

## **Correlate Sequence in Environmental Studies:**

Each 6-unit Correlate Sequence in Environmental Studies is designed in consultation with an advisor from the Environmental Studies Program and the ENST Director. The correlate includes (1) ENST 107 - Global Change and Sustainability, ENST 124 - Essentials of Environmental Science, ESCI 151 - Solid Earth, or ESCI 153 - Fluid Earth; (2) a set of four related courses from a list of courses approved for the correlate, no more than one of which is a 100-level course; (3) a 300-level seminar in Environmental Studies chosen from the list of approved courses or ½ unit of ENST 290 combined with a ½ unit capstone project (ENST 399).

After declaration of the correlate, no courses may be elected NRO.

## **PART I: Environmental Studies Courses at Vassar College**

(Revised by Claire Furtwangler, 2020-2021 academic year, updated and revised by Glenna Gomez, 2023-24)

### Environmental Studies courses:

**107 Global Change and Sustainability** This class offers an interdisciplinary introduction to the climate, ecosystem and sustainability principles needed to understand human impact on the natural environment. We discuss the issue of global change prediction and the scientific basis for global change assessments and policy measures. Key topics are the physical climate system and its variability, the carbon cycle and related ecosystem processes, land use issues, nutrient cycles, and the impact of global change on society. Common threads in all of these topics include the use of observations and models, the consideration of multiple scales (temporal and spatial), the interaction of human behaviors and choices with natural systems, and the linkages among aspects of the global change issue.

**124 Essentials of Env Science** A lecture/laboratory course in which basic topics in environmental biology, geology, and chemistry are covered with examples from current environmental issues used to illustrate the application and interdisciplinary nature of these fields. This course treats the following topics: energy sources and waste products, atmospheric patterns and climate, biogeochemical cycles, properties of soils and water, and ecological processes. Using these topics as a platform, this course examines the impact humanity has on the environment and discusses strategies to diminish those effects. The laboratory component includes field trips, field investigations, and laboratory exercises.

**125 Environmentalisms in Perspective** This multidisciplinary course examines significant approaches to the theory and practice of environmentalisms past and present. Students explore possible connections between the ethical, aesthetic, social, economic, historical, and scientific concerns that comprise environmental studies. The methods of inquiry we follow and the

environmentalisms we consider vary among sections.

**153 Fluid Earth: Oceans, Atmosphere, & the Climate System (ENST/ESCI/GEOG 153)**

Earth's oceans are critical for human societies: They absorb carbon dioxide emissions, provide food and natural resources, and their life generates half of the oxygen we breathe. The oceans' counterpart, the atmosphere, is where weather systems develop and our planet's temperature is determined. In this introductory course, we examine the physical, chemical, and biological building blocks of the ocean and atmosphere and how they are changing as a result of human activities. We explore climate phenomena such as planetary wind belts, extreme precipitation and El Niño events, and ocean acidification. Students explore the ways that climate science is conducted and communicated to the public, as well as what can be done to create just and equitable climate solutions.

**162 Climate Solutions and Climate Careers: Finding your Role in the Climate Fight** This is an all-hands-on-deck moment in human history. This course is designed to help students find careers that will contribute impactfully to the fight against climate change, whatever their skills, talents, or interests. We map the technological, economic, social, and political landscape of climate solutions, and the work needed to implement those solutions, across a wide variety of fields, in the coming decades. We examine climate careers ranging from physics to ocean farming, computer science to public policy, finance to international development, biotechnology to urban planning. The class hosts a series of guest speakers who are professionals in a variety of fields, all working to address climate change. Each student undertakes a research project centering on a climate solution or climate career of their choice.

**164 Environmental History of Latin America (ENST/LALS/HIST 164)** This course explores the history of Latin America by centering the environment. Beginning with examples in the ancient Americas and continuing through the colonial and national periods, this course explores how human ideas about the environment, along with tangible regimes for exploiting "natural" resources, have shaped the history of Latin America. Class materials draw from a range of academic, literary, and primary sources, and class discussions cover topics such as: the flora and fauna of the ancient Americas; organisms and landscapes of the "Spanish Conquest"; ranching, farming, and export agriculture; mining, drilling, and extractivist industries; hurricanes, volcanoes, and "natural" disasters; urbanization, pollution, and climate change; and debates over environmental protections and human rights. Accordingly, this course addresses the questions: what discourses, representations, and ideas have shaped the meaning of the environment in Latin America? How has the environment shaped broader meanings of Latin America itself? And what is at stake today for the people of Latin America today as governments, corporations, and NGOs take different approaches to environmental issues?

**182 China Study Trip: Sustainable strategies and impacts along the central Yangtze River (ENST/ASIA/GEOG 182)** Since the 1950s, developing countries around the world have embraced modernization as a necessary and desirable passage. Critical scholars have argued, however, that techno-bureaucratic-driven modernization has led to environmental destruction and marginalization of disadvantaged populations and regions. This course explores this tension and

investigates the strategies China has deployed in infrastructure, agriculture, tourism, and other sectors to negotiate the complex interactions between economic development, technology, cultural diversity, and environmental sustainability. This course includes a spring break study trip through the central part of China's Yangtze River Valley. Students with expressed interests in sustainability and China may apply for admission. Preference is given to students without previous travel experience in China. Students form small groups to develop a research project with a faculty member, focusing on one aspect of sustainability in China that can be observed on the trip and discuss the lessons for the world.

**202 Public Policy and Human Environments (ENST/ESCI/GEOG/URBS 202)** This course combines the insights of the natural and social sciences to address a selected topic of global concern. Geographers bring spatial analysis of societal and political-ecological changes, while Earth Scientists contribute their knowledge of the diverse natural processes shaping the earth's surface. Together, these distinctive but complementary fields contribute to comprehensive understandings of the physical limitations and potential, uses and misuses of the Earth's natural resources.

**213 Indigenous Environmental Activism (ENST/AMST/ANTH 213)** This intensive seeks to foster a community of students dedicated to learning about Indigenous environmental activism. We read publications, watch films, and listen to interviews that highlight the work of Indigenous activists, scholars, and scientists. Students must be willing and able to invest 3-5 hours a week on this intensive. An hour of that time is spent monitoring news sources for recent events and discussing them with others in this learning community. This is not a traditional course, so students with existing knowledge of Indigenous activism or ways of knowing are best prepared for this intensive.

**230 Research Methods: Studying Sustainability at Vassar (ENST/GEOG 230)** Vassar now integrates sustainability planning as a core institutional mission, including the goal of carbon neutrality by 2030. This intensive course builds skills of social-science research through the tracking of institutional sustainability data. Such a campus-wide effort provides an ideal setting to examine the effectiveness of the measures taken, the existence of individual or institutional barriers, and the possible need for additional interventions. We discuss practices such as literature review, formulating a research question, methods design, the Institutional Review Board process, and other aspects of research design. Students then collect and analyze data to put Vassar's experience into the context of sustainability debates. The class meets weekly for 2 hours for the first half of the semester, then biweekly afterward with an individual consultation with the instructor. The instructor arranges data sharing with the Vassar sustainability office, but students are encouraged to make their own contact with various other organizations for additional data collection, survey, and interview arrangements.

**232 Pathways for Sustainability (ENST/URBS/GEOG 232)** We all want a sustainable and climate-smart future, but how do we get there? Communities at all scales, from colleges to cities to global institutions are seeking answers to this question. To have agency in transitions toward sustainability, we need to understand the range of approaches and practices available, and we

need to understand a number of general issues: How do differences in scale and regional context create or constrain possibilities? How do we learn new approaches to decision-making with sustainability in mind? How do transitions toward carbon neutrality imply transformations in social relations and structures of production? Our aim here is to understand the ways communities and institutions address these questions as they envision a road map for putting sustainability principles into practice. We focus largely on the pivotal issue of energy, but we also address related topics such as building and transportation infrastructure, landscapes, and food systems. We draw on transformative examples from the US, Europe, and Asia to find pathways through the existential challenges of the climate crisis and sustainability goals.

**234 Race, Space, and Nature (ENST/AFRS/GEOG 234)** Ideas about “race” and “nature” are intimately bound up with the production of space. Historically, essentialist theories about racial difference served to legitimize and naturalize oppression, dispossession, and enslavement. Racism and white privilege have also long been present in how non-human natures are understood and managed in rural and urban environments, and have contributed to the uneven socio-spatial distribution of environmental harms. This course draws on political ecology, environmental justice, and theories of racial capitalism to apprehend and deconstruct the historical and contemporary relationships between race, space, and nature. Potential topics may include: connections between race, property, and land; the plantation as a socio-ecological phenomenon; environmental racism; Eurocentric ideologies of nature; and racialized exclusion and eviction in the creation of National Parks in North America and Africa.

**238 Environmental China: Nature, Culture, and Development (ASIA/GEOG/INTL 238)** As environmental actions suffer setbacks in the United States, it becomes even more important to understand the dynamics in other nations. China has emerged as a leading player in the environmental field. China is not only the world’s biggest emitter of greenhouse gases; it is also suffering from many acute environmental problems related to its air, water and soil, among others, all of which make China the world’s most important experimental site for environmental actions. How do the Chinese government and Chinese people view their environmental problems? What are the geographical and historical conditions underlying the evolution of such problems? As the world’s oldest continuous civilization and the most populous nation, China has a deep history in dealing with its environment, thus has formulated ancient cultures and practices regarding nature, some of which have reemerged in the country’s headlong march into modernity. What can China teach the world? Employing a political-ecological approach, this course explores the roots of China’s environmental challenges as created by and mediated through historical, cultural, political, economic and social forces, both internal and external to the country, and especially instigated by the movements of global socialism and capitalism in the last one and a half centuries. It also examines some of the solutions that the Chinese government and the people are taking on. Lessons from China have profound implications for the future of our livable world.

**254 Environmental Science in the Field (ENST/ESCI/CHEM 254)** The environment consists of complex and often elegant interactions between various constituents so that an interdisciplinary approach is required to understand how human interactions may affect it. In this course, we study a variety of aspects of a specific environment by considering how biological,

chemical, geological, and human factors interact. We observe these interactions first hand during a weeklong field trip. Some of the questions we may consider are: How does a coral polyp create an environment that not only suits its particular species, but also helps regulate the global climate? How has human development and associated water demands in the desert Southwest changed the landscape, fire ecology, and even estuary and fisheries' health as far away as the Gulf of California? How have a variety of species (humans included) managed to survive on an island with the harsh environment of the exposed mid-ocean ridge of Iceland? The course is offered every other year, and topics vary with expertise of the faculty teaching the course.

**260 Issues in Environmental Studies** The purpose of this course is to examine in depth an issue, problem, or set of issues and problems in environmental studies, to explore the various ways in which environmental issues are embedded in multiple contexts and may be understood from multiple perspectives. The course topic changes from year to year.

**261 “The Nuclear Cage”: Environmental Theory and Nuclear Power (ENST/SOCI/INTL 261)** The central aim of this course is to explore debates about the interaction between beings, including humans, animals, plants and the earth within the context of advanced capitalism by concentrating on the production, distribution, consumption, and disposal of nuclear power. The first question concerning the class is how does Environmental Theory approach nuclear power and its impact on the environment. The second question deals with how this construction interacts with other forms of debate regarding nuclear power, especially concentrating on the relation between science, market and the state in dealing with nature, and how citizens formulate and articulate their understanding of nuclear power through social movements.

**265 Resource Extraction: History, Economy & Sustainability of Fossil Fuels (ENST/ESCI 265)** This course is designed for students who wish to learn more about the environmental, socioeconomic, and cultural impacts of resource extraction and energy production on communities. The Appalachian area of the United States and the island of Trinidad in the Caribbean serve as focal points representing one domestic and one international region, respectively, that have been uniquely shaped by resource extraction. We consider communities within these regions to guide class discussions and to investigate 1) their geological history and natural resources; 2) the history of indigenous communities, colonization, resource extraction and economic development; and 3) the challenges and solutions for sustainability and environmental justice faced by these communities.

**266 Racism, Waste, and Resistance (ENST/SOCI 266)** The 21st century will be defined in the dramatic consequences of the current events and movements regarding our waste: global climate change, pollution, resource depletion, contamination and extinction. One of the most striking and consistent observations is that racism plays a major role in placing waste in close proximity to those racially distinct, economically exploited and politically oppressed. This class examines the destructive global dynamics of environmental racism and resistance, as struggles against it.

**278 Environmental Political Thought (ENST/POLI/STS 278)** In the current, urgent context of eco-catastrophe, the high-stakes question of how to rethink the human and the nonhuman arises

(together, in relation with one another, entangled as they are, distinct as they might be...). Many theorists from myriad disciplines and multidisciplinary areas have taken on this question, some stressing the “intrinsic value” of the natural world, some proclaiming the end of nature, some critiquing the concept of Nature as so all-encompassing that it inevitably allows human claims to mastery of the nonhuman. Though this course cannot exhaustively survey all these approaches, we will explore some of the key contemporary debates (regarding mass extinction, Gaia theories, the oft-cited “Anthropocene”) pertaining to deep ecology, social and political ecology, de-growth theory, object-oriented ontology, speculative realism, environmental justice, posthumanism, ecofeminism, (feminist) new materialisms.

**335 Paleoclimatology: Earth’s History of Climate Change (ENST/ESCI 335)** In recent decades, record high temperatures and extreme weather events have led scientists and policy makers to grapple with the fact that human activities are affecting the climate system. At the same time, scientists have come to realize that climate is capable of dramatic shifts in the absence of human intervention. The science of paleoclimatology seeks to understand the extent and causes of natural climatic variability in order to establish the baseline on top of which anthropogenic changes are occurring. In this course we examine the structure and properties of the oceans and atmosphere and how the general circulation of these systems redistributes heat throughout the globe; study how cycles in Earth’s orbital parameters, plate tectonics, changes in ocean circulation, and the evolution of plants have affected climate; and explore the different lines of evidence used to reconstruct climate history. Weekly laboratory projects introduce students to paleoclimatic methods and to records of climatic change from the Paleozoic through the Little Ice Age.

**352 Conservation Biology (ENST/BIOL 352)** Conservation Biology and restoration ecology use multidisciplinary approaches to study the maintenance and restoration of earth’s biodiversity. We examine human impacts on biodiversity and ecosystem function and discuss how to develop practical approaches for mitigating those impacts. We assess the current human footprint on global resources, asking questions about what we are trying to preserve/restore, why we are trying to preserve/restore it, and how we can accomplish those goals. We critically examine the assumptions made by conservation biologists and restoration ecologists throughout, using case studies from around the world to explore a range of perspectives. Discussion topics include conservation in an agricultural context, the efficacy of marine protected areas, the impact of climate change on ecosystem resilience, restoration and management of forests, the management of invasive species, and urban ecology.

**356 Environment & Land-Use Planning (ENST/GEOG/URBS 356)** This seminar focuses on land-use issues such as open-space planning, urban design, transportation planning, and the social and environmental effects of planning and land use policies. The focus of the course this year is impacts of planning policies (such as transportation, zoning, or growth boundaries) on environmental quality, including open space preservation, farmland conservation, and environmental services. We begin with global and regional examples and then apply ideas in the context of Dutchess County’s trajectory of land use change and planning policies.

**368 Toxic Futures: From Social Theory to Environmental Theory (ENST/INTL/SOCI 368)**

The central aim of this class is to examine the foundations of the discourse on society and nature in social theory and environmental theory to explore two questions. The first question is how does social theory approach the construction of the future, and the second question is how has this construction informed the present debates on the impact of industrialization, urbanization, state-building and collective movements on the environment? In this context, the class focuses on how social theory informs different articulations of Environmental Thought and its political and epistemological fragmentation and the limits of praxis, as well as its contemporary construction of alternative futures.

**381 Topics in Ecosystem Ecology - Ecosystem Structure and Function (ENST/BIOL 381)**

Ecosystems are complex systems, where biotic and abiotic factors interact to create the world we see around us. Understanding the nature of ecosystems is fundamental to understanding how disturbance and change in a dynamic world will influence ecosystem stability. This is especially critical as we enter the Anthropocene; a time in our planet's history where one species, modern humans, dominate. Major changes brought about by increased human activity include changing climate regimes, invasive species spread and biodiversity loss. This course explores how ecosystems, both aquatic and terrestrial, are assembled (structured) and how different ecosystems process energy and matter (function). We use our understanding of structure and function to explore how different ecosystems respond to changes in the environment. Understanding ecosystems is important for making management decisions, but how we communicate that information is equally as important as the information itself. The second half of this class explores effective science communication strategies, with a class project tackling how to translate ecosystem science.

Africana Studies Courses:

**234 Race, Space, and Nature (ENST/AFRS/GEOG 234)**

**242 Brazil in Crisis: Continuity and Change in Portuguese America (GEOG/INTL/LALS 242)** Brazil, a giant of Latin America and the Global South, has long been known as the “land of the future.” Yet frustrating political-economic crises have repeatedly followed periods of rapid growth and social progress. Taking current crises as a point of departure, this course examines Brazil's contemporary evolution in light of the country's historical geography, the distinctive cultural and environmental features of Portuguese America, and the political-economic linkages with the world system. Specific topics for study include: the legacies of colonial Brazil; race relations, Afro-Brazilian culture, and ethnic identities; issues of gender, youth, violence, and poverty; processes of urban-industrial growth; regionalism and national integration; environmental devastation and sustainability; controversies surrounding the occupation of Amazonia; and long-run prospects for democracy and equitable development in Brazil.

**336 Black Ecologies (ENST/AFRS/AMST/HIST/WFQS 336)** This seminar operates on the notion that structural racism and environmental degradation are historically related—and that Black Americans have confronted the two together. Over the course of the semester, we interrogate how different Black activists have done so, from the Antebellum period to the present

day. We consider how enslaved people drew from nature in their resistance to slavery, as well as the role of pollution, environmental disasters, and gentrification in twentieth-century organizing. Toward the end of the course, we explore the concepts of environmental justice and ecofeminism.

Anthropology courses:

**213 Indigenous Environmental Activism (ENST/ANTH/AMST 213)**

**243 Mesoamerican Worlds (ANTH/LALS 243)** A survey of the ethnography, history, and politics of indigenous societies with deep historical roots in regions now located in Mexico, Guatemala, Belize, and Honduras. This course explores the emergence of Mesoamerican states with a vivid cosmology tied to warfare and human sacrifice, the reconfiguration of these societies under the twin burdens of Christianity and colonial rule, and the strategies that some of these communities adopted in order to preserve local notions of identity and to cope with (or resist) incorporation into nation-states. After a consideration of urbanization, socio-religious hierarchies, and writing and calendrical systems in pre-contact Mesoamerica, we will focus on the adaptations within Mesoamerican communities resulting from their interaction with an evolving colonial order. The course also investigates the relations between native communities and the Mexican and Guatemalan nation-states, and examines current issues—such as indigenous identities in the national and global spheres, the rapport among environmental policies, globalization, and local agricultural practices, and indigenous autonomy in the wake of the EZLN rebellion. Work on Vassar’s Mesoamerican collection, and a final research paper and presentation is required; the use of primary sources (in Spanish or in translation) is encouraged.

**364 Travelers and Tourists** The seminar explores tourism in the context of a Western tradition of travel and as a complex cultural, economic and political phenomenon with profound impacts locally and globally. Using contemporary tourism theory, ethnographic studies of tourist locales, contemporary and historical travel narratives, travelogues, works of fiction, postcards and travel brochures, we consider tourism as a historically specific cultural practice whose meaning and relation to structures of power varies over time and context; as a performance; as one of many global mobilities; as embodied activity; as it is informed by mythic and iconic representations and embedded in Western notions of self and other. We also address issues pertaining to the culture of contemporary tourism, the commoditization of culture, the relation between tourism development and national identity and the prospects for an environmentally and culturally sustainable tourism.

Asian Studies courses:

**182 China Study Trip: Sustainable strategies and impacts along the central Yangtze River (ENST/ASIA/GEOG 182)**

**216 Food, Culture, and Globalization (SOC/ASIA 216)** This course focuses on the political



economy and the cultural politics of transnational production, distribution, and consumption of food in the world to understand the complex nature of cultural globalization and its effects on the national, ethnic, and class identities of women and men. Approaching food as material cultural commodities moving across national boundaries, this course examines the following questions. How has food in routine diet been invested with a broad range of meanings and thereby served to define and maintain collective identities of people and social relationships linked to the consumption of food? In what ways and to what extent does eating food satisfy not only basic appetite and epicurean desire, but also social needs for status and belonging? How have powerful corporate interests shaped the health and well being of a large number of people across national boundaries? What roles do symbols and social values play in the public and corporate discourse of health, nutrition, and cultural identities.

### **238 Environmental China: Nature, Culture, and Development (ENST/ASIA/GEOG/INTL 238)**

#### Biology courses:

**202 Plant Physiology and Development** An examination of the cellular and physiological bases of plant maintenance, growth, development, and reproduction; with emphasis on the values of different plants as experimental systems.

**208 Plants and Fungi** Plants and fungi are key components of the biosphere. By focusing on their evolutionary ecology, this course explores their distinctive biological features, evolution of life history strategies, and how we have modified them for our own uses. Field trips to natural areas in the Hudson Valley focus on observing and describing variation in plant form, learning locally common plant species, and recognizing the primary plant communities of the Hudson Valley. Labs include a comparative study of the structure and function of plants such as moss, ferns, conifers and flowering plants, as well as the diversity of the major groups of fungi, including pathogens, mutualists, and mushrooms.

**241 Ecology** Population growth, species interaction, and community patterns and processes of species or groups of species are discussed. The course emphasizes these interactions within the framework of evolutionary theory. Local habitats and organisms are used as examples of how organisms are distributed in space, how populations grow, why species are adapted to their habitats, how species interact, and how communities change. Field laboratories at Vassar Farm and other localities emphasize the formulation of answerable questions and methods to test hypotheses.

**293 Special Topics in Biology** A variety of current and timely topics in Biology is considered by these intensive mentored experiences. Each of these involves closely mentored work in small groups of students around a key topic in biology. A variety of formats is used, including field experiences, field trips, different types of media and different approaches. Topics and instructors vary each semester. \*depends on topic, review with advisor\*

### **352 Conservation Biology (ENST/BIOL 352)**

**355 Rethinking the Invasive Species Challenge** What would it mean to approach the phenomenon of biological invasion in North America as an environmental justice issue? This course, “Rethinking the Invasive Species Challenge,” situates prevailing engagements with biological invasion in both the natural sciences and the humanities by rerouting the conversation through Native studies. Focusing on North America, the course will historicize biological invasion, paying careful attention to its entanglements with settler colonialism and racial capitalism. Through multi-disciplinary engagement with biological invasion and the field of invasion biology, students explore the historical roots of a pressing ecological challenge, the connections between scientific research and its applications, and critical Indigenous engagements with colonial epistemologies and land practices. In addition to honing valuable interpretative and synthetic reading skills, students have an opportunity to pursue their own interests through a significant research project related to course themes. Course texts are drawn from across the disciplines and divisions. Fields represented include environmental history, anthropology, invasion biology, environmental studies, and Indigenous STS.

**356 Plants, Climate and Society** An examination of plant physiological ecology through the lens of climate change. This course considers the specific effects of global temperature change and changes in atmospheric composition on organisms and ecosystems. We use primary literature to understand how the different aspects of climate variability affect plant physiology, including photosynthesis, plant water relations, reproduction and morphology. Class discussions focus on the application of ecological knowledge to evaluate the interactions between biology and society.

### **381 Topics in Ecosystem Ecology - Ecosystem Structure and Function (ENST 381)**

\*depends on topic, review with advisor\*

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### Earth Science courses:

**151 The Solid Earth: Physical Geology (ESCI/GEOG 151)** The Earth is a dynamic planet. As planetary citizens, we need to understand the components of the Earth and what geologic processes occur on it. Therefore, in this course we develop skills that enable us to examine the materials that comprise the solid Earth and understand processes that operate in the geosphere. We explore topics including but limited to plate tectonics, minerals and rocks, volcanism, maps, geologic time and fossils.

**153 Fluid Earth: Oceans, Atmosphere, & the Climate System (ENST/ESCI/GEOG 153)**

**202 Public Policy and Human Environments (ENST/ESCI/GEOG/URBS 202)**

**221 Soils (ESCI/GEOG 221)** Soils form an important interface between the lithosphere, hydrosphere, atmosphere, and biosphere. As such, they are critical to understanding the functioning of ecosystems. This course studies soil formation, and the physical and chemical properties of soils critical to the understanding of natural and constructed ecosystems. Field trips and laboratory work focus on the description and interpretation of local soils.

**235 Water (ESCI/GEOG 235)** Sixty to seventy percent of Dutchess County residents depend on groundwater supplies to meet their daily needs. Industrial pollution and road salt have contaminated many of these supplies, spawning legal actions and requiring costly remediation. Ensuring adequate and safe groundwater supplies for humans and ecosystems requires extensive knowledge of the hydrologic cycle and of how contaminants may be introduced into water resources. We explore how rainfall and snowmelt infiltrate into soils and bedrock to become part of the groundwater system, learn what factors govern subsurface flow, and discuss the concept of well-head protection, which seeks to protect groundwater recharge areas from contamination. Using Vassar's teaching well at the field station we perform a number of experiments to assess aquifer properties, water chemistry, and presence of microbial contaminants.

**254 Environmental Science in the Field (ENST/ESCI/CHEM 254)**

**260 Conservation of Natural Resources (ESCI/GEOG 260)** Natural resources are perennially at the center of debates on sustainability, planning, land development, and environmental policy. The ways we conceptualize resources can be as important to understanding these issues as their actual distributions are. This course provides a geographic perspective on natural resource conservation, using local examples to provide deeper experience with resource debates. We focus particularly on forest resources: biodiversity, forest health, timber resources, forest policy, and the ways people have struggled to make a living in forested ecosystems. We discuss these issues on a global scale (such as tropical timber piracy and forest conversion), and we explore them locally in the Adirondacks of New York. This course requires that students spend October Break on a group study trip in the Adirondacks. Students must be willing to spend long, cold days outside, including some strenuous physical activity (unless special permission is arranged with the instructor).

Economics courses:

**267 Environmental and Natural Resource Economics (ECON/STS 267)** This course examines environmental and natural resource issues from an economic perspective. Particular attention is given to the evidence and analysis presented at the UN climate negotiations and the recent history of climate accords and assesses the case for more drastic commitments. Particular attention is given this year to the evidence and analysis presented at the UN Conference of the

Parties (COP 26). The various possible policies to address the situation are analyzed in economic terms identifying those who gain by, and those who lose by these policies. The goal is for students to develop a framework for understanding environmental problems and then to learn how to analyze policy actions within that framework. Topics include the economics of externalities, free rider issues, global warming, air and water pollution, the loss of biodiversity, energy demand and technology, and natural resource extraction.

Geography courses:

**102 Global Geography: People, Places, and Regions (GEOG/INTL 102)** Places and regions are fundamental parts of the human experience. From our hometowns to the Vassar campus, the United States, and the world beyond, we all inherit but then actively reproduce our geographies through the ways in which we lead our lives—by our social practices and spatial movements, and by the meanings we ascribe to people, places, and regions. In this manner, people shape their cultural landscapes and create the spatial divisions that represent global power relations, ideologies, socioeconomic differences, and the uneven distribution of resources. In this course we study the making of the modern world at different scales, ranging from the local to the global—through case studies drawn from the Hudson Valley and around the world—with an emphasis on the ways people, places, and regions relate to socio-economic inequalities. In addition to learning about specific places and regions, we focus on major themes and debates in geography, including mapping and cartographic communication, culture and landscape modification, population and sustainable development, agriculture and urbanization, and political divisions of the globe.

**151 The Solid Earth: Physical Geology (ESCI/GEOG 151)**

**153 Fluid Earth: Oceans, Atmosphere, & the Climate System (ENST/ESCI/GEOG 153)**

**182 China Study Trip: Sustainable strategies and impacts along the central Yangtze River (ENST/ASIA/GEOG 182)**

**202 Public Policy and Human Environments (ENST/ESCI/GEOG/URBS 202)**

**221 Soils (ESCI/GEOG 221)**

**230 Research Methods: Studying Sustainability at Vassar (ENST/GEOG 230)** Vassar now integrates sustainability planning as a core institutional mission, including the goal of carbon neutrality by 2030. This intensive course builds skills of social-science research through the tracking of institutional sustainability data. Such a campus-wide effort provides an ideal setting to examine the effectiveness of the measures taken, the existence of individual or institutional barriers, and the possible need for additional interventions. We discuss practices such as literature review, formulating a research question, methods design, the Institutional Review Board process, and other aspects of research design. Students then collect and analyze data to put Vassar's experience into the context of sustainability debates. The class meets weekly for 2 hours

for the first half of the semester, then biweekly afterward with an individual consultation with the instructor. The instructor arranges data sharing with the Vassar sustainability office, but students are encouraged to make their own contact with various other organizations for additional data collection, survey, and interview arrangements.

**232 Pathways for Sustainability (ENST/URBS/GEOG 232)**

**234 Race, Space, and Nature (ENST/AFRS/GEOG 234)**

**235 Water (ESCI/GEOG 235)**

**238 Environmental China: Nature, Culture, and Development (ENST/ASIA/GEOG/INTL 238)**

**242 Brazil in Crisis: Continuity and Change in Portuguese America (GEOG/INTL/LALS 242)**

**250 Urban Geography: Space, Place, Environment (GEOG/URBS 250)** Now that most of the world's population lives in urban areas, expanding city-regions pose a series of social, spatial and environmental problems. This course focuses on the making of urban spaces, places, and environments at a variety of geographical scales. We examine entrepreneurial urban branding, sense of place and place making, geographies of race and class, urbanization of nature, environmental and spatial justice, and urban risk and resilience in facing climate change. Concentrating on American urbanism, case studies include New York City, Poughkeepsie, Chicago, Los Angeles, and San Francisco. Students also research specific issues in cities of their own choice, such as land-use planning and public space, historic preservation, transit-oriented development, urban ecology and restoration, urban sustainability programs, and citizen movements for livable cities.

**252 Cities of the Global South: Urbanization and Social Change in the Developing World (GEOG/INTL/URBS 252)** The largest and fastest wave of urbanization in human history is now underway in the Global South—the developing countries of Africa, Asia, Latin America, and the Middle East. Most of the world's urban population already resides here, where mega-cities now reach massive proportions. Despite widespread economic dynamism, high rates of urbanization and deprivation often coincide, so many of the 21st century's greatest challenges will arise in the Global South. This course examines postcolonial urbanism, global-city and ordinary-city theories, informal settlements and slums, social and environmental justice, and urban design, planning, and governance. We study scholarly, journalistic, and film depictions of Mexico City and Rio de Janeiro in Latin America; Algiers and Lagos in Africa; Cairo and Istanbul in the Middle East; and Beijing and Mumbai in Asia.

**254 Environmental Science in the Field (ENST/ESCI/CHEM 254)**

**256 Geographies of Food and Farming** Farming and food production connect us to the

landscapes in which we live, and they shape the geographies of our communities. Increasingly, farming and food also connect us to processes of globalization. The world produces more food than ever before, yet factors such as centralization of production and competition from biofuels lead to food riots in developing regions and continuing losses of rainforests from Brazil to Indonesia. One key strategy for understanding these connections is to examine the biogeographic patterns that shape food production. In this course, we focus first on the physical environmental factors (including water resources, climate patterns, and biodiversity) that characterize agricultural regions of North America. As part of this discussion, we consider ethical, political, and cultural aspects of food production. We then use these frameworks to examine global production and exchanges of food. We use case studies, such as land conversion in Brazil and Indonesia, to understand prominent debates about food and farming today.

### **260 Conservation of Natural Resources (ESCI/GEOG 260)**

**266 Population, Environment, and Sustainable Development (GEOG/INTL 266)** Concerns about human population are integral to debates about matters of political stability, socio-economic equity, ecological sustainability, and human wellbeing. This course engages these debates via an examination of environmental change, power and inequality, and technology and development. Case studies include: water supplies, fishing and agriculture and the production of foodstuffs. Being a geography course, it highlights human-nature relations, spatial distribution and difference, and the dynamic connections between places and regions.

**276 Economic Geography: Spaces of Global Capitalism (GEOG/INTL 276)** We live in turbulent times. In the past decades, global capitalism has profoundly reorganized global space for production, distribution and consumption. Geography discipline, economic geography, in particular, is uniquely equipped to provide critical analysis of the spatial dynamics of the global economy. Differing from other disciplines concerning economics, economic geography studies the relationship between economics and space and place. Economic geographers argue that in all economic activities, accessibility, proximity and spatial agglomeration play essential roles in the location choice, organization and performance of economic units. Space, place, and mobility resulted in uneven development, which is deeply implicated features in the capitalist system in its emergence, development, and transformation.

### **356 Environment & Land-Use Planning (ENST/GEOG/URBS 356)**

**372 Topics in Human Geography** This seminar focuses on advanced debates in the socio-spatial organization of the modern world. The specific topic of inquiry varies from year to year. Students may repeat the course for credit if the topic changes. \*depends on topic, review with advisor\*

#### International Studies courses:

**238 Environmental China: Nature, Culture, and Development (ENST/ASIA/GEOG/INTL 238)**

**242 Brazil in Crisis: Continuity and Change in Portuguese America (GEOG/INTL/LALS 242)**

**252 Cities of the Global South: Urbanization and Social Change in the Developing World (GEOG/INTL/URBS 252)**

**255 Global Political Economy (INTL/LALS 255)** This course explores competing visions of economic globalization, and uses these distinct frameworks to analyze the meaning, causes, extent, and consequences of globalization, with a particular focus on the relationships among global, national and local economic phenomena. What do we mean by globalization? What are the effects of globalization on growth, inequality, and the environment? How might international economic policy and the particular form(s) of globalization that it promotes help to explain the pace and form of urbanization? Who benefits from globalization, and who might be hurt? Why do economists and others disagree about the answers to these and related questions? This course explores some of the ways that interdisciplinary analysis might enrich our understanding of economic globalization.

**261 “The Nuclear Cage”: Environmental Theory and Nuclear Power (ENST/SOCI/INTL 261)**

**266 Population, Environment, and Sustainable Development (GEOG/INTL 266)**

**276 Economic Geography: Spaces of Global Capitalism (GEOG/INTL 276)**

**368 Toxic Futures: From Social Theory to Environmental Theory (ENST/INTL/SOCI 368)**

Latin American Studies courses:

**164 Environmental History of Latin America (ENST/LALS/HIST 164)**

**242 Brazil in Crisis: Continuity and Change in Portuguese America (GEOG/INTL/LALS 242)**

**243 Mesoamerican Worlds (ANTH/LALS 243)**

Political Science courses:

**278 Environmental Political Thought (ENST/POLI/STS 278)**

**232 International Law and The Anthropocene** The course examines the history of international law and its relationship to nature and the legal mechanisms that continue to

shape extraction globally. We unpack the role of international law in responding to the challenges of the Anthropocene epoch. We explore the understanding of the Anthropocene epoch through the writings of scholars like Donna Haraway, Anna Tsing, and others who have conceptualized this epoch as the capitalocene and plantationocene. Students are exposed to areas of international investment law, human rights law, environment, and climate law to situate international law in the context of the climate crisis. Students delve into the connections between international law and the Anthropocene through the works of Third World Approaches to International Law (TWAIL) scholars Usha Natarajan, Ntina Tzouvla, Julia Dehm, and Katharina Pistor among others. The course highlights alternative legal possibilities being devised by climate justice movements emerging from climate litigation to remaking international law to be able to contrast the colonial and extractive legacy of international law with the reparative legal frameworks being proposed for the future.

**387 Political Theories for Heated Climates (WFQS/POLI 387)** Human, all-too-human, nonhuman, inhuman, posthuman, more-than-human, queer political ecologies are increasingly sites of theoretical and practical contestation in this heated Earth-historical moment. What some have called “societies of control” are shaken by multiple simultaneous ecological catastrophes, inciting us to (re)think the human, and to think beyond it (including to problematize transhumanist fantasies replete with A.I., space colonization and geoengineering). This seminar is inspired by the urgent need to pay attention to the (ecological, digital, hybrid) nonhuman, the inhuman (within and beyond certain economies of power, from neoliberal biopolitical regimes to the rise of eco- and fossil fascisms), as well as embodiment, materialities, and especially, temporalities. We engage some of these questions through selected works from queer, feminist, decolonial, anti- and post-capitalist theories of science and technology studies (STS), critical new materialisms (particularly queer and feminist theory), critical environmental theory, in conversation with the performing arts, street art, science fiction, ecopoetics, and more.

Science, Technology and Society courses:

**137 Unpacking Climate Change (Un)Certainty** The dissonance between the scientific and public understandings of uncertainty can manifest in many ways, but becomes most obvious during scientific controversies. As of late there seems to be a rash of scientific controversies dominating public discourse on all sides of the political landscape. We are seeing an Orwellian emergence of a “post-fact” politics that has normalized the denial of scientific evidence. Whether someone rejects the incontrovertible evidence for anthropogenic climate change or dismisses the numerous studies showing no causal links between childhood vaccinations and autism, it seems that consensus driven scientific evidence and authority are being regularly dismissed on the public stage. In this Grand Challenge course, we use the controversy surrounding the science of climate change as a way of examining the various ways people engage with uncertainty and the impact this has on the erosion of scientific authority. Although this course is firmly rooted in STS frameworks examining the social, political, and economic dimensions of science, it also involves some light quantitative analysis. Although students do not learn statistical methods, they are introduced to concepts like bell curves, standard deviation, and p-hacking. The goal is for students to become more literate and reflexive in how they engage scientific controversies like



climate change. As with all scientific controversies, answers are never clear cut. Yet, the messiness isn't always grounded in the science itself. By examining the social dimensions of this controversy students begin to identify and navigate other rhetorical forces at play.

**267 Environmental and Natural Resource Economics (ECON/STS 267)**

**278 Environmental Political Thought (ENST/POLI/STS 278)**

Sociology courses:

**216 Food, Culture, and Globalization (SOC/ASIA 216)**

**261 “The Nuclear Cage”: Environmental Theory and Nuclear Power (ENST/SOCI/INTL 261)**

**266 Racism, Waste, and Resistance (ENST/SOCI 266)**

**368 Toxic Futures: From Social Theory to Environmental Theory (ENST/INTL/SOCI 368)**

Urban Studies courses:

**202 Public Policy and Human Environments (ENST/ESCI/GEOG/URBS 202)**

**232 Pathways for Sustainability (ENST/URBS/GEOG 232)**

**250 Urban Geography: Space, Place, Environment (GEOG/URBS 250)**

**252 Cities of the Global South: Urbanization and Social Change in the Developing World (GEOG/INTL/URBS 252)**

**356 Environment & Land-Use Planning (ENST/GEOG/URBS 356)**

Women, Feminist, and Queer Studies courses:

**277 Feminist Approaches to Science and Technology (WFQS/STS 277)** In this course students examine the intersections of science and technology with the categories of gender, race, class, and sexuality. We explore the ways that science and technology help to construct these socio-cultural categories and how the constructions play out in society. Examples come from the history of science and technology, concerns about gender identity, health care, environmentalism, and equal opportunity in education and careers. Throughout the course, we ask how the social institution and power of science itself is affected by social categories. We also investigate alternative approaches to the construction of knowledge.

**336 Black Ecologies (ENST/AFRS/AMST/HIST/WFQS 336)** This seminar operates on the notion that structural racism and environmental degradation are historically related—and that Black Americans have confronted the two together. Over the course of the semester, we interrogate how different Black activists have done so, from the Antebellum period to the present day. We consider how enslaved people drew from nature in their resistance to slavery, as well as the role of pollution, environmental disasters, and gentrification in twentieth-century organizing. Toward the end of the course, we explore the concepts of environmental justice and ecofeminism.

**387 Political Theories for Heated Climates (WFQS/POLI 387)**

## **PART II: Fieldwork, via OCEL**

### **Environmental Studies Partners**

[Poughkeepsie Farm Project](#) - The mission of the Poughkeepsie Farm Project is to cultivate local leadership in sustainable farming, food access and education, and to foster an inclusive, welcoming community for everyone. Our Vision is a community that works collaboratively to provide equitable access to nutritious food via a just and resilient food system.

[Sustainable Hudson Valley](#) - Sustainable Hudson Valley's mission is to speed up, scale up, jazz up and leverage progress against climate change, creating communities where people and nature thrive. We are the only regional organization devoted to on-the-ground programs and projects that concretely reduce greenhouse gas emissions, draw carbon out of the atmosphere and create economic opportunities in the process.

[The Environmental Cooperative at the Vassar Barns](#) - The Environmental Cooperative works to engage the community in conservation efforts in the local community. We run education programs and outreach events to teach about nature in Poughkeepsie.

[Vassar Farm & Ecological Preserve](#) - The mission of the Vassar Ecological Preserve is to protect and preserve the ecological diversity of the land to ensure that its educational value will be maintained in perpetuity. The Vassar Ecological Preserve promotes increased understanding and appreciation of the natural systems on the preserve through field based education and research.

[Hudson River Sloop Clearwater, Inc.](#) - We are a 501(c)3 organization that works to protect and restore the Hudson River through education and environmental advocacy.

[Schooner Apollonia](#) - Since 2020, the Schooner Apollonia has transported over 200,000 pounds of cargo by wind, tide, and current. Our watershed includes the Hudson River, New York Harbor, the East River, Newtown Creek, the Gowanus Canal, Raritan Bay, the Arthur Kill, the Kill Van Kull, and Rondout Creek. We've hauled malted barley, coffee beans, lumber, flour, beer, cheese, pumpkins, apparel, cider, furniture, and much more. We also supply galas/events, deliver to food banks and pantries, and transport wholesale and individual cargoes, including our CSA-style Boat Boxes.

[Unitarian Universalist Ministry for Earth](#) - We offer spiritual grounding and care for climate justice. We do that through resources (including curriculum for all ages) , gatherings and support for climate justice action.

[Natures Impact](#) - Nature's Impact strives to design sustainable gardens in the Hudson Valley and curate experiences using nature as the guide.

[Citizen Action NY](#) - Since 1983, Citizen Action has been at the forefront of the fight for racial, social, economic, and environmental justice in New York State.

[Bedford2030](#) - Bedford 2030 is a 501(c)3 that addresses the urgent issue of climate change through the reduction of greenhouse gas emissions and preservation of natural resources. Since 2010, through partnerships, programs, and events we have inspired, advocated, communicated, convened and connected with our community, in Bedford and beyond, to drive behavior change. A recent report shows that, with Bedford 2020 leading the way, our community successfully reduced greenhouse gas emissions by 44% (as compared to 2004 baseline data). The Rooted Solutions action area is focused on natural climate solutions, including tree canopy, landscape management practices and sustainable food choices.

### **Food Justice/Food Security Community Partners**

[Dutchess Outreach](#) - Dutchess Outreach acts as a catalyst for community revitalization and exists in Dutchess County as an advocate and provider of hunger and relief programs in order to ensure that everyone, regardless of income, has access to fresh, healthy food, and the support they need.

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[Indoor Organic Gardens of Poughkeepsie](#) - Our mission is to introduce a more sustainable and healthy way to think about nutrition while providing opportunities for at-risk communities. IOGP takes pride in helping to revitalize Main Street in the City of Poughkeepsie. IOGP aims to utilize unoccupied building spaces, employ at-risk residents who are challenged to find work, and provide a supply of organic, living, and high-density Micronutrients for the health and wellness of all.

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[Natures Impact](#) - Nature's Impact strives to design sustainable gardens in the Hudson Valley and curate experiences using nature as the guide.

[Evergreen Minds](#) - We are a small 501 c3 charitable organization that connects people living with dementia with people of all ages. We do this through nature-based programs. We use expressive arts, forest therapy and our garden at Vassar to do this work. We go into senior living communities as well as partner with other organizations to offer programming out in the community as well. Our aim is to de-stigmatize dementia and reframe how we view dementia. In addition, we work to help eradicate ageism and ableism which is so deeply woven into our society.

[Hudson River Housing, Inc.](#) - Hudson River Housing provides a continuum of services that improves lives and communities through housing with compassion and development with vision. We create pathways out of homelessness through empowerment, education and advocacy. We strengthen communities by developing and preserving affordable housing and creating opportunities for people and places to thrive.

[Schooner Apollonia](#) - Since 2020, the Schooner Apollonia has transported over 200,000 pounds of cargo by wind, tide, and current. Our watershed includes the Hudson River, New York Harbor, the East River, Newtown Creek, the Gowanus Canal, Raritan Bay, the Arthur Kill, the Kill Van Kull, and Rondout Creek. We've hauled malted barley, coffee beans, lumber, flour, beer, cheese, pumpkins, apparel, cider, furniture, and much more. We also supply galas/events, deliver to food banks and pantries, and transport wholesale and individual cargoes, including our CSA-style Boat Boxes.

## **GIS Partnerships**

[Town of Woodstock Planning Board](#) - The Planning Board and the Complete Streets Committee use maps for a variety of internal processes and also for public information.

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[The Hudson Valley Regional Council](#) - HVRC provides technical assistance to municipalities in areas such as sustainability, water, energy, climate mitigation and adaptation, and economic development. It has been doing this work for over 30 years and is one of 7 regional councils in New York state.

[The Town of Gardiner Environmental Conservation Commission](#) is an all-volunteer commission dedicated to discussing and implementing ways to protect the natural resources of the town.

[The City of Newburgh Department of Planning and Development](#) - The City of Newburgh Department of Planning and Development manages a variety of services and programs that assist the City in land use development, economic growth, and neighborhood revitalization aimed at sustainable living. The Planning and Development Department has a broad range of responsibilities including: (Brownfield Investigation and Remediation, Census and Demographics, Community Development, Disposition of In-Rem City-Owned properties, Economic Development, Environmental Assessment, Heritage, Land Use Boards management, Land Use Planning, Long Term Master Planning, Parks, Recreation, and Open Space Planning)

[Center for Economic and Environmental Partnership \(CEEP\)](#) - CEEP's Mission is to serve as a bridge between economic and environmental perspectives

[Wallkill Valley Trust](#) - Our mission is to enhance the quality of life in Ulster County by conserving lands of scenic, agricultural, ecological, recreational, and cultural significance.

[Dutchess County Transportation Council \(DCTC\)](#) - The DCTC is the Metropolitan Planning Organization (MPO) for Dutchess County. We do county-wide transportation planning and local transportation studies for municipalities.

### **Environmentally Based Organizations in the area**

[sPOKE](#)

[Thrift2Fight](#)

[Unshattered](#)

[Forge Project](#)

[Iron Path Farms](#)