

**ENVIRONMENTAL  
SCIENCE  
AND POLICY** **ESP**

**College of Social Science**

- 800 Principles of Environmental Science and Policy**  
Spring. 3(3-0)  
Scholarship and research in environmental science and policy.
- 801 Physical, Chemical, and Biological Processes of the Environment**  
Fall. 3(3-0) RB: Bachelor's or Master's in appropriate discipline for specialization. SA: SSC 801  
Interdisciplinary concepts in the natural sciences related to environmental problems. Ecology and human health.
- 802 Human Systems and Environment**  
Spring. 3(3-0) RB: Bachelors or Masters in appropriate discipline for specialization. SA: SSC 804  
Anthropological, economic, geographical, legal, political, and sociological concepts of human systems and environmental change.
- 803 Human and Ecological Health Assessment and Management**  
Fall. 3(3-0) RB: Familiarity with the basic concepts of physics, chemistry and biology of environmental processes, and the relationships between human systems and the environment. SA: SSC 805  
Concepts and techniques used to evaluate human and ecological health impacts from anthropogenic activities. Policy formulation and management strategies to mitigate health effects.
- 804 Environmental Applications and Analysis**  
Fall. 3(3-0) A student may earn a maximum of 6 credits in all enrollments for this course. P: ESP 801 and (ESP 802 or concurrently) and ESP 803 or approval of department RB: Bachelors or Masters in appropriate discipline for specialization. SA: SSC 806  
Global, regional, and local environmental issues. Systems approach to identify and solve environmental problems.
- 836 Modeling Natural Resource Systems**  
Spring. 3(3-0) Interdepartmental with Community Sustainability and Fisheries and Wildlife. Administered by Community Sustainability. RB: ecology, statistics, and calculus SA: ACR 851, CSUS 851  
System dynamics modeling in human-environment systems. Sustainability applications, including renewable and non-renewable resource use, greenhouse gas emissions and climate change, pollutants and limits to growth.

- 845 Environmental Risk Perception and Decision-Making**  
Spring of odd years. 3(3-0) Interdepartmental with Criminal Justice and Fisheries and Wildlife. Administered by Criminal Justice. R: Open to master's students or doctoral students in the School of Criminal Justice or in the Department of Fisheries and Wildlife or approval of school.  
Theoretical underpinnings of individual decision-making and risk perception processes. Case studies of the interplay of risk perception and decision-making in an environmental and or criminological context.
- 846 Corporate Environmental Crime and Risk**  
Spring of even years. 3(3-0) Interdepartmental with Criminal Justice and Fisheries and Wildlife. Administered by Criminal Justice. R: Open to master's students or doctoral students in the Department of Fisheries and Wildlife or in the School of Criminal Justice or approval of school.  
Theoretical accounts and multiple interventions relevant to corporate environmental crime and risk. Use of "Smart Regulation" principles to design interventions to match specific problems.
- 847 Global Risks, Conservation, and Criminology**  
Fall. 3(3-0) Interdepartmental with Criminal Justice and Fisheries and Wildlife. Administered by Criminal Justice. R: Open to graduate students or approval of school.  
Theories, actors, characteristics and legal instruments associated with risk, conservation, and criminology related to globalization. Current case studies in criminological conservation.
- 850 Introduction to Environmental and Social Systems Modeling**  
Fall. 1(1-0)  
Theoretical background of diverse modeling problems in complex environmental systems. Diverse modeling approaches to most appropriate modeling tools in a variety of contexts.
- 869 Agent-Based Modeling**  
Spring. 3(3-0) Interdepartmental with Geography. Administered by Geography. RB: Basic understanding of data structures and algorithms covered in an introductory course of any programming language. R: Approval of department.  
Theoretical concepts related to simulating dynamic geographic phenomena in the intersection between human and natural systems. Innovative agent-based methodology applied to complex social-environmental systems. Hands-on experience of agent-based modeling, with special emphasis on modeling human decision-making and its impact on the natural environment.
- 883 Multi-Equation Quantitative Models**  
Spring. 3(3-0) Interdepartmental with Sociology. Administered by Sociology. P: SOC 881 and SOC 882 or approval of department R: Open to graduate students in the Department of Sociology and open to graduate students in the Environmental Science and Policy Specialization or approval of department.  
Quantitative methodology: multilevel modeling; structural equation modeling. Applications in sociology and environment.

- 890 Modeling Environmental and Social Systems**  
Fall. 2(2-0)  
Modeling project of real-world environmental problems. Theories and methodologies from previous modeling courses to practical policy problems. Applied project with a variety of modeling tools and a trans-disciplinary synthesis. Model development, implementation, and evaluation in student groups.
- 891 Selected Topics in Environmental Science and Policy**  
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course.  
In-depth study of selected environmental science and policy issues.