# ENVIRONMENT & SUSTAINABILITY (ENVS)

**ENVS 1101 - Understanding Environment and Sustainability (3 Credits)**
Crosslisted with NTRES 1101
This course examines two fundamental questions about biological, chemical and physical processes that influence the biosphere. First, how do humans obtain knowledge about these environmental processes? Second, how can we assess human influences upon these environmental processes? A key conceptual framework for the course is that environmental science provides tools for predicting future states of the earth's environment. Case studies, readings, discussions, writing assignments, and group exercises provide a foundation for understanding predictions about how the biosphere is influenced by human activities.
**Enrollment Information:** Enrollment preference given to: Environment and Sustainability majors.
**Distribution Requirements:** (OPHLS-AG)
**Exploratory Studies:** (CU-SBY)

**Last Four Terms Offered:** Fall 2024, Fall 2023, Fall 2022, Fall 2021
**Learning Outcomes:**

- Identify and weigh sources of information about environmental resources, and use them to evaluate competing claims about sustainability and environmental management efforts.
- Explain how the earth's resources support ecosystems and humanity.
- Evaluate how cultural context and spatial scale influence environmental resource management options.
- Compare policies and societal norms that influence personal and collective resource use.

Schedule of Classes (https://classes.cornell.edu/)

**ENVS 1111 - Roadmap to Success in Environment and Sustainability (1 Credit)**
Crosslisted with NTRES 1111
This course is for first-year students entering or intending to enter the Environment & Sustainability (E&S) major. The multidisciplinarity of this major may make it seem complex. The purpose of this class is to position you for success with your goals in the major, at Cornell and beyond. Course content will facilitate your course planning, choice of concentration, and help you map out the resources and opportunities Cornell offers. Course activities will help you explore your personal identity and get to know your E&S student cohort.
**Enrollment Information:** Enrollment limited to: first-year students interested in or entering the Environment & Sustainability major.
**Last Four Terms Offered:** Fall 2024, Fall 2023
**Learning Outcomes:**

- Develop a learning community and support network.
- Describe learning goals in the E&S core curriculum, E&S concentration, E&S capstone and Cornell electives; relate them to your career goals.
- Identify the resources and services at Cornell that can help you meet your academic and career goals.
- Engage in self-reflection about how you think and learn, how you interact with others, and how you respond to new information.
- Identify and acknowledge your social identity, cultural rules and biases and the inherent value of being open to diverse perspectives.

Schedule of Classes (https://classes.cornell.edu/)

**ENVS 1201 - Global Water Sustainability (3 Credits)**
Crosslisted with NTRES 1201
This course will cultivate an interdisciplinary, solution-oriented perspective on water resource challenges from local to global scales. Water is central to all of life, yet its management represents a wicked challenge in sustainability science because tradeoffs and feedbacks among multiple objectives are commonplace. Readings and parallel mini-lectures from natural and social science instructors will embrace the diversity of perspectives involved in managing water resources, and students will engage in collaborative problem-solving during class to deepen their understanding of each weekly theme. Meetings with case study experts from around the world will ground this dialog in reality, and all students will participate in debate-style examination of major controversies in water sustainability. Reflective writing assignments will encourage students to assess their own role in achieving water sustainability.
**Distribution Requirements:** (PSC-AG)
**Exploratory Studies:** (CU-SBY)

**Last Four Terms Offered:** Spring 2025, Spring 2024, Spring 2023, Spring 2022
**Learning Outcomes:**

- Identify and weigh sources of information about water resources, and use them to evaluate competing claims about management needs.
- Explain how water resources support both nature and humanity.
- Evaluate how cultural context and spatial scale influence water resource management options.
- Compare policies and societal norms that influence personal and collective resource use.
- Individually and in collaboration with classmates, devise and assess strategies to enhance water resource sustainability.

Schedule of Classes (https://classes.cornell.edu/)

**ENVS 1500 - An Introduction to the Economics of Environmental and Natural Resources (3 Credits)**
Crosslisted with AEM 1500
This course provides an introduction to the economic foundations for public decision-making regarding environmental quality and natural resources. Emphasis is placed on how basic tools of economic analysis can be used to identify sources of environmental problems and solutions to these problems. Topics to be covered include individual hand concepts underlying market success, market failure with particular focus on public goods and externalities, benefit-cost analysis and non-market valuation, incentive-based policies for controlling pollution, and economic aspects of renewable and non-renewable resources.
**Forbidden Overlaps:** AEM 1500, AEM 2500, ENVS 1500, ENVS 2500
**Enrollment Information:** Enrollment preference given to: E&S majors. Not open to: Dyson School students.
**Distribution Requirements:** (SBA-AG, SCH-AG)
**Exploratory Studies:** (CU-SBY)

**Last Four Terms Offered:** Spring 2025, Spring 2024, Spring 2023, Spring 2022
**Learning Outcomes:**

- Understand how economic incentives influence individual and group behavior and how this knowledge can be used to explain and address environmental challenges.
- Develop the ability to identify the range of potential economic costs and benefits of a particular environmental policy and the array of economic tools that can be used to estimate these costs and benefits.
- Improve critical thinking skills to assess the tradeoffs inherent to a broad range of contemporary environmental issues.

Schedule of Classes (https://classes.cornell.edu/)

**ENVS 2000 - Environment and Sustainability Colloquium (1 Credit)**
Crosslisted with CLASS 2000, VISST 2002
This colloquium presents students with diverse approaches at the art-science interface used to interest, educate and motivate people to consider, address and solve environmental and sustainability challenges. It consists of a series of lectures given by experts, people with different expertise and perspectives who are addressing a variety of environmental and sustainability problems with regard to humanistic concern.
**Forbidden Overlaps:** CLASS 2000, CLASS 2010, ENVS 2000, ENVS 2010, VISST 2002, VISST 2012
**Enrollment Information:** Enrollment preference given to: Arts & Sciences and CALS students planning to complete or interested in the Environment & Sustainability major.
**Exploratory Studies:** (CU-SBY)

**Last Four Terms Offered:** Fall 2024, Fall 2023, Fall 2022, Fall 2021
**Learning Outcomes:**

- Develop depth of knowledge, ability to use concepts and analytical tools, and to understand public policy dimensions in sustainability sciences at the art-science interface.

Schedule of Classes (https://classes.cornell.edu/)

**ENVS 2001 - Perspectives on the Climate Change Challenge (1.5 Credits)**
Crosslisted with BEE 2000
This university-wide seminar series provides critically important perspectives on the grand challenge of climate change. Speakers from Cornell University and other institutions will cover a range of topics including the science of climate change, implications for ecosystems, oceans, forests, agriculture and communities, the important ethical, philosophical and legal insights on the issue, and provide thoughts on societal responses through international mechanisms, economic drivers and communication tools. This seminar series counts towards the requirements of the climate change minor and the ESS minor and major.
**Exploratory Studies:** (CU-SBY)

**Last Four Terms Offered:** Spring 2025, Spring 2024, Spring 2023, Spring 2022
Schedule of Classes (https://classes.cornell.edu/)

**ENVS 2010 - Discussions of Environment and Sustainability (3 Credits)**
Crosslisted with CLASS 2010, VISST 2012
This colloquium presents students with diverse approaches at the art-science interface used to interest, educate and motivate people to consider, address and solve environmental and sustainability challenges. It consists of a series of lectures by experts with different perspectives addressing a variety of environmental and sustainability problems with regard to humanistic concern. The small group discussion session allows in-depth engagement with the art-science interface. Building on the possibilities shared by our expert visitors, students in the discussion section will develop their own approach to addressing environmental issues. We will analyze how the ways in which information is shared is as significant as the information itself, and consider artistic and scientific perspectives as mutually beneficial tools for exploring and communicating our relationship to the environment.
**Forbidden Overlaps:** CLASS 2000, CLASS 2010, ENVS 2000, ENVS 2010, VISST 2002, VISST 2012
**Enrollment Information:** Enrollment preference given to: Arts & Sciences and CALS students planning to complete or interested in the Environment & Sustainability major.
**Distribution Requirements:** (ALC-AS), (CA-AG, LA-AG, SCH-AG)
**Exploratory Studies:** (CU-SBY)

**Last Four Terms Offered:** Fall 2024, Fall 2023, Fall 2021
**Learning Outcomes:**

- Develop depth of knowledge, ability to use concepts and analytical tools, and to understand public policy dimensions in sustainability sciences at the art-science interface.
- Mobilize students' own backgrounds and developing expertise to produce a public-facing display that communicates environmental knowledge in creative ways.

Schedule of Classes (https://classes.cornell.edu/)

**ENVS 2100 - Introductory Field Biology (4 Credits)**
Crosslisted with NTRES 2100
In this course, students are introduced to field identification, natural history, and study of plants, animals, and natural systems. This course emphasizes hands-on interaction with nature, recording of ecological phenomena, and awareness and understanding of the natural environment, including ecological concepts (e.g., ecosystem, community, habitat, and niches). Students will 1) work cooperatively in hands-on field lab exercises to build skills in the identification and classification of native biota and their natural history 2) conduct a field research project in which they formulate research questions from field observations, develop a research design, collect field data, and interpret those data for a research report and presentation, and 3) maintain a detailed field journal of natural history observations from field labs and independent observations
**Prerequisites:** one introductory college biology course.
**Enrollment Information:** Enrollment preference given to: Arts & Sciences and CALS sophomores and higher planning to complete or interested in the Environment & Sustainability major.
**Course Fee:** Course Fee, $32. To cover certain meals for weekend trips.
**Distribution Requirements:** (OPHLS-AG)
**Last Four Terms Offered:** Fall 2024, Fall 2023, Fall 2022, Fall 2021
**Learning Outcomes:**

- Students will be able to identify and characterize ecosystem types, ecological communities, and habitats in the northeastern region based on key structural features, associated taxa, and the physical environment.
- Students will be able to identify approximately 200 common taxa of plants and animals in the northeastern region and will understand the natural history of those species and their relationship to the environment.
- Students will develop an understanding of field research methods and approaches in a variety of ecological disciplines.
- Students will be able to formulate research questions from field observations, develop a sample design, collect field data, and interpret and discuss their results in relation to research questions.
- Students will demonstrate equitable collaboration as they design, plan, execute and communicate the results of a field research project.

Schedule of Classes (https://classes.cornell.edu/)

**ENVS 2400 - Field Methods in Avian Ecology (3 Credits)**
Crosslisted with NTRES 2400
Students will learn and practice a variety of methodologies used for studying wild birds including banding, census methods (point counts, transects, spot mapping), and behavioral observations. In a 50-minute classroom session each week, students will discuss relevant scientific literature and prepare for the lab session. The weekly field session will be held at various locations and students should be prepared to handle variable weather conditions. Students seeking to conduct independent research in avian ecology are encouraged to enroll. Note that one weekend field trip is required.
**Last Four Terms Offered:** Fall 2024, Fall 2023, Fall 2022, Fall 2021
**Learning Outcomes:**

- Recognize the birds of the Finger Lakes region by sight and sound.
- Develop an appreciation for the diversity of life-history strategies pursued by these birds.
- Perform a variety of field techniques used for studying birds including banding, census methods (point counts, transects, spot mapping), and behavioral observations.
- Record an appropriately detailed field journal.
- Develop and test ecological hypotheses through an independent project, to summarize and analyze data, and to present scientific information appropriately in both written and oral form.

Schedule of Classes (https://classes.cornell.edu/)

**ENVS 2500 - Environmental and Resource Economics (3 Credits)**
Crosslisted with AEM 2500
This course uses microeconomics to understand the causes and how to devise solutions to environmental and natural resource problems. Subjects include valuation, benefit-cost analysis, policy design and property rights. The course relies on these concepts to explore major current policy issues such as economic incentives in environmental policy, air and water pollution, depletion of renewable and nonrenewable resources, and global warming. Students are evaluated based on problems sets, short essays, 3 quizzes and 3 prelims.
**Prerequisites:** ECON 1110.
**Forbidden Overlaps:** AEM 1500, AEM 2500, ENVS 1500, ENVS 2500
**Enrollment Information:** Enrollment preference given to: Dyson students and E&S majors.
**Distribution Requirements:** (OCE-IL), (SBA-AG)
**Exploratory Studies:** (CU-SBY)

**Last Four Terms Offered:** Fall 2024, Fall 2023, Fall 2022, Fall 2021
Schedule of Classes (https://classes.cornell.edu/)

**ENVS 2600 - Field Research in the Ecological Arts (3 Credits)**
Crosslisted with NTRES 2600
Taught by an artist and scientist, this experiential, project-oriented field course emphasizes methodologies used by ecological artists and scientists who conduct expeditionary and place-based field work. The beginning of the class presents a conceptual and historical foundation in the ecological arts through lectures, readings, and artist talks. Techniques in the sciences as well as conventional and unconventional methodologies in the arts and humanities will be employed to research sites to collect, analyze, and interpret data, objects, natural phenomena, and sensorial experiences in the field through five projects: a site-specific research presentation, bioacoustics, video, sculpture and the final. Work is submitted and graded through a student-built website resulting in a solid portfolio.
**Enrollment Information:** Enrollment preference given to: Environment & Sustainability majors, and intended majors.
**Course Fee:** Course Fee, $40. For materials.
**Exploratory Studies:** (CU-SBY)

**Last Four Terms Offered:** Spring 2022
**Learning Outcomes:**

- Interrelate field study, scientific research, cultural and artistic practices to deepen a sense of place.
- Design, conduct, and present site-specific research.
- Use software tools to edit video, sound and to design websites.
- Acquire knowledge of a wide range of current topics in environmental studies while broadening aesthetic and sensorial capacities to respond to and bolster field-based scientific research.
- Name, describe and critique the work of a diversity of international artists and scientists who exemplify a holistic study of nature, sustainability, and humanities, while learning about the strategies and critical concepts they employ in their work.
- Gain new perspectives to diversify approaches to students' discipline-specific problems.

Schedule of Classes (https://classes.cornell.edu/)

**ENVS 2830 - DNA, Genes and Genetic Diversity (4 Credits)**
Crosslisted with NTRES 2830
Covers molecular, Mendelian and population genetic principles as they relate to population biology and biodiversity. A laboratory section is devoted to problem solving, computer exercises and discussions. We will focus on mechanisms generating and shaping genetic variation within and among populations, examine the relation of gene expression, and consider conservation relevance of variation at multiple levels. Recommended as a preliminary to upper-level ecology, evolution, and natural resources management courses.
**Distribution Requirements:** (BSC-AG, OPHLS-AG)
**Exploratory Studies:** (CU-SBY)

**Last Four Terms Offered:** Spring 2025, Spring 2024, Spring 2023, Spring 2022
**Learning Outcomes:**

- Explain the key mechanisms that generate and shape patterns of genetic variation patterns at the individual, family, and population levels.
- Quantitatively analyze patterns of genetic variation to predict inheritance patterns within families and allele frequency changes in populations.
- Accurately interpret the consequences of genetic variation on human health, species endangerment, evolutionary potential, and ecosystem function.
- Describe the ethical dimensions of genetic information related to privacy, genetic testing, and transgenics.

Schedule of Classes (https://classes.cornell.edu/)

**ENVS 3020 - Earth Projects (3 Credits)**
Crosslisted with NTRES 3020
Taught by an artist and scientist, in this experiential, place-based field course, students will engage in a range of interdisciplinary practices to understand and interpret ecological systems and land use issues using artistic and scientific approaches. The core of this course will be based on weekend field trips to diverse sites in the Finger Lakes Region of New York with varied cultural and ecological significance. Sites include Cornell's Biological field station at Shackelton Point on Oneida Lake, Arnot Forest, and several art museums. Immersive stays will allow students to gain a deep understanding of place along with uninterrupted time to work on creative projects independently, in groups, and as a class. Students will gain an understanding of the history of creative interventions and performance in the landscape, as well as scientific approaches to engage with and conceptualize Earth's topography and natural phenomena. Students will have the opportunity to interact with various visiting scientists and artists who are leaders in their fields. Lectures, readings, fireside chats, critique, and interdisciplinary experiences will contribute to students' development. The final product of this class will be an art exhibition at the Soil Factory, an interdisciplinary art space in downtown Ithaca.
**Prerequisites:** at least one of the following: a studio art class or a college-level biology class or a visual studies class or an environment and sustainability class or permission of instructor.
**Course Fee:** Course Fee, $50. To cover certain meals for weekend trips.
**Exploratory Studies:** (CU-SBY)

**Last Four Terms Offered:** Fall 2024, Fall 2023, Fall 2022
**Learning Outcomes:**

- Interrelate field study, scientific research, cultural and artistic practices to deepen a sense of place.
- Design, conduct, and present site-specific research and artwork.
- Illustrate knowledge on a wide range of current topics in environmental studies while broadening aesthetic and sensorial capacities to respond to and bolster field-based scientific research.
- Name, describe and critique the work of a diversity of international artists and scientists who exemplify a holistic study of nature, sustainability, and humanities while learning about the strategies and critical concepts they employ in their work.
- Gain new perspectives to diversify approaches to students' discipline-specific problems.
- Use shop tools and/or software for the creation of artwork.

Schedule of Classes (https://classes.cornell.edu/)

**ENVS 3260 - Applied Conservation Ecology (3 Credits)**
Crosslisted with NTRES 3260
An interactive-field and lab course designed to provide direct experience with some of the most important field methods and analytical techniques used to examine species, ecosystem and community-level function, structure, and value, especially within the context of contemporary conservation ecology and evolutionary theory. Tools include field sampling techniques, resource and conservation mapping, spatial referencing, GIS, measures of biodiversity, and manual and automated techniques for studying soil, stream, forest, terrestrial, and marine biota and related physical factors. The class is designed to provide a strong background in field research methods and theory related to ecological conservation.
**Prerequisites:** college-level biology or permission of instructor.
**Enrollment Information:** Enrollment limited to: seniors and juniors who have taken college-level biology. All others need permission.
**Distribution Requirements:** (BSC-AG, OPHLS-AG)
**Exploratory Studies:** (CU-SBY)

**Last Four Terms Offered:** Spring 2025, Spring 2024, Spring 2023, Spring 2022
**Learning Outcomes:**

- Students will understand and discuss perceptions, personal values, and effective tools to motivate people towards conservation.
- Encourage critical analyses, broad philosophical understanding, and integration of a variety of information sources including web-based and media reports, along with scientific publications.
- Students will be able to use scientific measurements and analyses to distinguish opinion from fact-based decisions.
- Students will participate in weekly class discussions based on diverse perspectives and philosophies.
- Students are required to give individual and group presentations, as well as numerous short essays and a final written report. The use of multiple forms of media will be encouraged and rewarded.
- Students will be evaluated based on independent work, quizzes, and presentations, along with weekly group exercises and two group presentations.

Schedule of Classes (https://classes.cornell.edu/)

**ENVS 4103 - Nabokov, Naturally (3 Credits)**
Crosslisted with COML 4103, SHUM 4103
Vladimir Nabokov's legacy at Cornell is not limited to the world-famous literary works he produced here. The university's natural and built environments also provided powerful material for his lifelong pursuit of butterflies within their geo- and biodiverse ecosystems. In this project-oriented course on the writer-lepidopterist, we will read his words, look at his drawings, study his collections of insects and plants, and develop our own modes of engaging with place and planet through a lively science-art practice.
**Distribution Requirements:** (ALC-AS), (CA-AG, LA-AG)
**Last Four Terms Offered:** Spring 2025, Fall 2023
Schedule of Classes (https://classes.cornell.edu/)

**ENVS 4262 - Environmental Justice: Past, Present, Future (4 Credits)**
Crosslisted with HIST 4262, AMST 4262
Environmental Justice is a relatively recent term, coined in the United States in the 1980s. It usually refers to a social movement fighting against the unfair concentration of toxic sites within impoverished communities of color. As a broader set of ideas, though, environmental justice has a much longer history, going back at least to the 17th century in England, when poor farmers banded together to prevent common land from being enclosed for the exclusive use of the aristocracy. This course explores that deep history, examining various overlaps between environmental thought and theories of social justice over the past 400 years in the western world. It concludes with an examination of the current climate justice movement and a consideration of how environmental justice concerns are being played out in recent works of speculative fiction. What do we owe to the climate refugees of our present day? What do we owe to future generations?
**Distribution Requirements:** (ALC-AS, HST-AS), (CA-AG, HA-AG, LA-AG)
**Last Four Terms Offered:** Fall 2024, Fall 2023, Fall 2021
Schedule of Classes (https://classes.cornell.edu/)

**ENVS 4331 - Environmental Law and Policy (3 Credits)**
Crosslisted with LAW 4330, CRP 4331
Environmental law deals with some of today's most pressing challenges. In the fifty years since 1972, when the first World Conference on the Environment was held in Stockholm, and the US Clean Water Act was amended, the field of environmental law and policy has become increasingly sophisticated and complex. Regulation of environmental harms has long been a focus of governmental effort. Over the past half century, however, societies have come to recognize that they must adopt controls on pollution to protect the air, ground, water, atmosphere, and the natural world. Environmental law also increasingly touches on energy, agriculture, and land use law, and has expanded to include a focus on corporate law, international trade, environmental governance, environmental justice, sustainable growth and development, and climate change. In this course, we will look at the major statutes and policies used, at both the federal and state levels, to protect humans and the environment against exposure to harmful substances, including the National Environmental Policy Act (NEPA), Clean Air Act, Clean Water Act, CERLCA (Superfund), Resource Conservation & Recovery Act, Toxic Substances Control Act (TSCA), and approaches to protecting endangered species and ecosystems. We will also examine the challenges of global atmospheric pollution, including ozone depletion and climate change. The class will look not only at the substance of these laws and policies, but also review common-law litigation, enforcement challenges, and the role of market mechanisms in addressing environmental issues. Students will become familiar with the history of environmental law and will analyze important landmark cases, as well as the hierarchy of laws, and jurisdictions that shape environmental law and policy. Students will apply their knowledge to real examples, with the goal of developing innovative legal solutions for the critical environmental challenges facing our world today.
**Last Four Terms Offered:** Fall 2024, Fall 2023
Schedule of Classes (https://classes.cornell.edu/)

**ENVS 4400 - Nature-Based Climate Solutions? (3 Credits)**
Crosslisted with NTRES 4400
The risks and costs associated with climate change, and the uneven distribution of the risks and costs, produce hot politics. In the past 20 years, 'Natural Climate Solutions' (NCS) has emerged as an important environmental policy and management response. NCS encompasses a range of strategies focused on managing agriculture, forests, grasslands, and aquatic environments to store carbon in order to meet GHG reduction goals. Planning, implementation, finance, governance and assessment raise multiple questions, and NCS represents a research and policy frontier for scientists, policy makers, practitioners, and activists. Through interdisciplinary active learning strategies, students in the course will engage critical questions as part of an effort to assess and to develop NCS.
**Distribution Requirements:** (OPHLS-AG, SBA-AG, SCH-AG)
**Exploratory Studies:** (CU-SBY)

Schedule of Classes (https://classes.cornell.edu/)

**ENVS 4443 - Global Climate Change Science and Policy (3 Credits)**
Crosslisted with EAS 4443, GDEV 4443
This Engaged Cornell course will introduce students to climate change science and policy, with a focus on how science factors into the United Nations Framework Convention on Climate Change (UNFCCC) and how negotiations take place at the annual Conference of the Parties (COP). The course will enable Cornell students to participate in global, engaged learning at the most significant annual meeting of the U.N. on climate change; and make a vital contribution to their academic studies and decisions about future work in international environmental affairs. Students will critically analyze contemporary climate change science and global environmental policy-making; develop and address pertinent research questions; engage with experts in the field and help them with policy-relevant research; and develop experience with communications and social media. The course will involve lectures, discussions, readings, and group projects. Teams of students will work with partner organizations representing developing countries, non-governmental organizations, and international organizations to help them prepare for the COP. This innovative, cross-disciplinary course will provide a career-changing opportunity to students to engage in the global policy-making process to address a difficult environmental problem.
**Distribution Requirements:** (CA-AG), (GLC-AS)
**Exploratory Studies:** (CU-CEL, CU-ITL, CU-SBY)

**Last Four Terms Offered:** Fall 2022, Fall 2021, Fall 2020, Fall 2019
**Learning Outcomes:**

- Students will develop substantive knowledge to: describe the basics of climate change science and the technical, scientific, economic and political challenges and opportunities that solving climate change represents; understand the diverse perspectives from a cultural, political, scientific and economic view of the problem and solutions of climate change to develop intercultural competence; explain the global climate change negotiations process, and articulate different viewpoints and north/south perspectives on the politically charged topics associated with climate change; evaluate future developments in light of the complex political and ethical issues behind climate negotiations.
- Students will gain skills to: improve personal reflection; develop partnerships; work on projects.
- Students will also develop technical skills to: communicate about climate change to/with different audiences; develop intercultural competence by working with diverse peers and partners; develop professional skills working and communicating with international partners.

Schedule of Classes (https://classes.cornell.edu/)

**ENVS 4500 - Climate Solutions Capstone (3 Credits)**
Crosslisted with NTRES 4500
Interested in working toward solutions to the climate crisis? In this course, you will choose and implement a climate action from Project Drawdown's (www.drawdown.org) list of 82 climate solutions. You will also apply social sciences research to influence your friends or family to implement your climate action alongside you. For the capstone team project, you will work with other students and a community partner (Cornell Cooperative Extension or Climate Action Now) to support education related to plant-rich diet, low-emissions agriculture, forest regeneration, or other climate solutions. Interested students should have a general understanding of climate change science.
**Distribution Requirements:** (GLC-AS), (SBA-AG)
**Exploratory Studies:** (CU-CEL, CU-SBY)

**Last Four Terms Offered:** Fall 2024, Fall 2023, Fall 2022
**Learning Outcomes:**

- Compare approaches to mitigating climate change and choose an individual climate mitigation action.
- Apply social sciences research to develop and implement an action plan to influence one of your social networks (e.g., friends, family, Instagram followers) to take that action alongside you.
- Create your own arguments for the responsibility of individuals, corporations, and the broader collective to foster climate and food justice.
- Collaborate professionally and equitably with community partners to develop educational materials related to sustainable food, agricultural, and forestry practices and policies.
- Communicate through a variety of media including writing, presentations, and apps. 6. Evaluate and respond to constructive peer feedback on discussion boards and during real-time online discussions.

Schedule of Classes (https://classes.cornell.edu/)

**ENVS 4600 - Planning for Environmental Conservation and Sustainability (3 Credits)**
Crosslisted with NTRES 4600
An interactive course designed to provide students with experience applying some of the most important techniques that are used to develop plans to protect and sustain valuable environmental resources, such as species, ecosystems, land, and water. The class focuses on highly charged controversies over conservation, and students learn how planning can help them to identify and address the full range of ecological and social factors that lead to conservation success in these contexts. Students adopt the roles of stakeholders and work on intensive case studies of conservation issues, learning how ecological and social insight are integrated for effective conservation planning. Topics covered in the course include: rational planning, adaptive management, stakeholder engagement, and conflict resolution.
**Enrollment Information:** Enrollment limited to: juniors and seniors, all others require permission of instructor.
**Distribution Requirements:** (SBA-AG)
**Exploratory Studies:** (CU-SBY)

**Last Four Terms Offered:** Fall 2024, Fall 2023, Fall 2022, Fall 2021
**Learning Outcomes:**

- Students will learn to define conservation issues, develop plans (including goals, objectives, strategies, and actions) to address those issues, and identify potential positive and negative consequences of these plans.
- Students will be able to recognize and describe the range of ecological and social factors that influence the success of conservation efforts.
- Students will be able to identify and describe the stages of the planning process and learn how to carry out the activities that occur during these stages.
- For specific current issues in environmental conservation, students will recognize key stakeholder groups and be able to describe: these stakeholders' interests and concerns, points of contention between different stakeholders, and possible strategies and actions for addressing these points of contention.
- Students will develop their written and oral communications skills.
- Students will develop their abilities to work individually and in groups.

Schedule of Classes (https://classes.cornell.edu/)

**ENVS 4700 - Art and Science of the Mohawk River Watershed (3 Credits)**
Crosslisted with NTRES 4700
This experiential, community-engaged interdisciplinary course will introduce students to a range of artistic and ecological practices to understand, interpret, and communicate past and present environmental issues of the Mohawk River Basin. We will dive deep into current topics related to the river basin using the New York Water Resource Institute's Action Agenda items including A) Understanding inequitable distribution of flood, drought, and water scarcity vulnerability in New York State. B) Exploring traditional ecological knowledge and people's history of the river to help to communicate those knowledge systems. C) Learn about water quality, restoration, and riparian systems.
**Course Fee:** Course Fee, $50. For food and lodging.
**Exploratory Studies:** (CU-CEL)

**Last Four Terms Offered:** Spring 2025, Spring 2024
**Learning Outcomes:**

- Discuss the geological, geographical, environmental and people's history of the Mohawk River Watershed.
- Articulate current issues and scientific research of the Mohawk River Basin.
- Summarize the NY Water Resource Institute's Action Agenda, specifically the Mohawk River Action agenda items.
- Exhibit an understanding of traditional knowledge and history of the Haudenosaunee people as it relates to the Mohawk River.
- Interrelate field study, scientific research, cultural and artistic practices to deepen a sense of place, specifically the Mohawk River Valley.

Schedule of Classes (https://classes.cornell.edu/)

**ENVS 4795 - Climate Communications Capstone (3 Credits)**
Crosslisted with ENGL 4795
Students will build on coursework in Communicating Climate Change to design, create and launch climate communications projects focused on reducing Cornell's emissions. This will involve research into Cornell's operations, creativity in developing effective communications, a focus on climate justice, and engagement with Cornell students, faculty, and staff. Projects may include reducing air travel, fume hood energy waste, and meat consumption, and addressing misconceptions about tap water, lighting, and food waste.
**Prerequisites:** ENGL 3795 or ENGL 1168 (Topic Communicating Climate Change) or permission of instructor.
**Distribution Requirements:** (ALC-AS, GLC-AS), (CA-AG, LA-AG, SCH-AG)
**Last Four Terms Offered:** Spring 2025
Schedule of Classes (https://classes.cornell.edu/)

**ENVS 4800 - Wildlife Corridor Conservation & Crossing Design (3 Credits)**
Crosslisted with NTRES 4800
Habitat fragmentation is one of the biggest threats to biodiversity conservation. Ecological connectivity conservation is a growing approach to counter fragmentation and enhance landscape and seascape climate resilience. This course will develop comparative case study assessments of wildlife corridors and wildlife crossing designs as examples of connectivity conservation. Students will learn about ecological connectivity, large landscape/seascape conservation, and road ecology.
**Exploratory Studies:** (CU-SBY)

**Last Four Terms Offered:** Spring 2025
**Learning Outcomes:**

- As a result of participating in this course, students will be able to: Work effectively as a team, collaborating with peers, outside experts, and instructors.
- Design and manage a team project that defines feasible goals and executes them.
- Integrate knowledge from diverse disciplines and prior courses to critically analyze a complex problem in sustainability.
- Communicate their findings to both academic and public audiences via written reports and oral presentations.
- Adapt to challenges and evolving stakeholder requests without sacrificing the rigor and objectivity of their assessment.
- Understand the complex regulatory, policy, public relations, scientific, and engineering constraints that influence ecological connectivity initiatives.

Schedule of Classes (https://classes.cornell.edu/)

**ENVS 4850 - Sustainability Project Lab (3 Credits)**
Crosslisted with GDEV 4850
This course is a project-based course, meaning you will work in teams with a community or campus partner on a sustainability project with multiple outcomes or goals. A project will be outlined with an assigned community partner working towards sustainability and you will work to produce deliverables that meets the needs of the partner. The project will require you and your peers to utilize the skills you have learned during your time at Cornell. During this process you will learn about sustainability in action, project planning and management, and practicing the 'soft skills' that will help you navigate life after graduation. Most importantly you will gain experience working in teams to deliver real-world project results to partners– this can be research, practice, or a combination.
**Prerequisites:** GDEV Students: GDEV 2130 or GDEV 3740 or GDEV 4045 or GDEV 4190 or permission of instructor. ENVS students: NTRES 2201.
**Enrollment Information:** Enrollment limited to: Juniors and Seniors in Global Development or Environment and Sustainability majors.
**Distribution Requirements:** (SBA-AG, SCH-AG)
**Exploratory Studies:** (CU-SBY)

**Learning Outcomes:**
- Refine skills for critical reading and thinking, data analysis and oral and written presentation of findings.
- Construct and refine project management abilities.
- Develop a relationship with a community partner and gain experience in delivering results to a real-world partner.
- Design a professional report collaboratively.

Schedule of Classes (https://classes.cornell.edu/)

**ENVS 4940 - Capstone Special Topics Course in Environment and Sustainability (1-4 Credits)**
E&S faculty will offer trial capstone courses under this number. Offerings vary by semester and are advertised to the major before the beginning of the semester.
**Exploratory Studies:** (CU-SBY)

**Last Four Terms Offered:** Spring 2024, Spring 2022, Fall 2021, Spring 2021
Schedule of Classes (https://classes.cornell.edu/)

**ENVS 4941 - Special Topics in Environment & Sustainability (1.5 Credits)**
E&S faculty will offer "trial" courses under this number. Offerings vary by semester and are advertised to the major before the beginning of the semester.
Schedule of Classes (https://classes.cornell.edu/)

**ENVS 4960 - Internship in Environment and Sustainability (1-3 Credits)**
In this course, students participate in an experiential learning opportunity relevant to the student's focus of study or career goals in environment and sustainability. An E&S faculty member must serve as supervisor and complete the term grade report. Specific learning goals for the experience are arranged by the student with their internship faculty supervisor and the internship host prior to the start of the internship. All 4960 internship courses must adhere to the CALS Internship Guidelines. Students from any major or college may enroll in ENVS 4970 using the CALS Special Studies form.
**Last Four Terms Offered:** Spring 2025, Fall 2024, Spring 2024, Fall 2023
Schedule of Classes (https://classes.cornell.edu/)

**ENVS 4970 - Individual Study in Environment and Sustainability (1-6 Credits)**
Individual studies are arranged under the supervision of one or several E&S faculty members. They provide opportunity to design a course that fills the need of an individual student and addresses pertinent issues in the environmental sciences. Students from any major or college may enroll in ENVS 4970 using the CALS Special Studies form.
**Last Four Terms Offered:** Spring 2025, Fall 2024, Spring 2024, Fall 2023
Schedule of Classes (https://classes.cornell.edu/)

**ENVS 4980 - Teaching Experience in Environment and Sustainability (1-4 Credits)**
Designed to give qualified undergraduate students teaching experience through actual involvement in planning and assisting in courses in the Environment & Sustainability curriculum. This experience may include facilitating discussion groups and assisting in field or laboratory classes. Undergraduate teaching assistants will regularly discuss course objectives and teaching techniques with the faculty member in charge of the course.
**Prerequisites:** previous enrollment in course to be taught, or equivalent and permission of instructor.
**Last Four Terms Offered:** Spring 2025, Fall 2024, Spring 2024, Fall 2023
**Learning Outcomes:**
- Explain the fundamental concepts presented in the course.
- Support student learning through one-to-one and group instruction.
- Help maintain the course CANVAS site.
- Plan and present interactive class activities.

Schedule of Classes (https://classes.cornell.edu/)

**ENVS 4990 - Undergraduate Research in Environment and Sustainability (1-8 Credits)**
Undergraduate research projects in environment and sustainability; contingent on student working with a faculty member to supervise their research.
**Exploratory Studies:** (CU-UG)

**Last Four Terms Offered:** Spring 2025, Fall 2024, Spring 2024, Fall 2023
Schedule of Classes (https://classes.cornell.edu/)