ENVIRONMENTAL STUDIES - GAYLORD NELSON INSTITUTE (ENVIR ST)

ENVIR ST/SOIL SCI 101 — FORUM ON THE ENVIRONMENT
1-2 credits.

Lectures and discussions about environmental issues. Historical and contemporary environmental impacts of humans on the biosphere. Global futures: population, technology, societal values, resources and prospects for sustainable management.

Requisites: Open to Fr
Course Designation: Breadth - Either Social Science or Natural Science
Level - Elementary
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2017

ENVIR ST/ATM OCN/GEOSCI 102 — CLIMATE AND CLIMATE CHANGE
3 credits.

This course describes the basic climate principles governing the climate system. It describes the climate and climate variability at present, climate evolution in the past, and the projected climate change into the future. The scientific principles underlying the natural and anthropogenic greenhouse effect and climate model forecasts are elucidated.

Requisites: None
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Elementary
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Summer 2017

ENVIR ST/AGROECOL/AGRONOMY/C&E SOC/ENTOM 103 — AGROECOLOGY: AN INTRODUCTION TO THE ECOLOGY OF FOOD AND AGRICULTURE
3 credits.

Agroecology has blossomed across the world in recent decades as not only a science, but also a practice, and a movement. This course will challenge students to employ the multiple disciplines and perspectives that Agroecology affords to analyze our agricultural and food systems within a broader context of dynamic social and ecological relationships.

Requisites: None
Course Designation: Breadth - Biological Sci. Counts toward the Natural Sci req
Level - Elementary
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No

ENVIR ST/GEOSCI 106 — ENVIRONMENTAL GEOLOGY
3 credits.

Application of geology to problems resulting from the ever more intense use of the earth and its resources. Lecture and discussion. Open to Fr
Requisites: Not open to those who have had Geosci 101, 100, or 109.
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Elementary
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2017

ENVIR ST 112 — ENVIRONMENTAL STUDIES: THE SOCIAL PERSPECTIVE
3 credits.

Importance of social factors in the generation and resolution of complex environmental problems with an interdisciplinary perspective. Comparison of specific communities in the more and less developed areas of the world.

Requisites: Open to Fr
Course Designation: Breadth - Social Science
Level - Elementary
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2017

ENVIR ST 113 — ENVIRONMENTAL STUDIES: THE HUMANISTIC PERSPECTIVE
3 credits.

Environmental problems as approached by philosophy, literature, fine arts, history of science, and anthropology. Reflections on the past and present situation of our species and its relationship to the rest of nature offer suggestions toward possible alternative values for future.

Requisites: Open to Fr
Course Designation: Breadth - Humanities
Level - Elementary
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Summer 2017

ENVIR ST/E ASIAN/LCA 115 — ENVIRONMENTAL HUMANITIES: ASIAN/PACIFIC PERSPECTIVES
3-4 credits.

Course offers a case-based approach to environmental studies from a humanistic perspective, taking into account diverse and connected transnational systems of Asia; materials draw on themes like forests, water, disaster, war, and conservation and wildlife. Course introduces disciplines in the Environmental Humanities (literature, religion, music, etc.) through studies in tradition, theory and practice across South Asia, Southeast Asia, East Asia and ocean and Pasifik regions including Aotearoa, New Zealand. Throughout the course we ask, how are environmental worldviews cast as the basis for action and understanding in the present?

Requisites: None
Course Designation: Breadth - Humanities
Level - Elementary
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
ENVIR ST/GEOG 120 — INTRODUCTION TO THE EARTH SYSTEM  
3 credits.

Introduces students to how the Earth system works and what makes Earth livable. Through this course you will gain a deeper appreciation for how the atmosphere, oceans, life, and earth’s surface interact to shape our local, regional and global landscapes. Many students take this course to fulfill their physical science requirement. Others use it as a gateway to majors and careers in Geography, Environmental Studies, and Environmental Science.

Requisites: Not open to students with credit for GEOG/ENVIR ST/GEOG 127  
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req  
Level - Elementary  
L&S Credit - Counts as Liberal Arts and Science credit in L&S  
Honors - Honors Optional (%)  
Repeatable for Credit: No  
Last Taught: Spring 2017

ENVIR ST/ATM OCN/GEOG 121 — ATMOSPHERIC ENVIRONMENT AND SOCIETY  
2 credits.

Changing interactions between humans, other animals and plants, and the atmospheric environment, both in time and space.

Requisites: Open to Fr  
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req  
Level - Elementary  
L&S Credit - Counts as Liberal Arts and Science credit in L&S  
Repeatable for Credit: No  
Last Taught: Fall 2009

ENVIR ST/HIST SCI/HISTORY 125 — GREEN SCREEN: ENVIRONMENTAL PERSPECTIVES THROUGH FILM  
3 credits.

From Teddy Roosevelt’s 1909 African safari to the Hollywood blockbuster King Kong, from the world of Walt Disney to The March of the Penguins, cinema has been a powerful force in shaping public and scientific understanding of nature throughout the twentieth and twenty-first century. How can film shed light on changing environmental ideas and beliefs in American thought, politics, and culture? And how can we come to see and appreciate contested issues of race, class, and gender in nature on screen? This course will explore such questions as we come to understand the role of film in helping to define the contours of past, present, and future environmental visions in the United States, and their impact on the real world struggles of people and wildlife throughout the world.

Requisites: None  
Course Designation: Breadth - Either Humanities or Social Science  
Level - Elementary  
L&S Credit - Counts as Liberal Arts and Science credit in L&S  
Repeatable for Credit: No  
Last Taught: Fall 2015

ENVIR ST/ILS 126 — PRINCIPLES OF ENVIRONMENTAL SCIENCE  
4 credits.

This course relates principles of environmental science to our daily activities, with an eye to sustainability, conservation, and systems thinking. It introduces science as a process of inquiry and discovery rather than just a pre-established set of facts. Topics relate to energy, water, and land use, and include food, electric power, materials, buildings, transportation, and waste.

Requisites: Open to Freshmen  
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req  
Level - Elementary  
L&S Credit - Counts as Liberal Arts and Science credit in L&S  
Repeatable for Credit: No  
Last Taught: Spring 2017

ENVIR ST/GEOG 127 — PHYSICAL SYSTEMS OF THE ENVIRONMENT  
5 credits.

Climatic regimes, landforms, soils, waters and life forms at the earth’s surface in terms of energy-transforming processes, locational patterns, and changes through time.

Requisites: Open to Freshmen not open to those with GEOG/ENVIR ST 120, 123, 124, or 125 credit or ILS 132 credit  
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req  
Level - Elementary  
L&S Credit - Counts as Liberal Arts and Science credit in L&S  
Honors - Honors Optional (%)  
Repeatable for Credit: No  
Last Taught: Fall 2016

ENVIR ST/GEOG 139 — LIVING IN THE GLOBAL ENVIRONMENT: AN INTRODUCTION TO PEOPLE-ENVIRONMENT GEOGRAPHY  
3-4 credits.

This course provides an exploration of the global and local nature of environmental problems facing us, including issues of climate change, food, energy, economic globalization, deforestation and land use change, biodiversity loss, resource scarcity and access, environmental justice, and population. Through group and individual work, this course considers how we should analyze and act on environmental problems as we confront the apparently daunting scale of such issues. The theme of this course is that what appear to be single global environmental problems are actually composed of many smaller context-specific and place dependent problems or conflicts. Through an interdisciplinary and geographic perspective, these can be understood and addressed at the scale of our lived lives.

Requisites: None  
Course Designation: Breadth - Social Science  
Level - Elementary  
L&S Credit - Counts as Liberal Arts and Science credit in L&S  
Repeatable for Credit: No  
Last Taught: Spring 2017
ENVIR ST/ENG 153 — LITERATURE AND THE ENVIRONMENT
3 credits.
An introduction to literature in English about the natural world and
humankind’s relationship with it; specific topics will vary.
Requisites: None
Course Designation: Breadth - Literature. Counts toward the Humanities req
Level - Elementary
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: Yes, unlimited number of completions

ENVIR ST/ATM OCN 171 — GLOBAL CHANGE: ATMOSPHERIC ISSUES
AND PROBLEMS
2-3 credits.
Atmospheric problems of global significance. Greenhouse warming, ozone layer, acid rain, climate change. Study based on elementary principles of atmospheric science. Systems approach applied to changing atmospheric composition. Interactions among geochemical cycles, anthropogenic inputs and other parts of the environment.
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Elementary
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2017

ENVIR ST 199 — DIRECTED STUDY
1-2 credits.
Requisites: Open to Freshmen, consent of instructor
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2014

ENVIR ST 200 — SPECIAL TOPICS IN ENVIRONMENTAL STUDIES
1-4 credits.
Topics vary each term, within the scope of the environmental physical sciences. These may encompass areas such as energy systems, earth system sciences, quantitative methods for environmental analysis, and application of scientific and engineering concepts to real-world environmental issues. Open to Fr
Requisites: Minimum pre-calculus; concurrent enrollment in calculus recommended.
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2011

ENVIR ST/ENTOM 201 — INSECTS AND HUMAN CULTURE-A SURVEY COURSE IN ENTOMOLOGY
3 credits.
Importance of insects in man’s environment, emphasizing beneficial insects, disease carriers, and agricultural pests that interfere with man’s food supply. Environmental problems due to insect control agents.
Requisites: Open to Fr
Course Designation: Breadth - Biological Sci. Counts toward the Natural Sci req
Level - Elementary
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Summer 2017

ENVIR ST/MED HIST 213 — GLOBAL ENVIRONMENTAL HEALTH: AN INTERDISCIPLINARY INTRODUCTION
3 credits.
The course provides an introduction to the intersections of health and environment on a global scale. Exposes students to a range of problems in global environmental health, including climate change, disease ecology, and the globalization of disease.
Requisites: None
Course Designation: Breadth - Either Humanities or Social Science Level - Elementary
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2017

ENVIR ST/GEOG/SOIL SCI 230 — SOIL: ECOSYSTEM AND RESOURCE
3 credits.
Soils are fundamental to ecosystem science. A systems approach is used to investigate how soils look and function. Topics investigated include soil structure, biology, water, fertility, and taxonomy as well as the human impact on the soil environment.
Requisites: Not open to students with credits in SOIL SCI 301
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2017

ENVIR ST/A E 244 — THE ENVIRONMENT AND THE GLOBAL ECONOMY
3 credits.
The "economic way of thinking" about global and regional environmental issues. Topics include climate change, biodiversity preservation, ocean fisheries, environmental impacts of international trade, poverty and the environment, and sustainability.
Requisites: Open to Freshmen
Course Designation: Breadth - Social Science Level - Elementary
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2017

ENVIR ST 250 — INTRODUCTION TO SUSTAINABILITY SCIENCE
3 credits.
Course introduces issues connected with "Sustainability Science," the study of coupled human-natural systems with implications for resource use, human well-being, and the environment. Methods include risk assessment, life-cycle assessment, and conceptual modeling, as well as basic background on natural systems such as climate, water, and land use, and engineered systems including energy, transportation, land use, and materials.
Requisites: A sem of calculus or concurrent enrollment in MATH 136, 171, 211, 221 or equiv
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Elementary
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2015
ENVIR ST/BOTANY/ZOOLOGY 260 — INTRODUCTORY ECOLOGY
3 credits.

For nonbiology students: the relationships of organisms and the
environment. Population dynamics and community organization, human-
environment relationships, action programs. Does not count toward
Botany or Zoology major
Requisites: Open to Freshmen.
Course Designation: Breadth - Biological Sci. Counts toward the Natural
Sci req
Level - Elementary
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Summer 2017

ENVIR ST/RELIG ST 270 — ENVIRONMENT AND RELIGION
3-4 credits.

What are sources on which members of religious communities draw in
order to understand and address environmental change? This course
explores how religious persons and communities confront global
environmental questions and challenges today, with case studies
drawn from culturally and religiously plural societies such as India and
Indonesia. Introducing diverse varieties of Christianity, Islam, and Hindu
and Buddhist systems, course gives overview of some approaches in the
environmental humanities related to philosophy, history, sociology and
anthropology, and ethics. Fulfills requirement for Environmental Studies
and Religious Studies degree programs.
Requisites: Sophomore standing
Course Designation: Breadth - Humanities
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2016

ENVIR ST 307 — LITERATURE OF THE ENVIRONMENT: SPEAKING FOR
NATURE
3 credits.

19th and 20th century British and American literature.
Requisites: So st; priority given to IES certificate students
Course Designation: Breadth - Literature. Counts toward the Humanities
req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Summer 2017

ENVIR ST/GEOG 309 — PEOPLE, LAND AND FOOD: COMPARATIVE
STUDY OF AGRICULTURE SYSTEMS
3 credits.

Introduction to how and why humans have transformed natural
landscapes around the world, including tropical deforestation. Exploration
of different agricultural systems, and topics such as food security,
land scarcity, bioenergy and the impacts of food production on the
environment.
Requisites: Sophomore standing
Course Designation: Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Summer 2017

ENVIR ST/M H R 310 — CHALLENGES & SOLUTIONS IN BUSINESS
SUSTAINABILITY
3 credits.

This course provides students with central knowledge and skills to tackle
challenges at the intersection of business and sustainability. Students
will study the failures in market and decision making systems that lead to
sustainability challenges, and learn how to address these challenges on
the policy, organizational, and individual level.
Requisites: Senior standing
Course Designation: Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2017

ENVIR ST/ZOOLOGY 315 — LIMNOLOGY-CONSERVATION OF AQUATIC
RESOURCES
2 credits.

General limnology. Physical, chemical and biological characteristics and
processes of lakes. Environmental problems and rehabilitation of lakes.
Requisites: Intro course in biol; intro course in chem recommended
Course Designation: Breadth - Biological Sci. Counts toward the Natural
Sci req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Fall 2016

ENVIR ST/SOIL SCI 324 — SOILS AND ENVIRONMENTAL QUALITY
3 credits.

Interaction of soils with environmental contaminants and the role of soils
in pollution control.
Requisites: CHEM 103 104 or equiv; Jr st
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci
req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Summer 2017

ENVIR ST/GEOG 325 — ANALYSIS OF THE PHYSICAL ENVIRONMENT
4 credits.

Selected associations of natural and human environments illustrative of
the broad principles of physical geography. Practical application of
data collection and the use of laboratory and field methods to Wisconsin
examples employing quantitative and nonquantitative analytical
methods; field trips; lab section.
Requisites: Any intro crse in phy geog or phy geol or meteor or cons inst
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci
req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2010
ENVIR ST/HISTORY 328 — ENVIRONMENTAL HISTORY OF EUROPE
3 credits.

This class explores a new approach to a part of the world with a very old history, but one that is now as 'modern' as any. The changing, complex relations between Europeans and their environments from antiquity to the twenty-first century offer instructive comparison with American and current global environmental concerns. Approaching Mediterranean and Western civilizations from an environmental viewpoint also offers fresh perspective on these enduring cultures.

Requisites: Sophomore Standing
Course Designation: Breadth - Either Humanities or Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Fall 2016

ENVIR ST/ATM OCN/GEOG 331 — CLIMATIC ENVIRONMENTS OF THE PAST
3 credits.

Climatic change at timescales from the last 1,000,000 years to the last 1000 years. Examines how climate variability arises from interplay between external forcings, feedbacks within the earth system, and (more recently) human activity.

Requisites: Atm Ocn/Geog/ENVIR ST/ATM OCN/GEOG 121, or GEOG/ENVIR ST 120, 123, 124 or 127 or ATM OCN 100
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Fall 2016

ENVIR ST/ATM OCN/GEOG 332 — GLOBAL WARMING: SCIENCE AND IMPACTS
3 credits.

Climate change is underway and will continue into the foreseeable future. This course offers a fundamental understanding of how and why global warming is happening, and what to expect in the future. Together, we will investigate and discuss the evidence for change, the science that explains these observations, predicted impacts on humans and ecosystems, and the societal debate over proposed solutions. Freshmen permitted only with consent of instructor

Requisites: Geog/IES 120 or 127 or ATM OCN 100 or equivalent recommended.
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2017

ENVIR ST/GEOG 337 — NATURE, POWER AND SOCIETY
3 credits.

Explores the links between nature, power and society in today's world. The course considers the complex relationships between humans and the earth's resources, including food, energy, physical materials, water, biota, and landscapes; it considers issues linked to population and scarcity, resource tenure, green consumerism, political economy, environmental ethics, risks and hazards, political ecology, and environmental justice. Not open to students who took Geog/Env 139 in 2010-11, 2011-12 or 2012-13.

Requisites: Sophomore standing.
Course Designation: Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Fall 2015

ENVIR ST/GEOG 339 — ENVIRONMENTAL CONSERVATION
4 credits.

Examines major environmental conservation approaches in the U.S. and developing countries and how they are influenced by sociopolitical factors, cultural values and scientific understandings of nature. Historical and contemporary cases are explored with emphasis on biodiversity and climate change issues.

Requisites: So st
Course Designation: Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Honors - Honors Optional (%)
Repeatable for Credit: No
Last Taught: Spring 2017

ENVIR ST/A A E/ECON 343 — ENVIRONMENTAL ECONOMICS
3-4 credits.

Microeconomic principles underlying the use of natural resources such as air, water, forests, fisheries, minerals and energy. These principles are applied in the examination of pollution control, preservation vs. development, deforestation, and other environmental issues.

Requisites: AAE 215, ECON 101 or equivalent, or consent of instructor
Course Designation: Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Fall 2016
ENVIR ST 349 — CLIMATE CHANGE GOVERNANCE
3 credits.

Climate change is being felt, and addressed, at every level of society, from the individual to the global scale. This course examines efforts to mitigate climate change. We will learn about initiatives that are being implemented through international treaties; national, state, and municipal government policies; corporate programs; and individual behavior. We will examine the advantages and disadvantages of each approach, their successes, and the obstacles they have faced. We will also evaluate various forms of climate activism as a means of pushing for meaningful action on climate change.

Requisites: Sophomore standing
Course Designation: Breadth - Social Science
Level - Intermediate
L&S Credit: Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No

ENVIR ST/HIST SCI 353 — HISTORY OF ECOLOGY
3 credits.

The development of the science of ecology and related scientific issues and social attitudes, with a primary emphasis on developments from the late nineteenth century to the present.

Requisites: Jr st or cons inst
Course Designation: Breadth - Humanities
Level - Intermediate
L&S Credit: Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2015

ENVIR ST/HIST SCI/LCA/RELIG ST 356 — ISLAM, SCIENCE & TECHNOLOGY, AND THE ENVIRONMENT
3-4 credits.

Survey of Muslim religious understandings of science, technology, nature and environment. Lectures and readings present a global perspective through case studies, covering sources such as the Qur'an, theology and law, and traditions of esoteric piety (mysticism), and historical and contemporary issues like medical ethics, virtual realities, and environmental change, challenge and crisis.

Requisites: Sophomore standing
Course Designation: Breadth - Humanities
Level - Intermediate
L&S Credit: Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2015

ENVIR ST/LAND ARC 361 — WETLANDS ECOLOGY
3 credits.

Types, origins, settings, and structure of wetlands. Physical, biological, and cultural values, uses and assessments. Physical and biological characteristics and dynamics. Protection, management and restoration. Field trips, literature review, term paper, and personal observations required.

Requisites: Upper class st; basic college-level biology or equiv (such as relevant physical sciences)
Course Designation: Breadth - Biological Sci. Counts toward the Natural Sci req
Level - Intermediate
L&S Credit: Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2017

ENVIR ST/BSE 367 — RENEWABLE ENERGY SYSTEMS
3 credits.

Students will learn about the state-of-the-art in renewable energy applications including biomass for heat, electric power and liquid fuels as well as geo-energy sources such as wind, solar, and hydro power. Students will do engineering calculations of power and energy availability of renewable energy sources and learn about requirements for integrating renewable energy sources into production, distribution and end-use systems.

Requisites: College algebra, college-level physical science course
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2017

ENVIR ST/M&ENVTOX/PL PATH 368 — ENVIRONMENTAL LAW, TOXIC SUBSTANCES, AND CONSERVATION
2 credits.

Development of and need for "environmental law"; an introduction to the legal system; public and private rights in the environment; regulation of pesticides and toxic substances; environmental legislation and rulemaking; environmental impact statements; professionals as expert witnesses. No prior knowledge of law assumed. For scientists and others dealing with environmental issues in academia, industry and government.

Requisites: So st
Course Designation: Breadth - Social Science
Level - Intermediate
L&S Credit: Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2013
ENVIR ST/F&W ECOL/G L E/GEOG/GEOSCI/LAND ARC 371 — INTRODUCTION TO ENVIRONMENTAL REMOTE SENSING
3 credits.

Introduction to the Earth as viewed from above, focusing on use of aerial photography and satellite imagery to study the environment. Includes physical processes of electromagnetic radiation, data types and sensing capabilities, methods for interpretation, analysis and mapping, and applications.

Requisites: MATH 114 Sophomore standing
Course Designation: Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Fall 2016

ENVIR ST/F&W ECOL/G L E/GEOG/GEOSCI/LAND ARC 372 — INTERMEDIATE ENVIRONMENTAL REMOTE SENSING
3 credits.

Examines intermediate-level concepts in information extraction, data processing and radiative transfer relevant to remote sensing of the environment. Includes transforms, image correction, classification algorithms and change detection, with emphasis on applications for land use planning and natural resource management.

Requisites: Envir St 301 or consent of instructor; sophomore standing
Course Designation: Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2015

ENVIR ST/N E 373 — NUCLEAR ENERGY AND THE ENVIRONMENT
3 credits.

Fission and fusion processes, nuclear reactors, power plants, radioactivity, biological effects, radiation and thermal releases, governmental regulations' impact on society.

Requisites: HS physics or chem; knowledge of basic biology or consent of instructor; not open to NEEP stdts
Course Designation: Breadth - Natural Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Fall 2009

ENVIR ST 375 — FIELD ECOLOGY WORKSHOP
3 credits.

Lecture labs wholly in field for intensive study of behavior of plants and animals and their relationship to environments and human impacts. Individual and group observations, measurements, interpretation, reports, typing personal experience with specifics to basic principles.

Requisites: Some basic biology ecology recommended; cons inst
Course Designation: Breadth - Biological Sci. Counts toward the Natural Sci req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Summer 2016

ENVIR ST/CIV ENGR/GEOG 377 — AN INTRODUCTION TO GEOGRAPHIC INFORMATION SYSTEMS
4 credits.

Design, implementation and use of automated procedures for storage, analysis and display of spatial information. Covers data bases, information manipulation and display techniques, software systems and management issues. Case studies. Meets with Civil Environmental Engineering 357.

Requisites: Sophomore standing
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Summer 2017

ENVIR ST 400 — SPECIAL TOPICS IN THE ENVIRONMENT: BIOLOGICAL ASPECTS OF ENVIR ST
1-4 credits.

Topics vary each term, within the scope of the environmental biological sciences. These may encompass areas such as conservation biology, environmental ecology, issues in ethnobotany and tropical ecology, environmental health, ecotoxicology, biodiversity, endangered resources, biological systems analysis, and field studies. Authorization may be required

Requisites: So st.
Course Designation: Breadth - Biological Sci. Counts toward the Natural Sci req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Summer 2017

ENVIR ST 401 — SPECIAL TOPICS: ENVIRONMENTAL PERSPECTIVES IN THE PHYSICAL SCIENCES
1-4 credits.

Topics vary each term, within the scope of the physical environmental sciences. These may encompass issues in energy resources, environmental measurement and analysis, modeling, remote sensing and GIS, environmental engineering and transportation, air and water resources, and global climate change. Authorization may be required

Requisites: So st.
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2017
ENVIR ST 402 — SPECIAL TOPICS: SOCIAL PERSPECTIVES IN ENVIRONMENTAL STUDIES
1-4 credits.
Topics vary each term, within the scope of the environmental social sciences. These may include issues in environmental policy, law, economics, land use, sustainability, food systems, energy policy, conflict resolution, environmental justice, and international development. Authorization may be required
Requisites: So st.
Course Designation: Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Summer 2017

ENVIR ST 404 — SPECIAL TOPICS: HUMANISTIC PERSPECTIVES IN ENVIRONMENTAL STUDIES
1-4 credits.
Topics vary each term, within the scope of the environmental humanities. These may encompass themes in environmental ethics, literature, art, film, aesthetics and design, history, and indigenous knowledge. Authorization may be required
Requisites: So st.
Course Designation: Breadth - Humanities
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2017

ENVIR ST/GEOSCI 410 — MINERALS AS A PUBLIC PROBLEM
3 credits.
Distribution of mineral resources; present and future problems of mineral supply; conservation of minerals, and mineral resources in relation to national and international policy.
Requisites: Open to Fr
Course Designation: Breadth - Natural Science
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2011

ENVIR ST/GEOSCI 411 — ENERGY RESOURCES
3 credits.
Requisites: Crse in college level math a crse in phy sci or cons inst
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2016

ENVIR ST/LEGAL ST 430 — LAW AND ENVIRONMENT: RIGHTS AND RESOURCES
3 credits.
This class explores the burgeoning field of environmental studies through a focus on the historical development of legal rights in land and natural resources. It examines rights in natural resources in pre-modern European and non-Western traditions, traces the development of modern Anglo-American and selected global approaches to environmental law and governance, and considers the recent development of international environmental law.
Requisites: Sophomore standing
Course Designation: Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2017

ENVIR ST/C&E SOC/GEOG 434 — PEOPLE, WILDLIFE AND LANDSCAPES
3 credits.
This course explores the relationship between humans and wildlife amidst diverse landscapes, both historic and contemporary, tropical and temperate. We study how humans shape wild animal populations by modifying physical environments, and by hunting, domesticating and introducing species.
Requisites: Geog/ENVIR ST/GEOG 339
Course Designation: Breadth - Social Science
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2017

ENVIR ST/GEOG 439 — US ENVIRONMENTAL POLICY AND REGULATION
3-4 credits.
This course covers a broad cross-section of American environmental policy by focusing on specific statutes and policy arenas. In this course we will survey the basic elements of American environmental policy and regulation with a particular focus on the specific people, sites and scales at which environmental decision-making happens through primary-source case material. Understanding environmental outcomes in a complex society depends on observing both the structure of regulations and the geographic and social context in which such regulations emerge. This course will maintain a dual focus on (a) the legal and regulatory aspects of environmental regulation and (b) the specific geographic and social features of actual cases in which regulations and policy are used.
Requisites: None
Course Designation: Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2016
 ENVIR ST/PHILOS 441 — ENVIRONMENTAL ETHICS  
3-4 credits.

Adequacy of ethical theories in handling such wrongs as harm to the land, to posterity, to endangered species, and to the ecosystem itself. Exploration of the view that not all moral wrongs involve harm to humans. Inquiry into the notion of the quality of life and the ethics of the "lifeboat" situation.

**Requisites:** 3 cr philos or envir studies, or Grad st in IES  
**Course Designation:** Breadth - Either Humanities or Social Science Level - Advanced  
L&S Credit - Counts as Liberal Arts and Science credit in L&S  
**Repeatable for Credit:** No  
**Last Taught:** Fall 2016

 ENVIR ST/CIV ENGR/G L E/GEOSCI 444 — PRACTICAL APPLICATIONS OF GPS SURVEYING  
2 credits.


**Requisites:** MATH 210, 211, 221 or equiv or cons inst  
**Course Designation:** Breadth - Physical Sci. Counts toward the Natural Sci req  
**Level - Advanced**  
L&S Credit - Counts as Liberal Arts and Science credit in L&S  
Grad 50% - Counts toward 50% graduate coursework requirement  
**Repeatable for Credit:** No  
**Last Taught:** Spring 2017

 ENVIR ST/ECON/POLI SCI/URB R PL 449 — GOVERNMENT AND NATURAL RESOURCES  
3-4 credits.

Problems of public policy and administration for development and use of natural resources.

**Requisites:** Jr st  
**Course Designation:** Breadth - Social Science  
L&S Credit - Counts as Liberal Arts and Science credit in L&S  
Grad 50% - Counts toward 50% graduate coursework requirement  
**Repeatable for Credit:** No  
**Last Taught:** Summer 2017

 ENVIR ST/F&W ECOL/HISTORY 452 — WORLD FOREST HISTORY  
3 credits.

Examines world forest history, with attention to links between societal change and forest change. Examines how different peoples have used or abused the forest, how societies have struggled to establish policies governing forests, and how perceptions of forests have evolved.

**Course Designation:** Breadth - Either Humanities or Social Science Level - Advanced  
L&S Credit - Counts as Liberal Arts and Science credit in L&S  
**Repeatable for Credit:** No  
**Last Taught:** Spring 2012

 ENVIR ST/GEOG/HISTORY 460 — AMERICAN ENVIRONMENTAL HISTORY  
4 credits.

Survey of interactions among people and natural environments from before European colonization to present. Equal attention to problems of ecological change, human ideas, and uses of nature and history of conservation and environmental public policy.

**Requisites:** So st  
**Course Designation:** Breadth - Either Humanities or Social Science Level - Intermediate  
L&S Credit - Counts as Liberal Arts and Science credit in L&S  
Grad 50% - Counts toward 50% graduate coursework requirement  
**Repeatable for Credit:** No  
**Last Taught:** Fall 2015

 ENVIR ST/GEOG/HISTORY 469 — THE MAKING OF THE AMERICAN LANDSCAPE  
4 credits.

Surveys the historical geography and environmental history of the United States by tracing the evolution of the American landscape from precolonial times to the present, with special emphasis on teaching students skills they can use to interpret landscape history themselves.

**Requisites:** Sophomore standing or one course in HISTORY, GEOG or ENVIR ST  
**Course Designation:** Breadth - Either Humanities or Social Science Level - Intermediate  
L&S Credit - Counts as Liberal Arts and Science credit in L&S  
Grad 50% - Counts toward 50% graduate coursework requirement  
**Repeatable for Credit:** No  
**Last Taught:** Fall 2016

 ENVIR ST/POP HLTH 471 — INTRODUCTION TO ENVIRONMENTAL HEALTH  
3 credits.

Impact of environmental problems on human health; biological hazards to human health from air and water pollution; radiation; pesticides; noise; problems related to food, occupation and environment of the work place; accidents. Physical and chemical factors involved.

**Requisites:** A course in biology; Jr st  
**Course Designation:** Breadth - Biological Sci. Counts toward the Natural Sci req  
**Level - Intermediate**  
L&S Credit - Counts as Liberal Arts and Science credit in L&S  
**Repeatable for Credit:** No  
**Last Taught:** Spring 2017
ENVIR ST/PHYSICS 472 — SCIENTIFIC BACKGROUND TO GLOBAL ENVIRONMENTAL PROBLEMS
3 credits.

A one-semester course designed to provide those elements of physics, atmospheric sciences, chemistry, biology and geology which are essential to a scientific understanding of global environmental problems. Specific examples of such problems include global warming, stratospheric ozone depletion, acid rain and environmental toxins. Three lectures per week.

Requisites: PHYSICS 103, 201, 207, or 247 or CHEM 103, 108, 109, 115, or 116
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Honors - Honors Optional (%)
Repeatable for Credit: No
Last Taught: Fall 2016

ENVIR ST/POP HLTH 502 — AIR POLLUTION AND HUMAN HEALTH
3 credits.

Toxicologic, controlled and epidemiologic studies on major air pollutants. Overview of study methods, lung physiology and pathology; air pollution sources, types, meteorology, sampling methods, controls and regulations.

Requisites: Jr st, a course in biology
Course Designation: Breadth - Biological Sci. Counts toward the Natural Sci req
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2016

ENVIR ST 506 — MODELING AND ANALYSIS OF ENVIRONMENTAL SYSTEMS
3 credits.

Systems modeling; applications to environmental problems; systems methods.

Requisites: Consent of instructor
Course Designation: Breadth - Natural Science
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2014

ENVIR ST/ZOOLOGY 510 — ECOLOGY OF FISHES
3 credits.

Interactions of fishes with their physical, chemical, and biotic environment; physiological ecology, community ecology and fisheries sciences. Lake Mendota perch fishery and Shedd Aquarium field trips.

Requisites: 1 yr biol chem Jr st
Course Designation: Breadth - Biological Sci. Counts toward the Natural Sci req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2017

ENVIR ST/ZOOLOGY 511 — ECOLOGY OF FISHES LAB
2 credits.

Anatomy and taxonomy of Wisconsin fishes and projects in fish ecology.

Requisites: Zool 510 or con reg
Course Designation: Breadth - Biological Sci. Counts toward the Natural Sci req
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2017

ENVIR ST/HIST SCI/MED HIST 513 — ENVIRONMENT AND HEALTH IN GLOBAL PERSPECTIVE
3 credits.

Explores the historical relationships between environmental change and human health from the 17th through the 20th century. Topics include colonialism and disease, medical geography, urban pollution and reform, workplace hazards, environmental risk, and the anti-toxics and environmental justice movements.

Requisites: Jr st
Course Designation: Breadth - Either Humanities or Social Science
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Honors - Honors Optional (%)
Repeatable for Credit: No
Last Taught: Spring 2016

ENVIR ST/F&W ECOL 515 — NATURAL RESOURCES POLICY
3 credits.

This course examines natural resources policy and law in the United States relating to forests, wildlife, and other natural resources. The course investigates the policy-making process and the role of science, values, property, economics, and justice in the development of federal and state resources policy. Students are trained in professional written and oral communication and ethical engagement in resources policy and administration.

Requisites: F&W ECOL 379, or 410, or consent of instructor
Course Designation: Gen Ed - Communication Part B
Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2017

ENVIR ST/ATM OCN 520 — BIOCLIMATOLOGY
3 credits.

How climate systems and biological organisms operate and interact at the global scale and the implications of this for climate change, ecosystem ecology and human land use.

Requisites: Junior standing and ATM OCN 101, ATM OCN 252 or ATM OCN/GEOG 323, and BIOLOGY/BOTANY/ZOOLOGY 152
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2016
ENVIR ST/PHILOS 523 — PHILOSOPHICAL PROBLEMS OF THE BIOLOGICAL SCIENCES
3 credits.
Problems raised by genetics, evolutionary theory, and taxonomy: patterns of explanatory force and dispensability of teleology; objectivity of taxonomy.
Requisites: 3 cr of philos or 3 cr in a biological science
Course Designation: Breadth - Either Humanities or Social Science
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Fall 2016

ENVIR ST/ATM OCN/GEOG 528 — PAST CLIMATES AND CLIMATIC CHANGE
3 credits.
Climatic change throughout geologic time, especially in the last 10 millennia; mechanisms of change, evidence, and criteria, paleogeography and paleoclimatology, climate models.
Requisites: Jr st or one year calculus-based college physics or introduction to weather and climate; or cons inst
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2014

ENVIR ST/GEOG 534 — ENVIRONMENTAL GOVERNANCE: MARKETS, STATES AND NATURE
3 credits.
This class is designed to help students answer real-world questions of how the environment is managed and governed through state policy, economics, and social institutions. We will cover strategies within and outside of the formal institutions of government, and extend the discussion to the commodification of nature and the use of science to understand and govern the environment. The last third of the class will consist of students engaging with case studies of environmental governance in water, carbon, species, and urban sustainability.
Requisites: GEOG/ENVIR ST/GEOG 339 or GEOG/ENVIR ST/GEOG 439 or FW ECOL/ENVIR ST/F&W ECOL 515
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2016

ENVIR ST/ATM OCN 535 — ATMOSPHERIC DISPERSION AND AIR POLLUTION
3 credits.
Physical principles of atmospheric transport processes. Variation of transport in time and place. Local and regional concentrations of pollutants. Environmental implications of air pollution and control strategies.
Requisites: Math 212, PHYSICS 202, or cons inst
Course Designation: Breadth - Physical Sci. Counts toward the Natural Sci req
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2016

ENVIR ST/GEOG 537 — CULTURE AND ENVIRONMENT
4 credits.
Geographic approaches to culture-nature relationships, including human perception of, use of, and adaptation to the physical environment, with emphasis on traditional subsistence systems; selected topics from contemporary and historical sources.
Requisites: Geog/IES 339 or equiv
Course Designation: Breadth - Social Science
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2017

ENVIR ST 539 — AIR RESOURCES SCIENCE AND POLICY
3 credits.
Overview of modern scientific methods, state-of-understanding, and current policy problems related to weather prediction, climate change, air pollution, and energy use. Problem sets, discussion, final paper with drafts.
Requisites: So st or cons inst
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2010

ENVIR ST/C&E SOC/SOC 540 — SOCIOLOGY OF INTERNATIONAL DEVELOPMENT, ENVIRONMENT, AND SUSTAINABILITY
3 credits.
Sociological analysis of relationships among economic growth, environmental sustainability and social justice in the developing world. Considers frameworks for understanding poverty, hunger, educational and technological inequality, and the impact of globalization on prospects for socially and ecologically sustainable development.
Requisites: Intro Soc course (SOC/C&E SOC 140, 181, 210, or 211)
Course Designation: Breadth - Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Fall 2016
ENVIR ST/CIV ENGR/LAND ARC 556 — REMOTE SENSING DIGITAL IMAGE PROCESSING
3 credits.

Techniques of enhancement and quantification of remote sensing imagery. Emphasis on processing and analyzing data gathered by airborne and satellite sensors. Techniques to quantitatively analyze data from photography, electro-optical scanners, satellite systems, and radar and passive microwave systems. A 5-week practicum with applications to: agriculture and forestry, geology and soils, water quality, and urban and regional planning.

**Requisites:** Civ Engr/Envir St/Forestry 303 or authorization
**Course Designation:** Level - Advanced

L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No
**Last Taught:** Spring 2016

ENVIR ST/GEOG 557 — DEVELOPMENT AND ENVIRONMENT IN SOUTHEAST ASIA
3 credits.

Examines the political, socio-cultural, economic and ecological aspects of contemporary development and human-environment relations in mainland Southeast Asia, applying a critical and theoretically informed perspective, and focusing largely on rural issues.

**Requisites:** Sophomore standing
**Course Designation:** Breadth - Social Science

Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No
**Last Taught:** Fall 2015

ENVIR ST/POP HLTH 560 — HEALTH IMPACT ASSESSMENT OF GLOBAL ENVIRONMENTAL CHANGE
3 credits.

Covers contemporary methods of impact assessment in a framework to address global environmental health threats (e.g., global climate change, deforestation and biodiversity loss, and urban sprawl). Issues dovetail well (but do not overlap) with Introduction to Environmental Health.

**Requisites:** Junior standing
**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No
**Last Taught:** Spring 2017

ENVIR ST/A E/CIV ENGR/URB R PL 561 — ENERGY MARKETS
3 credits.

Energy resources are an essential element of the world’s business, political, technical and environmental landscape. Analytic tools provided by the discipline of economics expands our understanding of this critical issue. Energy supply markets reviewed include both fossil fuels and renewable resources. Energy demand sectors include residential, commercial, industrial and transportation. Electricity represents an intermediate energy market. The interactions among these markets participants indicate how scarce resources are allocated among competing needs in the world economy.

**Requisites:** ECON 101, ECON 111, or AAE 215
**Course Designation:** Breadth - Social Science

Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No
**Last Taught:** Fall 2016

ENVIR ST/GEN BUS 601 — SYSTEMS THINKING AND SUSTAINABLE BUSINESSES
3 credits.

Introduces students to the concept of systems thinking so as to allow them to use systems to bring about large scale social change, both within the business community and within our societal infrastructure.

**Requisites:** Admitted bus stdt with Jr or Sr st or envir studies stdt

**Repeatable for Credit:** No
**Last Taught:** Spring 2014
ENVIR ST 602 — SUSTAINABILITY IN PRACTICE: CAPSTONE
3 credits.

An integrative capstone experience involving interdisciplinary teams applying the triple bottom line principals of sustainability to local, regional and global challenges.

Requisites: Junior or Senior standing seeking Sustainability Certificate, or consent of instructor
Repeatable for Credit: No
Last Taught: Spring 2015

ENVIR ST/BOTANY/F&W ECOL/ZOOLOGY 651 — CONSERVATION BIOLOGY
3 credits.

Application of ecological principles and human dimensions to the conservation of biological diversity. Topics: biodiversity science; conservation planning; population ecology; habitat loss, species exploitation, invasive species, pollution; human attitudes and activities as they affect the biosphere; approaches to monitoring interventions.

Requisites: An ecology crse (eg, Botany/ZOOLOGY/BOTANY/F&W ECOL 460)
Course Designation: Gen Ed - Quantitative Reasoning Part B
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2016

ENVIR ST/A A E/F&W ECOL 652 — DECISION METHODS FOR NATURAL RESOURCE MANAGERS
3-4 credits.

Applications of quantitative methods, including optimization and simulation, to the management of natural resources, especially forests.

Requisites: MATH 211 or equiv Comp Sci 132 or equiv
Course Designation: Gen Ed - Quantitative Reasoning Part B
Breadth - Biological Sci. Counts toward the Natural Sci req
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2017

ENVIR ST/URB R PL 668 — GREEN POLITICS: GLOBAL EXPERIENCE, AMERICAN PROSPECTS
3 credits.

An examination of the writings and activities of green parties and movements around the globe in order to assess the potential of an explicit, radical environmental politics for the United States.

Requisites: Jr st or cons inst
Course Designation: Breadth - Social Science
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2012

ENVIR ST/A A E/ECON/URB R PL 671 — ENERGY ECONOMICS
3 credits.

The method, application, and limitations of traditional economic approaches to the study of energy problems. Topics include microeconomic foundations of energy demand and supply; optimal pricing and allocation of energy resources; energy market structure, conduct, and performance; macro linkages of energy and the economy; and the economics of regulatory and other public policy approaches to the social control of energy.

Requisites: (Senior standing and ECON 101 or AAE 215) or graduate standing
Course Designation: Breadth - Social Science
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2017

ENVIR ST 681 — SENIOR HONORS THESIS
3 credits.

Requisites: Cons inst
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Honors - Honors Only Courses (H)
Repeatable for Credit: No
Last Taught: Fall 2016

ENVIR ST 682 — SENIOR HONORS THESIS
3 credits.

Requisites: Cons inst
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Honors - Honors Only Courses (H)
Repeatable for Credit: No
Last Taught: Spring 2017

ENVIR ST 691 — SENIOR THESIS
1-3 credits.

Requisites: Cons inst
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Fall 2014

ENVIR ST 692 — SENIOR THESIS
1-3 credits.

Requisites: Cons inst
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2016
ENVIR ST/LAND ARC/SOIL SCI 695 — APPLICATIONS OF GEOGRAPHIC INFORMATION SYSTEMS IN NATURAL RESOURCES
3 credits.

Course has four components: 1) Detailed review of GIS concepts; 2) Case studies; 3) GIS implementation methods; 4) Laboratory to provide “hands-on” GIS experience.

Requisites: Land Arc/Envir St/Civ Engr 655 or GEOG/CIV ENGR/ENVIR ST 377 or cons inst
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2017

ENVIR ST 699 — DIRECTED STUDY
1-3 credits.

Requisites: Cons inst
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Summer 2017

ENVIR ST 707 — PROFESSIONAL SKILLS FOR GLOBAL SYSTEMS ANALYSIS
1 credit.

Trains students in interdisciplinary skills needed to research environmental sustainability and vulnerability in linked human, non-human natural systems. Instruction involves communication simulations, facilitation training, cross-disciplinary listening exercises, and other hands-on activities. Content is linked with Environmental Studies 506.

Requisites: Con reg in ENVIR ST 506 or cons inst
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2011

ENVIR ST/M HR 710 — CHALLENGES & SOLUTIONS IN BUSINESS SUSTAINABILITY
3 credits.

This course provides students with central knowledge and skills to tackle challenges at the intersection of business and sustainability. Students will study the failures in market and decision making systems that lead to sustainability challenges, and learn how to address these challenges on the policy, organizational, and individual level.

Requisites: Graduate or professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2017

ENVIR ST/HIST SCI/MED HIST 713 — STUDIES IN ENVIRONMENT AND HEALTH
1 credit.

Advanced readings in primary and secondary literature of environment and health, with emphasis on current historiographic issues.

Requisites: Grad st, or con reg in Hist Med 513 or cons inst
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2016

ENVIR ST/CIV ENGR/URB R PL 717 — WATER RESOURCES MANAGEMENT PRACTICUM PLANNING SEMINAR I
1 credit.

This is the first of two seminars used for planning the activities of the Summer Session Water Resources Management Practicum (ENVIR ST/CIV ENGR/URB R PL 719).

Requisites: Consent of instructor
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2016

ENVIR ST/CIV ENGR/URB R PL 718 — WATER RESOURCES MANAGEMENT PRACTICUM PLANNING SEMINAR II
2 credits.

This seminar is used for planning the field work, analysis and reporting of the Summer Session Water Resources Management Practicum (ENVIR ST/CIV ENGR/URB R PL 719).

Requisites: Adv Grad standing or consent of instructor
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2017

ENVIR ST/CIV ENGR/URB R PL 719 — WATER RESOURCES MANAGEMENT SUMMER PRACTICUM
4 credits.

Interdisciplinary team of students and staff working with agency personnel, citizen groups, and/or private sector representatives on the analysis of a contemporary, problem-oriented water resource issue. Physical, biological, economic and social aspects of the issue analyzed. Comprehensive written report results, practicum’s findings and management recommendations.

Requisites: Envir St/Civ Engr/URB R PL/CIV ENGR/ENVIR ST 718 or consent of instructor
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Summer 2017
ENVIR ST/AGROECOL/AGRONOMY 724 — AGROECOSYSTEMS AND GLOBAL CHANGE
3 credits.

Impacts of global change drivers (climate change, atmospheric chemistry, bioenergy; urbanization, policy) on agroecosystems and their associated goods and services; environmental impacts of agricultural land use and feedbacks to climate; modeling approaches; critical review of current scientific literature.

**Requisites:** Grad st; coursework in either college-level biology or ecology; 1 sem college-level chemistry or physics; or cons inst

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Fall 2015

ENVIR ST/ATM OCN 745 — METEOROLOGICAL SATELLITE APPLICATIONS
2-3 credits.

Use of satellite imagery and measurements in meteorological research and operations; orbital characteristics; navigation; instrumentation.

**Requisites:** ATM OCN 640 or 1 yr calc-based college physics MATH 234

**Course Designation:** Breadth - Physical Sci. Counts toward the Natural Sci req

**Level & Advanced**
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2017

ENVIR ST/ATM OCN/GEOSCI/ZOOLOGY 750 — PROBLEMS IN OCEANOGRAPHY
3 credits.

Introduction to techniques used in the study of the biology, chemistry, geology, and physics of the marine environment.

**Requisites:** Cons inst

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2016

ENVIR ST 761 — COLLOQUIUM IN AIR POLLUTION
1 credit.

**Requisites:** Grad st

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2011

ENVIR ST/CIV ENGR 772 — PRACTICUM IN TRANSPORTATION MANAGEMENT AND POLICY
3 credits.

Integrative capstone course in transporation management and policy. Interdisciplinary team experience in the application of theoretical knowledge and analytical tools for developing policy and making management decisions on "real-world" problems.

**Requisites:** Grad st or cons inst

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2016

ENVIR ST 806 — LOCAL & REGIONAL APPROACHES TO SUSTAINABILITY & VULNERABILITY
3 credits.

Evaluates what local-scale, place-based and social science / humanities approaches offer to analyses of environmental change, sustainability and vulnerability. Stresses interdisciplinary, both through content and through assignments that require students to bring their own disciplinary training and work together in teams.

**Requisites:** ENVIR ST 506 ENVIR ST 707 or cons inst, and con reg in ENVIR ST 807

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2012

ENVIR ST 807 — PROFESSIONAL SKILLS FOR REGIONAL AND LOCAL SUSTAINABILITY
1 credit.

Trains students in the skills needed to research environmental vulnerability and sustainability from a regional or local perspective. Training in qualitative methods, cross-disciplinary presentation, and other hands-on activities. Content will be linked with ENVIR ST 806.

**Requisites:** Envir St 506 ENVIR ST 707 or cons instr, and con reg in ENVIR ST 806

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2012

ENVIR ST 808 — INTEGRATED RESEARCH METHODS & PROF SKILLS: HUMANS & THE GLOBAL ENV
4 credits.

Trains students to conduct research, review alternatives, and promote solutions to environmental problems through team-based projects. Teams integrate research across scales and disciplines and learn to present and publicize their ideas to peers, media, and the public.

**Requisites:** ENVIR ST 506, ENVIR ST 707, ENVIR ST 806, ENVIR ST 807 or cons inst

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Fall 2012
ENVIR ST/PUB AFFR/URB R PL 809 — INTRODUCTION TO ENERGY ANALYSIS AND POLICY
3 credits.

Interdisciplinary seminar for the Energy Analysis and Policy Curriculum. Strategy and policy problems in energy policy, both national and international.

Requisites: Grad st admission to Energy Anal and Policy curric or cons inst

Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement

Repeatable for Credit: Yes, unlimited number of completions

Last Taught: Fall 2016

ENVIR ST/PUB AFFR/URB R PL 810 — ENERGY ANALYSIS SEMINAR
1-3 credits.

Interdisciplinary seminar for the Energy Analysis and Policy Curriculum. Quantitative energy content and energy flows as an aid to problem analysis and policy formulation.

Requisites: Grad st admission to Energy Anal and Policy Curric or cons inst

Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement

Repeatable for Credit: Yes, unlimited number of completions

Last Taught: Spring 2017

ENVIR ST/URB R PL 821 — RESOURCES POLICY ISSUES: REGIONAL AND NATIONAL
2-3 credits.

Resource policy issues frequently faced by local and state governments and the federal government. Emphasis: (1) techniques for analysis of resource issues; (2) methods of collating knowledge from natural and social science disciplines which can make meaningful contributions to resolution of resource issues; (3) identification and analysis of strategic points of decision making in the legislative and executive branches of government; and (4) the application of planning techniques for accomplishing resource goals.

Requisites: Cons inst

Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement

Repeatable for Credit: Yes, unlimited number of completions

Last Taught: Spring 2015

ENVIR ST/JOURN/LSC 823 — SCIENCE AND ENVIRONMENT COMMUNICATION
3 credits.

Course uses available scholarship and commentary to track the evolution of mass media coverage of science and the environment. Emphasis on how journalists utilize evidence, the influence of scientific and journalistic norms on stories, and the effects of mass media on science and environment messages to the public.

Requisites: Graduate or professional standing

Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement

Repeatable for Credit: No

Last Taught: Fall 2015

ENVIR ST/URB R PL 843 — LAND USE POLICY AND PLANNING
3 credits.

Critical evaluation and analysis of land use policies and programs in relation to comprehensive planning and growth management issues in the U.S. The role of legislative and judicial processes and emerging public land use social values and philosophies in the development, regulation, and effectuation of innovative land use policies. Alternative land policy and growth guidance systems of select European countries.

Requisites: Grad st or cons inst

Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement

Repeatable for Credit: No

Last Taught: Fall 2016

ENVIR ST/URB R PL 865 — WATER RESOURCES INSTITUTIONS AND POLICIES
3 credits.

Governmental processes and policies for water resources management: major substantive problems and issues; political processes of decision making; problems of governmental organization and intergovernmental arrangements.

Requisites: Grad st

Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement

Repeatable for Credit: No

Last Taught: Fall 2016

ENVIR ST/POI SCI/PUB AFFR 866 — GLOBAL ENVIRONMENTAL GOVERNANCE
3 credits.

In-depth examination of the political and policy challenges posed by global environmental degradation. Analysis of international institutions for managing the global environment.

Requisites: Grad st or cons inst

Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement

Repeatable for Credit: No

Last Taught: Spring 2017

ENVIR ST/AA A E/PPO HLTH/PUB AFFR 881 — BENEFIT-COST ANALYSIS
3 credits.

This course will present the welfare economics underpinnings for evaluating the social benefits and costs of government activities. Issues such as uncertainty, the social discount rate, and welfare weights will be discussed; case studies from the environmental, social policy, and agricultural areas will be studied.

Requisites: Grad st, PUB AFFR 818 880 or POP HLTH/SS Y E 875 at least one crse in econ or cons inst

Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement

Repeatable for Credit: No

Last Taught: Fall 2016
ENVIR ST 900 — SEMINAR
1-3 credits.

Special topics selected with each offering.

**Requisites:** Grad st; authorization may be required

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** Yes, unlimited number of completions

**Last Taught:** Spring 2017

ENVIR ST 901 — GRADUATE ORIENTATION SEMINAR
1 credit.

This course provides incoming graduate students with an introduction to the organizational structure, policies and practices of the Nelson Institute, with an emphasis on the opportunities and challenges of being a student in a cross-campus interdisciplinary program.

**Requisites:** Declared in the Environment Resources or Water Resources Management graduate program

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Fall 2016

ENVIR ST/ATM OCN/BOTANY/CIV ENGR/GEOSCI/ZOOLOGY 911 — LIMNOLOGY AND MARINE SCIENCE SEMINAR
1 credit.

Sections in various fields of zoological research.

**Requisites:** Grad st in limnology marine sci grad prgm or cons inst

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** Yes, unlimited number of completions

**Last Taught:** Spring 2017

ENVIR ST/URB R PL 917 — PUBLIC PARTICIPATION FOR PLANNING AND POLICY MAKING
3 credits.

Examines public participation for planning and policymaking in both urban and natural environments; considers different types of participation from agency consultation to negotiation; designing, conducting, and evaluating citizen participation are major features.

**Requisites:** Graduate or professional standing

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2017

ENVIR ST 922 — HISTORICAL AND CULTURAL METHODS IN ENVIRONMENTAL RESEARCH
3 credits.

This course introduces graduate students from a wide array of departments and programs to different disciplinary and interdisciplinary methods for studying past environmental change and the human cultural contexts within which such change occurs. The course explores the disparate forms of evidence that can be used to reconstruct past environmental changes and their human meanings. The course also strives to build a strong sense of community among graduate students and faculty members at UW-Madison who share an interest in past environmental change by creating a context within which students from different departments and programs can work together while also getting to know faculty members associated with the Center for Culture, History, and Environment (CHE).

**Requisites:** Consent of instructor

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2017

ENVIR ST/URB R PL 923 — SEMINAR-LAND PROBLEMS: INSTITUTIONAL DEVELOPMENT
2-3 credits.

Land tenure and utilization research and policy problems.

**Requisites:** Grad st

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** Yes, unlimited number of completions

**Last Taught:** Spring 2017

ENVIR ST/ATM OCN 925 — SEMINAR-CLIMATOLOGY
1-2 credits.

Historical climatology with emphasis on the last few centuries.

**Requisites:** Grad st

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** Yes, unlimited number of completions

**Last Taught:** Spring 2017

ENVIR ST/CIV ENGR 950 — ENVIRONMENTAL MONITORING SEMINAR
1 credit.

Current research and literature dealing with environmental remote sensing and geographic information systems.

**Requisites:** Grad st

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** Yes, unlimited number of completions

**Last Taught:** Spring 2006
ENVIR ST 951 — CONSERVATION OF BIODIVERSITY
3 credits.

This online course will cover theory, advanced research, and the professional practice of conservation of biodiversity in interdisciplinary, international perspective. The course will be divided into approximately 50% biodiversity science and 50% human dimensions of biodiversity conservation, fully integrated with each other in readings, hands-on online simulations, peer-to-peer discussions, and writing assignments. Within lectures, students will learn about biodiversity science; human activities that threaten biodiversity; conservation project planning; conservation interventions against habitat loss, species exploitation, invasive species, and pollution; human values, attitudes, and activities as they affect controversial endangered species; and approaches to conservation research and monitoring. Furthermore, students will learn to plan conservation interventions systematically with optimal participation of stakeholders and using adaptive management practices. This course includes online, asynchronous discussions with peers and instructors to address advanced topics. Wolf recovery in Wisconsin is featured prominently as a conservation challenge. Students will: 1. Absorb information and nuance about complex ecological systems in comparative international and interdisciplinary perspectives 2. Learn systematic and strategic planning of biodiversity conservation projects 3. Experience the optimization challenges and trade-offs associated with setting policy for complex human-wildlife interactions 4. Manage and understand political clashes and value conflicts over biodiversity 5. Practice critical analysis and constructive synthesis of the latest scientific peer-reviewed literature 6. Gain experience in technical, scientific writing and peer review.

Requisites: Students must be accepted into the Environmental Conservation professional master’s program
Course Designation: Grad 50% - Counts toward 50% graduate coursework
Repeatable for Credit: No
Last Taught: Summer 2017

ENVIR ST/AGRONOMY/ATM OCN/BOTANY/ENTOM/F&W ECOL/GEOG/ZOOLOGY 953 — INTRODUCTION TO ECOLOGY RESEARCH AT UW-MADISON
1-2 credits.

This seminar course will introduce new graduate students to the diversity of ecologists across the UW-Madison campus. Course meetings will include discussions of key topics in professional development, research presentations by faculty members, and discussions of assigned papers with senior graduate students.

Requisites: None
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2016

ENVIR ST/CIV ENGR 970 — COLLOQUIUM IN TRANSPORTATION MANAGEMENT AND POLICY
1 credit.

Current issues, case studies, research, and literature dealing with transportation management and policy development.

Requisites: Grad st or cons inst
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2016

ENVIR ST 972 — CONSERVATION PLANNING
4 credits.

Preparation of students to plan, monitor and evaluate the effectiveness of conservation projects and programs. Systematic and adaptive processes of conservation planning will be learned through lectures, readings, discussions, and work in small groups to prepare a conservation plan and/or review case study projects (e.g., a protected area, a landscape) with a conservation organization.

Requisites: Students must be accepted into the Environmental Conservation professional master’s program
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Summer 2016

ENVIR ST 974 — ENVIRONMENTAL CONSERVATION COHORT SEMINAR
1 credit.

Professional development course for incoming Environmental Conservation graduate students. Introduces students to important aspects of communication, collaboration, and professional practice as they relate to Environmental Conservation.

Requisites: Students must be accepted into the Environmental Conservation professional master’s program
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Summer 2017

ENVIR ST 975 — ENVIRONMENTAL CONSERVATION LEADERSHIP SEMINAR
1 credit.

Professional development course for Environmental Conservation graduate students. Introduces students to important aspects of communication, negotiation, and cross-cultural professional practice as they relate to Environmental Conservation.

Requisites: Students must be accepted into the Environmental Conservation professional master’s program and have completed ENVIR ST 974
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Summer 2017
ENVIR ST 976 — THE PRACTICE OF CONSERVATION BIOLOGY AND SUSTAINABLE DEVELOPMENT
1 credit.

A weekly series of presentations by persons who have direct experience in the practice of conservation biology and sustainable development. Presenters may be students, faculty staff or agency persons.

Requisites: Grad st in IES program or cons inst
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2016

ENVIR ST 977 — SUSTAINABLE DEVELOPMENT - INTEGRAL PERSPECTIVE
3 credits.

This interdisciplinary graduate seminar has four main objectives: 1) review core concepts and history of sustainable development; 2) introduce students to innovative frameworks to sustainable development, including integral framework, institutional analysis, and the often overlooked cultural, philosophical and psychological underpinnings of environmental decision-making; 3) analyze case studies and examples through the lens of the frameworks presented; 4) provide a forum for graduate students to present their own research interests and examples regarding sustainable development. Some of the examples and case studies discussed are from Latin America, but will also include some from Wisconsin and the global level depending on the group’s interests.

Requisites: Graduate or professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2017

ENVIR ST 978 — ENVIRONMENTAL CONSERVATION TOOLS MODULES
1 credit.

Tools modules for Environmental Conservation graduate students. Modules will provide training in specific tools and methods related to environmental conservation. Topics may include GIS, conservation finance, conservation governance institutions, biodiversity monitoring, and science communication environmental mediating.

Requisites: Students must be accepted into the Environmental Conservation professional master’s program
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2017

ENVIR ST 979 — ENVIRONMENTAL CONSERVATION PROFESSIONAL PRACTICE
3 credits.

This course provides an online environment for the development and practice of the skills needed to be an environmental conservation professional and leader. It will help students analyze options and make good professional conservation judgments in complex and uncertain environmental, political, and economic settings. It will also give students the tools needed to assess and revise those judgments. The course will include exercises on the politics of environmental decisions, internal and external communication strategies, and program development and assessment strategies. The course builds on earlier classes’ discussions of online communication and presentation skills.

Requisites: Enrolled in Environmental Conservation professional master’s program and ENVIR ST 975
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2016

ENVIR ST/ATM OCN/BOTANY/F&W ECOL/GEOG/GEOSCI/ZOOLOGY 980 — EARTH SYSTEM SCIENCE SEMINAR
1 credit.

Topics in earth system science. Emphasis on the coupling between atmospheric, oceanic and land surface systems, involving physical geochemical and biological processes, and including interactions with human systems.

Requisites: Grad st
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2016

ENVIR ST 990 — RESEARCH
1-12 credits.

Requisites: Grad st
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Summer 2017

ENVIR ST 993 — APPROACHES TO INTERDISCIPLINARY ENVIRONMENTAL RESEARCH
2 credits.

A course to assist students undertaking interdisciplinary research. Preparation of a proposal or manuscript to professional standards. A review of other topics relevant to interdisciplinary work. Formal presentation of a research plan or other product to peers for review and evaluation. Authorization may be required

Requisites: Land resources major.
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2017
ENVIR ST 999 — ADVANCED INDEPENDENT STUDY
1-3 credits.

**Requisites:** Grad st

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** Yes, unlimited number of completions

**Last Taught:** Summer 2017