The Graduates Program

The goal of the program is to prepare graduates to function effectively in libraries and information centers. The program is designed to: (1) enable students to examine critically the role and function of libraries and information centers in our society, and to define and redefine that role as the needs of society demand; (2) enable students to understand and use the concepts and procedures related to the selection, acquisition, organization, and dissemination of knowledge; (3) enable students to understand and apply the principles of management to the library and information center; (4) enable students to assume individual and collective responsibility for the well-being and development of their profession and the library service; (5) enable students to make informed assignments and decisions regarding various career opportunities 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 suitable for children in local libraries. Requirements: Criteria for selecting books, magazines, recordings, films, and related materials; story telling and other devices for children. Prerequisite: Admission to teacher education or junior standing in College of Liberal Arts. (Same as Educ. C & 1475.)

3520 Books and Related Materials for Young People (3) Readings based on materials suitable for young people in public libraries. Requirements: Story telling and other devices for children. Prerequisite: Admission to teacher education or junior standing in College of Liberal Arts. (Same as Educ. C & 1475.)

3530 Books and Related Materials for Adults (3) Principles of material selection, selection standards, and current evaluation of books, periodicals, records, films, and related materials; criteria for selection. Prerequisite: Admission to graduate credit only. Prereq: Admission to teacher education or junior standing in College of Liberal Arts. (Same as Educ. C & 1475.)

3540 Library Facilities (3) The design and construction of library facilities as they pertain to the physical environment of the library user. Prerequisite: Admission to graduate credit only. Prereq: Admission to teacher education or junior standing in College of Liberal Arts. (Same as Educ. C & 1475.)

3550 Principles of Materials Selection (3) Principles of materials selection, selection standards, and procedures for the selection of books, periodicals, recordings, films, and related materials. Prerequisite: Admission to graduate credit only. Prereq: Admission to teacher education or junior standing in College of Liberal Arts. (Same as Educ. C & 1475.)

3560 Reading Guidance for Children and Young People (3) Reading materials and methods for children and young people. Prerequisite: Admission to graduate credit only. Prereq: Admission to teacher education or junior standing in College of Liberal Arts. (Same as Educ. C & 1475.)

3570 Library Representations (3) Library representation as an organization: its organization, responsibilities, and role in society. Prerequisite: Admission to graduate credit only. Prereq: Admission to teacher education or junior standing in College of Liberal Arts. (Same as Educ. C & 1475.)

3580 Organization of Library Collections (6) Acquisitions, cataloging, and methods of control over library materials. Prerequisite: Admission to graduate credit only. Prereq: Admission to teacher education or junior standing in College of Liberal Arts. (Same as Educ. C & 1475.)

3590 Introduction to Reference Materials (3) Basic information sources and services for all libraries. Prerequisite: Admission to graduate credit only. Prereq: Admission to teacher education or junior standing in College of Liberal Arts. (Same as Educ. C & 1475.)

The Graduate School of Planning (782)

Graduate School of Planning (782)

J. A. Spencer, Director


Assistant Professor: E. C. Bowen, M.A. George Washington, J. A. Spencer (Director), M.J.P., Ohio State.

Assistant Professor: J. G. Stoloff, M.P.P., Hunter College.

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

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

The Field of Planning

Planning is one of the challenging techniques by which society seeks to harness new methods and technologies in urban growth, economic development and redevelopment, housing, and transportation. Planning seeks to improve not only the physical but also the economic and social environment of the individual. Through the use of public policies and through maximum cooperation between public economics and private purposes, it seeks to increase the opportunity of the individual—to better the chances for a decent job and a decent home in a community of which to be proud.

Planning does not accept our present urban and rural environments as the best of all possible worlds. The planner can expect a challenging, sometimes frustrating, but always rewarding career.

Planning is a rapidly evolving field, but at present it is chiefly concerned with two general areas. Regional and state planning is concerned primarily with economic and resource regions, the forces that generate economic growth, and the ways in which state and local governments can best be organized to generate area development. Urban planning is concerned with the location of buildings and other projects in the urban environment, the social and economic consequences to the people involved, and the administrative and technological means by which it may be guided.

Graduate Education in Planning

The curriculum is organized on a basis of six quarters, or 72 credit hours, and provides the student with courses in planning theory, methods, and techniques, and also offers opportunities of study at The University of Tennessee and in other institutions which may serve the needs of those planning now in the field who wish to acquire their professional degree but who can spare only the minimum amount of time from their jobs because of financial or family considerations.

Entering students follow a program of courses which provide education in the basic elements of planning. These include studies in theory, history, analytical methods, design, and the application of these elements in government, geography, sociology, and economic studies. The student will be encouraged to pursue particular interests through the choice of electives in fields such as urban and regional planning, the study of land use, the study of the governmental process in Planning. Practice in research and analysis on a particular planning problem or topic is
Program in Radiation Biology (844)

Daniel Billen, Director

A graduate major in the field of radiation biology is offered through the Institute of Radiation Biology. This is a program crossing both departmental and institutional lines. Included on the Institute staff are certain scientists from the Departments of Biochemistry, Botany, Chemistry, Microbiology, Physics, and Zoology; the Memorial Research Center Hospital and the Comparative Animal Research Laboratory of The University of Tennessee; the Biology and Environmental Sciences Divisions of the Oak Ridge National Laboratory; and the Medical Division of Oak Ridge Associated Universities.

Formal courses in this program are offered mainly on the Knoxville campus. Thesis research may be carried on either at the University or at one of the Oak Ridge laboratories. Problems selected for thesis research shall involve the interaction of radiations or long-lived fission products and radiomimetic chemicals with biological systems, at the molecular, cellular, organiocal, or ecological level of complexity. Areas of radiation specialization currently include photobiology, environmental, microbeal, botanical, and biochemical and biophysical radiobiology.

Courses

0000 Thesis (1-15)
5000 Non-Thesis Graduation Completion (3-15)
5005 The Planning Process (3)
5045 Communications for Planners II (1)
5045 Communications for Planners I (1)
5020 Theory of Planning (3)
5110 Introduction to Planning (3)
5120 Planning Research Methods I (2)
5120 Planning Research Methods II (3)
5140 Library Research for Planning (1)
5160 Planning and Utilities (3)
5170 Planning for Historic Preservation (3)
5180 Planning Analysis and Forecasting (3)
5230 Urban and Rural Design (3)
5235 Urban and Site Design II (3-4)
5270 Planning and Transportation (3)
5280 Planning Methods (3)
5280 Regional Planning (3)
5290 State Planning (3)
5340 Implementation (3)
5360 New Towns (3)
5380 Housing (3)
5390 Futures (3)
5410-20-30 Special Topics in Planning (1-3, 1-3, 1-3)
5430 Planning and Government (3)
5440 Planning and Land Use Controls (4)
5450 Urban Revitalization (3)
5460 Planning Administration (2)
5465 Planning and Property Development (5)
5500 Social Planning (3)
5500 Synthesis (9)
5460 Planning Administration (2)
5455 Urban Revitalization(3)
5435 Planning and Government (3)
5410-20-30SpecialTopics inPlanning (1-3,1-3,1-3)
5390 Futures (3)
5360 New Towns (2)
5340 Implementation (3)
5310 State Planning (3)
5280 Planning Methods (5)
5270 Planning and Transportation (3)
5260 Planning and Utilities(3)
5160 Planning and Utilities (3)
5145 Library Research forPlanning (1)
5135 Planning Research Methods II(3)
5130 Planning Research Methods 1(2)
5100 Theory of Planning (3)
5050 Communications forPlanners III(1)
5045 Communications forPlanners 11(1)
5040 Communications forPlanners I(1)
5020 Theory of Planning (3)
5005 The Planning Process (3)
5045 Communications for Planners II (1)
5045 Communications for Planners I (1)
5020 Theory of Planning (3)
5110 Introduction to Planning (3)
5120 Planning Research Methods I (2)
5120 Planning Research Methods II (3)
5140 Library Research for Planning (1)
5160 Planning and Utilities (3)
5170 Planning for Historic Preservation (3)
5180 Planning Analysis and Forecasting (3)
5230 Urban and Rural Design (3)
5235 Urban and Site Design II (3-4)
5270 Planning and Transportation (3)
5280 Planning Methods (3)
5280 Regional Planning (3)
5290 State Planning (3)
5340 Implementation (3)
5360 New Towns (3)
5380 Housing (3)
5390 Futures (3)
5410-20-30 Special Topics in Planning (1-3, 1-3, 1-3)
5430 Planning and Government (3)
5440 Planning and Land Use Controls (4)
5450 Urban Revitalization (3)
5460 Planning Administration (2)
5465 Planning and Property Development (5)
5500 Social Planning (3)
school's program guides students into independent, analytical thought and prepares them to use their skills and knowledge to effective purposes. The School of Social Work recognizes and enjoys the challenge of cultural pluralism in society and encourages applications for admission from minority group members. Through the planned inclusion of significant and pertinent racial and ethnic content in the curriculum, the School provides students with the educational background needed to take creative roles in the social work profession's efforts toward the elimination of racism and such other social ills as poverty, crime, neglect, and social injustice. A special bulletin describing the facilities, admission, fees, and degree requirements is obtainable from The School of Social Work, 2014 Lake Ave., Knoxville, Tennessee 37916.

Courses
Charles H. Weaver, Dean
Arthur A. Mason, Assistant Dean
Professors:
G. W. Braun (Emeritus), Ph.D. Georgetown University; L. W. Crawford, Ph.D. Cincinnati; J. B. Dicks, Jr., Ph.D. Vanderbilt; F. W. Donaldson, Ph.D. Texas; W. Frost, Ph.D. Washington, D.C.; S. Goetz, Ph.D. Pennsylvania; T. H. Moulden, Ph.D. Tennessee; C. H. Weaver, Ph.D. Pennsylvania; R. L. Young, Ph.D. Florida.
Associate Professors:
F. Shahrokhi, Ph.D. Oklahoma; C. H. Weaver (Dean, Space Institute, Vice President for Continuing Education), Ph.D. Wisconsin, P.E.; M. A. Wright, Ph.D. Wisc.; J. M. Wu, Ph.D.
Assistant Professors:
Y. C. L. Wu, Ph.D. California Institute of Technology; L. R. Young, Ph.D. Northwestern; C. P. Mauney, Ph.D. Tennessee.
Associate Professors:
Assistent Professors:
B. Antar, Ph.D. Texas; Z. M. Carter, Ph.D. Missouri; J. C. Canfield, Ph.D. George Institute of Technology; R. D. Joseph, Ph.D. Case Institute of Technology; T. C. Powell, Ph.D. Kentucky; V. K. Smith, III, Ph.D. George Institute of Technology.

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

Courses
5000 Thesis (1-15) 5070 Airports and the Community (3) 5090 Collection and Distribution (2) 5095 Governmental Policies for Aviation (3) 5100 Projects in Aviation Systems (3) 5200-30 Experimental Flight Mechanics (3, 3) 5970 Special Topics in Aviation Systems (2)

Transportation Center
W. A. Gooden, Ph.D., M.S., C.E., Vanderbilt. Assistant Directors:
M. S. Brown, Ph.D., Pennsylvania State; R. A. Mundy, Ph.D., Pennsylvania State.
Assistant Directors:
D. H. Jones, M.S., Tennessee; P. L. Tuttle, M.S., Texas.
Assistant to Director:
C. P. Mauney, Ph.D. Tennessee.
The Transportation Center performs four main functions: (1) managing interdisciplinary transportation projects for the University, (2) managing transportation projects for the Tennessee Department of Transportation, (3) managing highway safety projects for the Governor's Highway Safety Program, and (4) providing public service activities in transportation throughout the state. In performing these functions, the Transportation Center works extensively with various colleges and departments, organizations, and campuses of The University of Tennessee. The Center conducts research in all modes of transportation. Current research includes transportation management, railroads and wetways, urban goods movement, airport ground transportation, transportation brokerage, social service transportation, ride sharing, transit, legislation, diagnostic vehicle inspection, highway safety, tunnel construction and ventilation, archaeological exploration, highway construction, and environmental impacts.

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Assistant Directors:
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Assistant to Director:
C. P. Mauney, Ph.D. Tennessee.
The Graduate School

Water Resources Research Center (991)
William F. Brandes, P.E., Director

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

The Center is operated through the office of the Vice Chancellor for Graduate Studies and Research.

UNDERGRADUATE

3410 Principles of Ground Water Geology (3) (Same as Geology 3410.)
3420 Geohydrology (3) (Same as Geology 3420.)
3565 Introduction to Public Administration Organization and Management (4) (Same as Political Science 3565.)
4110 Managerial Economics (3) (Same as Economics 4110.)
4810 Water Law (3) (Same as Environmental Engr. 4810 and Law 8975.)

GRADUATE

5000 Thesis
5130 Planning and Research Methods I (2)
5160 Planning and Utilities (3)
5340 Hydrology of Agricultural and Forest Lands (3)
5410-20-30 Interdisciplinary Seminars (3, 3, 3)
The Institute of Agriculture traces its history to 1869 when the University was designated as Tennessee's Federal Land-Grant Institution. Under terms of the Federal Land-Grant Act, the University was enabled to offer instruction in agriculture and the mechanic arts for the first time. Since 1869, agricultural programs at the University have been expanded to include research for the development of new knowledge and extension for dissemination of such knowledge to rural people. Thus the Institute of Agriculture has come to include the work of four main divisions: College of Agriculture, College of Veterinary Medicine, Agricultural Experiment Station, and Agricultural Extension Service.

**Agricultural Experiment Station**

Dorsey M. Gossett, Dean

The Agricultural Experiment Station was established in 1867 by an act of Congress known as the Hatch Act. The purpose of the Experiment Station is the promotion of practical agriculture through fundamental and applied research on all problems affecting farmers of the state. For example, there are research projects dealing with the development of new and improved varieties of farm and garden crops, the development of new knowledge and improved methods for the control of crop insects and crop diseases, and the evaluation of systems for the feeding, pasturing, and management of livestock. Also, much attention is given to soils and fertilizer, mechanical devices of importance on the farm, human nutrition, and various rural economic and social problems. Priority is given to problems of special importance to the farmers of Tennessee.

Facilities at the laboratory include approximately 2,000 acres of land for maintaining livestock and growing plants to be used in experimental work; a research laboratory especially suited to large animal work; and a unique gamma-radiation field. On January 1, 1965, the Agricultural Experiment Station was assigned responsibility for administration of the 600-acre farm adjacent to the Martin campus. The farm is used for both research and teaching. The research staff is jointly employed by the School of Agriculture at Martin. The staff works closely with the different departments in Knoxville in planning and executing the research program.

**BRANCH STATIONS**

Dairy Experiment Station near Lewisburg contains 615 acres and is operated in cooperation with USDA-SEA/FR. Major emphases are breeding and nutrition of Jersey cattle.

Highland Rim Experiment Station near Springfield contains 596 acres. Major emphases are breeding and cultivation of dark-fired tobacco, other agronomic crops, horticultural crops, and livestock.

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

Plateau Experiment Station near Crossville consists of three farms totaling 2,150 acres. Studies with beef cattle, field and horticultural crops provide information about results to be expected under the cooler, more humid climate and special soil conditions of the Cumberland Plateau.

Tobacco Experiment Station near Greeneville consists of 536 acres. Extensive research on burley tobacco is in cooperation with USDA-SEA/FR. In addition, beef cattle and field crops are studied.

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

**FIELD STATIONS**

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

Forestry Field Stations and Arboretum at Oak Ridge, Tullahoma, and Wartburg. The 230-acre arboretum at Oak Ridge places emphasis on woody plants. Research in forestry, studying genetics, species adaptation, fertilization, and other management practices are under way on the adjoining 2,000 acres of land. The Cumberland forest consists of two tracts of land in Morgan and Scott counties with a total area of 8,676 acres. Research at this location...
developing the agriculture of the state.

Agriculture, the College of Veterinary Medicine—in providing a total program of other units of the Institute—the Agricultural Extension Service works closely with the Cookeville, Knoxville, Chattanooga, seat towns. Headquarters for 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. Unfortunately, some students 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 these groups are carried 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 whose applications for 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 administrative offices are located in Cookeville, Knoxville, Chattanooga, Nashville, and Jackson.

As a distinct administrative unit of the Institute of Agriculture, the Agricultural Extension Service works closely with the office of 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. Glenn Hall, Dean

Curricula in Agriculture

As a distinct administrative unit of the Institute of Agriculture, the College of Veterinary Medicine—in providing a total program of research, instruction, and extension for developing the agriculture of the state.

The use of transfer credit in technical agriculture appropriate to each organized curriculum will be considered and approved by the head of the department or the director 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 of 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 interested in attending this program must apply for permission to register. Students may take three courses and earn nine quarter hours of graduate credit toward the Master of Science degree. The number of courses offered annually in agricultural extension education and in other departments in the College of Agriculture. Additional programs in the College of Agriculture, Knoxville, and in the College of Law, Knoxville, are described in the Graduate Catalog.

DOCTORAL PROGRAMS

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

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 near East campus. On the agricultural campus, 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.
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 experimental programs offered in the College. Cherokee Forest (120 acres), the Oak Ridge Forest (2,260 acres), and Ames Plantation (8,000 acres of forested land) provide excellent facilities for field work in forestry.

Transportation by bus is provided for classes of agricultural students from the agricultural campus to the University farms and to other points of interest where instruction may be given. Transportation by bus is provided between the agricultural campus and main University campus so that students may make the change between classes without serious inconvenience. The facilities of the University on the main campus are available to agricultural students. Courses in the basic sciences, business, communications, engineering, etc., are open to agricultural students and are taught on the main University campus.

Selection of Curriculum

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

Those who are in doubt will be assigned a special adviser to assist them in exploring their area of special interest. It is not necessary for the freshman year to consult an adviser. Requests for wish to follow and for assignment to an adviser should be made to the dean if in doubt about the curriculum they wish to follow and for assignment to an appropriate adviser. Requests for

substitutions or special examinations should be submitted for consideration during the first quarter of study in the selected curriculum.

BASIC CURRICULUM FOR AGRICULTURE

All students working for a degree in Bachelor of Science in Agriculture will include in their course of study the following minimum requirements. The sequence and the selection of courses not specified will be guided by the adviser and the agricultural-extension faculty.

Agriculture 1110, Introduction to Science in Agriculture 4 hours Credit

Agriculture 1120, Introduction to Science in Agriculture Engineering 4

Agriculture 1125

Agriculture 1140, Plant Science for Agriculture 4

Agriculture 1150, Food Technology and Science for Agriculture 4

Agriculture Science (courses listed in department curricula) 26

English and Communications, (English 1010-20 or 1031 or 1032 or 1033, Speech 2211, and elective 1)

Mathematics (general mathematics) 12

Biological Science, (Agricultural biology, biology, botany, microbiology, or zoology) 12

Physical Science. (Chemistry 1110-20 or 1130-40 or physics or geology) 16

Social Science and Humanities. (Economics 2110-20 and electives, 12 hours; more than 3 areas) 18

Hours Effective Hours Specified by Department 76

TOTAL 198

The five basic courses in agriculture are not sequential, 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 who seek the degree of Bachelor of Science in Agriculture, and the teaching teams coordinate their work carefully to insure a unified program.

A major purpose of this basic program is to present freshman agricultural students an appropriate concept of modern agriculture, its role in our economic and social structure, the unity among the several segments, and its relation to other areas of study. Basic subject-matter concepts are presented to prepare suitable foundations for further study. These courses serve as a foundation for study in the physical, biological, and social sciences, and are prerequisites to advanced courses in technical agriculture.

An Honors Seminar is offered as a challenge to exceptional students who desire to explore in greater depth some special topic of unusual significance to agriculture. A team of faculty members shares in this seminar as participants and resource people. The students gain experience and are encouraged to assume responsibilities not available in normally organized courses.
Sophomore

Agricultural economics electives

Chemistry 1110-20 or 1510-20 and

Physics 1210-20 or Geology 1410-20

or

Chemistry 1130-20 or 1530-20 and

Physics 1210 or Geology 1410

Office Administration 2750

3

or 4

Economics 2110-20 or 2300

Non-departmental social science and humanities electives

Statistics 2100

3

Electives

9 or 10

Jr.

Accounting 2110-20

9

Agricultural Economics 3320

6

Agricultural economics and rural sociology electives

Agricultural Economics 4170 or Business Law 4110

4 or 3

Statistics 3420

3

Electives

9

Senior

Agricultural Economics 4140, 4320; 4420 or 4430

Agricultural economics and rural sociology electives

Agricultural Economics 4710 or Business Law 4110

4 or 3

Office Administration 4320

3

Non-departmental agricultural electives

Business administration electives

Electives

9 or 10

TOTAL: 198 hours

Sophomore

Agricultural economics electives

Chemistry 1110-20 or 1510-20 and

Physics 1210-20 or Geology 1410-20

Office Administration 2750

3

or 4

Economics 2110-20 or 2300

Non-departmental social science and humanities electives

Statistics 2100

3

Electives

9 or 10

Jr.

Accounting 2110-20

9

Agricultural Economics 3320

6

Agricultural economics and rural sociology electives

Agricultural Economics 4170 or Business Law 4110

4 or 3

Statistics 3420

3

Electives

9

Senior

Agricultural Economics 4140, 4320 and 4340

Agricultural economics and rural sociology electives

Economics 4310-12-20

6

English 4140

3

Agricultural Economics 4120

3

Non-departmental agricultural electives

Speech 3021

4

Economics 3220

3

Electives

12

Junior

Agricultural Economics 3120

3

Agricultural economics and rural sociology electives

Economics 3111-12-20 or

Economics 3130-20 and 3 hours economics electives

9

Non-departmental social science and humanities electives

Rural Sociology 3420

3

Statistics 3110

3

Electives

12

Senior

Agricultural Economics 4140, 4320 and 4340

Agricultural economics and rural sociology electives

Economics 4310-12-20

6

English 4140

3

Agricultural Economics 4120

3

Non-departmental agricultural electives

Speech 3021

4

Economics 3220

3

Electives

12

TOTAL: 198 hours

Agricultural Education

Advisors: Professor Wegner and Professor Craig and Todd

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

This curriculum is designed to prepare students to work in agriculture. The minimum requirements for admission to the College of Education are offered in the College of Education. All students are required to complete a graduation in agricultural education courses.

Freshman

Agricultural Education 1110-20 and 4400-20

Biology 1210-20

Eng 1010-20, 1031 or 1002 or 1003

Mathematics 1540-50-60 or 1940-5400-12

Sophomore

Agricultural education elective

Chemistry 1110-20 or 1510-20 and

Physics 1210-20 or Geology 1410-20

Office Administration 2750

3

or 4

Economics 2110-20 or 2300

Non-departmental social science and humanities electives

Statistics 2100

3

Electives

9 or 10

Jr.

Accounting 2110-20

9

Agricultural Economics 3320

6

Agricultural economics and rural sociology electives

Agricultural Economics 4170 or Business Law 4110

4 or 3

Statistics 3420

3

Electives

9

Senior

Agricultural Economics 4140, 4320 and 4340

Agricultural economics and rural sociology electives

Economics 4310-12-20

6

English 4140

3

Agricultural Economics 4120

3

Non-departmental agricultural electives

Speech 3021

4

Economics 3220

3

Electives

12

Junior

Agricultural Economics 3120

3

Agricultural economics and rural sociology electives

Economics 3111-12-20 or

Economics 3130-20 and 3 hours economics electives

9

Non-departmental social science and humanities electives

Rural Sociology 3420

3

Statistics 3110

3

Electives

12

Senior

Agricultural Economics 4140, 4320 and 4340

Agricultural economics and rural sociology electives

Economics 4310-12-20

6

English 4140

3

Agricultural Economics 4120

3

Non-departmental agricultural electives

Speech 3021

4

Economics 3220

3

Electives

12

TOTAL: 198 hours

Agricultural Education

Advisors: Professor Wegner and Professor Craig and Todd

The curriculum in agricultural education is planned in cooperation with the College of Education. All agricultural education courses are offered by the College of Education. This curriculum is designed to prepare students to enter the College of Education. All agricultural education courses are offered by the College of Education. This curriculum is designed to prepare students to enter the College of Education.

Freshman

Agricultural Education 1110-20 and 4400-20

Biology 1210-20

Eng 1010-20, 1031 or 1002 or 1003

Mathematics 1540-50-60 or 1940-5400-12

Sophomore

Agricultural education elective

Chemistry 1110-20 or 1510-20 and

Physics 1210-20 or Geology 1410-20

Office Administration 2750

3

or 4

Economics 2110-20 or 2300

Non-departmental social science and humanities electives

Statistics 2100

3

Electives

9 or 10

Jr.

Accounting 2110-20

9

Agricultural Economics 3320

6

Agricultural economics and rural sociology electives

Agricultural Economics 4170 or Business Law 4110

4 or 3

Statistics 3420

3

Electives

9

Senior

Agricultural Economics 4140, 4320 and 4340

Agricultural economics and rural sociology electives

Economics 4310-12-20

6

English 4140

3

Agricultural Economics 4120

3

Non-departmental agricultural electives

Speech 3021

4

Economics 3220

3

Electives

12

Junior

Agricultural Economics 3120

3

Agricultural economics and rural sociology electives

Economics 3111-12-20 or

Economics 3130-20 and 3 hours economics electives

9

Non-departmental social science and humanities electives

Rural Sociology 3420

3

Statistics 3110

3

Electives

12

Senior

Agricultural Economics 4140, 4320 and 4340

Agricultural economics and rural sociology electives

Economics 4310-12-20

6

English 4140

3

Agricultural Economics 4120

3

Non-departmental agricultural electives

Speech 3021

4

Economics 3220

3

Electives

12

TOTAL: 198 hours

Agricultural Engineering

Advisors: Professors Luther and Bledsoe

The College of Agriculture, in cooperation with 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 Engineers' Council for Professional Development, Industry, government agencies, research and testing organizations, and foreign service employers respecting special requirements for 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 taking special classes during the freshman year. The curriculum gives training in the fundamentals of engineering applied to problems of agriculture. In the senior year, 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 erosion, and agricultural structures.
**Agricultural Mechanization Curriculum**

Advisers: Professors Lutriff and Shalton

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, electification and processing, structures and environment, and soil and water conservation. By selecting either the Production and Processing Option or the Business and Industry Option, students, with assistance from their adviser, may structure their program to obtain either a broadly specialized education.

Graduates are employed by industry, government, and educational institutions generally in the areas of management, promotion, sales, and training related to agricultural products, materials, and services.

**Freshman**  
Credits

<table>
<thead>
<tr>
<th>Course Area</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture 1130</td>
<td>5</td>
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<tr>
<td>Agriculture 1150</td>
<td>2</td>
</tr>
<tr>
<td>Basic English 1010-20-30</td>
<td>1</td>
</tr>
<tr>
<td>Basic Science 1010-20</td>
<td>4</td>
</tr>
<tr>
<td>English 1010-20-30</td>
<td>4</td>
</tr>
<tr>
<td>English 1100-20-30</td>
<td>3</td>
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<tr>
<td>English 1200-20-30</td>
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<tr>
<td>Mathematics 1200-20-30</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>196</strong></td>
</tr>
</tbody>
</table>

**Sophomore**  
Credits

<table>
<thead>
<tr>
<th>Course Area</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Biology 1210-20-30</td>
<td>3</td>
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<tr>
<td>Chemistry 1110-20-30</td>
<td>12</td>
</tr>
<tr>
<td>Engineering and Mechanics 2311</td>
<td>4</td>
</tr>
<tr>
<td>Engineering Science and Mechanics 3700</td>
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<td>Mathematics 2110-20-30</td>
<td>3</td>
</tr>
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<td><strong>Total</strong></td>
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**Junior**  
Credits

<table>
<thead>
<tr>
<th>Course Area</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Agricultural Engineering 3100</td>
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<tr>
<td>Agricultural Engineering 3150-20-30</td>
<td>12</td>
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<tr>
<td>Computer Science 3150</td>
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<tr>
<td>Computer Science and Mechanization 3310</td>
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<tr>
<td>Computer Science 3540</td>
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<tr>
<td>Speech 2311</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>19</strong></td>
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</tbody>
</table>

**Senior**  
Credits

<table>
<thead>
<tr>
<th>Course Area</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economics 2110-20-30</td>
<td>3</td>
</tr>
<tr>
<td>Agriculture 3610-20</td>
<td>8</td>
</tr>
<tr>
<td>Agriculture 3630-20-30</td>
<td>8</td>
</tr>
<tr>
<td>Agriculture 3670-20</td>
<td>8</td>
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<tr>
<td>Agriculture 4110-20-30</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>19</strong></td>
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</tbody>
</table>

**Electives**  
Credits

<table>
<thead>
<tr>
<th>Course Area</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Technical electives</strong></td>
<td><strong>6</strong></td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>6</strong></td>
</tr>
</tbody>
</table>

**TOTAL:** 199 hours

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**Agricultural Extension Education**

Advisers: President Dotson; Associate Professor Carter

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

**Animal Science**

Advisers: Professors Johnson, Bieter (Emeritus), Young, Smith, McWean, Merrigan, and others

**Agricultural Economics**

Advisers: Professors Drey, T. Young, and others

**Agricultural Extension Education**

Advisers: Professor Dotson; Associate Professor Hellman, Robbins, and Smaling

This curriculum is designed to prepare students for leadership careers in livestock and its 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 careers as advisors, extension workers, farmers, farm managers, management, business, or science, or elect the pre-veterinary courses preparatory for specialization. Election select permits
organizations associated with agriculture.
other educational agencies, supply and
production, managerial or marketing groups,
companies, meat animal, milk, egg, or poultry
special training for work with feed
departments.

This program is designed to guide the
student in meeting the admission
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 make up the
minimum requirements for entrance into the
College of Veterinary Medicine. However,
each year the number of applicants is greater
than the number of available spaces.
Therefore, each pre-veterinary medical
student should, early in the college career,
elect a possible alternative choice.

The admission requirements listed below are
those required by The University of
Tennessee College of Veterinary Medicine.
The information is intended to fulfill
requirements for other veterinary colleges.
Students should read the requirements for
their school of choice.

Animal Science (core
required)............................. 3
Chemistry 1300 or 1305, and 3211-19
or 3220, or Nutrition 3310
Economics 2110-20
Microbiology 2100-11
Plant and Soil Science 2100
Physiology 2311
Speech 2311 and communications
elective.............................. 7

Electives.............................. 5

Animalscienceelectives............

Pre-veterinary Medicine-Animal Science

A suggested schedule for the
pre-veterinary medicine student is given below which will (1) allow
for the completion of the above pre-veterinary
requirements by the end of the third year, and
(2) allow the student to make normal progress
toward the requirements for a degree in
agriculture with a major in animal
science. It is strongly recommended that the
student carry a normal load of at least 15 hours per
quarter.

First year

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,
zooology, physics, and statistics, etc. Electives should be chosen with care.

Pre-Veterinary Medicine

OPTIONS CURRICULUM

Animal Science (core
required)............................. 3
Chemistry 1300 or 1305, and 3211-19
or 3220, or Nutrition 3310
Economics 2110-20
Microbiology 2100-11
Plant and Soil Science 2100
Physiology 2311
Speech 2311 and communications
elective.............................. 7

Electives.............................. 5

Animalscienceelectives............

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quarter.

First year

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in production would select additional courses in agriculture, in business administration,
economics, agricultural economics, finance, and accounting; in research in chemistry,
zooology, physics, and statistics, etc. Electives should be chosen with care.

Pre-Veterinary Medicine

OPTIONS CURRICULUM

Animal Science (core
required)............................. 3
Chemistry 1300 or 1305, and 3211-19
or 3220, or Nutrition 3310
Economics 2110-20
Microbiology 2100-11
Plant and Soil Science 2100
Physiology 2311
Speech 2311 and communications
elective.............................. 7

Electives.............................. 5

Animalscienceelectives............

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agriculture with a major in animal
science. It is strongly recommended that the
student carry a normal load of at least 15 hours per
quarter.

First year

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,
zooology, physics, and statistics, etc. Electives should be chosen with care.

Pre-Veterinary Medicine

OPTIONS CURRICULUM

Animal Science (core
required)............................. 3
Chemistry 1300 or 1305, and 3211-19
or 3220, or Nutrition 3310
Economics 2110-20
Microbiology 2100-11
Plant and Soil Science 2100
Physiology 2311
Speech 2311 and communications
elective.............................. 7

Electives.............................. 5

Animalscienceelectives............

Pre-veterinary Medicine-Animal Science

A suggested schedule for the
pre-veterinary medicine student is given below which will (1) allow
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requirements by the end of the third year, and
(2) allow the student to make normal progress
toward the requirements for a degree in
agriculture with a major in animal
science. It is strongly recommended that the
student carry a normal load of at least 15 hours per
quarter.

First year

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,
zooology, physics, and statistics, etc. Electives should be chosen with care.

Pre-Veterinary Medicine

OPTIONS CURRICULUM

Animal Science (core
required)............................. 3
Chemistry 1300 or 1305, and 3211-19
or 3220, or Nutrition 3310
Economics 2110-20
Microbiology 2100-11
Plant and Soil Science 2100
Physiology 2311
Speech 2311 and communications
elective.............................. 7

Electives.............................. 5

Animalscienceelectives............

Pre-veterinary Medicine-Animal Science

A suggested schedule for the
pre-veterinary medicine student is given below which will (1) allow
for the completion of the above pre-veterinary
requirements by the end of the third year, and
(2) allow the student to make normal progress
toward the requirements for a degree in
agriculture with a major in animal
science. It is strongly recommended that the
student carry a normal load of at least 15 hours per
quarter.

First year

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,
zooology, physics, and statistics, etc. Electives should be chosen with care.
Food Technology and Science
Advisers: Professors Miles, Collins, James, and L. Mallon. Associate Professor S. Melton
Food technology and science is the application of the sciences and engineering to the manufacture, preservation, storage, transportation, and consumer use of food products. Processing of raw food materials into consumer products by canning, freezing, dehydrating, fermenting, preserving, etc., is taught with emphasis on basic principles rather than on specific commodity procedures. Therefore, 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 assurance control supervisor, plant foreman and manager, packing specialist, ingredient specialist, etc. The total Curriculum of the Institute of Food Technologists was used as a guide in development of the curriculum. At the outset of the first year, students are required to take 34 hours for the core of required courses and 6 hours for electives. The core requirements are based on the following areas of study:

- **Biology 1010-20**
- **Chemistry 1210 and 1220**
- **Mathematics 1700, 1841-51**
- **English 1010-20**
- **Computer Science 1410**
- **Economics 2110-20**
- **Forest Economics**
- **Forest Management**
- **Forest Biology**
- **Oral and Public Communication**

The curriculum includes a laboratory component and provides an opportunity to obtain an associate's degree Bachelor of Science in an area of interest in the sciences, particularly chemistry, biology, and microbiology. Students must complete the following core requirements and electives:

**Core Requirements**
- Biology 1010-20
- Chemistry 1210 and 1220
- Mathematics 1700, 1841-51
- English 1010-20
- Computer Science 1410
- Economics 2110-20
- Forest Economics
- Forest Management
- Forest Biology
- Oral and Public Communication

**Electives**
- 6 hours

**Other Requirements**
- 3 credit hours of natural and social sciences
- 3 credit hours of mathematics
- 3 credit hours of oral and public communication

**Total Hours**
- 54

**Advantages**
- Preparation for professional positions in the food industry
- Emphasis on basic principles rather than specific commodity procedures
- Preparation for professional positions in the food industry such as food microbiologist, food chemist, quality assurance control supervisor, plant foreman and manager, packing specialist, ingredient specialist, etc.

**Career Opportunities**
- Food technologist
- Food quality control
- Food safety
- Food processing
- Food product development
- Food industry management

**Additional Information**
- Students entering the junior year should check with an advisor to assure completion of course prerequisites for spring quarter junior year.
- Students interested in wildlife management should consult with an advisor to assure completion of course prerequisites for spring quarter junior year.

**Forest Resource Management Option**
- Provides an opportunity to obtain an education leading to a career in the management of the broad spectrum of forest and wildlife resources. In addition to the core of required courses there are about 30 elective credits hours for broad studies or specialized training in one or more areas of forestry. These areas and examples of related fields of study include:
  - Forest Biology
  - Forest Economics
  - Forest Management
  - Forest Engineering
  - Forest Inventory
  - Forest Recreation
  - Wildlife Management
  - Wood Utilization and Production Management

**Forest Recreation Option**
- Provides an opportunity to obtain an education leading to a career in the management of the broad spectrum of forest and wildlife resources. In addition to the core of required courses there are about 30 elective credits hours for broad studies or specialized training in one or more areas of forestry. These areas and examples of related fields of study include:
  - Forest Recreation
  - Wildlife Management
  - Wood Utilization and Production Management

**Forestry, Wildlife and Fisheries**

Adviser: G. Schneider

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

**FOREST RESOURCE MANAGEMENT OPTION**
- Provides an opportunity to obtain an education leading to a career in the management of the broad spectrum of forest and wildlife resources. In addition to the core of required courses there are about 30 elective credits hours for broad studies or specialized training in one or more areas of forestry. These areas and examples of related fields of study include:
  - Forest Biology
  - Forest Economics
  - Forest Management
  - Forest Engineering
  - Forest Inventory
  - Forest Recreation
  - Wildlife Management
  - Wood Utilization and Production Management

**FOREST RECREATION OPTION**
- Provides an opportunity to obtain an education leading to a career in the management of the broad spectrum of forest and wildlife resources. In addition to the core of required courses there are about 30 elective credits hours for broad studies or specialized training in one or more areas of forestry. These areas and examples of related fields of study include:
  - Forest Recreation
  - Wildlife Management
  - Wood Utilization and Production Management

**Total Hours**
- 198

**Advisers**
- Professors Miles, Collins, Jaynes, and C. Melton; Associate Professor S. Melton

**Additional Information**
- Students interested in wildlife management should consult with an advisor to assure completion of course prerequisites for spring quarter junior year.
- Students interested in wildlife management should consult with an advisor to assure completion of course prerequisites for spring quarter junior year.

**Forest Resource Management Option**
- Provides an opportunity to obtain an education leading to a career in the management of the broad spectrum of forest and wildlife resources. In addition to the core of required courses there are about 30 elective credits hours for broad studies or specialized training in one or more areas of forestry. These areas and examples of related fields of study include:
  - Forest Biology
  - Forest Economics
  - Forest Management
  - Forest Engineering
  - Forest Inventory
  - Forest Recreation
  - Wildlife Management
  - Wood Utilization and Production Management

**Forest Recreation Option**
- Provides an opportunity to obtain an education leading to a career in the management of the broad spectrum of forest and wildlife resources. In addition to the core of required courses there are about 30 elective credits hours for broad studies or specialized training in one or more areas of forestry. These areas and examples of related fields of study include:
  - Forest Recreation
  - Wildlife Management
  - Wood Utilization and Production Management

**Total Hours**
- 198
**Senior**  
Journalism 3710 .......................... 8  
Plant and Soil Science 3610 ............ 6  
Wildlife and Fisheries Science 3230 .... 8  
**Sophomore**  
Chemistry 1510-20 ........................ 8  
Computer Science 1410  ................ 3  
Economics 1410  .......................... 3  
Forestry 3640-50  ........................ 6  
Sociology 1510-20  ........................ 4  
Psychology 2500  .......................... 3  
**Junior**  
Zoology 4200, 4660  ..................... 9  
Wildlife and Fisheries Science 3450, 4300, 4520 .................. 6  
Computer Science 4110  .................. 4  
**Electives**  ................................. 11  
Science  
Forestry 3210, 4210, 4230, 4240, 4330, 4440  .............. 6  
Planning 4101, 4110 .......................... 3  
Wildlife and Fisheries Science 4120, 4180  ................. 4  
**Electives**  ................................. 21  
TOTAL: 198 hours

**Sophomore**  
Chemistry 1510-20-30  .................. 12  
Economics 2120-20  ..................... 6  
Biology 3710  .............................. 3  
Forest and Fisheries Science 3210-40  .... 8  
Animal Science 3120-40  .............. 7  
Computer Science 4110  .................. 3  
**Electives**  ................................. 11  
Junior  
Zoology 4200, 4640  ..................... 9  
Wildlife and Fisheries Science 4450, 4640  .................. 8  
Agriculture 4510  .......................... 3  
**Electives**  ................................. 21  
**Senior**  
Zoology 4200, 4660  ..................... 9  
Wildlife and Fisheries Science 4450, 4640  .................. 8  
Agriculture 4510  .......................... 3  
**Electives**  ................................. 21  
**TOTAL: 198 hours**

**Or equivalent honors courses.**  
**Only hours of electives approved by the faculty adviser.**  
**Include: 6 hours of communications electives, with at least 3 hours in writing.**  
**Include: Honors election: 2 of 12 hours of courses.**  
**Include: 3 hours of physics.**  
**Include: 198 hours.**

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**Oral Ornamental Horticulture and Landscape Design**  
**Adviser: Professor Williams**  
**Human needs go beyond food, clothing, and shelter. We require a degree of control over our environment, especially immediate surroundings. Ornamental plants and their uses are recognized as part of the environment, hence a curriculum in ornamental horticulture and landscape design. The four areas of study within this curriculum include: turf management, turfgrass management, and landscape management.**  
**The area of ornamental horticulture includes the science of production, distribution, and marketing of plants and flowers 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, and teachers.**

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

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

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

---

**Freshman**  
Agriculture 1110-30  ..................... 20  
**Introduction to biological sciences**  
**English 1510-30  ......................... 12**  
**Mathematics 1540-50-60**  .................. 12

**Sophomore**  
Chemistry 1510-20-30 or 1510-20-30-40  .... 12  
Economics 2120-20  ..................... 6  
**English or communications electives**  
**Social science or humanities electives**  
**Plant and Soil Science 3130**  ............ 4  
**Orn. Hort. and Landscape Design 3210**  ........ 4  
**Orn. Hort. and Landscape Design 3230**  ........ 4

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**Junior**  
**Social science or humanities electives**  
**Communications electives**  
**Psychology 2500**  ...................... 3  
**Orn. Hort. and Landscape Design**  ........ 4

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**Senior**  
**Plant and Soil Science 3040**  ............ 3  
**Orn. Hort. and Landscape Design**  ........ 4

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**Plant and Soil Science**  
**Advisors: Professor Reynolds, Seatz, Skold, Associate Professors Coffey, Lessman, and Reich, Assistant Professor Allen.**

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**Ornamental Horticulture**  
**Adviser: Professor Williams**

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**Landscaping 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 management. Such opportunities include golf course superintendents, park and recreational turf managers, operation of a lawn maintenance business, producer and seller of sod, research, teaching, and sales. Landscaping means modifying the outdoor environment to the greatest use, comfort, and enjoyment. It not only means the use of trees, shrubs, and other plant material to accomplish this goal, but it also means having an understanding of the requirements for working, recreation, and housing. Emphasis in the area of landscape design is on plant material and design courses. Opportunities in this area include landscape nursery operation, landscape maintenance, garden center operation, allied sales, highway landscaping, park development, research, teaching, and writing.**
fertilizers efficiently; and basic studies in chemistry, physics, and biology as they apply to the soil and to a better understanding of its properties and proper use. The plant and soil scientist must have a knowledge of the basic physical and biological sciences and, in addition, be trained in communication skills. The scientist may be broadly trained or may specialize in a more specific phase of the subject. Regardless of interest, many good jobs are available for the well-trained plant and soil scientist.

Employment opportunities differ depending upon the individual's type of training and interest. For the person who is scientifically inclined, positions are available in research with both public and private agencies. For those who wish to apply their knowledge to the solution of practical problems, positions are available with the Agricultural Extension Service as extension agents or as specialists, with the Soil Conservation Service, Forest Service, Farmers Home Administration, Production Credit Association, and other public agencies. Many plant and soil scientists are employed in 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.

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.

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**
- Credit Hours
- **Agriculture** 1110-30-40-50 .................................. 16
- **Biology** 1220-2320 ............................................. 4
- **Chemistry** 1110-20-30 ........................................... 9
- **Mathematics** 1450-50-60 ........................................ 12

**Sophomore**
- **Agriculture** 1120-30-40-50 .................................. 12
- **Biology** 3110-20-30 ............................................. 6
- **Chemistry** 1150-20-30 ........................................... 6
- **Mathematics** 1840-50-60 ........................................ 9

**Junior**
- **Agriculture** 2120-30-40-50 .................................. 16
- **Chemistry** 1150-20-30 ........................................... 6
- **Mathematics** 1840-50-60 ........................................ 9

**Senior**
- **Botany** 3210 ....................................................... 4
- **Plant and soil science electives** .............................. 10
- **Electives** ............................................................ 5

**TOTAL: 108 hours**

**GROUP A**

**Plant and Soil Science 3110, 3200, 3610.**

**GROUP B**

**Plant and Soil Science 3120, 3140, 3160, 3190, 3510, 3520, 3610, 4120**

In addition to the specific courses, students may specialize in areas of interest by selecting courses from the following groups. These lists are suggestive only. The departmental adviser will guide the student according to the student’s individual objective.

**Agriculture**
- **Agricultural Economics** 4120, 4410, 4320;
- **Agricultural Marketing** 3410, 4120;
- **Animal Science** 2140, 3140, 3510;
- **Plant and Soil Science** 2130, 3610, 3420;
- **Rural Sociology** 3420.

**Business**
- **Accounting** 2120-2200; **Business Law** 4110-20-30;
- **Economics** 2120-30; **Finance** 3110; **Management** 3010; **Marketing** 3120-20; **Office Administration** 410-20.

**Science**
- **Biology** 3110-30-29-30; **Botany** 3030, 4310;
- **Chemistry** 2140-43, 3211-31-21, 3219-29-30;
- **Geology** 4120-30; **Physics** 1220-30.

**Credit for Cooperative Work**

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

**Short Courses and Special Events**

Practical short courses in agriculture are offered for those who desire special training in certain areas. Some of these short courses are held on the Knoxville campus, others at the Agricultural Experiment Station, Center, Milan, Tennessee, or appropriate approved jobs. To receive credit, the student must receive the recommendation of the employer, must present a satisfactory written report, and must receive a passing grade from the university professor in charge. Employment periods shall be not less than 12 weeks. At least one quarter must be spent in study on the campus between periods of employment. Prerequisites: Junior standing, with a grade of 2.0 or above, and permission of the department head and the dean of the College of Agriculture to register. Three credit hours may be earned by supervised employment on approved jobs. To receive credit, the student must receive the recommendation of the employer, must present a satisfactory written report, and must receive a passing grade from the university professor in charge.

**Special Courses**

Practical short courses in agriculture are offered for those who desire special training in certain areas. Some of these short courses are held on the Knoxville campus, others at the Agricultural Experiment Station, Center, Milan, Tennessee, or appropriate approved jobs. To receive credit, the student must receive the recommendation of the employer, must present a satisfactory written report, and must receive a passing grade from the university professor in charge. Employment periods shall be not less than 12 weeks. At least one quarter must be spent in study on the campus between periods of employment. Prerequisites: Junior standing, with a grade of 2.0 or above, and permission of the department head and the dean of the College of Agriculture to register. Three credit hours may be earned by supervised employment on approved jobs. To receive credit, the student must receive the recommendation of the employer, must present a satisfactory written report, and must receive a passing grade from the university professor in charge.

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analyzing a farm business. Factors affecting farm income and efficiency. Resource acquisition, cash flow, risk, tax, and tenure consideration. Practice in decision making on simulated farm. Prereq: Agriculture 1110 and Economics 2120. 2 hrs and 1 lab.

3130 Commodity Futures Markets (2) Futures markets as an instrument in marketing of primary industry products; problem of price behavior and role of alternative price change; price analysis from two viewpoints: supply-demand and history (fundamentalist and chartist). Prereq: Junior standing. 3 hrs.

3170 Consumer Demand for Agricultural Products (3) Economic principles, practices, and budgeting techniques to use in purchasing of goods and services. Evaluation of advertising and other related information. Prereq: Agriculture 1110 and Economics 2120.

4210 Farm Management (3) Principles of farm organization and operation; allocating land, labor, and capital to meet changing technologies; tenure arrangements and use of credit; risks; measures of success. Use and analysis of records; exercises in planning farms. Field trips arranged. Prereq: Agriculture 1110 and Economics 2120. 2 hrs and 1 lab.

4140 Introduction to Agricultural Production Economics (3) Resource allocation, production selection, scale of operation of agricultural firms; aggregate effects of decisions made by individual farmers. Prereq: Agriculture 1110 and Economics 2120, and senior standing.

4210 Problems in Agricultural Economics (3) Supervised laboratory course in methods of collecting and analyzing information and in writing a report. Prereq: Agriculture 1110 and Economics 2120. May be repeated to a maximum of 9 credit hours.

4320 World Agriculture and Trade (2) Economic problems of world agricultural production and trade—resource location, land tenure systems, international trade, and commercial policy. Prereq: Agriculture 1110 and Economics 2120, or consent of instructor.

4250 Agricultural and Rural Planning (3) Decision-making concepts applied to design and implementation of projects at different scales. Examples from the U.S. and other countries. Prereq: Agriculture 1110 and Economics 2120.

4310 Farm Financial Management (3) Nature and sources of capital, credit problems of farmers; kinds and sources of farm credit. Apportion of insurance and taxation. Prereq: Agriculture 1110 and Economics 2120.

4230 Agricultural Policies (3) Meaning of agricultural policy in democratic planning; relationship of farm groups to public policy; problems rising to public debate. Policy formulation, analysis of policy, and appraisal of results; current policy problems. Prereq: Agriculture 1110 and Economics 2120.


4710 Agricultural Law (5) Survey of law and application of law to the business practices of the farm or rural enterprise, such as property, contracts, trusts, farm and water rights, land transfer, transfer of property, tenancy, leases, and other selected topics. Prereq: Economics 3210.

4000 0 Non-Thesis Graduation Completion (3-10)

5011 Special Problems in Laws of Thesis (2-6)

5120 Agricultural Price Analysis (3)

5130 Advanced Agricultural Production Economics (3)

5210 Seminar: Agricultural Policies (3)

5220 Seminar: Methodology of Research (3)

5230 Seminar: Adjustments to Industrialization (3)

5310 Research (3)

5410 Agricultural Marketing Analysis (3)

5425 Advanced Land Economics (3)

5440 Economics of Agricultural Development (3)

5610 Quantitative Methods in Agricultural Economics (3)

5710 Quantitative Methods in Agricultural Economics (3)

5230 Research and Dissertation

6230-30 Seminar in Agricultural Economics (3, 3)

6210 Agricultural and Rural Transformation Problems (3)

6140 Agricultural Supply Analysis (3)

6242 Marketing and Resource Use (3)

Rural Sociology (880)

3420 Rural Sociology (3) Nature of rural society: local traditions connected; rural-urban differences; rural-residential characteristics and movement; problems of rural people; tenancy, farm labor, health, services, educational facilities, churches, local government; impact of industrialization.

4452 Diffusion of Agricultural Technology (3) Analysis of diffusion process already new technology spreads from scientists to final adopters. Topics discussed include adoption process, communication behavior, mass media, role of professional change agents, opinion leadership, and two-step flow hypothesis. Prereq: Rural Sociology 3420, or consent of instructor.

GRADUATE

3450 Special Problems (3)

5430 Rural Sociology Seminar (3)

5450 Advanced Rural Sociology (3)

5470 Research Problems in Rural Communities (3)

5490 Rural Population Analysis (3)

Agricultural Engineering

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

2130 Agricultural Prices (2) Factors determining prices of farm products. Effects on price of varying demand for farm products and weather. Sources of information on prices and related market data. Uses of price information and techniques of analysis in determining outcome for farm prices. Prereq: Agriculture 1110 and Economics 2120.

3230 Marketing Farm Products (5) American marketing system; marketing system functions, marketing objectives, marketing strategies, marketing relationships, farm marketing, functions of marketing system, commodity marketing, marketing principles, current marketing problems, and possibilities for improvement. Prereq: Agriculture 1110 and Economics 2120.

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

5011 Special Problems in Laws of Thesis (2-6)

5120 Agricultural Price Analysis (3)

5130 Advanced Agricultural Production Economics (3)

5210 Seminar: Agricultural Policies (3)

5220 Seminar: Methodology of Research (3)

5230 Seminar: Adjustments to Industrialization (3)

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5210 Seminar: Agricultural Policies (3)

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5710 Quantitative Methods in Agricultural Economics (3)

5230 Research and Dissertation

6230-30 Seminar in Agricultural Economics (3, 3)

6210 Agricultural and Rural Transformation Problems (3)

6140 Agricultural Supply Analysis (3)

6242 Marketing and Resource Use (3)
apology problems involving food and erosion con-
trol, drainage, irrigation, and water quality. Corne
Plant and Soil Science, 3110; Engr. Sci. and Mech.
3112; Animal Sciences and Agricultural Engineer-
for non-majors only.
5320 Structures for Production, Environmental
Control, and Waste Management (3) Analysis of
concrete members, structural and environmental re-
duction and storage; physiological requirements;
heat, irrigation, moisture relationships, vari-
tation and waste management, 3 hrs and 1 lab.
Graduate credit for non-majors only.
3820 Processing and Material Handling Systems
(3) Agricultural systems involving design to in-
process and handling of agricultural products.
physical properties; thermal processing, cutting,
Coreq: Engr. Sci. Mech. 3112. 3 hrs and 1 lab.
Graduate credit for non-majors only.
3640 Power Units and Machinery (6) Components
and operating characteristics of internal combus-
tion engines and tractor systems: functional
analyses and capabilities of agricultural machin-
ery, machinery system performance and cost analyses.
3 hrs and 1 lab. Graduate credit for non-majors only.
4120-30 Seminar (1,1) Presentations, discussions,
reports. 4120—Professional development topics.
4130-Industry trip. Prereq: Consent of department
head.
4210 Special Problems in Agricultural Engineer-
ing (3) Selection, analysis, report, and re-
search problem. May be repeated for a maximum of
nine credit hrs when given in cooperative en-
gineering or other approved industry work. Prereq:
3100 and consent of department head.
4220 Selected Topics in Agricultural Engineer-
ing (3) Develop new topics as required by current
interests in problems in agriculture and related
fields.
4610 Design of Water Control and Waste Utili-
sation Systems (3) Design of water control and
waste utilization systems including earth dams, irrigation,
drainage, and groundwater; philosophy, compo-
ents for integrated agricultural processing
systems; design of water control and waste utili-
ization systems. Prereq: Math 1550. 3 hrs and 1 lab.
4620 Design of Structures for Produce, Process-
ing, and Environmental Control (3) Functional
principles of structures for structures; functional
structure halls; emphasis placed on complete design of struc-
tures in system; design to include functional struc-
tural and environmental aspects. Prereq: 3620. 1 hr
and 1 lab.
4630 Design of Processing and Materials Handling
Systems (3) Development of systems and com-
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during energy balances, product
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properties; thermal processing, cutting,
Coreq: Engr. Sci. Mech. 3112. 3 hrs and 1 lab.
Graduate credit for non-majors only.
2810 Fundamentals of Food Animal Evaluation (4)
Criteria for food animal evaluation: market clips, weights and grades of cattle, poultry, and poultry products. Demand, weight, and economic values. Grading of cattle, poultry, sheep, and swine. 2 hrs and 2 labs.

2820 Animal Management Practices (3) Integration of management practices and skills into cattle, horse, sheep, poultry, and swine enterprises. Practices and skills include feeding, castrating, docking, shearing, and, identification, preparation for show and sale, vaccinating and immunizing, controlling parasites. Facilities needed in livestock management include feeders, waterers, handling devices, and restraining devices. 2 hrs and 2 labs.

2830 Introduction to Light Horses (3) Scope and uses of light horse industry; breeds—development, function, and use; soundness; tack; introduction to management problems. May not be used by animal science majors. 2 hrs to meet graduation requirements. 2 hrs and 2 labs.

2910 Anatomy and Physiology of Farm Animals (4) Somatic and germ tissues, muscles, blood and microcirculation, and nervous cardiovascular, respiratory, gastrointestinal, renal, and endocrine systems; reproduction, pregnancy, and lactation; growth; digestion; endocrine regulation of reproduc- tion; lactation; endocrine regulation of reproduction in various species. Prereq: 3210 or consent of instructor. 3 hrs and 2 labs. (Same as Zoology 3320.)

2920 Nutrition and Food Processing of Farm Animals (2) Nutritional requirements, feeding standards, nutrient deficiencies, and their effects on animal performance in poultry, swine, beef, and dairy cattle. 2 hrs and 2 labs.

2930 Animal Nutrition (2) Properties, functions, utilization, and depletion of essential nutrients of normal growth and maintenance of farm animals; practical aspects of feeding. Prereq: Agriculture 1130 and 1 quart of meat. 3 hrs and 1 lab.

2940 Feeds and Ration Formulation (4) Feeds, feedstuffs, amino acids, minerals, vitamins, proteins, and ration formulation for beef and dairy cattle, swine, poultry, sheep, honey bees, and other farm ani- mals. Prereq: 3320. 2 hrs and 2 labs.

2950 Nutrition and Feeding of Dairy Cattle (2) Basic principles of nutrition and feeding diet essentials in dairy cattle, including lactation, body composition, endocrine regulation of feed intake, body composition, and dairy cattle nutritional needs. Prereq: 3320. 1 hr and 2 labs.

2960 Nutrition and Feeding of Swine (2) Basic principles of nutrition and feeding diet essentials in swine, including growth, body composition, endocrine regulation of feed intake, body composition, and swine nutritional needs. Prereq: 3320. 1 hr and 2 labs.

2970 Nutrition and Feeding of Sheep (2) Basic principles of nutrition and feeding diet essentials in sheep, including growth, body composition, endocrine regulation of feed intake, body composition, and sheep nutritional needs. Prereq: 3320. 1 hr and 2 labs.

2980 Nutrition and Feeding of Poultry (2) Basic principles of nutrition and feeding diet essentials in poultry, including growth, body composition, endocrine regulation of feed intake, body composition, and poultry nutritional needs. Prereq: 3320. 1 hr and 2 labs.

2990 Advanced Animal Physiology (5) Study of endocrine and feeding regulation in swine, cattle, poultry, sheep, and swine, 2 hrs and 1 lab.

3010 Breeds of Farm Animals (3) Study of evolution and formation of breeds of cattle, horses, poultry, sheep, and swine. Breeding structure, development, characteristics, and improvement of various breeds. Prerequisites: industry and impact of cross-breeding programs. 3 hrs and 1 lab.

3015 Animal Hygiene and Sanitation (4) Parasitic, bacterial, viral, and fungal disease agents. Transmission, reproduction, commutation, control and protection against diseases. Veterinary vaccinations and quarantines, health inspections. Prereq: Microbiology 1011 or 1012 or consent of instructor. 3 hrs and 1 lab.

3020 Animal Diseases (3) Major diseases; chro- matins, prokaryotes, and bacteria, trematodes, nematodes, and protists. Prereq: 3015. 3 hrs and 1 lab.

3030 Meat Animal Selection (3) Evaluation, judging, classification, and selection of beef cattle, sheep, and swine for commercial efficiency. Prereq: 2610. 1 hr and 2 labs.

3031 Dairy Cattle Judging and Classification (3) Comparative judging of dairy cattle, milk classification programs. Economic value of classification, rating, Prereq: 2810 or consent of instructor 3 labs.

3033 Grading of Poultry and Poultry Products (3) Grading of poultry and poultry products. According to USDA standards; factors influencing quality. Prereq: 2810. 1 hr and 2 labs.

3040 Horse Selection and Judging (3) Selection, evaluation, and selection of beef cattle, sheep, and swine for commercial efficiency. Prereq: 2610. 1 hr and 2 labs.

3060 Dairy Cattle and Beef Cattle (3) Development, breeding, nutrition, and physiology. Prereq: 3015. 1 hr and 2 labs.

3100 Special Problems in Animal Science 1-4 Special research and/or special projects based on independent student study or review of literature dealing with subjects applicable to field of animal science. Approved semester hour is for each credit hour earned. May be repeated for a maximum of 6 credit hours. Prereq: 3310. 1 hr or 2 labs.

3120 Applied Reproduction in Farm Animals (3) Application of methods and techniques in collecting, evaluating, producing, and processing semen; insemination of females; pregnancy diagnosis; gestation, parturition, and maternal behavior. Prereq: 3310. 1 hr and 2 labs.

3121 Physiology of Lactation (3) Developmental anatomy, endocrine regulation of milk glands; endocrine regulation of lactation; somatic and endocrine factors affecting feeding, balance: rating ratios for beef and dairy cattle, swine, and poultry. Not available to students with credit in 3310. Prereq: Agriculture 1130 and 1 quart of meat. 3 hrs and 1 lab.

3123 Avian Physiology (3) Anatomy and physiology of avian species with emphasis on poultry. Prereq: 2810. 1 hr and 2 labs.

3124 Animal Physiology (3) Anatomy and physiology of avian species with emphasis on poultry. Prereq: 2810. 1 hr and 2 labs.

3127 Animal Anatomy and Physiology (3) Vertebrate and invertebrate animal groups; basic principles of nutrition and feeding diet essentials in poultry, swine, beef, and dairy cattle. Prereq: 3320. 1 hr and 2 labs.

3128 Animal Nutrition (3) Principles, functions, utilization, and depletion of essential nutrients of normal growth and maintenance of farm animals; practical aspects of feeding. Prereq: Agriculture 1130 and 1 quart of meat. 3 hrs and 1 lab.

3130 Nutrition and Food Processing of Farm Animals (2) Nutritional requirements, feeding standards, nutrient deficiencies, and their effects on animal performance in poultry, swine, beef, and dairy cattle. 2 hrs and 2 labs.

3131 Animal Science (3) Vertebrate and invertebrate animal groups; basic principles of nutrition and feeding diet essentials in poultry, swine, beef, and dairy cattle. Prereq: 3320. 1 hr and 2 labs.

3136 Applied Animal Breeding (3) Applications of principles studied in 3310. Taught by special arrangement. 3 hrs and 1 lab.

3160 Advanced Beef Cattle, Dairy Cattle, Horse, Poultry, Sheep, and Swine Judging (3) Specialization in judging, evaluation, selection, and presenta- tion 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.

4160 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. Prereq: Completion of animal science sophomore and junior core courses or consent of instructor. 3 hrs and 1 lab.

4180 Dairy Cattle Production and Management (4) Integration of principles of nutrition, physiology, and breeding into complete dairy cattle management program. Topics will include structure of industry, enterprise establishment, systems of production, production practices, and herd improvement programs. Prereq: Completion of animal science sophomore and junior core courses or consent of instructor. 3 hrs and 1 lab.

4184 Poultry Production and Management (4) Structure of poultry industry; organization and management of poultry enterprises including rearing, production, processing, and marketing. Prereq: Completion of animal science sophomore and junior core courses or consent of instructor. 3 hrs and 1 lab.

4185 Light Horse Production and Management (4) Structure of industry; systems of management, organization, and herd improvement programs; tack, equipment, and feed for both pleasure owners and commercial producers. Altenatives evaluated in terms of pleasure and competition. Prereq: Completion of animal science sophomore and junior core courses or consent of instructor. 3 hrs and 1 lab.

4190 Seminar (2) Review of literature and presentation of special topics in animal science. Prereq: Senior standing. 1 hr and 1 lab.

GRADUATE
5010 Thesis 5011 Problems in Lieu of Thesis (1-4)
5110 Special Problems in Animal Science (1-4)
5110 Endocrine Relations in Animal Production (4)
5120 Advanced in Mammalian Reproduction (4)
5120 Advanced Studies of the Sacretion of Milk (3)
5130 Analytical Techniques in Animal (3)
5232 Advanced Experimental Animal Nutrition (3)
5234 Nonsustained Animal Nutrition (4)
5434 Rumian Animal Nutrition (3)
5450 Genetics of Animal Populations (3)
5530-35 Advanced Animal Physiology (3, 5)
Food Technology and Science (390)

Professors: J. T. Mien (Head), Ph.D. Wisconsin; J. L. Collins, Ph.D. Maryland; T. B. Harrison (Emeritus), M.S.; S. A. Thomas, Ph.D., D. Food 4110 (1-4) Minerals, fats, oils, and properties. Functions. Prereq: Nutrition 3320 or equivalent. 2 hrs and 1 lab.
4140 Food Chemistry II (3) Reactions of proteins, carbohydrates, and natural food colorants in food materials. Protein structure, food enzymes, and browning reactions. Effects of storage and processing on proteins and carbohydrates with emphasis on nutritional value and function. Prereq: Nutrition 3320 or equivalent. 2 hrs and 1 lab.
4200 Food Processing II (4) Prevention of deterioration and spoilage of foods. Methods of preserving. Prereq: 3200 and Agriculture Mechanization 3510. 3 hrs and 1 lab.
4210 Food Additives (3) Substances used in food processing with emphasis on properties and functions. Prereq: Nutrition 3200 or equivalent.
4300 Food Processing III (3) Water, sanitation, and waste control in food processing. Prereq: Food Technology and Science 4100 and Chemistry 2230 or equivalents. 2 hrs and 1 lab.
4310 Microbiology in Food Manufacturing (3) Relationship of growth of common food organisms in fermentative and enzymatic changes occurring during processing and marketing of foods. Prereq: Microbiology 2910 or equivalent. 1 hr and 2 labs.
4330 Bakery Products (3) Baking ingredients and their interactions during production and storage of bakery products. Prereq: Food Technology and Science 4100 and Chemistry 2230 or equivalents. 2 hrs and 1 lab.
4350 Fermented Foods (3) Role of microorganisms in preserving foods with emphasis on development of certain desirable characteristics, flavor, aroma, texture, and keeping quality. Prereq: Microbiology 3310, 2 hrs, and 1 lab.
4360 Meat Products Manufacturing (3) Prepared meat products with emphasis on sausage making and cutting. Methods of preservation. Prereq: 2200 and Agriculture Mechanization 3510. 3 hrs and 1 lab.
4380 Analysis of Physical Properties of Foods (4) Physical properties of foods: water, viscosity, density, color, gels, foams, crystals, color. Quantitation and microscopic methods of analysis. Prereq: Food Technology and Science 4320 and Agricultural Mechanization 3510. 3 hrs and 1 lab.
4390 Advanced Meat Science (3) Qualitative and quantitative characteristics of meat and poultry related to palatability, coagulation, preservation, packaging, and merchandising. Prereq: Food Technology and Science 3540 and Graduate standing.
5000 Thesis
5100 Seminar (1)
5130 Food Color (3)
5130 Food Enzymology (3)
5140 Food Science (3)
5150 Fats and Oils (3)
5200 Research (1-5)
5310 Food Products Development (3)
5420 Advanced Food Quality Assurance (3)
5510 Meat Technology (3)
5530 Microorganisms Common in Foods (3)
5540 Microbial Cultures in Foods (3)

Food, Wildlife, and Fisheries


Instructor: S. L. Melton, Ph.D. Michigan.

Food, Wildlife, and Fisheries (396)

1320 Introduction to Forestry (3) History of forestry: establishment, conservation, and use of forest resources; forest politics and economics; introduction to the agencies for establishment of forest policies, forest resources.
3200 Current Events in Renewable Natural Resources (3) Current events influencing forestry, wildlife, and fisheries management. Perspectives on the management of human activities affected by and which influence natural resource management. Extensive 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 Wildlife and Fisheries Science 3500.)
3230 Forest Environments and Ecology (3) Environments and ecology of forests and associated ecosystems; emphasis on the application of ecological principles to contemporary problems. Available for credit once only for non-forestry majors. Prereq: 8 hrs of biology, botany, or ecology. 3 hrs.
3240 Introduction to Animal Breeding (3) Elements of animal breeding and genetics of major animal breeds as related to domestication, selection, and improvement of domesticated animals. Prereq: Mathematics 2200. 3 hrs, 1 lab.
importance of environmental interpretation to man and techniques of interpreting forest resources; 

4240 Interpreting Forest Resources (3) Principles and techniques of interpretation of forest resources; emphasis on impact to vegetation, soil, and water quality; consideration of monitoring methods and management alternatives. Weekend field trip is required. Prerequisites: 3020 or equivalent; or consent of instructor. 3 hrs and 1 lab.

3230 Principles of Silviculture (5) Influence of site factors on reproduction, growth, and development of forest vegetation; classification of forest structure and function, emphasis on site and species; mapping of natural forest types. Prerequisites: 3110 and Plant and Soil Science 2140 recommended. 2 hrs and 1 lab.

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

4002 Utilization (5) Wood-industries processes: forest products—timber, tree-top yield grading; pulpwood operations, flooring plants, treating plants; panel layout, finished products. Prerequisites: 3100.

5905 Field Methods of Forest Inventory (4) Field measurements of forest trees; timber cruising; determining appropriate sample design for specific purposes; tree and stand growth; site evaluation; field problems. Prerequisites: 3110 and Agricultural Mechanization 3140.

4905 Forest Practice (3) Management of forest lands by public and private organizations: harvesting, silviculture, protection, development, and management decisions; impact of public pressures on out-put of forest products; marketing decision implications. Prerequisite: 4006. S/NC.

5160 Agricultural Transport Operations (3) Application of intermediate and regeneration cuttings; site preparation, plantations, and thinning. Basic cutting methods to obtain desired benefits and fulfill management objectives. Prerequisites: 3222 and 3910.

4020 Forest Water Management (3) Water as a factor in forest management and the part it plays in the hydrologic cycle; control of water quantity, quality, and regulation; forest water relationships with other natural resources. Prerequisite: 4006. S/NC.

5260 Seminar in Forest Biometry (3) Problems of estimation and decision making in forest resource management. Prerequisite: 3222. Seminar standing in foreology or wildlife and fishery science or consent of instructor. 3 hrs. Two overnight field trips.

4120-52 30 Problems in Forestry (1-4, 1-4, 1-4) Special research or individual problems in forestry. Prerequisite: 3222. Seminar standing in forest, wildlife, or fisheries science or consent of instructor. 2 hrs.

4200 Forest Resource Management Plans (4) The forest resource management plan as an instrument of forest management; review of traditional timber-management concepts; the multiple-use concept; valuation and transfer resources for decision making and planning; taxation of forest timber. Prerequisite: 4205. 4 hrs and 2 labs.

5120 Seminar in Forest Tree Improvement (5) Forest tree improvement; review of traditional timber-management concepts. The multiple-use concept; valuation and transfer resources for decision making and planning; taxation of forest timber. Prerequisite: 4205. 4 hrs and 2 labs.

5230 Seminar in Forest Management (3) Forest management alternatives. Development and management of forest recreation areas; socioeconomic and political determinants of recreation development and management. Prerequisite: 6 credits in sociology and/or economics. Junior standing. 2 hrs and 1 lab.

4450 Recreational Behavior in Forest Environment (3) Review of sociological and psychological theories relevant to forest recreation planning, management, and administration. Application of behavioral concepts to forest recreation problems, and review of methodologies for collecting and interpreting data. Prerequisite: 4006. 6 hrs and 1 lab.

4330 Forest Policy (3) History of forestry in United States with emphasis on development of forest resource policies; current policies influencing decision making; brief survey of policy implications of forest resources in public and private sectors. Prerequisites: 4004.

3430 Aerial Photography in Forest-Resource Management (1) Use of conventional aerial photography and remote sensing equipment in forest resource assessment; aerial inventory measurement of cover-type maps, uses of other remotely-sensed imagery. Prerequisites: 3130 or equivalent. 1 hr and 2 labs.

4240 Forest Tree Improvement (3) Forest tree improvement; review of traditional timber-management concepts. The multiple-use concept; valuation and transfer resources for decision making and planning; taxation of forest timber. Prerequisite: 4205. 4 hrs and 2 labs.

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

GRADUATE

5000 Thesis 1 hr.

5150 Special Problems in Wildlife and Fisheries Science (1-4) Individual problems for graduate credit for non-forestry and non-wildlife and fishery science majors only. Prerequisite: 6 credits in sociology and/or economics. Junior standing. 1 hr and 2 labs.

5040 Advanced Topics in Wildlife Science (3-6) Special research or individual problem in wildlife and fisheries science. Prerequisite: Senior standing. May be repeated. Maximum 5 credits.

5160 Agricultural Transport Operations (3) Application of intermediate and regeneration cuttings; site preparation, plantations, and thinning. Basic cutting methods to obtain desired benefits and fulfill management objectives. Prerequisite: 3222. Seminar standing in forest, wildlife, or fisheries science or consent of instructor. 3 hrs. Two overnight field trips.

5160 Agricultural Transport Operations (3) Application of intermediate and regeneration cuttings; site preparation, plantations, and thinning. Basic cutting methods to obtain desired benefits and fulfill management objectives. Prerequisite: 3222. Seminar standing in forest, wildlife, or fisheries science or consent of instructor. 3 hrs. Two overnight field trips.

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5260 Seminar in Forest Biometry (3) Problems of estimation and decision making in forest resource management. Prerequisite: 3222. Seminar standing in forest, wildlife, or fisheries science or consent of instructor. 3 hrs. Two overnight field trips.
3110 Greenhouse Management (3) Factors involved in management of greenhouses for production and research. Structure, fans, heat control, light scheduling, irrigation, nutrient conten- t, crop succession. Prereq: Junior standing and consent of instructor. 3 hrs and 1 lab.

3210 Turfgrass Management (4) Practical turfgrass management; cultivation techniques, establishment, maintenance; applied fertilizer programs, pest control, sod production, pest identification and control. Prereq: Plant and Soils 2130 and 5 hrs biological science related to course topic. 3 hrs and 1 lab.

3310 Ornamental Trees (3) Identification, adaptation, and landscape design. Prereq: Biological science or consent of instructor. 3 hrs.

3820 Ornamental Shrubs and Vines (3) Classification, identification, and landscape design. Prereq: 8 hrs biological science or consent of instructor. 3 hrs and 1 lab.

3300 House Plants (3) Identification, adaptation, and pest management; cultivation, development of fruit crops plantations; pest control, sod production, pest identification and control. Prereq: 8 hrs biological science or consent of instructor. 3 hrs and 1 lab.

3420 Advanced Turfgrass Management (4) Principles and scientific basis of turfgrass culture: adaptability to environment; growth; soil/root nutrition; climate effects on grass culture; physiology of clipping and water management; traffic effects and compaction; and the physiological basis for controlled growth. Prereq: 3100. 3 hrs and 1 lab.

3350 Principles of Weed Science (4) Principles of weed control; modes of action; economic importance of weeds. Prereq: One year organic chemistry. 3 hrs and 1 lab.

3520 Commercial Production of Warm Season Grasses (4) Characteristics, use, mode of action, degradation and environmental impact of selected herbicides. Prereq: 8 hrs biological science or consent of instructor. 3 hrs and 1 lab.

3510 Commercial Production of Cool Season Vegetables (4) Characteristics, use, mode of action, degradation and environmental impact of selected herbicides. Prereq: 8 hrs biological science or consent of instructor. 3 hrs and 1 lab.

3500 Mechanisms of Herbicide Action (3) Characteristics, use, mode of action, degradation and environmental impact of selected herbicides. Prereq: 8 hrs biological science or consent of instructor. 3 hrs and 1 lab.

3540 Soil Physics (3) Principles of soil physics and root growth and development. Prereq: 8 hrs biological science or consent of instructor. 3 hrs and 1 lab.

3581 Crop Climatology (4) Systems and properties of plant and soil and plant-soil interactions. Prereq: 3130 and 3 hrs biological science. 3 hrs and 1 lab.

3582 Advanced Crop Physiology and Ecology (4) Systems and properties of plant and soil and plant-soil interactions. Prereq: 3130 and 3 hrs biological science. 3 hrs and 1 lab.

3580 Mechanisms of Herbicide Action (3) Characteristics, use, mode of action, degradation and environmental impact of selected herbicides. Prereq: 8 hrs biological science or consent of instructor. 3 hrs and 1 lab.

3590 Soil Physics (3) Principles of soil physics and root growth and development. Prereq: 8 hrs biological science or consent of instructor. 3 hrs and 1 lab.
College of Veterinary Medicine

C. F. Reid, Jr., Acting Dean
W. H. Winter, Jr., Assistant Dean

The College of Veterinary Medicine, established in 1974, offers a professional curriculum leading to the degree Doctor of Veterinary Medicine (D.V.M.). When fully developed, the College will offer graduate studies leading to the degrees Master of Science (M.S.) and Doctor of Philosophy (Ph.D.). Residency training programs in various clinical specialties will also be offered.

The College is organized into six academic departments: Animal Science (jointly with the College of Agriculture), Environmental Practice, Microbiology (jointly with the College of Liberal Arts), Pathobiology, Rural Practice, and Urban Practice.

Primary objective of the College is to educate veterinarians for private practice. However, the professional curriculum provides an excellent basic medical education, in addition to training in diagnosis, disease prevention, medical treatment, and surgery. Graduates consequently are qualified to pursue careers in many facets of veterinary medicine and related health professions.

Most American veterinarians are engaged in private practice. The majority of these are in general practices which deal with the diseases of all kinds of animals. About one-fourth of the veterinarians in the United States are engaged exclusively in pet or companion animal practice. A growing number are concerned with the health problems of zoo animals, laboratory animals, wildlife, and domestic birds.

Veterinarians also find rewarding careers in the Public Health Service, U.S. Army and Air Force, and in state, county, or local health departments. The number of veterinarians is employed by the U.S. Department of Agriculture and by state departments of agriculture for inspection in work in livestock disease control, meat and poultry inspection, serum and vaccine work in livestock disease control, meat and poultry departments of agriculture. Also employed by the U.S. Department of Agriculture and by state veterinarian hospitals, clinics, and the Agriculture and Veterinary Medicine Library are contained within this modern structure of 246,000 gross square feet.

The College has also developed research facilities on Cherokee Farm adjacent to the UT Hospital. Satellite teaching-research facilities are also being developed in Middle and West Tennessee.

Admission Requirements

Admission to the professional program of the College of Veterinary Medicine is limited to those for which an education of high quality can be provided with the resources available to the College. To qualify for admission, a candidate must have completed at least the following minimum pre-veterinary requirements:

<table>
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<tr>
<th>Subjects</th>
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<tr>
<td>English, including speech</td>
<td>12</td>
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<td>Humanities</td>
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<td>Social sciences</td>
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<tr>
<td>Animal science, including</td>
<td>15</td>
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<td>nutrition and genetics</td>
<td>7</td>
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<td>Total</td>
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Excluding laboratory.

Includes history, literature, music or art appreciation, Anthropology, religion, or foreign language.

Admission to the professional program of the College of Veterinary Medicine is limited to the number of students for which an education of high quality can be provided with the resources available to the College. To qualify for admission, a candidate must have completed at least the following minimum pre-veterinary requirements:

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Admission Procedure

Admission of new students will be for the fall quarter each year. Applicants will be screened carefully by a faculty committee to determine those best qualified for admission within the College enrollment quota.

Applications will be considered in the following order of priority: (1) residents of Tennessee; (2) legal residents of states with which The University of Tennessee has contracts for veterinary medical education; (3) residents of other states or foreign countries.

Forms and instructions for making application for admission may be obtained from:

Director of Admissions
200 Student Services Building
University of Tennessee
Knoxville, Tennessee 37916

Applicants must be completed and mailed so as to reach the Director of Admissions by January 15 each year. All pre-veterinary requirements must be completed by the end of the spring semester of the year in which the student plans to enroll in the College of Veterinary Medicine.

Course Load

The professional curriculum of the College of Veterinary Medicine requires a specific number of hours for each quarter. A student may enroll for fewer or more than that number only with the permission of the dean. Because of the sequential and highly integrated character of the professional curriculum, all courses in a given quarter are considered prerequisite to those in the succeeding quarter.

Extramural Programs

The opportunity to participate in off-campus learning experiences may be available for a limited number of students during the elective portion of the third year of the professional curriculum. Selection of an extramural learning experience will require approval by the department concerned and the College of Veterinary Medicine.

Professional Curriculum

The professional curriculum in veterinary medicine is an 11 academic quarter, year-round program, including summers. The first year (three quarters) consists mostly of pre-clinical subjects such as anatomy, physiology, microbiology, parasitology, and general pathology. The second year (four quarters) includes the study of diseases, their causes, diagnosis, treatment, and prevention. The final year (four quarters) is devoted to intensive training in the solving of animal disease problems, including extensive clinical experience in the teaching hospital. The program provides broad base education in the sciences and art of veterinary medicine and in the medical subjects such as animal behavior, medical communication, professional ethics, jurisprudence, economics, and practice management.

ELECTIVES

E Electives include but are not limited to:

Animal Science 3420, 4210, 4330, 4340, 4810, 4820, 4930, 4940, 4950, 4960, 5110, 5210.
Water and Winter Quarters

**Electives** ........................................ 20

**TOTAL:** 223 hours

**During the third year of both of the students in this class, all courses through Rural Practice 8900 and thereafter will be through Urban Practice 8900 during the summer quarter. During the final quarter, the second year sequence for Rural Practice 8850 will be used for Urban Practice 8900. The subject matter and sequence will vary.**

**Departments of Instruction**

**Animal Science (114)—Veterinary Medicine**

Professors: R. J. Johnson (Head), Ph.D, Ohio State;
K. M. Barth, Ph.D., Rutgers;
M. C. Bell, Ph.D., Oklahoma State;
J. K. Beiler, Ph.D., Ohio State;
C. G. Schamberger, Ph.D., Iowa;
J. W. K. Hough, Ph.D., Oklahoma State;
S. R. Lueh, Ph.D., Texas;
A. J. Kanawati, Ph.D., Kansas State;
W. R. Krueger, Ph.D., Oregon State;
D. R. Kansas, Ph.D., Kansas State;
C. A. W. West, Ph.D., Oregon State;
R. L. Michel (Head), V.M.D., Pennsylvania, Ph.D.
Associate Professors: L. M. Mayfield, Ph.D., Oklahoma State;
W. E. Robinson, Ph.D., Missouri State;
H. J. K. Kuehne, Ph.D., Virginia; A. J. D. Swank, Ph.D., California (Davis)
Assistant Professors: D. L. N. F. Hull, Ph.D., Oklahoma State;
D. F. M. Smith, Ph.D., Arkansas State;
R. L. Murphee, Ph.D., Wisconsin; J. W. K. Hough, Ph.D., Oklahoma State.

In addition, academic expertise of staff members at C.A.R. and U.P. is used on appropriate occasions.

8340-50 Veterinary Physiology (4) Introduction to the concepts and principles of function in animal systems that form the basis for advanced study and practical training in pharmacology, medicine, pathology, and surgery.

In accordance with the instructions of the professional staff members at C.A.R. and U.P. are used.

8351-52 Veterinary Microbiology I (3, 3) Introduction to the study of virus genetics, morphology, virology, and virology related to their properties including toxins, capsules, enzymes, and other bacterial products. Part II, Viral pathogenesis, includes the study of the properties of viruses related to their properties including acute, latent, and "slow-virus" infections, and cancer. 3 hrs. of lecture and 2 hrs. of laboratory.

8102 Microbiology II (3) Part I, Bacterial pathogenesis. Diseases and patterns of infection, e.g., bacterial toxins, pathogenic enzymes, and genetics. Part II, Immunology, nonspecific and specific humoral and cellular host responses to infection and "foreign" material, immunophagocytosis, and certain aspects of immunity (e.g., transplantation). 3 hrs. of lecture and 2 hrs. of laboratory.

8103 Microbiology III (3) Part I, Viral pathogenesis continued. Part II, Medical virology. Diseases caused by viruses of yeasts, molds, and "imperfect" fungi related to their properties, including toxins, enzymes, etc., 2 hrs. of lecture and 2 hrs. of laboratory.

Pathobiology (742)

Professors: D. V. Morgan (Head), W.M. Pennsylvania, Ph.D., Michigan State; M.D. McLaughlin, M.D., Ohio State; J. W. Miller, Ph.D., Michigan State.

Associate Professor: R. W. Schafer, D.V.M., Michigan State, D.A.P.E.
Rural Practice (870)


870B Pathology Rotation (3) Rotation through hospital laboratories of Department of Veterinary Pathology, emphasis on practical application of parasitology, toxicology, histopathology, and microbiology. May be repeated.

871 Veterinary Pathology (2) Principles of pathology including causes of disease, disturbances of cell function, and effects of treatment in domestic animals. Emphasis on clinical aspects of pathology and microbiology.

870A Pathology Rotation (3-20) Provides student with particular interest in the hospital laboratories diagnostic techniques including postmortem pathology, clinical pathology, parasitology, and microbiology. May be repeated.

879 Veterinary Parasitology (2) Principles of pathology including causing of diseases in domestic animals, disturbances of cell function and effects of treatment in domestic animals. Emphasis on clinical aspects of parasitology.

870D Pathology Rotation (3-20) Provides student with particular interest in the hospital laboratories diagnostic techniques including postmortem pathology, clinical pathology, parasitology, and microbiology. May be repeated.

878 Special Problems in Pathology (2-10) Provides student with opportunity to design and attack research problem. May be repeated.

Urban Practice (896)

Professor: E. D. Gage (Head), D.V.M., Texas A & M.


873 Hematology (4) Includes study of the blood and blood-forming tissues of domestic animals including causes of disease, disturbances of cell function and effects of treatment in domestic animals. Emphasis on clinical aspects of hematology.

8731 Introduction to Veterinary Medical Practice (2) Essentials of medical and surgical patient care, veterinary history, physical examination, and interpretation, and medical treatment.

875 Special Problems in Veterinary Medicine (1) Consider by students of veterinary medicine a specific diagnostic problem.

870C Pathology Rotation (3-20) Provides student with particular interest in the clinical pathology laboratory diagnostic techniques including postmortem pathology, clinical pathology, parasitology, and microbiology. May be repeated.

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Rural Practice (870)


870B Pathology Rotation (3) Rotation through hospital laboratories of Department of Veterinary Pathology, emphasis on practical application of parasitology, toxicology, histopathology, and microbiology. May be repeated.

871 Veterinary Pathology (2) Principles of pathology including causes of disease, disturbances of cell function, and effects of treatment in domestic animals. Emphasis on clinical aspects of pathology and microbiology.

870A Pathology Rotation (3-20) Provides student with particular interest in the hospital laboratories diagnostic techniques including postmortem pathology, clinical pathology, parasitology, and microbiology. May be repeated.

879 Veterinary Parasitology (2) Principles of pathology including causing of diseases in domestic animals, disturbances of cell function and effects of treatment in domestic animals. Emphasis on clinical aspects of parasitology.

870D Pathology Rotation (3-20) Provides student with particular interest in the hospital laboratories diagnostic techniques including postmortem pathology, clinical pathology, parasitology, and microbiology. May be repeated.

878 Special Problems in Pathology (2-10) Provides student with opportunity to design and attack research problem. May be repeated.

Interdepartmental Offerings

Veterinary Medicine (887)

8119 Client Relations and Communication Skills (1) Interpersonal skills as they apply to client relations including communication with clients, employers, and the general public. 1 lab. SNC.

8316 Introduction to Veterinary Medical Practice (2) Essentials of medical and surgical patient care, veterinary history, physical examination, and interpretation, and medical treatment.

8311 Introduction to Veterinary Medical Practice (1-2) Essentials of medical and surgical patient care, veterinary history, physical examination, and interpretation, and medical treatment.

8400 Extramural Programs (2-20) Supervised off-campus educational programs approved by the College of Veterinary Medicine.

812 Introduction to Veterinary Medical Practice (2) Essentials of medical and surgical patient care, veterinary history, physical examination, and interpretation, and medical treatment.

8320 Medical Science Interactions (3) Multidisciplinary educational experiences for students including courses in anatomy, physiology, pharmacology, biochemistry, and microbiology.

8331 Introduction to Veterinary Medical Practice (1) Essentials of medical and surgical patient care, veterinary history, physical examination, and interpretation, and medical treatment.

8365 Radiology (3) Advanced and special techniques and interpretation, and surgical procedures applicable to veterinary medicine.

8332 Comparative Pathology (3) Comparative aspects of the pathology of diseases in domestic animals with emphasis on comparative pathologic and microscopic features.

8351 Musculoskeletal System I (4) Pathologic, diagnostic, and management of musculoskeletal diseases in domestic animals with emphasis on musculoskeletal system with specific emphasis on the spine and joints.

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School of Architecture

Roy F. Knight, Dean
William J. Laser, Assistant Dean

The School of Architecture presents a comprehensive program of undergraduate courses, offering opportunities for both general studies and professional specialization.

The intent of the school's program is to complement the University's learning opportunities by providing curricula and course offerings in the art and science of design. Accordingly, the program is composed of informational, analytical, and integrative studies related to the human role in shaping and changing the built environment. The welfare of this environment, which is a vital factor in the well-being of people everywhere, depends upon the knowledge and skill which those educated in the design sciences can contribute to continuing processes of developmental change.

A goal of this revised program is to provide undergraduate studies in scholarly and professional areas related to the knowledge base and methodologies for working with the built environment, while at the same time utilizing the school's resources, faculty, and facilities to their maximum effectiveness.

Facilities

The design laboratories, classrooms, computer room, library, and administrative offices of the school are located in three buildings—Estabrook Hall, Melrose Annex, and Alumni Gym. It is entirely appropriate that one of the newest schools, and particularly the School of Architecture, should be temporarily housed in venerable Estabrook Hall constructed in 1902. Other disciplines that share direct interests with the school—engineering, fine arts, and industrial arts—are also located in the building. The Melrose Annex provides additional space for undergraduate research and design activities. The principal library holdings of the school are contained in the James D. Hoskins Library. Extensive general collections and reference volumes in architecture and the fine arts are housed there. These sources are augmented by the branch library of the school where students have access to all the reference books in current use.

Student Sponsorship

A number of 5000 sponsorships are made available each year by architectural firms of Tennessee. These grants cover tuition and fees, travel expenses to a designated U. S. city for study purposes, subscription to an architectural journal, purchase of special drafting equipment, and purchase of special reference books for the student recipients' personal libraries. Honor students in all the upper four years are eligible for this aid, but it is primarily awarded to students of third- and fourth-year standing.

Lecture Program

ROBERT B. CHURCH MEMORIAL LECTURES

The income from the endowment is used to sponsor outstanding speakers from the profession.

General Information

Students are advised to consult the University's general requirements as stated in the front section of this catalog as well as the requirements for the School of Architecture. Self advising will not be permitted in the School of Architecture. Students must plan their schedule by consulting with an assigned adviser and with full consideration of the necessary prerequisites.

Requirements for Admission 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) A personal interview and evaluation of applicant's work by a designated member of the School of Architecture;

(3) Application to the School of Architecture no later than June 15 preceding the start of the second year.

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

Third-Year Prerequisites

Students are required to have all first- and second-year courses satisfactorily completed before entering the third-year design courses, Architecture 3001-02-03. Students who register for a third-year design course holding first- or second-year deficiencies may be required to drop the course at any point during the quarter.

Minor

An undergraduate minor in architecture is offered in order to enable students in other colleges to pursue studies in architecture which are relevant to their major areas of concentration. The minor will consist of not less than 16 hours. Persons interested must obtain the consent of the School of Architecture Current Curriculum Committee and dean of the School of Architecture, who will approve specific programs of study proposed by students.

Course Load

A course load in any quarter is 16 credit hours. The minimum which may be taken by full-time students is 12 credit hours and the maximum which may be taken without approval of the dean is 19 hours.

Satisfactory/No Credit Courses

These courses, if successfully completed, will count as hours for graduation, although neither S nor NC grades will be calculated in

73
Program for Architecture

Degree: Bachelor of Architecture
Major: Architecture

<table>
<thead>
<tr>
<th>Concentrations:</th>
<th>Design</th>
<th>History / Humanities</th>
<th>Administration</th>
<th>Technology</th>
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<tr>
<td></td>
<td>2. Criticism</td>
<td>2. Production</td>
<td>2. Environmental Controls</td>
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</tbody>
</table>

Curricula for Architecture

All students studying for a Bachelor of Architecture degree will include the following requirements in their first three years of study. During the fourth and fifth years, the student’s work will be concentrated in one of the following tracks: design, history, criticism, restoration/preservation, management, production, development, structures, systems building, or environmental controls. For certain tracks in the 4300 sequence for architecture design lab electives, any exceptions to the curriculum timeline have been noted. For any additional specialized requirements, the student should inquire at the School of Architecture.

**HISTORICALLY/HUMANITIES CONCENTRATIONS**

*HISTORY TRACK*

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<thead>
<tr>
<th>Track</th>
<th>Hours</th>
<th>Credit</th>
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<tr>
<td>Fourth Year</td>
<td>Architecture design lab electives</td>
<td>8 8 8</td>
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<td></td>
<td>Architecture 3101, 3102, 3137</td>
<td>4 4 4</td>
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<tr>
<td></td>
<td>History 1510-20</td>
<td>4 4 4</td>
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<td></td>
<td>Controlled electives</td>
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<td>Fifth Year</td>
<td>Architecture design lab electives</td>
<td>8 8 8</td>
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<tr>
<td></td>
<td>Architecture 4115, 4180</td>
<td>4 4 4</td>
</tr>
<tr>
<td></td>
<td>Controlled electives</td>
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<tr>
<td>Total: 240 hours</td>
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**CRITICISM TRACK**

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**RESTORATION/PRESERVATION TRACK**

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<td>Industrial Engr. 4150</td>
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<td>Architecture 4910-15, 4931</td>
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<tr>
<td>Fifth Year</td>
<td>Architecture 4503-04, 4504</td>
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<td>Architecture 4301-02, 4301</td>
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The last two quarters of architectural design lab electives may be governed by the controlled electives. Students in Technology Concentration take a controlled architecture 4752-53 .................. 4 4
Architecture 4751 ..................... 4
Architecture 4741-42-43 ...............4 4 4
Architectural design lab
Architecture 4761-62 ..................8 8
Electives.............................4
Controlled electives ..................4
Fourth Year
CONTROLS TRACK 3
STRUCTURE AND ENVIRONMENTAL
Electives.............................4 4
Architecture 4503-04, 4340 ............8
Electives............................. - 8
Controlled electives..................4
Architecture 4520, 4550 ...............4
Architecture 4501-02, 4351 ............8
Fifth Year
DEVELOPMENT TRACK
Architecture 4530-35, 4565 ............4
Fifth Year
PRODUCTION TRACK
Industrial Engr . 4150 .................. 3
Fourth Year
A program leading to a Bachelor of
Degree Program
Second Baccalaureate Degree
Applicants must show at least a 2.5 overall grade point average as well as goals and abilities appropriate to the program. Prerequisite courses include Math 1040-50 or
1550-60 and Physics 2440-50-60 or their equivalents.
The Second Baccalaureate Degree Program will be replaced by a graduate program upon its approval.
First Year
Architecture 4200-20-23 .......................... 4 4
Architecture 4201-22-23 .......................... 4 4
Architecture 4205-25-26 .......................... 4 4
Second Year
Architecture 5001-02 .......................... 8 8
Architecture design lab
elective or 3603 .......................... 8 8
Controlled electives ..................8 4 4
Third Year
Architecture design lab
electives .............................. 8 8
Controlled electives .................. 8 4 4
Fourth Year
Total: 240 hours
S.Y.S. BUILDING TRACK
Fourth Year
Architecture 4701, 4370, 4702 ........... 8 8
Architecture 4370, 4702-03-04 .......................... 4 4
Electives............................. 4 4
Fourth Year
ARCHITECTURE LISTS
systems building track
Fourth Year
Architectural design lab
electives .............................. 4 4 4
Architecture 4741-42-43 .......................... 4 4 4
Architecture 4752-53 .......................... 4 4 4
Architecture 4765 .......................... 16
Total: 240 hours
Second Baccalaureate Degree
A program leading to a Bachelor of Architecture is available for students who already have a bachelor's degree or an advanced degree in another field. This program consists of a core of accelerated and professional courses making up the knowledge and skills fundamental to preprofessional preparation for professional practice. The length of the program is three years. Advanced standing through advanced academic work in architecture, exceptional professional experience may also be considered.

Faculty

Assistant Professors:
J. A. Lester, B.Arch. North Carolina State;
R. J. Overbury, B.Arch. West Virginia;
G. J. Mertz, B.Arch. Pratt Institute;
R. H. Cline, M. Arch. Columbia.

Associate Professors:
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Professor:
A. D. Anderson, M.A. American Institute of Architects.

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2016 Environmental Control Systems II (4) Design and application of environmental control systems in buildings; space conditioning, electric service and wiring, lighting, mechanical systems, fire protection, and vertical transportation. Prereq: 2015.

2101 Pre-modern Survey II (6) Medieval and Syrian architecture.

3101 Architectural Design Lab I (4) Contended exercises designed to demonstrate integration and application of design theory and methodology into design process. Exercises directed to aspects of architectural themes such as site analysis and planning, facility programming and program analysis; specific architectural issues such as environmental design, building materials, interior design, and urban design. Emphasis on structural systems into comprehensive architectural resolutions. Prereq: 2015.

2012 Architectural Design Lab II (4) Experimental exercises designed to demonstrate integration and application of design theory and methodology into design process. Exercises directed to aspects of architectural issues such as site analysis and planning, facility programming and program analysis; specific architectural themes such as environmental design, building materials, interior design, and urban design. Emphasis on structual and environmental design principles and the development of comprehensive architectural resolutions. Prereq: 2006.

3003 Architectural Design Lab III (8) Advanced exercises designed to relate fundamental abilities in problem seeking, problem solving, and communication to the professional practice and its relation to design education experiences. Prereq: Architectural Design Lab II.


2102 Basic Design and Analysis II (4) Classification of histories and cultural developments to the built environment. Study of buildings: space conditioning, electric service and wiring, lighting, mechanical systems, fire protection, and vertical transportation. Prereq. 2016.

2010 Environmental Control Systems I (4) Introduction to theory and applications of man-environment relationships; study of man-environment interactions and environmental impact upon human behavior; techniques for evaluation purposes. Course objective is to understand environment from anthropological perspective. Prereq: Consent of instructor.


2103 Basic Design and Analysis IV (Classification of histories and cultural developments to the built environment. Study of buildings: space conditioning, electric service and wiring, lighting, mechanical systems, fire protection, and vertical transportation. Prereq: 2016.

2004 Physical Systems I (4) Examination of building systems: components, modules, building systems, and structural systems. Prereq: Basic Design and Analysis; and Use of digital computer.

2104 Physical Systems II (4) Examination of building systems: components, modules, building systems, and structural systems. Prereq: Basic Design and Analysis; and Use of digital computer.


3902 Behavioral Approaches to the Design of Prosthetic Environments (6) Many standard features of the built environment are unsuitable to the everyday functioning of individuals with various types of physical disability. Study of architectural barriers in relation to the physically handicapped considers the course lecture content. Studio problems explore design of barrier-free environments. Required for teaching assistants in architecture. Prereq: Consent of instructor.

4010 Historical and Cultural Developments to the Built Environment (4) Major concepts in the lecture content of architectural history. Emphasis on the role of environmental factors in human behavior. Prereq: Consent of instructor.

3910 Research Methods for Designers (4) General introduction to research methods and techniques available to the designer and comprehensive approach for uncovering basic user requirements during design process. Prereq: Consent of instructor.

3920 Environmental Design: Education, Problems, Practice, and Structures (4) Focus directed at survey- ing existing models of education, learning objectives and program evaluation performance. Prereq: Consent of instructor.

3930 Behavioral Approaches to Environmental Design (6) Of major concern in the lecture content of this course is the effect of the built environment on human behavior. Prereq: Consent of instructor.


4120 Treatises (4) Vitruvius; Renaissance and neoclassical treatises. Prereq: Consent of instructor.


4300 Architectural Design (4) Advanced applications of architectural design and methodology. Prereq: Consent of instructor.

3130 History of Architectural Theory (4) Philosophies of science, the emergence of technology, and theories of design since 1500.

3150 Tennessean Architecture (4) Tennessean traditions, regional developments, national styles, contemporary architecture.

3220 Architectural Environments since 1456 (4) New directions and views of the future.

4003 Architectural Writing (4) Survey of European architectural writings from Pugin to the present. The relation between the written work and design. Prereq: Consent of instructor. May be repeated. Maximum credit 8 hrs.

4101 Application of Computer in Architecture (4, 6) Survey of computer applications in the architectural profession. Prereq: Architectural Design II or Environmental Control Systems II. Prereq: Architectural Design II or Environmental Control Systems II.


5419 Architectural Graphics (4) Principles and techniques of architectural graphics and presentation drawings, with particular emphasis on computer graphics applications. Prereq: Architectural Design I.

2101 Pre-modern Survey I (4) Classical tradition in architecture—Greek and Roman architecture. Renaissance and renaissance architecture.

2102 Pre-modern Survey II (6) Medieval and Syrian architecture.

3001 Architectural Design Lab I (4) Contended exercises designed to demonstrate integration and application of design theory and methodology into design process. Exercises directed to aspects of architectural issues such as site analysis and planning, facility programming and program analysis; specific architectural issues such as environmental design, building materials, interior design, and urban design. Emphasis on structural systems into comprehensive architectural resolutions. Prereq: 2015.

3003 Architectural Design Lab III (8) Advanced exercises designed to relate fundamental abilities in problem seeking, problem solving, and communication to the professional practice and its relation to design education experiences. Prereq: Architectural Design Lab II.


3608 History of Architectural Thought (4) In- troduction to the theory and practice of architectural design. Prereq: Architectural Design I.

3902 Behavioral Approaches to the Design of Prosthetic Environments (6) Many standard features of the built environment are unsuitable to the everyday functioning of individuals with various types of physical disability. Study of architectural barriers in relation to the physically handicapped considers the course lecture content. Studio problems explore design of barrier-free environments. Required for teaching assistants in architecture. Prereq: Consent of instructor.

3910 Research Methods for Designers (4) General introduction to research methods and techniques available to the designer and comprehensive approach for uncovering basic user requirements during design process. Prereq: Consent of instructor.

3920 Environmental Design: Education, Problems, Practice, and Structures (4) Focus directed at surveying existing models of education, learning objectives and program evaluation performance. Prereq: Consent of instructor.

3930 Behavioral Approaches to Environmental Design (6) Of major concern in the lecture content of this course is the effect of the built environment on human behavior. Prereq: Consent of instructor.


4120 Treatises (4) Vitruvius; Renaissance and neoclassical treatises.

4010 Historical and Cultural Developments to the Built Environment (4) Major concepts in the lecture content of architectural history. Emphasis on the role of environmental factors in human behavior. Prereq: Consent of instructor.

4125 Eastern European Architecture (4) Twentieth-century architecture in Russia, Czechoslovakia, Poland, Hungary, East Germany, Romania, Bulgaria, Yugoslavia, and Eastern Europe.

4130 Seminar in Medieval Architecture (4) Seminar in architectural history focusing on specific architectural forms.


4137 Forms of Utopia (4) Ideals, spaces, and places; projects and programs which have formed Utopian tradition: utopian visions and theories of architectural utopias.

4140 Criticism Seminar (4) Theories, function, and techniques of architectural criticism.

4150 Advanced Reading (4) Advanced study in special topics of architectural history.

4160 Architects in Social Criticism (4) Writing which illustrates architectural, political, and anthropological assumptions of some 19th- and 20th-century architects.

4170 Introduction to Preservation and Restoration (4) History and theory of restoration and preservation.

4175 Technology of Preservation (4) History of technology and materials, methods and analysis, and techniques of preservation.

4180 Descriptive Analysis of Historic Buildings (4) Identification and analysis of characteristics and elements of buildings from various architectural periods with emphasis on American architecture. Survey techniques.

4185 Contemporary Preservation Practice (4) History and theory of contemporary preservation, practice and theory. Survey techniques.

4191 Historic Preservation Laboratory (4) Directed studies for buildings of historic significance: Technical investigation, construction of, and study of state laws and local ordinances concerning restoration, and, adaptive uses. May be repeated. Maximum credit 16 hrs.

4192 Foreign Studies Laboratory (16) Travel, research, and laboratory projects conducted in various countries, directed by instructor, subject to approval of dean and program director. May be repeated. Maximum credit 16 hrs.

4193 Media Laboratory (4) Special projects related to in situ analysis, film making, exhibitions, publications, and other media and mail applications under the direction of faculty members. May be repeated. Maximum credit 16 hrs.

4200 Introduction to Site Planning (8) Analysis of site form and environmental, environmental, social and psychological aspects of site location and development, study of movement systems, programs of site development, site design, site layout and location, topography, soils, water resources, air, and site management and development.

4231-23-23 Macro Studies Laboratory I, II, III (8, 8, 8) Design studies of a large scale and complex nature with emphasis on reinforcing application of architectural design process and introducing principles of methodology in urban and regional studies. Analytic and synthetic design and planning process. Prereq: 4230.

4230 Architecture Research Lab (8) Research projects on specific architectural subjects under the direction of faculty members.

4233-33-33 Micro Studies Laboratory I, II, III (8, 8, 8) Series of design exercises to develop range of human response to various forms of environmental elements and systems.

4240 Independent Study Lab (4) Independent architectural or related projects under direction of faculty member. May be repeated. Maximum credit 4 hrs.

4250 Visiting Lecturers Laboratory (4) Architectural or educational programs presented by visiting lecturers. Nature of project to be determined by visiting lecturer in charge. May be repeated. Maximum credit 16 hrs.

4311 Building Laboratory (8) Design and construction under the direction of faculty member of small building project for a public service agency or organization. Work with client including programming, cost and analysis, material specification and ordering, subcontracting, and on-site construction.

4320 Architectural Service Laboratory (8) Off-campus studies conducted under direction of architect or related professional on the staff, member of public service organization, or agencies of government. Subject of study varies but is directly related to problem-solving process.

4325 Development Laboratory (8) Directed studies in development of real property. Studies of site feasibility, economics, finance and marketability, environmental impact, social considerations and consequences.

4326 Remote Centers Laboratory (8) Program extension in remote locations of various tenure.

4270 Architecture-Engineering Laboratory (8) Off-campus studies under the direction of faculty member of a research project related to the engineering systems under consideration. Includes design and study of component systems and their implementation.

4290 Architecture-Engineering Laboratory (8) Off-campus studies under the direction of faculty member of a research project related to the engineering systems under consideration. Includes design and study of component systems and their implementation.

4292 Architectural Techniques Laboratory (4) Lab simulation of office environment in project planning and control, and drawing and drafting.

4293 Architectural Design I (16) Introduction to historical, stylistic, and professional aspects of architectural design. Laboratory and simulation of successful projects in the School of Architecture.

4294 Management Design I (16) Using the lab situation and project simulation, study aspects of project management and construction management, the process of making decisions and the understanding of their ramifications; the concept of decisions, design, and the process of delivery.

4295 Administrative Design I (16) Lab simulation of office environment in project planning and control, and drawing and drafting.

4296 - 24 - 24 Architectural Design II (Advanced work in the design of existing facilities in the direction of management and content. May be repeated. Maximum credit 24 hrs.

4500 Architecture Research Lab (8) Research projects on specific architectural subjects under the direction of faculty members. May be repeated. Maximum credit 24 hrs.

4501 Management Design 1 (8) Using the lab situation and project simulation, study aspects of project management and construction management, the process of making decisions and the understanding of their ramifications; the concept of decisions, design, and the process of delivery.

4502 Administrative Design I (16) Lab simulation of office environment in project planning and control, and drawing and drafting.

4505 Project Management (4) Principles, methods, and application of project management to the total building process. Project planning, organizing, and management of projects and contracts; job site, project, and site management projects. Study of job inspection during construction phase and project management to the total building process. Project planning, organizing, and management of projects and contracts. Prereq: 4501.

4510 Construction Management (4) Principles, methods, and application of construction management to the total building process. Prerequisites: 4501, 4502, 4505. Case studies, job history reviews, and project simulation.

4520 Professional Services (4) Marketing of architectural services using case studies of projects, theories, public relations techniques, and understanding roles of professional services, both basic and comprehensive.

4525 Personnel Relations (4) History of practice of architectural personnel policies, theories of personnel relations, benefits, and urbanization.


4555 Cost Analysis (4) Methods and theories of estimation, principles of cost analysis techniques of cost analysis.

4565 Supervision (4) Analysis and design of structures to resist extreme Hazards (4) Probability, risk, human values, structures. Instrumentation and structural response to specific structural design and structural response to extreme Hazards. Probability, risk, human values, structures. Instrumentation and structural response to specific structural design and structural response to extreme Hazards.

4575 Construction Economics (4) Construction economics of small, medium, and large projects. Principles of estimating, labor costs and building codes; history and development of building codes; real estate investment and speculation; mortgage, inflation; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization; real estate investment and speculation; mortgage amortization. Analysis and design of structures to resist extreme Hazards (4) Probability, risk, human values, structures. Instrumentation and structural response to specific structural design and structural response to extreme Hazards. Probability, risk, human values, structures. Instrumentation and structural response to specific structural design and structural response to extreme Hazards. Probability, risk, human values, structures. Instrumentation and structural response to specific structural design and structural response to extreme Hazards. Probability, risk, human values, structures. Instrumentation and structural response to specific structural design and structural response to extreme Hazards. Probability, risk, human values, structures. Instrumentation and structural response to specific structural design and structural response to extreme Hazards. Probability, risk, human values, structures. Instrumentation and structural response to specific structural design and structural response to extreme Hazards.
4734 Advanced Design of Stair Buildings (4) Con-
struction and maintenance of stair buildings. Large
span and special structures. Composite construc-
tion. Framing. Building codes. Prereq: 3702 or equiva-
 lent.

4735 Advanced Design of Concrete Buildings (4)
Precast and site-concrete construction and con-
crete reinforced. Foundations, floor and wall systems.
Domes and shell roofs. Prereq: 3702 or equivalent.

4737-47 Design and Planning of Tall Buildings (4)
Architectural; economic, and urban design con-
cepts in design of tall buildings. Environmental and
service systems. Wind, fire, and earthquake resistance.
Structural and economic considerations. Building codes.
Steel, concrete, and masonry structures. Prereq: Con-
dition for admission to courses in design and urban planning.

4739 Aesthetics of Engineering Structures (4) Ar-
chitecture in engineering; theory and utilization of
space, design, and detailing in large structures. Bridges,
elevation halls, power plants.

4741 System Theory, History, and Methodology (4) Investiga-
tion of general system theory and system research.
System analysis and overview of systems on an international basis.

4743 System Techniques, Materials, and Proce-
sures (5) Survey of new technologies and their proper-
tives, innovative uses of old materials, and new uses of
current materials. Exploration of new construction methods,
material and technological processes.

4751 Structural and Architectural Innovations (4) Explo-
rability of new materials and innovative and flex-
ible systems. Selection of new structural systems.
Prereq: 3702 or equivalent.

4751 Special Topics in Architecture (4) Students and faculty
enroll in special topics courses with the permission of the
instructor. Prereq: Approval of thesis committee. Prereq:
3.0 cumulative grade average.

4752 Mechanical Innovations (4) New technologi-
cal concepts and techniques for heating, ventilat-
ing, cooling, and air conditioning systems. Prereq:
4741 or equivalent.

4755 Materials of Construction (4) Analysis of materials
consisting of both static and dynamic properties to produce
structures that are both aesthetically pleasing and structurally
stable. Prereq: 4751 or equivalent.

4756 Architectural Innovations (4) Comprehensive
analysis of new technology and innovations in man-
ufacturing and construction with emphasis on produc-
tion, transportation, storage, distribution, precast and site-
constructed systems, light assembly systems, and on-site
construction methods. Prereq: 4751 or equivalent.

4757 Systems Theory (4) Comprehensive examin-
ation of system theory. Analysis of systems and their
structures and components. Development of a common
language for present-day design issues. Changing con-
ceptsof ethically.aesthetics, and architectural theory.
Prereq: 4751 or equivalent.

4801 Elementary Structural Matrix Methods (4) In-
struction to the generalized matrix methods of analysis of
drilled shells of large areas. Matrix algebra and vectors; de-
velopment of membrane stiffness and flexu-
osity; matrices, assembly of structure stiffness and
flexuosity matrices. Prereq: Consent of instructor.

4803 Display and Control Systems (4) In-
struction to the generalized matrix methods of
analysis of structures. Review of matrix algebra and
vectors; development of membrane stiffness and flexu-
osity; matrices, assembly of structure stiffness and
flexuosity matrices. Prereq: Consent of instructor.

4810 Aspects of Urban Environment I (4) Interdisci-
plinary course in urban problems. Prereq: Consent of
one of the instructors. (Same as Humanities 4900, Political
Science 4900, Psychology 4900, and Public Policy 4900).

4910 Architectural Photography (4) Photography as a
research, design, and presentation medium. Em-
phasis on architectural photography black and white and
photography in black and white.

4920 Advanced Architectural Photography (4) Ap-
lication of special photographic techniques with
emphasis on color printing and processing.

4930 General Practice I (4) Building and business
methods, finance, and marketing. Prereq: 4910.

4931 Professional Practice (4) Analysis of man-
agement and procurement of major projects. Emphasis
on architectural photography black and white and
photography in black and white.

4932 Advanced Architectural Photography (4) Ap-
lication of special photographic techniques with
emphasis on color printing and processing.

4933 Introduction to Architecture (4) An
investigation of the major theoretical issues involved in
considering architecture as a medium of human
expression. Co-design and the organization of the
aesthetic universe. Coding and social behavior. Coding
and social behavior. Coding and social behavior.

4934 Introduction to Architecture (4) An
investigation of the major theoretical issues involved in
considering architecture as a medium of human
expression. Co-design and the organization of the
aesthetic universe. Coding and social behavior. Coding
and social behavior. Coding and social behavior.

4935 Advanced Analytical Studies I (4) General
principles of architectural design. Co-design and
the organization of the aesthetic universe. Coding
and social behavior. Coding and social behavior.

4936 Advanced Analytical Studies I (4) General
principles of architectural design. Co-design and
the organization of the aesthetic universe. Coding
and social behavior. Coding and social behavior.

4937 Advanced Analytical Studies I (4) General
principles of architectural design. Co-design and
the organization of the aesthetic universe. Coding
and social behavior. Coding and social behavior.

4938 Advanced Analytical Studies I (4) General
principles of architectural design. Co-design and
the organization of the aesthetic universe. Coding
and social behavior. Coding and social behavior.

4939 Advanced Analytical Studies I (4) General
principles of architectural design. Co-design and
the organization of the aesthetic universe. Coding
and social behavior. Coding and social behavior.

4940 Professional Practice (4) Examination of
business and economic involvement in architectural
practice. Prereq: 4910.

4941 Professional Practice (4) Examination of
business and economic involvement in architectural
practice. Prereq: 4910.

4942 Professional Practice (4) Examination of
business and economic involvement in architectural
practice. Prereq: 4910.

4943 Professional Practice (4) Examination of
business and economic involvement in architectural
practice. Prereq: 4910.

4944 Professional Practice (4) Examination of
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practice. Prereq: 4910.

4945 Professional Practice (4) Examination of
business and economic involvement in architectural
practice. Prereq: 4910.

4946 Professional Practice (4) Examination of
business and economic involvement in architectural
practice. Prereq: 4910.

4947 Professional Practice (4) Examination of
business and economic involvement in architectural
practice. Prereq: 4910.

4948 Professional Practice (4) Examination of
business and economic involvement in architectural
practice. Prereq: 4910.

4949 Professional Practice (4) Examination of
business and economic involvement in architectural
practice. Prereq: 4910.

4950 Professional Practice (4) Examination of
business and economic involvement in architectural
practice. Prereq: 4910.

4951 Professional Practice (4) Examination of
business and economic involvement in architectural
practice. Prereq: 4910.

4952 Professional Practice (4) Examination of
business and economic involvement in architectural
practice. Prereq: 4910.

4953 Professional Practice (4) Examination of
business and economic involvement in architectural
practice. Prereq: 4910.

4954 Professional Practice (4) Examination of
business and economic involvement in architectural
practice. Prereq: 4910.

4955 Professional Practice (4) Examination of
business and economic involvement in architectural
practice. Prereq: 4910.

4956 Professional Practice (4) Examination of
business and economic involvement in architectural
practice. Prereq: 4910.

4957 Professional Practice (4) Examination of
business and economic involvement in architectural
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4958 Professional Practice (4) Examination of
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4959 Professional Practice (4) Examination of
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4960 Professional Practice (4) Examination of
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4964 Professional Practice (4) Examination of
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4967 Professional Practice (4) Examination of
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4968 Professional Practice (4) Examination of
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4969 Professional Practice (4) Examination of
business and economic involvement in architectural
practice. Prereq: 4910.

4970 Professional Practice (4) Examination of
business and economic involvement in architectural
practice. Prereq: 4910.

4971 Professional Practice (4) Examination of
business and economic involvement in architectural
practice. Prereq: 4910.
College of Business Administration

C. Warren Neel, Dean
John R. Moore, Associate Dean
John A. Bachmann, Assistant Dean
for External Affairs and Director,
Management Development Programs
Francis A. Chamblin, Assistant Dean
for Graduate Programs
Liston M. Fox, Assistant Dean for
Undergraduate Programs
David A. Hake, Director, Center for
Business and Economic Research

The College of Business Administration seeks to prepare men and women for positions as executives and specialists in business. Seeing the business firm as operating in a dynamic social, political, and economic environment, the college has four functions with respect to its purpose: (a) to offer its students the firm base of liberal education consistent with that possessed by educated people; (b) to present to its students the intellectual maturity through continuing education and personal growth and commitment to personal growth and intellectual maturity through continuing education; (c) to associate closely with other colleges of education; (d) to develop in 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; and to prepare them to answer theirown questions and concerns.

The college centers its teaching, subject to the Office of the Assistant Dean for Undergraduate Programs.

Student Advising Center
The College of Business Administration maintains a Student Advising Center. The center is staffed with full-time academic advisers to assist the freshman and sophomore students on an individual basis. All students should be referred to the Office of the Assistant Dean for Undergraduate Programs.

Transfer Admission
The college stands ready to assist any student seeking a business education, regardless of credit hours attempted or earned, and regardless of the grade point average. All such students should be referred to the Office of the Assistant Dean for Undergraduate Programs.

Management Development Programs Department
The Management Development Programs Department offers a wide variety of programs ranging from two- to three-day public seminars and customized "in plant" programs to the four-week University of Tennessee Executive Development Program. The University of Tennessee Executive Development Program (TEDP) is designed to provide extensive continuing educational opportunities for executives from firms and organizations in Tennessee, the South, and nationally. The major objectives of the program are to prepare and develop executives for increasingly higher levels of management responsibility and to sharpen existing executive skills needed for comprehensive decision making and leadership. Other major aims of the TEDP are to teach the fundamentals of analytical thinking and the use of the decision tools, and to examine the economic, political, technological, and other environmental factors affecting the firm's operations.

Tennessee, the Southeast, and the nation. The center serves the business community, state government, individuals, and the University through dissemination of information, and aids the faculty in preparing research proposals. Staff members conduct research in regional economics, public finance, demography, and related socio-economic problems. The center publishes results of its research and that of others, in monograph form, so that significant developments in the various business disciplines can achieve widespread exposure. In addition, the center staff does contract research on business and economic problems for governmental organizations and private industry. As periodicals, the center publishes the Tennessee Statistical Abstract and the Survey of Business. The center is a member of the Southeastern Economic Analysis Conference and the Association for University Business and Economic Research.

Graduate Programs

All students who have attempted 36 or more credit hours as of fall semester must have a grade point average of at least 2.00 to be considered for transfer into the College of Business Administration. This requirement applies both to students transferring from other institutions (including those of The University of Tennessee System) and to those transferring from other colleges and schools of The University of Tennessee, Knoxville. The college stands ready to assist any student seeking a business education, regardless of credit hours attempted or earned, and regardless of the grade point average. All such students should be referred to the Office of the Assistant Dean for Undergraduate Programs.

The Management Development Programs Department offers a wide variety of programs ranging from two- to three-day public seminars and customized "in plant" programs to the four-week University of Tennessee Executive Development Program. The University of Tennessee Executive Development Program (TEDP) is designed to provide extensive continuing educational opportunities for executives from firms and organizations in Tennessee, the South, and nationally. The major objectives of the program are to prepare and develop executives for increasingly higher levels of management responsibility and to sharpen existing executive skills needed for comprehensive decision making and leadership. Other major aims of the TEDP are to teach the fundamentals of analytical thinking and the use of the decision tools, and to examine the economic, political, technological, and other environmental factors affecting the firm's operations.
for Non-Business Majors
Business Minor
colleges or universities are available.
business or distributive education regarding economics, or distributive subjects in the Preparation for Teaching referred to Center for Extended Learning, employer and coordinator, including reports do a satisfactory job as determined by the hours of elective credit for fieldwork but must

Students alternate quarterly between work in students in jobs which offer maximum practical experience. Effort is made to place students in jobs which offer maximum educational and financial advantages. Students work in actual operations in business and industry. The TEDP faculty is supplemented by outstanding practitioners in their fields of business and industry.

Cooperative Program in Business
The College of Business Administration offers qualified students who have completed at least one year of work at the University and whose grades conform to the standards set by the college. The opportunity to participate in the Cooperative Program in Business which, under the direction of a coordinator, combines classroom study with practical experience. Effort is made to place students in jobs which offer maximum educational and financial advantages. Students work in actual operations in business and industry. The TEDP faculty is supplemented by outstanding practitioners in their fields of business and industry.

Cooperative Program in Business
The College of Business Administration offers qualified students who have completed at least one year of work at the University and whose grades conform to the standards set by the college. The opportunity to participate in the Cooperative Program in Business which, under the direction of a coordinator, combines classroom study with practical experience. Effort is made to place students in jobs which offer maximum educational and financial advantages. Students work in actual operations in business and industry. The TEDP faculty is supplemented by outstanding practitioners in their fields of business and industry.

Preparation for Teaching
Students desiring to teach business, economics, or distributive subjects in the secondary schools of Tennessee may follow majors in accounting, office administration, or marketing and also meet the requirements for certification by the State Department of Education. Students should consult an adviser in business or distributive education regarding the proper courses.

Minor and doctoral degree programs leading to teaching in junior and senior colleges or universities are available.

Business Minor for Non-Business Majors
Students who are non-business majors, but who wish to attain a minor in business, must successfully complete 21 hours of the following required courses: Accounting 2110-20, Economics 3110-20, Statistics 2100. Also, 15 hours of upper-division business electives must be taken at UTC. More than six upper-division hours of accounting, economics, or statistics may be used for this minor. Students are responsible for meeting prerequisites listed for any upper-division courses taken in a particular concentration. Acceptance of the minor must have approval of the student's college of enrollment. Minors are unavailable to College of Business Administration students.

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

Requirements for All Curricula
A student must complete the curriculum outlined by the major department in order to receive a degree. Where no course number is indicated or where a choice is allowed, the student will fulfill the requirement by selecting from specified courses. Where electives are provided, the student must meet the approval of the advisor. A student's minor must be approved as courses outside the student's major department. No more than 42 hours are permitted in any one subject area. A maximum of 30 credit hours of unconditionally graded (UNC, P/F, P, etc.) courses may be applied to the total credit hours required for a degree of Bachelor of Science in Business Administration. Such credit hours may be used to meet only the requirements identified in the curriculum as "non-business electives," "non-departmental electives," "business and non-business electives," and "business electives." A Management Science Option is available for students with facility in mathematical applications to business. See page 85.

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, Economics 2110-20-30, Statistics 2100 and three hours of upper-division statistics elective or as designated by the curriculum (3450-60 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 both English 1021-20 and either English 1021, 1032, or 1033, as well as hours selected from English 2110-20, 2510, 2560-70-80, 2690-70-80. Speech 2131, unless specifically required by a concurrent course, may be used to satisfy the four elective hours required. English courses beyond 1000 level may be taken in any order. Students making a B average in freshman English are permitted to substitute for the 2000-level courses listed above any upper-division courses which the Department of English will allow them to take.

NATURAL SCIENCE REQUIREMENT
The natural science requirement can be fulfilled by an eight-hour sequence (any eight-hour sequence plus any additional four hours of natural science for the business education curriculum) in any of the following fields: astronomy, biology, botany, chemistry, geology, or physics.

SOCIAL SCIENCE REQUIREMENT
The social science requirement can be fulfilled by taking courses in the following fields: Anthropology 1010-20, 1210-30; Geography 1610-20, 2110-20; History 1010-20 (1518-28), 1610-20, 1620-20, 1910-20 (2518-28); Modern Languages 1110-30; Political Science 2000, 2510-20 (2518-28); Psychology 2500 (2518), 2530-40; Religious Studies 2500-20; Sociology 1510-20. Students who have not completed a year of American history in high school must select American History (History 2510-20 or 2518-28) and 2511 or 2521 as part of the 16 hours of social sciences.

COMPUTER SCIENCE REQUIREMENT
A student must complete an approved course satisfying this requirement; Computer Science 1410 or Office Administration 2750 is recommended.

Accounting
The College of Business Administration provides preparation for professional accounting careers in public accounting firms, public or private industry, and public agencies. Graduate students are eligible for the CPA examination in Tennessee.

Transfer Students: A minimum of 30 quarter hours of required upper-division College of Business Administration courses must be completed in residence at The University of Tennessee, Knoxville. These courses must include a minimum of 15 hours of accounting courses numbered 3000 or above and must include Accounting 4110, 4140, 4340, and 4630.

<table>
<thead>
<tr>
<th>Name</th>
<th>Hours Credit</th>
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<tbody>
<tr>
<td>English</td>
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</tr>
<tr>
<td>English 1010-20</td>
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<tr>
<td>English 1021-20</td>
<td>3</td>
</tr>
<tr>
<td>English 1032-20</td>
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</tr>
<tr>
<td>English 1033-20</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics 1540-60</td>
<td>4</td>
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<tr>
<td>Natural science</td>
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<td>Social science</td>
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<tr>
<td>Business elective</td>
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<table>
<thead>
<tr>
<th>Name</th>
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</thead>
<tbody>
<tr>
<td>Computer Science</td>
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<tr>
<td>Accounting 1410</td>
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<td>Office Administration 2750</td>
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<tr>
<td>Computer Science 1410 (2150) for Management Science Option</td>
<td>4</td>
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<td>Course</td>
<td>Hours</td>
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<tr>
<td>Accounting 2110-20-30</td>
<td>3</td>
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<tr>
<td>Business and/or non-business Finance electives</td>
<td></td>
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<tr>
<td>Statistics 3220</td>
<td>-</td>
</tr>
<tr>
<td>Marketing 3110-20</td>
<td>3</td>
</tr>
<tr>
<td>Finance 3510</td>
<td></td>
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<tr>
<td>Junior</td>
<td></td>
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<tr>
<td>Accounting 3110-20-30</td>
<td>3</td>
</tr>
<tr>
<td>Accounting 3410</td>
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<td>Economics 3110</td>
<td>-</td>
</tr>
<tr>
<td>Finance 3120</td>
<td>-</td>
</tr>
<tr>
<td>Finance 3150</td>
<td>3</td>
</tr>
<tr>
<td>Management 3010, 3110</td>
<td>3</td>
</tr>
<tr>
<td>Marketing 3110-20</td>
<td>3</td>
</tr>
<tr>
<td>Statistics 3220</td>
<td>3</td>
</tr>
<tr>
<td>TOTAL: 187 hours</td>
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<tr>
<td></td>
<td></td>
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<tr>
<td><strong>Banking</strong></td>
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</tr>
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</table>

Students planning careers in management of commercial banks and branches, or as financial analysts, investment or loan officers, or in savings or industrial banks, the Federal Reserve System, international monetary institutions, or state and federal bank regulatory agencies may major in banking.

Transfer Students: A minimum of 30 quarter hours of required 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.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>Accounting 2110-20-30</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Business and/or non-business Finance electives</td>
<td></td>
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</tr>
<tr>
<td>Statistics 3220</td>
<td>-</td>
<td>3</td>
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<tr>
<td>Marketing 3110-20</td>
<td>3</td>
<td>3</td>
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<tr>
<td>Finance 3510</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Junior</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accounting 3110-20-30</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Accounting 3410</td>
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<td>3</td>
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<td>Finance 3120</td>
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<td>Finance 3150</td>
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<td>Marketing 3110-20</td>
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<td>Statistics 3220</td>
<td>3</td>
<td>3</td>
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<tr>
<td>TOTAL: 187 hours</td>
<td></td>
<td></td>
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<tr>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Economics</strong></td>
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</tr>
</tbody>
</table>

The Department of Economics offers specialized courses for those who desire to serve as economic analysts and specialists in business, education, government, and various international agencies. The curriculum requirements for an economics major in the College of Business Administration are listed below with an additional explanation given on page 68. Freshman students may also elect to major in economics in the College of Liberal Arts or to become certified to teach economics in the secondary schools through the College of Education. See page 103 for further details.

Transfer Students: A minimum of 30 quarter hours of required upper-division College of Business Administration courses must be completed in residence at The University of Tennessee, Knoxville. These must include a minimum of 15 hours of economics courses.

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<thead>
<tr>
<th>Course</th>
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<th>Credit</th>
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<tbody>
<tr>
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<tr>
<td>Accounting 4110-20</td>
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<td>Business Administration 4430</td>
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<tr>
<td>Finance 4510-20</td>
<td>3</td>
<td>3</td>
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<tr>
<td>Economics 4520</td>
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<td>-</td>
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<tr>
<td>Junior</td>
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<td></td>
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<tr>
<td>Accounting 4110-20</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Business Administration 4430</td>
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<td>3</td>
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<tr>
<td>Economics 4520</td>
<td></td>
<td>-</td>
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<tr>
<td>TOTAL: 187 hours</td>
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<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Finance</strong></td>
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</tbody>
</table>

Curricula in the finance department include those in finance, banking, insurance, and real estate and urban development. The finance curriculum courses offer in the following areas: business financial management, security analysis and investments, financial institutions, and monetary theory and policy.

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.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>Business Education</td>
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<td></td>
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<tr>
<td>Accounting 4110-20</td>
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<td>3</td>
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<tr>
<td>Business Administration 4430</td>
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<tr>
<td>Finance 4510-20</td>
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<tr>
<td>Economics 4520</td>
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<td>-</td>
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</table>
## General Business

This major is for those who desire a broad business background without extensive concentration in any single business field. To that end it includes advanced work beyond the introductory courses in accounting, economics, finance, personnel management, marketing, statistics, and transportation as specified below.

### Freshman

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>English 1010-20</td>
<td>English elective</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics 1420-20</td>
<td>Mathematics 1440-50 or 1450-60</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Social science electives</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Economics 2110</td>
<td>3</td>
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</table>

### Sophomore

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounting 2110-20</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Economics 2120-30</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Social science electives</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Statistics 2100</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>English elective</td>
<td>4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Non-business electives</td>
<td>6</td>
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### Junior

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management 3010, 3110</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Marketing 3110</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Finance 3120-30</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Economics electives</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Finance electives</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Social science elective</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Statistics elective</td>
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</tr>
<tr>
<td>Economics 2120-30</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
</tbody>
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### Senior

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Law 4110-20</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Management Administration 4330</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Finance, insurance, or real estate electives</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Accounting electives</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Business or non-business electives</td>
<td>4</td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

### 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 insurance courses.

## 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:

### Operations Management

- Operations Management-designed for students interested in management in operations in manufacturing and service industries, including the specific fields of materials management, scheduling, and control. Work measurement, quality assurance, and supervision.

### Personnel Management

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

### General Management

- General Management-designed for students who desire careers in management, but who do not wish to specialize in either business or non-business.

### Transfer Students: A minimum of 20 quarter hours of upper division College of Business Administration courses must be completed in residence at the University of Tennessee, Knoxville. These must include at least 10 hours of management courses including 4120, 4330, 4460.

## Insurance

The insurance major is for students planning careers in business risk management, insurance company and business administration, actuarial work, pension administration, life underwriting, estate planning, property-casualty agency management, insurance consulting, loss adjustment, and state regulation of insurance. Graduates are eligible to take the national examinations for the C.L.U. or C.P.C.U. designation.

### Freshman

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>English 1010-20</td>
<td>English elective</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics 1420-20</td>
<td>Mathematics 1440-50 or 1450-60</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Social science electives</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Economics 2110</td>
<td>3</td>
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### Sophomore

<table>
<thead>
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<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
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<tr>
<td>Economics 2120-30</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Social science electives</td>
<td>4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>English elective</td>
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### Junior

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>Management 3010, 3110</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Marketing 3110</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Finance 3120-30</td>
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<td>3</td>
<td></td>
</tr>
<tr>
<td>Economics electives</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Finance electives</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Social science elective</td>
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<td></td>
</tr>
<tr>
<td>Statistics elective</td>
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### Senior

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Law 4110-20</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Management Administration 4330</td>
<td>3</td>
<td>3</td>
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</tr>
<tr>
<td>Finance, insurance, or real estate electives</td>
<td>3</td>
<td>3</td>
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</tr>
<tr>
<td>Accounting electives</td>
<td>3</td>
<td>3</td>
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<tr>
<td>Business or non-business electives</td>
<td>4</td>
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### 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 10 hours of management courses including 4120, 4330, 4460.

## Business and/or non-business electives

<table>
<thead>
<tr>
<th>Course Code</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Management 3010, 3110</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Marketing 3110</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Finance 3120-30</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Economics electives</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Finance electives</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Social science elective</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Statistics elective</td>
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<td></td>
</tr>
<tr>
<td>Economics 2120-30</td>
<td>3</td>
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</tr>
</tbody>
</table>

## TOTAL: 187 hours

### Insurance electives

- 3 hours

---

*See Requirements for All Curricula.*
Sophomore
Accounting 2110-20-30 3 3
*Computer science elective 3 3
Economics 2110-30-30 3 3
*Social science electives 4 4
Business Administration 2100 3 3
Statistics 3410 or 3290 3 3
*Business electives 5 6
Marketing 3420 3 3
Economics 3110 or 3200 or 3401 3 3
Finance 3120-30 3 3
*Finance elective 3 3
Management 3010 3 3
Marketing 3100 3 3
Marketing 3120 3 3
Marketing 4110 3 3
Transportation 3110 3 3
*Non-departmental electives 3 3
*Non-business electives 3 3
TOTAL: 187 hours

Sophomore
Accounting 2110-20-30 3 3
*Computer science elective 3 3
Economics 2110-30-30 3 3
*Social science electives 4 4
Business Administration 2100 3 3
Statistics 3410 or 3290 3 3
*Business electives 5 6
Marketing 3420 3 3
Economics 3110 or 3200 or 3401 3 3
Finance 3120-30 3 3
*Finance elective 3 3
Management 3010 3 3
Marketing 3100 3 3
Marketing 3120 3 3
Marketing 4110 3 3
Transportation 3110 3 3
*Non-departmental electives 3 3
*Non-business electives 3 3
TOTAL: 187 hours

Marketing
Transfer Students: A minimum of 30 quarter hours of required upper-division College of Business Administration courses must be completed in residence at The University of Tennessee, Knoxville. These must include the following required marketing courses: 3210, 4210, 4510, 4650, 4710, and 3115.

Transfer Students: To graduate with a major in office administration, a minimum of 30 quarter hours of required upper-division College of Business Administration courses must be completed in residence at The University of Tennessee, Knoxville. A minimum of 12 hours must be in office administration.

Sophomore
Accounting 2110-20-30 3 3
*Computer science elective 3 3
Economics 2110-30-30 3 3
*Social science electives 4 4
Business Administration 2100 3 3
Statistics 3410 or 3290 3 3
*Business electives 5 6
Marketing 3420 3 3
Economics 3110 or 3200 or 3401 3 3
Finance 3120-30 3 3
*Finance elective 3 3
Management 3010 3 3
Marketing 3100 3 3
Marketing 3120 3 3
Marketing 4110 3 3
Transportation 3110 3 3
*Non-departmental electives 3 3
*Non-business electives 3 3
TOTAL: 187 hours

Sophomore
Accounting 2110-20-30 3 3
*Computer science elective 3 3
Economics 2110-30-30 3 3
*Social science electives 4 4
Business Administration 2100 3 3
Statistics 3410 or 3290 3 3
*Business electives 5 6
Marketing 3420 3 3
Economics 3110 or 3200 or 3401 3 3
Finance 3120-30 3 3
*Finance elective 3 3
Management 3010 3 3
Marketing 3100 3 3
Marketing 3120 3 3
Marketing 4110 3 3
Transportation 3110 3 3
*Non-departmental electives 3 3
*Non-business electives 3 3
TOTAL: 187 hours

See Requirements for All Curricula.

Transfer Students: A minimum of 30 transfer hours of credit is required to fulfill the sophomore elective.

See Requirements for All Curricula.

Total: 12 hours of foreign language electives.

See Requirements for All Curricula.

Marketing
See Requirements for All Curricula.

2.2 in office administration, and within the overall average of at least 2.0, an average of 3.0 required.

See Requirements for All Curricula.

Transfer Students: To graduate with a major in office administration, a minimum of 30 quarter hours of required upper-division College of Business Administration courses must be completed in residence at The University of Tennessee, Knoxville. A minimum of 12 hours must be in office administration.

Transfer Students: To graduate with a major in office administration, a minimum of 30 quarter hours of required upper-division College of Business Administration courses must be completed in residence at The University of Tennessee, Knoxville. A minimum of 12 hours must be in office administration.
regarding the recommended sequence of courses may be obtained from the office of the department head.

This "short course" has been planned for six quarters of work and may be started at the beginning of any quarter.

Bachelor of Science in Public Administration

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Political Science</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Business Administration</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Political Science elective</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Social science elective</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>TOTAL:117 hours</td>
<td></td>
<td>117</td>
</tr>
</tbody>
</table>

*Subjects recommended for All Curricula.

Public Administration

This major is for students who wish to prepare for management positions in the public service. In general, it presents a combination of general education together with studies in governmental and business management. It is designed to give initial preparation for such governmental employment as organization and management work, budgeting, work force and personnel management.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Political Science</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Business Administration</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Political Science elective</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Social science elective</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>TOTAL:117 hours</td>
<td></td>
<td>117</td>
</tr>
</tbody>
</table>

*Subjects recommended for All Curricula.

Real Estate and Urban Development

This major is designed for students who are interested in the many fields of business and government where real estate is of significance. Such fields include real estate brokerage, appraisal, taxation, law, property management, real estate development, mortgage lending and mortgage banking, construction, government loan guarantees, and insurance.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Administration</td>
<td>3</td>
<td>3</td>
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<tr>
<td>Political Science</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Social science elective</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>TOTAL:117 hours</td>
<td></td>
<td>117</td>
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</tbody>
</table>

*Subjects recommended for All Curricula.

Statistics

A major in statistics is recommended for students interested in positions involving process control and quantitative research in business, industry, and government.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
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</thead>
<tbody>
<tr>
<td>Business Administration</td>
<td>3</td>
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<td>Political Science</td>
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<td>3</td>
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<tr>
<td>Business Administration</td>
<td>3</td>
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<tr>
<td>Social science elective</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>TOTAL:117 hours</td>
<td></td>
<td>117</td>
</tr>
</tbody>
</table>

*Subjects recommended for All Curricula.
### 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 solution of complex problems. In response to this growing need, 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 complex management problems. The Management Science Option is available to students majoring in accounting, business and/or non-business electives, economics, general business, industrial management, marketing, personnel management, real estate, and urban development, statistics, and transportation.

### Accounting M.S.O.
Transfer students with nine quarter hours of introductory accounting will receive six hours of credit in Accounting 2110-20 and three hours of lower-division accounting credit. These students must take as much of their technical electives an upper-division course approved by the accounting department adviser, and if necessary must not be an accounting course.

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

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

<table>
<thead>
<tr>
<th>Hours Credit</th>
<th>1</th>
<th>2</th>
<th>3</th>
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<tbody>
<tr>
<td>Freshman</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>English 1010-20; 1031 or 1032</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>English elective</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mathematics 1840-50-60</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Natural science electives</td>
<td>4</td>
<td>4</td>
<td>4</td>
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<tr>
<td>Social science electives</td>
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<tr>
<td>Non-business electives</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Sophomore</td>
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<tr>
<td>English elective</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accounting 2110-20-30</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Mathematics 2840-50-60</td>
<td>4</td>
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</tr>
<tr>
<td>Economics 3110</td>
<td>3</td>
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<tr>
<td>Marketing 3110-20</td>
<td>3</td>
<td></td>
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<tr>
<td>Management 4430</td>
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<tr>
<td>Business Administration 4430</td>
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</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>187</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Hours Credit</th>
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<th>3</th>
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<tbody>
<tr>
<td>Freshman</td>
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<tr>
<td>English 1010-20; 1031 or 1032</td>
<td>3</td>
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<tr>
<td>Mathematics 1840-50-60</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Social science electives</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Non-business electives</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Sophomore</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Accounting 2110-20-30</td>
<td>3</td>
<td></td>
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</tr>
<tr>
<td>Economics 2110-20-30</td>
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<td>Mathematics 2840-50-60</td>
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<tr>
<td>English elective</td>
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<tr>
<td>Social science electives</td>
<td>4</td>
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<td></td>
</tr>
<tr>
<td>Business and/or non-business electives</td>
<td>4</td>
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</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Hours Credit</th>
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<tr>
<td>Social science electives</td>
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<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Non-business electives</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>
Marketing M.S.O.

Transfer Students: An option in Marketing M.S.O. requires a minimum of 30 quarter hours of required upper-division College of Business Administration courses which must be completed in residence at The University of Tennessee, Knoxville. These must include the following required marketing courses: 3210, 4120, 4510, 4570, 4710.

Real Estate and Urban Development M.S.O.

Students applying for the MBA, M.Acc., and Ph.D. programs are required to take the Graduate Management Admission Test (GMAT). Applicants for the M.A., M.A.C.T., M.S., and Ph.D. programs may take either the Graduate Management Admission Test (GMAT) or the Graduate Record Examination (GRE).
3110 with grade of C or better for
and
tniques for decision analysis, governmental regula-
and performance measurement of decentralized opera-
and management control. Special topics include
3210-20-30 Managerial Cost Accounting (3,3,3)
and
ncreased enrichment of student with superiorabil-
mediate financial accounting theory designed for
preparation of financial statements. Prereq: 2120 for
product costing, cost behavior analysis for decision
User-oriented survey of managerial cost accounting
2130 Survey of Manageial Cost Accounting (3)
req: For 2110, Math 1550 or equivalent.
and analysis of financial information. Prereq to all
majors. Courses must be passed in sequence. Pre-
framework underlying measurement of income and
better.
4300 Advanced Federal Taxes (3) Fundamental principles of federal taxation with emphasis on
4118 Honors: Principles of Auditing (3) Designed for increased enrichment of student with superior ability and interest. Prereq: Same as for 4110 and consent of department head. Substitutes for Accounting 4150 in student’s program.
4010 Introduction to Accounting (3) Designed to enhance development of the student with superior ability and interest. Prereq: Same as for 4110 and consent of department head. Substitutes for Accounting 4150 in student’s program.
3910 . Prereq or coreq: Statistics 3410. 2120 .
3010 with grade of C or better. 4120 .
4118 Honors: Accounting for Control (3)
5640 Seminar in Accounting Information Systems
5510 Not-for-Profit Accounting (3)
5340 Consolidations and Business Combinations (3)
5320 Advanced Auditing (3)
5310 Audit Concepts (3)
5210-20 Seminar in Advanced Managerial Cost Ac-
counting (3,3)
5160 Graduate Internship in Accounting (3)
5120-40 Seminar in Current Accounting Topics (3,3)
5110 Seminar in Accounting Theory (3)
5020 Corporate Reporting Problems (3)
5010 Financial Accounting (3)
4960 Accounting Theory (2) Theory and conceptual framework underlying measurement of income and financial position as related to the resolution of key reporting problems. Prereq: 3130 with grade of C or better.
Graduate See page 86 for information on graduate programs.
5002 Non-Thesis Graduation Completion (3-15)
5001 Financial Accounting (3)
3330 Business Law (3) Principles of law comprising legal environment appropriate to commercial business transactions, strongly integrated with basic political and economic concepts. Review of U.S. legal system and business-related law.
4119 Environmental Business Law (3) Principles of law comprising legal environment appropriate to commercial business transactions, strongly integrated with basic political and economic concepts. Review of U.S. legal system and business-related law.
4118 Honors: Accounting for Control (3)
3010 with grade of C or better. 4110 .
4090 Tax Planning (3)
4080 Taxation of Estates and Gifts (3)
3950 Not-for-Profit Accounting (3)
3810 Accounting for Control (3)
3550 Tax Planning (3)
3490 Test of English as a Foreign Language
3430 Business Law (3) Fundamentals of business and public affairs, with particular emphasis on legal responsibilities, internal control, and use of statistical auditing evidence and reporting. Prereq: 3190 with grade of C or better. Computer Science 3910. Prereq or core: Statistics 3410.
3400 Electronic Data Processing Concepts and Control (3) Elements and operation of computers in a business environment, accounting systems are emphasized. Topics include input, storage, data manipulation, output, and error control. Prereq: 3210. Computer Science 3410 or equivalent.
3150-20-30 Intermediate Accounting (3,3,3) In-depth study of theory, principles, and procedures related to the valuation of assets, liabilities and equity; measurement of periodic income; and preparation of financial statements. Prereq: 2110 or 2130 with grade of C or better for 2110 and with a grade of C or better for 2130.
3148 Honors: Introduction to Accounting (3) Inter-
mediates in accounting theory designed for increased enrichment of student with superior abil-
ity and interest. Prereq: Same as for 3110 and consent of department head. Substitutes for Accounting 3130 and 3430 in student’s program.
3130 Advanced Auditing (3) A case-oriented course including audit of specific assets, liability, revenue, and expense accounts, with emphasis on reporting, data processing, statistical sampling, and internal auditing. Prereq: 4110 with grade of C or better.
3120. Computer Science 3410 or equivalent.
3118 Honors: Introduction to Accounting (3) Inter-
mediates in accounting theory designed for increased enrichment of student with superior abil-
ity and interest. Prereq: Same as for 3110 and consent of department head. Substitutes for Accounting 3130 and 3430 in student’s program.
3110 with grade of C or better for 3130 and 3430 in student’s program.
3110 with grade of C or better.
3110 with grade of C or better for 3130 and 3430 in student’s program.
3110 with grade of C or better for 3130 and 3430 in student’s program.
Economics (283)

Professors:
P. D. Qualls (Head), Ph.D. California (Berkeley).
P. D. Taves, Ph.D. Stanford.
P. D. Twiss, Ph.D. Northwestern.

Associate Professors:
C. L. Burkholder, Ph.D. California (Berkeley).
J. H. Bolle (Emeritus), Ph.D. Cal State, Los Angeles.
J. F. Bowie, Ph.D. Virginia Polytechnic Institute.
J. J. Brown, Ph.D. North Carolina.
J. R. Moore (Associate Dean), Ph.D. Cornell.
C. A. Nusse, Ph.D. London (King's College).
M. D. Perry, Ph.D. Michigan (Ann Arbor).

Assistant Professors:
G. P. Capel, Ph.D. London (King's College).
D. H. Chang, Ph.D. Cal Tech.
A. Z. Vernicelli, Ph.D. State University of New York.

Instructor:
D. D. Verbic.

Alumni/Scholarship/Student Services:
Funding.

Requirements for a major in economics consist of: (1) Economics 2110, 2120, and 2130 or equivalent honors courses; and (2) a minimum of 33 additional hours in upper-division economics courses. Economics 3110 or (3111 and 3112) and 3120 are required as a part of the upper-division work and should be taken as early in the upper-division program as possible.

2001 Current Economic Problems (2)
This course will be designed to provide students with an understanding of major economic events and issues. Topics will be chosen to reflect the nature of the economy and the current political and social environment. Each year a new course will be offered at the convenience of the department upon student request.

2110-20-30 Introductory Economics (3, 3, 3)
2110—Basic economic concepts introduced through study of evolution of modem capitalism and the ideas of major economists, organization of the U.S. Economy. 2120—Macroeconomics: national income, money and banking, employment, inflation. 2130—Microeconomics: price and output determination; market demand, supply, and prices. Prerequisites: none, unless otherwise noted by the department. Offered at the discretion of the department.

2110-28-38 Honors: Introductory Economics (3, 3, 3) An honors level course for students of superior academic standing. Honors students will be selected on the basis of their performance in College Testing Program scores, and grade record during their first two quarters. Grade S of B in 2110 is necessary for entrance into 2128. An A or B in 2128 automatically gives credit for 2138 also, with same grade. Students making C or D in 2110 must take 2130 in order to receive honors credit.


313 Intermediate Micro Theory IV (3) Aggregate demand, output, and level of employment: price level, inflation, and deflation: economic growth. Prerequisite: 2110. Fall: 2110.

3210 International Economics I (3) Balance of payments and international trade. Prerequisite: 2110. Fall: 2110.


3220 Principles of Economic Development (3) Theory of economic development with application to problem areas on local, national, and international levels. Emphasis on the economic aspects of social change. Prerequisites: 2130; B in 2120 and 2130.

3230 Regional Economics (3) Overview of regional differences: theory of industrial, agricultural, and residential location; the economic basis for land use and zoning; and of changes in governmental economic policy. Prerequisite: 2130.


3350 Comparative Economic Systems I (3) Description and analysis of economic systems, institutions and culture. Prerequisites: 2130 or equivalent honors courses; and I/S. Economic systems will include Soviet-type economies. Prerequisite: 2130 or equivalent honors courses.

3360 Government and Business I (3) Microeconomic objectives and market behavior. Policies affecting business and prices, concentration through the antitrust laws, direct control of businesses, price ceilings. Prerequisite: 2130.

3410 Government and Business II (3) Topics in antitrust policy, direct regulation, and other forms of social control; regulating information, product and service quality. Emphasis on public and private business relations: selected cases. Prerequisite: 3360.

3450 Principles of Labor Economics I (3) Supply and demand for labor, market wage determination; economic role of trade unions; application of analysis to various labor market problems such as unemployment, discrimination, occupational choices. Prerequisite: 2130; B in 2120 and 2130; Fund-quarter standing required for admission to 2130.

3450 Principles of Labor Economics II (2) American labor history, structure and philosophy of contemporary unions, nature of collective bargaining, and dispute settlement. Prerequisite: 2130.

4110 Managerial Economics (3) Application of economic theory to business decision making, emphasis on profit objectives, measurement and control. Prerequisite: 2130; 3450 as a prerequisite or consent of instructor.

4170-80 Introduction to Mathematical Economics (3, 3) Application of mathematical methods in economic theory to business decision making; emphasis on profit objectives, measurement and control. Prerequisite: 2130; 3450 as a prerequisite or consent of instructor.

4350 Industrial Organization Analysis (3) Monopoly and competition in the United States economy; market structure, business behavior, and economic performance and their interrelationships. Prerequisite: 2130.

4430 Labor Legislation (3) Current manpower problems and examination of possible solutions. Problems include unemployment, inflation, manpower training and education, poverty, and economic and social aspects of unemployment and underemployment. Prerequisite: 2130.

4530 Business Cycles (3) Fluctuations in income, employment, prices, and output in the economic system; trends discussed are historical facts concerning booms and depressions; statistical methods used in business and economic forecasting; business cycles and relation of Fair Labor Standards Act, Social Security Act, and other legislation affecting labor relations. Prerequisite: 2130.


4770 Independent Study (4-15) Open to qualified students in all departments. May be taken for co-operative work with department. Prerequisites: 2130; B in 2120 and 2130; Fund-quarter standing required for admission to 2130.

4980 Independent Study (1-15) Open to qualified students in all departments. May be taken for co-operative work with department. Prerequisites: 2130; B in 2120 and 2130; Fund-quarter standing required for admission to 2130.

5010 Introduction to Economic Analysis (3)
5020 Managerial Economics (3)
5030 Economic Fluctuations, Forecasting, and Stabilization (3)
5111 Microeconomics (3)
5112 Macroeconomics (3)
5212-21 Macroeconomic Theory (3, 3)
5110 History of Economic Thought (3)
5210-50 Mathematical Economics in Interdisciplinary Programs (3)
5240 Quantitative Methods in Economic Research (3)
6000 Doctoral Dissertation and Research (3)
6700-80-80-80 International Economics (3, 3, 3, 3)
6260 Seminar in American Economic History (3)
6211-12, 6221-22 Seminar in International Economics (3)
5610 Location and Regional Development Theory (3)
5010 Financial Management and Asset Valuation (3)

6000 Doctoral Dissertation and Research

Grades: A, B, C, D, I, P, N (Pass by Examination), or I (Incomplete). All grades of I are subject to a final examination, which must be passed to remove the grade.

Grades: A, B, C, D, I, P, N (Pass by Examination), or I (Incomplete). All grades of I are subject to a final examination, which must be passed to remove the grade.

Prerequisites: Accounting 2110-20-30, Economics 2110-20-30, and Statistics 2100-20-30 for all courses offered in the finance department except Insurance 3200.

Finance (349)
3150 Money and Banking (3) Nature and functions of money and credit, analysis of monetary and credit systems, money creation and event of the Federal Reserve System. Prereq: 3120 and Statistics 3220 or 4310.
4130 Topics in Investments (3) Portfolio management policies of institutions, efficient market hypothesis and evidence, options and commodities. Prereq: 4000.
4310 Monetary Theory and Policy (3) Role of money in the economy. Emphasis upon factors that affect demand for and supply of money. Evaluation of current policy.
4420 Commercial Banking (3) Operations of commercial banks, emphasis on asset and liability management. Prereq: 3110.
4660 Problems in Financial Management (3) Financial management of institutions, asset valuation, and internal and external supplies of funds, and their costs to the firm. Prereq: 3120 for 3130.
4700 Life Insurance and Estate Planning (3) Consumer-oriented view of risks faced by individuals and families. Prereq: 3110 or 3120.
4710 Life Insurance and Estate Planning (3) Coor.
4720 Property-Casualty Planning (3) Property and casualty contracts and forms and their application to business and personal risks. Must be taken in sequence.
4740 Property-Casualty Planning (3) Property and casualty contracts and forms and their application to business and personal risks. Must be taken in sequence.

GRADUATE
5130 Financial Administration (3)
6231-32, 6241-42 Seminar in Economic Development (3, 3, 3, 3)
6331 Theory and Practice of Economic Planning (3) Economics of Centralized and Planned Economies (3)
6350 Seminar in Private Enterprise and Public Policy (3)
6411-12, 6421-22 Seminar in Labor Economics (3, 3)
6510 Seminar in Economic History of the Third World (3)
6560 Seminar in Regional Analysis (3)
6580 Seminar in Environmental and Resource Economics (3)
6610 Seminar in Environmental Economics (3)
6650 Seminar in Economic History of the United States; emphasis on economic and social development of the United States. Prereq: 3120.
6710-20 Seminar: Fiscal Theory and Public Finance in the World (3)
6731-32, 6741-42 Seminar in Environmental Economics (3, 3, 3)
6800 Doctoral Dissertation and Research (3)

Economics (3)
3610 Principles of Real Estate and Urban Development (3)
3640 Real Estate Analysis (3) Development and analysis of investment opportunities in real estate. Prereq: Economics 3110. 3110.
3650 Problems in Real Estate Development (3) Analysis of urban growth processes and land use patterns. Prereq: 3110. 3110.
3670 Principles of Urban Development (3) Principles of urban development and land use. Prereq: 3110. 3110.
4810 Management and Development of Real Property (3) Real estate investment analysis and taxation. Preparers: 3365.
4810 Analytical Methods in Real Estate (3) Application of regression, correlation, and computer-based models to real estate investment decisions. Preparers: 3610 and Statistics 4310.
4900 Aspects of Urban Environment (4) Same as Architecture 4900, Human Services 4900, and Psychology 4900.
GRADUATE
3010 Non-Thesis Graduation Completion (3-15)
5110 Urban Economic Analysis (3)
5210 Real Estate Analysis (3)
5110 Housing and Urban Land Markets (3)
5310 Real Estate Investment and Taxation Analysis (3)

Management
Professors: H. D. O'Meara (Head), Ph.D., Texas; R. W. Boring, Ph.D., Stanford; G. E. Frighel (Emeritus), M.Ed., Colorado; M. E. Gordon, Ph.D., California (Berkeley); W. B. H. Henderson, Ph.D., Michigan; J. H. Kaatz (Emeritus), M.D., Pennsylvania; J. M. Lane, Jr., M.B.A. (England); J. A. Bachmann, Ph.D. (Scotland); S. C. Varne, Ph.D., Pennsylvania.
Associate Professors: R. W. Stokely (Professor of Management) ; G. W. Bertulis, Ph.D., Pennsylvania.
Assistant Professors: F. A. Cambell, M.B.A., Indiana; O. S. Fowler, Ph.D., Georgia; R. D. Niday, Ph.D., Texas; W. C. Coakley, L.M., Iowa; R. A. Brue, Ph.D., Missouri;

3010 Principles of Management (3) Analysis of basic management functions of planning, organizing, and controlling.
3110 Production Management (3) Analysis of production function. Prerequisites: 3110-20. Not available for management majors with concentrations in operations or personnel. Preparers: Management Science 2110-30. Cannot be taken for credit by students who have credit for Management 3110.
3111 Operations Management (3) Analysis of the operations control function. Techniques of short-term forecasting, material and capacity requirements planning, integration of scheduling and operations control into the total operations function. Preparers: 3111.
3410 Advanced Industrial Problems (3) Cases in production management. Preparers: 3110 in major including 4410.
4460 Organizational-Industrial Psychology (3) An analytical and empirical approach to application of psychological tools and knowledge to organizations. Preparers: 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.)
4700 Job Analysis and Evaluation (3) Job evaluation as basis for control of wages and salaries. Preparers: 3460.
4801-02-03 Readings and Research in Personnel Management (3, 3, 3) Preparation and writing of personnel management research papers.
5010 Organization Theory and Behavior (3) Emphasis on the analytical and empirical approach to application of psychological tools and knowledge to organizations. Preparers: Statistics 3110 or Statistics 3310 with consent of instructor. Cannot be taken for credit by students who have credit for Management 5050. (Same as Psychology 5050.)
5050 Production Management (3)
5120 Organization Theory II (3)
5170 Enterprise Planning and Control (3) Development and analysis of new or existing organizations. Preparers: Management Science 2110-30. Cannot be taken for credit by students who have credit for Management 5110. See page 86 for information on graduate programs.
5220 Wage and Salary Administration (3)
5410-20-30 Production Management (3, 3, 3)
5710 Management of Foreign Operations (3)
5720 Personnel Problems Seminar (3) Case problems in personnel analysis, applying experiential methods and conclusions from personnel research as reported in professional journals. Preparers: 4460-70, Statistics 3110.
5920 Personnel Problems Seminar (3) Case problems in personnel analysis, applying experiential methods and conclusions from personnel research as reported in professional journals. Preparers: 4460-70, Statistics 3110.

5220 Wage and Salary Administration (3)
5410-20-30 Production Management (3, 3, 3)
5710 Management of Foreign Operations (3)
5720 Personnel Problems Seminar (3) Case problems in personnel analysis, applying experiential methods and conclusions from personnel research as reported in professional journals. Preparers: 4460-70, Statistics 3110.
5810 Energy Management: Theory and Practice (2) 6000 Doctoral Dissertation and Research 6100 History of Management Thought (3) 6120 Advanced Organizational Theory (3) 6130 Seminar in Contemporary Management Issues (3) 6230-40-70 Seminar in Organizational Psychology (3, 3, 3) 6380 Seminar in Industrial Psychology (3) 6900 Field Work in Industrial Psychology 6300 Management Science Programs

Professor: C. E. Bell (Chairman), Ph.D. Yale; R. S. Garfinkel, Ph.D. Hopkins
Associate Professor: R. E. Rosenthal, Ph.D. Georgia Tech
Assistant Professor: C. R. Woodall, M.S. Miami.

Management Science (627)
2110-20 Decision Models (3, 3) Introduction to the use of quantitative techniques in the decision-making process. Pre-req: Mathematics 1560, Statistics 2700, and Computer Science 1410 or Office Administration 2750.
3160 Case Studies in Management Science (5) Analysis of quantitative approaches to managerial decision making in various business environments. Prereq or coreq: 2110-20 and consent of instructor.

GRADUATE
5020 Thesis
5002 Non-Thesis Graduation Completion (3-15) 5010 Quantitative Analysis for Management Decisions (3) 5210-20 Management Science Methods (3, 3) 5310 Mathematical Programming Computational System (2) 5340 Applications of Management Science Methods (3) 5010 Special Topics in Management Science (3) 5910 Management Science Problems (1-6) 6000 Doctoral Research and Dissertation 6110-20-30 Models for Production Systems (3, 3, 3) 6200-20 Network Flows (3, 3) 6310 Integer Programming (3) 6410 Large Scale Mathematical Programming (3) 6450 Nonlinear Optimization (3) 6510 Markovian Decision Models (3) 6520 Queuing Models (3) 6710 Location Models (3) 6810 Special Topics (3) 6910-20-30 Management Science Seminar (1-3, 1-3, 1)

Marketing and Transportation


Assistant Professors: P. L. Barbour, Ph.D. Illinois, L. D. Dufus, Ph.D. Franklin, J. D. Poppin, Ph.D. Indiana; E. L. Jenkins, Ph.D. Ohio State; R. L. Spro, Ph.D. Georgia.

Marketing (632)
Nine quarter hours in general economics including Economics 2110-20 or the equivalent are prerequisite to all courses in marketing.
3160 Introduction to Marketing (3) Marketing is one of the major functions in the business organization; the role of marketing in society; the marketing concept and its implications for organizations of all types; marketing management; marketing research; and marketing strategies. Pre-req: 2110-20 or consent of instructor.

3160-20-30 Marketing Management (3) Analysis of marketing systems approach from viewpoint of decision maker. Examination of inputs, outputs, organizations, and goals of marketing systems. Consideration of competitive marketing systems. Pre-req: 3160.
4160 Marketing Communications (3) Examination of firm's personal communications functions. Marketing sales force, including personal selling concepts. Particular emphasis on role of sales organization in marketing program. Pre-req: 3160-20.
4180 Buyer Behavior (3) Industrial and ultimate consumer purchasing behavior. Theories underlying consumer behavior are examined along with economic, psychological, sociological, and cultural factors. Emphasis on relationship between analysis of consumer needs, wants, and the marketing process. Discovery of the role of information as a major factor in the marketing process. Pre-req: Statistics 2100 or equivalent.
4910 International Marketing (3) Examination of international business activities of the firm. Marketing strategies in international business. Pre-req: 4180. Recommended prior completion of World Business Administration 6110 or consent of instructor.
3910 Retailing (3) Structure and environment of retailing and its relationship to other parts of the economy. Research and decision making in selected retailing areas of store management. Pre-req: 4180.
4910 Environmental Issues in Marketing (3) Environmental forces which serve as constraints on marketing activities. Strategies available to manage these forces are examined. Concepts of current issues and social and ethical implications of marketing decisions. Pre-req: 3160.
4510 Marketing Information Planning (3) Planning and collection of marketing information for decision making; information needs, data collection processes, and analysis techniques. Methods of analysis of information and interpretation procedures are integrated to serve decision maker. Pre-req: 3160-20, Statistics 4310, or 4220 or 4250.
4920 Applied Marketing Research (3) Quantitative techniques, behavior concepts, and marketing research methodology in study of consumer purchasing, sales forecasting, and other marketing problems. Pre-req: 4910.
4930 Marketing Opportunity Analysis (3) Developing understanding of various approaches available for examining market opportunities. An awareness of the impact that market opportunities can have on a market. Emphasis on relationship between analysis of marketing opportunities and market management. Topics include market potential analysis, behavior concepts, alternative sources of market information, information analysis, and marketing decision making. Pre-req: 4910 or 4920.
4710 Marketing Decisions and Strategies (3) Practice of making marketing decisions in the context of the firm's marketing environment. Emphasis on integration of knowledge from component areas of marketing into cohesive, well-organized marketing program. Pre-req: 4910 or 4920 and consent of instructor. Course should be taken as close to graduation as possible.

4810 Honors: Executive-in-Residence Seminar (3) Student interaction with top-level marketing executives is used as a primary vehicle to show how conceptual marketing knowledge is applied in the business world in a major marketing subject area (e.g., promotion, consumer behavior, marketing strategy, etc.). Prereq: Marketing 3210, 4180, and consent of instructor. 4810 is a recommended but not required prerequisite.

4810-20-30 Honors: Marketing (3) Marketing trends and developments. Advanced marketing theory and application. Can be substituted for eligible students for other courses in marketing with consent of department. Pre-req: Consent of department.

GRADUATE
See page 86 for information on graduate programs.
5002 Non-Thesis Graduation Completion (3-15) 5010 Marketing and Distribution Management (3) 5020 Marketing Strategy and Decision Making (3) 5020 Marketing Strategy and Decision Making (3) 5210 Sales Force Management (3) 5220 Promotion Management (3) 5310 Analysis and Design of Marketing Systems (3)
5330 Marketing Research (3) 5350 Buyer Behavior Analysis for Marketing (3) 5400 Analyzing Market Opportunity for Marketing Decisions (3) 5410 Advanced Marketing Strategy (3) 5450 International Marketing Management (3) 6000 Doctoral Dissertation and Research 6920 Macro/Theoretical Foundations of Marketing (3) 6100 Design and Measurement in Marketing Research (3) 6150 Marketing Research Applications (5) 6200 Buyer Behavior (3) 6250 Selected Problems in Consumer Behavior (3) 7000 Marketing Decision Models (3) 7020 Current Topics in Marketing (3) 7900 Transportation (981)
Nine quarter hours in general economics are prerequisite to all courses in transportation. Transportation 3110-20 or consent of the instructor are prerequisite to all courses numbered above 4900.
3110 Introduction to Transportation (3) Survey of the transportation field and its application to the nation's transportation system and the problems facing carriers and government in meeting these demands.
3115 Introduction to Logistics (3) Business logistics and its internal role within the firm. Discussion of logistical system components and their interrelationships. Pre-req: 3115, Statistics 2100.
3140 Traffic Management (3) Problems and opportunities in shipping and distribution of finished products. Emphasis on classification and tariff systems analysis; rate determination and selection procedures. Pre-req or coreq: 3115.
3220 Transportation Management (3) Analysis of organizational structures, operational characteristics, and managerial policies of railroads, motor carriers, and domestic air lines. Courses should be taken in numerical sequence.

College of Business Administration 91
6210 Seminar in Transportation and Logistics

Office Administration (735)

Professors: J. S. Stallard (Head), Ph.D., Ohio State; E. W. Davis (Emeritus), M.A. New York; D. Reese, Ph.D., Ohio; G. A. Waugh, M.S., Indiana.


Junior standing or the approval of the department head is required for registration in courses numbered 3000 or above.

2100 Beginning Typewriting (Development of typewriting skills, straight-copy speed attained. Introduction to letters, tabulations, and manuscripts. Students with a minimum grade of C in 2310 or equivalent)

2100 Word Processing (Introduction to word processing concepts and how they fit into an information-processing network. Some hands-on experience with magnetic typewriters and word processing equipment. May include study of the various computer-based word processing systems. Minimum grade of C in 2310 and Electrophone starting.

2110 Beginning Shorthand (Theory of a unit of high school credit. Students with a minimum grade of C in 2310 or equivalent)

2120 Intermediate Shorthand (Development of dictation and transcription skills. Students with a one year of high school shorthand will enter this course, Minimum grade of C in both 2310 and 3150 or their equivalents)

7000 Electronic Data Processing (Development of skill in FORTRAN programming with special emphasis on business applications. Prerequisites: Mathematics 1550 or 1660 or equivalent. Cannot receive credit in both courses. Minimum grade of C in both 3450 and 3470 or their equivalents)

6100 Administration (Identification and analysis of methods for research in transportation and business logistics. Application of quantitative techniques, model building, and simulation to solution of problems. May include student project at discretion of instructor. Prerequisite: 4720)

2040 Physical Distribution Strategies (3) Senior standing. Prerequisites: 3000-level courses and 4720. Emphasis on logical thinking, problem solving, and decision making in office management, and synthesizing previous learning. Taken as a capstone experience during senior year. Prerequisites: 3110, 3180, and 3310, 4510 or 4520.

3650 Practicum (Development of office supervisory and managerial skills. Minimum of 15 hours a week of paid work experience of reasonable complexity under the supervision of an assistant professor or management personnel: assignment to a position consistent with the student's career goal and the latter from among 3000-level courses. 3110, 4510 or 4520, coreq: 4500. Maximum credit 3 hrs for each course.)

5010 Problems in Business (1-3, 1-3) Subject and title vary each quarter. May be repeated. Maximum credit 3 hrs for each course.

6210 Seminar in Transportation and Logistics (3) Seminar designed to study specific current problem areas in transportation and distribution. Topics announced prior to offering. May be repeated once for credit. Prerequisite: Consent of instructor.
3110 Regression and Correlation Methods (3) Methods of linear and multiple-linear regression and correlation; nonparametric measures of association. Cannot be taken for credit by students who have credit for 4310. Prereq: 2100 or 3450.

3220 Analysis of Time Series (3) Some statistical methods applicable to analysis of trends and time series data. Includes techniques for seasonal adjustment, autocorrelation, autoregressive processes, moving averages, analysis of variance, cross-sectional analysis, seasonal and cyclical variation. Prereq: 2100 or 3450.

3110 Industrial Statistics (3) Shawhart Control Charts, acceptance sampling by attributes, Military Standard 105E, design of experiments, sampling plans; construction of control charts, acceptance sampling theory and procedures. Prereq: 2100 or 3450.

3410 Sampling Methods Useful for Surveys (3) Exposure treatment of various types of probability sampling methods illustratively developed. Emphasis on the estimation of means and variances. Credit will not be given for both this course and 3450. Prereq: 2100 or 3450.

3450 Statistics for Engineering (3) Survey of statistical methods with special application for engineering. Areas covered include: planning of experiments, simple and multiple regression, correlation, multivariate analysis, two-sample tests, analysis of variance. Prereq: 2100 or 3450.

4250 Nonparametric Methods (3) Measures of association, contingency table analysis, measures of location and dispersion, the binomial, Poisson, and normal distributions, estimation and sampling distributions, some tests of significance. Cannot be taken for credit concurrently with 2100. Prereq: Mathematics 2850.

4310 Regression Analysis (3) Linear regression and correlation, multiple regression; use of dummy variables. Use in preference testing; questionnaire evaluation. Prereq: 3450; Mathematics 2850.

4415 Sampling Techniques and Theory (3) Procedures used in probability sampling for a variety of experimental data. Determination of sample size and number of experimental units to meet specified sampling objectives. Prereq: 2100 or 3450.

4430 Design of Experiments (3) Principles and procedures for experimental design. Randomization, choice of size and number of experimental units, utilization of blocking arrangements. Interpretation of experimental data. Prereq: 3450; Mathematics 2850.

4550 Nonparametric Methods (3) Measures of association, contingency table analysis, measures of location and dispersion, the binomial, Poisson, and normal distributions, estimation and sampling distributions, some tests of significance. Cannot be taken for credit concurrently with 3450. Prereq: 2100 or 3450.

4610 Seminar in Small Business Assistance (3) Application of classroom learning to problems of small business in the community. Students are given opportunities to apply business concepts and develop analytical skills. Upon completion of selected readings related to small or minority enterprise, students and instructors conduct interviews with small business owners to determine the special needs of the business. 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 hrs.

4690 Institutional and Organizational Research (3) Design, implementation, and evaluation of cross-disciplinary research on organizational and institutional change. Emphasis on the analysis of relevant cross-national environments including cultural, political, economic, and legal characteristics. Prereq: Economics 3410 or consent of instructor.

4750 Statistical Problems in Business (3) Case study course of statistical problems in business. Prereq: 15 hrs of economics. Cannot be taken for credit concurrently with 3410. Prereq: 3450 or consent of instructor.

5110 Seminar in Applied Business Analysis (3) Application of statistical methods to evaluation of business operations in an international context. Emphasis on the analysis of relevant cross-national environments including cultural, political, economic, and legal characteristics. Prereq: Economics 3410 or consent of instructor.

5430 Business Policy (3) Analysis of business problems and managerial decision-making through case study method and written reports. Prereq: Core requirements except business law (see page 86) and senior standing.

5610 Special Topics in Statistics (3)

5650 Applied Multivariate Analysis (3)

5670 Factor Analysis (3)

5690 Statistical Problems in Business (3)

5700 Statistical Problems in Business (3)

5750 Statistical Problems in Business (3)

5790 Statistical Problems in Business (3)

5830 Special Topics in Statistics (3)

5870 Factor Analysis (3)

5890 Statistical Problems in Business (3)

6050 Applied Multivariate Analysis (3)

6210 Stochastic Processes II (3)

Interdepartmental Unit

Business Administration (205)

1110 Business Administration (3) Introduction to business. Not open to students with more than 3 credit hrs of economics.

3110 Introduction to International Business (3) A survey of the strategic implications of conducting business operations in an international context. Emphasis on the analysis of relevant cross-national environments including cultural, political, economic, and legal characteristics. Prereq: Economics 3410 or consent of instructor.

4430 Business Policy (3) Analysis of business problems and managerial decision-making through case study method and written reports. Prereq: Core requirements except business law (see page 86) and senior standing.

4610 Seminar in Small Business Assistance (3) Application of classroom learning to problems of small business in the community. Students are given opportunities to apply business concepts and develop analytical skills. Upon completion of selected readings related to small or minority enterprise, students and instructors conduct interviews with small business owners to determine the special needs of the business. 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 hrs.

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4750 Statistical Problems in Business (3) Case study course of statistical problems in business. Prereq: 15 hrs of economics. Cannot be taken for credit concurrently with 3410. Prereq: 3450 or consent of instructor.

4690 Statistical Problems in Business (3) Design, implementation, and evaluation of cross-disciplinary research on organizational and institutional change. Emphasis on the analysis of relevant cross-national environments including cultural, political, economic, and legal characteristics. Prereq: Economics 3410 or consent of instructor.

4750 Statistical Problems in Business (3) Case study course of statistical problems in business. Prereq: 15 hrs of economics. Cannot be taken for credit concurrently with 3410. Prereq: 3450 or consent of instructor.

5110 Seminar in Applied Business Analysis (3) Application of statistical methods to evaluation of business operations in an international context. Emphasis on the analysis of relevant cross-national environments including cultural, political, economic, and legal characteristics. Prereq: Economics 3410 or consent of instructor.

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5750 Statistical Problems in Business (3)

5790 Statistical Problems in Business (3)

5830 Special Topics in Statistics (3)

5850 Applied Multivariate Analysis (3)

5870 Factor Analysis (3)

5890 Statistical Problems in Business (3)

Center for Business and Economic Research

STAFF

D. A. Hake (Director), Research Associate Professor, Ph.D. Tennessee
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P. A. Price, Research Associate, B. S. Tennessee
N. C. Schoening, Research Associate, M. S. Ohio State
College of Communications

Donald G. Hileman, Dean
Paul Ashdown, Assistant Dean for Undergraduate Studies
George A. Everett, Assistant Dean for Graduate Studies

Communication has become increasingly significant in today's complex society. The growth of specialization, the widening gaps among segments of society, and the inescapable nature of world conflict point up the need for a greater understanding of communication processes and for the education of young men and women capable of perceptive understanding of the communications media.

The College of Communications offers programs designed to acquaint students with the nature of communication and to prepare them for professional work in a variety of communications fields. The college is composed of the School of Journalism and the Departments of Advertising and Broadcasting. The curricula of these three academic divisions have a common base of courses beyond which choices will permit the student to develop special interests. The American Council on Education for Schools and Departments of Journalism and Communications has accredited the News-Editorial student to develop special interests. The college curriculum offers academic majors in advertising, broadcasting, and journalism. Through core introductory courses, students receive a basic view of the nature of communications.

The freedom of electives provided within the programs permits students to develop specialized interests in a variety of fields. In consultation with an adviser, they may plan individual programs leading to newspaper, magazine, radio, television, public relations, or advertising work. They may prepare for careers in agricultural or industrial journalism. They may select related courses to develop a specialty in writing news of communications.

The purpose of this option is to encourage students to venture beyond those courses in which they usually do well and, motivated by their own intellectual curiosity, to explore subject matter in which performance may be somewhat less outstanding than work in preferred subject fields. This option applies only to general elective courses. No course that is a part of the specific requirements of the College of Communications or the student's major department can be taken under this option. For example, social science, humanities, and speech electives required by the various departments cannot be taken under this option. Courses earning a "satisfactory" grade will count as hours for graduation but not for calculating the grade point average. A student who wishes to take a S/NC course must indicate this at the time of registration. Under no circumstances may the student change from S/NC to regular credit after the deadline for adding courses.

Course Load

The maximum number of hours which can be taken by an undergraduate without special permission is 19 hours. Permission to take 20 or more hours must be obtained from either the dean or the assistant dean for undergraduate studies.

Cooperative Program

The college, in cooperation with the University-wide Undergraduate Cooperative Education Program, has developed a cooperative program with the media, advertising and public relations agencies, and the communications departments of...
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. Journalism 2110-20 is the only course in the college that may be taken by correspondence.

AMERICAN HISTORY
Students lacking a high school credit of American history must take nine quarter hours of American history in addition to history 15-20. Those hours may be applied to the general electives requirement.

FOREIGN LANGUAGES
One year of foreign language on the college level is required unless two units of high school credit are presented in which case eight or nine hours selected from the following courses may be substituted:

Anthropology 2510, 2520, 2530; Geography 15-20 or 2110-20; Mathematics 1540-50; Philosophy 1510-20, 2510-20, 3111-21-31-41; Psychology 2500, 2530, 2540; Religious Studies 2510. The requirement may also be fulfilled with a foreign language.

ENGLISH
This requirement is fulfilled by English 1010-20 or 2110-20. English 1021 or 1025 may be substituted for 1022 with the consent of the advisor. The eight hours of literature may be selected from English 2110-20-30-40 and 2560-78-80 (and Comparative Literature 2110 for journalism majors). Upper-division literature courses may be substituted by students with a B+ average in freshman English at UT.

PROFESSIONAL COURSES
The advertising major requires certain professional courses which may be selected from the following courses:

Advertising 3740, 4510-20, 510, 5350; Art 2516, 2517, 2518, 2519, 2520, 2530, 2535; Broadcasting 2750, 3360, 4020-40-60; Educational Curriculum and Instruction 4710; English 1033, Journalism 3120, 3410, 3470-20, 4710, 3810, 3910, 3930, 4410-20, 4590; Marketing 4140, 4200, 4310, 4410-20, 4710; Mathematics 3000; Office Administration 4310-20; Psychology 3120, 4640; Speech 3011; Statistics 3410.

SOCIAL SCIENCE AND HUMANITIES
At least eight hours may be selected from geography, economics, political science, psychology, anthropology, classics (except grammar and composition courses), and upper-division philosophy and religious studies courses. Humanities electives include English, speech and theatre, music, (except applied music), language culture courses (not grammar and composition), and upper-division philosophy and religious studies courses.

GENERAL ELECTIVES
All electives are subject to the advisor's consent. Students are advised to consult the Undergraduate Curriculum for the college or department.

Undergraduate Curriculum

Advertising
Freshman
Hours Credit
English 1010-20, 1021, 1025 9
Natural science electives 12
"History 1510-20 3
"Foreign language electives 8
Sociology 1510 4
Computer science 1110 3
Economics 2110-20 6
Sophomore
Sociology 1520 4
Speech 2311 4
Economics 2130 3
"English literature electives 6
Mathematics 1540-50 8
Marketing 3112-30 6
Economics 2150-20, 2350; Journalism 2215 11
Junior
Art 1510 4
Junior
Political Science 2110-20 8
Advertising 4000 4
Public Relations 4020 4
Advising 3820 4
Advising 3840 4
Advertising 4000 4
Psychology 3150 4
"Professional courses 6
General electives 6
Marketing 4210 3
Senior
Advertising 4690 4
Advertising 4410-70 7
Computer Science 4110 3
"Professional courses 3
"Social science or humanities electives 10
General electives 6
TOTAL 194 hours

Broadcasting
LOWER-DIVISION CURRICULUM
(Required for all broadcasting majors)

Freshman
English 1010-20, 1021, 1025 9
Natural science electives 12
"History 1510-20 3
"Foreign language electives 8
Sociology 1510-20 4
Communications 1110 3
TOTAL 194 hours

See Requirements for Graduation.


Option C. Any approved combination of Options A and B (including the required courses of one group) for students interested in both writing and editing.

PUBLIC RELATIONS SELECTIONS

Freemans Hours Credit

English literature electives 8
Economics 3220; Sociology 2510-20, 2510-20, 2510-20, 2510-20; Philosophy 3510-20, 3510-20; Communications electives 12
Spanish literature electives 6
French language electives 3
Philosophy 3510-20, 3510-20; Sociology 3510-20, 3510-20

Sophomores

Required: English literature electives 8
Electives: Economics 3220; Sociology 2510-20; Philosophy 3510-20

Juniors

Required: Economics 3220; Sociology 2510-20; Philosophy 3510-20
Electives: Economics 3220; Sociology 2510-20; Philosophy 3510-20

Seniors

Required: Economics 3220; Sociology 2510-20; Philosophy 3510-20
Electives: Economics 3220; Sociology 2510-20; Philosophy 3510-20

TOTAL: 194 hours

See Requirements for Graduation.
5970 Independent Study (3)

Broadcasting (202)
Professor: D. W. Roll (Head), Ph. D. Northwestern.
Associate Professors: H. H. Howard, Ph. D. Chico; G. I Simpson, M. S. Syracuse.
Assistant Professors: T. A. Lester, M. A. Tennessee; C. A. Birmingham, M. A. Tennessee; M. K. Side, Ph. D. Northwestern.

2750 Introduction to Broadcasting (3) Theory, history, regulation, and economic aspects of broadcasting industry and its functions in society.

3500 Television and Radio Advertising (3) Principles of successful radio-television advertising: emphasis on media research, rate structure, programing, creativity, television commercials.

3810 Radio-Television News (3) Theory and techniques of news gathering, writing, editing, and broadcasting; emphasis on planning and execution of campaigns.

3620 Television Law and Regulations (3) Broadcasters' legal responsibilities; the impact of FCC decisions, court by-laws, and court rulings on broadcasting.

4420 Newspaper Management (3) Daily and weekly newspapers.Ú Media production, and planning of newspaper contents. Prerequisite: 2230.

4360 Television Production (3) Overview of electronic television production and post-production techniques. Prerequisite: 2230 or consent of instructor.

4510-20-30 Practicum in Journalism, I, II, III (1, 1, 1) Supervised experience in news writing and editing. Prerequisite: 3990.

2910 Professional Courses in Advertising (3) Principles and practices of television and radio advertising agencies. Prerequisite: 3630.

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 the public.

3720 Advanced Public Relations (3) Preparation of communications materials to gain support from various publics; planning public relations programs. Prerequisite: 2930.

3810 Specialized Publications (3) Editorial and design considerations for company publications and small magazines. Prerequisite: 2250 and 3910 or consent of instructor.

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

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

3520 Advanced Public Affairs (3) Reporting news of courts, police, and government. State, county, and local government. Prerequisite: 2930 and senior standing.

4140 Mass Media and Society (3) Roles and responsibilities of mass media in society. Crisis of trust in media. Media research and media codes of the control.

4290 Newspaper Management (3) Daily and weekly newspaper organizations. Developments in newspaper management.

2930 Broadcast Law and Regulations (3) Broadcasters' legal responsibilities; the impact of FCC decisions, court by-laws, and court rulings on broadcasting. Prerequisite: 2230.

4410 Mass Media and Society (3) Roles and responsibilities of mass media in society. Crisis of trust in media. Media research and media codes of the control.

4400 Advanced Radio Production (3) Application of the theories, techniques, and methods of radio production to the creation of programming of a professional level of sophistication and quality. Prerequisite: 4250 or consent of instructor.

4040 Independent Study (3) Advanced study and research in broadcasting. Prerequisite: 4030 or consent of instructor.

4020 Radio Production (3) Study of radio production, news, and feature programs. Emphasis on the production of radio network programming. Prerequisite: 2230.

4670 Radio-Television Management (3) Business policies and practices of networks and stations. Developmental functions, cost and income figures, sales techniques, promotion, advertising agencies, and governmental regulations. Lectures by commercial broadcasters. Prerequisite: 2750 or consent of instructor.

4680 Broadcast Sales Management (3) Problems and practices of radio-television advertising. Prerequisite: 3720 or radio course.

5970 Independent Study (3)
for international affairs; barriers to the flow of information; comparison of world press systems.

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

GRADUATE

5210 Government and the Press (3)
5230 Public Opinion and Mass Media (3)
5910-20-30 Writing and Editing Projects (3, 3, 3)
5950 Magazine Article Writing (3)
5710 Studies in Public Relations Communications (1)
5810 Magazine Editing and Production (2)
5900 Communications and International Development (3)
5970 Independent Study (3)
The Division of Continuing Education at Knoxville extends the academic programs and services for all colleges and schools on campus to the people in the area served by The University of Tennessee, Knoxville. In addition, the division cooperates with all other campuses of The University of Tennessee in extending academic programs and services to all citizens of the state.

Conferences

Directors: W. L. Whelan, Ed.D.
Assistant Director: S. R. Martin, B.A.
Coordinators: J. H. Billep, M.S.; M. R. Davis, M.S.

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

The Department of Conferences is staffed and equipped to advise, assist, and provide administrative support in the delivery of a successful conference or workshop.

In these roles, the department can follow through with an initial tentative budget; secure an appropriate setting; devise an attractive format; arrange for auxiliary services such as lodging, meal, and banquet services, extra excursions and tours, and complete registration procedures; design, print, and mail the conference brochure; and handle registration fee collection and payment of honoraria and other conference expenses.

Depending on the time of year, the academic calendar of the University, and the desires of the conference sponsor, the program and participants may be housed in campus facilities or off-campus commercial settings.

Among the unique advantages offered by the Department of Conferences programs are that: programs are designed to meet specific needs of the greatest practical value to the participants; the knowledge and expertise of the UT faculty and staff can be matched with the specific needs of the participants; the programs encourage informal contacts and interaction among colleagues with similar interests with the resource persons; program fees are kept reasonable by using University facilities and services whenever possible; an experienced Conference staff is available to plan, coordinate, and facilitate delivery of programs of virtually any size or duration; by using conference services, the activity initiator is free to concentrate fully on program content; programs can be conducted "in-house" on the campus, anywhere in the state of Tennessee, or whenever an appropriate meeting site can be arranged; Continuing Education Units (CEU's) may be awarded to program participants if the program is designed to satisfy the criteria necessary for CEU credit.

Additional information may be obtained from the Department of Conferences, 1629 Melrose; telephone 974-5261.

Workshops and Off-Campus Programs

Director: W. L. Russell, Jr., Ed.D. Tennessee
Assistant Director: J. R. Richomond, M.S. Tennessee

This department 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 on all their courses at off-campus locations.

All course offerings and instructors are approved by the appropriate academic department heads and the credit awarded is resident credit. The majority of the colleges and their academic departments cooperate in the off-campus program.

Credit workshops are another phase of continuing education designed to meet the student's changing needs. They are coordinated through the various academic units 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 also offer flexibility of timing, location, and content. Summer workshops are particularly popular with teachers and school administrators. Although most workshops are held on the UTK campus, geography is not a limiting factor. In the past, workshops have been held throughout the state and in the United Kingdom.

Provisions for a program of student services are provided. These services encompass areas of registration, records, and procedures for admission. The student advisor/counselor is available upon request for meeting with students at on-campus locations. As of fall 1978, all UTK course offerings in Oak Ridge are under the administration of this department. Inquiries and/or course requests may be directed here.

University Evening School

Director: S. C. Blevs, Ed.D. Tennessee
Associate Director: J. C. Sekula, Ph.D. Tennessee
Assistant Directors: T. R. Ayer, M.S. Tennessee; L. U. Jurand-Salter, M.S. Tennessee
Assistant Professors: G. M. Fisher, M.S. Tennessee; C. B. Mamantov, Ed.D. Tennessee

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difficulty in pursuing academic goals and advises students on how to achieve educational goals. Additionally, evening students who receive educational benefits under the GI Bill, with their academic planning.

Undergraduate Degree Programs

The following degrees are available for evening students:
- Bachelor of Science in Business Administration with a major in Accounting, General Business, Economics, Management, or Office Administration;
- Bachelor of Science in Engineering Science;
- Bachelor of Science in Liberal Arts with a major in Anthropology, Economics, History, Mathematics, Political Science, Psychology, or Sociology;
- Bachelor of Health Administrations.

Graduate Degree Programs

Some departments within the Colleges of Business Administration, Education, and Engineering offer all courses required for an advanced degree during the evening. For a specific major, consult the appropriate department. In the College of Business Administration, all courses required for the MBA degree with a concentration in Marketing are offered during the evening.

Nursing Education Program

The Nursing Education Program is conducted through contractual agreement with two major Knoxville hospitals. The program is run through each hospital’s independent School of Nursing. Academic courses are provided by the University Evening School in support of this program.

Student Services

A comprehensive program of services is provided by the Evening School for the adult part-time student.

REGISTRATION

Enrollment registration by mail or on campus is offered as a convenience for former Evening School students.

ADVISING

An advising-counseling program is available for the benefit of all evening students who need assistance with academic and personal matters. This program can accommodate students during regular daytime hours (8:30-5:30) and in the evenings by appointment. In addition, advisers from various colleges are on hand for academic consultation during evening preregistration days. A full-time veteran advisor assists evening students who receive educational benefits under the GI Bill with their academic planning.

FINANCIAL AID

Evening School students who encounter difficulty in pursuing academic goals because of financial restrictions may be eligible for assistance through the Evening School Scholarship Fund. In addition, interested students may obtain applications for the Basic Educational Opportunity Grant Program in the Evening School Office.

ELDERLY AND DISABLED PERSONS

Recent statewide legislation gives Tennessee citizens who are 60 years of age or older, or those who are totally disabled, the opportunity to attend courses at UT at no charge on an audit, space available basis. Legal verification of either of these conditions is required for enrollment. Students who are 65 or over, or are totally disabled and who desire to receive UT credit for their courses, may pay a reduced charge of $5 per credit hour to a maximum of $50 for a full-time load. Registration for day and evening classes is handled by the Evening School.

For additional information concerning any of these programs or services please contact the University Evening School, 451 Communications & University Extension Building.

Non-Credit Programs

The department conducts and coordinates various non-credit courses offered on campus and off campus. It administers non-credit programs offered by the University of Tennessee at Knoxville and surrounding community.

Certain non-credit courses are approved for veterans’ training. For specific information, contact the Department of Non-Credit Programs.

The University of Tennessee at Knoxville participates in the Basic Educational Opportunity Grant and the Tennessee Educational Assistance Act and does not discriminate in the administration of these programs or services.