

# ENVIRONMENTAL STUDIES (ENVST-UA)

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## ENVST-UA 100 Environmental Systems Science (4 Credits)

*Typically offered Fall and Summer terms*

A comprehensive survey of critical issues in environmental systems science, focusing on: human population; the global chemical cycles; ecosystems and biodiversity; endangered species and wildlife; nature preserves; energy flows in nature; agriculture and the environment; energy systems from fossil fuels to renewable forms; Earth's waters; Earth's atmosphere; carbon dioxide and global warming; urban environments; wastes; and paths to a sustainable future.

**Grading:** CAS Graded

**Repeatable for additional credit:** No

## ENVST-UA 101 Environment & Society (4 Credits)

*Typically offered Spring and Summer*

Environment & Society is a broad exploration of the foundations of Environmental Studies. It examines several of the major concepts that have been developed and refined over the years, decades and centuries to attempt to understand humanity's relationship with nature and manage our impact on the environment. Many of the ideas we will explore in class underpin a range of environmental sub-disciplines, from environmental governance and ethics, to environmental justice and history. As such, it is one of the gateway courses to the Environmental Studies major. More specifically, the issues we will cover of the course of the semester include environmental history and concepts of nature and the environment; the rise of environmentalism; environmental skepticism; anthropogenic global change; population and consumption, ecological footprint analysis and other environmental indicators; environmental justice; public goods and collective action problems; environmental politics; environmental values; and the future of environmentalism. This course will cover a significant amount of demanding material in order to prepare students for upper-level courses.

**Grading:** CAS Graded

**Repeatable for additional credit:** No

## ENVST-UA 226 Climate Change (4 Credits)

*Typically offered Spring*

Climate change is among the most complex and challenging problems that we have confronted as a civilization, and the responses and impacts will vary largely across space and the global population. This course is designed to give you an overview of the scientific basis of climatic change, and will expose you to multiple facets of a very interdisciplinary and encompassing field. You will be introduced to the physical science of our climate system, the contributing system components, and the basic mechanisms that govern how the climate system responds to drivers of change. We'll then explore climate change from multiple perspectives: paleoclimatic change, recent historical variability and change, and then future climate projections.

**Grading:** CAS Graded

**Repeatable for additional credit:** No

## ENVST-UA 250 Topics in Environmental Science (4 Credits)

Topics vary. May include environmental systems, design, planning, monitoring, and modeling.

**Grading:** CAS Graded

**Repeatable for additional credit:** No

## ENVST-UA 275 Where the City Meets the Sea: Studies in Coastal Urban Environments (4 Credits)

*Typically offered Spring*

Uses the built and natural environments of coastal cities as laboratories to examine the environmental and ecological implications of urban development in coastal areas. Student teams use field-based studies and Geographic Information System (GIS) data to examine patterns and processes operating in coastal cities. Offered simultaneously at NYU New York and NYU Abu Dhabi, and students collaborate extensively with students from their sister campus.

**Grading:** CAS Graded

**Repeatable for additional credit:** No

## ENVST-UA 300 Advanced Topics: (4 Credits)

*Typically offered Fall and Spring*

Topics and prerequisites vary by semester.

**Grading:** CAS Graded

**Repeatable for additional credit:** Yes

**Prerequisites:** ENVST-UA 100.

## ENVST-UA 305 Introduction to Environmental Modeling (4 Credits)

This course will provide an introduction to the modeling of environmental systems using a systems dynamics (stock & flow) modeling platform called STELLA. Key concepts include causal modeling and the representation of systems as a set of processes, basic numerical methods, model development in STELLA, and analytical approaches to make inferences from model results. No prior coding experience is necessary, but students should expect to make significant use of algebra and basic statistics.

**Grading:** CAS Graded

**Repeatable for additional credit:** No

**Prerequisites:** ENVST-UA 100.

## ENVST-UA 310 Environmental Quantitative Methods (4 Credits)

Of critical importance to Environmental Studies is the collection, analysis, and interpretation of environmental data and modeling results. Environmental data is often constituted and impacted by multiple variables and factors, and must be placed into context within the population and systems from which it was sampled. What are the best methods and practices in collecting data? How do we characterize a particular environmental variable? How do we identify specific changes or trends in the data? How can we tell if these changes and trends are significant? How are multiple variables related to one another? And how can we use quantitative methods of analysis to help us interpret environmental data and information?

**Grading:** CAS Graded

**Repeatable for additional credit:** No

**Prerequisites:** ENVST-UA 100.

## ENVST-UA 315 Environmental and Molecular Analysis of a Disease (4 Credits)

The environmental determinants of disease vectors and the molecular techniques used to measure prevalence of a pathogen in these vectors. Students conduct a semester-long research project to determine the prevalence of *Borrelia burgdorferi* (the Lyme disease causative agent) in tick populations from local forests. Combines field collection, lab work, and epidemiological models.

**Grading:** CAS Graded

**Repeatable for additional credit:** No

**ENVST-UA 320 Introduction to Conservation Analysis (4 Credits)**

Critically explores current and past biodiversity conservation problems and proposed or attempted solutions through a quantitative modeling lens. Students will apply several modeling techniques used to measure and address biodiversity loss to diverse species, ecosystems, global regions, spatial and temporal scales, and anthropogenic impacts.

**Grading:** CAS Graded

**Repeatable for additional credit:** No

**Prerequisites:** (ENVST-UA 100 OR BIOL-UA 12).

**ENVST-UA 323 Introduction to Marine Ecology and Conservation (4 Credits)**

*Typically offered Spring*

This course analyzes several aspects of our oceans, with particular emphasis on human impacts and examines some of the recent major threats, including lack of governance for the high seas, deep-sea mining, and the effects of climate change on aquatic animals. We will focus ecological relationships between marine organisms and their environment, with the introduction of humans as marine predators and ecological disturbers

**Grading:** CAS Graded

**Repeatable for additional credit:** No

**ENVST-UA 325 Fundamentals of Ecology (4 Credits)**

*Typically offered Fall*

Presents basic ecological principles and concepts, including ecological relationships within ecosystems, energy flow, biogeochemical cycles, limiting factors, community ecology, population ecology, niche, climax, and major ecological habitats. These topics are related to current environmental problems such as habitat destruction, climate change, biological invasions, loss of biodiversity, and overpopulation. Several field trips are scheduled during the regular class periods.

**Grading:** CAS Graded

**Repeatable for additional credit:** No

**Prerequisites:** ENVST-UA 100 OR (BIOL-UA 11 AND BIOL-UA 12) OR (BIOL-UA 13 AND BIOL-UA 14).

**ENVST-UA 327 NY Underground (4 Credits)**

*Typically offered Spring*

Every day, millions of people walk the streets of New York City. But what is happening below those city streets? This course will investigate the life and resources underneath NYC and is divided into three principle modules: energy, transportation, and water (potable and wastewater). For each module, we will discuss the mechanics, history and significance of the infrastructure from the perspective of environmental scientists. At the end of the course we relate the biotic components of New York's fascinating dendritic underground environment. This seminar course will integrate classroom learning with practical experience and hands-on application through data collection and field trips.

**Grading:** CAS Graded

**Repeatable for additional credit:** No

**Prerequisites:** (ENVST-UA 100 OR BIOL-UA 12).

**ENVST-UA 331 Food Production and Climate Change (4 Credits)**

*Typically offered Spring*

RProvides an overview of our current global food system, which is embedded within larger environmental systems that it both impacts and depends on. Explores the evolution of our food system and how humans have modified the environment in order to meet increasing food demand. Examines how climate change and variability impact our ability to grow and harvest crops, and how these impacts vary across geographic, economic, and even gender space. Finally, addresses the environmental footprint of emerging food movements, their efficacy, and a host of alternative future food production trajectories that promise a range of environmental, socio-economic and nutritional impacts.

**Grading:** CAS Graded

**Repeatable for additional credit:** No

**Prerequisites:** ENVST-UA 100.

**ENVST-UA 332 Current Topics in Earth System Science (4 Credits)**

*Typically offered Spring*

Topics and prerequisites vary by semester.

**Grading:** CAS Graded

**Repeatable for additional credit:** No

**Prerequisites:** (CORE-UA 312 OR ENVST-UA 210 OR ENVST-UA 340).

**ENVST-UA 333 Limits of The Earth: Issues in Human Ecology (4 Credits)**

*Typically offered Fall*

Examines the array of environmental problems facing modern society, including global pollution and the impact of human population growth on land-use patterns, earth resources, energy supply and use, water, agriculture, and ecosystems.

**Grading:** CAS Graded

**Repeatable for additional credit:** No

**Prerequisites:** ENVST-UA 100 OR CORE-UA 311.

**ENVST-UA 340 Earth System Science (4 Credits)**

*Typically offered Fall*

Our current view of the earth as an integrated system involving dynamic interactions among the atmosphere, ocean, solid earth, and life. Emphasizes present earth systems, their evolution, and forecasts for the future. Topics include new observations of the earth from space, geophysics and plate tectonics, circulation of the oceans and atmosphere, cycles of elements essential for life, coevolution of climate and life, and current problems (e.g., the greenhouse effect).

**Grading:** CAS Graded

**Repeatable for additional credit:** No

**Prerequisites:** ENVST-UA 100.

**ENVST-UA 346 Animal Behavior for Compassionate Conservation (4 Credits)**

This course has three objectives: (i) situating animal behavior within environmental studies and animal studies, (ii) surveying the emerging field of compassionate conservation, (iii) providing students with hands-on experience collecting and processing animal behavior data.

**Grading:** CAS Graded

**Repeatable for additional credit:** No

**ENVST-UA 350 Energy Generation and the Environment (4 Credits)***Typically offered Fall and Spring*

Provides a comprehensive overview of major topics in energy generation and their impact on our environment. The course is technical and requires an understanding of the vocabulary of energy, including the concepts of work, energy, and power. Some basic chemistry and thermodynamics are introduced, permitting the students to perform comparative analysis of energy systems. An introduction to life-cycle cost estimation is included, and associated environmental-impact calculations for energy systems are presented.

**Grading:** CAS Graded**Repeatable for additional credit:** No**Prerequisites:** ENVST-UA 100.**ENVST-UA 360 Fundamental Dynamics of Earth's Atmosphere and Climate (4 Credits)***Typically offered Spring*

This course will be an introduction to the dynamical processes that drive the circulation of the atmosphere and ocean, and their interaction. The aim of the course is to develop both qualitative and quantitative understanding of the processes that generate weather and climate. The course is technical, involving physics and mathematics, but lectures will be driven by consideration of observations and experiments. Topics include the global energy balance, convection and radiation (the greenhouse effect), effects of planetary rotation, structure of the atmospheric circulation, structure of the oceanic circulation, climate and climate variability.

**Grading:** CAS Graded**Repeatable for additional credit:** No**Prerequisites:** (MATH-UA 121 with a Minimum Grade of B OR MATH-UA 1011Q OR MATH-UA 221 OR MATH-UA 132 OR MATH-UA 122 OR MATH-SHU 131 OR Advanced Placement Examination Calculus AB Subscore  $\geq$  4 OR Math Placement (Calculus 2) Calculus 2  $\geq$  100).**ENVST-UA 370 Biogeochemistry of Global Change (4 Credits)***Typically offered Fall and Spring*

Biogeochemistry is the study of biological controls on the chemistry of the environment and geochemical regulation of ecological structure and function. This course will introduce the fundamental principles of biogeochemistry. Additionally, we will utilize the scientific literature from peer-reviewed journals to explore specific case studies on the global change of biogeochemistry (e.g., acid precipitation, nitrogen deposition, eutrophication of the oceans, etc.) from the field of biogeochemistry.

**Grading:** CAS Graded**Repeatable for additional credit:** No**Prerequisites:** (BIOL-UA 11 OR BIOL-UA 13 OR BIOL-UA 9011) AND (BIOL-UA 12 OR BIOL-UA 14 OR BIOL-UA 9012 OR ENVST-UA 100).**ENVST-UA 372 Exploring Earth: Remote Sensing and Spatial Analysis (4 Credits)***Typically offered Spring*

Being able to organize and analyze ecological data is an essential research tool. Geographic information systems (GIS) are computerized systems for the capture, storage, management, analysis and display of geographically referenced data and their attributes. In this course, you will learn the basic principles and applications of GIS including coordinate systems, data transformations, spatial analysis, and accuracy assessment. Laboratory exercises will use ecological data and examples to provide extensive hands-on experience with ArcGIS, a professional GIS software package.

**Grading:** CAS Graded**Repeatable for additional credit:** No**Prerequisites:** (BIOL-UA 12 OR BIOL-UA 14 OR BIOL-UA 9012 OR ENVST-UA 100).**ENVST-UA 385 Climate and Life (4 Credits)***Typically offered Spring*

Designed to help students understand and explore the role of the biosphere in Earth's systems and processes, with particular emphasis on the climate system and key principles of biosphere-climate interactions. Explores the response of the biosphere to change, both anthropogenic and natural, and aims to track, understand, and anticipate current and future changes in natural and human biospheric systems. Concludes with implications for future policy decisions.

**Grading:** CAS Graded**Repeatable for additional credit:** No**Prerequisites:** ENVST-UA 100.**ENVST-UA 390 Urban Ecology (4 Credits)**

We are currently living in a time where city residents outnumber rural residents. In addition, the projected expansion of human population growth is largely predicted to occur in urban areas. Urban Ecology is an interdisciplinary and emerging field of research focused on the consequences of urbanization on ecological processes. In addition to a physically transformed natural landscape, cities are unique from other systems in terms of hydrology, temperature, noise, air quality and many other abiotic factors. In this course we will investigate the consequences of urban constructs on ecological systems. We will discuss factors such as nutrient cycling, organismal behavior and phenology, disease, and the drivers and patterns of biodiversity in urban systems. We will also talk about green spaces, urban planning, and the future of these expanding manmade landscapes. A significant component of this course will involve discussion of current literature. This is an upper-level reasoning course designed primarily for students majoring in biology (ecology track) and environmental studies.

**Grading:** CAS Graded**Repeatable for additional credit:** No**Prerequisites:** (BIOL-UA 63 OR ENVST-UA 325).**ENVST-UA 395 Water Science and Security (4 Credits)**

This course confronts the present and future challenge of sharing water resources that are abundant for some and scarce for others. We will start with the science of water, what it provides for us and how it constrains us. We will examine perceptions of scarcity through film and field trips. We will consider the way we use water and the tools we have for sharing it and valuing it. Finally, we'll draw on games and role play to draw out the challenges of managing water conflict and achieving equitable, efficient use of water resources.

**Grading:** CAS Graded**Repeatable for additional credit:** No

**ENVST-UA 400 Ethics & The Environment (4 Credits)***Typically offered Fall*

Environmental philosophy is a large subject that involves questions in metaphysics, philosophy of science, and history of philosophy, as well as in such normative areas as ethics, aesthetics, and political philosophy. This class is primarily devoted to these normative areas. Beginning with some basic concepts in value theory, the goal is not to arrive at definite solutions to specific environmental problems, but rather (i) to improve your ability to think critically, read closely, and to argue well about environmental issues; (ii) to introduce you to some major controversies in environmental philosophy; and (iii) to aid you in arriving at your own rational and clear-minded views about the matters under discussion

**Grading:** CAS Graded**Repeatable for additional credit:** No**ENVST-UA 407 Climate Politics: When Policy meets Reality (4 Credits)**

The course will cover the optimal way to curb carbon emissions, how to price fossil or subsidize low-carbon energy, and the role new technologies, including solar geoengineering. The class will discuss a number of different climate policy objectives and policies throughout the semester, and then place them in a political context. By the end of the course, students be well prepared to apply fundamental economic and political economy tools to a host of climate questions, and to do so without fear, favor, or jargon.

**Grading:** CAS Graded**Repeatable for additional credit:** No**ENVST-UA 410 Environmental Economics (4 Credits)***Typically offered Spring*

In this course, we will understand environmental problems and policy through an economic perspective. We will focus on the interaction between our means of production and our economic “system” and the “environment”. This course introduces the students to key concepts in environmental economics and sustainability, conceptually and practically. The first part of the course builds the toolkit, i.e., the concepts from economics and how they apply to “general” environmental problems. The second part is instead organized around applied topics like climate change, biodiversity loss, energy policy, urban policy, discounting, and growth.

**Grading:** CAS Graded**Repeatable for additional credit:** No**ENVST-UA 422 Science in Environmental Policy (4 Credits)**

Science plays a fundamental role in environmental policy. It can put an issue on the political agenda, it often guides and underpins rationales for policy, while enabling us to monitor implementation. In short, science can provide a reason for humankind to act on environmental problems, while policy enables us to do so. Therefore, understanding how science translates into policy – from a theoretical, historical and practical perspective – is critical to understanding environmental governance. This course explores how the scientific process, as well as scientists themselves, influence environmental policy – from agenda setting, to legislation and implementation. In order to ground the discussion, the course will focus on specific issues including, but not necessarily limited to: stratospheric ozone depletion, climate change, genetically modified organisms (GMOs), pesticides, whaling and nutrient pollution.

**Grading:** CAS Graded**Repeatable for additional credit:** No**Prerequisites:** ENVST-UA 101.**ENVST-UA 423 History of United States Environmental Policy (4 Credits)**

This survey course will focus on the historical development of U.S. federal authority and capacity over public lands and resources, including the germination and expansion of the idea of a coherent public interest with respect to air, water, forests, landscapes, and other environmental attributes. The course will address U.S. environmental policy through several lenses, including (1) a set of two introductory sessions in which students are introduced to key terminology, concepts, and orientations toward the domain of environmental policy; (2) a core series of sessions through which we survey how historical precedents have shaped contemporary U.S. environmental policies and programs. As we work through the semester, we will also review several contemporary, but still evolving, environmental policy topics (e.g., climate change, invasive species, fracking) in light of historical precedents.

**Grading:** CAS Graded**Repeatable for additional credit:** No**ENVST-UA 424 Environmental Qualitative Methods (4 Credits)***Typically offered Fall and Spring*

This course explores the research methodology of ethnography, as it applies to Environmental Studies. The course focuses on the work from the field Environmental Anthropology. By reading finished ethnographies together, they will consider the practice of ethnography “backwards,” in a manner that allows for learning from the methodological design, and ultimate path, each author took to arrive at the analysis presented in each book. The goal is to acquaint with the ways that qualitative data can and do function as “data,” and the ways in which they can enrich quantitative data forms for a more robust understanding of environmental change.

**Grading:** CAS Graded**Repeatable for additional credit:** No**ENVST-UA 431 Urban Environmentalism (4 Credits)***Typically offered Spring*

This course explores environmental issues in urban centers, their causes and impacts, and the rise of a movement that considers the “environment” not just as the term we use to describe the natural world from which many urban residents feel dissociated, but rather as the array of places where we live, work and play. We will consider the relationship between society and public policy in the context of environmentalism, social justice and urban health. This course introduces students to sustainability planning and public policy analysis, with a focus on policy development, implementation and decision-making in New York City. We will examine the powers of the NYC Council and consider the role of agencies, the private sector, and interest groups as critical parts of a bureaucracy through which environmental issues are shaped, managed and negotiated. Through case studies, students will understand the political, legal, economic and technical and scientific constraints of the policy decision-making process and explore the path towards managing, using and protecting environmental resources in urban centers.

**Grading:** CAS Graded**Repeatable for additional credit:** No**ENVST-UA 435 Environmental Governance (4 Credits)**

Human activities are having an unprecedented impact on the planet. In “Environmental Regulation in Practice” we will study some of the most serious environmental threats facing humanity and how they are being managed, if at all. Topics include: climate change, stratospheric ozone depletion, air pollution, biodiversity loss, nutrient pollution, fisheries collapse, and genetically modified organisms.

**Grading:** CAS Graded**Repeatable for additional credit:** No**Prerequisites:** (ENVST-UA 100 OR ENVST-UA 101).

**ENVST-UA 440 Food, Animals, & The Environment (4 Credits)***Typically offered Spring and Summer*

The purpose of Food, Animals, and the Environment is to critically analyze the place of animals in our food system and in the environment, with an emphasis on the intersection between them. The course examines the main impacts that agriculture has on humans, nonhumans, and the environment, as well as some of the questions that these impacts raise for the ethics of food production, consumption, and activism. This seminar is designed to reflect the rich overlap between the fields of Environmental Studies and Animal Studies.

**Grading:** CAS Graded**Repeatable for additional credit:** No**Prerequisites:** ENVST-UA 101.**ENVST-UA 445 Global Environmental Politics (4 Credits)**

Environmental problems are now at the forefront of political discussions. This course examines the law, politics and policy of global environmental issues including energy, climate, biodiversity, food and water. The course aims to provide a broad overview of the key concepts, actors, debates and issues in global environmental politics. It demonstrates the complexities both of the nature of the problems as well as the solutions. The proliferation of global institutions and international actors and the absence of central enforcement mechanisms are hallmarks of addressing environmental problems.

**Grading:** CAS Graded**Repeatable for additional credit:** No**ENVST-UA 450 Topics in Environmental Values & Society (4 Credits)***Typically offered Fall and Spring*

[not available]

**Grading:** CAS Graded**Repeatable for additional credit:** Yes**ENVST-UA 465 Business and the Environment (3 Credits)**

This course is a broad overview of pressing questions regarding the relationship between business and the environment. It aims to give students a look at the major drivers of environmental change, the shifting roles of government and NGOs, as well as some areas where there may be business opportunities.

**Grading:** CAS Graded**Repeatable for additional credit:** No**ENVST-UA 470 Climate and Society (4 Credits)***Typically offered Fall*

This is an intermediate Environmental Studies elective about how societies understand and respond to climate change. We will analyze the values, assumptions, and perceptions that contribute to our understanding of climate change. The main topics are ethics, justice, and responsibility; definitions of nature; cost-benefit analysis and the precautionary principle; geo-engineering; contrarianism; framing and communication; social engagement; and education. Central questions include: Is climate change a technical or social problem? What makes climate change uniquely challenging to understand and respond to? Which ethical and perceptual frameworks are best suited for both understanding and responding to climate change? Who is responsible, and what moral implications does this have? What assumptions about values, behavior, economics, and nature do we make when discussing climate change? How does climate change challenge our conceptions of nature, morality, society, and economics? Does climate change pose a special challenge to society, or does it simply amplify existing challenges?

**Grading:** CAS Graded**Repeatable for additional credit:** No**Prerequisites:** ENVST-UA 101.**ENVST-UA 475 Topics in Environmental Values and Society (1-4 Credits)**

Topics and prerequisites vary by semester.

**Grading:** CAS Graded**Repeatable for additional credit:** No**ENVST-UA 476 Topics in Environmental Values and Society (1-4 Credits)**

Topics and prerequisites vary by semester

**Grading:** CAS Graded**Repeatable for additional credit:** No**ENVST-UA 480 Environmental Justice & Inequality (4 Credits)***Typically offered Spring*

Traces the origins of the uneven distribution of environmental problems and hazards across various communities and analyzes how environmental problems reflect and exacerbate social inequality. Surveys the historical emergence of the environmental justice movement and explores competing moral and political visions for achieving equal protection from environmental hazards (both natural and manmade).

**Grading:** CAS Graded**Repeatable for additional credit:** No**ENVST-UA 482 Conservation in the Anthropocene (4 Credits)**

We have entered a new geological age called the Anthropocene, in which humans have become a primary driver of environmental change. As a result, natural systems are shifting rapidly, with increased rates of species extinctions, movement of organisms to new locations, and changes to how ecosystems work. In this course, we will use a combination of lecture, discussion, readings, and independent projects to explore how the fields of conservation and natural resource management are evolving to keep up in our rapidly changing world.

**Grading:** CAS Graded**Repeatable for additional credit:** No**ENVST-UA 485 Environmental Activism: (4 Credits)**

This course examines how activists try to change the world. We examine popular movements, social movements, NGOs and networks to understand why they choose the issues they do, how they seek to effect change, and whether and why they are successful at doing so. The inquiry is grounded in several approaches to activism: international relations theories of non-state actors, sociological study of social movements, and various more radical approaches. We begin with a survey of these theoretical approaches, so that students can be conversant in the basic theory and vocabulary of activism. We then examine the growing role of activism in local and global politics amidst the broader trend of globalization. The course will examine four "big questions" with respect to environmental activism: 1) When do activists mobilize? 2) What tactics do they use? 3) What explains success and failure in advocacy? 4) What are the broader political implications of a global class of elite advocates?

**Grading:** CAS Graded**Repeatable for additional credit:** No**Prerequisites:** ENVST-UA 101.**ENVST-UA 490 Urban Political Ecology (4 Credits)***Typically offered Fall*

Explores the gap between aspirations for, and the enactment of, urban sustainability. How contests over environmental knowledge, sociocultural ideology, and discourse shape human engagement with urban nature, and in turn influence social and natural transformation.

**Grading:** CAS Graded**Repeatable for additional credit:** No**Prerequisites:** ENVST-UA 101.

**ENVST-UA 495 Urban Greening Lab: New York (4 Credits)***Typically offered Spring*

Explores the theory and practice of urban “greening” as it has been planned, debated, and implemented in New York City. Drawing on analytical tools from the social and biophysical sciences, considers how New York’s historical and contemporary context have shaped the meaning, implementation, and social experience of environmental improvement. Examines “What does it mean to ‘green’ New York? What does it mean to ‘green’ a city?” The analytical approach seeks to integrate ecosystem ecology concepts, urban design principles, and social scientific sensibilities.

**Grading:** CAS Graded**Repeatable for additional credit:** No**Prerequisites:** ENVST-UA 101.**ENVST-UA 503 Journalism & Society: Covering The Earth (4 Credits)***Typically offered Fall*

Environmental narratives have never been more impactful than today. As we ride this wave of popularity as environmental journalists, there’s a lot we can learn from those who preceded us. How have some of our greatest writers and thinkers responded to the natural world and the deep footprints we humans have left upon it? These questions and many others are the fodder for this seminar in which we will read great work and produce our own. With the help of classic and contemporary readings, we will confront thorny questions of advocacy, inclusion, issue framing, risk balancing and the scientific process as we report our own stories and essays on the most epic beat of all.

**Grading:** CAS Graded**Repeatable for additional credit:** No**ENVST-UA 593 Making Art in the Anthropocene (4 Credits)***Typically offered Fall*

This workshop-seminar will explore key themes in post-humanist thought by reading, discussing and testing—in our own creative practice—a variety of recent ideas about what it means to live, think, and feel in this time of anthropogenic (human-caused) climate change, ecological turmoil, and species extinction. A main interest of this course is to experiment with “creative research,” a way of doing intellectual work in which art-making is regarded as—and systematically used as—a mode of knowledge and inquiry, and in which ideas are developed by doing and making as well as by thinking/writing/speaking. Prior artistic training/practice is welcomed but not required; however, all students must be willing to and interested in exploring their “inner artist.”

**Grading:** CAS Graded**Repeatable for additional credit:** No**ENVST-UA 630 Animals and Public Policy (4 Credits)***Typically offered Fall*

Considers how public policy is created, how social change occurs, and the influence of science, government, business, and non-governmental organizations on animal-related policies, legislation, litigation, and consumer campaigns, as well the meaning of “animal rights” and the impact of the modern animal protection movement.

**Grading:** CAS Graded**Repeatable for additional credit:** No**ENVST-UA 675 Literature and the Environment (4 Credits)**

This course provides an overview of Anglophone environmental literature of the 19th, 20th, and 21st centuries, focusing specifically on texts and cultural histories that may inform our understanding of current environmental problems. Taking the term “environment” in the widest sense possible (i.e., as referring to human as well as more-than-human environments), we’ll consider how environmental concerns have shaped literary innovation, and how literature has conversely come to influence environmental discourse. To this end, while tracking shifting attitudes toward “nature” and the “environment,” we’ll read foundational and lesser-known works associated with British romanticism, American transcendentalism, wilderness and conservation literature, New Deal-era progressive politics, postcolonial critique, the modern environmental movement, environmental justice, cli-fi, and eco-poetics. We will also bring to bear on these works vital sociological and theoretical frameworks foregrounding Black, Indigenous, queer, trans, women’s, and working-class thought and experiences

**Grading:** CAS Graded**Repeatable for additional credit:** No**ENVST-UA 700 Introduction to Environmental Humanities (4 Credits)**

This course introduces students to the interdisciplinary field of environmental humanities. Exploring an exciting range of novels, films, video games, and podcasts, as well as critical texts by philosophers, historians, and anthropologists, we will investigate some of the forms “nature” takes in capitalist and socialist modernity—from sublime confrontation to picturesque display, and from utopian dreamscape to dystopian wasteland. We will also consider how works in diverse media both enable and complicate such fantasies, in some cases articulating national or imperial justifications for the seizure of Indigenous lands, the pollution of air and water through energy extraction, or the development of nuclear weaponry.

**Grading:** CAS Graded**Repeatable for additional credit:** No**ENVST-UA 800 Internship in Environmental Studies (4 Credits)***Typically offered Fall and Spring*

The internship, which is normally completed during the junior year, prepares students for their professional lives by providing them with experience in environment-related organizations such as nonprofits, research institutes, and governmental organizations. At the beginning of the internship, students and the internship advisor agree to a learning contract that establishes specific goals, as well as a schedule for achieving them. Interns meet collectively during the semester to share their experiences and present brief reports.

**Grading:** CAS Graded**Repeatable for additional credit:** No**ENVST-UA 900 Environmental Studies Senior Seminar (4 Credits)***Typically offered Fall and Spring*

The Environmental Studies Senior Seminar is a research and professional seminar attended by all senior Environmental Studies majors in either the fall or spring semester of their senior year. It meets twice per week, with both sessions taught by the same instructor, ideally a core Environmental Studies faculty member. The seminar will include both a regular research and professional seminar series (about 12 per semester) as well as classroom instruction. The purpose of the senior seminar is to integrate environmental research and practice into the senior experience, teach critical and integrative thinking, and enhance community- and cohort-building.

**Grading:** CAS Graded**Repeatable for additional credit:** No**Prerequisites:** ENVST-UA 100 AND ENVST-UA 101.

**ENVST-UA 950 Honors Seminar in Environmental Studies (4 Credits)***Typically offered Spring*

This course builds on that skill and aims to push you a bit further and encourage you to produce your own research in the realm of environmental studies with the aim of preparing you for graduate school. You will be expected to formulate your own research question, and will be required to put together a large literature review, methods/research design, and hopefully a pilot study and even some results. Areas covered include preparing research proposals, using the literature in devising and evaluating research, statistical analysis, library facilities, research ethics, and communicating science. By the time we have finished, you should understand the differences between qualitative and quantitative research, various methods of both types of research, as well as many of the inner-workings of research. You are expected to find the edge of a problem and push it further, however incrementally, by producing some excellent research of your own.

**Grading:** CAS Graded**Repeatable for additional credit:** No**ENVST-UA 997 Independent Study (1-8 Credits)***Typically offered Fall and Spring*

Prerequisite: Permission of the department. Intensive research under the supervision of a department faculty member. Independent studies range from 1-4 credits depending on the amount of work agreed upon between the student and faculty member.

**Grading:** CAS Graded**Repeatable for additional credit:** Yes**ENVST-UA 9226 Climate Change (4 Credits)**

Climate change is among the most complex and challenging problems that we have confronted as a civilization, but the responses and impacts will vary largely across space and the global population. This course is designed to give you an overview of the scientific basis of climatic change, and will expose you to multiple facets of a very interdisciplinary and encompassing field. You will be introduced to the physical science of our climate system, the contributing system components, and the basic mechanisms that govern how the climate system responds to drivers of change. We'll then explore climate change from multiple perspectives: paleoclimatic change, recent historical variability and change, future climate projections as well as social and economic issues. Each session will start with a discussion about a scientific paper (or parts of the IPCC report) followed by a one hour lecture and practical work at the end of each session. The practical work will have large components of learning scientific writing and presentation.

**Grading:** CAS Graded**Repeatable for additional credit:** No**ENVST-UA 9300S Hydrological Monitoring and Modelling (4 Credits)**

In this course, you will engage with field-based and quantitative problems related to water quantity and quality. This includes a multi-day field trip to regional NSW to collect samples and engage with field-based activities. During these activities, you will develop field-based skills for collection of hydrological data. The data will be used later in the unit to analyse and map the water quantity and quality issues in the catchment, relating this to landscape, management and climate. The second part of the course focuses on developing an insight into model building, model calibration, validation and sensitivity analysis. It links back to the field experience by using long-term data collected by previous student cohorts and focussing on the identified landscape issues. This part of the study will allow you to directly engage with numerical approaches in prediction and forecasting in landscape hydrological models. The course is specifically designed to extend your field hydrological knowledge and to strengthen your analytical and numerical skills in this area.

**Grading:** CAS Graded**Repeatable for additional credit:** No**ENVST-UA 9372S Environmental GIS (4 Credits)**

This course is designed to impart knowledge and skills in spatial analysis and geographical information science (GIS) for decision-making in an environmental context. The lecture material will present several modules: introduction to GIS, digital terrain mapping, remote sensing and applications. Practical exercises will focus on learning geographical information systems (GIS) and how to apply them to land resource assessment, including digital terrain modelling, land-cover assessment, sub-catchment modelling, ecological applications, and soil quality assessment for decisions regarding sustainable land use and management.

**Grading:** CAS Graded**Repeatable for additional credit:** No**ENVST-UA 9423 History of United States Environmental Policy (4 Credits)***Typically offered Fall*

This survey course will focus on the historical development of U.S. federal authority and capacity over public lands and resources, including the germination and expansion of the idea of a coherent public interest with respect to air, water, forests, landscapes, and other environmental attributes. The course will address U.S. environmental policy through several lenses, including (1) a set of two introductory sessions in which students are introduced to key terminology, concepts, and orientations toward the domain of environmental policy; (2) a core series of sessions through which we survey how historical precedents have shaped contemporary U.S. environmental policies and programs. As we work through the semester, we will also review several contemporary, but still evolving, environmental policy topics (e.g., climate change, invasive species, fracking) in light of historical precedents.

**Grading:** CAS Graded**Repeatable for additional credit:** No**ENVST-UA 9450 Topics in Environmental Values & Society: (4 Credits)**

The course description for this Topics in Environmental Values and Society course varies depending on the topic taught. Please view the course descriptions in the course notes section below.

**Grading:** CAS Graded**Repeatable for additional credit:** Yes

**ENVST-UA 9450S Politics and Environment: Current Issues (4 Credits)**

The focus of environmental politics often shifts, and this course will examine key contemporary issues in the field - from the more longstanding to emergent issues just gaining political urgency. The course will focus on key issues in depth; this may include climate change, environmental justice, food politics, sustainable cities, and/or other timely issues in the Australian or global context. Students will be required to do intensive research in a relevant and salient area of interest in environmental politics and policy.

**Grading:** CAS Graded

**Repeatable for additional credit:** No

**ENVST-UA 9451S Global Challenges: Food, Water, Climate (4 Credits)**

In this course students will gain an understanding of the key environmental challenges of the 21st century; namely food security, climate change, water security, biodiversity protection, ecosystems services and soil security. In the second half, using Australian case studies, we will explore how we manage different agro-ecosystems within their physical constraints around water, climate and soil, while considering linkages with the global environmental challenges. Management now, in the past and the future will be considered, with an emphasis on food production. This course is recommended for students interested in gaining a broad overview of the environmental challenges of the 21st century, both globally and within Australia.

**Grading:** CAS Graded

**Repeatable for additional credit:** No

**ENVST-UA 9465 Business and the Environment (3 Credits)**

*Typically offered Fall and Spring*

This course is a broad overview of pressing questions regarding the relationship between business and the environment. It aims to give students a look at the major drivers of environmental change, the shifting roles of government and NGOs, as well as some areas where there may be business opportunities.

**Grading:** CAS Graded

**Repeatable for additional credit:** No

**ENVST-UA 9481 Environmental Social Movements (4 Credits)**

How do social movements form in response to environmental concerns? What makes them effective or ineffective? This course analyses the various social movements that organized in response to environmental concerns. Both historical and sociological dimensions of environmental movements are covered, with particular attention given to how issues of environmental protection and social justice intersect. At NYU Berlin, the course includes American (I), European, and in particular German (II), as well as global movements (III).

**Grading:** CAS Graded

**Repeatable for additional credit:** No

**ENVST-UA 9495 Urban Greening Lab: (4 Credits)**

This course provides a comprehensive examination of Berlin's urban ecology and approaches to urban planning, while introducing their history, and the correlations between the city's built structure, urban nature and culture. The course combines lectures, workshops and site visits to several facets of Berlin's 'green' past and present. The course investigates Berlin's 'green' structures in relation to the economic, socio-cultural, and political processes that shape it, while placing an emphasis on sustainable ideas and projects and how they influence Berlin's built structure.

**Grading:** CAS Graded

**Repeatable for additional credit:** Yes

**ENVST-UA 9503 Journalism & Society: (4 Credits)**

In this hybrid reading / writing class, we will explore environmental journalism from an Australian perspective. We will meet for a weekly in-class seminar, except for three weeks during the session set aside for field trips. Our field trips will give us the opportunity to experience environmental issues first-hand, meet people, gather story ideas and find local Australian context for our own writing. Guest speakers will join us occasionally to further explore key issues. Our in-class seminars will briefly introduce key journalism concepts and techniques to those new to journalism and reinforce and further develop these skills for experienced journalism students. During each in-class seminar we will also discuss set readings, and explore the environment beat, reading stories that have been reported in Australia and around the world, with students having the opportunity to present stories to the class each week. We will consider work that explores this journalistic tradition, its forms and its themes and the place it takes in the new media world. Drawing our inspiration from great writers, we will find our own stories, our own voices and learn to tell our own tales.

**Grading:** CAS Graded

**Repeatable for additional credit:** No