
Natural science electives....................4 4 4
Social science electives.....................4 4 4
Non-business elective.......................6

 Sophomore

Accounting 2110-20...........................3 3 3
Economics 2510-20............................4 4 4
English elective..............................4
Speech 2311.................................4
Social science electives.......................4
Statistics 2100.................................3
Computer science elective..................3
Economics 3130-30...........................4 4 4
Management 3010, 3110........................3
Statistics upper-division elective........3
Marketing 3110-20.............................3 3 3
Political Science 3545........................4
Political Science 3565-60....................4 4 4
Political science elective...................4
Business elective............................3

 Junior

Economics 3110, 3340........................3
Finance 3130-30...............................4
Accounting 3510...............................3
Management 3010, 3110........................3
Statistics upper-division elective........3
Marketing 3110-20.............................3
Political Science 3545........................4
Political Science 3565-60....................4 4 4
Political science elective...................4
Business elective............................3

Senior

Business Law 4110-20........................3 3 3
Business Administration 4430.................3
Political Science 4410........................4
Political Science 4610-20....................4 4 4
Economics 4710-20.............................3
Business electives............................3
Business and/or non-business electives...5
Social science elective.......................4

Total: 187 hours

Statistics

This major is designed for students interested in the use of statistics in business, government, and industry. All students complete a set of courses designed to provide a general understanding of statistical methodology and also complete one of the following concentrations:

Industriel Statistics - designed for students interested in positions involving quantitative research, as well as for those interested in pursuing a graduate degree in statistics.

Industrial Statistics - designed for students interested in careers in operations and quality management in business, government, and industry. Students planning to pursue graduate work in statistics should also take Math 2940-50-60.

Freshman

Hours Credit

English 1010 or 1011; 1020; 1031 or 1032 or 1033..........................3 3 3
Mathematics 1540-50-60 or 1840-50-60........4 4 4
Natural science electives....................4 4 4
Social science electives....................4 4 4
Economics 2510...............................4
Sophomore

Accounting 2110-20-30........................3 3 3
Economics 2520...............................4
Computer science elective..................4
English elective................................4
Social science elective......................4
STANDARD CONCENTRATION
Math 2640-50-60.............................4 4 4
Statistics 3400-60.............................3 3 3
Non-business elective......................3
INDUSTRIAL STATISTICS CONCENTRATION
Statistics 2100, 3220, 3310................3 3 3
Non-business electives.....................4 7
Junior

Management 3010, 3110........................3
Marketing 3110-20............................3

Senior

Business Law 3120-30........................3 3 3
Marketing 3110-20, 3310.....................3 3 3
Management 3010, 3110........................3 3 3
Economics 4510, 4560, 4600.................3 3 3
Statistics upper-division elective........3

Elective

INDUSTRIAL STATISTICS CONCENTRATION
Non-business elective.......................3
Statistics upper-division elective........3

Total: 187 hours

*See Requirements for All Curricula.

Transportation and Logistics

A major in transportation and logistics is recommended for students who plan careers with: (1) transportation companies that supply freight and/or passenger services; (2) industrial and marketing organizations that coordinate traffic, warehousing, and related distribution activities to achieve optimal business logistics systems; or (3) transport regulatory and planning agencies at all levels of government.

The program eliminates the requirement of formal examinations by the American Society of Logistics and Transportation. A number of scholarships for transportation and logistics majors are available.

To graduate with a major in transportation and logistics, a minimum of 20 quarter hours of required upper-division College of Business Administration courses must be completed in residence at The University of Tennessee, Knoxville. These must include a minimum of 21 hours of transportation and logistics courses in residence.

Freshman

Hours Credit

English 1010 or 1011; 1020; 1031 or 1032 or 1033........3 3 3
Mathematics 1540-50-60 or 1840-50-60........4 4 4
Natural science electives....................4 4 4
Social science electives....................4 4 4
Economics 2510...............................4
Sophomore

Accounting 2110-20-30........................3 3 3
Economics 2520...............................4
Computer science elective..................4
English elective................................4
Social science elective......................4
STANDARD CONCENTRATION
Math 2640-50-60.............................4 4 4
Statistics 3400-60.............................3 3 3
Non-business elective......................3
INDUSTRIAL STATISTICS CONCENTRATION
Statistics 2100, 3220, 3310................3 3 3
Non-business electives.....................4 7
Junior

Management 3010, 3110........................3
Marketing 3110-20............................3

Senior

Business Law 3120-30........................3 3 3
Marketing 3110-20, 3310.....................3 3 3
Management 3010, 3110........................3 3 3
Economics 4510, 4560, 4600.................3 3 3
Statistics upper-division elective........3

Elective

INDUSTRIAL STATISTICS CONCENTRATION
Non-business elective.......................3
Statistics upper-division elective........3

Total: 187 hours

*See Requirements for All Curricula.

Public Administration

This major is for students who wish to prepare for management positions in public service or government relations. It presents a combination of general education together with studies in governmental affairs and business management. It is designed to give initial preparation for such governmental employment as program management, budgeting and personnel management, and to private sector employment with trade associations and large corporations with substantial interaction with government.
### Management Science Option

The increasing use of electronic computers and modern management methods by industry and the business community has created a rapidly growing demand for persons capable of using mathematics, statistics, and computer methods for the use of quantitative techniques in solving management problems. In response to this growing demand, the College of Business Administration has established a Management Science Option which is available to qualified students who wish to prepare themselves for careers involving this type of work.

The Management Science Option is designed for students who have demonstrated a high level of ability in mathematics and who are interested in applying this ability toward solving management problems. The Management Science Option is available to students majoring in accounting, finance, general business, management, marketing, statistics, and transportation.

### Accounting M.S.O.

The curriculum provides students with a general education, a general business education, and a general exposure to the primary areas of accounting. Students completing the curriculum are eligible to begin careers in public accounting, industry, and government.

Students desiring greater depth or wishing to specialize in certain areas of accounting are encouraged to seek admission to the Master of Accountancy program during their junior or senior years. Together, the undergraduate accounting program and the Master of Accountancy constitute a five-year opportunity that fulfills the current educational recommendations of the American Institute of Certified Public Accountants.

Transfer Students: A minimum of 30 quarter hours of required upper-division College of Business Administration courses must be completed in residence at The University of Tennessee, Knoxville. These must include a minimum of 12 hours of accounting, economics, and finance courses.

### General Business M.S.O.

Transfer Students: An option in General Business M.S.O. requires a minimum of 30 quarter hours of required upper-division College of Business Administration courses which must be completed in residence at The University of Tennessee, Knoxville. These must include a minimum of 12 hours of accounting, economics, and finance courses.

### Graduate Studies

The College of Business Administration offers advanced programs in economics leading to the Master of Arts, and the Doctor of Philosophy degrees. The Master of Business Administration degree program offers concentrations in the fields of controllership, economics, finance, forest industries management, management, management science, marketing, statistics, and transportation and logistics. The Master of Accountancy is offered in accounting. The M.S. degree in statistics is also available. The Doctor of Philosophy in Business Administration degree program is offered in the fields of accounting, finance, management, marketing, and transportation and logistics. Advanced programs in management science lead to the M.S. and the Ph.D. degrees. The M.S. and the Ph.D. degrees are granted in industrial and organizational psychology jointly with the Department of Psychology. This college and the College of Law offer a coordinated dual program lead.
ing to the conferal of both the Doctor of Jurisprudence and the Master of Business Administration degrees. See the Graduate Catalog for detailed information.

Students applying for the MBA, M.Acc., and Ph.D. in Business Administration programs are required to take the Graduate Management Admission Test (GMAT). Applicants for the M.A., M.S., and Ph.D. programs may take either the GMAT or the Graduate Record Examination (GRE). Applicants whose native language is other than English must submit results of the Test of English as a Foreign Language (TOEFL) unless a degree has been earned at an accredited U.S. institution attended by the applicant for four academic years within five years prior to date of application. Scheduled dates and locations for these examinations may be obtained from Educational Testing Service, P.O. Box 696, Princeton, New Jersey 08540, and from most colleges and universities.

Application requirements vary with different graduate programs. Inquiries should be addressed to the Associate Dean for Graduate Programs, College of Business Administration, The University of Tennessee, Knoxville, Tennessee 37996-0570.

Departments of Instruction

Accounting and Business Law

Professors:

Associate Professors:

Assistant Professors:

Distinguished Lecturer:
S. B. Wolfe, B.S. Virginia Polytechnic.

Accounting (009)

2110-20 Fundamentals of Accounting (3, 3) introduces courses in financial accounting theory and practice with emphasis on preparation, reporting, and analysis of financial information. Prereq. to all other courses in accounting except for engineering majors. Courses must be passed in sequence. Prereq.: For 2110, Math 1850 or equivalent.


2110-20-30 Intermediate Financial Accounting (3, 3) introduces courses in financial accounting theory and practice with emphasis on cost behavior analysis and decision making. Standard costing, budgeting. Prereq.: 2120 for 3110 with a grade of C or better for 3120; and 3120 with a grade of C or better for 3130.

2120-20-30 Managerial Cost Accounting (3, 3) in-depth analysis of costing for products, projects, and management control. Special topics include cost behavior analysis, cost prediction, budgeting, and responsibility accounting. Accounting 2120 and Statistics 2100 are prerequisites for 3210. Prereq. for 3220: Credit not given for both 2120 and 3210.


3510 Not-for-Profit Accounting (3) Theory and practice of budgeting, financial and managerial accounting and analysis of planning and control and auditing for not-for-profit entities. Not available to students majoring in accounting. Prereq.: 2130 or 3210.

4110 Principles of Auditing (3) Role of auditing in society, professional auditing standards, auditor's legal and ethical responsibilities, internal control, use of statistical sampling, audit evidence, and reporting. Prereq.: 3130 with a grade of C or better. 4530. Prereq. or coreq: Stat. 4415.

4120 Advanced Auditing (3) Case-oriented course including audit of specific assets, liability, revenue, and expense accounts, with emphasis on reporting, data processing, statistical sampling, and internal auditing, and auditing for not-for-profit entities. Not available to students majoring in accounting. Prereq.: 2130 or 3210.

4140 Advanced Financial and Fund Accounting (3) Analysis of issues and alternatives in advanced problem areas including business combinations, consolidated financial statements and accounting for not-for-profit organizations. Prereq.: 3130 with a grade of C or better.

4230 Advanced Managerial Accounting (3) Use of accounting data in planning models, incorporating uncertainty into budgets and performance reports, performance measurement of decentralized operations. Prereq.: 3220 with a grade of C or better. 4530. Prereq. or coreq: Stat. 4700.

4430 Advanced Federal Taxes (3) Fundamental problems of federal taxation with emphasis on alternatives available for reporting taxable income. Prereq.: 3130 and 3430 with a grade of C or better in both courses.

4630 Analysis and Design of Information Systems (3) General systems concepts, flow charting, planning and implementation of systems studies, determination of systems objectives, development and evaluation of design alternatives, implementation, documentation, and control. Prereq.: Computer Science 2100 or equivalent and consent of department head.

GRADUATE
See page 81 for information on graduate programs. Consult the Graduate Catalog for listing of graduate level courses.

Business Law (216)

4110 Environmental Business Law (3) Principles of business law comprising legal environment appropriate to common law areas including business combinations, consolidated financial statements and accounting for not-for-profit organizations. Prereq.: 3130 with a grade of C or better.

4230 Advanced Managerial Accounting (3) Use of accounting data in planning models, incorporating uncertainty into budgets and performance reports, performance measurement of decentralized operations. Prereq.: 3220 with a grade of C or better. 4530. Prereq. or coreq: Stat. 4700.

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4430 Advanced Federal Taxes (3) Fundamental problems of federal taxation with emphasis on alternatives available for reporting taxable income. Prereq.: 3130 and 3430 with a grade of C or better in both courses.
national trade, barriers to trade, regional trade associations. Prereq: 2520.

3220 Principles of Economic Development (3) Theory of economic growth and application to empirical problems in developing areas on local, regional, national, and international levels; technological, locational, and financial aspects of economic growth. Prereq: 2520.

3230 Regional and Urban Economics (3) Overview of regional and urban economic theory, industrial, commercial, and residential location; the economic basis for land use patterns and central places; regional structure, growth, change, and development; national and international issues for regional economic development. Prereq: 2520.

3240 Economic History of the United States (3) Historical developments in agriculture, communications, transportation, banking, and trade, and changes in governmental economic policy. Prereq: 2520.

3250 Economic History of Europe (3) Beginnings of capitalism in medieval Europe, expansion of Europe and dominance of mercantilism in early modern times, mechanization of industry, changes in agricultural organization, and growing importance of commerce in the 19th century; two world wars and their economic consequences. Prereq: 2520.

3310 Comparative Economic Systems (3) Description and analysis of economic goals, institutions and policies in different countries with emphasis on alternative organizational and structural arrangements. Systems examined will include Soviet-type economies. Prereq: 2520.

3340 Government and Business I (3) Microeconomic objectives and alternative public policies for their achieve- ment; prevention of monopoly and concentration through the antitrust laws; direct regulation of business performance. Prereq: 2510.

3341 Government and Business II (3) Topics in antitrust policy, direct regulation, and other forms of social control; regulating information, product and manage-

3410 Principles of Labor Economics (3) Supply of and demand for labor; market wage determination; application of analysis to issues such as minimum wage laws, discrimination, unemployment, inflation, collective bargaining, income distribution and human resources policy. Prereq: 2520.

3420 Principles of Labor Economics II (3) American labor history, structure and philosophy of contemporary collective bargaining, and dispute settlement.

4000 Special Topics (3) Student-generated course offered at convenience of department upon student initiative, subject matter and content determined by students and instructor with approval of department. Prereqs determined by department each time course is offered. Numerical grade is given to law students. May be repeated for credit.

4130 Business Cycles (3) Fluctuations in income, employment, prices, and output in the economic system; subjects discussed are historical facts concerning booms and depression, statistical methods for analyzing business fluctuations, theoretical explanations of cycles, and policies that have been proposed to combat them. Prereq: 3120 or consent of instructor.

4150 History of Economic Thought (3) Development of economic thought, tools of analysis, and econom- ics as a social science, together with an analysis of socioeconomic conditions which influenced this development. Period covered: 1776 through 1936. Prereq: 2510-20 and consent of instructor.

4170-80 Introduction to Mathematical Economics (3, 3) Application of mathematical methods in theoretical study of micro and macro economic phenomena. Designed for undergraduate students who have limited training in analytic geometry and calculus. Must be taken in sequence. Prereq: Economics 3110 and Math- ematics 1840-50, or equivalent.

4230 Problems in International Trade and Economic Development (3) Problems or problem areas of current importance in international economics and economic development. Prereq: 3210 or 3220.

4231 The Political Economy of Latin America (3) Description, analysis, and comparison of major economic problems and policies of Latin American countries. (Same as Latin American Studies 4231.)

4232 The Political Economy of Asian Development (3) Description, analysis, and comparison of major economic problems and policies of some Latin American, China, and Southeast Asian countries.

4233 The Political Economy of the Soviet Union and Eastern Europe (3) Analysis of the major economic strategies, policies, and problems of the Soviet Union and Eastern Europe.

4260 Economics of Resources and Environmental Policy (3) Analysis of environmental policy and allocation of resources. Benefits and costs of development of natural resources and impacts of growth on environment. Prereq: 2520.

4350 Industrial Organization Analysis (3) Monopoly and competition in the United States economy; market structure, business behavior, and economic performance and their interrelationships. Prereq: 2510.

4420 Economics of Human Resources (3) Analysis of human resource development and examination of policies aimed at their solution. Problems discussed may include unemployment, edu-

4430 Labor Legislation (3) Economic background and effects of governmental regulation of labor relations, with emphasis on detailed examination of National Labor Relations Act as amended. Prereq: 3420.

4440 Labor Legislation (3) Social insurance, welfare and governmental regulation as remedies for the prob-

4510 Monetary Theory and Policy (3) Role of money and the money supply in controlling inflation and deflation, the impact of monetary and fiscal policies on aggregate demand, and the effects of governmental regulation of the money supply. Prereq: 2520.

4520 Commercial Banking (3) Analyzes key role of financial institutions and markets where they study of financial institutions and markets where they role in running profitable bank in rapidly changing eco-

4550 Public Finance (3) Taxation and other revenue systems, problems of collective consumption, exter-

4760 Public Expenditure Evaluation (3) Benefit-cost analysis, public sector investment criteria, and the social cost of federal government spending.

4770 State and Local Finance (3) Emphasis on reve-

4990 Independent Study (1-4) Offers qualified stu-

GRADUATE

See page 81 for information on graduate programs. Consult the Graduate Catalog for listing of graduate level courses.

Finance

Professors:

W. W. Dotterweich (Chairman), Ph.D. Pennsylvania; L. P. Anderson, Ph.D. Wisconsin; W. C. Goolsby, Ph.D.; C. P. White (Emeritus), Ph.D. Pennsylvania.

Associate Professors:

A. L. Auclier, Ph.D. Iowa; T. P. Boehm, Ph.D. Wash- ington; D. Choi, Ph.D. Pennsylvania State; J. M. Wachowicz, Jr., Ph.D. Illinois (Urbana), C.P.A.

Assistant Professors:

R. J. Clayton, Ph.D. Georgia; M. C. Erhardt, Ph.D. Georgia Tech.; J. P. Ogden, Ph.D. Purdue; R. A. Weir, Ph.D. North Carolina.

Wm. Vogt Professor of Insurance.

Distinguished Chaired Professor of Banking and Finance.

Prerequisites: Accounting 2110-20, Economics 2510-20, and Statistics 2100 for all courses in Finance.

Finance (349)


3110 The U. S. Financial System (3) Examines U. S. financial system as environment which affects busi-

3120 Portfolio Analysis and Management (3) Principles underlying construction and management of investment portfolios. Topics include: measures of investment risk; evaluation of portfolio performance; portfolio revision; and international diversification. Prereq: 3110.

4110 International Financial Management (3) Rigor-

4150 Financial Markets and Institutions (3) Intensive study of financial institutions and markets where they transact. Analysis of factors that influence the levels of interest rates; analysis of differences in rates on different securities; mathematical aspects of price and yield of international financial markets. Prereq: 3510 and 3510.

4520 Commercial Banking (3) Analyzes key role of banks in economy and management issues involved in running profitable bank in rapidly changing eco-

4650 Theory of Financial Management (3) Analyzes important decision-making topics in financial man-

4660 Problems in Financial Management (3) Appli-

4700 Business and Public Risk Management (3) Identification and assessment of pure risks facing business or governmental unit associated with proper-


Management (625)
Junior standing is prerequisite to all management courses.
3010 Principles of Management (3) Analysis of basic management functions of planning, organization, and controlling. E.
3110 Production Management (3) Analysis of production techniques. Prereq: Math 2100 or 3450. Not available for management majors with concentrations in operations or personnel. E.
3111 Operations Management (3) Analysis and synthesis of concepts and techniques for decision making in the operations function. Integration of the operations function with other business functions. Prereq: Management Science 2110-20. Cannot be taken for credit by students who have credit for Management 3110. F, W.
3330 Experiences in Organizational Behavior (3) General concepts and personal experience, interpersonal and organizational communication, practice and evaluation. F, W, S.
4610 Personnel and Human Resources Management (3) Processes of effective planning for recruitment, selection, development, and maintenance of human resources. Emphasizes universality of personnel function. Not available for management majors. Cannot be taken for credit by students who have credit for Management 4460.
4650 Survey of Administrative Services (3) Introduction to the basic functions of the modern automated office: information creation, production, duplication, storage/retrieval, and distribution. Career opportunities in the managing of information in business. Students in the Office Systems Concentration may not receive credit for Mgmt. 3500. F, S.
4510 Management of the Automated Office (3) Principles of management applied to the basic office information system: implications of automation on equipment, procedures, and personnel in the performance of basic office functions of origination, production reprographics, and distribution. Prereq. Mgmt. 3010, Bus. Admin. 2750 or Comp. Science 1410 or consent of instructor. F, W.
4520 Design and Control of Records System (3) Information storage/retrieval function of the office. Planning and organization of a records system configuration including records maintenance procedures. Requirements for personnel and equipment. Prereq. Mgmt. 3010, Bus. Admin. 2750 or Comp. Science 1410. W, S.
4500 Management Information Systems (3) Introduction to management information systems. Analysis of organizational information needs, management decision relations, information and systems design, organizational impact, and use of information systems. Prereq.: Comp. Science 1410 and Mgmt. 3010. F, W, S.
4120 Cases in Office System Management (3) Synthesis of office systems concepts through case study method, written reports and oral defense of alternative strategies. Human problems as they relate to management of automated office heavily emphasized. Prereq. Mgmt. 3510, 3520, 4320, 4110 or consent of instructor. W, S.
4210 Managerial Strategy and Tactics Applications (3) General business simulation is used for information processing to provide experience in organization and analysis of managerial data. Emphasis on skills related to oral and written justification of results. Prereq. Senior standing or consent of instructor. F, W, S.
4230 International Business Management (3) Analysis of factors affecting the management in international business activities. W.
4320 Organization Structure and Behavior (3) Structure and behavior in organization: models, concepts, and problems. F, W, S.
4410 Operations Control (3) Analysis of the operations control function. Techniques of short-term forecasting; material and capacity requirements planning; integration of scheduling and operations flows into the total operations function. Prereq. 3111. W, S.
4420 Advanced Industrial Problems (3) Cases in production management. Prereq. 15 hrs. in major including 4410. F, S.
4460 Organizational-Industrial Psychology (3) Analytical and empirical approach to application of psychological tools and to personnel research as reported in professional journals. Prereq: Statistics 3110 or (Statistics 3310 with consent of instructor). Cannot be taken for credit by students who have credit for Management 3460. (Same as Psychology 4460.) S.
4470 Job Analysis and Evaluation (3) Job evaluation as basis for control of wages and salaries. Prereq. 4460. F, W, S.
4520 Evaluation of Personnel Programs (3) Methodologies for criterion development analyzed in areas of selection, training, job evaluation, safety, and labor relations; performance evaluation emphasized. Prereq. 4460-70; Statistics 3110.
4540 Personnel Problems Seminar (3) Case problems in personnel analyzed, applying experimental methods to developmental and operational research as reported in professional journals. Prereq: 4460-70; Statistics 3110.
4600 Database Management in Business (3) Application, logical structure, and implementation of database systems. Management of data resources to effective support systems in organizations. Prereq: Computer Science 3150.
4610-20 Management Science (3, 3) Applications of mathematical and statistical techniques to problems of production management. Prereq: 30 hours of mathematics and statistics, and consent of instructor.
4710 Enterprise Planning and Control (3) Concepts and cases on managerial functions of planning and control in business firm or not-for-profit organization. Emphasis on formal long-range strategic planning in changing environment. Team project to develop long-range plan for hypothetical enterprise. GRADUATE
See page 81 for information on graduate programs. Consult the Graduate Catalog for listing of graduate level courses.

Management Science Programs

Professors:
R. S. Garfinikel (Chairperson), Ph.D. Johns Hopkins, J. K. Ho, Ph.D. Stanford.
Assistant Professor:
D. R. Fox, Ph.D. Purdue.

Management Science (627)
2110 Deterministic Decision Models (3) Introduction to quantitative techniques used to solve deterministic problems. Topics include problem formulation, computer solutions, simplex method, post optimality analysis. Prereq: Mathematics 1560; Computer Science 1410 or Business Administration 2750. E.
2120 Stochastic Decision Models (3) Introduction to quantitative techniques for problems involving probabilistic outcomes. Topics include decision theory, Markov chains, queuing, simulation. Prereq: Statistics 2100 and Mathematics 1560.
GRADUATE
See p. 81 for information on graduate programs. Consult the Graduate Catalog for listing of graduate level courses.
Marketing and Transportation

Marketing and Transportation

Proponents:
D. J. Barnaby (Chairman), Ph.D.; Purdue;
F. W. Davis, Jr., Ph.D.; Michigan State; G. N. Dicer, D.B.A.; Indiana; E. O. Dille (Emeritus), Ph.D.; Ohio State;
J. L. Frye (Emeritus), Ph.D.; Florida; F. L. Hendriks (Emeritus), Ph.D.; North Carolina (Chapel Hill);
C. J. Linton (Emeritus), Ph.D.; Pennsylvania State;
W. B. Locander, Ph.D.; Illinois;
R. A. Mundy, Ph.D.; Pennsylvania State; E. P. Patton, Ph.D.; North Carolina (Chapel Hill);

Associate Professors:
E. R. Cadotte, Ph.D.; Ohio State; J. H. Foggan, Ph.D.; Indiana;
R. L. Jenkins (Associate Dean), Ph.D.; Ohio State;
J. R. McMillin, Ph.D.; Ohio State;
R. C. Reizenstein (Associate Dean), Ph.D.; Cornell.

Assistant Professor:
S. F. Gardisi, Ph.D.; Houston;
J. O. Rentz, Ph.D.; Georgia;
D. W. Schumann, Ph.D.; Missouri (Columbia);
P. S. Speck, Ph.D.; Auburn.

Marketing (632)

Economics 2510-20 or the equivalent are prerequisite to all courses in Marketing: Marketing 3110-20 or the equivalent are prerequisite to all other 3000 or 4000-level marketing courses.

3110 Introduction to Marketing (3) Marketing in our economy; Influence of environment: social, economic, ethical, legal, and technological forces on marketing activities. Assessment of dimensions of the firm's marketing program. Prereq: Economics 2510-20. E.

3120 Marketing Management (3) Analysis of marketing management. Identifying market opportunities, planning marketing programs, and implementing competitive strategies. Prereq: 3110. E.

3190 Marketing Channels (3) Macromarketing systems approach from viewpoint of decision maker. Examination of inputs, outputs, organizations, and goals of marketing systems. Consideration of competitive marketing systems. Prereq: 3110. Prereq. or coreq: 3110-20. E.

3410 Buyer Behavior (3) Industrial and ultimate consumer purchasing behavior. Theories underlying buying decision processes. Marketing management and pivotal concepts in behavioral sciences. E.

3510 Marketing Research (3) Planning and obtaining information for marketing decision making. Information gathering and presentation methods, analysis, and interpretation procedures are integrated to serve the decision maker. Prereq: 3110. E.

4140 Sales Force Management (3) Examination of fundamental factors influencing sales force, including personal selling concepts. Particular emphasis on role of sales organization in marketing program. F, W, S.

4150 Advertising Management (3) Mass communications theories and concepts. Advertising and its relationship to marketing program of firm. E.

4230 International Marketing (3) Management of international marketing activities of the firm. Advertising, pricing, and distribution strategies of foreign markets and major developments in international marketing. Prereq or coreq: Business Administration 3110 or consent of instructor. F, W, S.

4610 Market Opportunity Analysis (4) Developing an understanding of various approaches available for evaluating market opportunities that may exist within a market. Emphasis on relationship between analysis of markets and marketing decision making. Topics covered will include market analysis. market orientation/consumer behavior strategies, alternative sources of market information, information analysis techniques, interpretation of marketing information, and forecasting. Prereq: 3510. F, W, S.

4710 Marketing Decisions and Strategies (4) Pragmatic orientation to application of advanced, analytical con-
3460 Probability and Statistics for Engineers II (3) Hypothesis testing, introduction to analysis of variance, simple linear regression, multiple linear regression. Prereq: 3450. E.


4310 Regression Analysis (3) Linear regression and correlation, multiple regression, stepwise methods, polynomial regression, use of dummy variables. Use of standard regression computer programs. Elementary theory and applications. E. Prereq: six hours in statistics.

4415 Sampling Techniques and Theory (3) Procedures used in probability sampling for a variety of arrangements of statistical universes and development of estimators and standard errors associated with sampling schemes. Some properties of estimators. Determination of sample size. Not available for credit to students with credit for 3410. E. Prereq: six hours in statistics.

4500 Statistical Inference (3) Properties and inferential applications of the common probability distributions in statistics. Goodness-of-fit tests; non-parametric statistics including ranking methods for two independent samples. Elementary theory with applications. Prereq: 3460 or equivalent. W.

4600 Analysis of Variance and Experimental Design (3) Analysis of variance techniques for one way and factorial models. Post hoc procedures. Design considerations for completely randomized, randomized block, factorial, hierarchical and split plot experiments. Prereq: 3460 or equivalent.

GRADUATE
See p. 81 for information concerning the graduate programs. Consult the Graduate Catalog for listing of graduate level courses.

Interdepartmental Unit
Business Administration (205)

2750 Electronic Data Processing (3) Development of skill in Fortran programming with special emphasis on business applications. Prereq: Math 1560 or 1860 or equivalent. May not be taken for credit if Comp. Science 1410 or Office Admin. 2750 has been completed. E.

3110 Introduction to International Business (3) A survey of the strategic implications of conducting business operations in an international context. Emphasis on the analysis of relevant cross-national environments including cultural, political, economic and legal characteristics. Prereq: Economics 2520 or consent of instructor.

3300 Business Career Planning and Placement (1) Exploration of career opportunities in business. Process of making the career decision, preparing for and conducting a job campaign. Using the Placement Office. S/NC only. Prereq: satisfactory progression to upper-division level in Business or Liberal Arts Business Minor.

3700 Essentials of Financial Planning (3) Introduction to individual financial planning through study of basic tools, money management, decision making, services of financial institutions, asset protection, insurance applications, and financial planning goals.

3800 Introduction to Real Estate (3) Survey of five fundamental areas of concern to real estate industry and real estate analysis: 1) economics of real estate market; 2) legal environment of real estate; 3) real estate finance and financial institutions; 4) appraisal; and 5) real estate investment. Credit not given for both 3800 and Real Estate 3610. (Same as Urban Studies 4830.)

4310 Business Letter Writing (3) Principles, practices, and mechanics of effective business letters and memoranda; principles applied by solving communication cases; emphasis placed on letters and memos as initial sources of ideas in communications systems of the business firm. May not be taken for credit by students who have completed Office Admin. 4310. F, W, S.

4320 Business Communications: Reports (3) Concept of communications applied to business reports. Process of collecting/anlyzing pertinent business information and the appropriate presentation of business reports as a basis for executive decision making. Computer technology utilized. Prereq: Junior standing. May not be taken for credit by students who have completed Office Admin. 4320. F, W, S.

4430 Business Policy (3) Analysis of business problems and managerial decision making through case studies and written reports. Prereq: Core requirements except Business Law (see page 78) and senior standing. Open only to students who have been admitted to the Upper-Division programs of the College of Business Administration. E.

4608 Honors: Corporate Executive-in-Residence Seminar (3) Interaction with top corporate executives from a wide spectrum of business disciplines, (Accounting, Finance, Management, Marketing, Transportation, etc.). Discussion of domestic and international strategic planning as it is applied in major U.S. corporations. The focus of executive presentations and small group discussion will be on goods and services in consumer and industrial settings. Prereq: Senior Standing, Finance 3120-30, Mgmt. 3010, 3110, Marketing 3110-20, and consent of instructor.

4610 Seminar in Small Business Assistance (3) Application of classroom learning to problems of small business in the community. Student is given opportunity to apply business concepts and develop analytical skills. Upon completion of selected readings relevant to small or minority enterprise, students are assigned a project on basis of interest, ability, and experience. Students work in teams under supervision of a participating professor within the College of Business Administration. Approval for enrollment must be secured from instructor. May be repeated. Maximum credit 9 hours.

4810-20-30 Problems in Office Administration (1-3, 1-3, 1-3) Subject and title vary each quarter. May be repeated. Maximum 3 hrs. each course. May not be taken for credit by students who have completed Office Admin. 4810-20-30.

GRADUATE
See page 81 for information on graduate programs. Consult the Graduate Catalog for listing of graduate level courses.

Center for Business and Economic Research
STAFF
D. A. Hake (Director), Research Associate Professor, Ph.D. Tennessee
K. E. Quindry (Emeritus), Research Professor, Ph.D. Kentucky
W. F. Fox, Associate Director, Research Associate Professor, Ph.D. Ohio State
J. W. Mayo, Research Assistant Professor, Ph.D. Washington University (St. Louis)
B. B. Vickers, Research Associate, B.A. Mary Washington
P. A. Price, Research Associate, B.S. Tennessee
M. J. Cornelius, Research Associate, M.S. Tennessee
C. E. Schmidthammer, Research Associate, B.S. Pittsburgh

STAFF
A. I. Fareed, Coordinator, Research Associate Professor, Ph.D. Vanderbilt
W. A. Wolf, Research Associate Professor, Ph.D. Columbia University
D. A. Hake, Director, Ph.D. Michigan State
B. B. Vickers, Research Associate Professor, Ph.D. Yale
K. E. Quindry (Emeritus), Research Professor, Ph.D. Kentucky
J. W. Mayo, Research Assistant Professor, Ph.D. Washington University (St. Louis)
B. B. Vickers, Research Associate, B.A. Mary Washington
P. A. Price, Research Associate, B.S. Tennessee
M. J. Cornelius, Research Associate, M.S. Tennessee
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K. E. Quindry (Emeritus), Research Professor, Ph.D. Kentucky
J. W. Mayo, Research Assistant Professor, Ph.D. Washington University (St. Louis)
B. B. Vickers, Research Associate, B.A. Mary Washington
P. A. Price, Research Associate, B.S. Tennessee
M. J. Cornelius, Research Associate, M.S. Tennessee
C. E. Schmidthammer, Research Associate, B.S. Pittsburgh
The college curriculum offers academic majors in advertising, broadcasting, journalism, and public relations. Through core introductory courses, students receive a basic view of the nature of communications. The freedom of electives provided within the programs permits students to develop specialized interests in a variety of fields. In consultation with an advisor, they may plan individual programs leading to newspaper, magazine, radio, television, public relations, or advertising careers. They may prepare for careers in agricultural or industrial journalism. They may select related courses to develop a specialty in writing news of science, government, and business. Others may elect courses to prepare themselves as writers on foods, fashions, and home interests.

Students in other divisions of the University may associate with the College of Communications as pre-majors as soon as they pass the Qualification Test. Students must be associated with the College during their last 45 hours prior to graduation.

Students from other colleges who are not seeking a degree in communications but who wish to take communications courses as electives or in fulfillment of requirements in other colleges may do so, but must file a program in advance with the Communications Advising Center.

Curriculum

Entering freshman are associated with the College of Communications as pre-majors. They may progress to a major in the School of Journalism or the departments of Advertising or Broadcasting after they:

1. Pass a Qualification Test covering proficiencies in spelling, grammar and typing. The test may be taken three times. If a student has not passed the test after three attempts, he or she must wait six months before attempting to pass the test again. Subsequent attempts will not be permitted without the written permission of the dean.

2. Pass, with at least a 2.0 average, the following courses or equivalent honors courses normally taken in the freshman year:
   - English 1010 or 1011; 1020; 1032
   - 12 hours of natural science
   - History 1510-20
   - Communications 1110
   - 8 or 9 hours of foreign language

3. Achieve at least a 2.3 average in all work attempted, including the courses mentioned in (2).

4. Complete the core courses required for each major, with at least a B in one course, and no grade below a C. The core courses for each major are:
   - Advertising — Communications 1110, Journalism 2215, Advertising 3000
   - Broadcasting — Journalism 2215, Advertising 3000, Broadcasting 2750
   - Journalism — Journalism 2215, Journalism 2220

Journalism students who otherwise meet all requirements may apply for admission as soon as they make a B in one of the core courses.

Students who have not met these standards may remain associated with the College as pre-majors but may not enroll in courses in the College numbered above 3000. Students normally will complete courses required in their program but offered by other colleges while they are completing their core course requirements. In order to make normal progress, pre-majors should progress into a major program by the end of their sophomore year.

Once students progress from pre-major status to a major with a school or department, they must earn at least a C grade in all College of Communications courses and maintain at least a 2.3 cumulative average to continue with subsequent courses in the College and to fulfill graduate requirements.

Students from other colleges within the University may associate with the College of Communications as pre-majors as soon as they pass the Qualification Test. Students must be associated with the College during their last 45 hours prior to graduation.

Students from other colleges who are not seeking a degree in communications but who wish to take communications courses as electives or in fulfillment of requirements in other colleges may do so, but must file a program in advance with the Communications Advising Center.

Association and Progression Requirements

Association with the College of Communications may take place when students first enter UTK, or after students have completed freshman and sophomore courses, and the core courses for a specific major. At least 45 quarter hours in residence in the college is required for a degree. Those interested in Communications should obtain a copy of the Program Planning Guidebook available from the College of Communications Advising Center.
transcript to the college Advising Center and should obtain approval in advance for a program of instruction.

Students who have completed the basic courses in the college may earn practicum credit for professional work in the field. Approval of the advisor and the department head must be obtained before such work is begun.

**Satisfactory/No Credit Option**

The purpose of this option is to encourage students to venture beyond those courses in which they usually do well and, motivated by their own intellectual curiosity, to explore subject matter in which performance may be somewhat less outstanding than work in preferred subject fields.

This option applies only to general elective courses. No course that is a part of the specific requirements of the College of Communications or the student's major department can be taken under this option. For example, social science, humanities and speech electives required by the various departments cannot be taken under this option.

Courses earning a “satisfactory” grade will count as hours for graduation but not for calculating the grade point average. A student who wishes to take a S/NC course must indicate this at the time of registration. Under no circumstances may a student change from S/NC to regular credit or from regular credit to S/NC after the deadline for adding courses.

**Course Load**

The maximum number of hours an undergraduate can take without special permission is 17 hours. Permission to take 18 or more hours must be obtained from the assistant dean for undergraduate studies or the undergraduate chairman or school director.

**Cooperative Program**

The college, in cooperation with the University-wide Undergraduate Cooperative Education Program, has developed a limited cooperative program with the media, advertising and public relations agencies, and the other departments of business organizations where interested students may combine their education with a productive work experience. At present, only a limited number of such opportunities are available. Although other arrangements can be made, a student will enter the program only after completing one or two quarters at the University. A student will alternate with another student, with one working full-time for the employer for one quarter while the other person is in school. The typical program is arranged for a five-year period, with the student spending the final three quarters of the senior year on campus.

The Cooperative Program gives a student an opportunity to gain practical experience. It also helps to develop a sense of responsibility and cooperation, creates greater interest in and stimulates academic studies and provides part of the student's expenses. It also may lead to permanent employment after graduation. Interested students should contact the Dean's office during their first quarter on campus.

The Edward J. Meeman Distinguished Professorship

As a result of a $200,000 grant to the School of Journalism in 1970 by the Edward J. Meeman Foundation, outstanding journalists and journalism educators are brought to the campus as distinguished professors. The professorship was named for The Memphis Press-Scimitar and founding editor of The Knoxville News, which later became the News-Sentinel.

Kelly Leiter, former columnist, feature writer and assistant city editor of The Chicago Daily News and the Indianapolis News, is the first permanent fulltime faculty member to hold the position. The late Turner Catledge, former executive editor of The New York Times, John Hohenberg, longtime administrator of the Pulitzer Prizes and outstanding teacher at the Columbia University Graduate School of Journalism, Martin Ochs, former editor of the Chattanooga Times, and William J. Zima, former editor of the Des Moines Register, have held this professorship.

**Equipment and Facilities**

The Communications and Extension Building provides extensive facilities for communications instruction. The college has laboratories with special equipment for instruction in writing, editing, photography, advertising and broadcasting. In addition, advanced students gain experience through summer internships or through the University's general program of publishing and broadcasting. The Office of Public Relations, campus publications such as the Daily Beacon, and the college radio station WUTK provide practice for communications majors. The Tennessee Press Association and Tennessee High School Press Association, with headquarters at the University, present opportunities for special work and study.

**Requirements for Graduation**

The Bachelor of Science in Communications is awarded to majors who complete a program of 194 hours prescribed under departmental requirements listed below. At least 140 of these hours must be taken in courses other than the major and related communications fields. At least 27 of the hours in the major must be taken at The University of Tennessee, Knoxville. Normally, no more than 22 transfer credits in the major will be applied to the 194 hours.

**HIGH SCHOOL DEFICIENCIES**

**AMERICAN HISTORY**

Students lacking a high school credit of American history must take nine quarter hours of American history in addition to History 1510-20. Those hours may be applied to the general electives requirement.

**FOREIGN LANGUAGES**

One year of foreign language on the college level is required. Students with two years of high school language credit in one language will not receive credit for college-level work in the same language at the first year level.

**NATURAL SCIENCE**

Students must take 12 hours of the following in any combination: Astronomy 1510-20, 30; Biology 1210-20-30; Botany 1110-20; Chemistry 1510-20-30; Geology 1410-20-30; or Physics 1410-20-30 or 1210-20-30.

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**SOCIAL SCIENCE AND HUMANITIES**

Social science electives may be selected from anthropology, economics, political science, psychology, history, sociology, anthropology, classics (except grammar and composition courses), and upper-division philosophy and religious studies courses. Journalism majors may also take some black studies and women's studies courses as social science electives with consent of their advisor. Humanities electives may be selected from English, speech and theatre (not performance courses), music (except applied music), art (except applied art), classics (except grammar and composition), language culture courses (not grammar and composition), and upper division philosophy and religious studies.

**GENERAL ELECTIVES**

All electives are subject to the advisor's consent. Students are advised to consult the University's degree requirements as stated in the front section of this catalog as well as the requirements for the college or department.

**Undergraduate Curriculum**

**Advertising**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
<td>ENGLISH 1010-20, 1032</td>
<td>12</td>
<td>9</td>
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<tr>
<td>Natural science electives</td>
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<tr>
<td>History 1510-20</td>
<td>8</td>
<td>8</td>
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<tr>
<td>Foreign language</td>
<td>8-9</td>
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<tr>
<td>Sociology 1510</td>
<td>4</td>
<td></td>
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<tr>
<td>Communications 1110</td>
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<td>Economics 2510</td>
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**Sophomore**

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<tr>
<td>Speech 231</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Economics 2520</td>
<td>4</td>
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<td>ENGLISH 1510</td>
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<tr>
<td>Mathematics 1540-50</td>
<td>4</td>
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<td>Marketing 3110-20</td>
<td>6</td>
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<tr>
<td>Psychology 2520, 2530</td>
<td>8</td>
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<td>Journalism 2215</td>
<td>4</td>
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<td>Art 2516</td>
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**Junior**

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<td>Political Science 2510-20</td>
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<tr>
<td>Anthropology elective</td>
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</table>
Communications/College of Communications 89

**Broadcasting**

**LOWER-DIVISION CURRICULUM**

(Required of all broadcasting majors)

**Freshman**

*English 1010-20, 1032 * 9

*General science electives * 12

*History 1510-20 * 8

*Social science and/or humanities electives * 8-9

*Communications electives * 12

*General electives * 6

**Total: 194 hours**

*See Requirements for Graduation.

**NEWS-EDITORIAL SEQUENCE**

**Freshman**

*English 1010 or 1011; 1020; 1032; 1042 * 9

*History 1510-20 * 8

*Social science and/or humanities electives * 8-9

*Communications electives * 12

*General electives * 6

**Total: 194 hours**

*See Requirements for Graduation.

**JOURNALISM**

**NEWS-EDITORIAL SEQUENCE**

**Freshman**

*English 1010 or 1011; 1020; 1032 * 9

*History 1510-20 * 8

*Natural science electives * 12

*Senior electives * 6

**Total: 194 hours**

*See Requirements for Graduation.

**MANAGEMENT SEQUENCE**

**Junior**

*Communications 1110 or 1118 * 3

*Sociology 1510-20 * 8

*Foreign language * 8-9

*History, liberal arts electives * 11

*General electives * 6

**Total: 194 hours**

**MANAGEMENT SEQUENCE**

**Senior**

*Liberal arts electives * 11

*Business Law 4110, 4120 * 8

*Foreign language * 8-9

*History, cultural affairs, consumer affairs, international studies * 8

*General electives * 6

**Total: 194 hours**

*See Requirements for Graduation.

**PRODUCTION/PERFORMANCE SEQUENCE**

**Junior**

*Communications electives * 12

*Speech electives * 12

*Upper-division social science and/or business electives * 14

**Total: 194 hours**

**departments of Instruction**

**Communications (259)**

**Professors:**


**Associate Professors:**


**1100 Introduction to Communications (3) Nature, functions, responsibilities of mass communications media and agencies. Survey of newspapers, magazines, radio, television, film, advertising, public relations, press associations and specialized publications. Open to majors who have had no communications courses and to non-majors below junior level. E.**

**1118 Honors: Introduction to Communications (3) Nature, functions and responsibilities of mass communications media and agencies, with in-depth study of special problems. Open only to those majors selected on the basis of placement scores and high school record. W.**

**GRADUATE**

Consult the Graduate Catalog for listing of graduate level courses.
Advertising (012)

Professors:
J. B. Haskins, Ph.D. Minnesota; R. Joel (Emeritus).

Associate Professors:
J. W. Frost, M.B.A. Harvard; D. Jackson, M.S. Tennessee; R. E. Taylor (Head), Ph.D. Illinois.

Assistant Professor:

3000 Advertising Principles (3) Advertising in business and society. Types and functions of advertising. Fundamentals of broadcast and publications advertising. Stress on communications aspects of advertising. Prereq: Sophomore standing or higher. Prereq: Communications 1110 or 1118 for communications majors only. E.

3630 Advertising Copy and Layout (4) Ideas and their translation into persuasive words and pictures. Principles and techniques of copy and layout. Lecture and labs. Prereq: 3000 with grade of C or better and Art 2516 or consent of department head. F, W, S.

3650 Basic Advertising Research (3) Use of research in solving media, creative, and managerial problems in advertising. Introduction to secondary information sources and primary research methodology. Prereq: 3000 with grade of C and Math 3000, or consent of department head. F, W, S.

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. W.

4000 Advanced Advertising Copy and Layout (4) Creative strategy and execution of advertisements for mass media. Problems in idea creation for advertisers. Lecture and labs. Prereq: 3630 with grade of C or better or consent of department head. F, W, S.

4360 Advertising Media (3) Media markets and audiences. Evaluation of media in relationship to communications needs of advertisers. Prereq: 3650 with grade of C or better, or consent of department head. F, W, S.

4460 Cases and Problems (3) Case approach to study of advertising problems. Analysis of campaigns and trends. Prereq: 3630, 3650, and 4360 with grades of C or better, or consent of department head. F, W, S.

4470 Advertising Campaigns (4) Application of theory in planning and execution of campaigns. Market and consumer research: development and allocation of budgets. Choice of appeals and approaches; media selection; preparation of advertisements. Prereq: 4000 and 4360 with grades of C or better, or consent of department head. F, W, S.

4510-20-30 Practicum (1, 1, 1) Prereq: Progression into the Department of Advertising as a major. S, NC, E.

4970 Independent Study (3) May be repeated. Maximum credit 6 hrs. E.

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

Broadcasting (202)

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

Associate Professors:
B. A. Moore, Ph.D. Ohio; I. G. Simpson, M.S. Syracuse.

Assistant Professor:
G. C. Johnson, Ph.D., Southern Illinois; D. Ziegler, Ph.D. Southern Illinois.

Communication Specialist:
J. H. Carr, M.S. Tennessee.

2750 Introduction to Broadcasting (3) Theory, history, regulation, and economic aspects of broadcasting industry and its functions in society. Prereq: Communications 1110 or 1118 or consent of department head. F, W, S.

3360 Television and Radio Advertising (3) Principles of successful radio-television advertising; emphasis on media research, role structure, programming, creativity, television commercials. Prereq: 2750 or consent of department head. F, W, S.

3610 Radio-Television News (3) Theory and techniques of writing news and features for broadcast media. Editing and rewriting press association dispatches, gathering local news, recording interviews, and preparing newscasts and feature programs. 2 hrs. and 1 lab. Prereq: Journalism 2220 or consent of department head. F, W, S.

3650 Radio-Television Writing (3) Theory and techniques of writing broadcast scripts except news and dramas. Special events, interviews, musical scripts, radio talks, documentaries, and promotion material. F, W, S.

3670 Television News (3) Theory and techniques of portable video tape and film production for television. Ethical considerations; journalism and editing techniques; emphasis on news and information programs. Prereq: 3610 or consent of department head. 2 hrs. and 1 lab. F, W, S.

4010 Speech for Broadcasting (3) Fundamental broadcast conditions affecting the news announcer; pronunciation and oral interpretation of general American speech. Prereq: 3610 and Speech 2311 or consent of department head. F, W, S.

4020 Radio Production (3) Study of radio production, past and present. Familiarization with production tools and techniques. Group and individual production activities. Prereq: 3650 or 3610 or consent of department head. F, W, S.

4021 Advanced Radio Production (3) Application of the theories, techniques, and tools of radio production to create programming of a professional level of sophistication and quality. Prereq: 4020 or consent of department head. F, W, S.

4030 Television Production (3) Overview of elements of television production: cameras, sound, lighting, film videotape recording, optics, and studio control centers. Presented with the inexperienced and professional broadcast student in mind. Prereq: 4020 or consent of department head. F, W, S.

4040 Advanced Television Production (3) A semi-independent course in program origination, producing, directing, and performing with orientation to the professional broadcast student. Prereq: 4020 or consent of department head. F, W, S.

4510-20-30 Practicum (1, 1, 1) Prereq: Consent of department head. F, W, S.

4610 Broadcast News Operation (3) Theory and practice in covering local news and public affairs events for radio and television. Gathering and production of news broadcasts, using tools of broadcast newsmanship. 2 hrs. and 1 lab. Prereq: 3610 and 3870 or consent of department head. F, W, S.

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 department head. F, W, S.

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 3360 or consent of department head. F, W, S.

4970 Independent Study (3) May be repeated. Maximum credit 6 hrs. F, W, S.

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

School of Journalism (594)

Professors:
J. A. Crook (Director), Ph.D. Iowa State; P. G. Ashdown, Ph.D. Bowling Green; G. A. Everett, Ph.D. Iowa; J. B. Haskins, Ph.D. Minnesota; B. K. Leiter, Ph.D. Southern Illinois (Meeman Distinguished Professor).

Adjunct Professor: Alex Haley

Associate Professors:
J. N. Adamson, M.S. Tennessee; M. Miller, Ph.D. Michigan State; J. L. Morrow, Ph.D. Toledo; S. L. Puett, M.S. Tennessee; M. W. Singletary, Ph.D. Southern Illinois.

Assistant Professor:
M. L. Kern-Foxworth, Ph.D. Wisconsin.

Instructor:
C. E. Caudill, M.A. Ohio State; B. L. Hufford, M.Ed. Bowling Green.

2210 Writing for Mass Media (3) Principles and practice of writing for major types of mass communications media. Not available to majors in the College of Communications. Prereq: English 1010; 1020; 1031 or 1032 or 1033. F, W, S.

2215 Basic Writing (4) Information gathering and writing under deadline. Observation, interviewing, speech reporting for print and broadcast media. Grammar workshop. Prereq: English 1032, Communications 1110 or 1118 and college association tests (typing, spelling and grammar). E.

2220 Reporting (4) Methods of gathering and writing news for mass media. Emphasis on news and news features. Prereq: 2210 or 2215. F, W, S.


2710 Public Relations (3) Theories and principles of public relations. Overview of PR as a management tool of business, government, institutions, and organizations. Prereq: 2210 or 2215. E.

3110 Communications History (3) Development of newspapers, magazines, broadcasting, photography, film, and book publishing in America and their relationship to society. F, W, S.

3120 Writing Feature Articles (3) Selection of topics and practices in writing feature articles for newspapers, magazines, and company publications. Prereq: 2220 or consent of instructor. E.

3210 Advanced Reporting (3) Gathering and writing news in depth on current issues and concerns under deadline. Special emphasis on business news. Use of video display terminals. Prereq: 2220. F, S.

2220 News Editing and Display (3) Principles and practice in making up newspapers and magazines. Advanced work in copyreading, rewriting, and headline writing. Picture editing. 1 hr. and 2 labs. Prereq: 2220. F, S.

3310 Graphic Arts in Journalism (3) Survey of print and electronic media. Emphasis on the design, production, and computerization of written communication. Prereq: English 1010; 1020; 1031 or 1032. F, W, S.

3740 Graphic Arts in Journalism (3) Survey of print and electronic media. Emphasis on the design, production, and computerization of written communication. Prereq: English 1010; 1020; 1031 or 1032. F, W, S.

4010 Speech for Broadcasting (3) Fundamental broadcast conditions affecting the news announcer; pronunciation and oral interpretation of general American speech. Prereq: 3610 and Speech 2311 or consent of department head. F, W, S.

4020 Radio Production (3) Study of radio production, past and present. Familiarization with production tools and techniques. Group and individual production activities. Prereq: 3650 or 3610 or consent of department head. F, W, S.

4021 Advanced Radio Production (3) Application of the theories, techniques, and tools of radio produc-
rience in news writing and editing. May be repeated for credit. Prereq: 2230. Maximum 3 hours. E.

3720 Advanced Public Relations (3) Preparation of communications materials to gain support from various publics; planning public relations programs. Prereq: 2710. F, W, S.

3810 Specialized Publications (3) Editorial and design considerations for company publications and small magazines. Prereq: 2230 and 3310 or consent of instructor. W, S.

3910 Basic News Photography (3) Principles of photojournalism including historical perspectives and special techniques. Medium and small format reflex cameras used. Darkroom techniques for black-and-white photography. Prereq: Consent of instructor. E.

3990 Journalism Research Methods (3) Use of social science research methods in journalism with emphasis on survey techniques. Interpretation and communication of research findings to public. W, S.

4130 Editorial Writing (3) Analysis of editorial policies, practices, pages. Writing of editorials and columns, with emphasis on study and use of rhetorical devices and logic. S.

4150 Issues in Journalism (3) Topics vary. May be repeated. Maximum credit 6 hrs.

4310 Reporting Public Affairs (3) Reporting news of courts, politics, and government. State, county, and local coverage. Prereq: 2230 and senior standing. W, S.

4410 Mass Media and Society (3) Roles and responsibilities of mass media in society. Critique of mass media performance. Media codes and controls on the media. E.

4420 Newspaper Management (3) Daily and weekly business operations. Developments in newspaper management. S.

4510 Practicum in Journalism, (1-3) Supervised experience in news writing and editing. May be repeated for credit. Prereq: Senior standing or consent of instructor. Maximum 3 hours. E.

4560 Investigative Reporting (3) Investigative and interpretive reporting of complex or specialized subjects to place news in perspective or to clarify situations. Emphasis on writing for publication. Prereq: 2220.

4710 Public Relations Cases (3) Case studies and application of public relations principles to problems in business and industry, government, institutions, trades, and professions; solving problems in public relations situations. Prereq: 3720. F, W, S.

4810 Journalism in the High School (3) Functions and methods of publications. Staff organization, writing, and editing techniques, editorial problems, and business management. SU.

4910 News and Feature Photography (3) Advanced principles and methods in black-and-white photography. Emphasis on news and feature photographs and picture stories. Prereq: 3910 or consent of instructor.

4950 International Communications (3) Communication of news and opinion among nations and under varying types of political and economic systems; world news organizations; the press as a factor in international affairs; barriers to the flow of information; comparison of world press systems. W.

4970 Independent Study (3) May be repeated. Maximum credit 6 hrs.

GRADUATE
Consult the Graduate Catalog for listing of graduate level courses.
The Division of Continuing Education, Knoxville, is the administrative unit of UTK that extends academic courses, educational services, and other programs to the non-traditional student. While most people who participate in the programs are adults, persons of all ages and academic levels can be counted among the people who enroll in the credit and non-credit offerings of the Division.

Programs and courses are based upon student needs and desires, whether for self-motivated learning; for leisure and recreational programs; or for professional promotion, certification, licensure, relicensure, or mid-career changes. The Division provides these educational opportunities through program coordination and development of the two departments: Conferences and Non-Credit Programs, and the University Evening School. Specific programs and services of each department are described on the following pages.

**Conferences**

Director:

W. L. Whelan, Ed.D., Pacific States.

Coordinators:


Administrative Assistant:

I. P. Keith.

Staff Assistant:

M. Barry-Purdy.

It has become evident that learning can take place for an extended period of time in a variety of modes, settings, and circumstances other than in the traditional classroom. To bring this fact to reality, the University of Tennessee, Knoxville, continuing education program has been designed and staffed to bring together under University auspices groups of participants and qualified resource persons to share new learning and ideas; to develop new insights; to address current problems; or to impart new skills and techniques. The program embraces virtually all disciplines, professions, vocations, and avocations.

The Department of Conferences is staffed and equipped to advise, assist, and provide administrative support in the delivery of a successful conference or seminars. Acting in these roles, the department can follow through with an initial tentative budget; secure appropriate setting; devise an attractive format; arrange for auxiliary services such as lodging, meal, and banquet events, extra excursions and tours, and complete registration procedures; design, print, and mail the conference brochure; and handle registration fee collection and payment of honoraria and other conference expenses. Depending on the time of year, the academic calendar of the University, and the desires of the conference sponsor, the program and participants may be housed in campus facilities or off-campus commercial settings.

Among the unique advantages offered by the Department of Conferences programs are that: programs are designed to meet specific needs of the greatest practical value to the participants; the knowledge and expertise of the UTK faculty and staff can be matched with the specific needs of the participants; the programs encourage informal contacts and interaction among colleagues with similar interests with the resource persons; program fees are kept reasonable by using University facilities and services whenever possible; an experienced Conference staff is available to plan, coordinate, and facilitate delivery of programs of virtually any size or duration; by using conference services, the program sponsor is free to concentrate fully on program content; programs can be conducted "inhouse," on the campus, anywhere in the state of Tennessee, or wherever an appropriate meeting site can be arranged; Continuing Education Units (CEU's) may be awarded to program participants if the program is designed to satisfy the criteria necessary for CEU credit. The Division of Continuing Education maintains a permanent record of CEU's earned. A record of CEU's earned may be obtained by written request. Additional information may be obtained from the Department of Conferences, 2014 Lake Avenue; telephone (615) 974-5261.

**English Language Institute**

Director:

Dale A. Myers, Ph.D., Florida

Administrative Assistants:


Coordinator:


The English Language Institute (ELI) is a non-credit language-study program of the University of Tennessee, Knoxville. It is designed to assist students in their pursuit of career goals or educational objectives in the United States. The ELI offers intensive courses for the improvement of student skills in the English Language. International students, visitors, and professionals have successfully learned English through study in the ELI.

The courses emphasize the development of communicative ability in listening, speaking, reading, and writing. Faculty members are trained in teaching English to speakers of other languages with differing national backgrounds and varying proficiency in English.

The curriculum consists of six courses:

101 Introductory
102 Elementary
104 High Intermediate
105 Advanced
Non-Credit Programs

The Department of Non-Credit Programs provides a comprehensive array of courses designed and planned to serve the needs or demands of individuals in Knoxville and surrounding communities, as well as those of area business and industry. Most courses are offered on a quarterly basis, in the evening on the University campus and at selected off-campus locations. The quality of these programs is maintained by utilizing University faculty where possible and citizens of the community who have gained a reputation for certain competencies or technical skills. A number of courses are offered “on-site” for business or industrial clients, and instructional services are tailored to the needs of each individual group.

The types of courses offered by the Department range from developing personal skills, such as communications, computer literacy, and management development, to human interest courses, such as plants and gardening, health, exercise and fitness. There are also courses which meet certain requirements of the state or other agencies for certification in given fields, such as real estate and aviation. “In-house” courses delivered to business and industry help provide for professional development for the area workforce. The department co-sponsors an ongoing program, the Smoky Mountain Field School, with the Great Smoky Mountains National Park. The School consists of intensive weekend and five-day field courses emphasizing outdoor exploration of the Smoky Mountains.

Continuing Education Units (CEU’s) are awarded to students satisfactorily completing courses described in the non-credit quarterly class schedule. A CEU is defined by the Southern Association of Colleges and Schools as “ten contact hours of participation in an organized continuing education experience under responsible sponsorship, capable direction, and qualified instruction.” A permanent record of CEU’s is maintained by the department. A letter of completion of all CEU’s earned at The University of Tennessee, Knoxville, may be obtained upon written request. Recent statewide legislation gives Tennes-see citizens who are 60 years of age or older, or those who are totally disabled, the opportunity to audit courses at UTK free of charge according to available space. Legal verification of either of these conditions is required for enrollment. Additional information may be obtained at 907 Mountcastle Avenue; telephone (615) 974-3404.

University Evening School

Director:

Coordinator:
G. D. Cooper, Ed.D., Tennessee.

The University Evening School is in conjunction with academic colleges and departments, administers credit programs for those students attending classes on- and off-campus in a variety of non-traditional formats. Support services are provided to assist students in their educational pursuits.

On-Campus Evening Program. Classes are offered during late afternoon and evening hours for those students who work or have other commitments during the day. The following undergraduate degrees are available:

- College of Business Administration — Bachelor of Science in Business with majors in Accounting, General Business, Economics, or Management (General Office Systems concentration);
- College of Liberal Arts — Bachelor of Arts with majors in Anthropology, Art, Biology, Computer Science, Economics, Mathematics, Psychology, or Sociology.

Some departments within the Colleges of Business Administration, Education, and Engineering offer all courses required for an advanced degree during the evening. The College of Business Administration also offers all courses required for the MBA degree with a concentration in Management. For other majors, consult the appropriate academic department.

Mini-Term. The University Evening School offers two Mini-Term a year — one during September and one in December. Students may enroll in one concentrated credit course during the ten-day Mini-Term period.

Courses and instructors listed for the Mini-Term are carefully selected to reflect a broad academic base of individualized offerings suited to an intensive program of study. Courses cover traditional material and information included in regular quarterly offerings; however, these courses may be supplemented with films, team teaching, field trips, independent research projects and specialized areas of study, affording students an opportunity to immerse themselves in the discipline selected.

Off-Campus Programs. The Evening School conducts undergraduate and graduate courses in many locations away from the Knoxville campus. The courses are scheduled in response to requests and identifiable needs of adult part-time students who live some distance from the UTK campus and who take part or all of their courses off-campus locations. All course offerings and instructors are approved by the appropriate academic department heads, and the credit awarded is resident credit.

The College of Education (Off-Campus) offers a Bachelor of Science in Education with a major in Vocational-Technical Education and the following graduate degree programs are available: Doctor of Education with a major in Educational Administration and Supervision (Chattanooga); Specialist in Education with a major in Educational Administration and Supervision (Chattanooga); Doctor of Education with a major in Vocational-Technical Education (Statewide); Master of Science in Education with a major in Curriculum (Cleveland and Morristown).

The Evening School administers an off-campus center at Oak Ridge where courses leading to advanced degrees in science and engineering are offered. At Oak Ridge, graduate study programs lead to an MBA with concentrations in Management or Statistics, as well as Master’s and Doctoral degrees in Engineering, Mathematics, and Physical Sciences.

Workshops. Credit workshops are coordinated through various academic departments of the University and provide students the opportunity to participate in short periods of intensive study. As a result, students may earn college credit within a shorter time frame than the traditional quarter system.

Workshops offer flexibility of timing, location, and content, and summer workshops are particularly popular with teachers and school administrators. Although most workshops are held on the UTK campus, geography is not a limiting factor.

Nursing Education Program. The Nursing Education Program is conducted under a contractual agreement with two Knoxville area hospitals. The University Evening School provides academic foundation courses for the independent Schools of Nursing of each hospital. Evening School also provides academic courses for Radiologic Technology students enrolled through two area hospitals.

Student Services. A comprehensive program of services is provided by the University Evening School for both on- and off-campus students.

REGISTRATION
Quarterly registration by mail is offered as a convenience to former Evening School students. Secondary registration at both on- and off-campus locations are also available.

ADVISING
An advising counseling program is available for the benefit of all evening students who need assistance with personal matters. The program can accommodate students during regular daytime hours.
hours (8:30-5:30) and in the evenings by appointment, as well as at various centralized off-campus locations. The College of Liberal Arts also cooperates with the Evening School by providing extended hours several times a week to advise students. A veterans' advisor assists in academic planning for Evening School students who receive educational benefits under the G.I. Bill.

FINANCIAL AID
Evening School students who encounter difficulty in pursuing academic goals because of financial restrictions may be eligible for assistance through the Evening School Scholarship Fund. Interested students may also obtain applications for the Pell Grant (formerly Basic Educational Opportunity Grant) in the Evening School Office.

Elderly and Disabled Persons
Legislation gives Tennessee citizens who are 60 years of age or older, or those who are totally disabled, the opportunity to attend courses at the University at no charge on an audit, space available basis. Legal verification of either of these conditions is required for enrollment. Students who are 65 or over, or who are totally disabled, and who desire to receive UT credit for their courses, may pay a reduced charge of $5 per credit hour up to a maximum of $50 for a full-time load. Registration for day and evening classes is handled by the Evening School. The University Evening School office is located at 451 Communications & University Extension Building on the UTK campus and may be reached by calling (615) 974-5361. All inquiries concerning these programs are welcome.
College of Education

Richard Wiśniewski, Dean
C. Glennon Rowell, Associate Dean for Graduate Studies
Thomas W. George, 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 six departments and its School of Health, Physical Education, and Recreation. In addition to teacher education programs, the College of Education has several non-teacher education programs. These programs include Dance, Industrial Education: Industrial Training, Physical Fitness, Public Health, Recreation, Sports Communication and Sports Management.

The College of Education holds membership in the American Association of Colleges for Teacher Education. All certification and degree programs through the doctoral level are fully accredited by the National Council for Accreditation of Teacher Education, the Southern Association of Colleges and Schools, and the Tennessee State Department of Education.

The faculty of the College of Education is committed to performing three major functions: (1) to provide professional preparation for teachers, administrators, and school service personnel at undergraduate and graduate levels; (2) to collaborate with school personnel, educational agencies, professional groups, and others interested in the evaluation and improvement of educational opportunities, programs, and services; and (3) to promote and conduct experimental and research studies in education.

The teacher preparation programs represent utilization of University-wide resources and cooperation of all appropriate units. Certain requirements are of basic importance: A broad cultural background in the arts and sciences (general education), mastery of professional knowledge and skills, and thorough preparation of specific teaching fields. Through a carefully planned program of combined academic and direct experiences, the prospective teacher acquires a depth and breadth of knowledge and understanding superior to that of the typical college graduate—superior in cultural and citizenship appreciation as well as in professional and scholarly accomplishment.

The Claxton Education Building and Claxton Addition contain many modern and functional facilities for the professional education of teachers including classrooms, laboratories, seminar rooms, faculty and administrative offices, the Instructional Services Center, the Reading Center, the Curriculum Laboratory, the Teaching Simulation Laboratory, and the Bureau of Educational Research and Service.

Teacher Placement Service

The College of Education, cooperating with the University Placement Service, assists qualified students and alumni in securing positions. School and college administrators are cordially invited to make full use of these services in their efforts to employ competent personnel.

General Information

Association with the College

Non-Teacher Education Programs

Association with the College of Education is granted to applicants possessing both of the following:

1. Academic Achievement The applicant will be required to have earned a minimum 2.5 GPA in General Education courses. This classification of courses should not typically include Education courses nor should it include upper division Specific Teaching Field (major) courses. In addition, the applicant will be required to have earned at least a “C” in all Professional Education courses. Professional Education courses in which less than “C” grades were earned must be repeated.

GPA computation will be made at the time of a student’s initial enrollment at UTK, whether the student enters as a freshman or undergraduate transfer. Students will not be granted association before the completion of a minimum of 50 semester or 75 quarter hours of academic course work (i.e., transfer hours may be included).

The following requirements apply to students seeking association:

1. Academic Achievement The applicant will be required to have earned a minimum 2.5 GPA in General Education courses. This classification of courses should not typically include Education courses nor should it include upper division Specific Teaching Field (major) courses. In addition, the applicant will be required to have earned at least a “C” in all Professional Education courses. Professional Education courses in which less than “C” grades were earned must be repeated.

GPA computation will be made at the time of a student’s initial enrollment at UTK, whether the student enters as a freshman or undergraduate transfer. Students will not be granted association before the completion of a minimum of 50 semester or 75 quarter hours of academic course work (i.e., transfer hours may be included).

If this standard is not met: The applicant will improve his/her academic record through
either repeating previously taken courses or enrolling in additional courses.

2. Standard Results The applicant will attain the minimum scores, as specified by the State Board of Education, on the Pre-Professional Skills Tests:

If this standard is not met: The applicant will not be eligible to proceed.

3. Speech and Hearing Evaluations The applicant will perform within normal limits on speech and hearing evaluations.

If this standard is not met: The applicant will participate in therapy, as specified by and provided through the University’s Speech and Hearing Center.

4. Socio-Emotional Assessment (16PF)
The applicant will perform within normal limits on a standardized personality instrument.

If this standard is not met: The applicant will participate in therapy, as specified by and provided through the University’s Counseling Services Center.

5. Conduct Record Each applicant’s name will be submitted to the University’s Conduct Office for review. Candidates who have established records of inappropriate conduct will be reviewed by the College’s Admissions and Retention Committee.

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

Upon the successful completion of the previously cited general progression requirements (i.e., 1-5), applicants will be scheduled for an interview with the association board responsible for screening applicants to each of the College’s specific teaching fields. Association boards are composed of, but are not limited to, the following individuals:

1. The applicant’s advisor and/or faculty member from the specific program to which the applicant is seeking association (e.g., Mathematics Education, Elementary Education),

2. A currently associated, advanced student in the program,

3. A school-based professional from the specific field, and

4. A subject-matter specialist from the larger University, if the applicant is interested in an interdivision College of Education courses.

The following are the general prerequisites for specific program areas (e.g., Art Education, Elementary Education) are available in the student teaching office or from academic advisors:

1. Association with the Teacher Education Program for at least one calendar year prior to the term of actual student teaching regardless of their association with the Teacher Education Program.

The following are the general prerequisites for student teaching. Student teaching prerequisites for specific program areas (e.g., Art Education, Elementary Education) are available in the student teaching office or from academic advisors:

1. Association with the Teacher Education Program
2. Completion of required courses from the Professional Core Curriculum and the Instruction 2011, 3021, 3031, 3032; Educational and Counseling Psychology 2001; and Special Education 3333.
3. Completion of field studies required in the program curriculum.
4. Completion of the special methods courses at The University of Tennessee.
5. Completion of at least nine quarter hours of prescribed course work in Professional Education at The University of Tennessee, Knoxville.
6. Classifications (minimal) as a senior-level student (i.e., at least 135 quarter hours passed).
7. Possession of the following minimum grade point averages: (a) 2.5 GPA in General Education, (b) 2.5 GPA in Specific Teaching Field, and (c) 2.5 GPA in Professional Education courses.
8. Possession of the following minimum grade point averages: (a) 2.5 GPA in General Education, (b) 2.5 GPA in Specific Teaching Field, and (c) 2.5 GPA in Professional Education courses.
9. Possession of the following minimum grade point averages: (a) 2.5 GPA in General Education, (b) 2.5 GPA in Specific Teaching Field, and (c) 2.5 GPA in Professional Education courses.
10. Possession of the following minimum grade point averages: (a) 2.5 GPA in General Education, (b) 2.5 GPA in Specific Teaching Field, and (c) 2.5 GPA in Professional Education courses.
11. Possession of the following minimum grade point averages: (a) 2.5 GPA in General Education, (b) 2.5 GPA in Specific Teaching Field, and (c) 2.5 GPA in Professional Education courses.
12. Possession of the following minimum grade point averages: (a) 2.5 GPA in General Education, (b) 2.5 GPA in Specific Teaching Field, and (c) 2.5 GPA in Professional Education courses.
13. Possession of the following minimum grade point averages: (a) 2.5 GPA in General Education, (b) 2.5 GPA in Specific Teaching Field, and (c) 2.5 GPA in Professional Education courses.
14. Possession of the following minimum grade point averages: (a) 2.5 GPA in General Education, (b) 2.5 GPA in Specific Teaching Field, and (c) 2.5 GPA in Professional Education courses.
15. Possession of the following minimum grade point averages: (a) 2.5 GPA in General Education, (b) 2.5 GPA in Specific Teaching Field, and (c) 2.5 GPA in Professional Education courses.
16. Possession of the following minimum grade point averages: (a) 2.5 GPA in General Education, (b) 2.5 GPA in Specific Teaching Field, and (c) 2.5 GPA in Professional Education courses.
17. Possession of the following minimum grade point averages: (a) 2.5 GPA in General Education, (b) 2.5 GPA in Specific Teaching Field, and (c) 2.5 GPA in Professional Education courses.
18. Possession of the following minimum grade point averages: (a) 2.5 GPA in General Education, (b) 2.5 GPA in Specific Teaching Field, and (c) 2.5 GPA in Professional Education courses.
19. Possession of the following minimum grade point averages: (a) 2.5 GPA in General Education, (b) 2.5 GPA in Specific Teaching Field, and (c) 2.5 GPA in Professional Education courses.
20. Possession of the following minimum grade point averages: (a) 2.5 GPA in General Education, (b) 2.5 GPA in Specific Teaching Field, and (c) 2.5 GPA in Professional Education courses.

Program Progression Teacher Education Programs

Each student’s progress is reviewed quarterly prior to and following association and a determination is made to allow the student’s eligibility to advance to the next level of preparation. Each student’s functioning is monitored closely on the following variables:

1. Academic Achievement The following GPA minimums function as guidelines during the period between association with the Teacher Education Program and enrollment in student teaching: (a) 2.5 GPA in General Education and Specific Teaching Field (major) courses and (b) 2.6 GPA in Professional Education courses.

It is important to note that grades of “D” and “F” in Professional Education courses must be repeated.

2. Field Study Anecdotal observations from faculty and school-based professionals of the student’s performance. Students whose progress is judged inadequate may be required to either re-cycle through courses, participate in remedial activities, or change to a more appropriate major.

To facilitate communication and proper guidance, undergraduate College of Education students are required to meet with their advisor at least once each quarter.

Admission to Student Teaching

Students seeking authorization to enroll in student teaching must apply at least one calendar year prior to the term of actual student teaching. For example, students desiring to student teach during the Fall Term, 1986, must register for that experience no later than the beginning of Fall Term, 1985. Students desiring to student teach during the Spring Term, 1987, must register for that experience no later than the beginning of Spring Term, 1986. Effective Fall, 1985, student teaching was extended to fifteen week terms. The fall term will begin when public schools open and the spring term will begin within winter quarter classes begin.

Student teaching is completed in group sessions. Four group sessions are conducted each quarter. Two application sessions are conducted during the summer. Schedules of the application sessions are announced in the Office of Field Studies, 212 Claxon Education Building.

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

The following are the general prerequisites for student teaching. Student teaching prerequisites for specific program areas (e.g., Art Education, Elementary Education) are available in the student teaching office or from academic advisors:

1. Association with the Teacher Education Program
2. Completion of required courses from the Professional Core Curriculum and the Instruction 2011, 3021, 3031, 3032; Educational and Counseling Psychology 2001; and Special Education 3333.
3. Completion of field studies required in the program curriculum.
4. Completion of the special methods courses at The University of Tennessee.
5. Completion of at least nine quarter hours of required course work in Professional Education at The University of Tennessee, Knoxville.
6. Classification (minimal) as a senior-level student (i.e., at least 135 quarter hours passed).
7. Possession of the following minimum grade point averages: (a) 2.5 GPA in General Education, (b) 2.5 GPA in Specific Teaching Field, and (c) 2.5 GPA in Professional Education courses.

Course Load—Permission for more than 19 hours in a quarter must be obtained from the Coordinator of Undergraduate Student Services. A normal course load in the college is 16-19 hours.
Course Substitutions
It is sometimes necessary and advisable for students to substitute other courses for those required in a particular curriculum. The principal rule is that 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 whether the course the student wishes to substitute meets the spirit of the course requirement.

That is, is the content similar or perhaps more applicable to that individual's needs?

The student should visit with the advisor first. If the advisor and student agree that the substitution is an appropriate one, the substitution request form should be forwarded to the Office of the Associate Dean for Undergraduate Studies, 212 Claxton Education Building. Approved petitions are forwarded to the Dean of Admissions for final approval and for filing in the Records Office.

Professional Education courses taken at junior or community colleges may be substituted for lower division (1000/2000 level) courses or may be used as electives. These courses may not be used to substitute for upper division (3000/4000 level) Professional Education courses.

Graduation and Certification

Teacher Education Programs

Students must attain the following minimum requirements to qualify for the College's recommendation to graduate and to receive teacher certification:

(1) Academic Achievement

Only those students who perform satisfactorily in student teaching will be recommended for either graduation and/or certification. Students who perform unsatisfactorily may be provided another opportunity to succeed. (Such students may be required to participate in remedial courses or activities prior to re-enrolling in student teaching.)

Students will be expected to attain the same minimum general education GPA levels as the time of graduation and certification that were necessary to progress to student teaching.

(2) National Teachers Examinations

All candidates for graduation and certification are required to attain the State of Tennessee minimums on the entire NTE:

Core Battery (i.e., General Knowledge, Communications Skills, and Professional Knowledge)

Complete details regarding the NTE are available in the Undergraduate Student Services Office, 212 Claxton Education Building. Additional certification requirements include the successful fulfillment of:

(a) a methods course in each area of endorsement,
(b) at least one three quarter hour course concerning the learning and behavioral characteristics of handicapped students,
(c) at least three quarter hours in teaching reading in content areas for all applicants, and a total of at least six quarter hours in methods of teaching reading for those applicants desiring to teach (a) grades kindergarten through eight and/or (b) grades nine through twelve language arts, and
(d) fulfillment of all special recommendations by the students' mentoring teams.

Applications for teacher certification should be completed early in the final quarter before graduation. Application forms may be obtained in the Registrar's Office, 212 Student Services Building, and in the Office of the Dean, 212 Claxton Education Building.

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

Non-College of Education

Undergraduate Students and Others Seeking the College's Recommendation for Teacher Certification

The following categories of students are subject to the same requirements (for admission to Teacher Education, entry into student teaching, and certification) as College of Education, baccalaureate students who are seeking teacher certification: (See Association, Progression, Student Teaching, and Certification requirements which are explained elsewhere.)

(1) undergraduate students from colleges other than the College of Education;
(2) post-baccalaureate students who are not graduates of the College of Education (UTK) who are seeking the College's recommendation for add-on teaching endorsements; and
(3) post-baccalaureate students who are seeking initial teacher certification.

Graduate Programs

The College of Education, through the Graduate School, offers programs leading to the Master of Science in Education, the Master of Education degree, the Master of Arts in College Teaching degree, the Master of Public Health degree, the Specialist in Education (advanced graduate) degree, the Doctor of Education, and the Doctor of Philosophy degrees. For further information, see the Graduate Catalog.

Undergraduate Curricula

The college offers courses of study leading to the Bachelor of Science in Education. Graduates who successfully complete teacher preparation programs are eligible for teacher certification in Tennessee and in those states which grant reciprocity privileges to graduates of institutions accredited by the National Council for Accreditation of Teacher Education (NCATE).

A core of studies provides the foundation for specialization in all teacher education curricula. In addition, approved concentrations must be completed in subject fields specifically related to the public school curriculum. A choice is to be made among programs leading to recommendation for certification at one of three levels: elementary, (kindergarten-9), secondary (grades 7-12), or special subjects in grades 1-12.

Courses in library science are available to students who are interested in beginning positions in any library or in preparation for further graduate study in professional librarianship. The minimum requirements for full-time librarianship in any size school in Tennessee can be met through completion of the basic library service courses (3510, 3520, 4140, 4150, 4270, 4320, 4330, 4750).

Endorsement as a librarian requires 27 quarter hours in library science. 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.

Students should work closely with faculty advisors in planning programs of study. The chosen curriculum must be followed as outlined to assure graduation and certification, and any proposed substitution for a required course should be filed for approval before the end of the junior year.

Optional Minors

Education students may earn single or multiple minors either from a unit within the College of Education or from units of other colleges. The minor must be one which is officially approved and described in the General Catalog. Unofficial minors will not be recognized.

Courses taken to satisfy the minor will not necessarily meet certification requirements. Students are encouraged to seek the counsel of their advisors on matters pertaining to minors.

The intention to complete a minor must be declared at the time of application for a degree if the minor is to appear on the final transcript. (Degree applications are available in the Registrar's Office.)

Satisfactory/No Credit Courses

For the Elementary and Secondary Education curricula only, a student may include a maximum of 30 hours in non-directed electives taken on a Satisfactory/No Credit basis in the total hours required for graduation. S/N may not be used in required courses or controlled electives, except where the course is offered on an S/N basis (such as student teaching and field experiences). An area of concentration will be considered as non-directed electives except where specific courses or controlled electives are required. NOTE: Students are advised to consult the University's degree requirements as stated in the front section of this catalog as well as the requirements for the college or department.

I. Curriculum for Elementary Teachers

(certificate for grades 1-8 with option for kindergarten certification)

GENERAL EDUCATION............97-101 hours
Communications (19-20 hours)

English 1010 or 1011; 1020; 1031 or 1032 or 1033 (English 1019 may be required for some students); Speech 2311; Educ. C & L/ LIS 3510; Elective from: Speech and Theatre 2031, Speech 1211, Journalism 2210, Communications 1110.

Health and Physical Education (9-10 hours)

School Health 3510; P.E. activities (4 hours), P.E. restricted elective (2-3 hours).

Humanities (18-19 hours)

Literature, (6 hours): Art 1705, 1815 or 1825; Music 1210 or 1220; Elective from the following: Philosophy 1510 or 1511 or 1521.
II. Curricula for Secondary Education (7-12)

GENERAL EDUCATION.................73-74 hours

Communications (13-14 hours) English 1010 or 1011; 1020; 1031 or 1032 or 1033 (9 hours) may be required of some students, and Speech 1211.

Health and Physical Education (9 hours) Physical Education must be represented plus Nutrition 1130 or Public Health 3330 or School Health 1110 or 3210 or 3420 or 3610. Humanities (16 hours) English 2510, 2520, 2531, 2532, 2533, 2560, 2570, 2580 (4 hours) are required of some students. Anthropology 2530; Religious Studies 2110, 2120, 2310, 2520, 3021, 3370, or 3330 (4 hours); Philosophy 2410.

Mathematics (3 or 4 hours)

Natural Science (12 hours) A biological science, a physical science, or a combination of the two.


Social Studies (12 hours) Economics 2510 or 2520; Geography 3490 or Political Science 3390; History 1510, 1520, 1610, 1620, 2015, 2510, 2520, 3050, 3051, 3201, 3202 (any one of these).

C. Mathematics Education

1. Area Majors in Mathematics
a. Mathematics and Physical Sciences (75 hours)

1) Mathematics (27 hours) must include at least a one-year sequence in calculus or analytic geometry and calculus and at least 12 quarter hours in courses numbered 3050 or above with at least one course in algebra and one in geometry.

2) Physical Sciences—12 hours in each of the following: Chemistry, geology, physics.2

3) Electives—12 additional hours in physical science and/or mathematics. Endorsements: Mathematics and Physical Science, General Science2

b. Mathematics and Related Sciences (72 hours)

1) Mathematics (36 hours)—must include at least a one-year sequence in calculus or analytic geometry and calculus and at least 12 hours in courses numbered 3050 or above with at least one course in algebra and one in geometry.

2) Related Sciences—12 hours in physics2 and 12 hours in each of two of the following subjects: astronomy, biology, botany, chemistry, geology, microbiology, zoology. Endorsements: Mathematics, General Science2

c. Mathematics and Computer Sciences (72 hours)

1) Mathematics (36 hours)—must include at least a one-year sequence in calculus or analytic geometry and calculus and at least 12 hours in courses numbered 3050 or above with at least one course in algebra and one in geometry.

2) Related Sciences—12 hours in physics2 and 12 hours in computer science. Endorsements: Mathematics, Computer Science and Computer Science.

D. Psychology Education

1. A concentration and endorsement in psychology shall require a minimum of 30 quarter hours—12 hours upper division distributed as follows:

Core 16 hours

Psychology 2500 4

Psychology 3120 4

Psychology 3150 4

Psychology 3210 4

Electives 14 hours selected from: Psychology 2520, 2530, 2540, 3120, 3210, 3220, 3310, 3430, 3560, 4230, 4510, 4610, 4900; Psychology or Ed. Psych. 4640; Ed. Psych. 3110, 4110, 4390, 4890, 4880, 4890.

2. Two cognates (18-27 hours for a total of 30 hours)

*Requires admission to Teacher Education Program.

1 Excluding Math 1202, 2110, 2120, 2130.

2 Excluding Physics 1410, 1420, 1430.

3 Plant and animal science courses required.
45 quarter hours each with minimum of 6 hours upper division or two minors. Note: At least one of the two cognate or minor areas must meet minimum endorsement requirements for the subject area.

E. Science Education

1. Area Majors in Science

a. Biological science (72 hours minimum)
   Biology 1210-20-30 or Botany 1110-20-40 (12 hours); Biology 3110-20-30 (12 hours)
   Microbiology 2010 (4 hours)
   Chemistry (excluding 1410 series) (12 hours)
   Science electives—(32 hours minimum)
   apprved electives must be selected from one or more of the following:
   biological sciences—biochemistry, botany, microbiology, zoology; physical science—
   chemistry. Minimum requirement in biological science consists of 56 hours
   (12 hours chemistry required, excluding 1410 series). Endorsements:
   Biology (Life Science) and General Science2

b. Earth and Environmental Sciences (72 hours minimum)
   Includes 12 hours biological science required, and 14 hours science electives selected from
   astronomy, chemistry (excluding 1410 series), geography, geology, and physics. Geology
   (16 hours). Chemistry (8 hours). Physics (excludes 1410 series) (4 hours).
   Astronomy (4 hours). Geography (physical)
   Geology (4 hours). Geography (climatology or geography) (4 hours). Cartography,
   conservation, oceanography, or soil science (6 hours). Endorsements: Earth Science,
   General Science, and Physical Science.

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. Chemistry (excluding 1410 series). Geology
   (excluding Geology 1000). Physics (excluding 1410 series) Mathematics
   (excluding 1020, 2020 and 2110-20-30). Credit for only 12 math hours
   accepted in the program. Approved science electives—24 hours minimum,
   including a total of six quarters of course work in one subject area other than math.
   Biology is considered as one subject for high school endorsement. Endorsements:
   General Science2 (Possible endorsements:
   Biology, Chemistry, and Physics).

2. Subject Majors in Science
   The only single
   a. Biological science (72 hours minimum)
   Endorsements:
   Biology (Life Science) and General Science2
   b. Earth and Environmental Sciences (72 hours minimum)
   c. Natural Science (72 hours minimum)

b. 8 quarter hours in each of the following:
   geography, political science, and sociolo-
   g.
   c. 4 quarter hours in anthropology.
   d. 8 quarter hours in economics, including
   2510-20 and an elective.
   e. 7-8 additional quarter hours in the
   above-listed or related fields.
   Program II
   Specific subject major (45 hours plus
   cognate)
   Cognate. A cognate is defined as 27 quarter
   hours in a single subject area, i.e., biology,
   history, French, psychology, speech, etc. A
   cognate does not meet certification require-
   ments in all cases.
   Minor. A minor is a subject area represented
   by a specified set of hours and/or courses.
   Since minors are defined by the offering
   departments interested students are refer-
   red to those sections of this catalog for
   further details.

III. Art and Music Education

A. Art Education
   GENERAL EDUCATION
   Notes: 3333.

   Communications (16-17 hours)
   English 1010, 1020 and 1031 or 1032 or
   1033 plus any speech course (13 hours).
   Journalism 2210 or Speech 1211 or Commu-
   nications 1110 (3-4 hours).
   Health and Physical Education (9 hours)
   School Health 3510 (3 hours) plus Physical
   Ed. activities courses (6 hours).
   Humanities (12 hours)
   Any two English of American Literature
   courses. Philosophy 1510 or any Classics or
   Religious Studies course.
   Mathematics (3 hours)
   Mathematics 2110 or any other Math course.
   Natural Science (12 hours)
   Any combination of courses from the bi-
   ological or physical sciences (Astronomy,
   Biology, Botany, Chemistry, Geology, Phys-
   ics, or Zoology).
   Psychology (8 hours)

   Social Studies (15 hours)
   Anthropology 2530 or Political Science
   3130 or Sociology 3780 (4 hours). Geogra-
   phy 1610 or 2110 or 2130;or Sociology
   1530 (4 hours). University Studies 3110 or
   Geography 3490 or Political Science
   3390 (3-4 hours). History 2510-20 or any
   other History courses (8 hours).

   CORE PROFESSIONAL
   EDUCATION
   20 hours
   Ed. C & I 2011, 3021, 3031, 3032, 3033,
   4011; Educ. Psych. 3002, 3003; Special Ed.
   3333.

   SPECIALIZED PROFESSIONAL
   EDUCATION
   19 hours
   Educ. C 4304, 4710-20; Music Ed. 4100.

   TEACHING AREAS AND
   ELECTIVES
   85-113 hours

   Concentration in Vocal Music (Voice Principal)
   (85 hours)

   Music Education 1010-20, 2110, 2421, 2421,
   2431, 3130, 3150, 4420, 4510, Music
   1111-21-31; 1113-23-33; 2111-21-31; 2113-
   23-33, 2340; Voice (22 hours); Required
   ensemble (11 hours) plus piano proficiency.

   Concentration in Vocal Music (Piano or Organ Principal) (91 hours)

   Music Education 1010-20, 2110, 2421, 2421,
   2431, 3130, 3150, 4420, 4510. Music
   1111-21-31; 1113-23-33; 2111-21-31; 2113-
   23-33, Piano or Organ (22 hours); Voice (6
   hours); Required ensemble 11 hours.

   Concentration in Instrumental Music (110-113 hours)

   a. 35 Music Education 1010-20, 2110,
   2411-12-33, 2421-22-23, 2431-32-33, 3150,
   3410, 4420, 4430, 1511 (1.1.1).
   Music 1111-21-31; 1113-23-33; 2111-21-
   31; 2113-23-33, 2340; 3112; 4124;
   Principal instrument (22 hours);
   Secondary instrument (6 hours); Piano
   Proficiency; Required ensemble (11
   hours).

   b. Music Education 4460 is required for all
   students whose principal instrument is
   wind or percussion.

   TOTAL MINIMUM
   REQUIRED
   197-226 hours

   *Requires admission to Teacher Education Program.
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; Campus Band; University Marching Band; or University Orchestra. Vocal Major: Concert Choir; University Chorus; Chamber Singers.

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. Major in Physical Education

1. Teaching Track

a. Elementary Physical Education (K-8)

GENERAL EDUCATION

English 1011-20, and 1031 or 1032 or 1033; Speech 2311 or 2331.

Mathematical Skills (4 hours)

Math 1510, 1511, 1512, 1513, 1514.

Science (24 hours)

Chemistry 1110 and 1120 or 1510 and 1520, Biology 1110, 1120, 2110, 2120, 2210, 2220, 3020, 3030, 3040, 3041, 3070, 3075, or 4000.

Physical Education (9-16 hours)

Physical Educ. 1012, 1022, 1042, 1052, and any course in tennis, badminton, racquetball, paddleball or handball.

PHYSICAL EDUCATION CORE

Secondary Physical Education Endorsement for Physical Education Majors in the Elementary Physical Education Teaching Track. (21 hours)

(Open only to Physical Education major students in the Elementary Physical Education Teaching Track.)

Physical Educ. 1002 or 2002, 2032, 2042, 2052, 2500, 2540, 2550, 2750.

CORE PROFESSIONAL EDUCATION

20 hours

Edu. C &I 4304, 4810, and 4820; Physical Educ. 4100.

GENERAL ELECTIVES

5-14 hours

TOTAL MINIMUM REQUIRED

200 hours

PROFESSIONAL PHYSICAL EDUCATION

9 hours

Edu. C &I 4304, 4710, and 4720; Physical Educ. 4100.

GENERAL ELECTIVES

6-15 hours

TOTAL MINIMUM REQUIRED

200 hours

Elementary Physical Education Endorsement for Physical Education Majors in the Secondary Physical Education Track. (22 hours)

(Open only to Physical Education Major students in Secondary Physical Education Teaching Track.)

Any aquatics course, Physical Educ. 3350, 3470, 3480, 3500, 4500, and 4670.

2. Physical Fitness Specialist Track

GENERAL EDUCATION

85 to 93 hours

English 1010, 1020 and 1031 or 1032: Speech 2311 or 2331; Humanities electives (minimum of four courses and three areas, 12 to 16 hours) selected from the following: English literature, music, philosophy, religious studies, English literature, foreign languages (any level), and history; or any math course other than 1020 and 1022; Physics 1450; Psychology 2500; School Health 3210; Physical Educ. 1022 or 2022, 1042, 1052, and any course in tennis, badminton, racquetball, paddleball or handball.

PHYSICAL EDUCATION CORE

22 hours

Physical Educ. 1000, 2600, 3210, 3320, 3550, 3720, 4170, and 4420.

PROFESSIONAL EDUCATION

36 hours

Health 4412 and 4420; Nutrition and Food Sciences 3120 and 4160; Recreation 3880, and any one of the following: Accounting 2110, Advertising 3000, Communications 1110, Computer Science 1410, Economics 2510, Finance 3120, Management 3010 and 3480, Office Admin. 4310 or 4320, Marketing 4140.

PROFESSIONAL PHYSICAL EDUCATION

33 hours

Any aquatics course, Physical Educ. 2032, 2042, 2750, 2765, 3040 or 2720, 3250, 3560, 4110, 4115, 4260, 4360, and 4420.

GENERAL ELECTIVES

16 to 24 hours

Maximum of 6 hours in 1000 and 2000-level Physical Educ. Major activity courses and/or Physical Educ. 2700-level courses (which must be different from the Physical Educ. Major activity courses); also excluded are Physical Educ. 2730 and 2792.

TOTAL MINIMUM REQUIRED

200 hours

3. Movement Sciences Track

a. Exercise Physiology Area of Concentration

GENERAL EDUCATION

83 to 91 hours

English 1010 and 1020 and 1033; Speech 2311 or 2331; Humanities electives (minimum of four courses and three areas, 12 to 16 hours) selected from the following: anthro-