

2015 Spring Course Offerings

Environmental Studies

Graduate Director: Professor Donald Morris
Undergraduate Director: Al Wurth



Graduate certificate, major and minor declaration forms are available in the Office of Interdisciplinary Programs, Maginnes 490

ES 001-10 Introduction to Environmental Studies (CRN 16119) 4 credits (SS)

Gateway to the field of Environmental Studies, the course surveys central issues and themes confronting humanity in the natural world on a national and global basis. Topics include humankind's role in environmental change; society's response to the dynamism of nature; cultural evaluations of nature; population dynamics; resource availability and pollution sinks; land use patterns; sustainability and consumerism; environmental justice and ethics; policy and planning. This course fulfills a social science credit requirement (SS) please select ES 2 to fulfill the natural science (NS) requirement. **Professor Casagrande** T,TR; 9:20 - 10:35 a.m.

ES, EES 004-60 The Science of Environmental Issues (1 credit) (NS)

Section 60 (CRN 14364) M, 11:10 a.m. - 12:25 p.m.

Section 61 (CRN 14369) F, 1:10 p.m. - 12:25 p.m.

Section 62 (CRN 14373) W, 11:10 a.m. - 12:25 p.m.

Analysis of current environmental issues from a scientific perspective. The focus of the course will be weekly discussions based on assigned readings. Pre- or co-requisite: introductory-level course in EES. **Staff**

ES, EES, GCP 100-10 Earth System Science (CRN 18933) 4 credits (NS)

Examination of the Earth as an integrated system. Study of interactions and feedbacks between key components such as the atmosphere, geo-sphere, and hydrosphere to permit better understanding of the behavior of the system as a whole. Response of the Earth system to human perturbations such as land use and emissions are explored in the context of predictions of future environmental conditions and their projected impacts back on human systems. Lectures, class discussions, and recitation. **Professor Zeitler** T,TR; 9:20 - 10:35 a.m. & lab TR 1:10 - 4:00

ES, POLS 105-10 Environmental Policy and Planning (CRN 19296) 4 credits (SS)

Analysis of the framework that has been established to protect the environment and promote sustainable growth. Focus on the roles of the different branches of the U.S. government and the relative responsibilities of state and local governments within this framework. Consideration of the political nature of environmental issues and the social forces influencing environmental protection in different areas of domestic environmental policy, such as climate change, toxic waste disposal and natural resources conservation. **Professor Holland** M,W; 12:45 - 2:00 p.m.

ES 124-10 Sustainability in Action II (CRN 18867) 1-4 credits (ND)

Continuation of ES 123 Sustainability in Action I; second half of a year-long experiential learning program for students to engage with sustainability in both general theory and applied practices. Students will learn the political, economic and social effects of changing earth systems through a global, national and local lens. Students will explore the multitude of challenges posed by increasing natural resource consumption, inequitable distribution of wealth and rapid uneven globalization. Most importantly, students will engage the Lehigh community and broader community in developing and implementing practical solutions to creating a more sustainable and just world. Students in ES 124 expand the scope and scale of sustainability projects and activities piloted in ES 123. Offered in coordination with the Campus Eco-Reps program. Instructor permission required. May be repeated for credit **Professor Wurth**

ES 131-10 Internship (CRN 17959) 1-2 credits (ND)

Practical experience in the application of environmental studies for both on- and off-campus organizations. Course is designed to provide credit for supervised experiential learning experiences. May be repeated for credit up to four credits. Prerequisite: consent of the program director.

ES 181-10 Independent Study (CRN 11056) 1-4 credits (HU, SS)

Directed readings or research on an Environmental Studies topic. May be repeated for credit up to four credits. Prerequisite: consent of the program director.

ES 195-10 Practicum in Environmental Studies (CRN 19485) 1-4 credits (ND)

Supervised collaborative work on local, state or national environmental issues. Prerequisite: consent of the program director.

POLS, ES 196-10 Urban Environmental Planning (CRN 19287) 4 credits (SS)

An introduction to the topic of environmental planning, the course will review the roles of citizens, other stakeholders, political interests, and local governments in determining the use of land; unpack the meaning of "sustainability;" and grapple with the challenge of balancing communities' demand for development with the need to protect valuable natural resources. Students will be introduced to examples of successful and unsuccessful instances of environmental planning both at home and abroad. **Professor Beck-Pooley** T,TR; 9:20 - 10:35 a.m.

SDEV 201-10 Sustainable Development Solutions, I (CRN 18847) 2-4 credits (SS) *ES attribute*

Projects practicum in which cross-disciplinary teams of 5-6 students focus on understanding the context of a particular NGO amidst the broader social, economic, and scientific challenges to sustainable development. Analytic techniques for designing, implementing and evaluating projects. Nuts and bolts of development practice. Teams work on needs assessment related to their NGO's proposed goals and devise innovative solutions for implementing development projects. On-the-ground field experience, whether international or domestic, is required. Course fee may apply. Oral presentations and written reports. Prerequisite: SDEV 010 or permission of the Program Director. **Professor Orrs** T; 1:10 - 4:00 p.m.

SDEV 203-10 Research in Sustainable Development (CRN 18848) 2-4 credits (SS) ES attribute

Students will work on sustainable development research projects not involving field work. May be repeatable for a maximum of 4 credits. Prerequisite: SDEV 010 and instructor permission. **Professor Orrs**

ECO 211-10 Introduction to Environmental Economics (CRN 19193) 3 credits (SS)

An examination of the interactions between our economic systems and the environment. Pollution as a consequence of human activity within a framework for analyzing the relationships between environmental quality, scarcity of resources and economic growth. How to develop appropriate policies to deal with these issues. **Professor Figueroa Armijos** M,W; 2:35 – 3:50 p.m.

ES 224-10 Advanced Sustainability in Action II (CRN 18868) 1-4 credits (ND)

Continuation of ES 223. Leadership and coordination of Sustainability in Action projects and activities for students in ES 124. Experienced students who have completed the year-long Sustainability in Action sequence (ES 123 and ES 124) continue in course coordination role. Prerequisites, ES 123, ES 124 and ES 223. Offered in coordination with the Campus Eco-Reps Program. Instructor permission required. May be repeated for credit. **Professor Wurth**

CEE 272-10 Environmental Risk Assessment (CRN 18720) 2 credits (ND)

Effects of chemical releases on human health; ecological risks. Application of risk assessment methodology, including hazard identification, exposure assessment, toxicity assessment, and risk characterization. Accounting for uncertainty in data during risk management, risk reduction and implementation of regulations and environmental policy. **Professor Brown** M,W; 9:10 – 10:00 a.m.

ES 293-10 Advanced Lehigh Earth Observatory Field/Laboratory Internship (CRN 16122) 1-4 credits (NS, HU, SS)

A continuation of LEO Internship 93, this course will entail further development of supervised projects and leadership opportunities. Past projects and more details about LEO are available at <http://www.leo.lehigh.edu>. Prerequisite: consent of the program director and ES 93.

ES, IR 333-10 International Environmental Law & Policy (CRN 17646) 4 credits (SS) (Writing Intensive)

ES 433-10 International Environmental Law & Policy (CRN 17647) 3 credits (SS) (Writing Intensive) Graduate students Only

This course examines the basic international legal setting for the protection and management of the global environment. It examines how international law concerning nature is made and applied, the role of international environmental regimes or institutions, enforcement strategies, and compliance mechanisms. Emphasis will be placed on a review of various regulatory regimes for the protection of the global commons, including the history and legal sources of the Global Climate Change Convention. **Professor Gillroy** T; 4:10 – 7:00 p.m.

ES, TLT 368-10 Teaching and Learning with Geospatial Tools (CRN 19073) 3 credits (ND)

Exploration of geospatial tools, including but not limited to global positioning systems (GPS), geographic information systems (GIS), and related visualization tools (e.g., Google Earth). Application of these tools and techniques to instructional settings, including appropriate pedagogy and assessment. **Professor Hammond** T (1/20, 2/10, 3/24, 4/21); 4:10 – 7:00 p.m. and on-line.

ES 371-10 Special Topics (CRN 11057) 1-4 credits (HU, SS)

Intensive, research-oriented study of a subject or issue in Environmental Studies not covered in other courses. For students of demonstrated ability and adequate preparation. May be repeated for credit up to four credits. Prerequisite: consent of the program director.

SDEV 372-10 Independent Study in Sustainable Development (CRN 18849) 1-4 credits (SS/HU) ES attribute

Opportunity for students to pursue individual sustainable development projects or continue work begin in SDEV 201/202. May not count towards minor's credit requirements. Prerequisite: SDEV 010 and department permission.

ES 381-10 Senior Seminar: Issues in Environmental Studies (CRN 16776) 4 credits (SS)

Advanced seminar focusing on discussion and research on specialized subjects in Environmental Studies. Subject matter varies from semester to semester. Intended for Environmental Studies majors and minors but open to others. Prerequisites: ES 1, 2 or another EES course, and one core course or consent of the program director. **Professor Wurth** (open to senior ES majors only, others will require instructor permission) M,W; 11:10 – 12:25 p.m.

ES 391-10 Honors Thesis (CRN 12771) 1-4 credits (HU,SS)

Directed undergraduate research thesis required of students who apply and qualify for graduation with program honors. Prerequisite: consent of the program director.

ES 396-10 The management and resolution of environmental and resource-based conflicts (CRN 19489) 4 credits (SS)

ES 496-10 The management and resolution of environmental and resource-based conflicts (CRN 19491) 3 credits Graduate students only

This course examines the role of natural resources and environmental scarcities in the onset of violence and military conflicts and analyzes strategies for resolving such disputes. We will examine the phenomenon of resources curse and focus on the connection between human activity, environmental degradation and violence at the international, national, and local levels. We will then discuss opportunities and challenges for conflict resolution by focusing on bargaining, mediation and the art of negotiation. Students will analyze case studies of resource-based conflicts and participate in a simulation activity: Globalization and Nigerian Oil.

Professor Radziszewski M,W; 2:35 – 3:50 p.m.

**** CANCELED ** ES, GS, HMS, ANTH 396-11 Anthropology of Health & the Environment (CRN 19460)** 4 credits (SS)

This course blends insights from medical anthropology and political ecology to offer a holistic understanding of relationships among health, illness, poverty, development and the environment. It examines all aspects of health, illness, and disease in human communities, populations, and ecosystems across the globe to consider ways to make human habitation on the planet more sustainable and perhaps improve environmental health for future populations. Class discussions and assignments will hone students' analytical, research and critical thinking skills. **Professor Staff** T,TR; 1:10 – 2:35 p.m.

ES 396-12 Urban Environmental Policy Workshop (CRN 19497) 4 credits (SS) POLS attribute

ES 496-12 Urban Environmental Policy Workshop (CRN 19498) 3 credits POLS attribute, Graduate students only

An environmentally-focused design course in urban politics and planning, the class will work with community clients to address an environmental policy question or challenge. Students will explore the topic of trash hauling in Bethlehem, evaluating the pros and cons of the current approach as well as several alternatives, using various criteria. Course activities include: conducting individual interviews, running focus groups, attending community meetings, synthesizing primary and secondary data, and presenting findings to clients and the community. **Professor Beck-Pooley** T; 4:10 – 7:00 p.m.

AAS, WGSS, SDEV 397-10 Women, Engineering and Sustainable Development in Africa (CRN 17929) 4 credits (SS) ES attribute, GCP attribute

This course embraces multi-disciplinary approaches in Environmental Engineering and Africana Studies. The course will engage students on issues of sustainable development and explore various green energy and environmental initiatives in Africa. Students will learn and develop models for simple, culturally competent, and economically feasible technologies, either adopted or developed, that can enhance the communal, infrastructural and individual capacity for agricultural communities in rural Africa to alleviate poverty. Through research, situational/case study analysis and several discussion-based approaches, we will examine women's roles and various gendered issues and challenges that impede the economic advancement and environmental conservation that is vital to development in Africa.

Professor Dziror Darku T,TR; 10:45 - 12:00 p.m.

PSYC, HMS 397-10 Participatory and Action Research in Psychology (CRN 19389) 4 credits (SS)

Action research is used to understand important real-world social problems and promote social action. Participatory research engages community members as equals to help identify areas of focus and to design studies and interventions. This course provides an overview of the rich history of these approaches in psychology, an in-depth look at how they can be used effectively, and an opportunity to gain hands-on experience. *ES students interested in this course should seek instructor permission.*

Professor Burke M,W; 12:45 - 2:00 p.m.

SSP, ES 397-10 Information Ecology (CRN 19499) 4 credits (SS)

SSP, ES 497-10 Information Ecology (CRN 18035) 3 credits *Graduate students only*

Information theory and critical theory are combined with ecological modeling and cognitive science to analyze how human ecosystems succeed or fail in adapting to change. Special attention is paid to how organizational and public policy mediates individual cognition and social processes. Analytical tools developed in the course are applied to case studies to create policy recommendations. **Professor Casagrande** TR; 4:10 - 7:00 p.m.

ES, STS, HIST 398-10 Topics in Envirotechnical History (CRN 18596) 4 credits (SS)

ES, STS, HIST 398-11 Topics in Envirotechnical History (CRN 19470) 3 credits (ND)

The intersection between humanity's technological attempts to control nature, resulting impacts upon the environment, and the ways nature influences and constrains society. Case studies include water power and energy systems, urban growth and suburban sprawl, and agriculture and animals as machines.

Professor Cutcliffe T,TR; 2:35 - 3:50 p.m.

ES, EES 402-10 Scientific Foundations for Environmental Policy Design (CRN 18869) 3 credits (ND)

This course explores the science behind the environmental issues that bear on the policy process at local, national and global scales. It delves into the science of selected environmental issues that have either arisen from anthropogenic activities, or that impact social systems, or that help policy makers understand the consequences of different policy options. The course will consist of readings and discussions of timely topics and one major project.

Professor Sahagian W; 7:10 - 10:00 p.m.

ES 483 Independent Study 1-4 credits

Section 11 **Professor Gillroy (CRN 18248)**

Section 12 **Professor Holland (CRN 18249)**

Section 13 **Professor Sahagian (CRN 18250)**

Section 14 **Professor Casagrande (CRN 18251)**

ES 490 Thesis 1-6 credits

Section 10 **Professor Gillroy (CRN 16125)**

Section 11 **Professor Holland (CRN 16246)**

Section 12 **Professor Austin (CRN 18974)**

Section 13 **Professor Sahagian (CRN 16248)**

Section 14 **Professor Casagrande (CRN 18034)**