ENVIRONMENTAL SCIENCE AND STUDIES PROGRAM

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The Program

The Environmental Science and Studies Program has two primary educational objectives. One is to provide the fundamental scientific, technical and social knowledge that program graduates will need to assess, plan and evaluate environmental concerns, particularly those confronting metropolitan regions. The second is to instill the wide range of cognitive skills and content mastery that students will need to effectively analyze environmental issues and propose realistic plans for solving environmental problems at local, regional and national levels.

The requirements of the program are structured to meet these two objectives and include mathematical and scientific foundations as well as extensive interdisciplinary study related to environmental issues. The upper-level courses integrate the student’s program of study and provide hands-on practice in an environmental field. The environmental problems addressed in many classes and seminars will focus on the adjacent urban/suburban region and its impact on the surrounding environment.

Most solutions to environmental problems require input from multiple disciplines and environmental education programs need to reflect the complexity of the environmental processes they present. Therefore, the Environmental Science and Studies program utilizes a rigorous interdisciplinary approach. The curriculum draws upon the expertise of faculty in the areas of biology, chemistry, geology, mathematics, geography, environmental ethics and values, public policy, science education, economics, public health and social change.

Students majoring in Environmental Science and Studies have a choice of two concentrations: Environmental Studies or Environmental Science. Although there is considerable overlap in the courses between the two concentrations, Environmental Science is part of the Fisher College of Science and Mathematics and Environmental Studies is part of the College of Liberal Arts.

For Environmental Science and Studies, students have a choice of two concentrations:

- Major in Environmental Science and Studies - Environmental Science Concentration
- Major in Environmental Studies

Faculty

Professors: Kent Barnes (Geography & Environmental Planning), Vanessa Beauchamp (Biological Sciences), Harald Beck (Biological Sciences), Ryan Casey (Chemistry), Brian Fath (Biological Sciences), Laura Gough (Biological Sciences), Susan Gresens (Biological Sciences), Sarah Haines (Biological Sciences), David Hearn (Biological Sciences), John LaPolla (Biological Sciences), Kang Shou Lu (Geography & Environmental Planning), James Manley (Economics), Brian Masters (Biological Sciences), Joel Moore (Physics, Astronomy & Geosciences), Clare Muhor (Chemistry), Jay Nelson (Biological Sciences), Karen Oslund (History), David Ownby (Chemistry), Martin Roberge (Geography & Environmental Planning), Robert Rook (History), Christopher Salice (Biological Sciences), Stephen Scales (Philosophy & Religious Studies), Jeremy Tasch (Geography & Environmental Planning), Paporn Thebpanya (Geography & Environmental Planning), Donn Wors (Political Science)

Associate Professors: Andrea Brace (Health Sciences), Mark Bulmer (Biological Sciences), Kathryn Kautzman (Chemistry), Sya Kedzior (Geography & Environmental Planning), Christopher Oufiero (Biological Sciences), Makmiller Pedroso (Philosophy & Religious Studies), John Sivey (Chemistry), Shannon Stitzel (Chemistry), Timothy Sullivan (Economics)

Assistant Professors: Jacqueline Doyle (Biological Sciences), Anne Estes (Biological Sciences)

Lecturer: Natalia Fath (Geography & Environmental Planning)

Clinical Assistant Professor: Steven Kimble (Biological Sciences)

Courses

ENVS 270 SPECIAL TOPICS IN ENVIRONMENTAL SCIENCE AND STUDIES (1-4)
Study of a special topic related to Environmental Science and Studies. Topic can vary and will be announced. May be repeated if a different topic is covered.

ENVS 301 PEOPLE AND PESTS (3)
Impact of select pest species (insects, weeds, or microbes) on humans and human affairs; why some organisms become pests; approaches to controlling pest organisms. Not for credit towards ENVS major or minor. Prerequisites: At least one high school or college Biology course.

ENVS 337 THE CHESAPEAKE BAY AND ITS WATERSHED (3)
The Chesapeake Bay and the natural processes and anthropogenic disturbances that influence its health are the focus. The multidisciplinary nature of environmental problem solving is also explored through writing assignments. Requires grade of C or better to fulfill requirement. Prerequisites: A writing course, two courses in two different disciplines from among the following: BIOL 200/BIOL 200L (BIOL 201), BIOL 202, CHEM 104, CHEM 131/CHM 131L (CHEM 110), GEOG 101, GEOL 101, or permission of the instructor.

ENVS 382 ENVIRONMENTAL EDUCATION AND SERVICE LEARNING IN THE TROPICS (3)
Designed for majors in Science or Education with an interest in Environmental Education; course work will take place in Costa Rica; emphasis on tropical forest ecology concepts applicable to PreK-12 environmental education and management of tropical natural resources. Cross-listed as BIOL 382. Prerequisites: minimum Junior status and consent of the instructor.

ENVS 411 WATER POLICIES OF THE UNITED STATES (3)
History and application of the Clean Water Act, including ongoing actions and case studies with focus on Maryland issues. Prerequisite: POSC 103 or POSC 207.

ENVS 420 ENVIRONMENTAL POLICY AND SUSTAINABLE MANAGEMENT (3)
Analysis of the scientific approach to solve environmental problems within the socioeconomic concerns involved in formulating and administering environmental policy. Energy, management, policy, and sustainability are considered. Prerequisite: POSC 103 or POSC 207.
ENVS 425 SCIENCE AND POLICY OF THE CHESAPEAKE BAY RESTORATION (3)
Provides students with a basic understanding of the key physical, chemical and biological processes taking place in the largest estuary in America. The class will explore how an understanding of these important ecosystem components has informed scientists, managers, legislators and other stakeholders about the causes of the degradation of the Bay and has provided insight into the formulation of a strategy for its protection and restoration. In addition to class lectures, projects and possibly in-field experiences, regional Chesapeake Bay experts from the academic, political and regulatory sectors will provide students with a real-world perspective on both the opportunities and obstacles in the effort to save the Bay.

ENVS 432 SPECIAL TOPICS IN ENVIRONMENTAL SCIENCE AND STUDIES (1-4)
Study of a special topic related to Environmental Science and Studies. Topic can vary and will be announced. May be repeated if a different topic is covered.

ENVS 471 INDEPENDENT STUDY IN ENVIRONMENTAL SCIENCE AND STUDIES (1-3)
Studies in selected content areas tailored to student needs. This course may be repeated for a total of 3 credits. Prerequisites: ESS major only, completion of 30 credit hours of required ESS coursework or consent of instructor.

ENVS 482 ENVIRONMENTAL RESEARCH (3)
Independent investigation of an environmental problem/question under the guidance of a faculty member. Paper and public presentation required. Prerequisites: ESS major, junior or senior standing and consent of instructor. Special permit required.

ENVS 485 ENVIRONMENTAL INTERNSHIP (3)
Practical application of environmental science and studies through a supervised work experience with business, industry, public or private agency. Analytical final product in which the student integrates workplace experience with academic studies required. Prerequisites: ESS major, junior or senior standing, 2.50 QPA in ESS required courses, and consent of internship coordinator.

ENVS 491 SENIOR SEMINAR (3)
Synthesis, analysis and application of information from a broad range of perspectives. Prerequisites: ESS major, completion of Advanced Writing Seminar requirement, and senior standing; consent of department.