substituted with the approval of the chairperson of the Comparative Literature Program. Students concentrating in comparative literature are strongly encouraged to acquire a working knowledge of a second foreign language, especially if they hope to pursue comparative literature on the graduate level.

A minor in comparative literature consists of 24 hours including Comparative Literature 4010, two courses from Comparative Literature 4012-22-32, 6 hours of literature in a foreign language in courses numbered 3000 and above, and 9 hours of literature courses numbered 3000 and above, either in English or in a foreign language, from at least two of the following departments: Classics (4010, 4230, 4510), English, Germanic and Slavic Languages, Religious Studies, and Romance Languages (certain courses in Philosophy or Speech and Theatre may be substituted with the approval of the Comparative Literature Program). Minors in comparative literature are strongly encouraged to continue their study of a foreign language beyond the minimum requirements.

For further information, consult the chairman of the Comparative Literature Committee, Dr. Harry C. Rutledge.

2010 Introduction to Comparative Literature (4)
Basic knowledge, techniques, and sources necessary to compare literatures of various cultures, ages, and nations.

4010 Methodology of Comparative Literature (3)
Research and writing of comparative literary studies. Major project will be preparation of a seminar paper in comparative literature. Prereq: 2010 and one course from 4012-22-32 or consent of instructor.

4012-22-32 Special Topics in Comparative Literature (3, 3, 3) Content varies; may be repeated for credit.

5012 Comparative Theories of Literature (3)

5022 Approaches in Comparative Literature (3)

5032 Studies in Comparative Literature (3)

Comparative Literature (260)

A concentration in comparative literature consists of 36 hours including Comparative Literature 4010, 4012-22-32, 9 hours of literature in a foreign language in courses numbered 3000 and above, and one classics course selected from Classics 4010, 4230, 4510. The remaining twelve hours should include literature courses, either in English or in a foreign language, numbered 3000 and above, from at least two of the following departments: English, Germanic and Slavic Languages, Religious Studies, Romance Languages (certain courses in Philosophy and Speech and Theatre may be
Linguistics (623)

This concentration offers a broad exposure to the various fields of linguistics (including historical, descriptive and theoretical linguistics) along with an opportunity to study areas where linguistics overlaps with other disciplines such as psycholinguistics, sociolinguistics, speech pathology and the like. It is designed to prepare a student for graduate work in linguistics or related areas, or to serve as a general survey of language and linguistics. It provides the additional possibility of emphasizing the teaching of English as a second language for the student interested in employment at the B.A. level. The requirements of this concentration are:

Corequisites
(a) A 3000-level sequence or its equivalent of a foreign language. (This can be accomplished by electing Option I of the Language, Literature and Arts section of the Trilld requirements. The following languages offer sequences which fulfill Option I: French, German, Greek, Italian, Latin, Russian, Portuguese, Spanish.) By special permission of the Linguistics Committee, certain language-related courses may be substituted for a 3000-level sequence of the foreign language.
(b) Two quarters of a non-Indo-European language to be selected from the following: Religious Studies 3141-51 (Hebrew); Arabic 2510-20; Asian Studies 2531-32 (Chinese); Asian Studies 2631-32 (Japanese).

Concentration
The concentration shall consist of 38 hours distributed as follows:
(a) 32 hours composed of: Audiology and Speech Pathology 3050; French, German, Russian, or Spanish 4250-60-70; English 3350; 4430; 4440; Speech 4811; Linguistics 4020-30.
(b) 6 hours of the following, selected in consultation with the Linguistics Committee: Anthropology 3800; Audiology and Speech Pathology 3200, 4650, 5651, 5790; Educational Curriculum and Instruction 3562-63; Special Education and Rehabilitation 5220, 5310-20-30; English 3340, 4450; 4450; 4471, 4481, 5150, 5170; German 4310-20, 4810-20-30, 5170-20-30; Linguistics 4000; Russian 4310-20-30; Philology 4630; Psychology 4650, 4660, 5360-70; French 4210-20-30, 5110-20-30; Spanish 4210-20-30, 5110-20-30.

(c) Other hours may be substituted in (b) by approval of the Linguistics Committee.

Minor
A minor in linguistics shall consist of 27 credit hours composed of 9 from section (b) of the major selected in consultation with the Linguistics Committee, and 18 hours as follows: Audiology and Speech Pathology 3050; Linguistics 4020-30; English 4430; French, German, Russian, or Spanish 4250-60.

NOTE: In addition to the above listed courses for the concentration and the minor there are occasionally offerings in the Honors Series or in graduate seminars which may be substituted for certain requirements subject to written approval of the Linguistics Committee and the Office of the Dean.

For further information consult the chairman of the program, Dr. James Elliott.

4000 Topics in Linguistics (3) Content varies. May be repeated. Maximum 9 hrs credit.
4020-30 Historical Linguistics, Neo-Grammariian School, and Growth of Structuralism (3, 3) Traces development of scientific approach to linguistics from Jacob Grimm and Franz Bopp through 19th century. 4030—Traces change in linguistic interest brought about by Saussure’s Course and growing impact of anthropology and behaviorism on linguistic studies.
4471-81 English as a Second or Foreign Language (3, 3) (Same as English 4471-81.

Medieval Studies (674)

A concentration in Medieval studies focuses upon culture and society from the collapse of the Roman Empire to the sixteenth century. Such a concentration offers the opportunity to deepen one’s self-awareness and broaden one’s view of the range of human possibilities by studying a very different and remote culture—its conditions of life, social and political institutions, values and ideals, and modes of perception and expression. A concentration in Medieval studies consists of Medieval Studies 2010 and 4010 and 28 hours of upper-division courses concerned with the Medieval experience, divided among the following three categories: (1) history, philosophy, political science, and religious studies; (2) language and literature; (3) the arts—history of art, architecture, music, and speech and theatre. Courses should not be selected at random but should either form a related pattern (for example, courses in the literature and history of Medieval England or Italy, etc.), or should revolve around a particular discipline, or two closely-related disciplines (for example, courses in the history of art and architecture). A minor in Medieval studies consists of Medieval Studies 2010 and 4010 and 16 additional hours distributed among the categories listed above for the major. Each student’s program, major or minor, must be approved in advance by the Medieval Studies Coordinating Committee, chairperson Sarah Blanshie, 1113 McClung Tower.

It is strongly recommended that students selecting the Medieval studies concentration choose a foreign language option for the Triad requirement (Options 1 or 2). Latin is the most appropriate language for students and is essential for those who plan to continue their studies in graduate school. In addition, students planning to go on to graduate school are strongly advised to supplement their Medieval studies concentration with extensive work in one of the traditional disciplines.

4010 Medieval Civilization (4) Introduction to basic themes in medieval experience, approached from interdisciplinary points of view and including philosophy and religion, art and architecture, language and literature, social and political history.
4010 Seminar in Medieval Studies (4) Interdisciplinary treatment of selected topics.

Upper-division courses for the concentration in Medieval studies may be chosen from the list of courses below.

Category #1

History, Philosophy, Political Science and Religious Studies.

History 3061 History of Western Religious Thought and Institutions (4)
History 3411 Renaissance (3)
History 3710 History of Germany (3)
History 3780 History of Middle East (3)
History 4011 European History Colloquium (3) (when subject is part of medieval culture and society)
History 4500 History of Medieval England (3)
History 4710-20-30 Medieval History (3, 3, 3)
Philosophy 4430 Medieval Philosophy (4)
Political Science 3802 Studies in Political Thought (4)
Religious Studies 3061 History of Western Religious Thought and Institutions (4)
Religious Studies 3411 Renaissance and Reformation (4)
Religious Studies 3713 Religion in the Middle Ages
Religious Studies 4610 Topics in Western Religious Thought and Institutions (4) (when subject is part of medieval culture and society)

Category #2 Language and Literature

Classics 4310 Selected Reading from Latin Literature (3) (readings in Latin)
Comparative Literature 4012-22-32 Special Topics in Comparative Literature (3, 3, 3) (when subject is part of medieval culture and society)
Comparative Literature 4050-60-70 Dante and Medieval Culture (3, 3, 3)
English 4410 Introduction to Study of English Language (3) (no language requirement)
English 4420 History of English Language (3) (no prerequisites)
English 4910-20 Chaucer, (3, 3) (readings in Middle English)
French 3450-60-70 Medieval French Literature (3, 5, 3) (readings in French)
French 4410 French Civilization (3) (readings in French)
French 3210 Medieval French Literature in English Translation (3)
Urban Studies (985)
A concentration in urban studies consists of 40 quarter hours, including Urban Studies 2500 and 3000, at least 4 hours of Urban Studies 4000, and 28 hours from the urban studies curriculum provided below. The urban studies minor consists of 24 quarter hours, including Urban Studies 2500 and 3000 plus 16 hours from the urban studies curriculum provided below. For further information consult the chairperson of the Urban Studies Committee.

2500 Interdisciplinary Urban Studies (4) Fundamental perspectives of various disciplines toward the city, urbanism as a way of life and urbanization as an ongoing process. Stresses the multidimensional nature of urban studies.

3000 Selected Topics in Urban Studies (4) May be repeated with consent of the committee. Maximum 12 hrs credit.

4000 Directed Field Work (1-18) Participant observation and other directed field research in selected sites and organizations. May be done in a concentration major such as a summer, or over the course of an academic year. Minimum of four credits required for a concentration in urban studies. May be repeated. Maximum 16 hrs credit.

Urban Studies Curriculum: For the concentration and minor, courses may be selected to fill the respective requirements from the following:

Anthropology: 3450 Community Studies in Complex Culture (3)
3440 Urban Anthropology (3)

Architecture: 2000 Man-Environment Systems (4)
3830 Behavioral Approaches to Environmental Design (6)
4900 Aspects of Urban Environment (4)

Geography: 2000 Man, Location, and Behavior (4)
3430 Urban Geography (4)

History: 4670 Cities and Urbanization in American History
4740 The City in Europe (3)

Planning: 4100 Introduction to Planning (3)

Political Science: 3750 The Urban Polity (4)
3780 Urban Policy Process (4)

Real Estate and Urban Development: 3610 Principles of Real Estate and Urban Development (3)
4120 Urban Growth and Land Use (3)
4130 Problems of Urban Development (3)

Sociology: 3410 Urban Environment (4)
3420 Urban Problems (4)
3430 Urban Ecology (4)
4530 Community Organization (4)

Women's Studies (944)
Minor: Consists of Women's Studies 2010-20 and 16 hours of appropriate courses numbered 3000 or above. Supporting courses are drawn from several departments and colleges on the IUK campus. A list of available courses will be published annually by the Women's Studies Committee. For further information consult the chairperson of Women's Studies, Dr. Suzanne Kurth.

2010-20 Women's Studies (4, 4) Explores basic knowledge and sources necessary to understand current and past societal experiences of women. 2010 utilizes perspective of humanities; 2020 employs that of social science.

4000 Topics in Women's Studies (4)

Cultural Studies (270)

4000 Selected Interdisciplinary Cultural Topics (1-12) Acceptable for credit in any cultural studies concentration or minor with consent of the director of cultural studies and the respective chairperson. May be repeated for credit up to maximum of 12 hrs.

4101 Foreign Study (1-16) Acceptable for credit in any cultural studies concentration or minor except Black studies. Registration by consent of director of cultural studies and the respective chairperson. See page 187.

4102 Off-Campus Study (1-16) Acceptable for credit in any cultural studies concentration or minor except Black studies. Registration by consent of director of cultural studies and the respective chairperson. See page 187.

4103 Independent Study (1-16) Acceptable for credit in any cultural studies concentration or minor except Black studies. Registration by consent of director of cultural studies and the respective chairperson. See page 187.

GRADUATE

5101 Foreign Study (1-12)
5102 Off-Campus Study (1-12)
5103 Independent Study (1-12)

Ecology (278)

J. Frank McCormick, Director.

Basic Faculty:

The Graduate Program in Ecology offers Master of Science and the Doctor of Philosophy degrees. This interdisciplinary program provides advanced courses in contemporary ecology for students from undergraduate programs in basic and applied biology, social sciences, mathematics and engineering. Research opportunities in both fundamental and applied ecology are intended to prepare students for academic careers as well as professional positions in industry or government. The Environmental Sciences Division of the Oak Ridge National Laboratory and the
Tennessee Valley Authority provide advisers and research facilities. The Great Smoky Mountains, Cumberland Plateau, valley and ridge topography, TVA lakes and wild rivers provide locally a spectrum of natural habitats and consequent biological diversity which is truly unique. In addition, faculty research programs provide opportunities for student research elsewhere on this continent and abroad.

ADMISSION

Requirements for admission to this program are: (1) admission to the Graduate School of The University of Tennessee; (2) at least 12 quarter hours of college chemistry, 9 quarter hours of college mathematics, and 4 quarter hours of biology at the upper-division level. Candidates for the doctoral degree are expected to take the Graduate Record Examination.

Application forms for admission should be obtained from the Graduate School. Inquiries concerning the admission requirements should be addressed to the Director, Graduate Program in Ecology, 408 10th Street, University of Tennessee, Knoxville, Tennessee 37916.

COURSES ACCEPTABLE IN PROGRAM

Agricultural Biology

4010 Biology of Soil Microorganisms (4)
4510 Freshwater Fishery Biology (4)
4520 Management of Lakes and Ponds (4)
Botany

4310 Plant Ecology (4)
5340 Plant Geography (4)
5350 Analysis of Plant Communities (4)
5510-20-30 Systems Ecology (3, 3, 3)
5830 Field Methods in Plant Ecology (4)
Ecology

5000 Thesis
5100 Special Problems in Ecology (1-3)

5210-20-30 Principles of Ecology (2, 2, 2)
5310 Ecology for Planners and Engineers (3)
5320 Implementation of Environmental Policy (3)
5330 Marine Ecology (3)
6000 Doctoral Research and Dissertation
6100 Special Topics in Ecology (3)
6110 Seminar in Animal Behavior (2)
6120 Seminar in Aquatic Ecology (2)
6130 Seminar in Physiological Ecology (2)
6140 Seminar in Community Ecology (2)
6150 Seminar in Radiation Ecology (2)
6160 Seminar in Systems Ecology (2)
Economics

4260 Economics of Resources (3)
Environmental Engineering

4700 Air Pollution-Air Resources Management (3)
Forestry

4005 Forest Ecosystems (3)
4450 Game Mammals (4)
4460 Game Birds (4)
5210 Seminar in Wildlife Conservation (3)
5220 Seminar in Forest Tree Biology (3)
5240 Seminar in Forest Genetics (3)
Geography

5610 Selected Topics in Climatology (4)
Geology

5290 Quaternary Problems (4)
5829 Experimental Microbial Ecology (3)
Plant and Soil Science

4320 Soil Formation, Morphology, and Classification (4)
5240 Soil Productivity and Management (3)
5250 Pedology (4)
5810 Crop Climatology (4)

5820 Advanced Crop Physiology and Ecology (4)
5750 Ethological Psychology (3)
Zoology

4240 Animal Ecology (4)
4660-70 Limnology (4, 4)
5570 Animal Populations (3)
5850 Insect Autecology (4)
5860 Geographic Distribution of Animals (4)
5870 Insect Synecology (4)

Economics (283)

See faculty list, page 90.

Economics courses offered in the Department of Economics of the College of Business Administration provide opportunity for a major or minor in liberal arts. See page 90 for description of the courses available.

Requirements for a major in economics consist of: (1) Economics 2110, 2120, and 2130 and (2) a minimum of 33 additional hours in upper-division economics courses. Economics 3110 (or the sequence 3111 and 3112) plus 3120 are required as a part of the upper-division work and should be taken as early as possible in the upper-division program as possible. A minor consists of (1) Economics 2110, 2120, 2130 and (2) 15 additional hours in economics at the upper-division level. Minors are encouraged to include Economics 3110 and 3120.

English (339)

Professors:
J.H. Fishel (Head), Ph.D. Pennsylvania; P.G. Adams, Ph.D. Texas; E.W. Bratton, Ph.D. Illinois; K. Curry, Ph.D. Yale; R.B. Davis (Emeritus), Ph.D. Virginia; R.Y. Drake, Jr., Ph.D. Yale; J.A. Hansen, Ph.D. Yale; R.M. Kelly, Ph.D. Yale; A. Knickerbocker (Emeritus), Ph.D. Yale; B.J. Legget, Ph.D. Florida; F.D. Miller, Ph.D. Virginia; R.E. Parker (Emeritus), Ph.D. California (Berkeley); J.E. Reese (Chancellor), Ph.D. Kentucky; N.J. Sanders, Ph.D. Shakespeare Institute, Stratford-on-Avon; P.L. Soper (Emeritus), Ph.D. Cornell; H.E. Spivey (Emeritus), Ph.D. North Carolina; B.T. Stewart, Ph.D. Northwestern; W.E. Stockton (Emeritus), Ph.D. Harvard; A. Taler (Emeritus), Ph.D. Harvard; R.H. Walker, M.A. Texas; T.V. Wheeler, Ph.D. North Carolina; J.M. White, M.A.
Cambridge, N. Wright, Ph.D. Yale.

Associate Professors:

Assistant Professors:
J.M. Armstead, Ph.D. Duke; D.R. Cox, Ph.D. Missouri; R.T. Goode, Ph.D. Texas; D.F. Goslee, Ph.D. Yale; N.M. Goslee, Ph.D. Yale; T.J.A. Heffernan, Ph.D. Cambridge; M.A. Lofaro, Ph.D. Maryland, M.P. Richards, Ph.D. Wisconsin.

*Alumni Distinguished Service Professor.
*John C. Hodges Professor.
Instructors:

P.S. Adams, M.A. Tennessee; E.D. Badgett, M.A. Tennessee; E.W. Bare, M.A. East Tennessee State University; M.A. Marquette; D.M. Craven, Ph.D. Tennessee; W.J. Curtis, M.A. Tennessee; K.S. Feenick, M.S. Columbia; B.L. Ferrall, Ph.D. Michigan State; L. Fuller; M.A. Tennessee; D.R. Goswami, M.A. Clemson; P.H. Hamilton, M.A. Tennessee; C.M. Hoffman, M.A. Iowa; G.E. Klein, M.A. Illinois; N.V. Lee, M.A. Peabody; M.S. Lewis, Ph.D. Tennessee; I. Leki, Ph.D. Illinois; V.C. Martin, Ph.D. Tennessee; K.D. Moore, M.A. Michigan; E.H. Murphy, M.A. Mississippi; R.A. Scott, M.A.C.T. Tennessee; M.H. Simpson, M.A. Oregon; P.A. Tschantz, M.A. New Mexico State.

UNDERGRADUATE

Major: (36-39 hours) Two courses in English at the 2000 level are prerequisite to a major, which consists of the following requirements:

(1) English 2150, which should be taken as soon as possible after the student has elected English as a major.

(2) Upper-division courses in English (26-27 hours)

Nine English courses at the 3000 and 4000 levels should be distributed over a broad spectrum of British and American literature, either

(a) by taking 14 hours in the British and American literature courses surveys (8 hours in English 4991-92 and 6 hours from English 3010-20-30) and the remaining 12-13 hours in individual author and genre courses offered in English linguistics; or

(b) by taking 6 hours each from the courses listed below under categories A, B, and C, with the remaining 9 hours arranged to form a coherent program.

Three hours of advanced writing (Category D below) may fulfill a part of either (a) or (b) above.

(3) Additional courses in literature or language (6-9 hours), either

(a) 6-8 hours of 3000-level literature in a foreign language; or

(b) 8-9 hours of comparative literature or foreign literature in translation, at the 3000-4000 level.

(4) Corequisites—English majors must complete the equivalent of the second (2000-level) year of a foreign language.

Special Programs for the Major—The Director of Undergraduate Studies is empowered to approve the individualized programs developed by students in consultation with their advisors. These programs need not necessarily fulfill all of the requirements listed above.

Honors Program—For students who qualify for this concentration, the English department offers a program of individualized study in the fourth year, culminating in a senior thesis and comprehensive examination. If these two are passed with grades of B or better the student will be graduated with honors in English.

Classification of Upper-Division English Courses for the Major:

A. English honour.


C. Nineteenth and Twentieth Century: 3030, 3070, 3080, 3140, 3150, 3210-20, 3411-12-20-30, 3390, 3940, 4060, 4210-20-30, 4230-30-40, 4620, 4652, 4660, 4680, 4691, 4700.

D. Advanced Writing: 3450, 3460, 3470, 3830, 4960.

Minor: 24 hours, including at least 18 at the upper-division level.

Certification for Teaching English and Speech in Tennessee

Consult Certification Clerk, Room 212, Claxton Education Building.

General Prerequisites

English 1010-20-30 or equivalent are prerequisite to all English courses numbered above 2000.

1010 English Composition (3) Expository writing with emphasis on invention, organization, style, and revision; intensive study of essays for meaning and ways of expressing meaning; conferences on individual writing problems. Coreq: English 1019 for designated students. A, B, C, I, NC, W grading.

1019 Writing Workshop (1) Required concurrently with 1010 of students selected on the basis of either their placement scores and high school record or their performance in English 1010. Specifc criteria of selection for 1019 will be published by the English Department to all graduating seniors each year. Individual and group instruction in grammar, mechanics, sentence patterns, reading comprehension, précis writing, and paragraph development. Graded S/NC; a student taking 1019 concurrently with 1010 must pass 1010 to receive credit for 1019.

1020 English Composition (3) Analytical writing based on study of current literature; practice in documentation; individual conferences. Prereq: 1010. Students receiving an A in 1020 may elect to complete a year's work in English composition with any 2000- or 3000-level writing course. A, B, C, I, NC, W grading.

1031-32-33 English Composition, (3, 3, 3) Applica
tion of writing skills to areas of special interest. Study and practice of research writing; individual conferences. Prereq: 1010-20; any 1030-level course completes a year's work in English composition; no more than one may be taken for credit. 1031—Types of literature; 1032—Language: its forms and functions; and technical and technical writing. A, B, C, I, NC, W grading.

1018-28-38 Honors: English Composition, (3, 3, 3) Open only to those students selected on the basis of placement scores and high school record. Grading scales of research work load the same as in regular sequence. 1018—Expository writing based on the study of essays and short stories. 1038—Analytical writing based on the study of drama and poetry. Study and practice of research writing. Students receiving a grade below B in 1018 will complete a year's work in English composition by taking 1020 and one course on the 1030 level; students receiving a grade of A or B also receive credit and a grade of no less than B for 1028 and may continue into 1038; all students with A's and those with B's and the permission of the department have the additional option of completing a year's work in English composition with any 2000- or 3000-level writing course. A, B, C, I, NC, W grading.

1211 Written and Oral English for Foreign Students (6) Repeat of English grammar structures and the intensive oral, aural, and written drill. Required during the first quarter of residence of all foreign students (graduates, undergraduates, graduate students) who are not excused from it on the basis of the English Proficiency Examination required of every new foreign student. A, B, C, I, NC, W grading.

1221 Written and Oral English for Foreign Students (6) Emphasis on the more advanced structures of English grammar and on paragraph writing. Required during the first quarter of residence of all foreign students. Also on the English Proficiency Examination demonstrate need for work in this structure, but not at the intensive level of English 1211. Required of all foreign students who complete 1211. A, B, C, I, NC, W grading.

1261 English Pronunciation for Foreign Students (3) Sounds and intonation patterns of American English and relation of spelling to sound. Designed to improve student's ability to speak and understand English. May be repeated. Maximum 6 hrs credit. S/NC. (Same as Audiology and Speech Pathology 1261.)

1431 English Composition for Foreign Students (3) Composition and reading for students whose native language is not English. Emphasis on paragraph and composition organization with attention to grammar and mechanics. English 4133 replaces English 1010 for undergraduate foreign students. Prereq: 1221 or recommendation based on English Proficiency Examination. A, B, C, I, NC, W grading.

1441 English Composition for Foreign Students (3) For students whose native language is not English, writing based on reading and discussion with attention to use of leactic and to basic skills of communication. Prereq: writing assignment forms of English composition with no credit. English 1441 replaces English 1020 for undergraduate foreign students. Prereq: 1431. A, B, C, I, NC, W grading.


2510 Colloquium for English Majors (3) Introduction to methods and objectives of literary study; conferences to plan student's program in major.

2510-20 English Masterpieces (4, 4, 4) 2510—To the mid-eighteenth century. 2520—Since the mid-eighteenth century.

2530 American Masterpieces (4)

2540 The Literature of Black America (4) Poetry, fiction, drama. Emphasis on twentieth century.

2560-70-80 Literature of the Western World (4, 4, 4) 2560—Ancient and Medieval. 2570—Renaissance through the eighteenth century. 2580—Nineteenth and twentieth centuries.

2640-50 English Culture (4, 4) 2640—Beginnings to the late eighteenth century. 2650—From the late eighteenth century to the present.

2660 Introduction to Drama (4) Study of selected plays to provide critical techniques necessary for understanding of drama.

2670 Introduction to Poetry (4) Study of selected poems to provide critical techniques necessary for reading of different types of poetry.

2680 Introduction to the Novel (4) Study of selected novels to provide critical tools necessary for judging longer works of fiction.

2710 Introduction to Writing Fiction (3) Fundamental course for those desiring to enter creative writing program. Instruction in and application of basic skills of finding the subject, selecting setting and point of view, shaping plot, developing characters.

2720 Introduction to Writing Poetry (3) Further basic course for those entering creative writing program. Study of fundamental elements of poetry: composition and discussion of poems by students.

*Represents the Freshman English Sequence 1510-20.

*1Represents English 1518-28.

*2Represents English 1431-41-51 replaces English 1010-20-31, 1032, 1033 for foreign students.
5610-20-30 Readings in English Literature of Nineteenth Century (3, 3, 3)
5710-20-30 Readings in English Literature of Eighteenth Century (3, 3, 3)
5810-20-30 Readings in English Literature of Renaissance (3, 3, 3)
5860 Introduction to Literary Research (3)
5910-20-30 Readings in English and American Literature of Twentieth Century (3, 3, 3)
6000 Doctoral Research and Dissertation
6110-20-30 Studies in Elizabethan Literature (3, 3, 3)
6150 Old English Poetry (3)
6160 Beowulf (3)
6170 Studies in Middle English (3)
6181-82-83 Studies in the English Language (3, 3, 3)
6210-20-30 Studies in American Literature (3, 3, 3)
6241 Studies in Colonial American Literature (3)
6342 Studies in Colonial American Literature (3)
6270-80 Studies in American Fiction (3)
6310-20-30 Studies in Victorian Literature (3, 3, 3)
6410-20-30 Studies in Chaucer (3, 3, 3)
6510-20-30 Studies in Spenser and Milton (3, 3, 3)
6610-20-30 Studies in English Romanticism (3, 3, 3)
6710-20-30 Studies in Eighteenth-Century Literature (3, 3, 3)
6810-20-30 Studies in Drama and Theatre (3, 3, 3)
6910-20-30 Studies in Twentieth-Century Literature (3, 3, 3)

French
See Romance Languages.

Geography (415)

Professors: S.R. Jumper (Head), Ph.D. Tennessee; E.P. Hammond, Ph.D. California (Berkeley); R.G. Long, Ph.D. Northwestern; T.H. Schmude, Ph.D. Wisconsin.

Associate Professors: C.S. Aiken, Ph.D. Georgia; T.L. Bell, Ph.D. Iowa; L.W. Brinkman, Jr., Ph.D. Wisconsin; J.B. Rehder, Ph.D. Louisiana State.

Assistant Professors: J.R. Carter, Ph.D. Georgia; W.N. Cherry, M.S. Tennessee; B.A. Ralphson, Ph.D. Northwestern.

UNDERGRADUATE

Major: Eight hours in courses numbered at the 1000 or 2000 level are recommended as an introduction to a major which consists of Geography 4100, 4710 and 4990, and an additional 28 hours selected from courses at the 3000 and 4000 levels. At least one course must be selected from each of groups A, B, C, and D below:

a. Physical Geography: 3520, 3530, 4550
b. Economic Geography: 3410, 3430, 3490, 4075, 4610, 4630
c. Cultural Geography: 3450, 3610, 3660, 4075, 4240
d. Regional Geography: 3790, 3800, 3810, 3840, 3870, 3890, 3910, 3920, 3930, 3940

For those pursuing a program leading to professional employment or graduate study in geography, 4210 and/or a senior project under 4103 are/is strongly recommended.

Minor: Eight hours in courses numbered at the 1000 or 2000 levels are recommended as an introduction to the minor which consists of 24 hours selected from courses at the 3000 and 4000 levels. Students wishing to major or minor in geography are strongly urged to consult with a departmental undergraduate advisor. The availability of courses within the structure of the major and by appropriate selection of electives outside the department, each student may develop a coherent program in accordance with specific interests and needs. Such programs might emphasize particular aspects of geography itself or might develop interdisciplinary themes such as natural environment and resources, urban and regional planning or the culture, history or economy of a particular area. A useful technical or vocational specialty program is available which emphasizes cartography and remote sensing.

Asian Studies. See Cultural Studies.

Latin American Studies. See Cultural Studies.

Russian and East European Studies. See Cultural Studies.

1610-20 Introduction to Geography (4, 4) Selected problems or situations of contemporary interest are studied in depth, utilizing geographical points of view and techniques. Need not be taken in sequence. Not open to students who have taken 1110 and 1120, respectively.

1810-20 Geography of the Natural Environment (4, 4) Characteristics and processes of earth's surface and lower atmosphere; their interaction to produce world patterns of distinctive environments significant to man. Must be taken in sequence. 1810 not open to students who have taken 1710.

2110-20-30 Economic Geography (4, 4, 4) The significance of location, pattern, and environment in economic activities. Emphasizes: 2110- agriculture; 2120—energy, minerals and manufacturing; 2130—transportation and trade. Need not be taken in sequence.

3000 Man, Location, and Behavior (4) Types of human spatial behavior, such as shopping patterns, commuting, residential mobility, trade, and regional consumption. As they relate to accessibility, natural environment, and culture. Order and regularity in pattern of human use of earth's surface.


3430 Urban Geography (4) Concepts and theories concerning development and significance of systems of cities and internal morphology of cities. Not open to students who have taken 4660.

3450 Rural Geography (4) Geographical appraisal of rural areas of the United States, including small towns and urban fringes. Problems and potentials of rural America.

3490 Geography of Resources (4) Study of factors related to variations in resource availability from time to time and from place to place, with particular emphasis upon energy and mineral resources.

3510 Meteorology (4) Introduction to dynamic atmosphere and resulting weather events. Nature of individual weather elements, their measurement and analysis over time and space.

3520 The Atmospheric System and Man (4) Overview of general circulation system leading to world pattern of climates. Role of climate in agriculture, architecture, human comfort, and economic activity.

3530 The Land-Surface System and Man (4) Nature and regional variations in relationships among surface form, water, vegetation, and surface materials. Man as evaluator and agent of change.

3600 Geography of Population (4) World population patterns; regional socio-economic characteristics and demographic trends; relationship to resource base.

3610 Political Geography (4) Importance of geographic factors for understanding political relations within and between nations; spatial implications of political decision-making processes; geography of administrative units.

3760 Cultural Geography (4) Basic concepts in culture: methods and background of cultural geography; world patterns of cultural phenomena.

3790 Geography of Middle America (4) Covers Mexico, Central America, and the West Indies. Not open to students who have taken 3740, 3770, or 3780.

3800 Geography of South America (4) Not open to students who have taken 3730, 3750, or 3760.

3810 Geography of Europe (4)

3840 Geography of Australia and Oceania (4) Survey of major physical, economic and social characteristics of Australia, New Zealand, and of impact of western civilization on selected island groups of Southwest Pacific.

3870 Geography of Asia (4) A survey of the physical, cultural and economic characteristics of the countries of Asia, excluding the Soviet Union. Not open to students who have taken 3820, 3890 or 3900.

3880 Geography of the Soviet Union (4)

3910 Regional Geography of United States and Canada (4) Major physical, economic, and social distributions as they interrelate to give distinctive characteristics to regions of United States and Canada. Not open to students who have taken 3710 or 3720.

3920 Geography of the American South (4) Geographical appraisal of southeastern United States, including physical environment and human resources. Origin and development of contemporary economic and cultural traits of the area.

3930 Geography of Tennessee (4)

3940 Geography of Appalachia (4) Interrelation of physical, economic, and social patterns to give distinctive character to the region and its parts, especially southern Appalachia. Appalachia in perspective in the current American scene.

4075 Geography of Transportation (4) Geographic examination of transportation systems, emphasizing transport of people at highway and by public facilities. Relationship of these systems to changing geography of cities and urban hinterlands.

4100 Quantitative Methods in Geography (4) Geographic applications of statistical techniques, point pattern analysis and analysis of areal units. Pre Req: Mathematics 3000 or consent of instructor.

4101 Foreign Study (1-16) See page 187.

4102 Off-Campus Study (1-16) See page 187.

4103 Independent Study (1-16) See page 187.

4210 Problems in Geographic Method (4) Examples of problems and approach in geographic analysis and synthesis. Emphasis on character of geographic data, area sampling, generalization, classification, regionalization, and questions of scale.

4240 Historical Geography of the United States (4) Survey of changing human geography of United States during four centuries of settlement and development. Emphasis upon changing population patterns, development of agricultural regional patterns of urban development. Not open to students who have taken 4250-60.
4510 Principles of Geomorphology (4) (Same as Geology 4510.)

4550 Geography of Soils (4) Soils as physical systems and their relationship to environments. Investigation of specific cases of role of soil in management of environmental systems.

4610 Industrial Geography (4) Factors affecting location of manufacturing activities, with emphasis on the United States. Prereq: 3410 or consent of instructor.

4630 Geography of Agriculture (4)

4720 Cartography (4) Map construction, map reproduction, and practice in map drawing.

4720 Data Mapping (4) Methods of representing spatial distributions by maps and graphs. Mappable data may include phenomena as diverse as birth rates, voting patterns, and air pollution levels. Prereq: Junior standing or consent of instructor.

4740 Remote Sensing: Types and Applications (4) Basic principles and uses of aerial photography and other remote sensing techniques. Emphasis upon value of various types of imagery for geographic interpretation and simple mapping. Prereq: Consent of instructor.

4750 Interactive Computer Graphics (3) (Same as Computer Science 4750 and Electrical Engineering 4750.)

4990 Pros甚 seminar in Geography (4) Overview of major themes in geography, especially trends over past 20 years. Designed for undergraduate majors and may not be taken for credit by graduate students. Prereq: Completion of at least 12 hrs of major or minor requirements for geography.

GRADUATE

Master’s Program

The general requirements for the Master’s degree are given in the Graduate Catalog.

Doctoral Program

General requirements for Doctor’s degree are given in the Graduate Catalog.

5000 Thesis

5100 Colloquium in Geography (1)

5101 Foreign Study (1-12)

5102 Off-Campus Study (1-12)

5150 Introduction to Geographical Research (3)

5160 Research Design and Field Problems (4-6)

5170 Geographic Concept and Method (3)

5200 Special Problems in Geography (2-6)

5250 Topics in Historical Geography (3)

5260 Advanced Cultural Geography (3)

5310 Topics in Regional Geography of United States (3)

5320 Topics in the Geography of the American South (3)

5410 Advanced Topics in Economic Geography (3)

5520 Advanced Urban Geography (3, 3)

5550 Topics in Geography of Land-Surface System (3)

5610 Topics in Climatology (3)

5710 Seminar in Geography (3)

5720 Topics in Quantitative Geography (3)

5740 Advanced Topics in Remote Sensing (3)

5915 Regional Geomorphology (4)

6000 Doctoral Research and Dissertation

6110 Seminar in Economic Geography (3, 3)

6220-30 Seminar in Urban Geography (3, 3)

6240-50 Seminar in Historical Geography (3, 3)

6260 Seminar in Cultural Geography (3, 3)

6310-20 Seminar in Rural Geography (3, 3)

6410-20 Seminar in Regional Geography of United States (3, 3)

6610-20 Seminar in Regional Geography of Latin America (3, 3)

6710-20 Seminar in Physical Geography (3, 3)

Geological Sciences

Professors: G. Briggs (Head), Ph.D. Wisconsin; H.J. Klepaer, Ph.D. Ohio State; O.C. Kopp, Ph.D. Columbia; R.E. McLaughlin, Ph.D. Tennessee; D.H. Roeder, Ph.D. Goethe University (Germany); L.A. Taylor, Ph.D. Lehigh; K.F. Walker, Ph.D. Yale; J.G. Waits (Emeritus), Ph.D. North Carolina.

Associate Professors: M. Clark, Ph.D. Pennsylvania State; K.C. Misra, Ph.D. Western Ontario.

Assistant Professors: D.W. Byers, Ph.D. Tennessee; F.B. Keller, M.Ph. Yale; H.D. Harvard; W.P. Staub, Ph.D. Iowa State.

The Department of Geological Sciences provides training for (1) those who plan a career as a professional geologist in industry, federal and state surveys, education or other fields which utilize earth scientists; and, (2) those who seek a general knowledge of geology and its relationships to the other sciences, engineering, business, law, and other disciplines.

The requirements set forth below are designed to provide geology majors with a broad base from which qualified students may proceed into advanced study in one or more of the branches of geology or related minor fields. Because a wide range of elective courses is available, it is essential that each student be guided in planning the program by a departmental adviser. A list of advisers is available in the departmental office.

UNDERGRADUATE

Major: Geology 1410, 1420, 1430 are prerequisite to a major which consists of Geology 3180, 3260, 3310, 3360, 3370, and at least 24 hours additionally in upper-division courses in geology chosen to include at least twelve hours from among the following courses: Geology 3510, 4110, 4115, 4230, 4510, and 4610. Geology 4310 and/or 4440 (or equivalent) are strongly recommended for students planning to become professional geologists.

Because of the interdisciplinary nature of geology and the prerequisites for advanced study, students who major in geology are required to take the following allied science and mathematics courses: Biology 1210-20, Chemistry 1110-20, Mathematics 1840-50, Physics 2210-20 or 2510 and 2310-20. It is recommended that students take additional courses beyond the elementary level in at least one of the above allied fields.

Minor: Geology 1410, 1420, 1430 are prerequisite to a minor which consists of at least twenty-four hours in courses numbered 2000 or above.

Geology (424)

1000 Frontiers in Earth and Planetary Sciences (4) Recent developments in earth science of interest to the public. Designed for non-majors; treats popular topics such as discussion of the Apollo missions, earthquake prediction, and drift- ing of continents.

1410-20 General Geology I, II (4, 4) 1410—Introduction to study of the earth, its composition, structure, and processes that change it. 1420—Emphasizes development of life and physical events through Mesozoic Era. Must be taken in sequence. 3 hrs and one 2-hr lab or field period.

1430 General Geology III (4) Continuation of 1410-20 sequence emphasizing the advent of human life and its interactions with geological processes and events. Prereq: 1420. 3 hrs and one 2-hr lab or field period.

2130 Geological History of the Earth (4) Origin and evolution of continents, atmosphere, oceans and earth's inhabitants with emphasis on physical history of North America. Prereq: 1420. 3 hrs and 1 lab or field period.

2210 History of Life on Earth (4) Chronological account of origin and evolution of life, its environment, and societal patterns. Not intended for geology majors. 3 hrs and 1 lab or field period.


2610 Introductory Geology for Engineers (3) Materials and structure of the earth. For College of Engineering students only. 2 lectures and 1 lab or field period.

2710 Introductory Oceanography (4) Introduction to study of oceans including origin and development of ocean basins and physical and biological processes within ocean basins and their contained water and sediment masses. 1410 recommended.

3160 Introduction to Earth Materials (4) Study of minerals and rocks. Laboratory includes both hand specimen and analytical methods of identification. Not available for credit to majors. Prereq: 1410. 2 lectures and 2 labs.

3180 Mineralogy (4) Introduction to crystallography and study of minerals. Laboratory includes hand specimen, chemical and X-ray methods of identification. Prereq: 1410, Chemistry 1110-20 or equivalent. 3 lectures and 1 lab.

3210-20 Invertebrate Paleontology (4, 4) Systematic review of important invertebrate fossil groups. 3210—Prostata to Brachiopoda, including sponges, coelenterates and bryozoans. 3220—Phoronida to Hemichordata, including annelids, molluscs, arthropods and echinoderms. May be taken separately or in any order. Prereq: 3260; Biology 1210-20 or consent of instructor. 3 hrs and 1 lab or field period.

3250 Micropaleontology (4) Microscopic remains of animals and plants with special emphasis on stratigraphically important groups. Prereq: 3210 or consent of instructor. 3 hrs and 1 lab.

3280 Paleobiology (4) Introduction to principles and materials of paleontology as applied to interpretation of earth history. Prereq: 1420. 3 lectures and 1 lab or field period. 4

4
Mathematics 1840-50 has prerequisites of 2 years high school algebra and one year trigonometry equivalent. Students who are deficient in these subjects may need to take Mathematics 0150 and/or 1500 prior to enrolling in Mathematics 1840-50. Consult mathematics section of this catalog or the Department of Mathematics for details.
3270 Geological History of Land Organisms (4) Geologic history and development of terrestrial biota and ecosystem with special emphasis on fossil record of land plants and vertebrates. Prereq.: Biology 1210-20 or consent of instructor. 3 lectures and 1 lab or field period.

3310 Lithology (4) Study of igneous and metamorphic processes and rocks. Laboratory includes hand specimen and microscopic study of important rock types. Prereq: 3180, 2 lectures and 2 labs.

3330 Geology of East Tennessee (4) Lectures and field excursions. Prereq: 12 quarter hrs of geology and consent of instructor.

3380 Stratigraphy-Sedimentation (4) Introductory study of principles and methods of interpretation of depositional environments. Prereq: 1420 and 3180. 3 hrs and 1 lab or field period.

3370 Structural Geology (4) Introductory discussion of structures such as folds, faults, joints, cleavage, and primary structures. Laboratory work includes depth and thickness problems. Structure sections, structure contour maps, etc. Prereq: 1420, Mathematics 1840-50 or equivalent. 3 hrs and 1 lab.

4140 Principles of Ground Water Geology (3) Geologic principles and processes affecting the occurrence and behavior of water. Open to geology majors. 2 lectures and 1 lab. (Same as Water Resources Development 3410.)

3510 Introductory Environmental Geology (4) Geologic processes involving earth environments and resources, and geologic parameters associated with their control and misuse. Prereq: 1420 or consent of instructor. 2 lectures and 2 lab or field periods.

3610 Quaternary Geology for Engineers (3) Erosional and depositional processes, landforms, groundwater. 2 lectures and 1 lab or field period. Prereq: 2610 or equivalent.


4110 Principles of Economic Geology (4) Formation of mineral deposits. Prereq.: 3180, 3370 or equivalent.

4115 Elementary Applied Geophysics (4) Basic principles of electrical, seismic, gravity and magnetic surveying. Recommended: 1420, Physics 2220 or 2320. 3 lectures and 1 lab.

4130 Sedimentology (4) Introduction to physical processes of sedimentation: transport of sediments and formation of sedimentary structures, river flow, waves, tides, and ocean circulation. Prereq: 3180, 3 lectures and 1 lab.

4230 Paleocology (4) Principles of environmental analysis as applied to fossil assemblages and associated lithologies. Prereq: 3260 or consent of instructor. 3 hrs and 1 lab.

4240 Paleobotany (4) Survey of fossil record of plants with particular emphasis on (1) comparative morphology and evolutionary trends in major plant groups and (2) chronological succession and geographic distribution of past floras on earth. Prereq: 1420 or 2210; Botany 3010-20 or consent of instructor. 3 hrs and 1 lab or field period. (Same as Botany 4240.)

4310 Geologic Mapping (4) Interpretation of maps and methods of geologic mapping. 3 lectures and 1 lab or field period. Prereq: 12 quarter hrs of geology.

4370 Tectonic Styles (4) Elements, habitats, and geotectonic causes of basic styles of tectonic deformation are presented on maps, sections, aerial photographs and fabric diagrams. 3 lectures and 1 seminar or lab. Prereq: 3370 or consent of instructor.

4440 Field Geology (8) Five week's field course, first term summer quarter. Advanced undergraduates or first-year graduates in geology. Employs entire time of students. A report is required, to be submitted no later than end of fall quarter. Prereq: 12 quarter hrs of geology and consent of instructor.

4460 Geologic Photography and Photogrammetry (4) Principles of terrestrial and aerial photographic geology, including photographic principles and practice, geometry of terrestrial and aerial photography, and image interpretation. Prereq: 3370 or consent of instructor. 3 lectures and 1 lab.

4510 Principles of Geomorphology (4) Gradational processes acting at earth's surface and landforms produced. Prereq: 1410 or consent of instructor. 3 hrs and 1 lab.

4550 Optical Mineralogy (4) Identification of non-opaque substances by immersion methods, using petrographic microscope.

4610 Principles of Geochemistry (4) Application of chemical principles to geologic problems. Emphasis on crystal chemistry and relation between basic atomic structure and distribution and behavior of elements in the earth's crust. Prereq: Chemistry 1110-20 or equivalent required. Recommended 3310.

4560 Mineral Phase Equilibria (3) Principles of phase chemistry and application of phase equilibria studies in rock-forming mineral systems as aid to understanding conditions of formation, modification of rocks. Prereq: 4610 or consent of instructor.

4710 Petrophysics (3) Fluid, heat, electric current and ionic flow through rock masses in a potential field. Stress-strain behavior of rock as a function of temperature and pressure. 3 lectures per week. Prereq: 3310, Mathematics 1830, Physics 1330. Recommended: Mathematics 2610 and 2820.

4810 Special Problems in Geology (1-4) Prereq: Consent of instructor. May be repeated to a maximum of 4 hrs credit.

GRADUATE

Master's Program

General requirements for Master's degree given in the Graduate Catalog.

Doctoral Program

General requirements for Doctor's degree given in the Graduate Catalog.

5000 Thesis

5050 Geochemistry of Ore Mineral Deposits (3)

5089 Experimental Geochemistry Laboratory (1-3)

5120 Geophysics—Gravity and Magnetic Methods (4)

5130 Geophysics—Seismic Exploration Methods (4)

5210-20-30 Special Problems in Geology (1-4, 1-4, 1-4)

5290 Quaternary Problems (4)

5310 Advanced Stratigraphy and Sedimentation (4)

5340 Seminar in Local Stratigraphy (1)

5350 Selected Topics in Geology (1)

5370 Mesofabric Analysis (4)

5460 Photogeologic Interpretation (4)

5470 Plate Tectonics and Orogeny (4)

5520 Igneous Petrology (4)

5530 Metamorphic Petrology (4)

5540 Terrigeneous Clastic Sedimentary Petrology (4)

5550 Carbonate Sedimentology (4)

5620 Electron Microprobe and X-Ray Spectrographic Analysis: Theory and Application (4)

5630 X-Ray Diffraction: Theory and Application (4)

5640 Clay Mineralogy (4)

5650 Thermodynamics for Geologists (3)

5670 Geochemical Prospecting (3)

5710 Advanced Paleontology (4)

5750 Petrophysics (3)

5810 Geology of Fuels (4)

5820-30 Mineral Deposits (4, 4)

5840 Ore Microscopy (4)

5850 Regional Studies in Economic Geology (3)

5910 Regional Geomorphology (4)

6000 Doctoral Research and Dissertation

6110 Seminar in Stratigraphic Geology (3)

6210 Seminar in Paleontology (3)

6310 Seminar in Structural Geology (3)

6410 Seminar in Mineralogy (3)

6510 Seminar in Petrology (3)

6610 Seminar in Economic Geology (3)

6710 Seminar in Geochemistry (3)

6810 Seminar in Geomorphology (3)

Germanic and Slavic Languages

Professors:
H. Kratz (Head), Ph.D. Ohio State; J.E. Falen, Ph.D. Pennsylvania; H.W. Fuller, Ph.D. Wisconsin; E.T. Hankamer (Emeritus), Ph.D. Bonn (Germany); R.L. Hiller, Ph.D. Cornell; R.L. Nordlieck, Ph.D. Ohio State; J.C. Osborne, Ph.D. Northwestern.

Associate Professors:
N.A. Laukner, Ph.D. Wisconsin; D.E. Lee, Ph.D. Stanford; M.P. Rice, Ph.D. Vanderbilt.

Assistant Professors:
J.S. Elliott, Ph.D. Michigan; D.M. Flene, Ph.D. Indiana; C.J. Mellor, Ph.D. Chicago.

Instructors:
D.F. Brandt, M.M. Syracuse; M.H. Harris, M.A. Illinois; J.M. Rasmussen, Diploma, City College, Tallin, Estonia.

UNDERGRADUATE

Placement Examination: Students who have had previous work in German or Russian either in high school or in another college should register for the course in which they would normally be placed. During the first week of the quarter a placement test will be given, and students will be advised if a change in registration is indicated.

Proficiency Examinations: Students who have acquired a knowledge of German or Russian through private study, tutoring, residence in foreign countries, or the like, should request a proficiency test. A student earning a grade of C or better on such a test will receive credit for a limited number of courses. Superior students are encouraged to proceed as rapidly as their achievement permits. Students who omit any course in a sequence may receive credit for it by passing a proficiency examination.

Foreign Study: Students are encouraged to study abroad. The department is prepared to recommend summer study programs and junior year abroad programs for students who are interested in foreign study. Credits from
recognized foreign study programs can readily be transferred to UK. For qualified students, the department also offers German 4110 Foreign Study and Russian 4101 Foreign Study. See page 187. Students should consult the department before registering for the foreign study course.

German

Major: Majors or minors in German should carefully prepare their programs in consultation with a departmental faculty adviser. German 2110-20-30 or the equivalent is a prerequisite to the major. The major shall consist of at least 36 hours of German courses numbered above 3000, usually including German 3110-20-30 (or 3410-20), 3810-20-30, 9 hours of German literature in courses numbered above 3000, excluding 3010-20-30 and courses in English translation.

It is recommended that German majors also take History 1510-20 or 3710-20-30 and 8 hours of sophomore English. Majors are also strongly urged to consider a minor in some other area of the humanities.

German 2110-20-30 or its equivalent is a prerequisite to the minor. The minor shall consist of at least 24 hours of German courses numbered above 3000, which will normally include German 3110-20-30 (or 3410-20-30), and 15 additional hours of courses numbered above 3000, excluding 3010-20-30 and courses in English translation.

Russian

Major: Russian majors should carefully prepare their programs in consultation with the departmental faculty adviser. Russian 2510-20 or its equivalent is a prerequisite to the major. Russian 2640-50 is a corequisite to the major. The major itself consists of 36 hours of Russian courses, including Russian 3510-20, 3610-20-30, 9 hours from Russian 3210-20-21-30-40-50-60, and 9 hours of courses numbered above 4000. It is recommended that Russian majors take History 3470-80-90 and 9 hours of sophomore English. Majors are urged to consider a minor in some other area of the humanities.

Minor: Russian 2510-20 or its equivalent is a prerequisite to the minor. The minor itself consists of 27 hours of Russian courses, including 9 hours from Russian 2640-50 and/or 3210-20-21-30-40-50-60 and 18 hours to be taken from Russian 3510-20, 3610-20-30 and courses numbered above 4000.

Russian and East European Studies.
See Cultural Studies.

Certification for Teaching German and Russian in Tennessee
Consult Certification Clerk, Room 212, Claxton Education Building.

German (433)

1110-20-30 Elementary German (3, 3, 3) Must be taken in sequence.

1510-20 Elementary German (4, 4) Must be taken in sequence.

1518-2518-28 Honors: Elementary and Intermedi ate German (5, 5, 5) Honors course for students of superior ability. Freshmen are admitted on the basis of high school average and performance on the American College Testing Program. Upperclassmen must have a B average. A grade of C or above must be achieved in order to continue to 2518. A student obtaining a grade of D or better in 1518 may continue with German 1520. This sequence is equivalent to 1510-20 or 1110-20-30 and 2110-20-30 and its completion allows the student to enter all 3000-level German courses.

1530 Elementary German through Individualized Instruction (1-8) Same material as in German 1510-20, but student is evaluated at own pace, with a minimum of one credit hr per quarter. With completion of four hrs student has option of transferring to 1520. May be repeated. Maximum credit 8 hrs.

2110-20-30 Intermediate German (3, 3, 3) Must be taken in sequence.

3010-20-30 Elements of German for Upper-Division and Graduate Students (3, 3, 3) Elements of language, elementary and advanced readings. Open to graduate students preparing for language examinations, and upper-division students desiring reading knowledge of the language. Undergraduate credit only. No credit for students having completed 1510-20 or 1110-20-30.

3040 Elementary Dutch (3) Prereq: Reading knowledge of German. Primarily for graduate students in German. No graduate credit allowed.

3110-20-30 Introduction to German Literature (3, 3) Prereq: 2130 or equivalent.

3410-20 Readings in Modern and Contemporary German Literature (3, 3) Prereq: 2130 or equivalent.

3810-20-30 Conversation and Composition (3, 3, 3) Prereq: 2130 or equivalent.

ADVANCED UNDERGRADUATE AND GRADUATE

4101 Foreign Study (1-16) See page 187.

4102 Off-Campus Study (1-13) See page 187.

4103 Independent Study (1-16) See page 187.

4110-20-30 Studies in Classical and Modern Writers (3, 3, 3) Content varies. May be repeated for credit with consent of department. Prereq: 9 hrs of 3000 courses (exclusive of 3010-20-30, or courses in English translation) or equivalent.

4140-50 Selected Topics in German Literature from 1750 to the Present (3, 3) Prereq: 9 hrs of 3000 courses (exclusive of 3010-20-30, or courses in English translation) or equivalent. Prereq: 9 hrs of 3000 courses (exclusive of 3010-20-30, or courses in English translation).

4170 Theatrical German (1-3) Performance in one or more German plays. May be repeated for credit with consent of department. Prereq: 2130 or equivalent or consent of instructor.

4210-20-30 Studies in German Literary Types (3, 3, 3) 4210—Lyric poetry. 4220—Drama. 4230—Narrative prose. Prereq: 9 hrs of 3000 courses (exclusive of 3010-20-30, 3210-20-30, 3310) or equivalent.

4250 Introduction to Descriptive Linguistics (3) (Same as Russian, French and Spanish 4250.)

4260 Introduction to Historical and Comparative Linguistics (3) (Same as Russian, French and Spanish 4260.)

4270 Introduction to Germanic Linguistics (3) Phonetics and phonemics of German, German grammar and vocabulary from a descriptive point of view. Dialects of German. Prereq: 2130 or equivalent.

4310-20 History of German Language (3, 3)

4610-20-30 German Civilization (3, 3, 3) Prereq: 2130 or equivalent.

4621-28-38 Honors: Senior German (3, 3, 3) Intended to give student of special aptitude greater opportunity to do independent work in ordinary courses. Prereq: Senior standing, with a record of A in half of German courses taken as prerequisite to the course. Average of B in remaining, and consent of department.

4810-20-30 Advanced Conversation and Composition (3, 3, 3) Prereq: 3810-20-30 or equivalent or consent of department.

GENERAL COURSES

4810-30 Culture of German-Speaking Peoples (3-4, 3-4) Studies in culture and life style of German-speaking peoples from their first contact with Romans to the present. Readings are in English language. Students opting for 4 hrs credit will be expected to present an appropriate amount of extra work above that required for 3 hrs.

3210-20-30 German Literature in English Translation (3-4, 3-4, 3-4) No foreign language credit. No change in credit hours. Prereq: 3040. Students opting for 4 hrs credit will be expected to present an appropriate amount of extra work above that required for 3 hrs.

3240 Old Norse Literature in English Translation (3-4) Prose readings of sagas of Norwegian kings, great Icelandic family sagas, and Vinland sagas, narrating discovery of America around the year 1000. Mythological and heroic poems of the Edda.

3250 Modern Scandinavian Literature in English Translation (3) Introduction to modern literature of Sweden, Norway, Denmark, and Iceland. Representative readings by such writers as Ibsen, Strindberg, Lagerlöf, Hamsun, Vesaas, Lagerkvist, Bang, Nesbø, Laxness.

3260 German Drama in English Translation (3) From Lessing to present. No foreign language credit.

3270 Modern German Novel in English Translation (3) From 1900 to present; Remarque, Hesse, Mann, Kafka, Frisch, Böll, Grass. No foreign language credit.

3280 Goethe's Faust in English Translation (3) Intensive study of Faust I and II and survey of criticism and interpretations of the work. No foreign language credit.

3120 Dramas of Bertolt Brecht (3-4) Canonical explorations of Brecht's dramatic works and theoretical writings in English translation. No foreign language credit.

3202 novels of Hermann Hesse (3-4) Study and analysis of Hesse's major novels in English translation. No foreign language credit.

3330 Dramas of Ibsen and Strindberg (3-4) Study of two principal forerunners of twentieth-century drama. Works are read in English translation. No foreign language credit.

3340 Special Topics in German Literature in English Translation (1-4) Topics and credit hours vary and are announced in advance. Student suggestions for topics are welcome. No foreign language credit. May be repeated for credit.

4050 The Faust Legend (3) Survey of development of legend from Faust chapbook to present, excluding Goethe's Faust. No foreign language credit.

GRADUATE

The Department of Germanic and Slavic Languages offers three advanced degrees. They are M.A. (in German), Master of Arts in College Teaching.
3610-20-30 Introduction to Russian Literature (3, 3, 3) 3610: Russian poetry. 3620: Russian Short Stories. 3630: Russian Short Novels. Prereq: Completion of Russian 3510-20 or equivalent.

ADVANCED UNDERGRADUATE AND GRADUATE

4010 Selected Topics in Russian and East European Studies (3) Interdisciplinary seminar on selected topic using comparative approach.

4101 Foreign Study (1-16) See page 187.

4102 Off-Campus Study (1-16) See page 187.

4103 Independent Study (1-16) See page 187.

4110-20-30 Studies in Major Russian Writers (3, 3, 3) Content varies. Pushkin, Lermontov, Gogol, Turgenev, Tolstoy, Dostoevsky, Chekhov and others. Prereq: 9 hrs of 3000 courses (exclusive of 3010-20-30; 3210-20-30; 3520-20-30; 3310) or equivalent. May be repeated for credit.

4210-20-30 Studies in Russian Literary Periods (3, 3, 3) 4210—Russian Romanticism. 4220—Russian Realism. Prereq: 9 hrs of 3000 courses (exclusive of 3010-20-30; 3210-20-30; 3520-20-30; 3310) or equivalent.

4250 Introduction to Descriptive Linguistics (3) (Same as German, French and Spanish 4250.)

4260 Introduction to Historical and Comparative Linguistics (3) (Same as German, French and Spanish 4260.)

4270 Introduction to Slavic Linguistics (3)

4310-20-30 Advanced Studies in Russian Language (3, 3, 3) Intended primarily for students majoring or minoring in Russian who are interested in language and linguistics. Includes problems in morphology and syntax, stylistics and translation techniques, and history of Russian language as well as other special problems for advanced students of Russian.

4410-20-30 Directed Readings in Russian (3, 3, 3) Intended primarily for students participating in program in Russian and East European Area Studies. Each course will involve individual study relating to student's major field. Prereq: 9 hrs of 3000-level courses in Russian (exclusive of 3010-20-30; 3210-20-30; 3520-20-30; 3310 or equivalent).

GENERAL COURSES

2640-50 Background and Main Currents of Russian Culture (4) A broad interdisciplinary approach to the appreciation of the history, religion, literature, art, music, history, geography, and social problems of Russia. No knowledge of Russian required. May not be taken for foreign language credit.

3210-20-21-30 Survey of Russian Literature in English Translation (3-4, 3-4, 3-4, 3-4) 3210—Russian realism; development of nineteenth-century novel; selections from works of Pushkin, Gogol, Lermontov, Leskov, Goncharov, Chernyshevsky, and others. 3220—Works of Leo Tolstoy. 3221—Twentieth-century Russian literature, on eve of revolution and under Soviets.

3240 The Russian Drama in English Translation (3-4) Selections from works of Fonvizin, Griboedov, Pushkin, Gogol, Ostrovsky, Turgenev, Chekhov, and others.

3250 The Works of Ivan Turgenev and Anton Chekhov in English Translation (3-4)

3260 Russian Folklore in English Translation (3-4)

3270 Russian Philosophical and Theological Thought (4) A survey of the development of philosophical and theological thought in Russia from the Middle Ages to the Revolution. Special emphasis on the expression of this thought in Russian literature and literary criticism. No knowledge of Russian required. (Same as Philosophy 3270 and Religious Studies 3270.)

Greek
See Classics.

Hebrew
See Religious Studies.

History (462)

Professors: L.P. Graf (Head); Ph.D. Harvard; G. Broeker, Ph.D. Minnesota; E.V. Chmielewski, Ph.D. Harvard; R.E. Duncan, Ph.D. California (Berkeley); H.S. Fink (Emeritus), Ph.D. Princeton; Y.-P. Hao, Ph.D. Harvard; A.G. Haas, Ph.D. Chicago; R.W. Haskins, Ph.D. California (Berkeley); J.W. Hoffman (Emeritus), Ph.D. Chicago; O.C. Jackson (Associate Dean, Liberal Arts College), Ph.D. Emory; M. Klein*, Ph.D. Columbia; R.G. Landen (Dean, Liberal Arts College), Ph.D. Princeton; R.C. Marius, Ph.D. Yale.


Assistant Professors: S.D. Becker, Ph.D. Case-Western Reserve; S.J. Kleinberg, Ph.D. Pittsburgh; R.B. Rice, Ph.D. Harvard.

*Distinguished Professor.
*Alumni Distinguished Service Professor.

UNDERGRADUATE

Major: History 1510-20 (or honors equivalent), or 1610-20, is prerequisite to a major which consists of at least 32 credits, including 8 hours of History 2510-20 and 28 hours of upper-division courses chosen so that the student presents a minimum of 8 upper-division hours in two of the three following groups: (a) European; (b) United States; (c) Other areas, e.g., Latin American, Asian, etc. Students may use only two of the three History colloquia (4010, General; 4020, European; 4012, American) toward the 36 hours of the major. Honors Major—Consists of prerequisites to the general major plus 45 hours: 36 hours of courses, including group requirements in the general major and History 4018-28 plus 3008, 3038, 3048.

(a) European: 3061-71; 3140-50-60; 3411-12-13; 3421-22-23; 3431-32-33; 3441-42-43; 3450; 3470-80-90; 3710-20-30; 3760-70; 4011; 4250-60-70; 4280; 4380; 4410-20-30; 4450-60-70; 4470; 4480; 4490; 4500; 4510-20; 4570; 4710-20-30; 4740; 4770-80.

(b) United States: 3310-20-30; 3610-20; 3620-30; 3670; 3880; 3910-20-30; 4012; 4391-21-22; 4370; 4610-20-30; 4640-50-60; 4670; 4910-20-30; 4950-60.

(c) Other: 3751-52; 3780-90; 3795; 3810-20-30; 3870-80-90; 4010; 4120-30-40; 4590; 4840; 4850; 4870-80-90.

Minor: History 1510-20 (or honors equivalent) or 1610-20, is prerequisite to a minor which consists of 24 hours of courses numbered 2000 or above of which at least 8 hours must be in United States History.

American Studies. See Cultural Studies.
4850 History of the Caribbean (3) Caribbean region from discovery and colonization to contemporary times.
4870-80-90 China(3, 3, 3) 4870—Cultural History of China. 4890—History of Modern China. 4890—History of Contemporary China.

GRADUATE
A student who enrolls in the Graduate School with intention of obtaining an advanced degree in history shall have completed an undergraduate major in history or its equivalent.

The Master’s Program
General requirements for the Master of Arts and Master of Arts in College Teaching degrees are found in the Graduate Catalog.

The Doctoral Program
General requirements for the Doctor’s degree are found in the Graduate Catalog.

5000 Thesis
5002 Non-Thesis Graduation Completion (3-15)
5015 Periods in European History (3)
5016 Periods in American History (3)
5101 Foreign Study (1-12)
5102 Off-Campus Study (1-12)
5103 Independent Study (1-12)
5211-12-13-14-15-16-17-18-19 M.A. Reading Courses (3, 3, 3, 3, 3, 3, 3, 3)
5221-22-23-24-25 M.A. Reading Courses (3, 3, 3, 3, 3)
5240 Introduction to Historical Research (3)
5250 European Historiography (3)
5260 American Historiography (3)
5271-72-73 Teaching of College History (0, 0, 3)
5280 Philosophy and Methodology (3)
5290 Quantitative Analysis of Historical Data (3)
5300 Topics in History (3)
5310 Topics in Women’s History (3)
5320 Topics in Historical Editing (3)
5360 Topics in American Foreign Relations (3)
5410 Topics in Early Modern European History (3)
5440 Revolution and Restoration in Central Europe, 1786-1850 (3)
5444 Topics in French History (3)
5445 Topics in Nineteenth-Century European History (3)
5450 Topics in Twentieth-Century European History (3)
5480 Topics in Russian History (3)
5510 Topics in Tudor-Stuart England (3)
5520 Topics in Modern English History (3)
5550 Reaction and Reform in England, 1789-1848 (3)
5560 Anglo-Irish Relations (3)
5640 Topics in American Social and Cultural History (3)
5645 Topics in American Urban History (3)
5650 Topics in American Westward Movement (3)
5660 Topics in Negro History (3)
5670 Topics in American Colonial History (3)
5675 Topics in the Early National Period of American History (3)
5680 Topics in Nineteenth-Century American History (3)
5690 Topics in Twentieth-Century American History (3)
5710 History of Crusades (3)
5720 Topics in Medieval History (3)
5740 Topics in European Urban History (4)
5750 Topics in Ancient History (3)
5780 Topics in German National Socialism (3)
5790 Topics in Middle Eastern History (3)
5810 Topics in Andean History (3)
5820 Topics in Mexican History (3)
5850 Topics in Chinese History (3)
5860 Topics in Japanese History (3)
5910-20 Topics in Southern History (3)
6000 Doctoral Research and Dissertation
6210-20-30-40 Directed Readings (3, 3, 3, 3)
6300 Seminar in Special Studies (3)
6310 Seminar in Tennessee History (3)
6350 Seminar in American Diplomatic History (3)
6410-20 Seminar in Western European History (3, 3)
6440 Seminar in French History (3)
6480 Seminar in Russian History (3)
6510 Seminar in English History (3)
6610 Seminar in American Colonial History (3)
6620 Seminar in Era of American Revolution (3)
6630 Seminar in Early National Period of American History (3)
6635 Seminar in Jacksonian Period (3)
6640 Seminar in Social and Cultural History of the United States (3)
6650 Seminar in American Westward Movement (3)
6710 Seminar in Medieval Institutions (3)
6740 Seminar in the Crusades (3)
6770 Seminar in Central European History (3)
6810 Seminar in Latin American History (3)
6910 Seminar in the Civil War Era (3)
6930 Seminar in Twentieth-Century America (3)
6940 Seminar in History of the South (3)
6960 Seminar in Negro History (3)

Honors Program
Director: Dr. Harry Jacobson

Non-Departmental
The following courses are restricted to students who have been selected to participate. 1118-28-38 are for first-year students invited on the basis of test scores, high school averages, and where appropriate, on University performance. Participation in the 2000-, 3000-, and 4000-level courses is based on cumulative averages. At present students with an average of 3.25 or greater are eligible.

Honors (509)
1118-28-38 Honors: First Year—Inquiry and Modes of Thought (2-4, 2-4, 2-4) 1118—The Humanities; 1128—The Natural Sciences; 1138—The Social Sciences. May be repeated.
2118-28-38 Honors: Sophomore—Special Problems Seminar (2-4, 2-4, 2-4) 2118—The Humanities; 2128—The Natural Sciences; 2138—The Social Sciences. These seminars focus on selected problems in the respective disciplines. The specific topics will vary from year to year. May be repeated.
3118-28-38 Honors: Junior—Colloquium (2-4, 2-4, 2-4) Small group studies of selected topics. May be repeated.
4101 Honors: Foreign Study (1-16) See page 187 and Director of Special Programs. Primarily for College Scholar Students.
4102 Honors: Off-Campus Study (1-16) See page 187 and Director of Special Programs. Primarily for College Scholar Students.
4103 Honors: Independent Study (1-16) See page 187 and Director of Special Programs. Primarily for College Scholar Students.
4118-28-38 Honors: Senior—Colloquium (2-4, 2-4, 2-4) Small group studies of selected topics. May be repeated.
4998 Honors: College Scholars Studies (2-16) Designed for College Scholars working on their senior thesis, project, or performance. May be repeated for a total of 16 credit hrs.

Human Services (532)
Associate Professor: R.F. Kronick (Director), Ph.D. Tennessee.
Assistant Professors: J.D. McLean, Ph.D. Chicago; F.J. Spicuzza, M.S.W. Tennessee.
Instructors: J.E. Everett, M.S.W. Michigan; N. Wright, M.S.W. Pittsburgh.
develop specific helping skills and to become exposed and involved in the roles and functions of social services; to provide some direct services in a supervised learning situation. For majors only. May be repeated 18 hrs required. S/NC. Prereq: Consent of instructor.

**4900 Aspects of Urban Environment (4)** (Same as Architecture 4900, Real Estate 4900, Psychology 4900.)

**Italian**

See Romance Languages.

**Japanese**

See Cultural Studies (Asian Studies).

**Latin**

See Classics.

**Latin American Studies**

See Cultural Studies.

**Linguistics**

See Cultural Studies.

**Mathematics (641)**

**Professors:** L.K. Barrett (Head), Ph.D. Pennsylvania; G.E. Albert (Emeritus), Ph.D. Wisconsin; S. Bradie, Ph.D. Iowa; J.H. Carruth, Ph.D. Louisiana State; R.E. Cline, Ph.D. Purdue; R.J. Daverman, Ph.D. Wisconsin; D.J. Desart, Ph.D. Maryland; E.D. Eaves (Emeritus), Ph.D. Texas; H. Fransen, Ph.D. Illinois; D.A. Gardner, Ph.D. North Carolina State; R.T. Gregory, Ph.D. Illinois; T.J. Hallam, Ph.D. Missouri; D.B. Hinton, Ph.D. Tennessee; A.S. Householder (Emeritus), Ph.D. Chicago; L.S. Husch, Ph.D. Florida State; H.T. Mathews, Ph.D. Tulane; R.M. MacConnel, Ph.D. Duke; D.D. Miller, Ph.D. Michigan; R.L. Plemons, Ph.D. Auburn; K.C. Reddy, Ph.D. Indian Institute of Technology; P.W. Schawer, Ph.D. Maryland; F.W. Stallman, Ph.D. Giessen (Germany); B.D. Steeman D.S. Dundee (Scotland).

**Associate Professors:** J.D. Chandler, Jr., Ph.D. Virginia; C.E. Clark, Ph.D. Louisaina State; D.E. Dobbs, Ph.D. Cornell; M.D. Gunzburg, Ph.D. New York; W.E. Haver, Ph.D. SUNY (Binghamton); G.S. Jordan, Ph.D. Wisconsin; K.R. Kimble, Ph.D. Ohio State; O.A. Klaassen, Ph.D. Nebraska; Y. Kuo, Ph.D. Cincinnati; B.S. Rajput, Ph.D. Illinois; W.H. Row Jr., Ph.D. Wisconsin; S.M. Serbin, Ph.D. Cornell; J. Smith, Ph.D. California (Berkeley); K. Soni, Ph.D. Oregon State; R.P. Soni, Ph.D. Oregon State; W.R. Wade, Ph.D. California (Riverside); C.G. Wagner, Ph.D. Duke.

**Assistant Professors:** D.F. Anderson, Ph.D. Chicago; W. Brandall, Ph.D. Northwestern; V.A. Douglas, Ph.D. Harvard; E.L. Evans, Ph.D. Houston; R.H. Hanks, Ph.D. Minnesota; W.F. Keigher, Ph.D. Illinois; R.J. Rowlette, Ph.D. Virginia; R.D. Shelton, Ph.D. Rice; K.R. Stephenson, Ph.D. Wisconsin; C.C. Traczyk, Ph.D. Wisconsin; J.J. Walsh, Ph.D. SUNY (Binghamton); A.T.M. Wang, Ph.D. Minnesota.

**Instructors:** E.S. Carlin, M.A. Alabama; C.G. Doss, M.A. Tennessee; M.S. McLean, M.S. Purdue; D.P. Nash, M.A. Colorado; A.M. Steele, M.Ed. Pittsburgh.

*On leave.*

*Space Institute-Tullahoma.*

*Visiting.*

**UNDERGRADUATE**

**Placement Information for Freshman Courses:** Students who need more than one year of mathematics should plan to take 1840-50-60 (or 1842-52-62 or 1848-58-68). The prerequisites for 1840 (and 1842) are two years of high school algebra, one year of geometry and one semester of trigonometry or equivalent. Students who present an ACT score below 28 in mathematics are urged to complete 1700 with a grade of C or better before taking 1840 (or 1842). Students who have not had high school trigonometry should take 0150 before (or concurrently with) 1840 (or 1842). Students who present an ACT score of at least 28 in mathematics and have completed 1700 with a grade of B or better are encouraged to take 1844. (Exceptions to the eligibility criteria for 1848 are possible. Interested students should see the department head in Ayres Hall, Room 124.)

The prerequisites for 1540 are two years of high school algebra or one year of algebra and one year of geometry. Students who present an ACT score below 18 in mathematics may be advised to take Algebra Refresher, Part I, in the Workshops and Non-Credit Programs (or equivalent elsewhere), and make at least B, or to make a passing grade in Algebra Refresher, Parts I and II, in the Workshops and Non-Credit Programs (or equivalent elsewhere). Students who have taken 2 years of high school algebra and 1 year of high school geometry and who present an ACT score of at least 24 are encouraged to omit 1540 and begin with 1550.

Students who have a deficiency in algebra or geometry must remove the deficiency by taking the appropriate course(s) in the Workshops and Non-Credit Programs (or equivalent elsewhere).

A student may receive credit for only one of the following courses: 1500, 1540, 1700. The last one of these courses taken is the one which will count for credit.

**Honors Courses:** The current practice of the department is to offer honors versions (1848-58-68 and 2848-58-68) of 1840-50-60 and 2840-50-60 in sequence, fall-winter-spring, each year. In addition to these regularly offered honors courses, an honors version of any course in the department whose offerings have zero as the last digit may be offered in any quarter. In this case, the last digit will be changed to eight and the title will be preceded by the word "Honors, " in the Timetable and on the student's transcript. These honors courses may be offered upon the initiative of interested faculty, students, or the department head (in all cases subject to the approval of the department head).

**Proficiency Examinations:** Students who have taken calculus in high school are encouraged to inquire at the Mathematics Office, Ayres 121 about the
possibility of taking a proficiency examination for one or more courses from the calculus sequence 1840-50-60. If a satisfactory grade is made on the examination(s), credit will be awarded for the appropriate course(s).

Major To major in mathematics, a student must complete the Basic Requirements and Advanced Requirements listed below:

1. Basic Requirements:
   a. 2840-50-60; or 2848-58-68; or 2540-54-60 and 2540-50-60.
   b. 3810, preferably taken during the sophomore year. Students who take 2848-58-68 may substitute any 3 or 4 hour mathematics course numbered 3050 or above for 3810.

2. Advanced Requirements:
   a. 21 additional hours in mathematics courses numbered 3050 or above, including a senior seminar (4910 or 4920) and at least two of the following sequences:
   b. Note: The two sequences selected cannot contain the same course.
   c. 9 additional hours in courses from the following list: mathematics courses numbered 3050 or above; Computer Science 4010, 4020, 4410, 4420, 4430, 4510; Curriculum and Instruction 3751, 3752, 3521, 3522; Physics 3210, 3220, 3250, 4410, 4420, 4430, 4210, 4220, 4250; Statistics 3450.

Honors Program:
An Honors Program in mathematics will consist of at least 27 hours of mathematics courses numbered 4000 or above, including at least 6 hours of honors courses (those whose number ends in 8). Students who satisfy the major requirements (categories 1 and 2 above) and complete the Honors Program with a grade point average of at least 3.4, 3.6, or 3.8 will be graduated with Honors, High Honors, or Highest Honors in mathematics respectively.

In exceptional cases, other courses of similar level may be accepted in place of the six hours of honors courses.

A student who wishes to be considered under the Honors Program will apply the quarter before he or she expects to graduate (but in the spring, if graduation is to be in December). The application will list the 27 hours to be offered, including the honors courses or their proposed substitutes. Students taking more than 27 hours of qualifying courses may select those to be listed. A note of successful completion will be added to the student's transcript.

Students interested in planning an Honors Program should consult their advisor as early as possible.

Minor: 20-50-60 (or 2848-58-68; or 2540-50-60, 2610 and 2860) and at least 12 hours in courses numbered 3050 or above.

Program Planning for Majors:
Mathematics majors have considerable freedom in determining how they will meet the advanced requirements of the major. In order to offer some guidance in planning program, the mathematics department has designed several sample programs which majors may wish to follow. The following description of these programs approaches more detailed information about these or any additional programs which the department may design in the future is available in Ayes 121. Completion of the courses suggested in any of the following programs will meet (and, in some cases exceed) the advanced requirements for a major in mathematics.

All students who intend to pursue graduate study in mathematics, or in any of the natural sciences are strongly urged to study French, German, or Russian for at least two years.

Program 1. This program is designed for students who have a general interest in mathematics and do not plan to become professional mathematicians. Supplemented by appropriate non-mathematical electives, such a program might be followed, for example, by pre-medical or pre-law students, by students planning to teach secondary school mathematics, or by those who plan to enter business school mathematics, or by those who plan to enter business school sciences.

Suggested courses: Mathematics 3150, 3050-60, 3780-90, 3330, 4150-20, 4120, senior seminar, 6 hours of math electives.

Program 2. This program emphasizes pure mathematics and is designed to prepare students for graduate work in any of the mathematical sciences. Suggested courses:

Mathematics 3150, 4150-20, 4120, 4150-60, 4250, senior seminar, 3 hours of math electives. The honors courses 4158-28-38 and 4158-68 are especially recommended. Since 4158-68 begins only in the fall quarter, students who wish to enroll in this sequence should take 4120 during their sophomore or junior years.

Program 3-A. This program emphasizes numerical mathematics, and is designed to prepare the student for employment in industry. Suggested courses:

Mathematics 3150, 4220-30, 4610, 4620-60, 4650, Computer Science 4410, Mathematics 4990 or Computer Science 4330, senior seminar, 6 hours of math electives selected from 4540, 4550, 4620, 4640, 4710.

Program 3-B. This program emphasizes numerical mathematics and is designed to prepare the student for graduate work in numerical mathematics or computer science. Suggested courses: Mathematics 3150, 4225-35, 4610, 4610-60, 4510-20-30, 4250, Computer Science 4410.

Mathematics 4990 or Computer Science 4330, senior seminar.

Program 4-A. This program emphasizes operations research, probability, and mathematical statistics, but is designed to prepare the student for employment in business or industry. Suggested courses:


Program 4-B. This program emphasizes operations research, probability, and mathematical statistics, and is designed to prepare the student for graduate work in one or more of these areas. Suggested courses: Mathematics 3150, 4060-70, 4650-60-70, 4510-20-30, 4750-60-70, Industrial Engineering 3510-20-30, senior seminar.

Program 5. This program emphasizes actuarial science and is designed to prepare students for professional or graduate work in actuarial sciences.

Suggested courses: Math 3155, 4225-35, 4120, 3780-90, 4550-60-70, senior seminar and two courses from 4750-60-70, 4650-70, Computer Science 3510, 3520, 4520.

Students following this program should supplement their mathematical training by selecting electives such as Economics 2110-20-30 or 2118-28-38; Accounting 2110-30; Insurance 3220, 4710-20; Marketing 3110; Statistics 3450; Industrial Engineering 3510-20-30; Computer Science 3510, 3520, 4550. Students in this program should also plan to take the Society of Actuaries Examinations I and II.

0150 Trigonometry (8) Plane trigonometry with emphasis on identities and other analytic aspects used in calculus. For students who enter with deficiencies in high school trigonometry. 3 hrs per week. No college credit.

1020 Mathematics: A Philosophical Approach (4) Mathematics as a science, art and "language game"; nature of mathematical truth; strengths and limitations of the axiomatic method; the infinitesimal; mathematical creativity; ethical problems facing the mathematician-scientist.

1540 College Algebra (4) Sets, real and complex number systems, exponents and radicals, fundamental algebraic operations, theory of equations, polynomial inequalities, relations, functions, graphs. NOTE: students may not receive credit for both 1540 and 1700. If both are taken, the last one taken counts. Prereq: Two years high school algebra or one year algebra and one year geometry.

1550-60 Introductory Calculus—General Mathematics (4, 4, 1550—Equations of straight lines, conics, derivatives of algebraic functions, applications of derivatives; review of trigonometry; rates, antiderivatives, integration of algebraic functions, applications of integration. Prereq: 1540 or equivalent. 1560—Determinants, matrices, systems of linear equations and inequalities, Cramer's Rule, linear programming, trigonometric functions, applications, arithmetic and geometric series, simple and compound interest, annuities, exponential and logarithmic functions, law of growth, applications. Prereq: 1550 or equivalent.

Note: Students with an adequate high school background in algebra are advised to begin the 1540-50-60 sequence with 1550.

1630 Analytic Geometry (5) Straight line; plane curves; polar coordinates; parametric equations, line and plane in three dimensions; review of trigonometry. This course will prepare students for 2710-20-30 and cannot be taken for credit in addition to 1810-20. Prereq: Two years high school algebra and one semester of trigonometry or equivalent.

1700 Precalculus Mathematics (4) Function concept and use of functional notation. Properties of functions and their graphs. Polynomial, exponen- tial, logarithmic, and circular functions. Prereq: 1550-60 or equivalent. NOTE: students may not receive credit for both 1540 and 1700. If both are taken, the last one taken counts. Prereq: Two years high school algebra and the equivalent of one-half year of trigonometry or taking Mathematics 0150 concurrently.
1840-50-60 Single Variable Calculus (4, 4, 4) Functions, graphs, slope of a curve, limit, definition of derivative, limit, derivatives of algebraic functions, implicit differentiation, chain rule, differentials, continuity, applications: derivatives of exponential, logarithmic, exponential, and trigonometric functions and their derivatives. Techniques of integration, plane analytic, polar and polar coordinates. Must be taken in sequence. Prereq: Two years of high school algebra, one year geometry, and one semester of trigonometry or equivalent.

1841-51 Calculus for Biological Sciences (4, 4, 4) Course is designed for students majoring in an area of the life sciences. Differentiation and integration of logarithmic, exponential, trigonometric, and algebraic functions; partial differentiation, elementary differential equations, infinite series, probability. Emphasis upon applications of calculus problems in the life sciences. Must be taken in sequence. Prereq: Two years of high school algebra, one year geometry, and one semester of trigonometry or equivalent.

1842-52-62 Single Variable Calculus with Computer Support (5, 5, 5) Same coverage of calculus as 1840-55-60 supplemented with computer. Elementary theory and not all problems from following areas: computer evaluation of functions; limit; application of limits; integration via partial differentiation; approximate solution of equations by bisection, secant methods and Newton's method; reduction of complex to a simpler form by computer. Prerequisite: for numerical integration; Euler's method for initial value problems. Prereq: Two years of high school algebra, one year geometry, and one semester of trigonometry or equivalent.

1848-58-68 Honors: Single Variable Calculus (4, 4, 4) Honors course for students who have had trigonometry. Course is selected on basis of placement test scores and high school record. Students receiving a grade below B in 1848 will complete the year's work in calculus by taking 1850-60. Students of 1858 will be made available for students who perform well in 1840. Must be taken in sequence.

1900 Selected Topics (4) Applications of definite integrals; approximate integration; simultaneous linear equations; matrix inversion; elementary linear programming, infinite series; descriptive statistics and finite probability. This course is especially recommended for architecture majors. Prereq: 1810-20. A student wishing to copy this course for the calculus (4, 4, 4) course 1901 should consult the mathematics department.


2020 Great Ideas in Mathematics (4) Course for non-science majors designed to expose the student to ideas which have had a significant impact on direction of mathematical thought in particular and on civilization in general. Selected topics may include: the Greeks and mathematics as logical reasoning; irrational numbers; Descartes and coordinates; logarithms and Leibniz and the mathematics of motion; non-Euclidean geometry; the infinite. Prereq: High school algebra and geometry and an interest in the history of mathematics.

2119-20-30 Structure of the Number System (3, 3, 3) Whole numbers, integers, rational, and irrational numbers; exponential notation; order of operations; whole numbers, integers, and rational and irrational numbers. Euclidean geometry. Must be taken in sequence. Prereq: 1 year high school algebra and geometry. Preparatory courses and study of elementary mathematics, College of Education, or consent of instructor.

2412-22 Finite Mathematics (4, 4) Logic and sets, combinatorics and probability, vectors and matrices, elementary optimization and game theory, applications: simple problems in the behavioral and/or managerial sciences. Prereq: Two years of high school algebra or one year of algebra and one year geometry or one year trigonometry or equivalent. Prerequisite: Two years of high school algebra or one year geometry, and one semester of trigonometry or equivalent.

2512 Calculus Refresher (4) Functions, graphs, limits, derivatives, mean value theorem, integration and properties of the integral. For students who have completed a refresher course in differential and integral calculus. Prereq: 1130 or 1560 or equivalent and consent of instructor.

2540-50-60 Calculus (4, 4, 4) Calculus sequence for students who have completed 1560 or students who have had a refresher course in integral calculus in high school. Definition of a derivative, derivative of algebraic functions, limit rule, differentials, continuity; applications of derivatives; Rolle's Theorem, the Mean Value Theorem, maxima and minima; integral applications, definite integral and applications, Fundamental Theorem of integral calculus. Derivatives and integrals of transcendental functions, methods of integration, parametric equations, vectors, differentiation of vectors, scalar and vector products, equations of lines and planes, surfaces. Partial differentiation, directional derivatives, the chain rule, the total differential, maxima and minima. Integration of polar coodinates, spherical coordinates, series, tests for convergence, power series. Must be taken in sequence. Prereq: Math 1560 or at least one semester of high school calculus.

2610 Introduction to Differential Equations (2) Variables separable, homogeneous, exact, and linear first order equations. Second order linear differential equations with constant coefficients. Prereq: 1830.

2710-20-30 Calculus (5, 5, 5) For students who have had a year of calculus in analytic geometry. 2710—Functions, graphs, limits, derivatives of algebraic functions, applications, antiderivatives. 2720—Definite integral, applications of integrals, elementary functions, polar and transcendental functions, methods of integration, hyperbolic functions, vectors in 2-space. 2730—Elementary linear algebra and vector applications, partial differentiation, multiple integrals, series. Must be taken in sequence. Prereq: 1630 or equivalent.

2840-50-60 Multivariable Calculus and Matrix Algebra (4, 4, 4) 2840-50—Differential equations, vectors and parametric equations, solid analytic geometry, dot and cross product of vectors, space curves. Functions of several variables, functional derivatives, partial derivatives, gradient, curves and surfaces, multiple integrals, cylindrical and spherical coordinates, convergence tests, power series, Taylor series, indeterminate forms, absolute convergence. Prereq: Math 1860. Must be taken in sequence. 2860—Vectors, matrices, systems of equations, determinants, inverses of matrices, eigenvalues and eigenvectors. A student cannot receive credit for both 2860 and 4050. Prereq: 2850 or 2560 or consent of instructor.

2848-58-68 Honors: Multivariable Calculus and Matrix Algebra (4, 4, 4) Honors course for selected students admitted on basis of performance in 1848-58-68 or 1840-50-60. Prerequisites. If specific courses are listed below as prerequisites, equivalent preparation satisfactory to the instructor will be accepted. Graduate standing is prerequisite to enrollment in courses numbered above 6000. Undergraduates working towards a major in mathematics with a view to taking advanced work are strongly recommended to include 4510-20-30 and 4150-60-70 during the junior or senior year.

3000 Elementary Quantitative Methods (4) Elementary course designed to prepare students in social and life sciences taking courses in the behavioral and/or managerial sciences. Treats basic topics in probability and statistics without calculus. Course cannot be used to meet requirements for majors or minors in mathematics, nor is it available for credit to students in College of Business Administration.

3040 The Ideas of Calculus (4) Study of basic ideas and theory behind differential and integral calculus designed for students whose course of study does not involve the use of calculus. Emphasis on the historical framework in which calculus was discovered and its influence on subsequent development of science. Prereq: Two years of high school algebra. May not be taken for credit by any student who has previously received credit for any college calculus course.

3050 Elementary Probability and Statistical Analysis (3) Combinatorial problems; sample spaces, events; statistical independence; axioms of probability; random variables and their distributions; simple random processes. Prereq: 1550-60 or equivalent.

3060 Elementary Statistical Analysis (3) Elementary probability distributions; sampling theory; confidence intervals and statistical tests of hypotheses; least squares and linear regression. Prereq: 3050 or consent of instructor.

3090 Polynomials and Rings (3) Elementary introduction to polynomials, linear equations, determinants, fundamental theorems of algebra and matrices. Prereq: Linear Algebra.

3110 Real Number System (3) Laws of arithmetic; rational and irrational numbers; fields. Primarily for students in the College of Education. Prereq: 1 year of college mathematics.

3115 Introduction to Numerical Algorithms and Programming (3) (Same as Computer Science 3150.)

3155 Introduction to Numerical Algorithms (3) (Same as Computer Science 3155.)

3220 History of Mathematics (3) Survey of development of various branches of mathematics from ancient to modern times. Not acceptable for satisfying requirements for a major or minor in mathematics. Prereq: Math 1860 or 2560 or equivalent.

3310 Advanced Euclidean Geometry (3) Triangles and circles, trigonometric concepts. Prereq: 1 year of college mathematics.

3320 Non-Euclidean Geometry (3) Foundations of geometry. Elliptic and hyperbolic plane geometry. Prereq: 1 year of college mathematics.

3330 Transformational Geometry (3) Fundamental transformations in Euclidean geometry. Classification of isometries and similarities; symmetry of a polygon; invariances. Prereq: One year of college mathematics.

3510 Intermediate Analysis (3) Primarily for students in secondary mathematics education. Course covers elementary calculus from advanced viewpoint with emphasis on proofs of basic theorems. Topics covered include limits of sequences and functions, continuous functions, derivatives, definite integral, and fundamental theorem of integral calculus. Prereq: 1550-60 or 1950.

3715 Discrete Structures (3) (Same as Computer Science 3715.)


3780-90 Introduction to Combinatorial Theory (3, 3) Introduction to problems of arrangement and selection within discrete systems. Enumeration by recurrence relations and generating functions,
graph theory, finite geometries and finite fields, partitions, block design. Prereq: Math 2860 or consent of instructor.

3810 How to Prove It (3) Course is designed to improve understanding of nature and methods of mathematical proof by means of practice and participation in constructing a proof. Variable content but will include certain standard topics such as elementary set theory, relations and functions, and mathematical induction. Coreqs: 2850 or 2950.

3920-30 Topology of Euclidean Spaces (4, 4) Topics will include topology of line and plane, separation properties, compactness, connectedness, completeness, continuous functions, homeomorphisms, continuity, and topological invariants. Must be taken in sequence. Prereq: 2860 and 3810, or 2860 and 3820.

3990 Studies in Mathematics (1-4) Credit determined at registration. May be repeated for credit with consent of department; maximum 9 hrs credit. Prereq: Consent of instructor.

4035-45 Introduction to Numerical Linear Algebra (3, 3) (Same as Computer Science 4035-45.)

4050 Matrix Algebra and Applications (3) Matrices, elementary operations, systems of linear equations, vector spaces, determinants, eigenvalues and eigenvectors. A student cannot receive credit for both 2850 and 4050. Prereq: 2850 or 2950 or consent of instructor.

4060-70 Matrix Algebra and Applications (3, 3) Eigenvalues and eigenvectors, singular values and singular vectors, similarity of linear transformations, quadratic forms, vector and matrix norms, Jordan canonical form, and related topics. Prereq: 2860 or 4050.

4101 Foreign Study (1-18) See page 187.

4102 Off-Campus Study (1-16) See page 187.

4120 Linear Algebra (3) Abstract vector spaces, linear transformations, and their matrices, systems of linear equations and determinants, inner products, and diagonalization of symmetric matrices. Prereq: 2860 or 4050.

4150-60 Abstract Algebra (3, 3) Equivalence relations and partitions, properties of integers, elementary theory of groups and rings, polynomial rings, integral domains, divisibility, unique factorization of domains, fields. Must be taken in sequence. Prereq: 2860 or 4050.

4225-35 Introduction to Numerical Analysis (3, 3) Interpolation and approximation, numerical differentiation and integration, roots of equations, systems of linear equations. Prereq: 3150 or 3155. (Same as Computer Science 4225-35.)

4250 Elementary Complex Variables (3) Complex numbers, Cauchy's theorem, Cauchy's integral, Cauchy's integral formula, Taylor and Laurent series, residues and their applications. Prereq: 2860; one 4000-level mathematics course recommended.

4510-30 Introduction to Analysis (3, 3, 3) Real number system, functions, sequences, limits, continuity, uniform continuity, differentiation, integration. Functions of several variables, implicit function theory. Multiple integrals, infinite series, sequences and series of functions, uniform convergence, Taylor series. Should be taken in sequence. Prereq: 2860.

4540 Infinite Series and Functions of Several Variables (3) General theory, power series and Taylor's formula, uniform convergence. Partial differentiation and maxima and minima for functions of several variables. Lagrange multipliers. Prereq: 2860.

4550 Partial Differential Equations (3) Fourier series; Fourier integral; orthogonal functions; the vibrating string; solution by series; heat flow, Bessel functions. Prereq: 2860; 4610 or 4710 recommended.

4610-20-30 Ordinary Differential Equations (3, 3, 3) 4610—Linear first and second order equations. Power series solutions and Legendre polynomials. Regular singular points, Frobenius method, and Bessel equations. Systems of linear differential equations and the matrix exponential. 4620—Numerical methods for ordinary differential equations. Numerical methods for stiff problems. 4630—Special topics which may include existence and uniqueness, oscillation theory, Liapunov stability, singular perturbations, and asymptotic solutions. Prereq: 4610; 2860 or 4050; 4620; 4050 or 2860; and 3150 or 3155; 4630: 4610 or consent of instructor.

4640 Calculus of Finite Differences (3) Real difference equations and their application to problems in engineering and physics. Prereq. or coreq: 4610.

4650-60-70 Introduction to Mathematical Statistics (3, 3, 3) Introduction to probability; discrete and continuous distributions; correlation, regression, and statistical independence; foundations of sampling theory; significance tests. Must be taken in sequence. Prereq: 2860.

4710 Vector Analysis (3) Fundamental operations, base vectors, dot and cross products, directional derivatives, divergence and curl of vector fields, line and surface integrals, divergence theorem of Gauss, and Stokes theorem. Prereq: 2860.

4750-60-70 Introduction to Probability Theory (3, 3, 3) 4750—Elementary combinatorial analysis, probabilities in discrete sample spaces, conditional probability and stochastic independence, binomial, Poisson, hypergeometric and normal distributions. 4760—Expectation, conditional expectation and characteristic function of random variables, infinite sequences of random variables, the weak and strong laws of large numbers, and the central limit theorem. 4770—Markov chains: limiting probabilities; steady-state and stationary distributions; Stochastic processes; Poisson, birth and death processes; Kolmogorov equations. Prereq: Math 2840-50-60.

4810 Elementary Number Theory (3) Divisibility; congruences; theorems of Fermat and Wilson, primitive roots, indices, quadratic reciprocity. Prereq: 2860 or consent of instructor.

4910 Senior Seminar (1-2) Credit determined at registration. May be repeated for credit with consent of department; student may offer a maximum of 4 hrs credit from 4910 and 4920 combined. Prereq: Senior standing.

4920 Senior Seminar (1-2) Credit determined at registration. May be repeated for credit with consent of department; student may offer a maximum of 4 hrs credit from 4910 and 4920 combined. Prereq: Senior standing.

4980 Readings in Mathematics (1-3) Open to superior students with consent of department head. Independent study with faculty guidance. May be repeated. Maximum 9 hrs credit.

4990 Studies in Mathematics (1-4) Credit determined at registration. May be repeated for credit with consent of department; maximum 9 hrs credit. Prereq: Recommendation of member of mathematics professional staff and consent of department.

GRADUATE
The Department of Mathematics offers four advanced degrees. In order to become a candidate for any one of these the student must first be admitted to the Graduate School. The master of Arts and Master of Science degrees presuppose a bachelor's degree with a major in mathematics. The Master of Mathematics degree is intended primarily for teachers of high school mathematics. Applicants for admission to this program must take the Graduate Record Examination and must have either (a) certification for teaching secondary mathematics, or (b) successful elementary or secondary school teaching experience. The Doctor of Philosophy degree program presupposes a Bachelor's or Master's degree with a strong major in mathematics. This program is intended to train prospective mathematicians for a career of teaching and scholarly work in colleges and universities or work in industry. Further details on all of these programs are in the Graduate Catalog.

5000 Thesis

5002 Non-Thesis Graduation Completion (3-15)

5011 Elementary Functions from an Advanced Standpoint for Teachers (3-4)

5012 Differential Geometry for Teachers (3-4)

5013 Geometry for Teachers (3-4)

5014 Analysis for Teachers (3-4)

5015 Probability and Statistical Inference for Teachers (3-4)

5050-60-70 Mathematical Logic (3, 3, 3)

5110-20-30 Theory of Functions of Complex Variables (3, 3, 3)

5150-60-70 Foundations of Analysis (3, 3, 3)

5210-20-30 Theory of Functions of a Real Variable (3, 3, 3)

5240-50-60 Linear Analysis (3, 3, 3)

5270 Stability Theory and Liapunov's Direct Method (3)

5310-20-30 Introduction to Higher Geometry (3, 3, 3)

5340-50-60 Numerical Treatment of Algebraic and Transcendental Equations (3, 3, 3)

5430 Integral Equations (3)

5440 Calculus of Variations (3)

5450-60-70 Introduction to Partial Differential Equations (3, 3, 3)

5455 Finite Difference Methods for Partial Differential Equations (3, 3)

5465 Mathematical Aspects of the Finite Element Method (3)

5480-90 Mathematical Programming (3, 3)

5510-20-30 Introduction to Higher Algebra (3, 3, 3)

5640 Galois Theory (3)

5650-70-80 Theory of Matrices in Numerical Analysis (3, 3, 3)

5590 Theory of Rings (3)

5610-20-30 Mathematical Methods in Physics (3, 3, 3)

5640 Numerical Methods in Physics (3)

5655-65-75 Numerical Mathematics (3, 3, 3)

5710-20-30 Tensor Analysis (3, 3, 3)

5750-60-70 Advanced Mathematical Statistics (3, 3, 3)

5810-20-30 Number Theory (3, 3, 3)

5910-20-30 Elementary Topology (3, 3, 3)

5990 Graduate Reading in Mathematics (1-3)

5991 Seminar Analysis (1-3)

5992 Seminar Topology (1-3)

5993 Seminar Algebra (1-3)

5994 Seminar Foundations (1-3)

5995 Seminar Applied Mathematics (1-3)
Medical Studies
See Cultural Studies.

Microbiology

Professors: A. Brown (Head), Ph.D. Chicago; R.W. Beck, Ph.D. Wisconsin; D.F. Holtman (Emeritus), Ph.D. Ohio State; A.J. Girardi, Ph.D. Pennsylvania; J.C. Mundi, Ph.D. Michigan State; J.M. Woodward, Ph.D. Kansas; C.J. Wust, Ph.D. Indiana.

Associate Professors: J.M. Becker, Ph.D. Cincinnati; T.C. Montle, Ph.D. Maryland; W.S. Riggsby, Ph.D. Yale; B.T. Rouse, Ph.D. Guelph (Canada).

Assistant Professors: D.A. Bemis, Ph.D. Cornell; D.A. Brian, D.V.M., Ph.D. Michigan State; R.V. Miller, Ph.D. Illinois; G.S. Sayler, Ph.D. Idaho.

UNDERGRADUATE
Major: Consists of Biology 3110, 3120, Biochemistry 4110, 4120, Microbiology 3510-19, 3520-29, 3530-39, and 12 hours of upper-division courses in microbiology of which 2 hours must be in a 4000-level laboratory course. Prerequisites to this major are Biology 1210-20-30 or Honors Zoology 1118-28, and Chemistry 1110-20-30. Corequisites are Chemistry 3211-21-31, 3219-29-39, and Mathematics 1841-51 or 1540-50-60. It is recommended that students who intend to do postgraduate work take Mathematics 1841-51. It is further recommended that such students take Physics 2210-20-30.

Microbiology (684)
2110 Microbiology for Student Nurses (4) Introductory course only available to student nurses in diploma program of hospitals affiliated with the University of Tennessee. Microbiological principles as they apply to nursing care of the patient, epidemiology of infection, and principles of immunity and allergy. 3 hrs and 1 lab.
2910 General Microbiology (3) General properties of bacteria, viruses, and fungi including study of pathogenesis, immunity, and applied bacteriology. The combination of 2910-2911 or 2910-2919 meets the needs of programs that require a one-quarter course in microbiology. Coreq: 2911 or 2919.

2911 Microbes in Action (1) Discussions, demonstrations, and films relating to the subject matter of 2910. Students do not receive credit for 2911 if 2919 has been taken. Prereq or coreq: 2910.
2919 Laboratory in General Microbiology (2) Laboratory exercises designed to accompany 2910. Open only to students enrolled in the College of Nursing. Prereq: preclinical year of nursing. Others by consent of instructor. Students do not receive credit for 2919 if 2911 has been taken. Prereq or coreq: 2910.
3510 Introduction to Microbiology I: Physiology, Genetics, and Ecology (4) Structure and behavior of prokaryotic and eukaryotic microorganisms: physiology and genetics of bacteria and viruses. Place of microorganisms in the environment. Prereq: Biology 3110; 3120.
3519-29-39 Introduction to Microbiology Laboratory I, II, III (2, 1, 1) Laboratory exercises designed to accompany 3510-20-30 which are coreq for 3519-29-39 respectively. 3519 is prereq to 3539.
3520 Introduction to Microbiology II: Immunology (2) Basic principles of inflammation and immunity, immunoglobulin structure, complement, hypersensitivity, and cell-mediated immunity. Prereq: Biology 3110. (Same as Zoology 3520.)
3530 Introduction to Microbiology III: Pathogenic Microbiology (2) Structure-constant microbiograms including bacteria, fungi, and viruses. Prereq: 3510.
3810 Food Bacteriology (4) Standard methods for examination, cultivation, and identification of bacteria associated with food fermentation and food spoilage. Prereq: 2910 and Chemistry 2210 or 3211. 2 hrs and 2 labs.
3820 Yeasts and molds (4) Morphology, taxonomy, and physiology of yeasts, actinomycetes, and fungi of industrial importance. Prereq: 2910 and Chemistry 2210 or 3211, or consent of instructor. 2 hrs and 2 labs.
4010 Biology of Soil Microorganisms (4) (Same as Agricultural Biology 4010.)
4101 Foreign Study (1-16) See page 187. No more than 3 hrs may be applied toward a major or minor in microbiology. May be repeated to a total of 16 hrs.
4102 Off-Campus Study (1-16) See page 187. No more than 3 hrs may be applied toward a major or minor in microbiology. May be repeated to a total of 16 hrs.
4103 Independent Study (1-16) See page 187. No more than 3 hrs may be applied toward a major or minor in microbiology. May be repeated to a total of 16 hrs.
4110 Physiology of Bacteria (2) Modern concepts of bacterial physiology and metabolism including cell structure and function. Prereq: 3510 and 12 hrs of organic chemistry.
4119 Bacterial Physiology Laboratory (2) Prereq: 3519; coreq: 4110.
4130 Taxonomy of Bacteria (3) Bacterial classification. Prereq: 3510-19. 3 hrs.
4140 Molecular Genetics of Prokaryotes (2) Transmission and expression of genetic information at the molecular level. Emphasis is on bacterial and viral systems, but unique features of eukaryotic genetic systems are included. Prereq: 3510 or consent of instructor.
4150 Microbial Ecology (3) Application of ecological principles to study of microbial communities. Emphasis on functional role of microorganisms in natural environments. Prereq: 3510, one year of organic chemistry, Biology 3130, or consent of instructor.
4270 Advanced Immunology (2) Chemistry of antigens and haptens, theories of antibody formation, cell cooperation in immune mechanisms, transplantation, abnormalities of the immune system, and autoimmune diseases. Prereq: 3520 or consent of instructor. (Same as Zoology 4270.)
4279 Advanced Immunology Laboratory (2) Laboratory exercises designed to accompany 4270. Prereq or coreq: 4270.
4289 Serological Methods (2) Practical procedures in serology and clinical immunology. Prereq or coreq: 4270.
4320 Pathogenic Bacteriology (2) Disease-producing microorganisms including bacteria, rickettsia, and chlamydia. Prereq: 3530.
4329 Pathogenic Bacteriology Laboratory (2) Techniques for isolation, cultivation, and identification of pathogenic bacteria. Prereq: 3530; coreq: 4320.
4330 Medical Mycology (2) Disease causing fungi; cytology, physiology, pathogenesis and immunity; emphasis on methodology of isolation and identification. Prereq: 3530 and 3820.
4339 Medical Mycology Laboratory (2) Prereq: 3519; coreq: 4330.
4420 Molecular Virology (2) Molecular aspects of the replication, assembly, and expression of viruses, with emphasis on bacteriophage. Prereq: 3510.
4430 Medical Virology (2) General virology with emphasis on medical aspects. Prereq: 3530.
4439 Medical Virology Laboratory (2) Laboratory procedures for isolation, handling and culturing of animal viruses. Prereq: 3530; coreq: 4430.
4909 Laboratory Problems in Microbiology (2-6) Involvement in research program of a faculty member through independent study projects. Consent of individual faculty member required. Not more than 3 hrs may be used towards a major in microbiology. May be repeated. Maximum 12 hrs credit.
4910 Seminar in Microbiology (1) May not be applied toward a major in microbiology. Prereq: Senior standing, consent of instructor. 5/NC.
GRADUATE
5000 Thesis
5002 Non-Thesis Graduation Completion (3-15)
5011-12-13-14-15-16 Mini-course in Microbiology (1, 1, 1, 1, 1, 1)
5130 Topics in Taxonomy (3)
5310 Selected Topics in Microbiological Research (3)
5360 Topics in Immunology and Immunchemistry (4)
5400 Seminar in Microbial Physiology (1)
5410 Seminar in Immunology (1)
5441-42-43-44-45-46 Clinical Microbiology (6, 6, 6, 6, 6, 6)
5450 Seminar in Filamentous Fungi (1)
5510-20-30 Research Problems (3, 3, 3)
5570 Microbial Physiology (3)
5730 Pathogenesis of Infectious Disease (3)
5750 The Oncogenic Viruses (3)
5760 The Bacterial Viruses (3)
5819 Molecular Genetics Laboratory (3)
5820 Microbiology of Foods (3)
5829 Experimental Microbial Ecology (3)
5830 Seminar in History of Microbiology (1)
5850 Seminar in History of Microbiology (1)
5910-20-30 General Seminar (1, 1, 1)
5940 Seminar in Microbial Genetics (1)
5970 Seminar in Virology (1)
6000 Doctoral Research and Dissertation
6410 Concepts of Immunity (3)
6720 Advanced Topics in Microbial Physiology (3)
6780 Advanced Topics in Microbial Pathogenesis (3)
6740 Advances in Virology (3)
6760 Advanced Topics in Microbial Genetics (3)
6810-20-30 Problem Seminar (1, 1, 1)

Medical Technology (669)

Courses in this major are open only to qualified students who have completed the first three years of the Science-Medical Technology Curriculum, described on page 182, and who have been approved by the Pre-Medical Advisory Committee.

4011-12 Microbiology (6, 6) Laboratory work in bacteriology, mycology, and parasitology. Emphasis on pathogenic bacteria and fungi, their sources, methods of culture, techniques of identification, and evaluation of antibiotic sensitivity. Gross and qualitative chemical examination of feces and methods of identification of protozoa and helminth parasites of man.

4021-22 Clinical Chemistry (6, 6) Clinical aspects of biochemistry, including overview of principles and instrumentation with emphasis on practical laboratory applications of analytical procedures, specimen collection and handling, significance of results, and quality assurance. Includes blood gas analysis, including radioimmunoassay, and analysis of blood and other body fluids for enzymes, hormones, and other constituents of clinical interest, utilizing both automated and manual techniques.

4031-32 Hematology and Clinical Microscropy (6, 6) Principles, theories, techniques, and instrumentation related to the qualitative and quantitative evaluation of cellular elements of blood and other body fluids; factors of hemostasis, quantitative chemical analysis of urine and renal function studies. Emphasis is placed on microscopic identification of cells and the significance and correlation of laboratory data.

4041-42 Immunohematology (4, 4) Theory and practice in blood bank operation. Erythrocyte antigens and their normal and abnormal immunology. Serologic tests used in determining blood groups, in evaluating blood typing, cross-matching, and antibody detection, and preparation of blood components for transfusion. Safety control methods and standards to ensure an efficient blood bank are important part of course material.

4043 Clinical Serology and Immunology (2) Performance of blood bank tests using wide range of clinical serological and immunological procedures with emphasis on principles and clinical correlation. Formal lecture series included.

4050 Nuclear Medicine (1) Physical characteristics, detection and use of short half-life radioactive materials. Emphasis placed on in vivo diagnostic medical uses and radiation safety.

4060 Histology (1) Overview of techniques of preservation and staining for microscopic evaluation and role of histopathology in clinical diagnosis.

4071 Orientation and Basic Techniques (1) Designed to facilitate transfer of students from campus to hospital community and clinical laboratory. Introduction to medical terminology, ethics, and health team concept. Orientation to basic techniques. Methods of study include procedures for collection and handling of specimens, principles of operation of major laboratory instruments, review of quality assurance and introduction of quality control procedures. Portions of course extend over entire clinical year.

4072 Principles of Supervision and Education in Medical Technology (1) Consists of seminars in basic principles of management, supervision, and education in theories and methods. There will be comprehensive examination covering the entire course.

Music (698)


The Department of Music offers curricula leading to the Bachelor of Music degree which is designed to prepare students for graduate study and for professional positions, and the Bachelor of Arts degree with a major and minor in music, designed for those students whose interests are strong but essentially non-professional. Information regarding requirements for the B.M. degree may be found on page 183. The requirements for a major and minor are as follows:

**Major:**
(a) Concentration in Applied Music—consists of Music 2000, 2111-21, 2111-23-33, 2310-20-30-40, 27 hours in applied music at the 2000-3000-4000 levels (9 hours each), and junior and senior recitals. Prerequisites are Music 1111-21-31, 1113-23-33, and 3 quarters of study in applied music at the 1000 level.
(b) Concentration in Music History and Literature—consists of Music 2111-21, 2111-23-33, 2310-20-30-40, and 27 upper-division hours in music history and literature. Prerequisites are Music 1111-21-31, 1113-23-33, and 1340.

**Minor:**
(a) Concentration in Applied Music—consists of Music 2000, 2111-21-31, 2310-20-30-40 and 18 hours in applied music at the 2000-3000-4000 levels (6 hours each). Prerequisites are the same as those for the major.
(b) Concentration in Music History and Literature—consists of Music 2111-21-
3112 Instrumentation (3) Basic techniques in scoring for voices; brass, woodwind, and string choir; and percussion. Prereq: 2131 or 2138.

3113 Analysis I (3) Study and practice in analysis of structures of music from smallest structural units to large compound forms. Emphasis on macroanalytic techniques. Prereq: 2131 or 2138 or equivalent.

3114-24 Choral Arranging (3, 3, 3, 3) Analysis of scores and writing of arrangements for choirs. 3114—male and female chorus. 3124—mixed chorus. Prereq: 3112 or consent of instructor.

3122 Orchestration (3) Advanced techniques in instrumental writing with emphasis on scoring for the concert orchestra. Prereq: 3112 or consent of instructor.

3123 Analysis II (3) Continuation of Analysis I with emphasis on micro and linear analytic techniques. Prereq: 3113.

4100 Independent Study in Music Theory (1-3) May be repeated for credit. Prereq: Consent of instructor.

4101 Foreign Study (1-16) See page 187.


4112 Twentieth-Century Compositional Techniques (3) Styles and compositional devices from Debussy to present. Emphasis on scores, idiomatic writing. Prereq: 2131 or equivalent.

4113 Pedagogy of Music Theory (3) Techniques, methods and materials involved in college-level theory programs. Prereq: Consent of instructor.

4114 Stage Band Arranging (3) Analysis of scores and scoring for the stage band. Prereq: 3112 and consent of instructor.

4115 Variation (3) Study and application of variation procedures. Prereq: 3123 or equivalent.

4116 Set Structure in Musical Composition (3) Theory of sets and its application to analysis of music. Prereq: Consent of instructor.

4124 Band Arranging (3) Study and application of techniques employed in scoring for the marching and concert bands. Prereq: 3112 or equivalent.

4134 Band Transcription (3) Technique and application of transcribing keyboard and orchestra music to bands. Emphasis on editing and Reedering. Prereq: 3112 or equivalent.

4150 Survey of Music Theory (3) Theory of music with emphasis on harmonic practice of Baroque, Classic, and Romantic periods. Exercises in writing and analysis. Recommended as review course for graduate students. Prereq: Consent of instructor.

MUSICHISTORY AND LITERATURE

1210-20 Orientation in Music Appreciation (3, 3) 1210—Developing perceptive listening skills through study of materials of music, musical styles, and musical aesthetics. Illustrative examples selected from fourth through the twentieth centuries. 1220—Introduction to masterworks of music from 1600 to present. For non-music majors. Prereq: 1210 for 1220 or consent of instructor.

1340 Introduction to Music Literature (3) Acquaintance with basic terms of music and accepted masterworks through chronological approach. For music majors and minors only.

2310-20-30 40 History of Music (3, 3, 3, 3) 2310—to 1600. 2320—1600-1800. 2330—1800-1900. 2340—1900 to present. Requires musical background. Prereq: Consent of instructor.

3210 Orientation in Music: Germany from 1750 (3) Historical study of German composers and their music from death of Bach to present. Prereq: 1210 or consent of instructor.

3211 Orientation in Music: The Twentieth Century (3) Examination and study of serious, popular, folk, and ethnic music of the twentieth century. Prereq: 1210 or consent of instructor.

3212 Orientation in Music: Music for the Theatre (3) Survey of music of selected, representative dramatic music composed for Broadway stage, films, operaetta, and opera. Prereq: 1210 or consent of instructor.

3230 The Concerto (3) Survey of literature from seventeenth century to present.

3240 The Symphony (3) Survey of symphonic literature from precursors of classical symphony to present.

3260 Chamber Music (3) Survey of chamber music from 1750 to present.


3340 Oratorio (3) Choral works other than those appropriate for use in church.

3350 Introduction to Afro-American Music (3) History of African music, blues, gospel music and Jazz with emphasis on black artists and their contribution.

4003-04-05 The Organ and Its Literature (3, 3, 3) The development of the organ and organ literature from the Middle Ages to the present; problems of style interpretation and performance. Analytic study of organ literature; organ design. Prereq or coreq: 2310-20-30-40 and consent of instructor.

4200 Independent Study in Music History and Literature (3) May be repeated for credit. Prereq: Consent of department head.

4205 Survey of Music History (3) History of music with emphasis on genres, style changes, and cultural forces. Covers the Western European tradition from 400-1900. Recommended as a review course for graduate students. Prereq: Consent of instructor.

4210 Music in the Romantic Period (3) Survey of music from Beethoven through post-Romantic influence.

4230 Contemporary Music: 1945 to Present (3) Survey of new and avant-garde music in Europe and America since World War II.

4241 American Music (3) American music from colonial times to present. Includes both folk and cultivated traditions. Prereq: 1210-20 or equivalent.

4260 Introduction to Ethnomusicology (3) Basic attitudes and techniques of ethnomusicology. Survey of music cultures of the Pacific, Near East, Asia and Africa.

4270 Evolution of Jazz (3) Study of origin, development and styles of jazz music and its exponents.


4290 Gregorian Chant (3) Chants of Latin rite. Masses and Offices examined as functional music as well as by type.

4310 History of Art Song (3) Survey of art song from fifteenth century to 1930.

4315 Wind Chamber Music (3) Study of wind chamber music from 18th through 20th century. Emphasis placed on style, instrumentation, rehearsal techniques, programming and musical significance, both historical and theoretical.
4340-50 Works of Bach (3, 3) Detailed examination of sonatas, chamber, keyboard, and orchestral works; cantatas, motets, Passions and oratorios. 4340-Instrumental works; 4350—vocal works.

APPLIED MUSIC
Applied study is classified as Principal or Secondary.

Students studying their principal (major) instrument register for credit appropriate to their program, 2-4 credit hours; students studying a secondary instrument register for 1 hour credit. Study at the principal level receives one hour of private instruction per week for a one-hour class lesson plus a half-hour private lesson. Determination of the mode of instruction rests with the department. Study at the secondary level receives one-half hour private instruction per week or its equivalent in class instruction. Applied music courses do not permit non-credit registration nor may students elect non-conventional grading.

Non-music students will be accepted at the secondary level if they meet audition requirements established by area faculty (piano, voice, violin, etc.) and instruction time is available.

Undergraduate students seeking entrance to applied music courses must be concurrently registered for no less than nine credit hours in academic courses. Graduate students must be concurrently registered for no less than six credit hours in academic courses. Exceptions to these requirements may be made with the approval of the department head if applied music registration is necessary to completion of degree requirements.

Advancement in applied music is measured by proficiency (Jury) examination. Students who do not meet proficiency requirements at any level may be required additional study at that level. Course level and credit hours will be determined by the applied faculty.

All students studying applied music at the principal level are required to register for Music 200 Solo Class. The requirements for this course are to attend scheduled recitals, concerts, master, repertoire, and solo classes and to perform at least once each quarter as partial fulfillment of applied music credit requirements.

Applied Music Fees: $20 per quarter for half-hour lesson (1 credit hour) $40 per quarter for hour lesson (2-4 credit hours)

Computer registration and applied music fee payment must be verified in the Department of Music office no later than the end of the second day of classes of the fall, winter, and spring quarters and the first day of the summer terms in order to be accepted for applied music study.

Applied music fees are not refundable after lessons have been scheduled.

1520-2520-3520-4520-5520 Saxophone (1-4) May be repeated for credit.
1525-2525-3525-4525-5525 horn (1-4) May be repeated for credit.
1530-2530-3530-4530 Trumpet (1-4) May be repeated for credit.
1535-2535-3535-4535-5535 Trombone (1-4) May be repeated for credit.
1540-2540-3540-4540-5540 Baritone (1-4) May be repeated for credit.
1545-2545-3545-4545-5545 Tuba (1-4) May be repeated for credit.
1550-2550-3550-4550-5550 Percussion (1-4) May be repeated for credit.
1555-2555-3555-4555-5555 Voice (1-4) May be repeated for credit.
1560-2560-3560-4560-5560 Violin (1-4) May be repeated for credit.
1565-2565-3565-4565-5565 Viola (1-4) May be repeated for credit.
1570-2570-3570-4570-5570 Cello (1-4) May be repeated for credit.
1575-2575-3575-4575-5575 String Bass (1-4) May be repeated for credit.
1580-2580-3580-4580-5580 Piano (1-4) May be repeated for credit.
1585-2585-3585-4585-5585 Harpsichord (1-4) May be repeated for credit.
1590-2590-3590-4590-5590 Organ (1-4) May be repeated for credit.
1595-2595-3595-4595-5595 Guitar (1-4) May be repeated for credit.
2599-3599-4599-5599 Composition (1-3, 1-3, 1-3) May be repeated for credit. Prereq: Consent of instructor.
3597-4597-5597 Composition with Electronic Media (1-3, 1-3, 1-3) May be repeated for credit. Prereq: 3199 and consent of instructor.

ENSEMBLES
All students studying applied music are required to perform in a major musical organization each quarter. String, woodwind, brass, and percussion students must be enrolled in an instrumental organization; voice students in a choral organization, opera workshop or opera theatre. A student’s preference for musical organization will be honored whenever possible, but factors considered in making the assignment include playing ability, specific needs of various organizations, and previous performance experience at the University.

3600-5600 Small Ensemble (1, 1) May be repeated for credit.
3601-5601 Woodwind Choir (1, 1) May be repeated for credit.
3602-5602 Brass Choir (1, 1) May be repeated for credit.
3604-5604 Jazz Ensemble (1, 1) May be repeated for credit.
3606-5606 Trombone Choir (1, 1) May be repeated for credit.
3607-5607 Tuba Ensemble (1, 1) May be repeated for credit.
3610-5610 Percussion Ensemble (1, 1) May be repeated for credit.
3612-5612 Baroque Ensemble (1, 1) May be repeated for credit.

3620-5620 UT Singers (1, 1) May be repeated for credit.
3630-5630 Chamber Singers (1, 1) May be repeated for credit.
3632-5632 Collegium (1, 1) May be repeated for credit.
3634-5634 Saxophone Choir (1, 1) May be repeated for credit.
3640-5640 Opera Theatre (1, 1) May be repeated for credit.
3642-5642 Opera Workshop (1, 1) May be repeated for credit.
3650-5650 Concert Band (1, 1) May be repeated for credit.
3652-5652 Campus Band (1, 1) May be repeated for credit.
3654-5654 Varsity Band (1, 1) May be repeated for credit.
3656-5656 Laboratory Band (1, 1) May be repeated for credit.
3657-5657 Marching Band (1, 1) May be repeated for credit.
3670-5670 Symphony Orchestra (1, 1) May be repeated for credit.
3680-5680 Concert Choir (1, 1) May be repeated for credit.
3682-5682 University Chorus (1, 1) May be repeated for credit.
3684-5684 Campus Chorus (1, 1) May be repeated for credit.
3686-5686 Men's Glee Club (1, 1) May be repeated for credit.
3687-5687 Women's Chorale (1, 1) May be repeated for credit.
3699-5699 Accompanying (1, 1) May be repeated for credit.

GRADUATE
The Department of Music offers the Master of Music degree in performance, composition, music theory, choral conducting, and Suzuki string techniques, and the Master of Arts degree in musicology and music theory. See the Graduate Catalog for admission and degree requirements.

5000 Thesis
5001 Choral Conducting Document (3)
5002 Non-Thesis Graduation Completion (3-15)
5010 Organ Literature Seminar (3)
5012-22-32 Pedagogy of Voice (2, 2, 2)
5020 Piano Literature Seminar (3)
5030 Choral Literature Seminar (3)
5040 Vocal Literature Seminar (3)
5050 Graduate Recital (3)
5051 Opera Performance (3)
5052 Vocal Chamber Music Performance (3)
5053 Choral Conducting Performance (3)
5054 Lecture-Recital (3)
5060 Seminar in Choral Performance (3)
5070 Opera Production (1-3)
5090 Special Topics in Performance (1-3)
5100 Independent Study in Music Theory (1-3)
5111 Advanced Harmony (3)
Organizational Psychology Program
See Graduate School.

Philosophy (745)

Professors:
J.W. Davis (Head), Ph.D. Emory; R.B. Edwards, Ph.D. Emory; R.D. Herrmann, Ph.D. Mainz (Germany); M.H. Moore (Emeritus), Ph.D. Chicago; D. Van de Vate, Ph.D. Yale.

Associate Professors:

Assistant Professors:
J.D. Bennett, Ph.D. Tulane; G.G. Brenkert, Ph.D. Michigan; S.M. Cohen, Ph.D. Northwestern; K.A. Emmett, Ph.D. Ohio State; H.P. Hamlin, Ph.D. Georgia; E.R. Jones III, Ph.D. Chicago; B.G. Latta, Ph.D. Yale; S.J. Reaven, Ph.D. California (Berkeley).

Instructor:
M.L. Osborne, M.A. Bryn Mawr.

Philosophy seeks to understand humans, the world, their relations. It involves (1) use of logical and scientific methods, (2) appreciation of all values, (3) history of ideas, (4) philosophical systems. Philosophy is an appropriate major for students wishing a broad education, and those preparing for careers as writers (whether journalistic or literary), lawyers, ministers, teachers, in various types of political and government service, and in non-technical positions in business and industry.

A major in philosophy implies a balanced program in the humanities, natural and social sciences. Graduate students should read French or German, preferably both; other ancient or modern languages are useful and necessary for some advanced work.

UNDERGRADUATE

Major: 36 hours in courses numbered 2000 and above. Majors should discuss their programs with a member of the philosophy faculty.

Minor: 24 hours in courses numbered 2000 and above. It is suggested that minors discuss their programs with a member of the philosophy faculty.

American Studies. See Cultural Studies.

Russian and East European Studies. See Cultural Studies.

1510 Introduction to Philosophy: Human Nature and Values (4)

1520 Introduction to Philosophy: Consciousness and Reality (4) May be taken before 1510.

1600 Topics in Philosophy (4) May be repeated once for credit.

2310 Elementary Ethics (4) Theories of ethical values.

2410 Art and Experience (4) Introduction to various understandings of art.

2510-20 Elementary Logic (4, 4) 2510—Traditional or modern deductive logic, informal fallacies, uses of language, definitions. (3810 is recommended as an introductory for students with mathematical aptitude.) 2520—Inductive reasoning, elements of scientific method and statistical inference.

3111 Ancient Western Philosophy (4)

3121 Medieval Philosophy (4)

3131 Seventeenth- and Eighteenth-Century Philosophy (4)

3141 Nineteenth- and Early Twentieth-Century Philosophy (4)

3151 Contemporary Philosophy (4) Survey of recent movements in philosophy.

3270 Russian Philosophical and Theological Thought (4) (Same as Russian 3270 and Religious Studies 3270.)

3311-12 American Philosophy (4, 4) 3311—Colonial to late nineteenth century; 3312—Late nineteenth century to present.

3315 American Ideals (4) Ideological variants in American scene.

3320 Philosophy of Law (4) Nature, sources, function of law.

3330 Philosophy of History (4) Speculative and critical aspects of philosophy of history.

3410 Philosophical Ideas in Literature (4) Philosophical assumptions and implications in major literary works.

3420 Philosophy of Literature (4) Study of the nature, function, value and epistemic principles of literary arts.

3430 Concepts of Woman (4) Examination of some of theoretical foundations of feminism and anti-feminism.

3440 Social Ethics (4) Ethical theory as related to politics, economics, education, law, religion and the family.

3510 Existentialism (4)

3550 Marxism as Philosophy (4)

3611 Religious and Philosophical Issues in Medical Ethics (4) (Same as Religious Studies 3611.)

3650 Philosophy and Religion in India (4) (Same as Religious Studies 3650.)

3660 Buddhist Philosophy and Religion (4) (Same as Religious Studies 3660.)

3671 Religion and Philosophy in China (4) (Same as Religious Studies 3671.)

3690 Philosophy of Religion (4) Analysis of basic issues of religion. (Same as Religious Studies 3690.)


3740-50 Conceptual History of Science (4, 4) 3740—The Scientific Revolution: historical evolution of thought in astronomy, mechanics, and philosophy of nature up to Newton. 3750—The development and decline of Newtonian science: historical evolution of thought on the nature of matter and of light, and on that of life. Prerequisite: Eight hrs. of physical science or consent of instructor.

3770 Introduction to Philosophy of Science (4) Standard topics in philosophy of science: scientific method, nature of laws and theories, problem of induction, explanation, measurement. No background in logic is presupposed.

3810 Introductory Symbolic Logic (4) Techniques for formal analysis of deductive reasoning (propositional logic and quantification theory).

3910 Contemporary Aesthetics (4) Philosophical discussion of contemporary art.

4000 Special Topics (4) A student- or instructor-initiated course, offered at the convenience of department. Subject matter to be determined by mutual consent of students and instructor with approval of department. Prerequisites to be determined by department. May be repeated for credit.

4101 Foreign Study (1-16) See page 187.

4102 Off-Campus Study (4-12) See page 187.

4103 Independent Study (4-12) See page 187.

4111-21 Modern Religious Philosophies (4, 4) (Same as Religious Studies 4111-21.)

4310 Intermediate Ethics (4) Topics in meta-ethics or ethics.

4370-71 Theoretical Issues in Medical Ethics (4, 4) 4370—Prerequisite: 3310 or 3611 or consent of instructor. 4371—Prerequisite: 4370 or consent of instructor. (Same as Religious Studies 4370-71.)

4410 Plato (4) Prerequisite: Eight hrs of philosophy or consent of instructor.

4420 Aristotle (4) Prerequisite: Eight hrs of philosophy or consent of instructor.

4490 Continental Rationalism (4) Prerequisite: Eight hrs of philosophy or consent of instructor.

4460 British Empiricism (4) Prerequisite: Eight hrs of philosophy or consent of instructor.

4470 Kant (4) Prerequisite: Eight hrs of philosophy or consent of instructor.

4480 Advanced Topics in Existentialism and Phenomenology (4) Prerequisite: Eight hrs of philosophy or consent of instructor.

4490 Process Philosophy (4) Prerequisite: Eight hrs of philosophy or consent of instructor.

4510 Intermediate Symbolic Logic (4) Axiomatic development of propositional calculus and first-order functional calculus. Prerequisite: 3610 or equivalent.

4511 Advanced Topics in Logic (4) Prerequisite: Consent of instructor. May be repeated for credit.

4610 Philosophical Analysis (4) Prerequisite: Eight hrs of philosophy or consent of instructor.

4620 Philosophy of Mind (4) Problems of mind and body in relation to consciousness and personal identity. Prerequisite: 8 hrs of philosophy or consent of instructor.

4630 Philosophy of Language (4) Prerequisite: Eight hrs of philosophy or consent of instructor.
4710 Philosophy of Natural Science (4) Consideration of standard topics pertinent to natural science including reduction of theories and teleological explanation. Familiarity with symbolic logic is recommended. Pre Req: 3770 or two years of natural science.

4720 Philosophy of Social Science (4) Examination of methods of inquiry and modes of explanation in social sciences. Pre Req: 3770 or two years of social science.

4810 Metaphysics (4) Pre Req: 8 hrs of philosophy or consent of instructor.

GRADUATE

5000 Thesis

5050 Symbolic Logic (4)

5080 Philosophy of Logic (4)

5110-20-30-40-50-60 Studies in History of European Philosophy (4, 4, 4, 4, 4, 4)

5250 Studies in the History of American Philosophy (4)

5310-20-30 Studies in Value and Normative Theories (4, 4, 4, 4)

5370 Topics in Medical Ethics (4)

5410 Philosophy of History (4)

5430 Philosophy and Literature (4)

5450 Problems of the Self (4)

5460 Philosophy of the Mind (4)

5510-20-30 Studies in Epistemology (4, 4, 4)

5550-60 Philosophy of Science (4, 4, 4)

5610 Recent Developments in Philosophy of Religion (4)

5710 Studies in Metaphysics (4)

5810 Social and Political Philosophy (4)

5910-20-30 Research (4, 4, 4)

5950 Clinical Practicum in Medical Ethics (4-12)

6000 Doctoral Research and Dissertation

6110-20-30 Seminars in History of European Philosophy (4, 4, 4)

6150-60 Seminars in History of American Philosophy (4, 4, 4)

6250 Seminar in Philosophy of Religion (4)

6310 Seminar in Axiology (4)

6370 Advanced Topics in Medical Ethics (4)

6510 Seminar in Epistemology (4)

6550 Seminar in Philosophy of Science (4)

6950 Advanced Residence in Medical Ethics (4-12)

Physical Sciences

Major: None offered.

Minor: Consists of the following courses: Physics 2210-20-30, Chemistry 2140-49, 3211-21-31, 3219-29-39, and six hours chosen from Biochemistry 4210-20-30, Chemistry 3410-20-30, 4140-50, 4910-20-30, or Physics 3410-20-30, 3610-20-30. Prerequisites to this minor are Mathematics 1840-50 and Chemistry 1110-20-30. The physical sciences minor is designed particularly for students majoring in one of the biological sciences and/or preparing for graduate studies in a biological science or medicine.

Physics and Astronomy


Assistant Professors: H.W. Crater, Ph.D. Yale; M.F. Fair, M.S. Michigan; M.W. Guidry, Ph.D. Tennessee; R.H. Kohl, Ph.D. Ohio State; R.S. Thoe, Ph.D. Connecticut.

Research Associate Professor: L. Adler, Ph.D. Tennessee.

Research Assistant Professor: D.L. McCorkle, Ph.D. Tennessee.

Lecturers: R.L. Becker, Ph.D. Yale; M.H. Garaendant.

*Alumnus Distinguished Service Professor.
**Visited.
*Alumnus Distinguished Professor.

Astronomy (150)

2110-20-30 Introductory Astronomy (4, 4, 4) Surveys astronomical data and theories. 2110-20-30 concentrates on the solar system. 2130 introduces stellar astronomy including binary and variable stars clusters and nebulae. It is recommended that the courses be taken in sequence. 4 hrs including demonstration lab.

2118-28-38 Honors: Introductory Astronomy (4, 4, 4) Observation and theories of matter and space in the universe. Planets, stars, and the interstellar medium. Must be taken in sequence. 3 hrs lecture-discussion; 2 hrs lab per week. Coreq: Math 1810-20-30 or equivalent.

4110-20-30 Astrophysics (3, 3, 3) Physics of stars and interstellar matter, planets and planetary matter; atmospheres, interiors, and evolution; nebulae, quasars, etc. Observational data and their determination. Current developments. Approach will be interdisciplinary. Acceptable for major credit. Prereq: Physics 2330 and consent of instructor.

Physics (773)

UNDERGRADUATE

The undergraduate program in physics is designed to give the student a wide background which will permit ready specialization in various areas such as nuclear physics, solid state physics, high energy physics, and miscellaneous physics, etc. Students planning to major in physics are urged to consult advisers in the Department of Physics prior to registration in freshman year with major selection of proper first course in physics.

Major: Physics 1318-28-38 and Mathematics 1840-50-60 are prerequisites to a major in physics which includes the following 3000 or 4000/Physics 2318-28-38, Mathematics 2840-50-60; Physics 3210-20; either Physics 3710-20-30 or 4110-20-30; 4210-20; and at least six hours from 3510-20-30, 3610-20, 4230-40, 4510-20-30, 4540-50, Physics 1310-20-30 or Basic Engineering 1310-20-30 may be substituted for Physics 1318-28-38 and Physics 2310-20-30 may be substituted for Physics 2318-28-38 as a graduation requirement. Transferring students from other schools or departments may substitute 2510 and 1330 for 1310-20-30 or 1318-28-38. A major in physics with a concentration in health physics includes Courses 2310-20 or 2318-28, 3210-20, 4210-20, 4710-20-30, and Mathematics 2840-50-60. It is suggested that students also take Chemistry 1110-20-30, 3211-21-31, 3219-29-39, and 12 hours of an approved biological science.

Minor: A minor in sciences consists of 24 hours of courses including 2318-28-38 and the remainder from physics courses numbered 3000 or 4000/Physics 2318-28-38, provisions in the major statement also apply to the minor.

An Engineering Physics Curriculum is also offered. The program is described on page 152 and listed in tabular form on page 131.

1210-20-30 Introductory Physics (4, 4, 4) General course for students whose major falls outside the physical sciences. Concepts of physics developed by observation of phenomena and logic rather than mathematics analysis. Specific areas covered in the first quarter are mechanics, heat and energy. In the second quarter wave motion, sound, electricity and magnetism, and light are discussed. In the third quarter the main emphasis is on modern physics. It is recommended that the courses be taken in sequence. 1210-20 represent a survey of classical physics and are recommended as an introduction to the discipline for liberal arts non-science majors.

1310-20-30 Fundamentals of Physics: Mechanics and Heat (4, 4, 4) First course in physics for engineers and liberal arts majors in mathematics and the physical sciences. Basic Engineering 1310-20-30 is equivalent for graduation purposes. Must be taken in sequence. Coreq: Mathematics 1840-50-60. 3 hrs lecture, 2 hrs lab.

1318-28-38 Honors: Fundamentals of Physics: Mechanics and Heat (4, 4, 4) Honors course designed for physics and engineering physics majors and for qualified students from other disciplines. Must be taken in sequence. Coreq: Mathematics 1840-50-60. 3 hrs lecture, 2 hrs lab.

1410-20-30 Nature of the Physical World (4, 4, 4) Introduces course to concepts and principles of physical sciences which scientists enable a student to establish a unified picture of the physical universe. In the first two terms the principles of mechanics,
electricity, and wave motion are developed and applied to such varied fields as solar systems, atomic and nuclear physics, radioactivity, radiation, and climate change in the atmosphere and in the earth's crust and to stellar and galactic phenomena. In the third term, the principles are applied in more detail to such topics as nuclear energy, cosmology, atmospheric and oceanic phenomena, drifting continents and space and society. May be out of sequence only with consent of instructor. 4 hrs including demonstration lab.

1450 Physics of Athletic Activity (4) Principles of physics, particularly mechanics and heat, are introduced. Discussion of these ideas will emphasize their role in physical activities, particularly sports-related. Course topics include statics, equilibrium, linear and angular motion, momentum, force work, and energy. 4 hrs lecture-demonstration.

1810 Physics of Music (4) Production, transmission, and perception of sound waves. Frequency, intensity, timbre. Basic acoustics of instruments and voice. 4 hrs lecture and demonstration.

2210-20-30 Elements of Physics (4, 4, 4) 2210—Mechanics, properties of fluids, heat. 2220—Electricity and magnetism, sound waves. 2230—Optics, atomic and nuclear physics, radiation protection. Basic physical principles are applied to medical, pre-clinical, pre-pharmacy, and pre-veterinary programs. Must be taken in sequence. Prereq: Math 1550-1560 or (Math 1850 or 1860 and prior honors courses). 3 hrs lecture and 3 hrs lab.

2240-50-60 Elements of Physics for Architects (4, 4, 4) 2240—Statics, dynamics, properties of fluids; cores: Math 1850 or 1950, 2220—Heat and thermodynamics, sound and wave motion, optics; cores: Math 1850 or 1860. 2260—Electricity and magnetism, statics and dynamic topics. Basic physical principles with applications particularly as applied in architecture. Limited to students in School of Architecture. May be taken in sequence. 3 hrs lecture. 3 hrs lab.

2310-20-30 Fundamentals of Physics: Electricity, Waves and Optics, Modern Physics (3, 3, 3) Required of all engineering students. 2310—Electricity. 2320—Waves and Optics. 2330—Modern Physics. Must be taken in sequence. Prereq: 2310-20 or Basic Engineering 1310-20-30, or Physics 2310; coreq: Math 2610, 2810-20. 3 hrs lecture, 2 hrs laboratory-recitation per week.

2318-28-38 Honors: Fundamental Physics: Electricity, Waves and Optics, Modern Physics (4, 4, 4) Honors course selected depending on departmental needs. Prereq: selected dept. methods course and consent of instructor. Prereq: Math 1310-20-30 and 1318, and Engineering 1310-20-30. 2318—Electricity and magnetism, statics and dynamics; cores: Math 2610, 2810-20, 3 hrs lecture; discussion, 2 hrs lab per week.

2510 Mechanics (5) Statics, kinematics, Newton's laws, momentum, energy, rotation. 4 hrs lecture; recitation, 3 hrs laboratory-problem sessions. Prereq: Mathematics 1840-50-60 or equivalent. 2510 satisfies prerequisite for all physics majors. Physics majors should also take Physics 1330 as a prerequisite to the major.

2320-50 Mechanics (3, 3, 3) 2320—Statics, kinematics, and dynamics of a particle; 2350—Statics, kinematics, and dynamics of systems or particles and rigid bodies; 2350—Lagrangian and Hamiltonian equations of motion; 2360—Lagrangian and Hamiltonian equations of motion. 4 hrs lecture. Prereq: 2320 and Math 2860.

2320 Heat and Thermodynamics (3) Concepts of temperature and heat; laws of thermodynamics; applications of laws to simple physical and chemical problems. Prereq: 2320 or more. 3 hrs lecture and 3 hrs lab.

2340-20-30 Concepts of Modern Physics (3, 3, 3) Modern ideas of atomic structure, nuclear changes, particles, and radiation. 4 hrs lecture for majors; General physics. Must be taken in sequence.

3510-20-30 Physical Measurements (3, 3, 3) Laboratory measurement of some physical quantities. Theory supplied where necessary. Prereq: 2310-20-30 or 2210-20-30, and calculus; 3510 for 3520 and 3530. 3 labs.

3610-20 Electronics (3, 3) Electronic components and circuit theory and laboratory. Prereq: 2310-20-30 or 2210-20-30 and calculus. 3 labs.

3630 Nuclear Electronics Laboratory (3) Elementary circuits of interest in nuclear instrumentation are designed and built, and their characteristics are analyzed as a function of various parameters. Prereq: 3610-20.

3640-50-60 Health Physics Practicum (3, 3, 3) Instrumentation; legal aspects and practice of applied health physics. Nucleonics keeping and report writing. For students in health physics cooperative program.

3710-20-30 Introduction to Atomic and Nuclear Physics (3, 3, 3) 3710—Atomic and nuclear physics. Prereq: Math 2860 and Physics 2320 for 3710; 2330 for 3710-320. 3890 Junior Seminar (1-3) Topic of current interest. May be repeated for credit with consent of department.


4140 Elementary Nuclear Physics (3) General principles: nuclei, two-problem solving; record keeping and report writing. For students in health physics cooperative program.

4160 Physical Acoustics (4) Considerations fundamental to detailed investigation of any branch of acoustics; propagation of acoustic waves in the infrasonic, the audible, the ultrasonic, and the hyper-audible ranges of frequencies. 3 hrs and 1 lab. Prereq: 3210-20-30.

4220-20-50 Electricity and Magnetism (3, 3, 3) Intermediate level electrostatics; steady and alter- nating current; magnetic field; Maxwell's equations; radiation of electromagnetic waves; reflection and refraction; electromotive fields of moving charges. Must be taken in se- quence. Prereq: 2320 or 2220 and Math 2830.

4230-40 Modern Optics (4, 4) 4230—Geometrical Optics: Reflection and transmission of light at a dielectric interface; paraxial theory of interfaces, lenses, and mirrors; thick lenses, less systems, ray tracing; polarization; imagery; laser light. 4240—Physical Optics: Mathematics of wave mo- tion, superposition of waves; interference; Fraunhofer and Fresnel diffraction; Fourier optics; holography. Prereq: 4210 or consent of instructor. 3 hrs lecture and 3 hrs lab.

4510-20-30 Atomic Physics Laboratory (3, 3, 3) Ex- periments: fundamental particle properties, photoelectricity, conduction of electricity through gases, atomic and molecular spectroscopy, X-ray. Prereq or coreq: 3710-20-30. 3 labs.

4540-50 Experimental Nuclear and Radiation Physics (4, 4) Interaction of charged particles and electromagnetic radiation with matter, theory and characteristics of various effects of counting, nuclear properties. Experiments illustrate recent techniques for investigating the nuclei and nuclear radiation. 1 hr lecture, 4 hrs lab. Prereq: 2330.

4580 Principles of Non-Destructive Testing (3) De- tection and characterization of discontinuities in materials by non-destructive physical methods. Ultrasonic, electromagnetic, holographic and penetrating radiation techniques are discussed. May be taken 210-20 or consent of instruc- tor. (Same as Engineering Science and Mechanics 4580.)


4710-20-30 Introduction to Health Physics (3, 3, 3) Radiactivity, interaction of electromagnetic radia- tion with matter, radiation quantities and units, point kernel and extended sources, X-rays and gamma rays, neutron activation, interaction of charged particles with matter, stopping power, range-energy relations, counting statistics, shielding, dosimetry, waste disposal, criticality, and prevention, radiation biology and ecology. Prereq: 3730.

4915-28-38-48-58-68-78-88-98 Honors: Research and Independent Study (1 hr each) Designed for students undertaking research opportunity for research and independent study with faculty guidance. Special consent of department is required. Maximum total 48 hrs.

4990 Senior Seminar (1-3) Topic of current interest. May be repeated for credit with consent of department.

GRADUATE

The Master's Program

General requirements for the Master's Degree are found in the Graduate Catalog. For the Doctoral Program, General requirements for the Doctor's degree are found in the Graduate Catalog.

5000 Thesis

5002 Non-Thesis Graduation Completion (3-15)

5080 Graduate Research Participation (3)

5110-20-30 Introduction to Theoretical Physics (3, 3, 3)

5210-20-30 Advanced Modern Physics (3, 3, 3)

5240 Electronic Properties of Solids (3)

5250 Electromagnetic Properties of Solids (3)

5310-20-30 Advanced Dynamics (3, 3, 3)

5410-20-30 Electromagnetic Theory (3, 3, 3)

5440 Experimental Methods of Infrared and Raman Spectroscopy (3)

5460 Radiation Chemistry (3)

5510-20-30 Advanced Thermodynamics and Statistical Mechanics (3, 3, 3)

5510-20-30 Mathematical Methods in Physics (3, 3, 3)

5540 Numerical Methods in Physics (3)

5720 Physics of Polyatomic Molecules (3)
and Politics; International Relations; and Political Theory and Methodology. A minor consists of twenty-four hours that must be distributed as follows: (1) Eight hours at the 2000 level in political science or in political science courses not used for Triad credit but included on the History and Society list. (2) Sixteen hours in political science courses numbered at 3000 and above. Upper-division courses on the Triad list may be included. These thirty-two hours must include at least one course in each of four areas of the discipline: United States Government and Politics/Public Administration; Comparative Government

Political Science (801)


Associate Professors: B.B. Cunningham, Ph.D. Indiana; J.W. Dodd, Ph.D. Tulane; A.A. Elliott, Ph.D. Columbia; G.C. Evans, Ph.D. Columbia; A.H. Hopkins, Ph.D. Syracuse; S.J. Osofsky, Ph.D. Columbia; R.L. Peterson, Ph.D. Yale; T.M. Simpson, Ill; Ph.D. Johns Hopkins; T.A. Smith; Ph.D. Ohio State.

Assistant Professors: M.J. Bughton, M.A. Tulane, W.C. Koehler, Ph.D. Cornell; W. Lyons, Ph.D. Oklahoma; C.P. Mauney, Ph.D. Tennessee; G.J. Rathjen, Ph.D. Michigan State; R.E. Robson, Ph.D. Maryland.

Instructor: L.W. Thomas, M.P.A. West Virginia.

BUREAU OF PUBLIC ADMINISTRATION

Professor: T.D. Ungs (Director), Ph.D. Iowa.

Assistant Professors: W. Lyons (Acting Associate Director), Ph.D. Oklahoma; R.E. Robson (Assistant Director), Ph.D. Maryland.

UNDERGRADUATE A major consists of forty hours that must be distributed as follows: (1) Eight hours at the 2000 level in political science or in political science courses not used for Triad credit but included on the History and Society list. (2) Thirty-two hours in political science courses numbered at 3000 and above. Upper-division courses on the Triad list may be included. These thirty-two hours must include at least one course in each of four areas of the discipline: United States Government and Politics/Public Administration; Comparative Government

state administrators. Attention will be paid to state government’s role in formulating, enacting, and implementing state policy.

3750 The Urban Polity (4) Analysis of political institutions and processes in metropolitan areas.

3760 Urban Policy Process (4) Analysis of urban problems and policies in metropolitan areas.

3880 American Political Thought (4) Examination of role of selected political ideas, doctrines, and themes in America, emphasizing their development and relationship to diverse political interests.

4410 Law and the Administrative Process (4) Power of, procedures of, controls over administrators.

4535-36 Political Attitudes, Opinions and Communication (4, 4) Nature, development, formation and distribution of politically relevant attitudes and opinions; role of leadership, persuasion, and communication in opinion-policy process.

4540-50 Presidency, Congress and Public Policy (4, 4) The Presidency and Congress within framework of policy-making process.

4545-46 The Judicial Process (4, 4) The study of courts as components of political systems, and public policy formulation and judicial policy making. 2510-20 desirable as preceding courses.

4575 Special Topics in United States Government and Politics (4) May be repeated up to a maximum of 8 hrs credit with consent of department.

4610 Budgetary Process (4) Fiscal planning, budget and expenditure processes in government, their policy and administrative implications.

4620 Public Personnel Administration (3) Development of the merit system in government, career systems, public personnel management functions, organization for personnel management.

4630 Problems in Public Management (3) Selected problems. Emphasis on internal and external communication and information systems in government and public access to information.

4740-50-60 Politics and Elections (3, 3, 3) 4740- 50—Structure and function of party system; nominations and campaigns. 4760—Voting behavior of the electorate.

4840 Politics and the Environment (4) Examination of formulation and implementation of public policies relating to physical environment with emphasis upon water and air pollution control.

Comparative Government and Politics

3605 Political Change in Developing Areas (4) Characteristics and problems of political changes with primary focus on developing areas.

3615-16 Dynamics of Black African Politics (4, 4)

3621-22 Politics of Asian States (4, 4)

3625-26 Latin American Government and Politics (4, 4)

3631-32 Government and Politics of the Soviet Union (4, 4)

3635-36 Politics in Western Democracies (4, 4) Political culture, patterns, and institutions of Western democratic systems.

3641 Government and Politics of Middle East and North Africa (4)

3795 Contemporary Middle East (4) Same as History 3795.

4665-66 Policy Making in Democracies (4, 4) Comparative approach to theory and process of making public policies.

4675 Special Topics in Comparative Government and Politics (4) May be repeated up to a maximum of 8 hrs credit with consent of department.
International Relations
3701-02 Introduction to International Relations (4, 4) 3701—Methodology and background. 3702—International processes and institutions including war, diplomacy, law and organization.
3712-22 U.S. Foreign Policy Process (4, 4) Processes whereby U.S. foreign policies are made and implemented, focusing on interaction within federal bureaucracy and roles of the President, Congress, the press, and public opinion.
3790 Contemporary Diplomatic and Military Problems (4) Analysis of current international events.
3796 Contemporary Problems of Soviet Foreign Policy (4)
4711 International Law (4)
4727 Politics of Inter-American Relations (4) Analysis of selected theoretical and policy issues concerning international relations in the Americas with emphasis upon imperialism, intervention, and the Cuban revolution, nationalism, foreign assistance, trade and economic integration.

Political Theory and Methodology
3801 Studies in Ancient Political Thought (4) Classical Greek and Roman political thought.
3802 Studies in Medieval Political Thought (4) From Augustine to Luther: Emphasis on problems and theories of religion and politics.
3803 Studies in Early Modern Political Thought (4) Machiavelli through the Enlightenment.
3804 Studies in 19th- and 20th-Century Political Thought (4) Political theories of industrial and technological societies, 19th and 20th century.
4815 Contemporary Soviet Marxism-Leninism (4) Soviet implications of Marxist-Leninist theory.
4821-32-33 The Systematic Study of Politics (4, 4, 4) Scope, methods and procedures of analysis in political science; intended primarily for seniors intending to pursue graduate work and entering graduate students who have not had such a course.
4875 Special Topics in Political Thought (4) May be repeated up to a maximum of 8 hrs credit with consent of department.

Other
4101 Foreign Study (1-16) See page 187.
4102 Off-Campus Study (1-16) See page 187.
4103 Independent Study (1-16) See page 187.
4975 Proseminar in Political Science (4) Selected research for seniors; primarily for majors. May be repeated up to a maximum of 8 hrs with consent of department.

GRADUATE
The Master's Program
See requirements in the Graduate Catalog.
The Doctoral Program
General requirements for the degree of Doctor of Philosophy are described in the Graduate Catalog.
5000 Thesis
5002 Non-Thesis Graduation Completion (3-15)
5101 Foreign Study (1-12)
5102 Off-Campus Study (1-12)
5103 Independent Study (1-12)
5110-20 Seminar in World Political Theory (3, 3)
5140 Politics, Administration and Community in Non-metropolitan Areas (3)
5150 Internship in Political Science (3-9)
5210-20 Seminar in World Politics (3, 3, 3)
5211 Directed Readings in Political Science (3)
5250 Seminar in African Politics (3)
5270-80 Seminar in Politics of Development (3, 3)
5310-20 Seminar in Comparative Government (3, 3, 3)
5340-50-60 Seminar in Latin American Government (3, 3, 3)
5370-80 Seminar in Soviet Politics and Government (3, 3)
5410-20 Seminar in Public Law (3, 3, 3)
5440-50 Theory and Analysis of U.S. Foreign Policies (4, 4)
5510-20 Seminar in International Organization (3, 3)
5540 Seminar in Comparative Public Administration (3)
5550 Seminar in Administration in Developing Countries (3)
5600 Public Administration (3)
5605 Research and Methodology in Public Administration (3)
5610-20 Seminar in Organization Theory (3, 3)
5611-21-31 Seminar in State-Local Administration (3, 3, 3)
5630 Seminar in Technology and Public Policy (3)
5635-45 Operations Research for Public Administrators (3, 3)
5640-50-60 Seminar in Metropolitan Areas (3, 3, 3)
5641 Seminar in Contemporary Public Policies (3)
5670-80 Seminar in Policy Analysis (3, 3)
5710 Seminar in Politics of Administration (3)
5740 Seminar in Organizational Analysis (3)
5750 Seminar in Public Management (3)
5755 Seminar in Public Management (3)
5760 Seminar in TVA Public Personnel Management Practices (3)
5785-75 Law and the Administrative Process (3, 3)
5770 Practicum in Public Administration (3)
5780 Seminar in Fiscal Management (3)
5785-95 Seminar in Staff Functions (3, 3)
5810 The American Political Process (4)
5820 The American Political Process (4)
5850 Seminar in Comparative State Politics (3)
5910-20-30 Methodology and Bibliography (3, 3, 3)
6000 Doctoral Research and Dissertation
6210 Advanced Studies in International Politics (3)
6310 Advanced Studies in Political Theory (4)
6410 Advanced Studies in International Organization (3)
6430 Advanced Studies in Jurisprudence (3)
6440 Advanced Studies in Comparative Politics (3)
6510-20-30 Advanced Studies in American Constitutional Law (3, 3, 3)
6610-20 Advanced Studies in Public Administration (3, 3, 3)
6710 Directed Research in Political Science (3)
6810-20 Advanced Studies in the Political Process (3, 3)

Psychology (830)

Psychology (830)
Professors:
W. H. Calhoun (Head), Ph.D. California (Berkeley); G. M. Burghardt, Ph.D. Chicago; J. F. Byrne, Ph.D. Tennessee; E. E. Cureton (Emeritus), Ph.D. Columbia; H. J. Fine, Ph.D. Syracuse; L. Handler, Ph.D. Michigan State; J. F. Lubar, Ph.D. Chicago; E. O. Milton (Director, Learning Research Center), Ph.D. Michigan; K. R. Newton, Ph.D. Tennessee; H. R. Ph. Poitio, Ph.D. Michigan; N. L. Rasch, Ph.D. Pennsylvania; F. Samejima, Ph.D. Keio (Japan); R. R. Shadler, Ph.D. Tennessee; W. S. Verplanck, Ph.D. Brown; R. G. Wahrer, Ph.D. Washington; J. A. Wiberley, Ph.D. Syracuse.

Associate Professors:
H. S. Bacon, Ph.D. Tennessee; C. P. Cohen, Ph.D. Kansas; L. F. Droppleman, Ph.D. Catholic; H. R. Friedman, Ph.D. Tennessee; S. J. Handel, Ph.D. Johns Hopkins; M. G. Johnson, Ph.D. Johns Hopkins; J. Kandlakis, Ph.D. Tennessee; A. Landes, Ph.D. Yale; J. C. Maloney, Ph.D. Duke; W. M. Morgan, Jr., Ph.D. Tennessee; W. M. Simmons, M.S.S.W. Tennessee; E. D. Sundstrom, Ph.D. Utah; C. L. Travis, Ph.D. California (Davis).

Assistant Professors:

UNDERGRADUATE
Major: (Concentration in General Psychology) Designed to give students a broad and current background in the science and application of psychological methods and principles. It is particularly suited for students who plan careers in areas such as business, law, and journalism, or who for other reasons desire a liberal education concentrating on psychology. Psychology 2500 and two courses from 2520-2540 are prerequisite to major consisting of Psychology 3150 or 4150, at least 4 hours of laboratory, field or practicum courses, and 32 or more hours of upper-division psychology courses.
(Concentration in Academic Psychology) Designed to prepare students for advanced work in the scientific, professional, and college level teaching areas of psychology. Prerequisites to the major include Psychology 2500, two courses from 2520-30-40 or 2518-28, Mathematics 1540-50-60 or 1840-50-60, and Biology 1210-20-30. The major consists of Psychology 3150 or 4150, 8 hours of laboratory, field, or practicum courses, and 28 or more hours of upper-division courses, of which 12 hours must be in courses at the 4000 level.
Minor: A minor in psychology shall consist of Psychology 2500 and 20 additional hours from 3000- and 4000-level courses.
Honors Program in Psychology. A two-year (Junior-Senior) program leading to the B.A. degree. Objective of the Honors Program is to enable superior students to accelerate development of grasp of science of psychology. Program encourages independent study.
Eligibility: Selection of participants is determined by departmental
5140-50-60 Psychoeducational Assessment (3, 3, 3)
5148-58-69 Practicum in School Psychology I (2, 2, 2)
5170-80-90 Proseminar in Organizational Psychology (3, 3, 3)
5200 Topics in Developmental Psychology (3)
5210 Readings in Psychology (1)
5220 Readings in Psychology (2)
5230 Readings in Psychology (3)
5240 Readings in Psychology (4)
5250 Readings in Psychology (5)
5260 Special Problems in Psychology (1)
5270 Special Problems in Psychology (2)
5280 Special Problems in Psychology (3)
5290 Special Problems in Psychology (4)
5300 Special Problems in Psychology (5)
5319 Field Work in School Psychology: Level I (2)
5340 Group Dynamics (3)
5350-60-70 Seminar in Psychology (3, 3, 3)
5404 Psychophysics and Scaling Methods (3)
5420-30-40 Advanced Psychological Statistics (3, 3, 3)
5445 Advanced Correlational Methods (3)
5450 Human Problems in Administration (3)
5460 Personnel Research Seminar (3)
5500 Fundamentals of Psychometrics (4)
5610 Instrumentation for Psychological Research (3)
5520 Theory of Mental Measurement (3)
5530 Issues in Applied Psychological Measurement (3)
5550 Advanced Social Psychology (3)
5560-70 Seminar in Social Psychology (3, 3)
5580 Theories of Personality (3)
5581-32-83 Clinical Psychology I: Human Development and Personality (2, 2, 2)
5589 Psychological Techniques Laboratory (2)
5590 Psychodynamics (3)
5591-92-93 Clinical Psychology I: Patterns of Adaptation (2, 2, 2)
5601-02-03 Clinical Psychology I: Behavioral Deviance and Psychopathology (2, 2, 2)
5610-20 Psychology of Learning (3, 3)
5650 Ethics and Professional Practices (1)
5670 Forensic Psychology (2)
5680 Neural Basis of Behavior (3)
5690 Psychopharmacology (3)
5713 Learning Modules for Techniques in Professional Psychology (1-4)
5750 Ethological Psychology (3)
5760 General Vertebrate Neuroanatomy (3)
5769 Advanced Techniques in Physiological Psychology (3)
5790 Seminar in Psycholinguistic Concepts in Speech Pathology (3)
5810 Techniques of Psychological Examination (3)
5819 Practicum in Techniques of Psychological Examination (2)
5840 Student Appraisal (3)
5850-60-70 Psychological Appraisal (3, 3, 3)
5850-69-79 Practicum in Psychological Appraisal (2, 2, 2)
5890 Counseling Techniques (3)
5950-60-70 Consultation in Human Development Settings (3, 3, 3)
5950-69-79 Practicum in School Psychology II (2, 2, 2)
6000 Doctoral Research and Dissertation
6050 Experimental Methods in Sociology and Social Psychology (3)
6100 Community Psychology (3)
6150 Seminar in Program Evaluation (3)
6210-20-30 History, Systems, and Theories in Psychology (3, 3, 3)
6250-60-70 Seminar in Organizational Psychology (3, 3, 3)
6290-80-300 Factor Analysis (3, 3, 3)
6310 Seminar in Motivation and Emotion (3)
6319 Field Work in School Psychology: Level II (2)
6320 Seminar in Research Methods (3)
6330 Seminar in Learning (3)
6340 Seminar in Developmental Psychology (3)
6350 Seminar in Thinking (3)
6360 Seminar in Sensation and Perception (3)
6370 Seminar in Theoretical Psychology (3)
6380 Seminar in Industrial Psychology (3)
6390 Seminar in Psychotherapy (2)
6395 Seminar in Assessment (3)
6400 Seminar in Changing Concepts in Clinical Psychology (3)
6405 Seminar in Psychopathology (3)
6410-20-30 Psychotherapy (3, 3, 3)
6411-12-13-14 Psychotherapy: Elective Concentration Learning Laboratory (2, 2, 2)
6419-29-39 Psychotherapy Practicum (1-3, 1-3, 1-3)
6450-60 Advanced Psychometrics (3, 3)
6491 Field Placement in Clinical Psychology Level-1 (1-8)
6492 Field Placement in Clinical Psychology Level-2 (1-8)
6493 Field Placement in Clinical Psychology Level-3 (1-8)
6494 Field Placement in Clinical Psychology Level-4 (1-8)
6500 Seminar in Psychometrics (3)
6520 Experimental Design (3)
6550 Seminar in Advanced Social Psychology (3)
6575 Seminar in Mental Health Administration (3)
6650-60-70 Systems Approaches in Psychological Services (3, 3, 3)
6659-69-79 Practicum in School Psychology III (2, 2, 2)
6710 Seminar in Physiological Psychology (3)
6720 Seminar in Comparative and Ethological Psychology (3)
6730 Methods of Ethological and Naturalistic Research (3)
6750 Group Psychotherapy (3)
6780 Advanced Psycholinguistics (3)
6840 Child Psychotherapy (3)
6870 Adult Psychotherapy (3)
6900 Field Work in Industrial Psychology (1-15)

Religious Studies (863)

 Professors:
R.S. Lusby (Head), B.D. Coiglate (Rochester);
D.L. Dungan, Th.D. Harvard; R.V. Norman, Jr. (Associate Vice Chancellor for Academic Affairs), Ph.D. Yale

Associate Professors:
B.L. Daniels (Assistant Dean of the College of Liberal Arts), Ph.D. Duke; W.L. Humphreys, Th.D. Union; D.E. Lingle, Ph.D. Vanderbilt;
C. Reynolds, Ph.D. Harvard.

Assistant Professors:
J. Kim, Ph.D. Chicago; R. Lee, Ph.D. Harvard.

Instructors:

UNDERGRADUATE

Major: Two options are available in religious studies. One religious studies 2000-level course is a prerequisite for either option, and Religious Studies 4850 is required in both options.

The basic option consists of 36 hours of courses at the 3000 level or above (including 4850) with a minimum of 12 hours selected from courses listed below under History and Literature of Religion and a minimum of 12 hours selected from courses listed below under Problematic of Religion. Majors are invited to discuss their programs with a member of the religious studies faculty.

The student-initiated option is to be specified in an individual program defined in consultation between each student and the Department of Religious Studies. At least 36 hours of courses at the 3000 level or above (including 4850) are required for this major. Students whose educational goals would best be served by such a major are encouraged to construct their own plans of study as early as possible. The student-initiated option is recommended for persons who plan to pursue graduate study in religion or a closely related field. Further details are available in the department office, located at 501 McClung Tower, or from any member of the religious studies faculty.

History and Literature of Religion: 3011, 3021, 3061-71, 3110, 3120, 3210-20-30, 3270, 3311-12, 3330, 3340, 3411-12-13, 3440, 3490, 3510-20, 3550, 3560, 3650, 3690, 3671, 3672, 3680, 3710, 3711, 3713, 3770, 4210, 4310, 4450, 4460, 4670, 4810-20-30,

Problematic of Religion: 3600-10, 3611, 3620, 3690, 3715, 3720, 3740, 3750, 3760, 3780, 4101, 4102, 4103, 4111-21, 4370-71, 4410, 4540, 4540, 4610, 4810-20-30, 4850, 4940, 4950, 4960.

Minor: Twenty-four hours of courses at the 3000 level and above. It is suggested that students minoring in religious studies discuss their programs with a member of the department faculty.
2610 Introduction to Religions of the World (4) Introduction to the study of religion through selected historical traditions, East and West.

2611 Introduction to Ancient Near Eastern Religions (4) Introduction to study of religion through selected ancient Near Eastern and Mediterranean traditions.

2612 Issues in Religious Studies (4) Introduction to study of religion through selected religious problems and alternatives.

HISTORY AND LITERATURE OF RELIGIONS

3061-71 History of Western Religious Thought and Institutions (4, 4) 3061—First Century to the Thirteenth Century. 3071—Thirteenth Century to 1900. (Same as History 3061-71.)

3110 Ancient Israel’s Historical and Religious Traditions (4) Political, religious and cultural history and traditions of ancient Israel and Judah, from earliest periods to Exile.

3120 The Rise of Judaism (4) Political, religious and cultural history and traditions of ancient Jewish communities from the post-exilic period to the development of early Jewish literature. As part of the course, a field trip to Jerusalem is required. 

3210 Early Greek Mythology (3) (Same as Classics 3110.)

3220 Greek Mythology in the Classical Period (3) (Same as Classics 3220.)

3230 Roman Mythology (3) (Same as Classics 3230.)

3270 Russian Philosophical and Theological Thought (4) (Same as Russian 3270 and Philosphy 3270.)

3311-12 Images of Jesus (4, 4) Introduction to ancient and modern portraits of Jesus, understood in the context of Jewish and Hellenistic culture. 


3340 Judaism in the Common Era. (3) Survey of literature and traditions of Judaism in the Common Era.

3411-12 Renaissance and Reformation (3, 3) (Same as History 3411-12.)

3440 Religion of Primitive Peoples (3) (Same as Anthropology 3440.)

3490 African Religions (4) Examination of religious beliefs and practices of African peoples, including a study of functions of myths, rites, and symbols and an inquiry into how certain religious movements in Africa have been and are informed by religious sensibilities. (Same as Anthropology 3490 and Black Studies 3490.)

3510-20 Religion in America (4, 4) Not a survey but a representative profile of religion in America, past and present, organized each quarter around theme or problem. May be taken independently.

3550 Religion and Racism in America (4) Historical and critical survey of role played by religion in supporting and criticizing American racial injustice. (Same as Black Studies 3550.)

3560 Black Religion in America (4) Historical and critical examination of formation and development of black religious thought and institutions in America. (Same as Black Studies 3560.)

3560 Philosophy and Religion in India (4) (Same as Philosophy 3560.)

3560 Buddhist Philosophy and Religion (4) (Same as Philosophy 3560.)

3671 Religion and Philosophy in China (4) (Same as Sociology 3671.)

3672 Religion and Society in Japan (4) (Same as Sociology 3672.)

3680 Islam (4) Origin and early history, rapid spread of the faith, development of Muslim theology and culture, interaction with modern cultures.

3710 Literature of English Bible (3) (Same as English 3710.)

3711 Literature of the English Bible (3) (Same as English 3711.)

3713 Religion in the Middle Ages (4) Study of medieval religion and its role in European culture between 590 and 1500.

3770 Zen Buddhism (3) Examination of historical, philosophical, and meditational materials of Zen. Special emphasis upon Zen theories of emptiness, no-mind, sudden enlightenment, and the Koan.

4210 Topics in Ancient Israelite and Ancient Near Eastern Religions (4) Prereq: 3110-20 or consent of instructor. May be repeated once for credit.

4310 Jesus and Paul Compared (4) Jesus’ teaching and activity in context of first-century Palestinian Judaism; analysis of what Apostle Paul made of the tradition of and about Jesus. 2610 or 2611 recommended.

4450 Topics in American Religion (4) Prereq: One of the following: 3510, 3520, 4410, or consent of instructor. May be repeated once for credit.

4640 Topics in Early Christianity and Hellenistic Religions (4) Selected topics, issues, and institutions. Seniors and graduate students only, except by consent of department. Prereq: Consent of instructor. May be repeated for credit to a maximum of 12 hrs.

4670 Topics in Eastern Religions (4) Selected topics, issues, and institutions. Seniors and graduate students only, except by consent of department. Prereq: 3650-60-70. May be repeated for credit to a maximum of 12 hrs.

4681-20-30 Readings and Research in Religious Studies (3-4, 3-4, 3-4)

PROBLEMATIC OF RELIGION

3011 Phenomenology of Religion (4) Examination of recurrent forms, themes and patterns in history of religions, such as high gods, cultural heroes, initiations and ascensions.

3021 Religious Myth, Symbol, and Ritual (4) Study of interaction of myths, symbols, and rituals among preliterate peoples through a specific motif, such as solar, lunar, and communal.

3600-10 Religious Ethics (4, 4) Historical and critical survey of religious ethics; basic theories and their application.

3611 Religious and Philosophical Issues in Medical Ethics (4) Explores ethical issues in medicine such as abortion, euthanasia, human experimentation, fairness in health care delivery and the doctor-patient relationship. (Same as Philosophy 3611.)

3620 Topics in Religious Ethics (4) Examination of particular theoretical issues and social problems from perspectives of religious ethics. May be repeated once for credit.

3690 Philosophy of Religion (4) (Same as Philosophy 3690.)

3715 Religious Thought in the Nineteenth Century (4) Major problems and themes in European and American religious thought between 1800 and the beginning of World War I.

3720 Contemporary Religious Thought (3) Major trends, issues, and thinkers.

3740 Issues in Science and Religion (3) Relation of religion to history, methods, and theories of science.

3750 Theology and Literature (3) Exploration of issues raised for religious inquiry by phenomena of literature. Relation of religious and moral considerations to problems of literary criticism. Relation of religious language to certain forms of human expression (symbol, metaphor, myth, image) identified in study of literature.

3760 Eastern Religions and Western Thought (3) Critical consideration of influences of Hindu and Buddhist thought on Western philosophies.

3780 The Literature of Dissent (3) Critique of religious thought in Western thought. Aspects of atheism, rebellion, and revolution in such thinkers as Lucretius, Spinoza, Feuerbach, Marx, Nietzsche, Russell, and Camus.

4101 Foreign Study (1-16) See page 187.

4102 Off-Campus Study (1-16) See page 187.

4103 Independent Study (1-16) See page 187.

4111-21 Modern Religious Philosophies (4, 4) Examination of the role of religious thought in modern society. May be repeated once for credit.

4120 American Religious Thought (4) Selected figures, movements and problems in American religious thought from colonial period to present.

4540 Social and Religious Change (4) (Same as Sociology 4540.)

4610 Topics in Western Religious Thought and Institutions (4) Selected figures, issues, and institutions. Seniors and graduate students only, except by consent of department. Prereq: 3601-71. May be repeated for credit to a maximum of 12 hrs.

4610-30 Readings and Research in Religious Studies (3-4, 3-4, 3-4)

4850 Prossemian in Religious Studies (3) For advanced students in religious studies; staff of department will participate. Specific topics, e.g., nature and function of myth in religions, prophetic thinkers and movements. 4111—Nicolas de Cusa to Hume. 4121—Kant and the nineteenth century. Prereq: 9 hrs of philosophy other than logic. (Same as Philosophy 4111-21.)

4370-71 Theoretical Issues in Medical Ethics (4, 4) (Same as Philosophy 4370-71.)

4410 American Religious Thought (4) Selected figures, movements and problems in American religious thought from colonial period to present.

4540 Social and Religious Change (4) (Same as Sociology 4540.)

4610 Topics in Western Religious Thought and Institutions (4) Selected figures, issues, and institutions. Seniors and graduate students only, except by consent of department. Prereq: 3601-71. May be repeated for credit to a maximum of 12 hrs.

4610-30 Readings and Research in Religious Studies (3-4, 3-4, 3-4)

4850 Prossemian in Religious Studies (3) For advanced students in religious studies; staff of department will participate. Specific topics, e.g., nature and function of myth in religions, prophetic thinkers and movements. 4111—Nicolas de Cusa to Hume. 4121—Kant and the nineteenth century. Prereq: 9 hrs of philosophy other than logic. Maximum 9 hrs.

4940 Sociology of Religion (4) 3 a me as Sociology 4940.)

4950 Theory of Religion (4) Elements for construction of a theory of religion drawing on resources from fieldwork, psychology, anthropology, social psychology, sociology of religion, cultural anthropology, theology and comparative religion.

4960 Tradition, Change and Modernity in Asia (4) Comparative study of processes of religious and social change seen in historical context in Asian societies. Comparative focus of course will vary each year (e.g., China and Japan, India and South Asia, etc.). May be repeated once for credit. (Same as Sociology 4960.)

GRADUATE

5101 Foreign Study (1-12)

5102 Off-Campus Study (1-12)

5103 Independent Study (1-12)

5310-20 Topics in Religion and Society (4, 4)

5510-20 Topics in the History of Religion (4, 4)

5710-20 Topics in Religious Thought (4, 4)

RELATED LANGUAGE STUDIES

3140-55-60 Elementary Classical Hebrew (3, 3, 3) 3140—Basic elements of Hebrew, phonology, script, morphology and syntax. 3150—Continued grammar study and selected reading and translation. 3160—Continued reading and translation. Introduction to basic elements of text, literary form, historical, and traditional criticism.
Latin American Studies. See Cultural Studies.

Certification for Teaching
French or Spanish in Tennessee
Consult Certification Clerk, Room 212
Claxton Education Building.

Arabic (127)

1510-20 Spoken Arabic (4, 4) Must be taken in sequence. Dialect will vary depending on instructor. Class meetings and 2 laboratory periods.

2110-20-30 Elementary Modern Standard (3, 3, 3) Must be taken in sequence. 3 class meetings and 2 laboratory periods.

3510-20 Intermediate Modern Standard (4, 4)

3610 Islamic Literature in English Translation (4) Survey from origins to modern period of major Islamic, Arabic Persian, and Turkish. Readings include The Arabian Nights, The Rubaiyat of Omar Khayyam and Gibran's The Prophet.

1401 Foreign Study (1-16) See page 187.

GRADUATE

5070-60 Hispano-Arabic Literature and Language (3, 3, 3)

5101 Foreign Study (1-12)

5102 Off-Campus Study (1-12)

5103 Independent Study (1-12)

French (405)

Major: Consists of 36 hours in courses numbered 3110 and above. Students whose primary interest is literature must have the following courses (or their equivalent, with consent of the department): 3110-20-30 or 3810-20-30 (aspects or survey of literature, 9 hours); 3410 or 3420 or 3430 (intermediate composition and conversation, 3 hours); 4210 (phonetics, 3 hours); 4220 or 4230 (advanced grammar, 3 hours); 9 hours of literature at the 4000 level; 9 additional hours selected from courses in literature, language, or civilization. Students whose primary interest is language must have the following courses (or their equivalent, with consent of the department): 3110-20-30 or 3810-20-30 (aspects or survey of literature, 9 hours); 3410 or 3420 or 3430 (intermediate composition and conversation, 3 hours); 4210 (phonetics, 3 hours); 4220 or 4230 (advanced grammar, 3 hours); 6 hours selected from courses 3410-20-30 (intermediate composition and conversation, 3 hours); 4210 (phonetics, 3 hours); 4220 or 4230 (advanced grammar, 3 hours); or 4250-40-70 (linguistics); 6 hours of literature at the 4000 level; 6 additional hours selected from courses in literature, language, or civilization. With either of the above options, students may substitute Foreign Study (4101) for certain courses; students with special interests, such as comparative literature, may make certain substitutions with consent of the department.

Minor: Consists of 24 hours in courses numbered 3110 or above, including the following: 3110-20-30 or 3810-20-30 (aspects or survey of literature, 9 hours); 3410 (intermediate composition and conversation, 3 hours); 4210 (phonetics, 3 hours); 9 additional hours selected from courses in literature, language, or civilization. Students pursuing a minor are strongly advised to consult with a departmental adviser.

Courses which are the equivalents of the foregoing may be substituted with consent of the department. Out of course work in French literature in English translation may not be counted toward either a major or a minor.

1110-20-30 Elementary French (3, 3, 3) This sequence strongly recommended for students intending to take upper-division courses in French. Must be taken in sequence. 3 hrs and 2 labs.

1510-20 Elementary French (4, 4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.

1518-28 Honors: Elementary French (4, 4) Honors course for students of superior ability. 1518 nor open to students who have taken French in high school. Freshmen are admitted on the basis of a diagnostic test or conference with the instructor, high school average, and performance on the ACT. This class will be held to a maximum of 15 so that each student may receive more attention. This class will cover the normal French program for the first year, but will be enriched wherever possible. Students will be expected to spend only the normal amount of time in preparation. Those who find the course too difficult may easily be transferred to the regular class. Potential majors and minors in French are urged to take this course. Students who pass 1510 with a grade of B or higher may take 1528 instead of 1520.

2110-20-30 Intermediate French (3, 3, 3) This sequence strongly recommended for students intending to take upper-division courses in French. Must be taken in sequence. 3 hrs and 2 labs.

2510-20 Intermediate French (4, 4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.

2518-28 Honors: Intermediate French (4, 4) Honors course for students of superior ability in French. Incoming freshmen are admitted on the basis of a diagnostic test, high school average, and performance on the ACT. This class will be held to a maximum of 15 so that each student may receive more attention. Students will follow an enriched program with continuing emphasis upon speaking ability with special emphasis on reading, including literary selections. Must be taken in sequence. Students who earn a grade of A or B in 2528 automatically receive credit for French 3000. Prereq: French 1110-20-30, 1510-20, 1518-28 equivalent.

2610-20 Panorama of French Culture (4, 4) 2610: Topics include cultural forces which produced the French nation; art, literature, architecture, music under Francis I; beginning of the classical; and the culture. 2620: Deals with arts in Age of Reason and trends in French culture during the Revolution and Age of Romanticism, in bourgeois art of nineteenth century, and in modern movements of surrealism, dadaism, and existentialism.

3000 French Translation (3) Development of linguistic skills necessary for satisfactory work in courses above 3000. Recommended for students who feel they want benefit from additional training beyond 2130 or 2520 in basic skills of reading, speaking and writing French.

3010-20-30 Elements of French for Upper-Division and Graduate Students (3, 3, 3) Elements of language, elementary and advanced readings. Open to graduate students preparing for language examinations, and upper-division students desiring reading the language. Undergraduate credit only. Not for credit for those having had 1110-20-30, 1510-20 or equivalent. No credit for 3120.

3210-20-30 French Literature in English Translation (3, 3, 3, 3) 3210—From the origins
through the Renaissance: Life of St. Alexis, Song of Roland, Romance of the Rose, Rabelais, Du Bellay, 32:20—The Classical Period and the Age of Reason. The great dramatists, La Princesse de Cleves, Voltaire, Rousseau. 32:30—The Nineteenth and Twentieth Centuries: Balzac, Flaubert, Proust, Camus. No change in credit hrs after add deadline. Option of 4 hrs credit must present appropriate amount of extra work above that required for 3 hrs.

3240 Women in French Culture (4) Influential role of women in shaping French history and culture. Feminists (George Sand); royal mistresses (Mme. de Maintenon); intellectuals (Mme. de Staël); actresses (Sarah Bernhardt); scientists (Marie Curie) will be among the important figures studied.


3410-20-30 Intermediate Composition and Conversation (3, 3, 3) Grammatical analysis of modern French prose; review of grammatical principles and their application in translations from English to French, both written and oral; exercises in free composition. Prereq: 2130 or 2520.

3110-20-30 Aspects of French Literature (3, 3, 3) Study of various periods (poetry, novel, drama) of various periods of the literature; emphasis upon the genres (poetry, novel, drama) varies. Prereq: 2130, 2520 or equivalent. Recommended for literature majors.

3810-20-30 Survey of French Literature (3, 3, 3) Chronological study of various genres (poetry, novel, drama) by periods, from medieval period to the present. May be taken in place of 3110-20-30. Prereq: 2130, 2520 or equivalent.

4010 Masterpieces of French Literature in English Translation (3) No foreign language credit.

4020 Masterpieces of French Drama in English Translation (3) No foreign language credit.

4101 Foreign Study (1-16) See page 187.

4110-20-30 French Literature of the Seventeenth Century (3, 3, 3) Prereq: 2130, 2520 or equivalent.

4150 Theatrical French (1-3) Performance in one or more French plays. May be repeated for credit with consent of instructor. Prereq: 2130, 2520 or equivalent and consent of the instructor.

4160-70-80 Advanced Conversation (2, 2, 2) Intensive training in prepared and spontaneous conversations. Subjects range from travel and current events to literature and aspects of national culture. Prereq: Completion of 9 hrs of courses on 3000 level.

4210-20-30 Phonetics and Advanced Grammar (3, 3, 3) Prereq: 2130, 2520 or equivalent.

4250 Introduction to Descriptive Linguistics (3) Phonetics and phonemics, morphology and syntax. Types of languages, linguistic groups, dialects and dialect geography. Application of descriptive linguistics—field linguistics, dialect study; its practical use in learning languages and in language teaching. Introduction to transformational grammar. Prereq: 9 hrs of upper-division English or 9 hrs of upper-division courses in a modern or ancient language (exclusive of German and French 3010-20-30, courses in literature in translation, and general courses in Latin and Greek requiring no knowledge of these languages), or consent of department. (Same as Spanish, German, and Russian 4250.)

4260 Introduction to Historical and Comparative Linguistics (3) (Same as Spanish, German and Russian 4260.)

4270 Romance Linguistics (3) Development of classical Latin through vulgar Latin into major Romance languages. (Same as Spanish 4270.)

4310-20-30 French Literature of Eighteenth Century (3, 3, 3) Prereq: 2130, 2520 or equivalent.

4350-60-70 Medieval French Literature (3, 3, 3) Medieval works in modern French texts. Prereq: 2130, 2520 or equivalent.

4410-20-30 French Civilization (3, 3, 3) Prereq: 2130, 2520 or equivalent.

4510-20-30 French Literature of Nineteenth Century (3, 3, 3) Prereq: 2130, 2520 or equivalent.

4610-20-30 Readings in French Literature (3, 3, 3)

4618-28 Honors: Readings in French Literature (3, 3) For students who have completed 3130 or equivalent and have at least 3.0 on all university work. No credit for grade less than B.

4640-50-60 French Literature of Sixteenth Century (3, 3, 3) Prereq: 2130, 2520 or equivalent.

4710-20-30 French Literature of Twentieth Century (3, 3, 3) Prereq: 2130, 2520 or equivalent.

GRADUATE
The Master's Program
See Graduate Catalog for requirements.

5000 Thesis

5002 Non-Thesis Graduation Completion (3-15)

5011 Techniques in Literary Analysis (3)

5101 Foreign Study (1-12)

5102 Off-Campus Study (1-12)

5103 Independent Study (1-12)

5110-20-30 Old French (3, 3, 3)

5121 College Teaching of Romance Languages (3)

5151-61-71 Bibliography and Methods of Research (1, 1, 1)

5210-20-30 French Literature of Sixteenth Century (3, 3, 3)

5310-20-30 French Directed Readings (3, 3, 3)

5560-60-70 The Philosophes (18th Century) (3, 3, 3)

5410-20-30 The French Novel (3, 3, 3)

5460-60 Lyric Poetry of Nineteenth Century (3, 3)

5470 Baudelaire and the Symbolists (3)

5510-20-30 The French Drama (3, 3, 3)

5610-20-30 Trends in Contemporary French Literature (3, 3, 3)

5650-60 Advanced Syntax and Stylistics (3, 3)

5670 Problems in Romance Linguistics (3)

5710-20-30 Seminar in French Literature (3, 3, 3)

5910 Literary Criticism: Foundations of Romance Criticism (3)

Italian (584)

UNDERGRADUATE
Major: Consists of 36 hours in courses numbered 3110 or above, to include the following (or equivalents, with consent of the department): 3410-20-30 (advanced grammar, composition and conversation, 9 hours); 3110-20-30 or 3510-20 (aspects of Italian literature, at least 8 hours); 9 hours of literature at the 4000 level; 10 additional hours selected from courses in literature, language, or civilization. Students may substitute Foreign Study (4101) for certain courses; students with special interests, such as comparative literature, may make certain substitutions with consent of the department.

Minor: Consists of 24 hours in courses numbered 3110 or above, to include the following: 3410-20-30 (advanced grammar, composition, and conversation, 9 hours); 3110-20-30 or 3510-20 (aspects of Italian literature, at least 8 hours); 7 additional hours selected from courses in literature, language, or civilization.

Courses in Italian literature in English translation may not be counted toward either a major or a minor.

1510-20 Elementary Italian (4,4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.

2510-20 Intermediate Italian (4, 4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.

2610-20 Panorama of Italian Culture (4, 4) 2610—Survey of Italian culture from Roman era through the Renaissance. 2620—Survey of Italian culture in the 18th, 19th, 20th centuries.

3000 Italian Transition (3) Development of linguistic skills necessary for satisfactory work in courses above 3300. Recommended for students who feel they would benefit from additional training beyond 2520 in basic skills of reading, speaking, and writing Italian.

3110-20-30 Aspects of Italian Literature (3, 3, 3) Prereq: 2520 or equivalent. Recommended for literature majors.

3210-20 Civilization and Culture (3, 3, 3) Prereq: 2520 or equivalent.

3310-20-30 Italian Literature in English Translation (3, 3, 3) 3310—Sicilian School, the Florentine School, Dante, Petrarch, Boccaccio, Machiavelli, Ariosto, Tasso. 3320—From the Baroque through nineteenth century, commedia dell'arte, Vico Leopardi. 3330—Twentieth century, Carducci, Pirandello, Quasimodo, D'Annunzio, Croce, Moravia. No change in credit hrs after add deadline. Option of 4 hrs credit must present appropriate amount of extra work above that required for 3 hrs.

3410-20 Advanced Grammar, Composition, and Conversation (3, 3, 3) Laboratory work, drills, and tapes. Prereq: 2520 or equivalent.

3510-20 Aspects of Italian Literature (4, 4) Prereq: 2520 or equivalent. Recommended for literature majors.

4010-20 Italian Drama in English Translation (3, 3) 4010—La commedia dell'arte and major works of Machiavelli, Metastasio, Alfieri, Goldoni. 4020—Twentieth-century theatre: operatic drama, the Grottesses, Pirandello, De Filippo, Frati. No change in credit hrs after add deadline. Option of 4 hrs credit must present appropriate amount of extra work above that required for 3 hrs.

4050-60-70 Dante and Medieval Culture (3, 3, 3) Readings and lectures in English for students majoring or minoring in other departments. Readings, reports, and term papers in Italian for students majoring or minoring in Italian. (Same as Comparative Literature 4050-60-70.)

4101 Foreign Study (1-16) See page 187.

4160-70-80 Advanced Conversation (2, 2, 2) Intensive training in prepared and spontaneous conversations. Subjects range from travel and current events to literature and aspects of national culture. Prereq: Completion of 9 hrs of courses on 3000 level.

4220 Petrarch (3) Prereq: 3130, 3520 or equivalent.

4230 Boccaccio (3) Prereq: 3130, 3520 or equivalent.
4330 History of Italian Language (3) Prereq: 3130, 3520 or equivalent.
4410-20-30 Literature of the Rinascimento (3, 3, 3) From Pulci to Tasso, the Quattrocento and the Cinquecento. Prereq: 3130, 3520 or equivalent.
4530 The Modern Novel (3) Prereq: 2520 or equivalent.
4540 The Modern Theatre (3) Prereq: 2520 or equivalent.
4610 Contemporary Theatre (3) Prereq: 2520 or equivalent.
4620 Contemporary Poetry (3) Prereq: 2520 or equivalent.
4630 Contemporary Prose (3) Prereq: 2520 or equivalent.

GRADUATE See Graduate Catalog for requirements.

5011 Techniques in Literary Analysis (2)
5101 Foreign Study (1-12)
5102 Off-Campus Study (1-12)
5103 Independent Study (1-12)
5151-61-72 Bibliography and Methods of Research (1, 1, 1)
5610-20-30 Readings in Italian Literature (3, 3, 3)
5710-20-30 Seminar in Italian Literature (3, 3, 3)

Portuguese (811)

UNDERGRADUATE
Minor: A minor only is offered in Portuguese, consisting of 8 hours in the 3510-20 sequence (aspects of Portuguese literature) and 18 hours in the 4310-20-30 sequence (directed readings in Brazilian and Portuguese literature, a course of variable content which may be repeated for credit). Students may substitute Foreign Study (4101) for any of the above courses.

1510-20 Elementary Portuguese (4, 4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.
2510-20 Intermediate Portuguese (4, 4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.
3510-20 Aspects of Portuguese Literature (4, 4) Prereq: 2520 or equivalent. Recommended for literature majors.
4101 Foreign Study (1-16) See page 187.
4310-20-30 Directed Readings in Brazilian and Portuguese Literature (3, 3, 3) May be repeated with consent of instructor.

GRADUATE
5101 Foreign Study (1-12)
5102 Off-Campus Study (1-12)
5103 Independent Study (1-12)

Spanish (924)

UNDERGRADUATE
Major: Consists of 36 hours in courses numbered 3310 or above. Students whose primary interest is literature must have a minimum of 8 hours chosen from the following sequences: 3310-20-30, 3510-20, or 3610-20 (aspects of Spanish American literature, or aspects or survey of Spanish literature, 8 hours); 3410 plus 3420 or 3430 (composition and conversation, 6 hours); 4210 (phonetics, 3 hours); 9 hours of literature at the 4000 level; 3 hours of civilization; sufficient additional hours selected from courses in literature, language, or civilization to fulfill the major requirement. Students whose primary interest is literature must have a minimum of 8 hours selected from the following sequences: 3310-20-30, 3510-20, or 3610-20 (aspects of Spanish American literature, or aspects or survey of Spanish literature, 8 hours); 3410 (composition and conversation, 3 hours); 4210 (phonetics, 3 hours); 9 hours selected from courses 3420-30 (composition and conversation), 4220-30 (advanced grammar), or 4250-60-70 (linguistic); 3 hours of civilization; sufficient hours selected from courses in literature, language, or civilization to fulfill the major requirement. With either of the above options, students may substitute Foreign Study (4101) for certain courses; students with special interests, such as comparative literature, may make certain substitutions with consent of the department.
Minor: Consists of 24 hours in courses numbered 3310 or above, including a minimum of 8 hours chosen from the following sequences: 3310-20-30, 3510-20, or 3610-20 (aspects of Spanish American literature, or aspects or survey of Spanish literature, 8 hours); 3410 (composition and conversation, 3 hours); 4210 (phonetics, 3 hours); sufficient additional hours selected from courses in literature, language, or civilization to fulfill the minor requirement. Students pursuing a minor are strongly advised to consult with a departmental advisor.
Courses which are the equivalents of the foregoing may be substituted with consent of the department; but courses in Spanish literature in English translation may not be counted toward either a major or a minor.

1110-20 Intermediate Spanish (3, 3, 3) This sequence strongly recommended for students intending to take upper-division courses in Spanish. Must be taken in sequence. 3 hrs and 2 labs.
1510-20 Elementary Spanish (4, 4) Must be taken in sequence. 4 class meetings and 2 laboratory periods.
1518-28 Honors: Elementary Spanish (4, 4) Honors course for students of superior ability. 1518 not open to students who have taken Spanish in high school. Freshmen are admitted on the basis of a diagnostic test or conference with the instructor, high school average, and performance on the ACT. This class will be held to a maximum of 15 so that each student may receive more attention. This class will cover the normal Spanish program for the first year, but will be enriched whenever possible. Students will be expected to spend only the normal amount of time in preparation. Those who find the course too difficult may easily transfer to a regular class. Potential majors and minors in Spanish are urged to take this course. Students who pass 1510 with a grade of B or higher may take 1528 instead of 1520.
2110-20 Intermediate Spanish (3, 3, 3) This sequence strongly recommended for students intending to take upper-division courses in Spanish. Must be taken in sequence. 3 hrs and 2 labs.
2510-28 Honors: Intermediate Spanish (4, 4) Honors course for students of superior ability in Spanish. Incoming freshmen are admitted on the basis of a diagnostic test, high school average, and performance on the ACT. This class will be held to a maximum of 15 so that each student may receive more attention. Students will take an enriched program with continuing emphasis upon speaking ability and with special emphasis on reading, including literary selections. Must be taken in sequence. Students who earn an A or B in 2528 automatically receive credit for Spanish 3310. Prereq: Spanish 1110-20-30, 1510-20, 1518-28, or equivalent.
2810-20 Panorama of Hispanic Culture (4, 4) 2610—Peninsular Spain from Roman invasion through the 12th century, including Colonial period in Latin America. 2620—Highlights of 20th-century culture in both Latin America and Spain.
3000 Spanish Transition (3) Development of linguistic skills necessary for satisfactory work in courses above 3000. Recommended for students who feel they would benefit from additional training beyond 2130 or 2520 in basic skills of reading, speaking and listening Spanish.
3010-20-30 Spanish and Spanish American Literature in English Translation (3-4, 3-4, 3-4) 3010—Masterpieces of Classical Spanish Literature. Cervantes, realism and the picassalesque novel, religious mystics, Golden Age Theatre. 3020—Masterpieces of Twentieth-Century Spanish Literature: Unamuno, Lorca, Baroja, Ortega. 3030—Contemporary Spanish American Fiction: Marquez, Borges, Fuentes, Asturias. No change in credit hrs after add deadline. Option of 4 hrs credit must present an appropriate amount of extra work above that required for 3 hrs.
3310-20-30 Aspects of Spanish American Literature (3, 3, 3) Study (not usually chronological) of various periods of the literature; emphasis upon the genres (poetry, novel, drama) varies. May be taken in place of 3510-20 or 3610-20. Prereq: 2130, 2520 or equivalent.
3410-20-30 Intermediate Composition and Conversation (3, 3, 3) Not offered for graduate credit.
3510-20 Aspects of Spanish Literature (4, 4) Study (not usually chronological) of various periods of the literature; emphasis upon the genres (poetry, novel, drama) varies. Prereq: 2130, 2520 or equivalent. Recommended for literature majors. Not offered for graduate credit.
3610-20 Survey of Spanish Literature (4, 4) Chronological study of the various genres (poetry, novel, drama) by periods from the medieval period to the present. May be taken in place of 3310-20-30 or 3510-20. Prereq: 2130, 2520 or equivalent.
4030 Masterpieces of Spanish Literature in English Translation (3) No foreign language credit.
4040 Spanish Drama in English Translation (3) No foreign language credit.
4050-60-70 Hispano-Arabic Literature and Culture (3, 3, 3)
4101 Foreign Study (1-16) See page 187.
4110-20-30 Spanish Literature of the Golden Age (3, 3, 3) The picassalesque novel; Cervantes, the Comedia.
4150 Theatrical Spanish (1-3) Performance in one or more Spanish plays. May be repeated for credit with consent of department. Prereq: 2130, 2520, or equivalent and consent of instructor.
4160-70-80 Advanced Conversation (2, 2, 2) Intensive training in prepared and spontaneous conversations. Subjects range from travel and current events to literature and aspects of national culture. Prereq: Completion of 9 hrs of courses on 3000 level.
4210-20-30 Phonetics and Advanced Grammar (3, 3, 3) Prereq: 2130, 2520 or equivalent.

4250 Introduction to Descriptive Linguistics (3) (Same as French, German and Russian 4250.)

4260 Introduction to Historical and Comparative Linguistics (3) (Same as French, German and Russian 4260.)

4270 Romance Linguistics (3) (Same as French 4270.)

4410 Spanish Civilization (3) Prereq: 2130 or equivalent.

4420-30 Latin American Civilization (3, 3) Prereq: 2130, 2520 or equivalent.

4450-60-70 Studies in Modern Spanish Style (3, 3, 3) Prereq: 3410-20-30 or consent of instructor.

4510-20-30 Spanish Literature of Nineteenth Century (3, 3, 3) Prereq: 2130, 2520 or equivalent.

4618-28-28 Honors: Readings in Literature (3, 3, 3) Prereq: 3330, 3520, 3620 or equivalent and at least 3.0 on all university work. No credit for grade less than B.

4710-20-30 Spanish Literature of Twentieth Century (3, 3, 3) 4710—Non-dramatic Prose. 4720—Drama. 4730—Lyric Poetry. Prereq: 2130, 2520 or equivalent.


GRADUATE

The Master's Program

See Graduate Catalog for requirements.

5000 Thesis

5002 Non-Thesis Graduation Completion (3-15)

5011 Techniques in Literary Analysis (3)

5070-80-90 Hispano-Arabic Literature and Culture (3, 3, 3)

5101 Foreign Study (1-12)

5102 Off-Campus Study (1-12)

5103 Independent Study (1-12)

5110-20-30 Old Spanish (3, 3, 3)

5121 College Teaching of Romance Languages (3)

5151-61-71 Bibliography and Methods of Research (1, 1, 1)

5211-21 Don Quijote (3, 3)

5212-22-32 Golden Age Prose (3, 3, 3)

5231 The Exemplary Novels, Persiles y Sigismunda (3)

5250-60 The Generation of '98 (3, 3)

5270 The Contemporary Novel (3)

5310-20-30 Directed Readings (3, 3, 3)

5311-21-31 Special Topics in Spanish or Spanish American Literature (3, 3, 3)

5340 Problems in Hispanic Culture (3)

5510-20-30 Spanish Theatre after the Golden Age (3, 3, 3)

5550-60-70 Golden Age Theatre (3, 3, 3)

5610 Spanish American Prose to 1900 (3)

5611-21 Spanish American Lyric Poetry (3, 3)

5620-30 The Modern Novel in Spanish America (3, 3)

5631 Spanish American Essay (3)

5632 The Spanish American Short Story (3)

5633 Twentieth-Century Latin American Theatre and Film (3)

5640 Latin American Women Writers (3)

5650-60 Advanced Syntax and Stylistics (3, 3)

5670 Problems in Romance Linguistics (3)

5810-20-30 Spanish Lyric Poetry (3, 3, 3)

5910 Literary Criticism: Foundations of Romance Criticism (3)

6000 Doctoral Research and Dissertation

6210-20-30 Seminar in Spanish Literature (3, 3, 3)

6310-20-30 Seminar in Latin American Literature (3, 3, 3)

Russian

See Germanic and Slavic Languages.

Russian and Eastern European Studies

See Cultural Studies.

Sociology (915)

Professors:

D.R. Ploch (Head), Ph.D. North Carolina
J.A. Black, Ph.D. Iowa; D.J. Champion, Ph.D. Purdue; W.E. Cole (Emeritus), Ph.D. Cornell;
L. Ebersole (Vice Chancellor for Planning and Administration), Ph.D. Pennsylvania; W.B. Jones (Emeritus), Ph.D. Vanderbilt; J.B. Knox (Emeritus), Ph.D. Harvard; S.E. Wallace, Ph.D. Minnesota.

Associate Professors:

D.M. Betz, Ph.D. Michigan State; D. Cieland, Ph.D. Michigan State; D.W. Hastings, Ph.D. Massachusetts; T.C. Hood, Ph.D. Duke;
R.G. Perrin, Ph.D. British Columbia;
N.E. Shover, Ph.D. Illinois (Urbana).

Assistant Professors:

S. Kurth, Ph.D. Illinois (Chicago); S.E. Norland, Ph.D. Iowa; T.J. Weirath, Ph.D. Wisconsin (Madison).

Instructor:

D. Harris, M.A. Tennessee.

UNDERGRADUATE

Major: Consists of 36 upper-division hours in sociology. Eight lower-division hours in sociology are prerequisite to a major. The minor shall consist of 24 upper-division hours. Eight lower-division hours in sociology are a prerequisite to a minor.

Social Work: Students contemplating entrance into the field of professional social work will have an opportunity to plan their upper-division programs to this end. Suggested course offerings for students planning a social work career can be obtained from the Graduate School of Social Work catalog. The address and general information on the School are given on page 52.

Students who contemplate professional training in social work should discuss their upper-division programs with the Knoxville campus representatives of the School of Social Work.

American Studies. See Cultural Studies.

Latin American Studies. See Cultural Studies.

1510 General Sociology (4) Social origins, structures, forces, processes, and products.

1520 Sociology of Social Problems (4)

3010 Collective Behavior (4) Processual analysis of such collective phenomena as crowd behavior, social epidemics, fads, fashions, popular crazes, and mass movements. Nature of the public, functional analyses of public opinion; problems of democracy as viewed from standpoint of organizing collective action.

3030 Political Sociology (3) Sociological analysis of American political system. Attention given to consideration of concept of power, elitist-pluralist controversy, end-of-ideology debate, and related topics.

3130 Social Psychology (4) Social basis of human behavior; socialization; social status and social roles; personality; social adjustment.

3140 Deviance and the Social Order (4) Examination of relations between deviance and social order. Various types of social deviance considered, with focus on their structure, social factors related to process of becoming deviant, and consequences of deviant conduct.

3150 Sociology of Sex Roles (4) Sociological examination of the structure of current American sex roles, their historical development, and possible changes in the future. Emphasis on the role theory and bargaining. Development and effects of organized reactions to sex role expectations and social movements such as feminism are considered.

3160 Sociology of Medicine (4) Introduction to sociological approach to study of health and medicine. Emphasis on relationship of demographic characteristics to the prevalence of disease, organization of health care facilities and staff-patient relationships.

3220 The Family (4) Origin and ethnicity of the family; background of modern American family; family role in the public; the normal family; social changes and the family; social pathology of the family; reorganization and future of the family system.

3320 Sociology of Mass Communication (4) Sociological dimensions of mass communication and mass media, nature of mass communications organizations as structures of power and control, and its effects on mass communication on social behavior are examined.

3330 Prejudice and Racism in the United States (4) (Same as Black Studies 3330.)

3340 Sociology of Poverty and Inequality (3) Factors contributing to condition of poverty and social consequences of being poor. (Same as Black Studies 3340.)

3350 Social Stratification (4) Study of economic class, prestige, life style, and power hierarchies; causes and consequences of structured social inequality.

3410 Urban Environment (4) Introduction to urban environment includes: emergence of the city; cities of New World; rise of metropolitan America; urban society; social worlds within urban environment.

3420 Urban Problems (4) Crises and the urban conscience; urban problems and interventions; housing, urban renewal and neighborhood conservation; the urban poor, the dissident and alienated; planning for urban youth; the urban elderly; the social and physical planning process; new towns.

3510 Juvenile Delinquency (4) Critical assessment of nature of the delinquency problem, major sociological causes and their implications for control and rehabilitation of juvenile justice.

3610 Sociology of Occupations (4) Introduction to occupations and their relation to the individual and society; technology and occupations; unequal rewards and occupations; social organization and occupations.

3620 Occupations as Organizations (4) Occupations as interest groupings; their impact on work settings and the wider community.
Speech (943)

1211 Introduction to Rhetoric and Public Address (4) Major theories of communication from Plato to present; methods for describing and evaluating public address.

1221 Introduction to Speech Communication (4) Fundamental theories and practices with particular reference to interpersonal communication; persuasion, semantics, psycholinguistics; legal and ethical dimensions of communication.

2021 Voice and Diction (3) Voice production; attention to individual speech problems.

2311 Public Speaking (4) Basic principles of speech preparation and delivery.

2331 Argumentation and Debate (4) Recommended: 2311

2341 Deliberation in Assemblies (4) Various techniques for coming to collective decisions; parliamentary procedure.

2351 Interpersonal Communication (4) Communication theory in its application to informal, face-to-face situations.

2410-20-30 Intercollegiate Forensics (1, 1, 1) Supervised work in tournament debate and individual events. Prereq: Consent of instructor.

3011 Persuasion (4) Persuasive theory; psychological, sociological, and cultural dimensions.

3012 Persuasion: Projects (2) Material presented in Speech 3011 is applied to on and off-campus projects. Emphasis on analysis of the persuasive situation, application of the relevant communication principles, and understanding and evaluating the results. May be repeated for credit.

3021 Group Communication (4) Communication theory in its application to small groups, especially discussion groups; communication barriers, non-verbal communication, business communication.

3031 Nonverbal Communication (4) Exploration of non-verbal communication from human communication perspective; origins and research, usage and coding of non-verbal behavior, research strategies and theoretical approaches.

3410-20-30 Intercollegiate Forensics (1, 1, 1) Continuation of 2410-20-30. Prereq: Consent of instructor.

3541 Rhetorical Theory and Criticism (4) Survey of Western rhetorical theory; contemporary approaches to criticism of public address. Recommended: 1211

3551 Persuasive Speaking (4) Speech forms; principles and practice of speech composition.

4222 Advanced Argumentation and Debate (4) Prereq: 2331 or consent of instructor.

4841 Quantitative Research Methods in Speech Communication (4) Designing experiments; planning field studies; using statistical analysis.

4551 Southern Oratory (4) Historical and critical study of public address in the South.

4560 Rhetoric of the Women's Rights Movement (4) Historical and critical study of public address in campaign for women's rights from the 1830s to the present.

4571 British Oratory (4) Historical and critical study of British public address.

4582 Public Discussion of Race (4) History and criticism of racial advocacy in America.

4591 Persuasive Uses of Imaginative Literature (4) Topics in social and political uses of novels, plays, and poems.

4811 Advanced Phonetics (4) Phonetic aspects of contemporary dialects of the English language. Prereq: Consent of instructor.

4911 History of American Public Address (4, 4) 4911—Colonial period to 1865. 4921—1866 to present.

4999 Colloquium in Speech Communication (1) May be repeated for credit.

GRADUATE

5140 Communications Theory (3)

5210 Topics in Group and Interpersonal Communications (3)

5220 Quantitative Projects in Speech Communications (3)

5430 Studies in Tennessee Oratory (3)

5440 Organizational Communication (3)

5450 Studies in Collection and Use of Recorded Discourse (3)

5550-60-70 Studies in Persuasion (3, 3, 3)

5750-60-70 Studies in Rhetoric (3, 3, 3)

5911 Directing the Forensic Program (4)

Theatre (976)

1310 Introduction to Theatre (4) Theatre as experience; materials and techniques.


2111-21 Acting (4, 4, 4) 2111—Realism: readings, improvisations, and scene study. 2121—Extended Realism: voice and movement for the stage, basic rehearsal techniques. Prereq: Consent of instructor for 2121.

2111-21 Stagecraft (4, 4, 4) 2211—Techniques of scenery construction. 2221—Fundamental methods of stage lighting. Crew assignments on major productions.

2231 Basic Stage Costuming (4) History and its application to the stage; basic techniques in costume construction.

3121-22 Advanced Acting (4, 4) Historical styles of acting. 3121—Renaissance. 3122—Seventeenth and eighteenth centuries. Prereq: Consent of instructor.

3151-52 Major Productions (1-4, 1-4) Supervised work on departmental productions. Available only to majors or with consent of department. Prereq: Consent of instructor.

3153 Outdoor Repertory Productions (4) Supervised work on productions at Hunter Hills Theatre. Available only to members of summer company by consent of instructor.

3221-22 Introduction to Scene Design (4, 4) Descriptive drawing as an approach to three-dimensional design; theatrical graphic standards; problems in stage design with reference to lighting, movement, scale, and style. Prereq: 2211-21 or consent of instructor. Must be taken in sequence.


3262-63 History of the American Theatre (3, 3) Development of the theatre in American life. 3262—From its beginnings to 1900. 3263—From 1900 to present.

3231-22 Introduction to Lighting Design (4, 4) Elements of stage lighting; elementary theory; problems in basic lighting practice. Must be taken in sequence. Prereq: 2211-21 and consent of instructor.

3451-52 Play Directing (4, 4) Must be taken in sequence. Prereq: 2211.
4170-30-30 Film History and Theory (3, 3, 3) Analysis of cinematic forms and styles. 4170: Narration, 4180: Exposition and persuasion, 4180: Experimental forms; films and other media.
4640 Group Performance of Literature (4) Oral interpretive techniques of choral reading, readers theater and chamber theater.

GRADUATE
5000 Thesis
5002 Non-Thesis Graduation Completion (3-15)
5110 Introduction to Graduate Research in Speech and Theatre (3)
5120 Directed Reading and Research (3)

Statistics
See faculty list page 95.

Liberal arts students may major or minor in statistics under the supervision of the faculty of the statistics department in the College of Business Administration. The major is designed to prepare students for graduate studies in statistics or for professional work in various applications of statistical methods, including applications in the natural and social sciences, business, and industry. It is highly recommended that a student majoring in statistics have a minor in an area of application.

Major:
(a) Required courses: 27 hours to consist of Mathematics 2840-50-60; Statistics 3450-60, 4750; Computer Science 4310; Statistics 3550 or Mathematics 4650 or 4750.
(b) Statistics electives: 12 hours from upper-division statistics courses not listed in part (a) above.
(c) Electives: 12 hours to be selected from no more than two of the following groups: Computer Science 3150, 3510, 3520, 4320; Industrial Engineering 3430, 3510, 3520, 3530, 4590; Industrial Management 4610, 4620; Mathematics 3780-90, 4660-70, 4510-20-30 (or 4518-28-38), 4680-70.

Minor:
(a) Required courses: 21 hours to consist of Mathematics 2840-50-60; Statistics 3450-60; Computer Science 4310.
(b) Statistics electives: 9 hours from upper-division statistics courses not in part (a) of the minor.

University Studies (984)
(Non-Departmental)

University studies deal with important contemporary topics which are sufficiently comprehensive to require study and attention of students and faculty from more than one college. They are open to all qualified members of the university community.

3010 Technology and Society (3) Interdisciplinary lectures and discussions on science and technology, their interaction with contemporary social and political institutions and their impact upon human values. May be repeated for credit to maximum of 9 hrs.

4100 Energy Needs and Our Environment (3) Problems of present and projected energy resources and demands; economic, behavioral, legal, technical and environmental opportunities and constraints; regional impacts of energy production and consumption. Topical focus will change from quarter to quarter. May be repeated with approval of instructor.

Women's Studies
See Cultural Studies.

Zoology (995)

Professors:
J.C. Daniel, Jr. (Head), Ph.D. Colorado; D.L. Bunting, II, Ph.D. Oklahoma State; J.G. Carlsson, Ph.D. Pennsylvania; A.C. Cole, (Emeritus), Ph.D. Ohio State; R.C. Fraser, Ph.D. Minnesota; N. Gengozian, Ph.D. Wisconsin; R.F. Grell, Ph.D. Tennessee; B. Hochman, Ph.D. California (Berkeley); J.C. Howell, Ph.D. Cornell; K.W. Jeon, Ph.D. London (England); A.W. Jones, Ph.D. Virginia; J.N. Liles, Ph.D. Ohio State; L.E. Roth (Vice President for Graduate Studies), Ph.D. Chicago; C.A. Shivers, Ph.D. Michigan State; J.T. Tanner, Ph.D. Cornell; S.R. Tipton (Emeritus), Ph.D. Duke; G.L. Whitson, Ph.D. Iowa.

Associate Professors:
H.M. Ambrose III, Ph.D. Cornell; R.M. Bagby, Ph.D. Illinois; K.D. Burnham, Ph.D. Iowa; D.A. Enier, Ph.D. Minnesota; J.R. Kennedy, Ph.D. Iowa; M.C. Whiteside, Ph.D. Indiana.

Assistant Professors:
P.P. Coulson, Ph.D. Illinois; A.C. Echternacht, Ph.D. Kansas; D.J. Fox, Ph.D. Hopkins; M.A. Handel, Ph.D. Kansas State; A.M. Jungreis, Ph.D. Minnesota; J. MacCabe, Ph.D. California (Davis); M.L. Pan, Ph.D. Pennsylvania; S.E. Riechert, Ph.D. Wisconsin; G.L. Vaughan, Ph.D. Duke.

*All Majors Distinguished Service Professor.

UNDERGRADUATE
Prerequisites to upper-division courses: Biology 1210-20-30 is a prerequisite for all upper-division courses, with the exception of 3090 and 4940. Additional prerequisites are included with course descriptions. Courses numbered in the 4000s are no more advanced than those in the 3000s except as may be indicated by prerequisites.

Major: Consists of Biology 3110, 3120, 3130; 18 hours of upper-division zoology courses (except 3010-20-30), and 3 quarters of chemistry or biochemistry at the 2000 level or above. Of the 18 hours of upper-division zoology courses, a minimum of 6 hours must be at the 4000 level, including at least one laboratory or field course. Prerequisites to this major are: Biology 1210-20-30 or Zoology 1118-28 (Zoology 2920-30 may be substituted for Zoology 1118 or Biology 1220), and Chemistry 1110-20-30. Corequisites are Mathematics 1841-51, or 1840-50 or 1550-60 (Mathematics 1841-51 is the recommended choice); and a year sequence in physics (except 1410-20-30).

Note: Students majoring in zoology are advised to exercise care in fulfilling the Science and Mathematics Triad requirements. Mathematics 1840-50 or 1540-50-60 and Chemistry 1110-20-30 or equivalent (20 or 21 hours altogether) must be completed by all majors.

Minor: Consists of 24 hours of zoology, or zoology and biology, courses. (Zoology courses must be at the upper-division level; but 2000-level biology courses may be used, e.g. Biology 2110, 2120, 2130.) Prerequisites to this minor are Biology
GRADUATE

5000 Thesis
5080 Graduate Research Participation (3)
5110-20-30 Special Problems (2, 2, 2)
5150 Zoological Bibliography (1)
5180 Fresh-Water Invertebrates (4)
5210 Plant Parasitic Nematodes (4)
5220-30-40 Advanced Vertebrate Physiology (4, 4, 4)
5240 Physiology of Hormones (4)
5270 Advanced Neuromuscular Physiology (5)
5280 Insect Physiology (4)
5290 Quaternary Problems (4)
5310-20 Seminar in Teaching of College Zoology (2, 2)
5350 Biometry (3)
5410 Advanced Parasitology (4)
5430 Advanced Medical Entomology (3)
5550 Advanced Ornithology (4)
5570 Animal Populations (3)
5610-20 Foundations of Radiation Biology (4, 4)
5630 Methods of Experimentation with Laboratory Mammals (3)
5680 Physiology of Development (3)
5670 Cellular Immunology (4)
5760 General Vertebrate Neuroanatomy (3)
5780 Radiation Physiology (4)
5790 Transport of Ions Across Epithelia (4)
5820 Methods of Taxonomy (4)
5840 Aquatic Insects (4)
5860 Geographic Distribution of Animals (4)
5870 Insect Synecology (4)
6000 Doctoral Research and Dissertation
6110 Seminar in Cellular Biology (2)
6140 Seminar in Immunobiology (2)
6210 Seminar in Physiology (2)
6310 Seminar in Cytology (2)
6350 Seminar in Developmental Biology (2)
6410 Seminar in Parasitology (2)
6510 Seminar in Genetics (2)
6610 Seminar in Ornithology (2)
6650 Seminar in Aquatic Biology (2)
6710 Seminar in Ecology (2)
6810 Seminar in Entomology (2)
6910 Seminar in Radiation Biology (2)
College of Nursing

Sylvia E. Hart, Dean
Barbara M. Reid, Associate Dean
Dorothy B. Stephens, Assistant Dean

The College of Nursing at The University of Tennessee, Knoxville, was established in July, 1971, in response to a long-recognized and well-established need for nurses prepared at the collegiate level and as a part of a statewide comprehensive plan approved for The University of Tennessee system by its Board of Trustees and for the state by the Tennessee Higher Education Commission.

The undergraduate program offered by the College of Nursing is fully accredited by the National League for Nursing. It combines the unique resources of the University with those of several cooperating health agencies in a manner which enables both faculty and students to become aware of and responsive to an evolving dynamic culture, rapid scientific and technological advances and changing concepts of health, of human beings and society.

The baccalaureate nursing program has as its central focus and frame of reference human beings, society and health. It is based on the belief that nursing has equal concern for the prevention of illness, the promotion of health, and the care of the sick.

General education courses, Nursing courses and electives are organized in a manner designed to promote creative thinking and innovative approaches at both the theoretical and practical levels. General education courses are incorporated into the nursing curriculum at both lower- and upper-division levels. Certain aspects of general education, primarily in the natural and behavioral sciences, are prerequisite to any courses in the nursing major. Other supporting courses are taken concurrently with Nursing courses.

Since nursing is a humanistic science and an art, Nursing courses provide theoretical content which draws heavily from the theories and principles of related sciences and disciplines. This content is organized, integrated and synthesized in a manner which promotes a comprehensive understanding of the life process from conception through senescence. In nursing practice, this knowledge and understanding is combined with intellectual judgments, practical skills and human compassion. Opportunities to develop this kind of expertise in a variety of settings and situations are integral components of all Nursing courses.

A broad base of general education, a thorough study of human behavior, emphasis on health maintenance and promotion, and a strong family and community orientation are essential components of baccalaureate education in nursing. It is these characteristics which differentiate it from other types of basic nursing education.

Because of the expanding role of the professional nurse, the increasing complexity of health care delivery and the ever changing health needs of society, the goals of the program are to prepare graduates who are able to:

1. Assume beginning leadership positions in nursing in a variety of settings.
2. Work collaboratively with other health professionals.
3. Function as socially conscious and contributing citizens.
4. Pursue advanced education on either a formal or an informal basis.

GENERAL REQUIREMENTS:

In order to obtain a Bachelor of Science in Nursing Degree, 12 quarters of full-time study or their equivalent are required. Students may enroll in Nursing courses following successful completion of 90 quarter hour credits in prescribed general education courses. These courses may be taken at The University of Tennessee or at any accredited junior or senior college or community college. One hundred eighty-nine quarter hour credits must be successfully completed in order to be awarded the Bachelor of Science in Nursing Degree.

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

GRADING POLICY:

The Satisfactory-No Credit option is not permitted for any Nursing course.

The minimum grade for all courses in the nursing curriculum, other than electives, is a C; a course in which a grade of D or F is achieved may be repeated once. If a grade of D or F is achieved on the second attempt, the student will be required to withdraw from the program.

Any student who achieves a grade of D or F for more than two clinical Nursing courses will be required to withdraw from the program even if previous courses in which the grades of D or F were achieved have been repeated and a grade of C or better has removed the D or F. Clinical courses are: 3010, 3150, 3210, 3330, 4220, 4250, 4420, 4560, 4760.

If a student receives an Incomplete (I) in a required Nursing course the Incomplete must be removed before the student may enroll in any other required Nursing courses.

If a student's clinical laboratory performance for any Nursing course is deemed unsatisfactory, the grade for that course will be an F regardless of any grades related to the theoretical component of the course. If the unsatisfactory clinical performance is characterized by dangerous, inappropriate or irresponsible behavior, behavior which actually or potentially places the patient's or family's welfare in jeopardy, the student will be required to withdraw from the program.

ADMISSION AND PROGRESSION PROCEDURES

1) Nursing students must achieve a course grade of C or better in all required lower-division courses, exclusive of electives.
2) When the student has completed all required lower-division courses, having
met the above stated grade requirement, a petition for admission to upper-division courses must be made to the Progression Committee in the College of Nursing. The Progression Committee will review the record of each student who has submitted a petition in order to verify that the student has successfully completed all lower-division requirements. The College of Nursing will then notify, in writing, those students who are eligible to begin upper-division Nursing courses.

Students who are not admitted to upper-division courses must be submitted to the Progression Committee during the spring quarter which immediately precedes the fall quarter in which they expect to enter the upper division. The deadline for submitting a petition is the drop deadline date for each spring quarter.

3) Students who expect to enroll in The University of Tennessee, Knoxville College of Nursing, once they have completed lower-division requirements elsewhere, should contact the Associate Dean for Undergraduate Affairs. The UT Knoxville College of Nursing as soon as they begin their lower-division courses. Transfer students who believe they have met lower-division requirements should submit a petition to the Progression Committee as soon as they are admitted to the University. If the number of students qualified to begin upper-division Nursing courses exceeds the number that can be accommodated during the following fall quarter, the cumulative grade point average will be utilized to select those students who may enroll in upper-division Nursing courses. Qualified students not selected are eligible to reapply for progression during the next review period.

4) Transfer students who have been accepted by the University must complete all courses required in the College of Nursing curriculum. Transcripts will be evaluated on an individual basis. Students are free to take proficiency or challenge examinations in order to determine whether it is necessary for them to enroll in a course or whether they have met those course requirements in another way.

5) Registered nurses seeking a baccalaureate degree in nursing must also apply for admission to the University and must be accepted on the same basis as others. They must complete all prerequisites and all required courses identified in the nursing curriculum. They may also take challenge or proficiency examinations in required courses whenever these are available and appropriate.

Registered nurses who have completed Chemistry 1410-20 with a grade of C or better, within ten years prior to their admission to the College of Nursing, have satisfied the chemistry requirement.

For registered nurses the following courses may be substituted for those required in the nursing curriculum if a grade of C or better was achieved and if the courses were taken within ten years prior to admission to the College of Nursing: Microbiology 2110 for Microbiology 2610; Nutrition 1230 for Nutrition 3020.

Registered nurses must successfully complete Nursing 4440, 4660, 4670, 4760, and 4860. They may challenge up to a maximum of 40 hours of other required clinical Nursing courses and they will receive credit for Nursing 3110 (Pharmacology I) if they take or have taken the NLN Pharmacology Achievement Test and achieved a score at or above the 50th percentile.

**COURSE LOAD**

The maximum credit hours per quarter allowed for any student without special permission is 18.

**BELLS AUTHORITY IN NURSING CURRICULUM**

The following curriculum leads to the Bachelor of Science in Nursing degree. A minimum of 189 quarter hours of credit is required.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Credit</th>
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<tbody>
<tr>
<td><strong>Freshman</strong></td>
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<tr>
<td>English 1510-20</td>
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<td>Chemistry 1510-20-30</td>
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<td>Psychology 1510-20-31</td>
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<td>Math 1540</td>
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<tr>
<td>Sociology electives</td>
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<td><em>Electives</em></td>
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<td><strong>Sophomore</strong></td>
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<td>Zoology 2920-30</td>
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<td>Microbiology 2910-19</td>
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<td>Anthropology electives</td>
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<tr>
<td>Biology 3110</td>
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<td>CFS 2110</td>
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<td>Nutrition 3200</td>
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<td><em>Electives</em></td>
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<td><strong>Junior</strong></td>
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<td>Nursing 3010, 3110, 3410</td>
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<td>Nursing 3210-20</td>
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<td>Psychology 3630, 3110</td>
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<td><em>Electives</em></td>
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<tr>
<td>Philosophy 3611</td>
<td>4</td>
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<tr>
<td><strong>Senior</strong></td>
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<tr>
<td>Nursing 4110</td>
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<tr>
<td>Nursing 4230, 4560</td>
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<tr>
<td>Nursing 4440, 4660, 4670, 4860</td>
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<tr>
<td><em>Electives</em></td>
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<td><strong>TOTAL:</strong></td>
<td>189</td>
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</table>

*At least 14 of the elective hours must be in humanities courses.*

**Nursing (720)**

**Professor:** S.E. Hart (Dean), Ph.D. New York.

**Associate Professors:** D.H. Goodfellow, M.S.N., SUNY (Buffalo); K.J. Kant, Ph.D. Illinois; J.N. Mozingo, M.S.N. Emory; B.M. Reid, M.S.N. Columbia.

**Assistant Professors:** M.T. Boynton, M.S.N. Emory; K.P. Conlon, M.S.N. SUNY (Buffalo); C.H. Davidson, M.S.N. Florida; M.W. Davis, M.S.N. Emory; R.B. Dossett, M.S.W. Tennessee; G.A. Evans, B.S.N. East Tennessee State; M.M. Ensko, M.N. Florida; N.R. Hein, M.S.N. Medical College of Georgia; V.D. Hendricks, M.S.W. Tennessee; M.L. Jolly, M.S.N. Columbia; M.F. Kollar, M.N. Vanderbilt; V.M. Kramer, M.S. Colorado; B.W. Lowe, M.S. Tennessee; P.R. MacMorran, M.S.N. Vanderbilt; D.R. Oettle, M.S.N. Emory; H.E. Overton, M.P.H. Tennessee; M.A. Pierce, M.P.H. Tennessee; E.J. Rice, M.S. Emory; B.J. Riley, M.S. Ohio State; D.H. Shoffner, M.S. Tennessee; S.L. Sugg, M.S.N. Pennsylvania; J.W. Wagner, M.S.N. Yale.

**Instructors:** P.S. Droppelman, M.S. Tennessee; N.B. Helms, B.S.N. Mercy College; S.M. Hodson, M.S. Tennessee.

**Lecturer:** D.B. Stephens, M.S. Tennessee.

**2710 Family Health Promotion (4) (Same as Nutrition 2710).**

**3010 Nursing Process (8) Theory and related laboratory experiences necessary for beginning development of basic professional nursing skills:** History of development of traditional and expanding professional nursing role; philosophy of health and nursing; the health-in illness continuum; determinants and indices of health and illness. 5 lectures, 3 labs. Prerequisite: lower-division courses with grade of C or better; coreq: 3110, 3410. For nursing majors only.

**3110 Pharmacology (4) Biochemical and pharmacological effects of drugs and medications on the human body. Positive and negative pharmacological reactions and interaction between and among drugs.** Prereq: Chemistry 1610-20, Zoology 2920-30.

**3210 Acute Care Nursing (I) (8) Content and clinical laboratory experience related to nursing care of patients whose health problems require hospitalization. Physiological and behavioral deviations which underlie or are associated with more common, relatively uncomplicated acute illness of children and adults are stressed. Clinical laboratory experiences are provided to enable students to apply theoretical knowledge and skill to the care of patients in acute care settings as well as to the provision of continuity of care for those patients and their families. 5 hrs. 3 labs. Prereq: 3010, 3110, 3410. For nursing majors only.**

**3220 Acute Care Nursing (II) (10) Analysis of physiological and behavioral deviations which underlie or are associated with more common, relatively uncomplicated acute illness of children and adults are stressed. Laboratory experiences provide opportunity to apply theoretical knowledge and skill to care of acutely ill patients as well as to provision of continuity of care for these patients and their families. 5 hrs. 5 labs. Prereq: 3210. For nursing majors only.**

**3410 Children and Health (4) Theory and laboratory experiences related to systematic, comprehensive assessment of children and adolescents at various levels of health Illness. Emphasis on normal growth and development, interactional relationships with parents, children and health workers and responses to illness and hospitalization. Coreq: 3010, 3110.**

**3710 Individual and Family Health Problems (4) (Same as Nutrition 3710).**

**4110 Family Health Nursing (10) Nursing needs of families in health and in crisis. Emphasis on provision of comprehensive care to families in the child bearing and child rearing phases of family development. Application of theories of human growth and development, family dynamics, and crisis intervention. Laboratory experience to develop skills necessary to provide quality nursing care to families experiencing normal pregnancy and childbirth or health problems such as complications of childbirth, congenital anomalies and other high-risk birth, disturbed parent-child relationships, and gynecologic disturbances. 5 hrs., 5 labs. Prereq: All 3000-level Nursing courses or their equivalent. For nursing majors only.**

**4230 Psychosocial and Long Term Nursing (10) Nursing needs of clients whose primary health problems are of a developmental, behavioral or long term nature including maternal and child health promotion and rehabilitation. Laboratory experiences in a variety of psychiatric, extended care and out-patient clinics. 5 lectures, 5 labs. Prereq: All 3000-level Nursing courses or their equivalent. For nursing majors only.**

**4330 Nursing in the Specialties (2-4) Application of principles of basic nursing and nursing sciences to solution of nursing problems. Includes exploration of nursing intervention needed to resolve specific problems and situations in clients experiencing selected physiological and/or behavioral deviations. Specific topics to be determined by faculty and students.**
May be repeated with consent of instructor. Maximum credit 12 hrs. Prereq: Consent of instructor.

4350 Oncology Nursing (3) In-depth exploration of the cancer problem, medical and nursing intervention. Relates cellular kinetics to theories of carcinogenesis and metastasis, and examines treatment modalities and nursing intervention employed in all phases of the disease. Interdisciplinary approach analyzed. Prereq: Nursing 4230, R. N. status or consent of instructor.

4420 Long Term Nursing (6) Nursing needs of patients with long term congenital, developmental, or other chronic health problems. Focus on development of knowledge and skills needed to achieve total patient and family involvement in rehabilitative process. 3 hrs, 3 labs. Prereq: All 3000-level Nursing courses or their equivalent and Nursing 4220 and 4250. For nursing majors only.

4440 Scientific Inquiry in Nursing (3) Introduction to language of research, types of research design, methodological approaches, sampling, data analysis and significance of findings. Evaluation of existing and ongoing nursing research studies. Prereq: 10 hrs of 4000-level Nursing courses. For nursing majors only.

4560 Nursing in the Community (6) Content and laboratory experiences with focus on health patterns, needs and problems of the community. Particular emphasis on the health assessment of small and large groups, comparison of variations in health needs and patterns within and between communities, involvement in preventive and promotive community health programs at the national, state and local levels. 3 hrs, 3 labs. Prereq: All 3000-level Nursing courses. For nursing majors only.

4660 Professional Nursing Seminar (3) Critical examination of legislative, legal, ethical, social and educational issues and trends which have immediate or long-range implications for professional nursing practice. Prereq: 10 hrs of 4000-level Nursing courses. For nursing majors only.

4760 Management of Health Care (6) Theories of administration, supervision, organization, management and leadership as they apply to the delivery of health care services. Emphasis on role of the nurse in health care management and delivery. Laboratory experiences to develop skills necessary to function as an effective member of the health team. 2 hrs, 1 lab. Prereq: 10 hrs of 4000-level Nursing courses. For nursing majors only.

4770 Comprehensive Health Assessment (4) Principles and theories underlying health screening of children and adults, including health history, interviewing and physical examination. Practicum included; 2 hrs and 2 labs. (4 hrs each). Prereq: All 3000-level Nursing courses or their equivalent or consent of instructor.

4860 Independent Study in Nursing (3) In-depth study of some aspect of nursing in which student has developed special interest. Study is pursued independently utilizing guidelines developed by the student with appropriate faculty guidance, supervision and evaluation. May be repeated with consent of instructor. Maximum credit 9 hrs. Prereq: 10 hrs of 4000-level Nursing courses. For nursing majors only.

GRADUATE

5010 Applied and Pathophysiology (4)
5020 Current Health Issues (2)
5110 Geriatrics and Gerontology (5)
5120 The Acutely Ill Adult I (6)
5130 The Acutely Ill Adult II (6)
5140 The Acutely Ill Child I (6)
5150 The Acutely Ill Child II (6)
5160 Emergency and Intensive Care Nursing (3)
5170 Readings in Applied Physiology (5)

5210 Nursing Research Methods (4)
5220 Principles of Health Maintenance (3)
5240 Management of Common Health Problems (4)
5250 Chronic Health Problems (4)
5260 Advanced Family Health Care (4)
5310 Secondary Care Nursing Field Work I (9)
5320 Secondary Care Nursing Field Work II (9)
5330 Secondary Care Nursing Seminar I (2)
5340 Secondary Care Nursing Seminar II (2)
5410 Principles of Community Mental Health I (3)
5420 Principles of Community Mental Health II (3)
5430 The Adult and Mental Health (3)
5550 Nurse Practitioner Field Work I (9)
5560 Nurse Practitioner Field Work II (9)
5630 Teaching Practicum (5)
5650 Nurse Practitioner Seminar I (2)
5660 Nurse Practitioner Seminar II (2)
5730 Management Practicum (5)
Independent Departments

Department of Air Force Aerospace Studies

Air Force ROTC Program

Professor of Air Force Aerospace Studies: Colonel J.E. Hiteshew (Head), M.A. East Carolina.

Assistant Professors:

GENERAL INFORMATION

Any student may enroll voluntarily in Air Force ROTC at the same time as registration for other undergraduate courses. There is no active duty obligation resulting from enrollment in the first two years of AFROTC classes unless the student is on AFROTC scholarship.

AIR FORCE ROTC SCHOLARSHIP PROGRAM

Scholarships are available to qualified students who enroll in the four-year cadet program. These scholarships cover full tuition, all fees, and reimbursement for all required books. In addition, cadets are paid $100.00 per month during the entire period of the scholarship. Scholarships are awarded to cadets on a competitive basis for two through four years at all levels of the Air Force ROTC program, including college freshmen, sophomores, and juniors. High school seniors should contact the Professor of Air Force Aerospace Studies on campus early in the academic year.

PURPOSE OF THE AIR FORCE ROTC

The Air Force ROTC Program is designed to qualify for commissions those college men and women who desire to serve in the United States Air Force. The program provides education that will develop skills and attitudes vital to the professional Air Force officer. Upon graduation from the University and the Department of Air Force Aerospace Studies, students are commissioned second lieutenants in the United States Air Force Reserve. Opportunities exist throughout the initial period of active duty for the graduate to receive a Regular Commission in the Air Force and to pursue commissioned service as a career.

UNIVERSITY CREDITS

The following credits are granted for Air Force Aerospace Studies work and are creditable toward a degree in some colleges. See respective PAS for further information.

Aerospace Studies 1000 series (Freshman)—6 quarter hours per year
Aerospace Studies 2000 series (Sophomore)—6 quarter hours per year
Field Training Academics (Sophomore)—6 quarter hours
Aerospace Studies 3000 series (Junior)—9 quarter hours per year
Flight Instruction Ground School—3 quarter hours
Aerospace Studies 4000 series (Senior)—9 quarter hours per year.

COURSES AVAILABLE

The first two years (freshman and sophomore) of the Air Force curriculum are known as the General Military Course. The last two years of the curriculum (junior and senior) are known as the Professional Officer Course.

Flight training is offered free of charge to qualified pilot candidates who are senior AFROTC cadets. The cadet receives twenty-five hours of flight instruction. University credit is granted for the Ground School portion of the Flight Instruction Program.

Field Training is offered at Air Force bases across the country. Normally, this is the cadet's first extended exposure to an Air Force environment. It is here that the cadet receives junior officer and leadership development training. Also at this time, the Air Force has an opportunity to personally evaluate each cadet as a potential member of its officer corps.

Four-year ROTC members are required to complete a four-week session and two-year applicants attend a six-week session, adding two intensive weeks of academics comparable to the academics taught in Aerospace Studies 1000 and 2000 courses. Credit is granted for this two-week period, provided the student registers for credit, attends five one-hour pretraining sessions before attending Field Training, and attends two one-hour seminars conducted during the fall quarter following completion of Field Training.

ELIGIBILITY FOR THE PROFESSIONAL OFFICER COURSE (FOR PURPOSE OF EARNING A COMMISSION)

(Junior and Senior Years)

All cadets enrolled in the Professional Officer Course (junior and senior years) of the Air Force ROTC (for purpose of earning a commission) must:

a. Have either completed the General Military Course (freshman and sophomore years), or the off-campus, six-week Field Training, or have the required amount of prior military service.

b. Have two academic years of college remaining (either graduate or undergraduate).

c. Execute a written agreement with the government to complete the program, contingent upon remaining qualified and in school, and attend the off-campus, four-week Field Training between the sophomore and junior years and accept an Air Force Reserve Commission, if tendered.

d. Be selected by the Professor of Air Force Aerospace Studies and the President of the University or the duly authorized representative.

e. Meet certain specified age, mental, and physical requirements.

EXEMPTIONS FOR PREVIOUS ROTC, PREVIOUS ACTIVE MILITARY SERVICE, OR CERTAIN CIVIL AIR PATROL AWARDS

A student may request exemption from portions of the General Military Course on the following bases: (1) previous honorable active military service in any branch of the Armed Services; (2) at least
two years of high school ROTC; or (3) holding certain awards in the Civil Air Patrol. Exemption will be on an individual basis, and no University credit is given for those hours or portions of the General Military Course attended.

PAY AND ENTITLEMENTS
All cadets enrolled in AFROTC are furnished texts and uniforms by the government through the Air Force Material Control Clerk, University of Tennessee. Enrollees are required to deposit $35 as security to the University against loss or damage of uniforms or equipment for which the University is accountable to the government. At the completion of AFROTC, or when the student withdraws from the program, with the exception of a nominal fee covering the cost of shoes the deposit is returned to the student provided proper clearance for uniforms and equipment is obtained. Professional Officer Course cadets receive a subsistence allowance of $100 per month, not to exceed 20 months. In addition they are paid mileage to and from Field Training, plus pay commensurate with active duty rates. A four-week Field Training is normally required between the sophomore and junior years for those students enrolled in the four-year program. A six-week camp is required for two-year applicants.

ACTIVE DUTY COMMITMENTS
Commissioned graduates going into non-flying duties will be required to serve four years of active duty. Those graduates going into flying assignments will be required to serve five years active duty after completion of flight training.

CONDUCT, ORGANIZATION, AND ADMINISTRATION
Air Force Regulations provide for the following: "For the effective conduct of instruction at civilian colleges and universities, subject to coordination with general institutional regulations and arrangements and the approval of the head of the institution, the Professor of Air Force Aerospace Studies will be empowered to draft the rules and orders, relating to the organization, control, and training of the members of the AFROTC and the appointment, promotion, and reduction of Cadet Officers and Cadet Non-Commissioned Officers."

The Department of Air Force Aerospace Studies sponsors the following organizations:
(2) Angel Flight National auxiliary of the Air Force Auxiliary. Composed of selected cadets who are interested in enhancing the esprit, morale, and appearance of the Air Force ROTC Cadet Corps.
(3) Saber Team. Provides interested cadets an opportunity to serve as honor guard for all official Cadet Corps functions.
(4) Air Commando Flight. Provides opportunity for additional military training for those cadets volunteering to participate.

Curriculum
Air Force Aerospace Studies (094)

1210-20-30 Air Force Aerospace Studies (2, 2, 2)
Surveys the missions, functions, and organization of the Air Force. Emphasis on the Air Force Commands, the environment in which the Air Force operates and how the Air Force works with the Army and Navy, providing foundation upon which study of the Armed Forces and the Air Force can build. 1 hr and 1 hr lab (Leadership Laboratory).

2210-20-30 Air Force Aerospace Studies (2, 2, 2)
Introduction to study of air power. Course is developed from a historical perspective starting before the Wright Brothers and flying into the 1970s. 1 hr and 1 hr lab (Leadership Laboratory).

2240 Field Training (Academic Program) (1-6) Role of United States military forces in contemporary world, with particular attention to United States Air Force, its organization and mission, various component forces of U.S. military power, organization of America's defense structure, policies of major powers, and elements and processes in making of defense policy. Conundrums, Field Training bases in the country. Approximately 60 class hrs.

2310-20-30 Air Force Aerospace Studies (3, 3, 3) Air Force leadership at junior officer level, including leadership, ethics, professional, and legal aspects, with attention to communicative skills. Military management functions, principles, and techniques are covered. 3 hrs and lab (Leadership Laboratory).

2340 Flight Instruction Ground School (Private Pilot) (3) Part of Air Force ROTC Flight Instruction Program and provides students (1) to operate safely as a pilot. A secondary objective is to enable student to pass FAA private pilot's written examination. Thirty quarter hrs of classroom instruction. Seven subject areas covered are: Preflight Facts—Acquaints students with factors affecting flight; Meteorology—Involves student in learning weather phenomena affecting flight, weather information, and services available to pilots; Flight Computer; Navigation and Radio Navigation—Covers the requirements to plan a cross-country, use of appropriate maps, charts, logs and regulations that must be known to operate safely and legally.


2355 Commercial Pilot (3) Audio and visual presentation, supplemented with discussion, of following topics: Advanced Flight Computer; Advanced Meteorology; Advanced VFR Navigation and Radio; Commercial Pilot Federal Aviation Regulations and Exam-O-Grams; Alcohol, Drugs, and Flight Effects; Oxygen, Altitude, and the Body; Weight and Balance; and Oxygen Systems Course provides necessary instruction to take Federal Aviation Agency (FAA) written examination for Commercial Pilot's License.

2410-20-30 Air Force Aerospace Studies (3, 3, 3) Role and function of professional officer in a democratic society; socialization processes, public attitudes, and value orientations associated with professional military service; requisites for maintaining national security forces; decision-making processes of Department of Defense; political, economic, and social constraints affecting formulation of U.S. defense policy; impact of technological and international developments upon strategic problems and American response on developing communicative skills. 3 hrs and 1 lab (Leadership Laboratory).

Department of Military Science

Army Reserve Officers' Training Corps

Professor of Military Science:
Colonel Daniel H. Bauer (Head), M.A. Illinois.
Assistant Professor of Military Science:

UNIVERSITY ROTC PROGRAM
The University of Tennessee offers a voluntary ROTC program leading to appointment as an officer in the United States Army.

PURPOSE AND OBJECTIVE
The purpose is to provide professional education which will prepare students for appointment as commissioned officers in the Regular Army or the United States Army Reserve.

Objectives of the program are to provide students with an understanding of the fundamental concepts and principles of military art and science; to develop in them a basic understanding of associated professional knowledge, a strong sense of personal integrity, honor, and individual responsibility, and an appreciation of the requirements of national security; and to establish a sound basis for the students' future professional development.

ROTC draws young men and women for training from all geographical, economic, and social strata of our society as well as from the many educational disciplines required for the modern Army. The program insures that men and women educated in a liberal and broad spectrum of American institutions of higher learning are commissioned annually into the officer corps.

ARMY ROTC SCHOLARSHIP PROGRAM
The Army ROTC scholarship program offers financial assistance to young men and women in the Army ROTC program who are interested in the Army as a career. Each scholarship provides for free tuition, textbooks, and laboratory fees in addition to a subsistence allowance of $100 per month for the period that the scholarship is in effect. Scholarships may be awarded for either one, two, three or four years. High school seniors should contact their guidance counselors early in November or December of their senior year to apply for the four-year scholarship. One-, two-, and three-year scholarship applicants should contact the Professor of Military Science for further information. Certain other privately financed scholarships and grants are available to ROTC cadets.

UNIVERSITY CREDIT
The University of Tennessee grants the following credit for military science:
Military Science I—3 quarter hours (MS 1110)
Military Science II—6 quarter hours  
(MS 2110-20)  
Military Science III—12 quarter hours  
(MS 3110-20-30)  
Military Science IV—12 quarter hours  
(MS 4110-20-30)  
Army ROTC Summer Studies—6 quarter hours (MS 4000)

BASIC ACADEMIC REQUIREMENTS FOR APPOINTMENT AS SECOND LIEUTENANT

Academic prerequisites for appointment as Second Lieutenant in the United States Army through the ROTC Program at The University of Tennessee, Knoxville, include the following minimum requirements. The sequence and selection of courses not specified will be determined by the adviser in concert with the head of the Department of Military Science. In cases where a student is pursuing a discipline which is narrowly restricted (excluding Military Science Core Curriculum) with few elective options, any conflict in scheduling or course selection will be resolved in favor of academic degree requirements.

MILITARY SCIENCE CORE CURRICULUM

Basic Military Studies  
MS 1110 Fundamentals of Military Organization and Management  
....3  
MS 2110-20 Applied Leadership and Management (3, 3)  
6

Advanced Military Studies  
MS 3110-20-30 Advanced Leadership and Management (4, 4, 4)  
MS 4000 Army ROTC Summer Studies  
MS 4110-20-30 Seminar in Leadership and Management (4, 4, 4)  
TOTAL: 39 hours

Substitution

The following courses may be substituted for military courses with permission of adviser and ROTC department head:

Industrial Management 4460, History 4380 for MS 4130.

Regularly entered students may be substituted with permission of PMS.

OTHER ACADEMIC COURSES

Since each degree field at UT is designed to provide a well-balanced education in diversified fields, no specific hour requirement is levied for courses outside the Military Science Core Curriculum.

Freshman and Sophomore Years

The University requirements for subjects in the field of communications (English grammar, composition, speech, etc.); physical, natural and biological sciences; history and humanities; social sciences; and applied sciences (engineering, mathematics, computer science, etc.) will satisfy the Army's desire for its officers to have a well-rounded liberal education.

Junior and Senior Years

The cadet is expected to pursue at least one quarter of upper-division work in each of two different divisional course areas (other than major) as follows:

- Mathematics, computer sciences, natural sciences, anthropology, economics, political science and international relations, history, psychology, sociology, foreign languages, management, urban studies, mass communications, or accounting.

- Students seeking an Army commission are permitted to substitute military studies for non-technical electives, social studies, and/or humanities to satisfy degree requirements. This substitution is at the sole discretion of the deans of the separate schools and colleges.

ENROLLMENT AND CONTINUANCE REQUIREMENT

The general requirements for enrollment and continuance in the ROTC program are:

1. Basic Course—MS I and II
   a. Be a citizen of the United States.
   b. Be physically qualified.
   c. Be not less than fourteen years of age and not more than twenty-three years of age at the time of enrollment.

2. Advanced Course—MS III and IV
   All cadets applying for enrollment in the Advanced Course Army ROTC who seek a Commission must:
   a. Have either completed the Basic Course, or an off-campus six-week Field Training Course, or have the required amount of prior military service.
   b. Have two academic years of college remaining (either graduate or undergraduate).
   c. Be enrolled as a full-time student, either at UT or at a nearby institution in a cooperative program.
   d. Meet military screening and physical requirements.

- Regularly enrolled students who meet the academic prerequisites and do not desire a commission may take individual courses as electives with the permission of the department head and academic adviser.

ADVANCED MILITARY STANDING FOR MILITARY TRAINING

On the basis of previous honorable active military service in any branch of the Armed Services, or participation in the Junior ROTC Program at Secondary Schools, a student may request exemption from portions of the Basic Course. Exemption allowed will be determined by the academic adviser.

PROFICIENCY EXAMINATIONS

Students may apply for proficiency examinations in Military Science 1110, 2110 and 2120. These examinations are offered mainly for graduates of the 6 weeks of intensive training at the Basic Camp at Fort Knox, Kentucky. A student applying for a proficiency examination should present evidence that he or she has developed those abilities and attitudes expected of a student who has taken the course involved. The application must be approved by the department head.

EMOLUMENTS

All students enrolled in the Army ROTC program are furnished texts by the Army through the Military Property Officer at UT. Students enrolled in the ROTC Advanced Course receive uniforms and equipment plus an allowance of $100 per month during the academic year. While attending the ROTC summer studies, each cadet receives approximately $480 plus meals, clothing, and requisites special equipment.

COURSES AVAILABLE

The curriculum of the Army ROTC program is designed to qualify the cadet for appointment as an officer. Selection for appointment to the various branches of the Army is based on:

1. The personal interests of the cadet.
2. The major course of study.
3. Academic accomplishment.
4. Leadership potential.
5. The needs of the Service.

Under this system a cadet may be commissioned in any branch for which he or she is qualified and in which a need for officers exists. After graduation and commissioning, the officer will attend a service school for further specialized military training which will qualify him or her for the branch to which he or she is assigned.

Curriculum

Military Science (688)

1110 Fundamentals of Leadership and Management (3) Development of American military institutions, policies, experiences and traditions in peace and war from colonial times to present. Historical examples of effective and ineffective leadership and application of principles of war. Practical exercise in leadership development.


2120 Applied Leadership and Management (3) Contemporary world scene and impact on the military. Planning, preparation, and presentation of briefings and continued development of leadership skills through practical exercise. Discussion of ROTC Advanced Course. Prereq: 2110.

3110-20-30 Advanced Leadership and Management (4, 4, 4) Applied leadership to include operation of the military team, electronic communications, land navigation, small unit leadership and internal defense/development. Two field trips. Leadership Laboratory: Philosophy of organization and operation of military in tactical and administrative roles. Prereq: 2120.

4000 Army ROTC Summer Camp (6) Six-week encampment (forty-four hours of instruction are scheduled each week) is a prerequisite to commissioning and normally scheduled upon completion of 3130. Camp is conducted at an Army installation with instruction presented by ROTC faculty from colleges and universities. Course of instruction is an extension of leadership and management curriculum. Prereq: 3130.

4110 Theory and Dynamics of the Military Team (4) Organization and management of division military team, development and function of military staff, and coordination and planning of the military team. Leadership Laboratory: Staff and Tactical Planning, presentations, and briefings, preparation, execution and supervision of plans. Prereq: 4000 or consent of instructor.

4120-30 Seminar in Leadership and Management (4, 4) Analysis of selected leadership and management problems involved in unit administration, military justice, Army Readiness Program, and officer-assisted relationships. Leadership Laboratory: Prereq: 4110.
Division of Continuing Education

Vice President for Continuing Education:
Charles H. Weaver, Ph.D. Wisconsin
Assistant Vice President for Continuing Education:
C.W. Hartsell, Ed.D. Tennessee

The Division of Continuing Education is responsible for the operation of all statewide continuing education programs, both on campus and off campus. The Division is concerned with policies and programs required for effective offering of educational opportunities, including attainment of college-level degrees, to qualified students of all ages and walks of life who pursue knowledge outside the traditional on-campus setting. All continuing education programs of the University are coordinated through the Division.

Information concerning continuing education programs of the various campuses is set forth in the respective catalogs. Information on continuing education programs of The University of Tennessee, Knoxville, is given on page of this catalog.

Joint University Center (UT/MSU)
Coordinator:
J.A. Rhodes, Jr., Ph.D. Georgia State.

The Joint University Center is administered cooperatively by The University of Tennessee and Memphis State University, and the Division has coordinative and developmental responsibilities only.

Center for Extended Learning
Director:

Associate Directors:

CLEP Open Center: Administers College Level Examination Program tests each month.

College Credit for High School Seniors: Coordinated in cooperation with the State Board of Education.

Conferences: For specific clientele statewide.

Independent Reading: The student should contact the academic department for the desired reading course and then register for credit through the CEL.

Independent Study: Extends instructional services of the University from all campuses to the citizens of the state. Courses may be started at any time.

College Credit Courses: The same courses with the same instructors as in resident classes, offering full degree credit.

College Entrance Courses: To remove entrance deficiencies or to complete high school requirements.

Non-Credit Courses and Certificate Programs: In areas of general interest and in technical, business, and professional fields.

Statewide Media Programs: Courses for credit by cable and open-circuit television, radio, and newspapers.

Undergraduate Cooperative Education Program: For students desiring to work alternate quarters while going to school.

For information on enrollment, costs, books, and credit, write: Center for Extended Learning, 447 Comm. & Univ. Ext. Bldg., The University of Tennessee, Knoxville, Tennessee 37916. Telephone: (615) 974-5135.

Head Start State Training Office
Director:
L.C. Biggs, M.S. Wisconsin.

Assistant Director & Coordinator, Supplementary Training Program:
V.H. Gaylon, M.S. Tennessee.

Coordinator:
R.B. Popp, M.S. Tennessee.

Training Officers:
B.A. Nye, M.S. Tennessee; S.L. Hunter, M.S. Georgia State; J.J. Hamilton, B.S. Tennessee Tech; R. Neely, M.S. Tennessee; C. Doster, M.S. Memphis State; D. Griffin, M.S. Tennessee; L. Horn, B.S. Tennessee.

Research Associate, Competency Program:
W.J. Moore, M.S. Tennessee.

The State Training Office of Head Start is a program of services to the twenty area Head Start programs in Tennessee. The services include organizing training programs for personnel of the various local programs, development of special workshops, publication of a newsletter, and organizational work with parents of children in the Head Start program. This office provides training through the coordination of Head Start Supplementary Training and the State Training Office grants.

Library Services
Director:
D.J. Harkness, M.S. Columbia.

This is a statewide service, administered by the system Division, and has four major facets.

Package Library and Book Services provide material for use by clubwomen, teachers, librarians, and other individuals in preparing talks and papers and in doing special study and reference work. Books from the Extension Library and the University Library are loaned to individuals within the state and to students taking courses by correspondence. Study club
outlines, bibliographies, suggestions for club yearbooks, reading lists, and information-reference services are provided.

**Club Program Service** includes a series of program manuals on historical, literary, and bibliographical subjects designed to help clubwomen, teachers, and librarians in their work and individuals in their reading and study in informal adult education.

**Drama Loan Service** makes it possible for directors of drama in schools, colleges, universities, Little Theatres, and church drama groups to borrow copies of one-act and three-act plays and material for special days for reading and examination. Information on sets, costumes, and the original Broadway productions, along with material on playwrights, actors, and actresses, is also available.

**School Program Service** includes aids to teachers, librarians, and directors of speech and drama through package libraries, drama loans, and production aids.

**Publications**

Publications are a direct means of extending to Tennesseans the information resulting from studies by University departments and various extension materials designed for general enrichment of civic, cultural, and economic understanding. *The University of Tennessee Continuing Education Series* is used as an outlet for these materials. A list of available titles, most of them free to Tennessee residents, may be had upon request.

**Radio Services**

Director: R.A. Shirley, M.A. Tennessee.

Associate Director: N.L. Dryer, B.M. Indiana.


Staff: J.C. Adkins, M.S. Tennessee; M.J. Bell, B.A. North Carolina; J.A. Chasteen; W.G. Hauser, B.A. New Mexico; D. Lineback; R.W. Stagg.

This department conducts an extensive statewide program of adult education and information by radio, offering hundreds of different cultural and educational experiences. Its activities may be grouped into three categories.

1. **WUOT**, the University’s 100,000-watt stereo FM station, operating nineteen hours a day every day of the year, with a high quality and varied program of music, public affairs, discussion, drama, and documentaries from local, state, national, and international sources. The station is a member of the National Public Radio Network.

2. A network of over 150 Tennessee radio stations which provide without charge the time for over 22,000 quarter-hour programs on subjects of public interest, with production, duplication on audio tape, and distribution accomplished by the department. Its close contact with all broadcasting, and its staff and facilities, equip the department ideally for work with the other campuses in the production, duplication, and distribution of audio materials for educational use. It will upon request assist all of the campuses in communications development.

3. A technical service which includes highspeed duplication of reel-to-reel or cassette audio tapes for University departments, recording conferences and workshops, audio consulting, and educational radio consulting.

**Teaching Materials Center**

**Director:** J.T. Benton, M.S. Tennessee.

This department provides educational films for the public schools, colleges, churches, civic clubs, and other interested organizations on a wide variety of subjects, ranging from agriculture to technical material on the space age, and also films for industrial use. Film councils throughout the state encourage the use of these materials for forum discussions and general adult education. An advisory service on effective film use is also provided by the department. Films, equipment, and other services are made available to the academic faculty for classroom instruction and experimentation and educational films are provided for the students both on and off campus for student teaching, previews, and special projects.

**Television Services**

**Director:** F.A. Lester, M.A. Tennessee.

**Assistant Directors:** D.L. Bower; W.R. Terry, B.A. Tennessee; E.D. Wood, B.S. Tennessee.

**Producers:** S.H. Gordon, M.S. Tennessee; W.P. Wilson, B.S. Tennessee.

Television services include the complex closed-circuit administration and production work which results in many lower-division resident classes being taught to some 8000 students by television on the campus; the production of 196 half-hour programs each year on WSJK-TV, the State Department of Education station in East Tennessee; and instruction for three resident courses in broadcasting for the College of Communications. The department jointly administers an off-campus secondary school accelerated entrance program by television tape and the Video Tape Electrowriter Remote Mode program of professional development studies.
The University Library

Donald R. Hunt, Director
Gene M. Abel, Associate Director/Public Services
Susan Brynteson, Associate Director/Technical Services
George W. Shipman, Associate Director/Administrative Services

Professors:
Donald R. Hunt (Director), M.A.L.S. Michigan;
G.M. Abel, M.S. Chicago; R.J. Bassett, A.M.L.S. Michigan; O.H. Branch, B.A.L.S. Emory;
J.H. Dobson, M.S. Columbia; E.E. Goehring (Emeritus), B.S.L.S. Columbia; L.B. Vandiver,
M.A. Florida State.

Associate Professors:
K.M. Costam, M.S.L.S. Pratt; M.F. Crawford,
M.S.L.S. Kentucky; H.S. Garrett, M.A. Peabody;
D.W. Jeff, M.S.L.S. Florida State; A.W. LeBlancq;
M.L.S. Emory; A.E. Mitchell, M.A.L.S. Peabody;
A.M. Nicholls, M.S. Florida State; G.K. Phillips,
M.L.N. Emory; T.T. Rogers, M.S. Florida State;
M.J. Sharp, M.L. Emory; G.W. Shipman,
M.A.L.S. Michigan; R.H. Surles, M.L.L.
Washington; B.C. Wolfe, Jr., J.D. Kentucky.

Assistant Professors:
P.S. Bayne, M.S.L.S. North Carolina;
C.S. Carver, M.L.S. Peabody; M.D. Davis,
M.S.L.S. North Carolina; D.C. Ellingon, M.L.S.
Oregon; F.H. Felder, M.S.L.S. Atlanta;
D.K. Freeman, M.L.S. Indiana; C.J. Henderson,
M.S.L.S. Atlanta; S.B. Holland, A.B.L.S. North Carolina; J. Maddox, M.L.S. Emory;
A.H. Mitchell, M.S.L.S. Tennessee; D.A. Nitecki,
M.S. Drexel; F.O. Painter, M.L.S. Peabody;
L.L. Phillips, M.L.S. Rutgers; V.C. Reeves,
M.S.L.S. North Carolina; G.C. Scales, M.S.L.S.
Case Western Reserve; C.T. Schmidt, M.S.L.S.
Drexel; K.M. Tiahrt, M.L.N. Emory.

Instructors:
J.W. Granade, M.S.L.S. North Carolina;
R.J. Hoyt, M.S. Illinois; D.C. Picquet, M.S.L.S.
Tennessee; D.A. Ralkes, M.L.S. Rutgers;
N.H. Wiest, M.S. Drexel; N.B. Watkins, M.L.S.
Tennessee; J.H. Worley, M.S.L.S. Tennessee.

The UTK Library, as the premier library of the state, seeks to acquire and service all necessary recorded information, both print and non-print, that meets the needs of the University's teaching, research, and service programs.
The books, periodicals, non-print and any other materials contained in the 6 UTK Library units are available to all students, faculty and staff of The University of Tennessee, Knoxville. Included among the holdings are 1,332,782 books, 1,054,340 microforms, 4,347 audiotapes, 1,251 slide carousels, 570 videotapes, 6,288 phonodiscs, 1.9 million manuscripts, and various ephemeral materials. More than 20,000 periodical and other serial titles are received annually.
The library in its 6 locations is open to all students and faculty, regardless of their fields of study. The James D. Hoskins Library at 1401 West Cumberland is the main library where administrative and technical services offices are located. The dictionary catalog, listing the library holdings for the entire campus, is in Main, as are the general and research collections, comprehensive reference, interlibrary services, documents, 4000/5000-level reserves, newspapers, non-print materials, and Special Collections, the last a repository of local and regional source materials.
The John C. Hodges Undergraduate Library, on Volunteer Boulevard at Andy Holt Ave., has a limited collection of 150,000 volumes selected to meet the needs of students in undergraduate courses. Reserve materials for 1000-3000 level courses are available in this library as is a large collection of audio-tapes, slides, and video-cassettes.
Other libraries serving specialized areas are Agriculture-Veterinary Medicine in Morgan Hall, Law in the Taylor Law Building, Music in the Music Building, and Science/Engineering in Dabney-Buehler.
The libraries are administered by a director, three associate directors (for public, technical, and administrative services) and a number of department heads. Questions and comments are invited in person or through the suggestion boxes located in each library. Continuing evaluation and building of the collections is the responsibility of the Collections Development Librarian. While most materials are selected by faculty, recommendations for purchase are invited from all students and staff.
Copies of Your Libraries, the library handbook for students and faculty, are available at all libraries.

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Computing Center

Gordon R. Sherman, Director
Asa O. Bishop, Jr., Associate Director
Martha F. Bowen, Associate Director
Timothy P. MacKenzie, Assistant Director

Faculty Associates
Professors:
G.R. Sherman (Director), Ph.D. Purdue;
R.E. Cline, Ph.D. Purdue.

Associate Professor:
A.O. Bishop, Jr., Ph.D. Clemson.

Assistant Professor:
D.W. Straight, Ph.D. Texas.

The University of Tennessee Computing Center (UTCC), the largest computing facility in The University of Tennessee system, provides computing facilities and services for the needs of the University’s teaching, research, public service, and administrative activities. In particular, UTCC maintains close contact with the UTK academic community by supporting research and instructional users with professional computer staff.

UTCC is principally located in the Stokely Management Center and in Andy Holt Tower. From the Stokely location, UTCC supplies computing services to all campuses in the UT system through job entry facilities located on each campus. At UTK, UTCC maintains five job entry stations for batch work and eight sites for interactive computer work.

UTCC’s equipment consists of an IBM 370/148, an IBM 360/65 and a DECsystem-10 which are used for research, instruction and administrative computing work. UTCC also maintains an IBM 360/40 which is used exclusively for administrative work. The IBM 370/148 has two million bytes of memory, and the IBM 360/65 has 2.75 million bytes of memory. The DECsystem-10 is a 1080 configuration with 256K words of memory.

UTCC supports remote job entry stations (card reader/line printer) with the IBM 370/148-IBM 360/65-DECsystem-10 combination and a CalComp plotter. The IBM 370/148 and 360/65 run under OS/360 MVT with HASP II. The DECsystem-10 runs under the TOPS-10 Monitor. The time sharing system supported by the two machines includes ATS/360, Coursewriter III, APL, FORTRAN, BASIC, COBOL, Assembler language, and other special purpose application programs.

UTCC publishes a User’s Guide which describes the use of the IBM 370/148 and 360/65 and policies and procedures and the DECsystem-10 Programmer’s Guide, which is a general handbook for the use of the DECsystem-10. The two guides are available at the UT Book and Supply Store.

UTCC also publishes a monthly Newsletter which announces systems, equipment and procedural changes and contains other items of interest to the user community. Program writeups and special user’s guides are also published.

UTCC periodically offers intensive training seminars of several days duration in computer utilization on the IBM 370/148 and 360/65 and the DECsystem-10. These seminars are planned primarily for faculty, staff and graduate students who use or plan to use UTCC facilities. UTCC offers non-credit short courses each quarter in topics such as programming languages and special purpose programs. These courses are announced in the Newsletter and in the UT Daily Beacon.

Computing services can be requested via the Request for Services form available from the business office in the Stokely Management Center. All users of UTCC facilities are assigned a consultant to provide user assistance.
Public Service

Vice President for Public Service:
C.E. Smith, Ph.D. George Peabody
Associate Vice President for
Public Service:
A.B. Biscoe, Jr., Ph.D. Florida

Institute for Public Service

Executive Director:
R.S. Hutchinson, M.B.A. Chicago.

Associate Director:
L.R. Rogers, B.S. Tennessee.

Manager of Information Services:
T.B. Ballard, B.S. Tennessee.

Manager of Request-for-Service System:
W.S. Evans, B.S. Tennessee.

Business Manager:
G.W. Baskette.

Director, Emergency Training:
Harry V. Price, M.S. Tennessee.

The Institute for Public Service was established in 1971 within the Office of the Vice President for Urban and Public Affairs. The purpose of the Institute is to coordinate and promote public service activities throughout the University system, excluding services provided through the Institute of Agriculture.

The basic goal of the University public service effort is to bring to the citizens of Tennessee—their business, their industry, and their governments—the problem-solving capabilities uniquely embodied within their statewide University system.

Public service at The University of Tennessee includes all services offered to those outside the University, including teaching in certain non-degree situations, technical assistance, and applied research which is conducted specifically at the request and for the benefit of non-University organizations in Tennessee.

The Institute provides: (1) a system-wide focal point for urban and public services; (2) a means to coordinate the various system-level public service activities; and (3) an organizational base for communication and program development that relates to both outside service clientele of the University and the campuses of the University system.

The Institute is headquartered in Knoxville and maintains regional offices in Chattanooga, Cookeville, Jackson, Johnson City, and Nashville.

The Institute is comprised of the system-level public service operations listed below.

County Technical Assistance Service

Executive Director:
J.H. Westbrook, Jr., B.S. Tennessee.

Executive Assistant:
C.R. Phебus, M.S. Vanderbilt.

Assistant Director for Administration:
T.D. McAnulty, M.A. Austin Peay State.

Legal Specialist:
W.C. McIntyre, J.D. YMCA Law School;
J.D. Mayo, J.D. Tennessee; R.E. Fults, J.D. Tennessee.

Senior Law Enforcement Consultant:
G.L. White.

Law Enforcement Consultant:
S.F. Glaser, B.S. Tennessee.

Financial Specialist:
R.A. Pierce, B.A. Alabama.

Engineering Specialist:
C.R. Phебus, M.S. Vanderbilt.

Government Research Analyst:
W.E. Bragg, M.P.A. Middle Tennessee State.

Communications and Publications Specialist:
M.C. Walker, B.S. Tennessee.

Special Projects Coordinator:
M.J. Frank, B.A. Tennessee.

Impact Analyst:
J.C. Smith, B.S. Middle Tennessee State.

County Field Advisers:
J.B. Gardner, M.A. Memphis State;
M.R. Garland, M.C.M. East Tennessee State;

The County Technical Assistance Service was established by the Board of Trustees at the 1973 mid-year meeting and began operation on 1, 1973. Establishment of the Service was authorized by the 88th General Assembly for the purpose of providing “studies and research in county government, publications, educational conferences and attendance thereat, and to furnish technical, consultative and field services to counties of the state in problems relating to fiscal administration, accounting, tax assessment and collection, law enforcement, improvements, and public works, and in any and all matters relating to county government. This program shall be carried on in cooperation with and with the advice of counties in the state acting through the Tennessee County Services Association and its Board of Directors, which is recognized as their official agency or instrumentality.”

The Service is headquartered in Nashville, with regional offices in Chattanooga, Cookeville, Jackson, Johnson City, and Knoxville.

Municipal Technical Advisory Service

Executive Director:
V.C. Hobday, Ph.D. Syracuse.

Assistant Director:
J.P. Hartman, M.P.A. Tennessee.

Specialist Consultants:
J.M. Crabtree, Jr., B.S. Tennessee Tech (Personnel); J.W. Crawford, B.A. Miami (Personnel); J.A. Fitzgerald, B.A. Memphis State (Police); D.W. Huffer, J.D. Tennessee (Ordinance Codification); W.K. Joines, B.S. Tennessee Polytechnic (Finance and Accounting); J. Kersh, B.S. Tennessee (Municipal Information); F.E. Kirk, B.S. in C.E. Southern Methodist (Public Works); J.H. Leuty, B.S. Tennessee Polytechnic (Finance and Accounting); A.C. Lock, Jr., B.S.C.E. Oklahoma State (Public Works); R.A. Lovelace, M.P.A. Kansas (Intergovernmental Affairs); G. Musick (Police); D.W. Owby, J.D. Tennessee (Ordinance Codification); M.T. Pentecost, B.S. Murray State (Finance and Accounting); E. Puetz, J.D. Tennessee (Municipal Law).
Municipal (District Consultants);

Librarian:
E.M. Sodemann, B.L.S. Wisconsin.

The Seventy-Fifth General Assembly (1949) established a Municipal Technical Advisory Service at The University of Tennessee. The legislation designated the purposes to be “studies and research in municipal government, publications, educational conferences and attendance thereof, and furnishing technical, consultative, and field services to municipalities in problems relating to fiscal administration, accounting, tax assessment and collection, law enforcement, improvements and public works, and any and all matters relating to municipal government.” Services are currently provided in the fields of municipal law, municipal management, public works, finance and accounting, ordinance codification, municipal information, personnel, and police administration. The state is divided into eight districts and a Municipal Consultant is assigned to each district. Most of the staff are located in the headquarters office on the Knoxville campus; regional offices are maintained in Cookeville, Jackson, and Nashville. This program is carried on in cooperation with the Tennessee Municipal League.

Center for Industrial Services
Executive Director:
R.E. Harris, M.S. Tennessee, P.E.
Assistant Director for Field Services:
R.L. Highers, B.S. Tennessee Tech, P.E.
Senior Field Engineers:
S.E. Clapp, M.B.A. Tennessee; R.E. Rinta, B.S. Tennessee; J.E. Ross, B.S. Geneva (Pann), P.E.; C.R. Vandiver, B.S. Middle Tennessee State, P.E.
Field Engineers:
Counselor:
J. Logan, M.B.A. Arkansas.
Industrial Engineer:
T.C. Parsons, M.S. Tennessee, P.E., CPA.
Industrial Librarian:
N.W. Wieseheugel, M.L.S. Peabody.

The Center for Industrial Services has the primary role of assisting Tennessee’s manufacturing firms by providing technical and managerial assistance to those companies seeking assistance. By the Tennessee Public Acts of 1963, the assigned objectives for the Center are “to render service to the industries in this state by providing information, data, and materials relating to the needs and problems of industry which might be supplied and solved through research; by providing information about available research facilities and research personnel in Tennessee colleges and universities, and in governmental and private research laboratories; by keeping Tennessee’s industries informed about the supply of and demand for trained qualified personnel; and by cooperating with the Governor’s Staff Assistant for Industrial Development and the Tennessee Industrial and Agricultural Commission in carrying out its duties.”

This statewide program encourages and assists managers of Tennessee firms to draw upon the intellectual resources of the colleges and universities to upgrade the firm’s performance. Field engineers experienced in manufacturing operations take the initiative in encouraging the upgrading and expansion of management in their plant environment.

The Center for Industrial Services is headquartered in Nashville. Regional offices are maintained in Chattanooga, Cookeville, Jackson, Johnson City and Knoxville.

Center for Government Training
Executive Director:
Associate Director:
Assistant Directors:
E.K. Smith; M.D. Taugher, B.S. Middle Tennessee State; G.T. Himes, Jr., B.S. Belmont.
Regional Managers:
T.R. Carpenter Jr., M.S. Tennessee; J.W. Fort, M.A. Austin Peay State; P.J. Gilson, B.S. Belmont College; A.C. North, Jr., B.S. Middle Tennessee State; D.R. Waynick, B.S. Lambuth.

The Center for Government Training has responsibility for providing professional assistance and establishing training and career development programs for state and local government officials and employees throughout the state. Headquarters is located in Nashville, but regional offices are also maintained in Jackson and Knoxville. The Center is charged with identifying and analyzing needs for public service education and training at the state and local levels in Tennessee, and with developing and conducting programs for training of public agency employees, working with institutions of higher education in the state and other educational facilities. The Center acts as a clearinghouse for information relative to public service personnel education and training programs. In addition, the Center serves as the central administrative agency in a statewide local government training network which includes four campuses of the University and the six senior institutions in the Board of Regents system.

Technical Assistance Center
Director:
J.T. Brothers, B.S. Tennessee.
Associate Director:
J.R. Anns, M.B.A. Inter-American.
THE UNIVERSITY OF TENNESSEE GENERAL SUMMARY

Administration

Trustees:
- Appointed by the Governor ........................................... 18
- Ex-Officio ................................................................. 5

Officers of Administration:
- President ................................................................. 1
- Vice Presidents ......................................................... 8\(^a\)
- Associate/Assistant Vice Presidents .................................. 8
- Chancellors ............................................................... 5\(^b\)
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Full-Time and Part-Time Faculty 1977-78

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<th>Center for the Health Sciences</th>
<th>Chattanooga</th>
<th>Knoxville</th>
<th>Martin</th>
<th>Nashville</th>
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<td>Professors</td>
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<td>406</td>
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<td>Instructors</td>
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<td>114</td>
<td>290</td>
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<td>Totals</td>
<td>772</td>
<td>354</td>
<td>1,650</td>
<td>258</td>
<td>143</td>
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</table>

Instruction, Research, and Public Service

| Officers of the Agricultural Experiment Station | 40 |
| Officers of the Agricultural Extension Service (Includes County Agents) | 430 |
| Lecturers | 133 |
| Graduate, Research, and Teaching Assistants, Fellows, Trainees | 1,874 |
| Officers of the UT Center for the Health Sciences-Knoxville Unit | 69 |

\(^a\) Includes two vice presidential titles held by one person.
\(^b\) Includes two vice presidents.
\(^c\) Includes UTCHS-Knoxville Unit.
<table>
<thead>
<tr>
<th>Institution</th>
<th>Fall 1977</th>
<th>Winter 1977</th>
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<th>Total 1977</th>
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<td>Knoxville</td>
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<td>2,934</td>
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<td>Martin</td>
<td>2,277</td>
<td>2,168</td>
<td>2,168</td>
<td>6,613</td>
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<td>3,012</td>
<td>3,428</td>
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<tr>
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<td>1,155</td>
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<td>TOTAL</td>
<td>11,473</td>
<td>10,083</td>
<td>9,676</td>
<td>31,232</td>
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**Note:**

- The enrollment data in this statewide summary of the University of Tennessee System represents students enrolled for degree credit. Students enrolled only on a non-credit or audit basis are not included.
- The enrollment data do not include 603 Graduate Medical Students (Residents and Non-Residents).
- The enrollment data do not include 609 Graduate Students (Residens and Non-Residents).
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