ENVIROMENTAL SCIENCES IN THE COLLEGE OF AGRICULTURE AND LIFE SCIENCES

http://www.uvm.edu/~ensc/

The environment is a common theme in the courses offered at UVM. CALS partners with the Rubenstein School of the Environment and Natural Resources and the College of Arts and Sciences to offer two interdisciplinary majors: Environmental Sciences and Environmental Studies.

CALS ENVIRONMENTAL SCIENCE MAJOR

The environmental sciences major combines a science-based core curriculum with hands-on experience identifying, analyzing, and addressing environmental problems arising from human disturbance.

Students may pursue the major through the College of Agriculture and Life Sciences (CALS), the College of Arts and Sciences (CAS), or The Rubenstein School of Environment and Natural Resources (RSENR). The distinctions between the major offered through these three schools is subtle, and a student can usually shift between the three with little difficulty.

• The Rubenstein School provides a degree with an environmental focus, so an environmental sciences major is balanced with a broad-based understanding of the environment.
• The College of Arts and Sciences provides a degree with a traditional liberal arts orientation, so the major in environmental sciences is pursued within the context of a liberal arts education.
• The College of Agriculture and Life Sciences provides a degree in which the student pursuing the environmental sciences major is engaged in the application and understanding of the environment within the context of agricultural literacy.

The decision about which school is which to pursue the major is typically based on the student’s desired focus within the major and other academic interests. All environmental science majors take a common set of courses in biology, chemistry, mathematics, and geology or plant and soil science. A common set of environmental science core courses is followed by specialization in one of nine focus areas: agriculture and the environment, conservation biology and biodiversity, ecological design, environmental analysis and assessment, environmental biology, environmental chemistry, environmental geology, environmental resources, or water resources.

Goals of the major include providing students with a strong foundation in basic sciences as well as advanced knowledge in environmental sciences; emphasizing scientific analysis aimed at assessment and remediation of environmental problems; familiarizing students with sources and measurements of pollutants on ecosystems; and providing practical experience in environmental sciences through internships/service learning and research.

MAJORS

ENVIRONMENTAL SCIENCES MAJOR

Environmental Sciences B.S.

Courses

ENSC 001. Intro Environmental Sciences. 3 Credits.
Emphasizes the impacts of human activity on the environment. Attention to resources at risk and pollutant fate and effects on ecosystems.

ENSC 009. Orientation to Env Sciences. 1 Credit.
Introducing new majors to the environmental sciences through field trips, panel discussions and group projects. Pre/co-requisites: First-Year RSENR and CALS ENSC majors.

ENSC 130. Global Environmental Assessmnt. 0 or 3 Credits.
Assessment of human impacts on the global environment. Hands-on application of satellite remote sensing and geographic information systems to address key environmental issues. Prerequisite: BIOT 001 or BOT 004, CHEM 023, or equivalent, MATH 019.

ENSC 160. Pollutant Mvmt/Air, Land&Water. 0 or 4 Credits.
Physical, chemical, and biological aspects of pollutant behavior from source to ultimate fate. Laboratory methodologies for measuring pollutants and predicting their transport, behavior, and fate. Prerequisites: ENSC 001 ; BIOC 011, BIOC 012; CHEM 031, CHEM 032; MATH 019, MATH 020.

ENSC 185. Special Topics. 1-12 Credits.
See Schedule of Courses for specific titles. Variable credit.

ENSC 195. Internship. 1-6 Credits.
Professionally-oriented field experience under joint supervision of faculty and business or community representative. Prerequisite: Proposal and permission of ENSC Director; Junior standing; good academic standing; Maximum of six hours. Three can be applied to elected concentration with Director permission.

ENSC 196. Independent Research. 1-6 Credits.
Special study and research activity under the direction of a faculty member. Prerequisite: Proposal and permission of ENSC Director; Junior standing; good academic standing. Up to six hours. Three can be applied to elected concentration with Director permission.

ENSC 201. Recovery&Restor Altered Ecosys. 0 or 3 Credits.
Role of stress and disturbance and the natural process of recovery in aquatic and terrestrial ecosystems. Human efforts to modify, restore, and remediate altered ecosystems. Prerequisites: NR 103 or an intermediate-level ecology course; or Instructor permission. ENSC 160 strongly recommended.

ENSC 202. Ecological Risk Assessment. 0 or 3 Credits.
Approaches used to identify, measure, and manage ecological risk. Problem formulation, characterization, uncertainty analysis, and risk management. Case studies. Prerequisite: ENSC 201, NR 140 or STAT 141; Senior standing, or Instructor permission.
ENSC 222. Pollution Ecology. 3 Credits.
Impacts of pollutants on the structure and function of ecosystems. Examination of how air, land, and water influence fate and effects of pollutants. Prerequisites: BCOR 011, CHEM 023, NR 103, or equivalent ecology course.

ENSC 285. Adv Special Topics. 1-12 Credits.
See Schedule of Courses for specific titles. Prerequisite: Senior standing or Instructor permission. Variable credit.

ENSC 299. Environmental Sciences Honors. 1-6 Credits.
Honors project dealing with environmental sciences. Prerequisite: By application only, see program chair. Not approved for Graduate credit.