

ENVS - ENVIRONMENTAL SCIENCE

ENVS 1105 Environmental Studies (3-0-3)

An examination of the scientific components of environmental studies, including the interactions of biology, chemistry, physics, and anthropology. Primary focus will be on issues related to scientific principles and concepts, human population, global environmental problems (biodiversity and global warming), air and water pollution, natural resources and resource management, and the historical, social and political issues related to the environment.

ENVS 1105L Environmental Studies Laboratory (0-2-1)

Coerequisite or Prerequisite: ENVS1105. This laboratory compliments ENVS1105, Environmental Studies, and uses the scientific method and field and laboratory investigations to explore impacts of and interactions of modern society with the environment. Exercises will emphasize topics such as population, energy, land use, air and water pollution and human impacts on natural systems.

Prerequisite(s): ENVS 1105 (may be taken concurrently)

Restriction(s):

Graduate Level level students may **not** enroll.

ENVS 1205K Sustainability and the Environment (3-2-4)

This course will challenge students to reexamine their perception about the role of humans in their natural environment. Emphasis will be placed on ways to improve the sustainability of resources particularly through individual life-style choices about food, transportation, water, wastes, and housing. Students will learn how natural ecosystems work and why human societies depend on so much on them. In the laboratory, students will gain firsthand experience quantifying their impact, designing and performing experiments, and evaluating the effectiveness of sustainability-related practices.

ENVS 2202 Environmental Science (3-0-3)

Environmental Science, the study of interactions between humans and the environment, is an interdisciplinary science course that integrates principles from biology, chemistry, ecology, geology, and non-science disciplines. Issues of local, regional, and global concern will be used to help students explain scientific concepts and analyze practical solutions to complex environmental problems. Emphasis is placed on the study of ecosystems, human population growth, energy, pollution, and other environmental issues as well as important environmental regulations. This course is available through eCore.

ENVS 3105 Foundations of Environmental Science (3-3-4)

Lecture and laboratory course exploring key concepts in the field of Environmental Science: the science of our environment including chemical, ecological, atmospheric, and geological systems; human-environment interaction; and the nature of environmental problems and solutions. The course emphasizes field and laboratory applications for environmental assessment and monitoring.

Prerequisite(s): (ENVS 1105 with a minimum grade of C and ENVS 1105L with a minimum grade of C and STAT 1401 (may be taken concurrently) with a minimum grade of C) or (ENVS 1205K with a minimum grade of C and STAT 1401 (may be taken concurrently) with a minimum grade of C)

Repeatability: Repeatable for credit up to 1 times or 8 hours.

ENVS 4698 Internship ((0-4)-(0-4)-(1-4))

Prerequisite: Permission from academic advisor and Department Chair. Academic credit may be earned for approved environmental sciences work experience, either as a volunteer or through employment. An internship experience must be approved in advance. Successful completion requires written evaluation from a supervisor and an oral presentation to faculty and students. May be repeated for credit for a total of 8 hours. (S/U grading)

Repeatability: Repeatable for credit up to 7 times or 8 hours.

Restriction(s):

Enrollment limited to students in the Department Prerequisite college.

ENVS 4796 Senior Capstone (1-0-1)

This senior-level class is focused on preparing ESS students for post-baccalaureate academic and professional pursuits. The course is designed to allow students the opportunity to hone their critical thinking skills, advance their capacity to solve problems, and improve their ability to communicate effectively by synthesizing previous coursework in the diverse fields of earth and space science. Students will be assessed based on preparation of an academic portfolio and a capstone exam.

Restriction(s):

Enrollment limited to Senior students.

ENVS 4999 Research in Environmental Science (0-(2-8)-(1-4))

Student will conduct research under the guidance of a faculty mentor.

ENVS 5109G Environmental Air Quality (3-0-3)

Study of the structure and composition of the atmosphere, methods of analysis of pollutants in the atmosphere, and ozone depletion. Emphasis on transport and diffusion of atmospheric pollutants from the micro scale to the global scale, as well as an examination of global climate change.

ENVS 5109U Environmental Air Quality (3-0-3)

Study of the structure and composition of the atmosphere, methods of analysis of pollutants in the atmosphere, and ozone depletion. Emphasis on transport and diffusion of atmospheric pollutants from the micro scale to the global scale, as well as an examination of global climate change.

Prerequisite(s): ATSC 1112 with a minimum grade of C and MATH 1113 with a minimum grade of C

ENVS 5125G Human Ecology (3-0-3)

Prerequisites: One of the following: ANTH 1105, 1107, 1145, 5175, ENVS 1105, or ENVS 6207 with a grade of C or better; or instructor consent. Course provides an inter-disciplinary perspective blending biological ecology with social science approaches to examine the interrelationships between human societies and their environments. Problems examined include past and present intellectual frameworks, population ecology, environmental stressors, human subsistence strategies, processes of cultural and environmental change. Course aims to provide basic tools that will help students evaluate problematic human-environment relationships in order to confront them effectively.

Restriction(s):

Enrollment is limited to Graduate Level level students.

ENVS 5125U Human Ecology (3-0-3)

Prerequisites: One of the following: ANTH 1105, 1107, 1145, 5175, ENVS 1105, or ENVS 6207 with a grade of C or better; or instructor consent. Course provides an inter-disciplinary perspective blending biological ecology with social science approaches to examine the interrelationships between human societies and their environments. Problems examined include past and present intellectual frameworks, population ecology, environmental stressors, human subsistence strategies, processes of cultural and environmental change. Course aims to provide basic tools that will help students evaluate problematic human-environment relationships in order to confront them effectively.

Restriction(s):

Graduate Level level students may **not** enroll.

ENVS 5165G Hydrology (3-0-3)

Prerequisites: CHEM 1211, CHEM 1211L, and MATH 1132. Study of hydrological systems on and beneath the earth's surface. Topics include: precipitation and evaporation, runoff and stream flow, groundwater infiltration, flownets and flow direction analysis of groundwater, properties of aquifers, regional groundwater flow patterns, and water pollution.

Restriction(s):

Enrollment is limited to Graduate Level level students.

ENVS 5165U Hydrology (3-0-3)

Study of hydrological systems on and beneath the earth's surface. Topics include: precipitation and evaporation, runoff and stream flow, groundwater infiltration, flownets and flow direction analysis of groundwater, properties of aquifers, regional groundwater flow patterns, and water pollution.

Prerequisite(s): (PHYS 1111 with a minimum grade of C and PHYS 1311 with a minimum grade of C and MATH 1131 with a minimum grade of C)

ENVS 5206G Water Resources Management (3-3-4)

An examination of fluvial and wetland ecosystems and their dynamics, as well as common practices in the management and maintenance of these resources. Topics will include analysis of open-channel hydrology and hydraulics, flood control and analysis, regulated river management, wetlands hydrology, and management alternatives for wetland ecosystems.

ENVS 5206U Water Resources Management (3-3-4)

An examination of fluvial and wetland ecosystems and their dynamics, as well as common practices in the management and maintenance of these resources. Topics will include analysis of open-channel hydrology and hydraulics, flood control and analysis, regulated river management, wetlands hydrology, and management alternatives for wetland ecosystems.

Prerequisite(s): (ENVS 3105 with a minimum grade of C and CHEM 1211 with a minimum grade of C and CHEM 1211L with a minimum grade of C) or (ENVS 3105 with a minimum grade of C and CHEM 1211K with a minimum grade of C)

ENVS 5207G Experimental Design and Statistical Analysis (3-3-4)

This interdisciplinary course emphasizes the practical use of the scientific method with emphasis on experimental design, sample collection, data management/visualization, statistical analysis and scientific communication. Most examples will be drawn from Environmental Science, Biology, Geology disciplines.

Restriction(s):

Enrollment is limited to Graduate Level level students.

ENVS 5207U Experimental Design and Statistical Analysis (3-3-4)

This interdisciplinary course emphasizes the practical use of the scientific method with emphasis on experimental design, sample collection, data management/visualization, statistical analysis and scientific communication. Most examples will be drawn from Environmental Science, Biology, Geology disciplines.

Prerequisite(s): STAT 1401 with a minimum grade of C and ENVS 3105 with a minimum grade of C

ENVS 5226G Culture and Environment (3-0-3)

This course explores how societies in the past have not only adapted to their environments, but how they have manipulated and transformed their ecosystems, and how these processes in turn have shaped economic, demographic, political, social, and ideological, aspects of human populations. We will examine the development of theory regarding the emergence and history of ecological thinking in anthropology, and follow the development of varied approaches and major controversies, many of which remain unresolved today. The course will also utilize case studies from anthropology, archaeology and palaeoecology to evaluate changing interactions between the natural environment and human societies.

ENVS 5226U Culture and Environment (3-0-3)

This course explores how societies in the past have not only adapted to their environments, but how they have manipulated and transformed their ecosystems, and how these processes in turn have shaped economic, demographic, political, social, and ideological, aspects of human populations. We will examine the development of theory regarding the emergence and history of ecological thinking in anthropology, and follow the development of varied approaches and major controversies, many of which remain unresolved today. The course will also utilize case studies from anthropology, archaeology and palaeoecology to evaluate changing interactions between the natural environment and human societies.

Prerequisite(s): (ANTH 1105 with a minimum grade of C and ENVS 1205K with a minimum grade of C) or (ANTH 1105 with a minimum grade of C and ENVS 3105 with a minimum grade of C)

Restriction(s):

Freshman students may **not** enroll.

ENVS 5235G Geographic Information and Global Positioning Systems (3-3-4)

Utilization of GIS and GPS to portray existing spatial datasets, create new datasets and analyze datasets with emphasis on environmental applications, especially the analysis of change in environmental conditions on a landscape scale. Projects will require lab time beyond that scheduled.

ENVS 5235U Geographic Information and Global Positioning Systems (3-3-4)

Advances in technology have made the acquisition and visualization of spatially-explicit information ubiquitous. This accelerated course is designed to help advanced students become confident in the use and application of Geographic Information and Global Positioning Systems. Using industry-standard software, students learn to collect, geo-reference, symbolize, and analyze geospatial data. Problem sets and examples focus primarily on geologic and environmental science applications in both raster and vector formats. Students conduct individual research projects that align with their personal interests and educational goals.

ENVS 5255G Environmental Geology (3-2-4)

Prerequisite: GEOL 1221. Examination of human interaction with the geologic environment. Geologic hazards such as earthquakes, floods, landslides, and volcanic eruptions will be considered, as well as resource and waste management, and human impacts on the physical environment.

Restriction(s):

Enrollment is limited to Graduate Level level students.

ENVS 5255U Environmental Geology (3-2-4)

Prerequisite: GEOL 1221. Examination of human interaction with the geologic environment. Geologic hazards such as earthquakes, floods, landslides, and volcanic eruptions will be considered, as well as resource and waste management, and human impacts on the physical environment.

Prerequisite(s): GEOL 1221

ENVS 5315G Stream Ecology (3-3-4)

This course examines the implications of water flow on the biota, chemistry, and physics of freshwater river and stream ecosystems. Laboratory exercises apply practical research methods to understand causes of human created environmental problems such as habitat degradation, biodiversity declines, and eutrophication.

Prerequisite(s): BIOL 3217K with a minimum grade of C

ENVS 5315U Stream Ecology (3-3-4)

This course examines the implications of water flow on the biota, chemistry, and physics of freshwater river and stream ecosystems. Laboratory exercises apply practical research methods to understand causes of human created environmental problems such as habitat degradation, biodiversity declines, and eutrophication.

Prerequisite(s): BIOL 3217K with a minimum grade of C

ENVS 5405G Topics in Conservation (3-(0-4)-(3-5))

Human population growth and natural resource extraction have resulted in an unprecedented loss of species—often referred to as the 6th mass extinction. This course will explore various issues involving the conservation of Earth's biodiversity. Students will learn why biodiversity has value to humans, what human activities cause extinctions, what laws and regulations exist to prevent biodiversity losses, and how conservation strategies can be effectively implemented to preserve biodiversity. May be repeated for credit with different topic.

Prerequisite(s): BIOL 3217K with a minimum grade of C

Repeatability: Repeatable for credit up to 99 times or 99 hours.

ENVS 5405U Topics in Conservation (3-(0-4)-(3-5))

Human population growth and natural resource extraction have resulted in an unprecedented loss of species—often referred to as the 6th mass extinction. This course will explore various issues involving the conservation of Earth's biodiversity. Students will learn why biodiversity has value to humans, what human activities cause extinctions, what laws and regulations exist to prevent biodiversity losses, and how conservation strategies can be effectively implemented to preserve biodiversity. May be repeated for credit with different topic.

Prerequisite(s): BIOL 3217K with a minimum grade of C

Repeatability: Repeatable for credit up to 99 times or 99 hours.

ENVS 5555G Selected Topics in Environmental Science ((1-3)-(0-4)-(1-4))

Prerequisites: ANTH1105 or ENVS1105 or Permission of Department Head. Semester-length or short courses in specialty areas of environmental science, available as needed or as required by current environmental situations. These are topics not usually available on a regular schedule, such as risk analysis, environmental impact assessment, or more theory-based courses that may be cross-listed with offerings in other departments and programs.

Prerequisite(s): ENVS 1105

Repeatability: Repeatable for credit up to 1 times or 6 hours.

Restriction(s):

Freshman or Sophomore students may **not** enroll.

Students in a AAS in Applied Computer Sci., AAS in Criminal Justice, Associate of Science or One-Year Certificate degrees may **not** enroll.

ENVS 5555U Selected Topics in Environmental Science ((1-3)-(0-4)-(1-4))

Prerequisites: ANTH1105 or ENVS1105 or Permission of Department Head. Semester-length or short courses in specialty areas of environmental science, available as needed or as required by current environmental situations. These are topics not usually available on a regular schedule, such as risk analysis, environmental impact assessment, or more theory-based courses that may be cross-listed with offerings in other departments and programs. May be repeated for unlimited credit.

Prerequisite(s): ENVS 1105

Repeatability: Repeatable for credit up to 99 times or 99 hours.

Restriction(s):

Freshman, Sophomore, Degree - Graduate, Non-Degree - Graduate, Transient - Graduate, Audit - Graduate or Teacher Cert - Graduate students may **not** enroll.

Students in a AAS in Applied Computer Sci., AAS in Criminal Justice, Associate of Science, Doctor of Education, Master of Arts in Teaching, Master of Business Admin., Master of Education, Master of Music, Master of Public Admin., Master of Science or One-Year Certificate degrees may **not** enroll.

ENVS 5715G Earth and Space Sciences Seminar (1-0-1)

Seminar emphasizes current topics through readings and presentations by practitioners in a wide array of fields related to earth and space science. Course may be repeated up to 3 credits (Undergraduate) and 4 credit (Graduate).

Repeatability: Repeatable for credit up to 3 times or 3 hours.

ENVS 5715U Earth and Space Sciences Seminar (1-0-1)

Seminar emphasizes current topics through readings and presentations by practitioners in Environmental Sciences. Undergraduate level: Course may be repeated up to 3 credits. Graduate level: Course may be repeated up to 4 credits.

Repeatability: Repeatable for credit up to 2 times or 3 hours.

ENVS 6157 The Geology of Georgia (1-6-4)

Introduction to the general geology of Georgia, including the major geologic provinces, the kinds of rocks and structures found in each one, their geologic histories, and how Georgia's geologic history fits into the geologic history of the southeastern United States.

Restriction(s):

Enrollment is limited to Graduate Level level students.

ENVS 6207 Ecological Methods (3-3-4)

Applications of ecological principles to societal challenges such as population management, establishment, exploitation and assessment of ecosystems. Special emphasis is placed upon experimental design and methods employed for the analysis of the abundance and distribution of living organisms and the structure and function of communities.

Restriction(s):

Enrollment is limited to Graduate Level level students.

ENVS 6698 Internship (0-0-(1-3))

Prerequisite: Permission from academic advisor and Department Chair. Academic credit may be earned for approved environmental science work experience, either as a volunteer or through employment. An internship experience must be approved in advance. Successful completion requires written evaluation from a supervisor and an oral presentation to faculty and students. May be repeated for credit for a total of 8 hours. (S/U grading)

Restriction(s):

Enrollment limited to Degree - Graduate, Non-Degree - Graduate, Transient - Graduate, Audit - Graduate or Teacher Cert - Graduate students.

ENVS 7000 Thesis Defense (0-0-0)

Prerequisite: Department approval required. A satisfactory grade in the course indicates a successful oral defense of the master's thesis, the completion of edits and approval by the advisor or committee, and submission to the library. Degree candidates must be enrolled during the semester of their defense. S/U grading.

Restriction(s):

Enrollment is limited to Graduate Level level students.

Enrollment limited to students in the Department Prerequisite college.

ENVS 7001 Certification Exam (0-0-0)

Degree candidates must enroll in this course to prepare for and complete their professional certification exam.

Restriction(s):

Enrollment is limited to Graduate Level level students.

Enrollment limited to students in the Department Prerequisite college.

ENVS 7555 Selected Topics in Environmental Science ((0-3)-(0-4)-(1-4))

Prerequisite: Permission of instructor. Semester-length or short courses in specialty areas of environmental science, available as needed or as required by current environmental situations. These are topics not usually available on a regular schedule, such as risk analysis, environmental impact assessment, etc. May be repeated for unlimited credit.

Repeatability: Repeatability for credit up to 2 times or 6 hours.

Restriction(s):

Enrollment is limited to Graduate Level level students.

ENVS 7999 Research in Environmental Science (0-0-(1-9))

Prerequisite: Approval of thesis research topic by student's advisory committee. Supervised thesis. May be repeated for credit.

Repeatability: Repeatability for credit up to 98 times or 10 hours.

Restriction(s):

Enrollment is limited to Graduate Level level students.