ENVIRONMENTAL STUDIES - GAYLORD NELSON INSTITUTE (ENVIR ST)

ENVIR ST/F&W ECOL 100 – FORESTS OF THE WORLD
3 credits.

Ecology and conservation of a wide range of forests, from tropical rain and dry forests, boreal forests, to temperate forests, outside of the USA. The main threats to forests, and different strategies to solve conservation and sustainable management issues in international forestry. Trade-offs in forest conservation and management, resulting from different values that people place on forests, issues in equity and equality in access to forest resources. The role of forests in climate change and extinction of species.
Requisites: None
Course Designation: Breadth - Either Biological Science 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 2023
Learning Outcomes: 1. Identify relevant stakeholders in forest landscapes across the world
Audience: Undergraduate

2. Give examples of conservation threats to forests in countries other than the USA and relevant solutions
Audience: Undergraduate

3. Communicate about evidence on forest conservation and threats rigorously, correctly, and under different formats
Audience: Undergraduate

4. Demonstrate, on specific examples, how trade-offs in forest conservation originate and work
Audience: Undergraduate

5. Explain the role of forests in solutions to climate change and species extinctions
Audience: Undergraduate

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: None
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 2024

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

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: Spring 2024

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. Employ the multiple disciplines and perspectives that Agroecology affords to analyze our agricultural and food systems wihin 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
Last Taught: Fall 2023

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.
Requisites: Not open to students with credit for GEOSCI 100
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 2024

ENVIR ST 112 — ENVIRONMENTAL STUDIES: SOCIAL SCIENCE PERSPECTIVES
3 credits.

Explores different social science approaches to interpreting the relationship between environment and society at various scales, from the local to the global. Traces the social origins of environmental concerns, their social impacts, and the different responses they engender.
Requisites: Not open to students with credit for GEOG/ENVIR ST 337
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: Fall 2023
Learning Outcomes: 1. Identify different social science approaches that can be used to understand environment-society relations
Audience: Undergraduate

2. Analyze and explain how social, economic, and political conditions affect the environment and environmental issues
Audience: Undergraduate

3. Explain the social, economic and/or environmental dimensions of the sustainability challenges of population growth, natural resource consumption, and market economies
Audience: Undergraduate

4. Analyze objects, ideas, and current events using an environment and society perspective
Audience: Undergraduate

5. Describe the social, economic, and environmental dimensions of issues like climate change and environmental justice and identify potential tradeoffs and interrelationships among these dimensions at a level appropriate to the course
Audience: Undergraduate

6. Demonstrate writing that shows mastery of evidence-based critical thinking
Audience: Undergraduate

ENVIR ST 113 — ENVIRONMENTAL STUDIES: ENVIRONMENTAL HUMANITIES
3 credits.

What do we really mean when we use the word, environment, in interdisciplinary Environmental Studies, and how important is it to have our environment be meaningful? Considers five popular understandings, while also offering a global perspective on environmental humanities. Introduction to key American texts (Carson, Kimmerer, Leopold, etc.) and key concepts (like sustainability and the Anthropocene), along with core skills from fields like philosophy, ethics, literature, fine arts, history, politics and anthropology. Cases in environmental experience and expression range from Wisconsin to Asia, and across biotic and abiotic environments. Through discussions and assignments, answer fundamental questions about science, nature, environmental problems and crisis, and how to relate to others in our world as human beings.
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
Last Taught: Spring 2024
Learning Outcomes: 1. Master core concepts in Environmental Studies
Audience: Undergraduate

2. Understand human-environmental systems
Audience: Undergraduate

3. Demonstrate competence in humanistic study and disciplines
Audience: Undergraduate

4. Achieve excellent writing in Environmental Studies
Audience: Undergraduate

5. Develop oral/aural and collaborative academic skills
Audience: Undergraduate

ENVIR ST 117 — GREENHOUSE ROOTS SEMINAR
1 credit.

Challenges Greenhouse residents to think deeply about themselves and their place in the social and biophysical communities of which they are a part. Read some classic and provocative essays to help engage the meaning(s) of "sustainability" and to consider how our lifestyle and career choices impact other people and the environment. Discover the deep history of sustainability in Wisconsin and to learn more about current sustainability initiatives on the UW-Madison campus and in the greater Madison Area.
Requisites: None
Course Designation: Level - Elementary
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Fall 2023

ENVIR ST/GEOG 120 – INTRODUCTION TO THE EARTH SYSTEM
3 credits.

Introduction to how the Earth system works and what makes Earth livable. Gain appreciation for how the atmosphere, oceans, life, and earth's surface interact to shape our local, regional and global landscapes.
Requisites: Not open to students with credit for 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
Repeatable for Credit: No
Last Taught: Spring 2024

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? Explore such questions and 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 2021

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

Relates principles of environmental science to our daily activities, with an eye to sustainability, conservation, and systems thinking. 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: 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: Spring 2024
Learning Outcomes: 1. Apply foundational principles of Environmental Science to practices such as sustainability, conservation, and systems thinking
Audience: Undergraduate

2. Practice science as a process of inquiry and discovery, using the UW-Madison campus as a living laboratory
Audience: Undergraduate

3. Connect campus systems to wider environmental issues relating to energy, water, land use, and waste
Audience: Undergraduate

4. Analyze sustainability issues and practices using a systems-based approach
Audience: Undergraduate

5. Explain the social, economic, and environmental dimensions of the sustainability challenges of operating a large public research institution
Audience: Undergraduate

ENVIR ST/GEOG 127 – PHYSICAL SYSTEMS OF THE ENVIRONMENT
4 credits.

An introduction to natural environmental systems, emphasizing the interconnections between the systems of the solid earth (minerals, rocks, soils), the hydrosphere (water in all its forms), the biosphere, and the atmosphere. Emphasizes connections between basic concepts and specific environmental issues through hands-on case studies, lab projects, and field trips to collect samples and observations for lab projects.
Requisites: Not open to students with credit for ENVIR ST/GEOG 120
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 2023
Learning Outcomes: 1. Describe at a basic level the most important processes of the Earth system, including formation and weathering of rocks and minerals, soil development and erosion, atmospheric circulation, and the global cycles of water and carbon.
Audience: Undergraduate

2. Apply concepts from this course to understand environmental issues such as global climate change and the sustainability of agriculture, and natural hazards such as earthquakes and floods, and make informed contributions to public debate and decision-making on how to address these issues and hazards.
Audience: Undergraduate

3. Identify important research methods, through case studies and labs, that are the basis of modern Earth system science.
Audience: Undergraduate

ENVIR ST/GEOG 139 – GLOBAL ENVIRONMENTAL ISSUES
3 credits.

Explores the global and local nature of environmental problems, including issues of climate change, food, energy, globalization, deforestation, biodiversity loss, resource access, environmental justice, and population. Considers how we should analyze and act on environmental problems as we confront the apparently daunting scale of such issues. What appear to be single global environmental issues are actually composed of many smaller, context-specific, and place-dependent problems or conflicts. Through an interdisciplinary and geographic perspective, these issues 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 2024
Learning Outcomes: 1. Explain the scientific basis of climate change, population growth, desertification, deforestation, water quality and quantity impairments, and the environmental challenges of agriculture and energy production.
Audience: Undergraduate

2. Critically assess the causal factors and drivers associated with global environmental issues.
Audience: Undergraduate

3. Explain the political context in which environmental issues are framed as global problems.
Audience: Undergraduate

4. Identify potential solutions to global environmental issues, and obstacles to their implementation.
Audience: Undergraduate

5. Describe your own relationship to global environmental issues and how global environmental issues manifest locally.
Audience: Undergraduate

ENVIR ST/ENGL 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
Last Taught: Spring 2024

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.
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: Spring 2024

ENVIR ST 199 – DIRECTED STUDY
1-3 credits.

Independent work in environmental studies overseen by a qualified instructor.
Requisites: Consent of instructor
Course Designation: 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 2023
Learning Outcomes: 1. Conduct and report on independent environmental studies research under the guidance of a qualified instructor
Audience: Undergraduate

2. Appropriately utilize online and library resources
Audience: Undergraduate

ENVIR ST/ENTOM 201 – INSECTS AND HUMAN CULTURE-A SURVEY COURSE IN ENTOMOLOGY
3 credits.

Importance of insects in the environment, emphasizing beneficial insects, disease carriers, and agricultural pests that interfere with the food supply. Environmental problems due to insect control agents.
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
Last Taught: Spring 2024

ENVIR ST 202 – CAREERS IN THE ENVIRONMENT
2 credits.

Explores the varied career opportunities for environmental professionals. Features discussions with environmental professionals, supplemented with in-class training on job hunting and professional preparation.
Requisites: None
Course Designation: Level - Elementary
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2024
Learning Outcomes: 1. Evaluate your own unique skills and strengths as they relate to professional development
Audience: Undergraduate

2. Compare and distinguish diverse career opportunities related to the environment and sustainability
Audience: Undergraduate

3. Identify the core concepts, courses, and areas of training that are required in differing environmental sectors and jobs
Audience: Undergraduate

4. Communicate and present your training and abilities in a professional manner
Audience: Undergraduate

ENVIR ST 203 – SPECIAL TOPICS IN ENVIRONMENTAL STUDIES
1-3 credits.

Specific topics will vary, within the scope of environmental studies.
Requisites: None
Course Designation: 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: Fall 2023
Learning Outcomes: 1. Explain concepts fundamental to environmental studies
Audience: Undergraduate

2. Recognize interdisciplinary perspectives in environmental studies
Audience: Undergraduate

3. Demonstrate reading, writing, and communication skills
Audience: Undergraduate

ENVIR ST/ENTOM 205 – OUR PLANET, OUR HEALTH
3 credits.

An introduction to the multiple determinants of health, global disease burden and disparities, foundational global health principles, and the overlap between ecosystem stability, planetary boundaries, and human health. Explore the core fundamentals of global health scholarship, including but not limited to infectious disease, sanitation, and mental health, and also consider ecological perspectives on these issues through the lens of planetary boundaries. Attention is placed on how human-mediated global change (e.g. climate change, biodiversity loss, land-use patterns, geochemical cycling, agricultural practice) impacts human health and the ecosystem services we depend on. An overview of pertinent issues in sustainability science and planetary health discourse, including the 'Anthropocene' and resilience to understand and critically assess global trends.
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
Last Taught: Fall 2023
Learning Outcomes: 1. Use a local to global perspective to assess the historical, current and future trends in human health and well-being
Audience: Undergraduate

2. Describe the use of planetary boundaries to measure Earth system sustainability and the potential impacts of instability in these systems on global health and human well being
Audience: Undergraduate

3. Describe current primary global health challenges, their distribution, and prevention strategies
Audience: Undergraduate

4. Analyze global health disparities through a social justice and human rights lens
Audience: Undergraduate

5. Demonstrate a basic understanding of contemporary issues, problems, and controversies in global health through an interdisciplinary perspective that recognizes the complex relationships between social, economic, political, and environmental systems.
Audience: Undergraduate

6. Analyze ecological perspectives on the connections among human health and well being, animal health, and ecosystem health
Audience: Undergraduate

7. Assess and reflect on the successes and failures of global health interventions and become familiar with current events and current literature that describes these efforts
Audience: Undergraduate

8. Reflect on personal goals, objectives, and role as a global citizen and future professional or researcher
Audience: Undergraduate

ENVIR ST/GNS 210 – CULTURES OF SUSTAINABILITY: CENTRAL, EASTERN, AND NORTHERN EUROPE
3 credits.

Exploration of the ideals and realities of sustainability in Central, Northern and East European contexts. Cultural, historical, environmental and other perspectives on sustainability on a local and global scale.
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
Last Taught: Spring 2022
Learning Outcomes: 1. Describe the cultural, economic, environmental, geographic, linguistic, and/or political dimensions of sustainability in Central, Eastern and North (CEN) European contexts using a humanistic approach.
Audience: Undergraduate

2. Identify, describe, critique, and analyze sustainability issues on local, regional, and global levels using a humanistic approach.
Audience: Undergraduate

3. Compare and evaluate possible solutions to questions and ongoing issues of sustainability in CEN while working respectfully with stakeholders from different cultural, geographic, and political backgrounds by demonstrating a humanistic understanding of sustainability.
Audience: Undergraduate

4. Use sustainability principles for developing personal goals and professional values
Audience: Undergraduate

ENVIR ST/HIST SCI 213 – GLOBAL ENVIRONMENTAL HEALTH: AN INTERDISCIPLINARY INTRODUCTION
3 credits.

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 2024
Learning Outcomes: 1. Recognize the utility of humanistic methods for the study of global environmental health
Audience: Undergraduate

2. Develop critical thinking skills through techniques of close reading and written analysis
Audience: Undergraduate

3. Understand essential developments in the evolving relationship between the environment and public health on a global scale.
Audience: Undergraduate

4. Explain the social, economic, and/or environmental dimensions of the sustainability challenge(s) of global health issues in developing and industrialized countries
Audience: Undergraduate

5. Describe the social, economic, and environmental dimensions of climate change, agriculture, and the built environment and identify potential tradeoffs and interrelationships among these dimensions at a level appropriate to the course.
Audience: Undergraduate

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 credit for 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 2024

ENVIR ST/ART HIST/GEOG/HISTORY/LAND ARC 239 – MAKING THE AMERICAN LANDSCAPE
3-4 credits.

Traces the history and evolution of the American cultural landscape from precolonial times to present. Explores how class, ethnic, and racial inequality have shaped the appearance of the American landscape over time, and how that landscape in turn has affected relationships between people and groups through the present day. Examines extraordinary things (civic structures (like our State Capitol), National Parks, War Memorials) and more ordinary kinds of places (mining towns, cotton plantations, sites of recreation and leisure, and suburban tract housing) to stimulate critical thinking about how these places have served people and groups unequally and disproportionately over time and across space. Considers complex meanings of American spaces and places to different people and groups, stimulating empathy and encouraging participation in a multicultural society.
Requisites: None
Course Designation: Ethnic St - Counts toward Ethnic Studies requirement
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 2024
Learning Outcomes: 1. Describe and interpret the American landscape as a richly layered historical document mediated by complex relationships between people and groups
Audience: Undergraduate

2. Explain how the American cultural landscape has affected present day circumstances regarding ethnicity and race as well as racial and ethnic inequalities
Audience: Undergraduate

3. Articulate ways in which historical change manifest in buildings, enclosed spaces, and other elements of the American landscape reveal racial, ethnic, class and gender dynamics between and among people and groups over time
Audience: Undergraduate

4. Enlist forms of historical evidence – maps (current and historic), photographs (aerial and otherwise), historical newspapers, census records, deeds and land records – to interpret landscapes and landscape change
Audience: Undergraduate

5. Explain the American landscape as a product of competing interests, which will demonstrate self-awareness and empathy toward the cultural perspectives and worldviews of others
Audience: Undergraduate

ENVIR ST/A A E 244 – THE ENVIRONMENT AND THE GLOBAL ECONOMY
4 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: 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 2024
Learning Outcomes: 1. Demonstrate knowledge of economic concepts to think critically about relationships between economic activity and global environmental challenges ranging from climate change to biodiversity loss.

Audience: Undergraduate

2. Use appropriate tools to analyze how governmental policies affect the use and conservation of natural resources.
Audience: Undergraduate

3. Explain the social, economic, and/or environmental dimensions of the sustainability challenges of balancing healthy global economies with environmental quality.
Audience: Undergraduate

4. Analyze the causes of and solutions for the sustainability challenges of maintaining environmental quality and healthy economies.
Audience: Undergraduate

ENVIR ST 251 – ECOLOGY AND THE GLOBAL ENVIRONMENT
3 credits.

Ecology is the study of relationships in the natural world, many of which are increasingly being altered by human activities. These disruptions modify the environment on a global scale, affecting populations and communities of plants, animals, and other organisms, and making Earth increasingly inhospitable for life, including for humans. Explore the natural world and humans' role within it, as both instigators and managers of global environmental change.
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
Last Taught: Summer 2023
Learning Outcomes: 1. Articulate the fundamental ideas and concepts underlying the field of ecology
Audience: Undergraduate

2. Understand the causes, consequences, and outlook of the major global environmental issues in the context of ecological science
Audience: Undergraduate

3. Appreciate the role of science, politics, economics, and community engagement in the practice of environmental management and conservation
Audience: Undergraduate

4. Explain the environmental dimensions of the sustainability challenge of food production in the face of increasing habitat loss and degradation
Audience: Undergraduate

5. Analyze the causes of and solutions for the sustainability challenge of worldwide biodiversity declines
Audience: Undergraduate

ENVIR ST/ILS 255 – INTRODUCTION TO SUSTAINABILITY SCIENCE
4 credits.

Explore the foundations of sustainability using the UW-Madison campus as a living laboratory. Ground your feet on the UW-Madison campus and ask questions about the energy we use, the food we eat, the air we breathe, the land we occupy, the goods we purchase, and the waste we create. A blend of environmental sciences and studies. Use principles of chemistry, physics, and biology to understand the dynamics of our human and earth systems, but also explore societal issues like public health and social justice, all through the context of sustainability and the UW-Madison campus community.
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: Fall 2023
Learning Outcomes: 1. Identify drivers of climate change and describe effects both locally and globally
Audience: Undergraduate

2. Explain sustainability as depicted in models of the Triple Bottom Line
Audience: Undergraduate

3. Explain the sustainability challenges of operating a large public research institution, making connections from local to national and global contexts
Audience: Undergraduate

4. Analyze top-down versus bottom-up approaches to addressing sustainability issues on our campus and in the wider world
Audience: Undergraduate

5. Describe the intersection of sustainability goals with issues relating to communities of color and First Nations communities, particularly in Dane County and Wisconsin
Audience: Undergraduate

6. Value the human and natural capital necessary to sustain our life support systems on this planet
Audience: Undergraduate

ENVIR ST/BOTANY/ZOOLOGY 260 – INTRODUCTORY ECOLOGY
3 credits.

The relationships of organisms and the environment. Population dynamics and community organization, human-environment relationships, action programs.
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
Last Taught: Spring 2024

ENVIR ST/RELIG ST 270 – THE ENVIRONMENT: RELIGION & ETHICS
3-4 credits.

What are sources on which members of religious communities draw in order to understand and address environmental change? 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, gives overview of some approaches in the environmental humanities related to philosophy, history, sociology and anthropology, and ethics.
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: Fall 2019

ENVIR ST/ENGL 305 – RHETORIC, SCIENCE, AND PUBLIC ENGAGEMENT
3 credits.

Focuses on theoretical and practical aspects of public engagement with scientific research, policy, and management, with an emphasis on writing, rhetoric, and scientific discourse.
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: Yes, unlimited number of completions
Last Taught: Fall 2023

ENVIR ST/AMER IND 306 – INDIGENOUS PEOPLES AND THE ENVIRONMENT
3 credits.

Indigenous peoples often have very close relationships to ancestral homelands, species and natural resources. However, definitions of "indigenous" can be controversial and highly politicized. Diverse outlooks on identities, worldviews and environmental governance clarify the complex meanings of indigeneity in the US. Highlights American Indian perspectives, conservation practices, and policy environments through consideration of US and international case studies. American Indian experiences shed light on pressing issues of resource sustainability and sovereignty, and demonstrate linkages to global Indigenous environmental issues and strategies.
Requisites: Sophomore standing
Course Designation: Ethnic St - Counts toward Ethnic Studies requirement
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 2023
Learning Outcomes: 1. Identify diverse Indigenous experiences of and relationships to landscapes
Audience: Undergraduate

2. Recognize that American Indian and Global Indigenous identities are inextricably linked with the environment
Audience: Undergraduate

3. Analyze how American Indian and Global Indigenous histories and epistemologies have been marginalized
Audience: Undergraduate

4. Evaluate relationships between local Wisconsin and global Indigenous environmental issues
Audience: Undergraduate

5. Reflect on personal, family, and cultural identity
Audience: Undergraduate

6. Explore outside of cultural and academic comfort zones
Audience: Undergraduate

7. Practice global citizenry skills, i.e. cultural communications and protocols
Audience: Undergraduate

8. Critique American Indian stereotypes, exploring subtle versus overt racism
Audience: Undergraduate

9. Synthesize diverse approaches to addressing global environmental issues
Audience: Undergraduate

10. Demonstrate skills in articulating these concepts in multi-media formats
Audience: Undergraduate

11. Recognize contributions of indigenous perspectives and actions to environmental resource protection and management
Audience: Undergraduate

12. Articulate different perspectives on how indigenous identities are defined in academia and lived in indigenous communities

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

19th and 20th century British and American literature.
Requisites: Sophomore, junior, or senior standing only
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 2023

ENVIR ST 308 – OUTDOORS FOR ALL: INEQUITIES IN ENVIRONMENTALISM
3 credits.

National parks, wilderness, and monuments that are set aside for recreational enjoyment are disproportionately underutilized by African Americans, Hispanics, Asians and Native Americans for reasons that are inextricably linked to past and present racial discrimination. Broadening access and participation in outdoor recreation requires a clear understanding of this history, as well as an appreciation of the continuing efforts by people of color to reassert their right to the outdoors. Gain a clear understanding of the sociocultural circumstances that have created disparities among the U.S. population in citizens' ability to access and enjoy public land and the efforts that aim to address them.
Requisites: Sophomore standing
Course Designation: Ethnic St - Counts toward Ethnic Studies requirement
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 2023
Learning Outcomes: 1. Recognize the racial divide between those who spend time in nature for their personal enjoyment and edification and those who do not
Audience: Undergraduate

2. Describe and explain the historic policies, legislation and customs that created an environment of systematic racial discrimination that prevented people of color in the United States of America from creating substantive relationships with the natural world equal to their white counterparts
Audience: Undergraduate

3. Describe and discuss the experiences of specific people of color over the past 100 years of American history who, despite the circumstances of racial discrimination at the time, excelled at creating adventurous experiences and lifestyles
Audience: Undergraduate

4. Recognize, summarize, and analyze the ways that institutions and organizations have prevented under represented members of our society from enjoying experiences in the outdoors and contributing to the long-term preservation of the natural world, as well as the ways they can be used to encourage and support broader access and participation
Audience: Undergraduate

5. Based on their understanding of past discriminatory practices, be able to analyze, formulate, and defend improved policies and social systems that will encourage diversity, equity and inclusion in the management of public land and the interpretation of our shared natural history
Audience: Undergraduate

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: Spring 2024

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: (ZOOLOGY/BIOLOGY 101 and 102), ZOOLOGY/BIOLOGY/BOTANY 152, or BIOCORE 381 or graduate/professional standing
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 2023

ENVIR ST 317 – COMMUNITY ENVIRONMENTAL SCHOLARS PROGRAM SEMINAR
1 credit.

Provides opportunities for students in the Community Environmental Scholars Program to analyze the connections among environmental issues and community engagement. Requires work with community-based environmental and/or sustainability-related organizations. Student cohorts design and lead classes and projects and have opportunities to host guest speakers and environmental leaders. Emphasizes the professional skills needed to work effectively individually, in teams, in internships, and in professional positions.
Requisites: Junior or senior standing only
Course Designation: 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 2024
Learning Outcomes: 1. Apply environmental knowledge from outside course work and assigned course reading to develop and lead in-class activities appropriate for classmates from interdisciplinary backgrounds.
Audience: Undergraduate

2. Utilize community engagement literature as a resource for current and future professional practice.
Audience: Undergraduate

3. Document, analyze and reflect on your personal contributions to environmental-related volunteer work, service learning project, and personal actions.
Audience: Undergraduate

4. Demonstrate professional communication skills useful in applying for employment or graduate school.
Audience: Undergraduate

5. Demonstrate interpersonal and professional skills in collaboration and organization while working in classroom teams and in service projects in the community.
Audience: Undergraduate

ENVIR ST/ATM OCN/GEOG 322 – POLAR REGIONS AND THEIR IMPORTANCE IN THE GLOBAL ENVIRONMENT
3 credits.

Reviews the past, present, and future of the Arctic and Antarctic regions. Covers the history, geography, atmospheric and ocean circulations, permafrost, ice sheets, glaciers, and future state of the Arctic and Antarctica as projected by earth system models. Also explores the role of the polar regions in the earth's system and associated global climatic feedbacks.
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: Spring 2024
Learning Outcomes: 1. Describe the history, geography, atmospheric and ocean circulations, permafrost, ice sheets, glaciers, and the future state of the Arctic and Antarctic Regions.
Audience: Both Grad & Undergrad

2. Explain the major theories and concepts of the Arctic and Antarctic regions.
Audience: Both Grad & Undergrad

3. Identify how interactions occur between the major components of each polar region and their influence on global processes and climate.
Audience: Both Grad & Undergrad

4. Recognize the need for multi-disciplinary research to further our understanding of the polar regions and their role in the global system.
Audience: Both Grad & Undergrad

5. Integrate thesis or dissertation research directly or indirectly with polar processes research, thereby gaining better insight into Arctic and Antarctic regions.
Audience: Graduate

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 104, 109, 116, or graduate/professional 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: Fall 2023

ENVIR ST 326 – SUSTAINABILITY TOOLS: SYSTEMS THINKING & LIFE CYCLE ASSESSMENT
3 credits.

Explores fundamentals of systems thinking and how to apply a systems-based approach to understanding and addressing sustainability issues ranging from climate change to environmental racism. Systems content is complemented with foundational skills in life cycle assessment (LCA), an inherently systems-based application of sustainability science that considers the full measure of resources used and waste created throughout the cradle-to-grave supply chain of a product or process. Life cycle and systems-based approaches are used to characterize both human and natural systems in local and global contexts. These approaches also will be integrated with sustainability concepts including the triple bottom line, industrial ecology, and the circular economy. Concepts include: life cycle stages, supply chains, stocks, flows, feedback loops, and unintended consequences.
Requisites: Sophomore standing
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: Spring 2024
Learning Outcomes: 1. Analyze sustainability issues and/or practices using a systems-based approach.
Audience: Undergraduate

2. Use sustainability principles for developing personal goals and professional values.
Audience: Undergraduate

3. Explain life cycle and systems thinking approaches to addressing sustainability issues while evaluating their utility compared with alternative or traditional approaches to problem solving.
Audience: Undergraduate

4. Apply systems thinking concepts such as stocks, flows, and feedback loops to specific contexts ranging from local campus systems to global systems.
Audience: Undergraduate

5. Characterize the life cycle stages for a product system or process and quantify the relevant inputs and outputs at each stage.
Audience: Undergraduate

6. Determine the goal, scope, and relevant functional unit for a life cycle assessment and evaluate the environmental sustainability of a system by interpreting a life cycle assessment on a product or process.
Audience: Undergraduate

7. Connect the sustainability-related aspects of campus-based systems to local, national, and global contexts.
Audience: Undergraduate

8. Evaluate the role that life cycle assessment and systems thinking can have in addressing sustainability concepts such as (1) the triple bottom line, (2) industrial ecology, and (3) the circular economy.
Audience: Undergraduate

ENVIR ST/HISTORY 328 – ENVIRONMENTAL HISTORY OF EUROPE
3 credits.

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 2023

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

Offers a fundamental understanding of how and why global warming is happening and what to expect in the future. 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.
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
Repeatable for Credit: No
Last Taught: Spring 2024

ENVIR ST/GEOG 333 – GREEN URBANISM
3 credits.

Over half of the world's population now lives in urban areas, with an expected increase of 2.5 billion people in the next 30 years. As urbanization (broadly defined as the conversion of previously undeveloped lands into urbanized uses) continues and intensifies, we are faced with a number of environmental issues, for instance, fragmentation and destruction of habitats, and decreased air and water quality. Explore how urbanization impacts ecological processes and resulting environmental outcomes, strategies for "designing with nature," and behavioral, planning, and policy responses to urban environmental problems.
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: Spring 2024
Learning Outcomes: 1. Describe ecological processes as they relate to urbanization
Audience: Undergraduate

2. Describe the social, economic, and environmental dimensions of sustainable communities and identify potential trade-offs and interrelationships among these dimensions
Audience: Undergraduate

3. Analyze the causes of and solutions for the sustainability challenge of sustainable cities and communities
Audience: Undergraduate

4. Analyze local plans for sustainability strategies
Audience: Undergraduate

5. Identify strategies that cities can employ in preparing for the effects of the changing climate
Audience: Undergraduate

ENVIR ST/ATM OCN/GEOG/GEOSCI 335 – CLIMATIC ENVIRONMENTS OF THE PAST
3 credits.

Climate change at timescales from the last several million years to the last 100 years, with emphasis on more recent timescales. Examines how climate variability arises from interplay between external forcings, feedbacks within the earth system, and (more recently) human activity.
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
Repeatable for Credit: No
Last Taught: Fall 2023
Learning Outcomes: 1. Describe the major climatic events and trends during the Quaternary, spanning timescales from the last 50,000,000 years to the last 100 years.
Audience: Undergraduate

2. Identify the physical processes controlling the behavior of the earth system and its components (atmosphere, oceans, cryosphere, biosphere, etc.).
Audience: Undergraduate

3. Discuss how climatic variability results from a combination of external forcings and internal dynamics within the earth system.
Audience: Undergraduate

4. Recognize how paleoclimatologists collect, date, and analyze a staggering variety of paleoclimatic records, including ocean and lake sediment cores, ice cores, tree rings, corals, and speleothems.
Audience: Undergraduate

5. Analyze and critically evaluate climate experiments that are simulated by earth system models.
Audience: Undergraduate

6. Think and write critically, with particular attention to critically reading the scientific literature and critically employing the climate proxies and models used by paleoclimatologists.
Audience: Undergraduate

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

Explores the links between nature, power and society in today's world. Considers the complex relationships between humans and the earth's resources, including food, energy, physical materials, water, biota, and landscapes. Examines issues linked to population and scarcity, resource tenure, green consumerism, political economy, environmental ethics, risks and hazards, political ecology, and environmental justice.
Requisites: Sophomore standing. Not open to students with credit for ENVIR ST 112
Course Designation: Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Fall 2022

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: Sophomore standing
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 2024

ENVIR ST/AMER IND 341 – INDIGENOUS ENVIRONMENTAL COMMUNICATORS
3 credits.

Native Nations show leadership globally in addressing major environmental issues. Indigenous languages describe deep relationships with the natural world, including information on environmental stewardship - harvesting, caretaking and reciprocity. Indigenous scholars contribute crucial perspectives to conversations about human relationships to the Earth - cultural relationships to wildlife and plants, and the ethical and practical roles of humans in socio-ecological systems. Focuses on indigenous environmental scholarship, including the ongoing legacy of oral traditions, developing research, writing, and public speaking skills.
Requisites: Satisfied Communications A requirement and sophomore standing, or graduate/professional standing
Course Designation: Gen Ed - Communication Part B
Ethnic St - Counts toward Ethnic Studies requirement
Breadth - Humanities
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Fall 2023
Learning Outcomes: 1. Engage in protocols for learning with Tribes, including Elder epistemology and active listening
Audience: Undergraduate

2. Identify styles of indigenous environmental writing and communications from throughout the US and the world
Audience: Undergraduate

3. Summarize major theories and research findings in the field of environmental writing
Audience: Undergraduate

4. Demonstrate skills in articulating Indigenous environmental concepts in multimedia formats
Audience: Undergraduate

5. Engage in critical reading and the use of evidence
Audience: Undergraduate

6. Apply appropriate style and disciplinary conventions in writing and speaking
Audience: Undergraduate

7. Use core library resources specific to indigenous studies, environmental studies, and environmental communications
Audience: Undergraduate

8. Hone writing, public speaking, and library research skills
Audience: Undergraduate

9. Analyze how Native American and Global Indigenous histories and epistemologies have been marginalized
Audience: Undergraduate

10. Critique Native American stereotypes, exploring subtle versus overt racism
Audience: Undergraduate

11. Articulate different perspectives on how indigenous identities are defined in academia and lived in indigenous communities
Audience: Undergraduate

12. Engage in effective and respectful thinking and expression
Audience: Undergraduate

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: A A E 101 (215 prior to Fall 2024), ECON 101, or 111
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: Spring 2024
Learning Outcomes: 1. Understand why environmental problems occur in a market-based economy.
Audience: Undergraduate

2. Identify market-based environmental policies to address market failures.
Audience: Undergraduate

3. Explain the social, economic, and/or environmental dimensions of the sustainability challenge(s) of pollution control.
Audience: Undergraduate

4. Apply sustainability principles and/or frameworks to addressing the challenge of optimizing the use of scarce resources over time.
Audience: Undergraduate

ENVIR ST/AMER IND/GEOG 345 – CARING FOR NATURE IN NATIVE NORTH AMERICA
3 credits.

Surveys the concepts, practices, and issues associated with caring for nature in American Indian communities.
Requisites: Sophomore standing
Course Designation: Ethnic St - Counts toward Ethnic Studies requirement
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 2023
Learning Outcomes: 1. Interpret the diverse arrangements for tribal sovereignty, indigenous landtenure, and claims to natural resources and the environment.
Audience: Undergraduate

2. Illustrate natural resource and environmental issues important to bothAmerican Indians and Wisconsin Indians.
Audience: Undergraduate

3. Identify similarities and differences between indigenous knowledge systemsand Western Science.
Audience: Undergraduate

4. Discuss the marked cultural and natural diversity across native NorthAmerica.
Audience: Undergraduate

5. Recall the many different conceptions of place, nature, and development innative North America.
Audience: Undergraduate

6. Describe the diversity of American Indian experiences and their variedresponses to assorted histories of exclusion and marginalization.
Audience: Undergraduate

7. Demonstrate an awareness of history's impact on the present.
Audience: Undergraduate

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. Examine efforts to mitigate climate change. Learn about initiatives that are being implemented through international treaties; national, state, and municipal government policies; corporate programs; and individual behavior. Examine the advantages and disadvantages of each approach, their successes, and the obstacles they have faced. 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
Last Taught: Spring 2024

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: Junior 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/ATM OCN 355 – INTRODUCTION TO AIR QUALITY
3 credits.

Links chemistry and meteorology to engineering, law, policy, and public health. Presents key ideas in air quality, with focus on reactive pollutants in the outdoor environment, especially gas and particle phase chemicals that react with human tissue to cause sickness and death. Discusses environmental impacts of these pollutants and regulatory approaches for their control in the U.S. and around the world. Indoor air quality will be included. Non-reactive pollutants, especially carbon dioxide, will be compared and contrasted with reactive air pollutants.
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
Repeatable for Credit: No
Last Taught: Spring 2024
Learning Outcomes: 1. Build basic understanding of atmospheric pollutants affecting health, visibility, ecosystems, climate, and the ozone hold.
Audience: Undergraduate

2. Develop skills in analyzing air pollution data and related information, with a focus on evaluating and presenting original research on an air pollution episode of choice.
Audience: Undergraduate

3. Consider a single issue – air quality – from multiple disciplinary perspectives, including atmospheric science, engineering, policy, economics, and chemistry.
Audience: Undergraduate

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

Survey of Muslim religious understandings of science, technology, nature and environment. Gain 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: Fall 2015

ENVIR ST/F&W ECOL/ZOOLOGY 360 – EXTINCTION OF SPECIES
3 credits.

A comprehensive treatment of the ecology, causes, and consequences of species extinction. Ecology and problems of individual species, habitat alteration and degradation, socio-economic pressures and conservation techniques and strategies.
Requisites: Sophomore standing and ZOOLOGY/BIOLOGY/BOTANY 151, (ZOOLOGY/BIOLOGY 101 and 102), BIOLOGY/BOTANY 130, or (BIOCORE 381 and 382)
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 2023

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.
Requisites: (ZOOLOGY/BIOLOGY 101 and 102), ZOOLOGY/BIOLOGY/BOTANY 152, ZOOLOGY 153, (BIOCORE 381 and 382), BIOLOGY/BOTANY 130, or graduate/professional standing
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 2024

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

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. Practice 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: MATH 112, 114, 217, placement into MATH 221, or graduate/professional 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: Spring 2024
Learning Outcomes: 1. Calculate energy and power production for renewable energy systems
Audience: Both Grad & Undergrad

2. Determine renewable resource availability and impact on energy infrastructure
Audience: Both Grad & Undergrad

3. Design and assess the technical and economic feasibility of renewable energy systems
Audience: Both Grad & Undergrad

4. Explain the social, economic, and/or environmental dimensions of the sustainability challenge(s) of renewable energy systems.
Audience: Both Grad & Undergrad

5. Produce comprehensive renewable energy project analysis.
Audience: Graduate

ENVIR ST/HISTORY 369 – THINKING THROUGH HISTORY WITH ANIMALS
3-4 credits.

Explores the history of human relationships with animals around the world with focus on agriculture and hunting, political economic development, human identity, and biological science and conservation.
Requisites: Sophomore standing or 3 credits 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 2019

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: (Sophomore standing and MATH 113, 114, or 171), graduate/professional standing, or member of Engineering Guest Students
Course Designation: Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2024

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: LAND ARC/ENVIR ST/F&W ECOL/G L E/GEOG/GEOSCI 371, graduate/professional standing, or member of Engineering Guest Students
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 375 – FIELD ECOLOGY WORKSHOP
3 credits.

Hands-on field study 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: Sophomore standing
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 2023

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.
Requisites: Sophomore standing, member of Engineering Guest Students, or declared in Capstone Certificate in GIS Fundamentals
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 2024

ENVIR ST 398 – INDEPENDENT STUDY: SUSTAINABILITY COMMUNITY ENGAGEMENT
1 credit.

Provides an opportunity to learn about community engagement and link sustainability concepts to working with a community organization. Declared in the Sustainability Certificate or Environmental Studies Major.
Requisites: Consent of instructor
Course Designation: Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2024
Learning Outcomes: 1. Apply knowledge of sustainability through volunteering within a local, national, or international community
Audience: Undergraduate

2. Understand the role of civic engagement in furthering sustainability
Audience: Undergraduate

ENVIR ST 399 – DIRECTED STUDY
1-3 credits.

Independent work in environmental studies overseen by a qualified instructor.
Requisites: Consent of instructor
Course Designation: 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 2024
Learning Outcomes: 1. Conduct and report on independent environmental studies research under the guidance of a qualified instructor
Audience: Undergraduate

2. Develop researchable Environmental Studies questions
Audience: Undergraduate

3. Appropriately utilize online and library resources
Audience: Undergraduate

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

Topics covered within the scope of the environmental biological sciences, such as conservation biology, environmental ecology, issues in ethnobotany and tropical ecology, environmental health, ecotoxicology, biodiversity, endangered resources, biological systems analysis, and field studies.
Requisites: Sophomore standing
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: Spring 2024

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

Topics covered within the scope of the physical environmental sciences, such as 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.
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
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2024

ENVIR ST 402 – SPECIAL TOPICS: SOCIAL PERSPECTIVES IN ENVIRONMENTAL STUDIES
1-4 credits.

Topics covered within the scope of environmental social sciences, such as issues in environmental policy, law, economics, land use, sustainability, food systems, energy policy, conflict resolution, environmental justice, and international development.
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: Yes, unlimited number of completions
Last Taught: Spring 2024

ENVIR ST 403 – SPECIAL TOPICS IN ENVIRONMENTAL STUDIES
1-3 credits.

Specific topics will vary, within the scope of environmental studies.
Requisites: Sophomore standing
Course Designation: Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: Yes, unlimited number of completions
Learning Outcomes: 1. Explain concepts related to the environment.
Audience: Undergraduate

2. Apply interdisciplinary perspectives to the study of environmental issues.
Audience: Undergraduate

3. Demonstrate reading, writing, communication, and research skills.
Audience: Undergraduate

ENVIR ST 404 – SPECIAL TOPICS IN ENVIRONMENTAL HUMANITIES
1-3 credits.

Topics covered within the scope of environmental humanities, such as themes in environmental ethics, literature, art, film, aesthetics and design, history, and indigenous knowledge.
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: Yes, unlimited number of completions
Last Taught: Spring 2024
Learning Outcomes: 1. Explain social and historical processes that impact our current environments. Interpret the meanings, values, and aesthetics that are created, shaped, and revealed as humans interact with and modify the environments they inhabit.
Audience: Undergraduate

ENVIR ST/C&E SOC/CURRIC 405 – EDUCATION FOR SUSTAINABLE COMMUNITIES
3 credits.

How can education - for children and adults, in school and out - help to address crucial environmental and social sustainability challenges? What ideas and strategies have guided environmental and sustainability education over the years? What can individual people do to address environmental challenges, and what can only be accomplished by people working together? What does sustainability have to do with justice - and vice versa? Examine the principles behind behavior change and empowerment, community action and whole-scale social reform. Drawing on research and theory from across the social sciences, we will explore the uncertain relationship between education and advocacy, seeking the means by which education can have the greatest impact without compromising the core ideals of a democratic society.
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: Spring 2024

ENVIR ST/GEOSCI 411 – ENERGY RESOURCES
3 credits.

A critical examination of the full spectrum of renewable and nonrenewable energy options, from the unifying perspective of the Earth systems that govern their use. Energy conversion and efficiency, consumption patterns and trends, and environmental consequences of energy production and use.
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: Spring 2024

ENVIR ST 413 – PRESERVING NATURE
3 credits.

Understand the theory and practice the skills of effective, scientific, ethical, and legitimate preservation of nature (biodiversity, the atmosphere, water, etc.). Learn from global lessons in how to intervene against threats to nature, and the roles of ethics, law, and research in preserving nature. Gain mastery of terminology and usage so as to communicate professionally about nature preservation.
Requisites: Sophomore standing or ZOOLOGY/BOTANY/ENVIR ST 260
Course Designation: Breadth - Either Biological Science or Social Science
Level - Intermediate
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2024
Learning Outcomes: 1. Demonstrate understanding of the environmental provisions in national constitutions and U.S. co-sovereign federal-state-tribal governance as these relate to environmental protection.
Audience: Undergraduate

2. Display mastery of the fundamentals of biodiversity and the atmosphere, and what human activities threaten extinction, climate change, and water quality.
Audience: Undergraduate

3. Summarize the ethical and legal roles – of the public, civil society activist organizations, legislatures, executive branches, the judiciary, and public scholars – in preserving and impairing nature.
Audience: Undergraduate

4. Communicate professionally about effective conservation practice and scientific integrity.
Audience: Undergraduate

5. Explain the social, economic, and/or environmental dimensions of the sustainability challenge(s) of preserving nature for future generations.
Audience: Undergraduate

6. Analyze the causes of and solutions for the sustainability challenge of preserving nature for future generations.
Audience: Undergraduate

ENVIR ST 417 – SUSTAINABILITY SCIENCE, TECHNOLOGY AND POLICY
1 credit.

Analyze the concept of sustainability through current trends, including energy, air and water resources, agriculture, environmental measurement and analysis, modeling, remote sensing, Geographic Information Systems, the built environment, transportation, ecology, conservation and global climate change.
Requisites: Sophomore standing
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: Spring 2024
Learning Outcomes: 1. Apply a simple physical model to evaluate sustainability claims from a wide range of sectors, including agriculture, energy, water, land use and conservation.
Audience: Undergraduate

2. Explain how economic, social and cultural factors that don't explicitly involve matter or energy can also affect environmental sustainability.
Audience: Undergraduate

3. Produce thoughtful written work that integrates guest lectures, readings, other texts and/or current events related to environmental sustainability.
Audience: Undergraduate

4. Analyze sustainability issues and/or practices using a systems-based approach.
Audience: Undergraduate

5. Explain the social, economic, and/or environmental dimensions of the sustainability challenges of climate change, water scarcity, land and water degradation, energy use and biodiversity loss.
Audience: Undergraduate

ENVIR ST/HISTORY/LEGAL ST 430 – LAW AND ENVIRONMENT: HISTORICAL AND CONTEMPORARY PERSPECTIVES
3 credits.

Explores environmental studies through a focus on law and legal history. Although its main concentration is on U.S. environmental law, the course will begin and end with broader historical and global perspectives. Topics include a survey of English, European, and early American legal approaches to land use, natural resources, and pollution through World War II as well as an examination of the development and practice of contemporary U.S. environmental law and consideration of the recent emergence of international environmental law.
Requisites: Sophomore standing
Course Designation: Gen Ed - Communication Part B
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: Spring 2024
Learning Outcomes: 1. Analyze and articulate their own arguments about how social, political, and cultural phenomena shape law and legal systems.
Audience: Both Grad & Undergrad

2. Analyze and articulate their own arguments about the social, political, and cultural impacts of law at the societal and individual levels.
Audience: Both Grad & Undergrad

3. Demonstrate knowledge about how legal ideas and ideologies have changed over time and have shaped law and legal systems.
Audience: Both Grad & Undergrad

4. Demonstrate their abilities to find, interpret, and utilize resources relevant to law and society.
Audience: Both Grad & Undergrad

5. Demonstrate their abilities to analyze information, to write clearly and persuasively, and to construct original arguments.
Audience: Both Grad & Undergrad

6. Analyze the causes of and solutions for the sustainability challenge of the conservation of natural resources, especially insofar as their governance involves and impacts local stakeholders.
Audience: Both Grad & Undergrad

7. Analyze the social, economic, legal, political, and environmental dimensions of the sustainability challenge of regulating and governing biodiversity, clean air and water, and other, larger earth systems (such as climate).
Audience: Both Grad & Undergrad

8. Demonstrate an advanced understanding of the historiography or other scholarly debates that have shaped the study of conservation and environmental law.
Audience: Graduate

ENVIR ST/C&E SOC/GEOG 434 – PEOPLE, WILDLIFE AND LANDSCAPES
3 credits.

Explores the relationship between humans and wildlife amid diverse landscapes, both historic and contemporary, tropical and temperate. Investigates how humans shape wild animal populations by modifying physical environments, and by hunting, domesticating and introducing species.
Requisites: Junior 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 2023

ENVIR ST/GEOG 439 – US ENVIRONMENTAL POLICY AND REGULATION
3-4 credits.

Covers a broad cross-section of American environmental policy by focusing on specific statutes and policy arenas. Surveys 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. Maintains 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. 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.
Requisites: Sophomore standing
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 2022

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: Junior standing
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: Summer 2023

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

Global positioning system surveying for field applications. Signals. Coordinate systems. Datums. Cartographic projections. Satellite orbits. Choosing hardware. Strategies for data collection and analysis. Assessing uncertainty. Geocoding satellite images. Integrating data with Geographic Information Systems. Emerging technologies.
Requisites: MATH 211, 217, 221, or graduate/professional standing, or member of Engineering Guest Students
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 2023

ENVIR ST/SPANISH 445 – CULTURE AND THE ENVIRONMENT IN THE LUSO-HISPANIC WORLD
3 credits.

Investigates how economy and culture work together, consuming and/or restoring their environments in divergent scenarios of the Hispanic World.
Requisites: SPANISH 223 and 224
Course Designation: Breadth - Humanities
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2024

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: Junior standing
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: Summer 2023

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: Sophomore standing or 3 credits 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 2023

ENVIR ST/HISTORY 465 – GLOBAL ENVIRONMENTAL HISTORY
3-4 credits.

Explores the history of human relationships with the environment on a global scale through analysis of long-term changes, from early civilizations, to the beginnings of global trade, the Industrial Revolution, urbanization, and 20th century technological developments. Offers first-hand historiographical research experience and training in writing for public web audiences.
Requisites: Sophomore standing or 3 credits 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: Spring 2024

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 developing skills to interpret landscape history.
Requisites: Sophomore standing or 3 credits 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 2018

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: Junior standing
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 2024

ENVIR ST/PHYSICS 472 – SCIENTIFIC BACKGROUND TO GLOBAL ENVIRONMENTAL PROBLEMS
3 credits.

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.
Requisites: PHYSICS 103, 201, 207, 247, CHEM 103, 108, 109, 115, 116, or graduate/professional 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
Repeatable for Credit: No
Last Taught: Fall 2016

ENVIR ST/CLASSICS 488 – GREEKS, ROMANS AND THE NATURAL ENVIRONMENT
3 credits.

Examine ways in which the ancient Greeks and Romans interacted with their Mediterranean environments and the various conceptions of the natural world that they developed in poetry, prose and visual art. Explore a number of general topics that will underpin the course as a whole: the characteristics of the Mediterranean environment, the effect of nature on humankind, and the impact of humankind on nature. Study aspects of Greek and Roman engagements with nature, such as agriculture, hunting, sacrifice, the contested relationship between the natural and the civilized, and representations of human beings using terms drawn from the natural world ("bears" of Artemis, cannibalistic "wolves"). Consider how these aspects of the ancient world relate to modern treatments of such themes. (NB: All Greek and Latin texts will be read in English translation.)
Requisites: Sophomore standing
Course Designation: Breadth - Humanities
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 2024
Learning Outcomes: 1. Demonstrate knowledge of Classical societies and cultures.
Audience: Both Grad & Undergrad

2. Examine, analyze, and interpret ancient texts in translation.
Audience: Both Grad & Undergrad

3. Critique ancient Greek, Roman, and/or Near Eastern societies and cultures and compare them to other societies and cultures.
Audience: Both Grad & Undergrad

4. Carry out and present the results of in-depth research into aspects of the modern and ancient worlds.
Audience: Graduate

5. Develop an extended scholarly argument in written form.
Audience: Graduate

6. Reflect on modern environmental issues in light of ancient experiences and thought.
Audience: Both Grad & Undergrad

7. Explain the social, economic, and/or environmental dimensions of the sustainability challenge of the over-exploitation of natural resources.
Audience: Both Grad & Undergrad

8. Analyze the causes of and solutions for the sustainability challenges of human-caused climate change, pollution and other forms of environmental harm.
Audience: Both Grad & Undergrad

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: Junior standing
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
Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2023

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

Systems modeling; applications to environmental problems; systems methods.
Requisites: Senior standing
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 2019

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: (ZOOLOGY/BIOLOGY 101 and 102), ZOOLOGY/BIOLOGY/BOTANY 152, or BIOCORE 381
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 2024
Learning Outcomes: 1. Use facts to guide conceptual thinking and hypothesis tests about ecological systems.
Audience: Undergraduate

2. Draw upon aspects of fish evolution, ecology, and conservation to produce an integrated perspective.
Audience: Undergraduate

3. Summarize the diversity of fishes on Earth, including phylogenetic and geographic patterns.
Audience: Undergraduate

4. Analyze the relationship between form and function of individual fish.
Audience: Undergraduate

5. Place fish in the context of the broader food web and ecological community.
Audience: Undergraduate

6. Describe the management and use of fish by human society.
Audience: Undergraduate

7. Describe the conservation challenges faced by fish now and in the future.
Audience: Undergraduate

8. Write clear, concise scientific reports both individually and in teams.
Audience: Undergraduate

9. Present effective, informative, and persuasive arguments in writing and orally.
Audience: Undergraduate

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

Anatomy and taxonomy of Wisconsin fishes and projects in fish ecology.
Requisites: ZOOLOGY/ENVIR ST 510 or concurrent enrollment
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 2024

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

Examine natural resources policy and law in the United States relating to forests, wildlife, and other natural resources. Investigates the policy-making process and the role of science, values, property, economics, and justice in the development of federal and state resources policy. Practice professional written and oral communication and ethical engagement in resources policy and administration.
Requisites: Satisfied Communications A requirement or graduate/professional standing
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: Fall 2023

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: (ATM OCN 101, ENVIR ST/ATM OCN 171, or GEOG/ATM OCN 323), (ZOOLOGY/BIOLOGY/BOTANY 152, BOTANY/BIOLOGY 130, ZOOLOGY/BIOLOGY 102, BIOCORE 381, or 485), and junior standing, or graduate/professional standing
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 2023

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: Junior standing or 3 Credits in PHILOS
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 2021

ENVIR ST/GEOG/LAND ARC/URB R PL 532 – APPLICATIONS OF GEOGRAPHIC INFORMATION SYSTEMS IN PLANNING
3 credits.

Explores planning-related Geographic Information System (GIS) data, applications, analytical tools, and implementation issues.
Requisites: GEOG/CIV ENGR/ENVIR ST 377 or graduate/professional 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 2023
Learning Outcomes: 1. Identify how planning agencies use GIS.
Audience: Both Grad & Undergrad

2. Explain the nature, characteristics, and possible ways of analyzing spatial data in a planning context.
Audience: Both Grad & Undergrad

3. Communicate geospatial data and analyses effectively.
Audience: Both Grad & Undergrad

4. Obtain and analyze geospatial data using a range of spatial analysis tools for a number of planning practices.
Audience: Both Grad & Undergrad

5. Conduct site-selection and land-suitability analysis.
Audience: Both Grad & Undergrad

6. Identify ethical issues surrounding access to and use of geospatial data.

Audience: Both Grad & Undergrad

7. Analyze and provide written feedback on undergraduate student presentations.
Audience: Graduate

8. Produce a memo on land-suitability analysis.
Audience: Graduate

ENVIR ST/ENGL 533 – TOPIC IN LITERATURE AND THE ENVIRONMENT
3 credits.

Explores the ways that literary texts represent, imagine, and re-imagine the environment.
Requisites: Sophomore standing
Course Designation: Breadth - Literature. Counts toward the Humanities req
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: Fall 2023

ENVIR ST/GEOG 534 – ENVIRONMENTAL GOVERNANCE: MARKETS, STATES AND NATURE
3 credits.

Covers real-world questions of how the environment is managed and governed through state policy, economics, and social institutions. Includes strategies within and outside of the formal institutions of government, and extends the discussion to the commodification of nature and the use of science to understand and govern the environment. Also includes case studies of environmental governance in water, carbon, species, and urban sustainability.
Requisites: Sophomore standing
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 2022

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 234 or graduate/professional standing
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 359, ENVIR ST/GEOG 337, 339, 439, AMER IND/ENVIR ST/GEOG 345, or graduate/professional 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: Spring 2023

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: SOC 181, SOC/C&E SOC 140, 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: Spring 2024

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. Applications to: agriculture and forestry, geology and soils, water quality, and urban and regional planning.
Requisites: LAND ARC/ENVIR ST/F&W ECOL/G L E/GEOG/GEOSCI 371, graduate/professional standing, or member of Engineering Guest Students
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 2023

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: Junior 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 2022

ENVIR ST/A 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: A A E 101 (215 prior to Fall 2024), ECON 101, 111, or graduate/professional 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 2017

ENVIR ST/SOIL SCI 575 – ASSESSMENT OF ENVIRONMENTAL IMPACT
3 credits.

Overview of methods for collecting and analyzing information about environmental impacts on agricultural and natural resources, including monitoring the physical environment and relating impacts to people and society.
Requisites: Junior 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: Spring 2024

ENVIR ST/LAND ARC 581 – PRESCRIBED FIRE: ECOLOGY AND IMPLEMENTATION
3 credits.

Covers the use of live fire in land management and provides a background in fire ecology, fire behavior, fire effects, and the prediction of fire behavior for wetland, prairie and savanna fuels. Instruction includes field training with live fire exercises and the use of fire management equipment. Participate in prescribed burns outside of scheduled class times. Confers certificates of completion that qualify an individual to participate on prescribed fire crews with public and private sector organizations.
Requisites: Junior standing
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 2024
Learning Outcomes: 1. Understand fire ecology, the role that fires play in shaping fire-adapted ecosystems, and the use of prescribed fire for land management.
Audience: Both Grad & Undergrad

2. Qualify for working on any prescribed burn or fire suppression crew located anywhere in the U.S., and become familiar with organizations providing experiences using prescribed fire.
Audience: Both Grad & Undergrad

3. Become familiar with the restoration history, including the role of fire, for the UW Arboretum.
Audience: Both Grad & Undergrad

4. Demonstrate safe and appropriate use of Protective Personal Equipment (PPE) for fire.
Audience: Both Grad & Undergrad

5. Demonstrate proficient knowledge of national standards for participating in prescribed burn or fire suppression crews anywhere in the U.S.
Audience: Both Grad & Undergrad

6. Explain the social, economic, and/or environmental dimensions of the sustainability challenge(s) of fire for land management.
Audience: Both Grad & Undergrad

7. Apply sustainability principles and/or frameworks to addressing the challenge and fundamental concepts related to fire ecology in the Upper Midwest.
Audience: Both Grad & Undergrad

8. Gain enhanced knowledge and skills for fire management leadership.
Audience: Graduate

9. Demonstrate applied knowledge of fire ecology and the effects of fire on plant, fungi or animal communities.
Audience: Graduate

ENVIR ST 600 – ENVIRONMENTAL STUDIES CAPSTONE
3 credits.

Interdisciplinary investigation with an emphasis on real world challenges. Examine environmental issues and apply, often in a team context, a variety of academic perspectives and methodologies, and cultivate academic and professional abilities such as establishing connections within the larger community, developing strategies for analyzing and addressing problems, developing field skills in ecosystems, and working with others trained in fields different from one's own.
Requisites: Junior or senior standing only
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: Spring 2024
Learning Outcomes: 1. Research environmental studies questions, both independently and in groups.
Audience: Undergraduate

2. Synthesize information across several environmental studies disciplines.

Audience: Undergraduate

3. Connect their research to broader aspects of environmental studies.
Audience: Undergraduate

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 only
Repeatable for Credit: No
Last Taught: Spring 2015

ENVIR ST 613 – REPRODUCIBILITY CRISES AND OPEN SCIENCE IN ENVIRONMENTAL STUDIES
3 credits.

Why trust science? Examine critically the strengths and weaknesses of Western science in light of new efforts at overcoming the reproducibility crisis. Examine successes and failures in fostering open science focusing on ecological research in its broadest sense, although relevant to many fields of inquiry. In line with the mission of the Nelson Institute for Environmental Studies, take an interdisciplinary look at reproducibility and scientific integrity. Find out why and why not to rely on the scientific communications of individual researchers and interest groups that showcase their preferred evidence.
Requisites: Junior standing
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 2023
Learning Outcomes: 1. Master the principles of open science and reproducibility for biological and social sciences.
Audience: Both Grad & Undergrad

2. Practice the concepts of open science in preparation for a career in research or research administration.
Audience: Graduate

3. Gain and practice skills in critical thinking about research design and scientific communication.
Audience: Both Grad & Undergrad

4. Integrate methods and ways of knowing from two or more fields of inquiry in social sciences and ecology.
Audience: Both Grad & Undergrad

5. Communicate professionally about effective open science practices, reproducibility, and scientific integrity.
Audience: Both Grad & Undergrad

6. Gain familiarity with retraction processes in scientific publication.
Audience: Both Grad & Undergrad

7. Practice critical close reading of scientific methods for the identification of bias or irreproducible methods
Audience: Graduate

8. Disentangle value-based from evidence-based reasoning.
Audience: Both Grad & Undergrad

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: Satisfied Quantitative Reasoning (QR) A requirement and ZOOLOGY/BOTANY 450, F&W ECOL/BOTANY 455, ZOOLOGY/BOTANY/F&W ECOL 460, or graduate/professional standing
Course Designation: Gen Ed - Quantitative Reasoning Part B
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 2024

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: Junior standing
Course Designation: Breadth - Social Science
Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Fall 2017

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: Graduate/professional standing or (senior standing and ECON 101, 111, A A E 101, or 215 prior to Fall 2024)
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 2020
Learning Outcomes: 1. Understand fundamentals of energy sources and technologies.
Audience: Both Grad & Undergrad

2. Be familiar with microeconomic theory with applications to energy industries and markets.
Audience: Both Grad & Undergrad

3. Build analytical skills in economic analysis and be able to apply the economic thinking to historical and contemporary energy-related issues.
Audience: Graduate

4. Analyze the causes of and solutions for the sustainability challenge of affordable and clean energy.
Audience: Both Grad & Undergrad

5. Apply sustainability principles and/or frameworks to addressing the challenge of affordable and clean energy.
Audience: Both Grad & Undergrad

ENVIR ST 681 – SENIOR HONORS THESIS
3 credits.

Independent study for undergraduate students completing an Honors thesis in Environmental Studies.
Requisites: Consent of instructor
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 2022

ENVIR ST 682 – SENIOR HONORS THESIS
3 credits.

Independent study for undergraduate students completing an Honors thesis in Environmental Studies.
Requisites: Consent of instructor
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 2023

ENVIR ST 691 – SENIOR THESIS
1-3 credits.

Independent study for undergraduate students completing a thesis in Environmental Studies.
Requisites: Consent of instructor
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Fall 2018

ENVIR ST 692 – SENIOR THESIS
1-3 credits.

Independent study for undergraduate students completing a thesis in Environmental Studies.
Requisites: Consent of instructor
Course Designation: Level - Advanced
L&S Credit - Counts as Liberal Arts and Science credit in L&S
Repeatable for Credit: No
Last Taught: Spring 2019

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 211 or ENVIR ST/CIV ENGR/GEOG 377 or graduate/professional standing
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 2024

ENVIR ST 699 – DIRECTED STUDY
1-3 credits.

Independent work in environmental studies overseen by a qualified instructor.
Requisites: Consent of instructor
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: Spring 2024

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

The first of two seminars for planning the activities of the practicum.
Requisites: Declared in Water Resources Management MS or Doctoral Minor
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2023

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

The second of two seminars for planning the field work, analysis, and reporting of the practicum.
Requisites: Declared in Water Resources Management MS or Doctoral Minor
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2024

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: URB R PL/CIV ENGR/ENVIR ST 718
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Summer 2023

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: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2023

ENVIR ST/POP HLTH 739 – CLIMATE CHANGE, HUMAN AND PLANETARY HEALTH
2 credits.

Provide tools to identify and address real-world global environmental health issues, stemming from climate change, habitat destruction leading to disease spillover events, food insecurity, and urban design.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2024
Learning Outcomes: 1. Recognize unique environmental public health challenges posed by climate change.
Audience: Graduate

2. Define the planetary boundaries and describe their links to human health.
Audience: Graduate

3. Define and Understand the Planetary Health framework and principles for systems-based approaches to risk management and health promotion.
Audience: Graduate

4. Learn and apply a Health in All Policies strategy to demonstrate the value of more comprehensive, cross-sector disease prevention programs.
Audience: Graduate

5. Critically analyze the linkages between physical and ecological conditions with human health and well-being, as well as exposure pathways through which impacts occur.
Audience: Graduate

6. Develop and exhibit effective risk and/or science communication strategies related to environmental health.
Audience: Graduate

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: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2022

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: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2022

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

Integrative capstone course in transportation 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: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2016

ENVIR ST/PUB AFFR/URB R PL 809 – INTRODUCTION TO ENERGY ANALYSIS AND POLICY
3 credits.

Strategy and policy problems in energy policy, both national and international.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2023

ENVIR ST/PUB AFFR/URB R PL 810 – ENERGY ANALYSIS AND POLICY CAPSTONE
3 credits.

Interdisciplinary application of energy knowledge to an analysis project for a real-world client. Integrate and apply technical, economic, political, and social factors in energy decision-making.
Requisites: Declared in Energy Analysis and Policy Graduate/Professional Certificate or Doctoral Minor
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2024
Learning Outcomes: 1. Conduct an original analysis by collecting and interpreting data on an energy-related issue for areal-world client.
Audience: Graduate

2. Integrate and apply multiple disciplinary perspectives such as technical, economic, socio-political, and environmental factors in the context of complex energy problems.
Audience: Graduate

3. Prepare for energy-related careers by: planning and managing a project over multiple months; interacting professionally with client; working effectively in multidisciplinary teams; and producing professional-quality deliverables such as presentations and reports in accordance with scope of work.
Audience: Graduate

4. Analyze the causes and solutions for the sustainability challenge of affordable and clean energy.
Audience: Graduate

5. Analyze sustainability issues and/or practices using a systems-based approach.
Audience: Graduate

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: Graduate/professional standing
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.

Tracks 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/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2023

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: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Summer 2023

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: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2022

ENVIR ST/POLI 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: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2024

ENVIR ST/A A E/POP HLTH/PUB AFFR 881 – BENEFIT-COST ANALYSIS
3 credits.

Presents 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: Graduate/professional standing and (PUB AFFR 818 and 880), or POP HLTH/I SY E 875, or A A E 635
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2023
Learning Outcomes: 1. Explain the basic mechanics of performing a Cost Benefit Analysis, including methods for valuing costs and benefits, aggregating over time, and analyzing uncertainties.
Audience: Graduate

2. Evaluate the strengths and weaknesses of different CBAs and propose strategies to address any shortcomings.
Audience: Graduate

3. Debate the advantages and limitations of CBA for public policy and compare it to other approaches.
Audience: Graduate

4. Create a CBA for a real-world client from beginning to end, including scoping, background research, valuation of costs and benefits, uncertainty analysis, and interpretation.
Audience: Graduate

ENVIR ST 900 – SEMINAR
1-3 credits.

Special topics selected with each offering.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2024

ENVIR ST 901 – GRADUATE ORIENTATION SEMINAR
1 credit.

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 and Resources or Water Resources Management graduate program
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2023

ENVIR ST 909 – PROFESSIONAL SKILLS IN ENERGY ANALYSIS AND POLICY
1 credit.

Discussion of professional skills important to interdisciplinary professionals in energy analysis and policy. Exploration of diverse career pathways and personal career development goals. Includes presentations from practitioners in public, private, and non-profit sectors.
Requisites: Declared in the Energy Analysis and Policy graduate/professional certificate
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2023
Learning Outcomes: 1. Build understanding of personal career path.
Audience: Graduate

2. Gain awareness of careers in a variety of disciplines within the energy sector.
Audience: Graduate

3. Develop professional skills applicable to energy and environmental careers.
Audience: Graduate

4. Practice professional networking through informational interviews and expert visits.
Audience: Graduate

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: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2024

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/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2023

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

Introduction to other disciplinary and interdisciplinary methods studying past environmental change and the human cultural contexts within which such change occurs. Explore the disparate forms of evidence that can be used to reconstruct past environmental changes and their human meanings. 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 programs can work together.
Requisites: Consent of instructor
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2024

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

Land tenure and utilization research and policy problems.
Requisites: Graduate/professional standing
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: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2018

ENVIR ST 931 – REMOTE SENSING FOR INTERNATIONAL DEVELOPMENT
3 credits.

Explore the ways remote sensing data are being used within an international development context, broadly defined. Provides a unique focus on understanding how projects were completed with satellite data, what data sources were necessary, how expert local knowledge was incorporated, and how various challenges were faced and overcome. Discover how the application of remote sensing data helped change policy in different countries across the globe.
Requisites: LAND ARC/ENVIR ST/F&W ECOL/G L E/GEOG/GEOSCI 371 and graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2023

ENVIR ST/CURRIC 932 – FOUNDATIONS OF ENVIRONMENTAL AND SUSTAINABILITY EDUCATION
3 credits.

Education is often portrayed as a critical part of the solution to the intertwined problems of environment and society. Examines environmental education and related traditions such as nature study, conservation education, and outdoor education, as well as more recent movements such as place-based education and education for sustainability. Grounds discussions in concrete examples of educational practice, considers historical and contemporary critiques of environmental education.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2022

ENVIR ST 950 – ENVIRONMENTAL MONITORING SEMINAR
1-2 credits.

A discussion and exploration of the social, economic and legal interactions of geospatial and environmental information technologies with society.
Requisites: Declared in Environmental Conservation: Environmental Observation and Informatics MS
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Summer 2023
Learning Outcomes: 1. Recognize the social, economic, and legal considerations of working with environmental monitoring data
Audience: Graduate

2. Implement the steps for effective project collaborations
Audience: Graduate

3. Gain hands on experience working with data that has relevance for a conservation issue
Audience: Graduate

ENVIR ST 951 – CONSERVATION OF BIODIVERSITY
3 credits.

Surveys the scientific knowledge, concepts, and models that are the basis for the applied practice for the conservation of biodiversity. Study interactions of humans with nature, and how conservation science is used to formulate policy and guide conservation actions.
Requisites: Declared in Environmental Conservation: Environmental Conservation MS
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Summer 2023

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

Introduces new graduate students to the diversity of ecologists across the UW-Madison campus. Includes discussions of key topics in professional development, research presentations by faculty members, and discussions of assigned papers with senior graduate students.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2023

ENVIR ST 956 – ADVANCED ENVIRONMENTAL REMOTE SENSING
3 credits.

Focuses on the fundamental physical principles of terrestrial remote sensing, followed by an examination of advanced topics in earth observation and digital image processing. Topics include radiation interaction with the atmosphere and the surface; radiative transfer theory; land surface characteristics including energy balance; thermal sensing; atmospheric and radiometric correction of image data; automated cloud detection and removal. Applications of remote sensing data for environmental problems will be explored in depth, including biophysical remote sensing with 3D modeling of vegetation canopies, dense time series analysis, data mining techniques, data fusion, as well as object vs. per-pixel approaches to pattern recognition. Explores all major data types, including optical, RADAR, LiDAR, and hyperspectral data, and provide instruction in hands-on image processing using open source software.
Requisites: LAND ARC/ENVIR ST/F&W ECOL/G L E/GEOG/GEOSCI 371 and graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2024
Learning Outcomes: 1. Demonstrate understanding of major theories, approaches, concepts, and methods in remote sensing science.
Audience: Graduate

2. Apply knowledge of the nature and properties of electromagnetic radiation and how it is affected by interactions with the atmosphere and the Earth's surface, including transmission, absorption, reflectance, refraction, and scatter.
Audience: Graduate

3. Outline several historical models used to explain the nature of light (e.g. wave, particle), describe phenomena associated with each model, and discuss the principle of complementarity.
Audience: Graduate

4. Recall the basic physical principles of radiation laws derived from Planck, Wien, and Stefan-Boltzmann, and describe how these principles make remote sensing possible.
Audience: Graduate

5. Differentiate the effects of atmospheric scatter (Rayleigh, Mie, and non-selective scatter) on Earth observation imagery, and determine how to remove atmospheric effects (or differences) across images.
Audience: Graduate

6. Understand the fundamental laws of radiative transfer, such as heating and cooling of the surface and atmospheric layers, and its effects in both clear and cloudy conditions.
Audience: Graduate

7. Illustrate the inverse methodologies used to derive geophysical parameters from remote measurements.
Audience: Graduate

8. Use this knowledge to interpret complex multispectral radiance data sets to derive geophysical information for environmental applications.
Audience: Graduate

9. Describe the differences between heat, thermal energy, and emissivity, distinguish how the amount of energy stored determines the temperature, and determine how these properties affect thermal remote sensing image analysis.
Audience: Graduate

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

ENVIR ST 971 – ENVIRONMENTAL SENSING TECHNOLOGIES
3 credits.

Many diverse technologies for monitoring the environment have become available in recent years, including traditional remote sensing data sources: aerial photography and satellite imagery, hyper-spectral data, imagery on demand, RADAR and LiDAR. Other new data sources are quite unconventional, with many emerging relatively recently: unmanned aerial vehicles (UAVs or drones), social media, smartphones as sources of crowd-sourced data, and more. Sophisticated data management, analytics, and presentation technology are required to effectively leverage both the spatial (including 3D) and temporal dimensions of these often untapped data sources. Intended to survey and explore these newly developing technologies, and provide direct experience to the student to understand and interact with the data and methods (geocomputing, coding, cloud-based platforms), and to learn to plan, manage, and utilize them effectively.
Requisites: LAND ARC/ENVIR ST/F&W ECOL/G L E/GEOG/GEOSCI 371 and graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2024
Learning Outcomes: 1. Demonstrate their understanding of major theories, approaches, concepts, and methods in remote sensing science.
Audience: Graduate

2. Apply knowledge of the nature and properties of electromagnetic radiation and how it is affected by interactions with the atmosphere and the Earth's surface.
Audience: Graduate

3. Identify the techniques, skills, and modern tools necessary for monitoring environmental phenomena with earth observation data.
Audience: Graduate

4. Identify and appropriately utilize data types from the optical, thermal, and microwave portions of the electromagnetic spectrum, and from a wide range of airborne, satellite and unmanned aerial platforms, including high (greater than 5 m), medium (10-30 m), and coarse (250-1000 m) spatial resolution imagery.
Audience: Graduate

5. Illustrate the utility of machine learning for big data applications in remote sensing, and apply machine learning theories and tools in practice.
Audience: Graduate

6. Apply traditional and new forms of data fusion using earth observation imagery and a wide range of geophysical, social, and economic sources.
Audience: Graduate

7. Identify real-world issues that could benefit from the application of hyper-spectral and hyper-temporal data, and illustrate effective ways to apply these data for each.
Audience: Graduate

8. Analyze and interpret LiDAR point data clouds and LiDAR data derivatives for applications ranging from forestry to urban sustainability.
Audience: Graduate

9. Integrate new sources of data from unmanned aerial vehicles (UAVs) for monitoring biodiversity and conservation, and illustrate ways to influence policy with these findings.
Audience: Graduate

10. Apply a wide range of image processing tools using cloud computing

ENVIR ST 972 – CONSERVATION PLANNING
4 credits.

Prepare to plan, monitor and evaluate the effectiveness of conservation projects and programs. Learn systematic and adaptive processes of conservation planning.
Requisites: Declared in Environmental Conservation: Environmental Conservation MS
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2023

ENVIR ST 974 – ENVIRONMENTAL CONSERVATION COHORT SEMINAR
1 credit.

Introduction to professional development and important aspects of communication, collaboration, and professional practice as they relate to Environmental Conservation.
Requisites: Declared in Environmental Conservation MS
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Summer 2023

ENVIR ST 975 – ENVIRONMENTAL CONSERVATION LEADERSHIP SEMINAR
1 credit.

Introduction to important aspects of communication, negotiation, and cross-cultural professional practice as they relate to Environmental Conservation.
Requisites: Declared in Environmental Conservation: Environmental Conservation MS
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Summer 2023

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: Declared in Environmental Conservation MS
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Fall 2023

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

Review core concepts and history of sustainable development. Introduction to innovative frameworks to sustainable development, including integral framework, institutional analysis, and the often overlooked cultural, philosophical and psychological underpinnings of environmental decision-making. Analyze case studies and examples through the lens of the frameworks presented. Serves as a forum to present your research interests and examples regarding sustainable development.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Fall 2023

ENVIR ST 978 – ENVIRONMENTAL CONSERVATION TOOLS MODULES
1 credit.

Modules 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: Declared in Environmental Conservation MS
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2024

ENVIR ST 979 – ENVIRONMENTAL CONSERVATION PROFESSIONAL PRACTICE
3 credits.

Provides an online environment for the development and practice of the skills needed to be an environmental conservation professional and leader. Analyze options and make good professional conservation judgments in complex and uncertain environmental, political, and economic settings. Provides the tools needed to assess and revise those judgments. Includes exercises on the politics of environmental decisions, internal and external communication strategies, and program development and assessment strategies.
Requisites: Declared in Environmental Conservation: Environmental Conservation MS
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2024

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: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2024

ENVIR ST 990 – RESEARCH
1-12 credits.

Independent research and writing towards thesis or dissertation requirement.
Requisites: Consent of instructor
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2024

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

Preparation of a proposal or manuscript to professional standards in interdisciplinary research. A review of other topics relevant to interdisciplinary work. Formal presentation of a research plan or other product to peers for review and evaluation.
Requisites: Graduate/professional standing
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: No
Last Taught: Spring 2017

ENVIR ST 999 – ADVANCED INDEPENDENT STUDY
1-5 credits.

Independent work in environmental studies overseen by a qualified instructor.
Requisites: Consent of instructor
Course Designation: Grad 50% - Counts toward 50% graduate coursework requirement
Repeatable for Credit: Yes, unlimited number of completions
Last Taught: Spring 2024
Learning Outcomes: 1. Conduct and report on independent environmental studies research under the guidance of a qualified instructor
Audience: Graduate

2. Independently develop researchable Environmental Studies questions
Audience: Graduate

3. Appropriately utilize online and library resources
Audience: Graduate

4. Connect their research clearly to other research in their field of study
Audience: Graduate