

Undergraduate Environmental Science Courses

ENVS 1101. Environmental Science Introductory Seminar. 1 Credit Hour (Lecture: 1 Hour, Lab: 0 Hours).

This course introduces students to the interdisciplinary field of environmental science. The class will introduce students to the major science subfields of ecology, geology, and chemistry as well as the social policy subfield consisting of laws and regulations, ethics, and geography.

ENVS 1301. Society, Natural Resources, and the Environment. 3 Credit Hours (Lecture: 3 Hours, Lab: 0 Hours).

This course provides a broad overview of the role of the environment and natural resources in human society, with particular emphasis on Texas and the United States. A history of the environmental movement is presented. Students study the importance of natural resources in providing basic human necessities, and how these resources are managed. Various careers in environmental science, natural resource management, and wildlife conservation are also discussed.

ENVS 1302. Science, Technology, and the Environment. 3 Credit Hours (Lecture: 3 Hours, Lab: 0 Hours).

This course introduces students to the interdisciplinary field of environmental science and explores the interrelationships between science, technology, environment, and society. This class examines the scientific and social origins of environmental problems and evaluates the complex role of technology in creating and resolving these concerns.

ENVS 2451. Introduction to Geographic Information Systems. 4 Credit Hours (Lecture: 3 Hours, Lab: 2 Hours).

This is a cross-listed course with GEOG 2451 Intro to GIS. Basic concepts of design, planning and implementation of geographic information systems. Students will learn how to create, manipulate, project, and interpret geographic information. Students are encouraged to take GEOG 1451: Pre-GIS before this course. Lab fee: \$2.

ENVS 3302. Soils, Land Use, and The Environment. 3 Credit Hours (Lecture: 3 Hours, Lab: 0 Hours).

Interactions among soil physical, chemical, and biological processes affecting soil, water, and environmental quality. Addressed in relation to land use management practices such as erosion control, soil conservation, soil reclamation, riparian buffers, bioswales, and artificial wetlands. Land use planning tools, including WebSoil Survey and GIS will be used. Prerequisites: WSES/ENVS 3401; or WSES/SOIL 3301 and WSES/SOIL 3101.

ENVS 3305. GIS for Natural Resource Scientists. 3 Credit Hours (Lecture: 2 Hours, Lab: 2 Hours).

An intermediate course on the use of geographic information systems (GIS) in natural resource management. Builds on concepts learned in introductory GIS course. Laboratory exercises will apply knowledge learned in lectures to solve real world problems in natural resource management using GIS software. Prerequisite: WSES 2451.

ENVS 3307. Systems Thinking. 3 Credit Hours (Lecture: 2 Hours, Lab: 2 Hours).

This course focuses on the examination and analysis of complex systems, particularly in the environmental, natural resources, and sustainability fields. Major topics will include system structure, system behavior, feedback loops, stock and flow models, non-linear and emergent properties, self-organization, and the application of systems thinking to problem-solving. A significant component of the course will be development and analysis of computer models of complex systems. Prerequisite: C or better in MATH 1314 or equivalent, or approval of the instructor.

ENVS 3315. Sustainability. 3 Credit Hours (Lecture: 3 Hours, Lab: 0 Hours).

Explore the varied perspectives of sustainability and analyze factors that contribute to or decrease system sustainability. Investigation of the social, economic, and environmental barriers to achieving sustainable systems and options for overcoming these barriers. Credit cannot be awarded for both ENVS 3315 and WSES 3315. Prerequisite: GOVT 2305 or GOVT 2306 or POLS 2304 or approval of the instructor.

ENVS 3323. Ethical Issues in Agriculture and the Natural Resources. 3 Credit Hours (Lecture: 3 Hours, Lab: 0 Hours).

Students will examine the several major ethical issues facing agriculture and natural resources sciences in our current society. Readings, discussions and lectures will focus on the scientific, capitalistic, and philosophical motivation in common ethical issues. Upon completion of the course, students will be able to construct and dissect ethical arguments and hopefully become more aware of the ethical dilemmas we all face each day. Can receive credit for WSES 3323, ENVS 3323 or ANSC 3323.

ENVS 3375. Population, Pollution, and Resource Depletion. 3 Credit Hours (Lecture: 3 Hours, Lab: 0 Hours).

Principles and philosophies associated with the development, management, and use of natural resources are studied in the relationship to the ecological and social implications inherent in management alternatives involving the natural environment and the use of renewable natural resources. Can receive credit for either ENVS 3375 or WSES 3375. Prerequisite: Junior classification.

ENVS 4084. Environmental Science Internship. 1-6 Credit Hours (Lecture: 1-6 Hours, Lab: 0 Hours).

Formally arranged and approved on-the-job training with a cooperating sponsor in government or private sector of the environmental field. A minimum of 40 hours of training is required for each hour of academic credit. A maximum of six hours of credit may be earned. Oral and written reports of the experience are required. Prerequisites: Junior or Senior classification and approval of the instructor.

ENVS 4086. Environmental Problems. 1-3 Credit Hours (Lecture: 1-3 Hours, Lab: 0 Hours).

Independent study or research of current topics in student's major. Content and credit dependant on depth of study. May be repeated for credit subject to approval of program lead or department head as appropriate.

ENVS 4088. Undergraduate Research. 1-6 Credit Hours (Lecture: 1-6 Hours, Lab: 0 Hours).

Fundamental research methods will be addressed through a faculty-directed project. Participation in an abbreviated lecture series may be required. Project components may include a literature review, data collection and analysis, testing, planning, project design, and/or computer modeling. The student may be required to prepare a final report and produce a presentation. Prerequisite: approval of the instructor.

ENVS 4090. Special Topics. 1-6 Credit Hours (Lecture: 0-6 Hours, Lab: 0 Hours).

Selected topics in environmental science. May be repeated for credit when topics vary.

ENVS 4185. Seminar. 1 Credit Hour (Lecture: 1 Hour, Lab: 0 Hours).

A review of current problems and developments in environmental arena. Discussions of current literature and research. May be repeated once for credit.

ENVS 4187. Environmental Science Capstone. 1 Credit Hour (Lecture: 1 Hour, Lab: 0 Hours).

Integrate and use fundamental concepts learned in previous environmental science courses to research and analyze real-world environmental issues. Oral and written reports on experiential learning, supplemented by appropriate internet and multimedia materials.

ENVS 4340. Environmental Science Field Study. 3 Credit Hours (Lecture: 3 Hours, Lab: 0 Hours).

A field course involving visits to environmental science businesses, agencies, and organizations including TCEQ, watershed management organizations, river authorities, energy companies, and environmental advocacy organizations to learn about their work and engage in hands-on assessment activities. Requires an extended field trip at student's expense. Prerequisite: Grade of C or better in either WSES 2405 or BIOL 4401.

ENVS 4350. Energy and the Environment. 3 Credit Hours (Lecture: 3 Hours, Lab: 0 Hours).

Overview of the relationship between domestic energy supply and its environmental impacts. This class investigates international environmental affairs' impact on the United States' domestic energy sources. Prerequisite: Communication Core Component Area complete.

ENVS 4380. Environmental Science Capstone. 3 Credit Hours (Lecture: 3 Hours, Lab: 0 Hours).

Integrate and use fundamental concepts learned in previous environmental science courses to research and analyze real-world environmental issues. Oral and written reports on experiential learning, supplemented by appropriate internet and multimedia materials. Prerequisite: Senior Classification.

ENVS 4390. Special Topics. 3 Credit Hours (Lecture: 3 Hours, Lab: 0 Hours).