

**University of Tennessee,
Chattanooga****2025-2026 Undergraduate Catalog****Course Descriptions**[Contract All Courses](#) |

Courses certified as satisfying General Education Requirements are identified in the course title with a two letter category abbreviation. General Education categories are listed below.

[Writing and Communication \(WC\)](#) [Humanities and Fine Arts \(HF\)](#) [Natural Science \(LL, LC & LB, NL\)](#)

[Behavioral and Social Science \(SB\)](#) [Quantitative Reasoning \(QR\)](#) [Individual and Global Citizenship \(CZ\)](#)

French**FREN 3110 - French Conversation and Composition Through Culture, Film and Media I**

(3) Credit Hours

Selections from French and Francophone literature, cinema and television, topics of current interest, and articles from French newspapers and magazines will form the basis for discussions and compositions. Fall semester. Prerequisites:

[FREN 2120](#)

with a minimum grade of C or placement and oral proficiency with a rating of Novice-High or placement; [ENGL 1010](#)

or [ENGL 1011](#)

or [ENGL 1020](#)

or [UHON 1010](#)

or [UHON 1020](#)

with minimum grades of C or placement, or Department Head approval.

FREN 3120 - French Conversation and Composition Through Culture, Film and Media II

(3) Credit Hours

Selections from French and Francophone literature, cinema and television, topics of current interest, and articles from French newspapers and magazines will form the basis for discussions and compositions. Spring semester. Prerequisites:

[FREN 2120](#)

and oral proficiency with a rating of Novice-High or placement; [ENGL 1010](#)

or [ENGL 1011](#)

or [ENGL 1020](#)

or [UHON 1010](#)

or [UHON 1020](#)

with minimum grades of C or placement; or Department Head approval.

FREN 3210 - Advanced French Language I

(3) Credit Hours

Study of advanced grammar with special emphasis on writing and style. Reading and analysis of illustrative texts. Practice may be in a variety of written genres and styles: creative writing, persuasive essays, research papers, technical writing, translation or editing. On demand. Prerequisites: [FREN 2120](#) with a minimum grade of C or placement; or Department Head approval.

FREN 3220 - Advanced French Language II

(3) Credit Hours

Study of advanced grammar with special emphasis on writing and style. Reading and analysis of illustrative texts. Practice may be in a variety of written genres and styles: creative writing, persuasive essays, research papers, technical writing, translation or editing. On demand. Prerequisites: [FREN 2120](#) with a minimum grade of C or placement; or Department Head approval.

FREN 3230 - French and Francophone Culture

(3) Credit Hours

The fine arts, patterns of living, and total life-style of the French-speaking world approached through their language. Geographical and historical backgrounds included. On demand. Prerequisites: [FREN 2120](#) with a minimum grade of C or placement, or Department Head approval.

FREN 3240R - Special Topics in French and Francophone Studies

(3) Credit Hours

Special topics in French studies offers study of a theme, genre, medium, period of Francophone country/ies. On demand. Prerequisites: [FREN 2120](#) with a minimum grade of C or placement; or Department Head approval.

FREN 3310 - Premodern Literature and Culture

(3) Credit Hours

Study of principal works and/or genres from the Middle Ages through the 18th century. Traditional survey or thematic approach to fiction, essay, poetry, and/or drama, with attention to the cultural, political, and social context of French literature. On demand. Prerequisites: [FREN 2120](#) with a minimum grade of C or placement, or Department Head approval.

FREN 3320 - Modern Literature and Culture

(3) Credit Hours

Study of principal works and/or genres from the 19th – 21st century. Traditional survey or thematic approach to fiction, essay, poetry, and/or drama, with attention to the cultural, political, and social context of French literature. On demand. Prerequisites: [FREN 2120](#) with a minimum grade of C or placement, or Department Head approval.

FREN 3330 - Francophone Literature and Culture**(3) Credit Hours**

Study of principal works and/or genres from the Francophone world (i.e., Quebec, the Caribbean, North Africa and Sub-Saharan Africa). Traditional survey or thematic approach to fiction, essay, poetry, and/or drama, with attention to the cultural, political, and social context of French literature. On demand. Prerequisites: [FREN 2120](#) with a minimum grade of C or placement, or Department Head approval.

FREN 3400 - French Internship**(3) Credit Hours**

A cooperative arrangement between the university and specific elementary or middle schools, social service agencies or businesses involved with either foreign language instruction, service to foreign language-speaking clients, or business transactions with companies abroad. Every semester. Junior or Senior standing and Department Head approval.

FREN 3450R - Advanced French Conversation**(1-2) Credit Hours**

This course is designed to improve foreign-language speaking skills through conversation practice with native informants or professors and critical reflections. The course may be repeated a total of 3 times for a maximum of 3 credit hours (students who repeat the course will be given more advanced conversation assignments). This course is limited to students majoring in modern foreign languages. Prerequisites: [FREN 3110](#) or [FREN 3120](#) or Department Head approval. French majors only; minors with Department Head approval.

FREN 3998R - Individual Studies**(1-9) Credit Hours**

Student must submit an Individual Studies/Research Contract to the Registrar's Office at the time of registration. Every semester. Prerequisites: [FREN 3110](#), [FREN 3120](#), [FREN 3210](#), [FREN 3220](#), [FREN 3230](#), [FREN 3310](#), [FREN 3320](#), or [FREN 3330](#)

or Department Head approval. Department may have additional prerequisite requirements.

FREN 3999R - Group Studies

(1-4) Credit Hours

On demand. Prerequisites: [FREN 2120](#)
with a minimum grade of C or Department Head approval.

FREN 4010R - Special Topics in French or Francophone Language, Literature and/or Culture

(2-3) Credit Hours

A reading course with emphasis on a field, period, or author, or on a topic of philology or linguistics. By special arrangement with the head of the department and the instructor. On demand. Prerequisites: [FREN 3110](#)
or [FREN 3120](#)
or [FREN 3310](#)
or [FREN 3320](#)
, all with minimum grades of C; or Department Head approval.

FREN 4050 - Romance Philology

(3) Credit Hours

Historical linguistics, the development of Romance languages from Vulgar Latin into modern Romance Languages. Covers basic linguistic concepts and terminology as well as phonological and morphological developments in Romance languages with particular emphasis on French and Spanish. Prerequisites: [FREN 3210](#)
or [SPAN 3210](#)
or [LAT 2020](#)
, all with minimum grades of C; or Department Head approval.

FREN 4900 - Senior Capstone

(2-3) Credit Hours

This is a variable credit class. The 2-credit course will allow senior-level students to reflect on their experience as majors in Spanish, French and Francophone Studies and Classics. They will also prepare to enter the professional world and/or graduate school. Those who take the course for 3 credits will meet with faculty members throughout the semester in order to develop a capstone project and will present their work in a public form. Fall and Spring semesters. Pre or Corequisites: [FREN 4010R](#)
or Department Head approval. Senior standing. Open to Modern and Classical Language and Literature majors only.

FREN 4995R - Departmental Thesis

(1-3) Credit Hours

A two-semester research or creative project resulting in a thesis under the supervision of a faculty member and with the approval of the Honors College. On demand. Prerequisites: Student must coordinate with Honors College to submit a Thesis Contract to get registered for this course. Restricted to Sophomore standing or higher.

FREN 4997R - Research

(1-9) Credit Hours

Enables students to conduct independent research. On demand. Prerequisites: Student must coordinate with a specific faculty member to complete the Research contract to get registered for the course. Restricted to Sophomore standing or higher.

FREN 4998R - Individual Studies

(1-9) Credit Hours

Enables students to study selected topics in depth. On demand. Prerequisites: Student must coordinate with a specific faculty member to complete the Individual Studies contract to get registered for the course. Restricted to Sophomore standing or higher.

FREN 4999R - Group Studies

(1-9) Credit Hours

Department may have additional prerequisite requirements. On demand.

General Business Administration

BUS 1410 - Success Seminar: Professional Experience I

(1) Credit Hours

This course is designed to lay the foundation for academic and professional success. Special emphasis in the class is placed on individual personal development and growth. The course also provides opportunities for students to learn about the resources available to support academic achievement and professional development. Fall and Spring semesters. Differential course fee will be assessed.

BUS 1999R - Special Projects

(1-9) Credit Hours

Individual or group projects. On demand. Prerequisites: Department Head approval. Differential course fee will be assessed.

BUS 2900 - Experiential Learning: Business mentor Program in the College of Business

(1) Credit Hours

Experienced professionals support students who are paired in a mentoring relationship based on common professional interests in order to guide students toward best practices for career success. Course integrates academic learning with business world application and experiences. Course is non-repeatable. Fall and Spring semesters. Prerequisites: Department Head approval. Sophomore standing. Open to Business Administration majors only. Differential course fee will be assessed. Satisfactory/No Credit.

BUS 3350 - Legal Environment of Business

(3) Credit Hours

American legal institutions and sources of law; ethical considerations of business; an introduction to social and political influences as reflected in government regulation. Every semester. Restricted to Junior standing or higher or Department Head approval. Differential course fee will be assessed.

BUS 3360 - Business Law

(3) Credit Hours

Fundamental principles of commercial law including common law and UCC sales contracts, commercial paper, and secured transactions, real and personal property law including bailment arrangements, landlord-tenant law, bankruptcy, securities regulation, collective bargaining, and consumer protection law. Prerequisites: [BUS 3350](#) or Department Head approval. Junior standing. Differential course fee will be assessed.

BUS 3410 - Success Seminar: Career Development

(1) Credit Hours

Students will be exposed to career planning and professional development practices and apply methods to become business-world ready. Students will refine self-marketing skills to enter or advance in the job market. Every semester. Prerequisites: Department Head approval. Junior standing. Open to Business Administration majors only. Differential course fee will be assessed.

BUS 3900R - Experiential Learning: Academic Internship Program

(1-3) Credit Hours

A supervised work experience designed to strengthen the student's technical competencies and fundamental knowledge in accounting, finance, management, marketing or entrepreneurship. Application process required. Minimum GPA and previous coursework will be evaluated prior to approval. A maximum of three credit hours can be earned through one internship position. A maximum of six credit hours can be earned in [BUS 3900R](#)/[ACC 3900R](#)/[ETR 3900R](#)/[FIN 3900R](#)

/[MGT 3900R](#)

/[MKT 3900R](#)

per student through the College of Business with no more than three hours earned per semester. Every semester.

Prerequisites: approval of internship coordinator. Junior standing. Open to business majors only. Differential course fee will be assessed. Satisfactory/No Credit.

BUS 3999R - Group Studies

(1-9) Credit Hours

On demand. Prerequisites: Department Head approval. Department may have additional prerequisite requirements. Differential course fee will be assessed.

BUS 4120 - Taxation of Estates, Gifts and Trusts

(3) Credit Hours

A study of the federal taxation of wealth transfers, including federal estate and gift taxes, and the income taxation of estates and trusts. Summer semester. Prerequisites: [BUS 3350](#) or Department Head approval. Junior standing. Differential course fee will be assessed.

BUS 4995R - Departmental Thesis

(1-3) Credit Hours

Requires University Honors approval. Department may have additional prerequisite requirements. Student must submit an Individual Studies/Research Contract to the Registrar's Office at the time of registration. On demand. Differential course fee will be assessed.

BUS 4997R - Research

(1-9) Credit Hours

Student must submit an Individual Studies/Research Contract to the Registrar's Office at the time of registration. Every semester. Prerequisites: approval of Department Head. Differential course fee will be assessed.

BUS 4998R - Individual Studies

(1-9) Credit Hours

Enables students to study selected topics in depth. On demand. Prerequisites: Student must coordinate with a specific faculty member to complete the Individual Studies contract to get registered for the course. Restricted to Sophomore standing or higher. Differential course fee will be assessed.

BUS 4999R - Group Studies

(1-9) Credit Hours

Department may have additional prerequisite requirements. On demand. Differential course fee will be assessed.

General Science

GNSC 1110 - The Physical Environment: Atoms to Galaxies

(3) Credit Hours

Description of physical science from three viewpoints: its historical and sociological significance, the processes of science, and the present content of scientific fact and theory. Topics include physics, chemistry, geology, and astronomy. Corequisites: [GNSC 1110L](#) or Department Head approval.

GNSC 1110L - General Science Laboratory

(1) Credit Hours

Laboratory to accompany [GNSC 1110](#)

. Studies involve motion and gravity, wave motion, circuits, optics, nuclear radiation, astronomy measurements, and magnetic fields. Two hours per week. Every semester. Corequisites: [GNSC 1110](#) or Department Head approval. Laboratory/studio course fee will be assessed.

GNSC 1150 - Science and Society (NL)

(3) Credit Hours

Explores the interrelationship of science and society through discussion of scientific issues that are vitally important to our society and everyday life. Specific topics may vary in keeping with current issues, but are likely to include the technology revolution, the energy crisis and possible solutions, the importance of science to our economy and defense, the impact of politics and the economy on scientific research, and space science. On demand.

General Education Category: Natural Science Non-Lab

GNSC 1999R - Special Projects

(1-9) Credit Hours

Individual or group projects. On demand. Prerequisites: Department Head approval.

GNSC 2999R - Group Studies

(1-9) Credit Hours

On demand. Prerequisites: Department Head approval. Department may have additional prerequisite requirements.

GNSC 3999R - Group Studies

(1-9) Credit Hours

On demand. Prerequisites: Department Head approval. Department may have additional prerequisite requirements.

GNSC 4997R - Research

(1-9) Credit Hours

Student must submit an Individual Studies/Research Contract to the Registrar's Office at the time of registration. Every semester. Prerequisites: approval of Department Head.

GNSC 4998R - Individual Studies

(1-9) Credit Hours

Enables students to study selected topics in depth. On demand. Prerequisites: Student must coordinate with a specific faculty member to complete the Individual Studies contract to get registered for the course. Restricted to Sophomore standing or higher.

GNSC 4999R - Group Studies

(1-9) Credit Hours

Department may have additional prerequisite requirements. On demand.

Geography

GEOG 1010 - Physical Geography (NL)

(3) Credit Hours

The physical environment with emphasis on processes that influence the distribution and pattern of landforms, water, climate, vegetation, and soil. Every semester.

General Education Category: Natural Science Non-Lab

GEOG 1030 - World Geography (CZ)

(3) Credit Hours

Description and analysis of selected world regions, their internal characteristics and problems, and the nature of their interrelationships in a global context. Every semester.

General Education Category: Individual and Global Citizenship

GEOG 1040 - Cultural Geography (SB)

(3) Credit Hours

Systematic study of the distribution and locational processes of population, nutrition and health, disease, religion, agriculture, industry, cities, geopolitics, and other topics in human geography. Every semester.

General Education Category: Behavioral and Social Science

GEOG 1999R - Special Projects

(1-9) Credit Hours

Individual or group projects. On demand. Prerequisites: Department Head approval.

GEOG 2210 - Maps and Mapping

(3) Credit Hours

Introduction to types of maps, map construction, aerial photographs, remote sensing, digital image processing, computerized cartography, computerized map applications, and geographic information systems. Every semester.

GEOG 2500 - World Resources

(3) Credit Hours

Location, utilization, production, consumption, and significance of resources to society. Introduction to the vast, interlocking network of activities that produce and affect the world's use and consumption of resources. Prerequisites:

[ESC 1510](#)

or equivalent with a minimum grade of C or Department Head approval. May be registered as [ESC 2500](#)

. Credit not allowed in both GEOG 2500 and [ESC 2500](#)

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GEOG 2999R - Group Studies

(1-9) Credit Hours

On demand. Prerequisites: Department Head approval. Department may have additional prerequisite requirements.

GEOG 3030 - Geography of North America

(3) Credit Hours

Introduction to the physical and cultural geography of North America. Prerequisites: Any 1000-level GEOG course or Department Head approval.

GEOG 3050 - Geography of Asia

(3) Credit Hours

Introduction to the physical and cultural geography of Asia. Prerequisites: Any 1000-level GEOG course or Department Head approval.

GEOG 3060 - Geography of Southeast United States

(3) Credit Hours

Introduction to the physical and human geography of Appalachia and the South. Topics to be emphasized using a geographic perspective include the natural environment, regional definitions, history, population, culture, economics and politics. Prerequisites: Any 1000-level GEOG course or Department Head approval.

GEOG 3410 - Culture, Environment, Power

(3) Credit Hours

Examines recent approaches to the study of the relationship between humans and the environment. Considers historical relationship between nature, science, and colonial expansion as well as key issues of contemporary environmental concern: conservation, environmental justice, sustainable development, and social movements. May be registered as [ANTH 3410](#) and [SOC 3410](#). Credit allowed in only one of the three courses.

GEOG 3999R - Group Studies

(1-9) Credit Hours

On demand. Pre or Corequisites: Department Head approval. Department may have additional prerequisite requirements.

GEOG 4010 - Geography of Travel and Tourism

(3) Credit Hours

This course explores the geography of travel and tourism largely from a topical approach, with the following topics to be covered: the geography of demand and supply for tourism; history of tourism; the tourist area life cycle theory; the geography of contemporary international tourism; the relationships between the physical, economic, environmental, social, and cultural dimensions and tourism; place promotion; geotourism; urban tourism; and heritage tourism. A portion of the course will also look at the place-specific tourism geography of selected regions. Prerequisites: Any 1000-level GEOG course or Department Head approval. May be registered as [ANTH 4010](#)

[SOC 4010](#)

. Credit only allowed in one of the following: [ANTH 4010](#), GEOG 4010, or [SOC 4010](#)

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GEOG 4060 - Meteorology

(3) Credit Hours

The atmosphere about us and its interactions with human society. Atmospheric origin, composition, moisture, temperature, general circulation, pollution problems, and how these processes create both usual and unusual weather patterns. Atmospheric storm systems receive special attention. Lecture 3 hours. Pre or Corequisites: [GEOG 1010](#) or [GEOG 1030](#) or [GEOL 1110](#) or [ASTR 1010](#) or [ESC 1500](#) or [ESC 1510](#) or [GEOL 2200](#) or [GEOL 2250](#) or Department Head approval.

GEOG 4150 - Urban Geography

(3) Credit Hours

History of urbanism, study of patterns of cities, spatial distribution of cities, and social and physical structure of cities of the Western world. Prerequisites: Any 1000-level GEOG course or [SOC 1510](#) or Department Head approval. May be registered as [SOC 4150](#)

. Credit not allowed in both GEOG 4150 and [SOC 4150](#)

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GEOG 4160 - Climatology

(3) Credit Hours

The study of climate processes, world climate types, past climate change, projected future climates, and climate applications. Includes a section on climate policy. Fall or Spring semester. Prerequisites: [GEOG 1010](#) or [GEOG 1030](#) or [GEOL 1110](#)

or [ASTR 1010](#)

or [ESC 1500](#)

or [ESC 1510](#)

or [GEOL 2200](#)

or [GEOL 2250](#)

or Department Head approval.

GEOG 4650 - Remote Sensing and Imagery Analysis

(4) Credit Hours

Principles of aerial and satellite photography and infrared, multispectral, and microwave sensing. Interpretation of remotely sensed data, including application to problems in a variety of environmental sciences. Lecture 3 hours, laboratory 2 hours. Prerequisites: [GEOL 2100](#)

or Department Head approval. Maybe registered as [ESC 4650](#)

. Credit not allowed in both GEOG 4650 and [ESC 4650](#)

. Laboratory/studio course fee will be assessed.

GEOG 4660 - Geographic Information Systems

(4) Credit Hours

Introduction to fundamental principles of geographic information systems (GIS). Applications, data structures and basic functions of GIS. GIS computer programs are used to demonstrate basic GIS functions. Lecture 3 hours, laboratory 2 hours. Prerequisites: [ESC 4650](#)

[/GEOG 4650](#)

or Department Head approval. May be registered as [ESC 4660](#)

. Credit not allowed in both GEOG 4660 and [ESC 4660](#)

. Laboratory/studio course fee will be assessed.

GEOG 4997R - Research

(1-9) Credit Hours

Enables students to conduct independent research. On demand. Prerequisites: Student must coordinate with a specific faculty member to complete the Research contract to get registered for the course. Restricted to Sophomore standing or higher.

GEOG 4998R - Individual Studies

(1-9) Credit Hours

Enables students to study selected topics in depth. On demand. Prerequisites: Student must coordinate with a specific faculty member to complete the Individual Studies contract to get registered for the course. Restricted to Sophomore standing or higher.

GEOG 4999R - Group Studies

(1-9) Credit Hours

Department may have additional prerequisite requirements. On demand.

Geology

GEOL 1025 - Geology of the National Parks (LC or NL)

(3) Credit Hours

This course provides an overview of the diverse geology preserved in national parks. Students of all disciplines learn to view national parks through a geological perspective, and to explore the roles of national parks in historical events from both geological and humanistic perspectives.

General Education Category: Natural Science Lecture or Natural Science Non-Lab

GEOL 1030 - Natural Hazards (LC or NL)

(3) Credit Hours

This course will cover the causes and effects of earth hazards such as earthquakes, floods, sinkholes, landslides, subsidence, hurricanes, coastal erosion, wildfires, climate change, and impacts of extraterrestrial events. Discussion around each event will include effects to society and adjustments by humans living on a dynamic planet. Course topics will include reviews and explanations of worldwide natural hazards occurring during the semester. Lecture 3 hours.

General Education Category: Natural Science Lecture or Natural Science Non-Lab

GEOL 1040 - Earth's Resources and the Environment (LC or NL)

(3) Credit Hours

This course explores how the Earth's resources are formed and distributed, extracted, and used, and how their extraction and use impact the environment and society. Students will engage with geologic topics related to mining, metal and mineral abundance, water abundance and quality, climate change, as well as the challenges related to resources and the environment as population, and therefore demand continues to grow. Lecture 3 hours.

General Education Category: Natural Science Lecture or Natural Science Non-Lab

GEOL 1105L - Earth and Environment Lab (LB)

(1) Credit Hours

The course serves as an introduction to how our planet works, focusing on the formation and evolution of the solid earth, the dynamic nature of earth systems, and the geologic issues relevant to society. Specifically, students will perform hands-on laboratory exercises and case studies to investigate the scientific principles behind natural phenomena, resource cycles, how we utilize these systems, and our impact on the Earth System. Every semester. 2 hours. Pre or Corequisites: Any one of the following general education courses offered in Geology: [GEOL 2250](#), [GEOL 2200](#), or [GEOL 1040](#)

or Department Head approval. Laboratory/studio course fee will be assessed.

General Education Category: Natural Science Lab

GEOL 1110 - Physical Geology (LC)

(3) Credit Hours

Introduction to geology with emphasis on the origin of Earth, geological materials (minerals, rocks), geological processes and events (mountain building, erosion, earthquakes, volcanic activity) and geological features (oceans, land forms). Every semester. Corequisites: [GEOL 1110L](#) or Department Head approval.

General Education Category: Natural Science Lecture

GEOL 1110L - Physical Geology Laboratory (LB)

(1) Credit Hours

Laboratory to accompany [GEOL 1110](#)

, [GEOL 1025](#)

, or [GEOL 1030](#)

. Hands-on study of minerals and rocks, maps with topographical and geological information, and geological processes and events. Students will apply the scientific method to explore and understand earth processes and will use earth data to test hypotheses and comprehend theories used to resolve geological-related problems. Every semester. Two hours per week. Pre or Corequisites: [GEOL 1110](#)

, [GEOL 1025](#)

, or [GEOL 1030](#)

or Department Head approval. Laboratory/studio course fee will be assessed.

General Education Category: Natural Science Lab

GEOL 1120 - Historical Geology (LC)

(3) Credit Hours

Geologic history of Earth, with emphasis on geologic time and the evolution of life as gleaned from the fossil record.

Field trips. Fall and Spring semesters. Lecture 3 hours. Corequisites: [GEOL 1120L](#)

or Department Head approval.

General Education Category: Natural Science Lecture

GEOL 1120L - Historical Geology Laboratory (LB)

(1) Credit Hours

Laboratory to accompany [GEOL 1120](#)

. Laboratory studies of rocks, geologic maps and geologic structures, stratigraphic data sets, selected fossil and recent specimens of major taxonomic groups of organisms. Fall and Spring semesters. Two hours per week. Corequisites:

[GEOL 1120](#)

or Department Head approval. Laboratory/studio course fee will be assessed.

General Education Category: Natural Science Lab

GEOL 1250 - The First Year Experience in Geology

(1) Credit Hours

An introduction to the college experience of first-year students at UTC and the aspects needed for a successful transition from high school to college. This includes an introduction to the department, successful learning techniques for geology, and expectations for academic success. Elective available to students with fewer than 30 earned hours. Recommended during the initial semester for geology majors who enter UTC with fewer than 15 hours. Fall semester. Lecture 1 hour.

GEOL 1999R - Special Projects

(1-9) Credit Hours

Individual or group projects. On demand. Prerequisites: Receipt of an acceptable proposal and Department Head approval. Satisfactory/No Credit.

GEOL 2100 - Introductory Geographic Information Systems and Remote Sensing

(4) Credit Hours

Understanding the principles of Geographic Information Systems (GIS) and remote sensing technology, including understanding and identification of different geographic information and remotely sensed data, their acquisition, restoration, manipulation, storage, management, analysis, mapping, visualization, and real world applications. Lecture 3 hours, laboratory 2 hours. Corequisites: GEOL 2100L or Department Head approval. Laboratory/studio course fee will be assessed.

GEOL 2200 - Global Climate Change: Past, Present, and Future (LC or NL)

(3) Credit Hours

This course will provide an overview of the climate system and students will analyze the implications of changing parameters within that system. The course is designed to explore the causes and effects of ancient changes in climate and highlight the extreme climates Earth has experienced over geologic time, as well as the repercussions to the Earth's system. Students will use these extremes to aid in their understanding of modern climate change and to make

predictions about the future climate. Fall and Spring semesters. Lecture 3 hours.

General Education Category: Natural Science Lecture or Natural Science Non-Lab

GEOL 2250 - Oceanography (LC or NL)

(3) Credit Hours

Study of the oceans, including chemical and physical properties of sea water, patterns of seawater circulation, life zones, origin and physiography of ocean basins, and mineral and energy resources of the oceans. Lecture 3 hours.

General Education Category: Natural Science Lecture or Natural Science Non-Lab

GEOL 2999R - Group Studies

(1-9) Credit Hours

On demand. Prerequisites: Department Head approval. Department may have additional prerequisite requirements.

GEOL 3070 - Geology of Tennessee

(3) Credit Hours

Upon successful completion of this course, students will be able to relate their knowledge of geology to the geologic evolution of Tennessee, formulate reasonable models of Earth processes, relate important geological resources to the state of Tennessee, and communicate technical aspects of Tennessee regional geology to an audience of peers.

Mandatory field trips. Lecture 3 hours. Prerequisites: A previous 3-4 credit course in geology (excluding GEOL 2100) or Department Head approval. Laboratory/studio course fee will be assessed.

Effective Spring 2026.

GEOL 3220 - Soil Properties, Genesis, and Development Across the Landscape

(4) Credit Hours

Intensive introduction to soil genesis and development, and the study of soils across landscapes past and present.

Mandatory field trips. Offered alternate Spring semesters. Lecture 3 hours, laboratory 2 hour. Prerequisites: A previous 3-4 credit course in geology (excluding GEOL 2100) or [ESC 1500](#)

and [CHEM 1110](#)

and [CHEM 1110L](#)

, or Department Head approval. Mandatory field trips. Laboratory/studio course fee will be assessed.

Effective Spring 2026.

GEOL 3230 - Environmental Geology

(4) Credit Hours

This course examines basic to detailed geological principles and applications of geology toward understanding the interaction between humans and the geologic environment. Course will explore geologic phenomena such as volcanism,

seismicity, earthquakes, tsunamis, hurricanes, shoreline processes, soil erosion, and karst. Students will be introduced to basic soil and rock engineering principals. Environmental topics include surface water and groundwater pollution, geologic constraints on sewage, solid, and hazardous waste disposal, resource management, acid precipitation, climate change, human-induced hazards such as mining, urbanization, and flooding. Students will study current and proposed approaches to reducing risks from geological hazards, and will evaluate various legislative issues associated with environmental geological matters. Students gain a strong understanding of how geology influences many environmental problems. Laboratory and field trips. Current events in environmental geology are discussed as they arise. Alternating Fall semesters. Lecture 3 hours, laboratory 2 hours. Prerequisites: A previous 3-4 credit course in geology (excluding GEOL 2100). [CHEM 1110](#)
[/CHEM 1110L](#)
or [CHEM 1050](#)
or equivalent is recommended. Laboratory/studio course fee will be assessed.

Effective Spring 2026.

GEOL 3410 - Mineralogy

(4) Credit Hours

Crystallography, descriptive and determinative mineralogy, mineral chemistry, and methods of chemical analysis. Upon successful completion of this course, students will be able to characterize and identify common minerals in hand specimen, recognize the importance of chemical composition, bonding, and atomic structure on mineral properties, interpret and articulate the genesis of common minerals, apply critical thinking and problem-solving skills to evaluation of mineral data, and explain the importance of minerals to society. Mandatory field trips. Fall semesters. Lecture 3 hours, laboratory 2 hours. Prerequisites: A previous 3-4 credit hour course in geology (excluding GEOL 2100) or Department Head approval. Pre or Corequisites: [CHEM 1110](#)
[/CHEM 1110L](#)
or Department Head approval. Laboratory/studio course fee will be assessed.

Effective Spring 2026.

GEOL 3420 - Petrology

(4) Credit Hours

In-depth study of igneous and metamorphic rocks, including classification, genesis, and evolution. Field trips. Spring semester. Lecture 3 hours, laboratory 3 hours. Prerequisites: [GEOL 3410](#)
with a minimum grade of C or Department Head approval. Laboratory/studio course fee will be assessed.

GEOL 3530 - Paleontology

(4) Credit Hours

Study of animals that are preserved in the fossil record, particularly taxonomy and population, interpretation of faunal assemblages, and the concept of biostratigraphy. Laboratory exercises emphasize morphology and time ranges of major fossil groups. Field trips. Fall semester, alternate years. Lecture 3 hours, laboratory 3 hours. Prerequisites: [GEOL 1120](#)
[/GEOL 1120L](#)
with a minimum grade of C or Department Head approval. Laboratory/studio course fee will be assessed.

GEOL 3540 - Sedimentology and Stratigraphy

(4) Credit Hours

Sedimentary strata record the details of Earth's history, including the effects of changes in sea level, global climate, tectonic processes, and geochemical cycles. This course covers the basics of fluid flow, sediment transport and depositional processes, as well as sedimentary environments and systems, and stratigraphic patterns through geologic time. This course will require field trips. Lecture 3 hours, laboratory 3 hours. Prerequisites: [GEOL 1120](#) /[GEOL 1120L](#) and [GEOL 3410](#) with a minimum grades of C or Department Head approval. Laboratory/studio course fee will be assessed.

Effective Spring 2026.

GEOL 3999R - Group Studies

(1-9) Credit Hours

On demand. Prerequisites: Department Head approval. Department may have additional prerequisite requirements.

GEOL 4070 - The Dynamic Earth

(3) Credit Hours

History, theory, and application of plate tectonics models to explain the dynamic character of the Earth. On demand. Lecture 3 hours. Prerequisites: A previous 3-4 credit hour course in geology (excluding GEOL 2100) or Department Head approval.

Effective Spring 2026.

GEOL 4080 - Geomorphology

(4) Credit Hours

Intense study of geomorphic processes that shape our planet and create present-day landforms. This class benefits geologists, geographers, soil scientists, engineers, archaeologists, and environmental scientists. Mandatory field trips. Lecture 3 hours, laboratory 2 hours. Prerequisites: A previous 3-4 credit hour course in geology (excluding GEOL 2100), or [ESC 1500](#), or Department Head approval. Laboratory/studio course fee will be assessed.

Effective Spring 2026.

GEOL 4260 - Outreach in Science and Education

(2) Credit Hours

Simultaneously learn how to organize public outreach and education events as well as get firsthand experience in organizing and running a nonprofit educational event centered on education, biology, environmental science, ecology, conservation, land management and more. The Spring Wildflower Pilgrimage in the Great Smoky Mountains National

Park (GSMNP), which began in 1951, is the oldest and largest public outreach event of its kind in the US. Each year more than 200 educational programs are created and more than 100 leaders are organized to educate approximately 1000 people over four days in what has been called “natures greatest classroom,” the GSMNP. This class will not be based on exercises and examples, but actually building, working for, and attending the event. The course will begin with an overview of the Pilgrimage and we will get right to work assembling the Program and advertising its launch by mid-February, advertising and opening registration in March, and then **all students will be required to attend and assist with the event during a week in April (although we will make a schedule so students are not working the entire week, have time to attend programs of interest, and take some personal time).** Lodging in Gatlinburg, TN as well as three meals a day during the event will be provided for students in this class, and we can schedule time off for exams that need to be taken and for you to attend some of the event! Some of you will also need to attend the Association of Southeastern Biologists meeting, which is usually mid-March. Those of you who do this will not be required to work as much during the actual event in April and will serve more as team leaders during the actual event. Spring semesters. Junior standing. May be registered as ESC 4260, BIOL 4260, or GEOL 4260.

Effective Spring 2026.

GEOL 4450 - Hydrology

(4) Credit Hours

A quantitative course that investigates the movement and storage of water through the hydrologic cycle. Emphasis is placed on measurement of key hydrologic processes: precipitation, evaporation, evapotranspiration, infiltration, and groundwater flow. Fall semesters. Lecture 3 hours, laboratory 3 hours. Prerequisites: A previous 3-4 credit course in geology and [GEOL 2100](#), [CHEM 1110](#) /[CHEM 1110L](#) or [ENCE 3610](#) or Department Head approval. Laboratory/studio course fee will be assessed.

Effective Spring 2026.

GEOL 4470 - Applied Environmental Geochemistry

(4) Credit Hours

This course introduces students to practical applications of thermodynamics to the study of water chemistry, water quality, and the fate and transport of contaminants in hydrogeologic systems. Spring semester, every other year. Lecture 3 hours, laboratory 3 hours. Prerequisites: [GEOL 4450](#) or Department Head approval. Laboratory/studio course fee will be assessed.

GEOL 4490 - Hydrologic Modeling

(4) Credit Hours

This course provides practical experience in developing conceptual and computational models that can be used to simulate the flow of streams and groundwater and solve problems related to water supply and quality. Spring semesters, alternating Lecture 3 hours, Laboratory 2 hours Prerequisites: [GEOL 4450](#) or Department Head approval. Laboratory/studio course fee will be assessed.

GEOL 4510 - Structural Geology

(4) Credit Hours

Theory and principles of rock deformation, description and classification of common geologic structures, and laboratory methods to solve structural problems. Field trips. Fall semester, alternate years. Lecture 3 hours, laboratory 3 hours. Prerequisites: [GEOL 3410](#) with a minimum grade of C or Department Head approval. Laboratory/studio course fee will be assessed.

GEOL 4520 - Field Methods in Structural Geology

(4) Credit Hours

Methods of gathering data in the field and interpretation of field relationships, as necessary to geologic mapping and analysis of geologic structures. Extensive field work. Spring semester, alternate years. Lecture 3 hours, laboratory 3 hours. Prerequisites: [GEOL 4510](#) or Department Head approval. Laboratory/studio course fee will be assessed.

GEOL 4530 - Geographic Information Systems for Geoscientists

(4) Credit Hours

Applications of Geographic Information Systems in different areas of geosciences including geology, environmental science, and hydrology. Demonstrate understanding of advanced geospatial tools and spatial modeling and using them to design and complete a project that solves real world problems. Every other spring semester. Lecture 3 hours, laboratory 2 hours. Prerequisites: [GEOL 2100](#) with a minimum grade of C or Department Head approval. Laboratory/studio course fee will be assessed.

GEOL 4550 - Remote Sensing for Geoscientists

(4) Credit Hours

In-depth application and mastery of the theories and principles of quantitative remote sensing, and analysis of various remotely sensed data specifically focused on different geologic, environmental, and hydrologic applications. Implementation of advanced digital image processing techniques to design and complete a project. Every other spring semester. Lecture 3 hours, laboratory 2 hours. Prerequisites: [GEOL 2100](#) with a minimum grade of C or Department Head approval. Laboratory/studio course fee will be assessed.

GEOL 4800 - Research Design

(2) Credit Hours

Preparing students to develop their own research projects of current interests in the earth sciences using effective research designs. Student presentations required. Fall semester. Lecture 2 hours. Prerequisites: [ENGL 2810](#) or [ENGL 2820](#), and [GEOL 3410](#), with a minimum grade of C or Department Head approval.

GEOL 4900 - Senior Research Project

(2) Credit Hours

Culminating senior experience giving students an opportunity to design and conduct research related to geologic problems. Spring semester. Lecture 1 hour, laboratory 1 hour. Prerequisites: [GEOL 4800](#) or Department Head approval. Laboratory/studio course fee will be assessed.

GEOL 4950 - International Geology Field Experience

(3) Credit Hours

Students learn about and experience the geologic history of an international location. During the semester, students learn about the geology of the region. At the conclusion of the semester during the summer, the class travels to this region to explore (may include camping and hiking) and become familiar with the geology on a ~10 day field trip. Pre- and post-trip reports are required. Students are responsible for all travel costs including airfare, meals, and other travel costs. Students must have a passport prior to international travel. Spring semesters. Lecture 2 hours and ~10-day field trip. Prerequisites: At least one 3-4 credit course in geology (excluding GEOL 2100) or Department Head approval.

Effective Spring 2026.

GEOL 4960 - Geology Field Experience: Geology of the US Desert Southwest

(3) Credit Hours

Students learn and experience the geologic history of the US desert southwest including parts of Nevada, California, Utah, and Arizona. During the semester, students learn about the geology of the region. At the conclusion of the semester, the class travels to this region to explore (including camping and hiking) and become familiar with the geology on a ~10 day field. Pre- and post-trip reports are required. Students are responsible for all travel costs including airfare, meals, and other travel costs. Spring semesters. Lecture 2 hours and ~10-day field trip. Prerequisites: At least one 3-4 credit course in geology (excluding GEOL 2100) or Department Head approval.

Effective Spring 2026.

GEOL 4995R - Departmental Thesis

(1-3) Credit Hours

A two-semester research or creative project resulting in a thesis under the supervision of a faculty member and with the approval of the Honors College. On demand. Prerequisites: Student must coordinate with Honors College to submit a Thesis Contract to get registered for this course. Restricted to Sophomore standing or higher.

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