ENVIRONMENTAL STUDIES (EVST)

* EVST 030b / ARCG 031b / NELC 026b, Origins of Civilization: Egypt and Mesopotamia  Harvey Weiss
The origins of the earliest civilizations in Mesopotamia and Egypt along the Nile and Tigris-Euphrates Rivers explored with archaeological, historical and environmental data for the origins of agriculture, the classes and hierarchies that marked earliest cities, states and empires, the innovative monumental architecture, writing, imperial expansion, and new national ideologies. How and why these civilizational processes occurred with the momentous societal collapses at periods of abrupt climate change. Enrollment limited to first-year students. Preregistration required; see under First-Year Seminar Program.  HU, SO

* EVST 040a, Collections of the Peabody Museum  David Skelly
Exploration of scientific questions through the study and analysis of objects within the Peabody Museum’s collections. Formulating a research question and carrying out a project that addresses it are the core activities of the course. Enrollment limited to first-year students. Preregistration required; see under First-Year Seminar Program.  SC

* EVST 060b, Topics in Environmental Justice  Michael Fotos
This seminar introduces students to key concepts in environmental justice and to a selection of cases representing a wide range of environmental dilemmas. Course readings and discussions impart awareness of the diverse contexts in which problems of environmental justice might be studied, whether historical, geographic, racial, social, economic, political, biological, geophysical, or epistemic. Enrollment limited to first-year students. Preregistration required; see under First-Year Seminar Program.  WR, SO

* EVST 100b / APHY 100b / ENAS 100b / EPS 105b / PHYS 100b, Energy, Environment, and Public Policy  Daniel Prober
The technology and use of energy. Impacts on the environment, climate, security, and economy. Application of scientific reasoning and quantitative analysis. Intended for non-science majors with strong backgrounds in math and science.  QR, SC

EVST 185b / HIST 246b, The History of Food  Paul Freedman
The history of food and culinary styles from prehistory to the present, with a particular focus on Europe and the United States. How societies gathered and prepared food. Changing taste preferences over time. The influence of consumers on trade, colonization, and cultural exchange. The impact of colonialism, technology, and globalization. The current food scene and its implications for health, the environment, and cultural shifts.  HU  0 Course cr

EVST 191b, Trees: Environmental Biology and Global Significance  Craig Brodersen
This introductory level course explores the fundamental physiological and anatomical principles that govern tree biology. We cover the biophysics of energy balance, long-distance water transport, and gas exchange at multiple scales, from individual plant cells and organs to the tree and forest canopy. Understanding these processes requires foundational knowledge in the principles of cells and membranes, the fundamental differences between plant and animal cells, reproductive cycles, nutrient cycling, and phenology. Our focus then turns to regional and global patterns in forest dynamics, the implications of disruptions in the biotic and abiotic environment, and the role that trees play in the carbon cycle and carbon sequestration. We also consider the cultural significance of trees and forest products, with explorations of wood use in musical instruments and building materials. SC

* EVST 212a / EP&E 390a / PLSC 212a, Democracy and Sustainability  Michael Fotos
Democracy, liberty, and the sustainable use of natural resources. Concepts include institutional analysis, democratic consent, property rights, market failure, and common pool resources. Topics of policy substance are related to human use of the environment and to U.S. and global political institutions.  WR, SO

* EVST 215b / ENGL 450b / MRRB 450b, Writing about Science, Medicine, and the Environment  Carl Zimmer
Advanced non-fiction workshop in which students write about science, medicine, and the environment for a broad public audience. Students read exemplary work, ranging from newspaper articles to book excerpts, to learn how to translate complex subjects into compelling prose. Admission by permission of the instructor only. Applicants should email the instructor at carl@carlzimmer.com with the following information: 1. One or two samples of nonacademic, nonfiction writing. (No fiction or scientific papers, please.) Indicate the course or publication, if any, for which you wrote each sample. 2. A note in which you briefly describe your background (including writing experience and courses) and explain why you’d like to take the course.  WR, RP

EVST 219b / PHIL 290b, Philosophical Environmental Ethics  Stephen Latham
This is a philosophical introduction to environmental ethics. The course introduces students to the basic contours of the field and to a small number of special philosophical problems within the field. No philosophical background is required or expected. Readings are posted on Canvas and consist almost entirely of contemporary essays by philosophers and environmentalists.  SO  0 Course cr

EVST 223a / E&EB 220a, General Ecology  David Vasseur
The theory and practice of ecology, including the ecology of individuals, population dynamics and regulation, community structure, ecosystem function, and ecological interactions at broad spatial and temporal scales. Topics such as climate change, fisheries management, and infectious diseases are placed in an ecological context. Prerequisite: MATH 112 or equivalent.  SC  0 Course cr

* EVST 224a / ENGL 418a, Writing About The Environment  Alan Burdick
Exploration of ways in which the environment and the natural world can be channeled for literary expression. Reading and discussion of essays, reportage, and book-length works, by scientists and non-scientists alike. Students learn how to create narrative tension while also conveying complex—sometimes highly technical—information; the role of the first person in this type of writing; and where the
human environment ends and the non-human one begins. Formerly ENGL 241. Admission by permission of the instructor only. Students interested in the course should email the instructor at alan.burdick@gmail.com with the following information: 1.) A few paragraphs describing your interest in taking the class. 2.) A non-academic writing sample that best represents you.  WR

* EVST 234La, Field Science: Environment and Sustainability  Kealoha Freidenburg
A field course that explores the effects of human influences on the environment. Analysis of pattern and process in forested ecosystems; introduction to the principles of agroecology, including visits to local farms; evaluation of sustainability within an urban environment. Weekly field trips and one weekend field trip.  SC

* EVST 255b / F&ES 255b / GLBL 282b / PLSC 251b, Environmental Law and Politics  John Wargo
We explore relations among environmental quality, health, and law. We consider global-scale avoidable challenges such as: environmentally related human illness, climate instability, water depletion and contamination, food and agriculture, air pollution, energy, packaging, culinary globalization, and biodiversity loss. We evaluate the effectiveness of laws and regulations intended to reduce or prevent environmental and health damages. Additional laws considered include rights of secrecy, property, speech, worker protection, and freedom from discrimination. Comparisons among the US and EU legal standards and precautionary policies will also be examined. Ethical concerns of justice, equity, and transparency are prominent themes.  SO 0 Course cr

* EVST 290b / URBN 319b, Geographic Information Systems  Charles Tomlin
A practical introduction to the nature and use of geographic information systems (GIS) in environmental science and management. Applied techniques for the acquisition, creation, storage, management, visualization, animation, transformation, analysis, and synthesis of cartographic data in digital form.

EVST 307b, Organic Pollutants in the Environment  Shimon Anisfeld
An overview of the pollution problems posed by toxic organic chemicals, including petroleum, pesticides, PCBs, dioxins, chlorinated solvents, and emerging contaminants. Processes governing the environmental fate of organic pollutants, e.g., evaporation, biocaccumulation, sorption, and biodegradation. Technologies for prevention and remediation of organic pollution. No background in organic chemistry required.  SC

* EVST 323a, Wetlands Ecology Conservation & Management  Kealoha Freidenburg
Wetlands are ubiquitous. Collectively they cover 370,000 square miles in the United States and globally encompass more than 5 million square miles. Most points on a map are less than 1 km from the nearest wetland. Yet wetlands are nearly invisible to most people. In this course we explore wetlands in all of their dimensions, including the critical services they provide to other systems, the rich biodiversity they harbor, their impact on global climate, and the links by which they connect to other systems. Additionally, wetlands are lynchpin environments for scientific policy and regulation. The overarching aim of the course is to connect what we know about wetlands from a scientific perspective to the ways in which wetlands matter for people.  SC

* EVST 324b / ANTH 322b / SAST 306b, Environmental Justice in South Asia  Kalyanakrishnan Sivaramakrishnan
Study of South Asia’s nation building and economic development in the aftermath of war and decolonization in the 20th century. How it generated unprecedented stress on natural environments; increased social disparity; and exposure of the poor and minorities to environmental risks and loss of homes, livelihoods, and cultural resources. Discussion of the rise of environmental justice movements and policies in the region as the world comes to grips with living in the Anthropocene.  SO 0 Course cr

EVST 340a / ECON 330a, Economics of Natural Resources  Robert Mendelsohn
Microeconomic theory brought to bear on current issues in natural resource policy. Topics include regulation of pollution, hazardous waste management, depletion of the world’s forests and fisheries, wilderness and wildlife preservation, and energy planning. After introductory microeconomics.  QR, SO 0 Course cr

* EVST 349b / HIST 449Jb / HSHM 449b / URBN 382b, Critical Data Visualization: History, Theory, and Practice  Bill Rankin
Critical analysis of the creation, use, and cultural meanings of data visualization, with emphasis on both the theory and the politics of visual communication. Seminar discussions include close readings of historical data graphics since the late eighteenth century and conceptual engagement with graphic semiology, ideals of objectivity and honesty, and recent approaches of feminist and participatory data design. Course assignments focus on the research, production, and workshop of students’ own data graphics; topics include both historical and contemporary material. No prior software experience is required; tutorials are integrated into weekly meetings. Basic proficiency in standard graphics software is expected by the end of the term, with optional support for more advanced programming and mapping software.  HU

* EVST 350a, Writing the World  Verlyn Klinkenborg
This is a practical writing course meant to develop the student’s skills as a writer. But its real subject is perception and the writer’s authority—the relationship between what you notice in the world around you and what, culturally speaking, you are allowed to notice. What you write during the term is driven entirely by your own interest and attention. How you write is the question at hand. We explore the overlapping habitats of language—present and past—and the natural environment. And, to a lesser extent, we explore the character of persuasion in environmental themes. Every member of the class writes every week, and we all read what everyone writes every week. It makes no difference whether you are a would-be journalist, scientist, environmental advocate, or policy maker. The goal is to rework your writing and sharpen your perceptions, both sensory and intellectual. Enrollment limited to fifteen.  WR
Ancient states were societies with surplus agricultural production, classes, specialization of labor, political hierarchies, monumental public architecture and, frequently, irrigation, cities, and writing. Pristine state societies, the earliest civilizations, arose independently from simple egalitarian hunting and gathering societies in six areas of the world. How and why these earliest states arose are among the great questions of post-Enlightenment social science. This course explains (1) why this is a problem, to this day, (2) the dynamic environmental forces that drove early state formation, and (3) the unresolved, fundamental questions of ancient state genesis and crisis, law-like regularities or a chance coincidence of heterogenous forces? HU, SO

This course examines historical case studies of several significant global commodities produced in Africa to explore interactions between world market forces and African resources and societies. Through the lens of four specific commodities—ivory, rubber, cotton, and diamonds—this course evaluates diverse industries and their historical trajectories in sub-Saharan Africa within a global context from ~1870-1990s. Students become acquainted with the historical method by developing their own research paper on a commodity using both primary and secondary sources. WR, HU

This is the second course in a spring-fall sequence. The course is primarily for students who have already taken “Observing and Measuring Behavior I: Study Design” (ANTH 376) and who have conducted summer research as part of an NSF-funded Summer Program in Argentina (https://www.owlmonkeyproject.com/open-calls). In this course students learn how to analyze the data they have collected, strategies for interpreting and presenting results, including considerations of study design issues and a priori statistical protocols; predictive and/or explanatory power and interpretation of statistical significance, scientific inference and research relevance. Students practice writing and oral skills associated with how to write communicating the results of their study. Prerequisite: ANTH 376. QRF, SC, SO

Exploration of a range of coastal and pelagic ecosystems. Relationships between biological systems and the physical processes that control the movements of water and productivity of marine systems. Anthropogenic impacts on oceans, such as the effects of fishing and climate change. Includes three Friday field trips. Enrollment limited to 15. SC

Study of technological advances that have global health applications. Ways in which biotechnology has enhanced quality of life in the developing world. The challenges of implementing relevant technologies in resource-limited environments, including technical, practical, social, and ethical aspects. Prerequisite: MCDB 120, or BIOL 101 and 102.

Discussion of the major currents of thought regarding climate and climate change; focusing on equity, collapse, folk knowledge, historic and contemporary visions, western and non-western perspectives, drawing on the social sciences and humanities. WR, SO

U.S. literature from the late eighteenth century to the Civil War explored in the context of climate change. Development of the modern concept of the environment; the formation and legacy of key ideas in environmentalism; effects of industrialization and national expansion; utopian and dystopian visions of the future. Formerly ENGL 430. WR, HU

The course provides students with core knowledge on the processes controlling the earth’s climate system. The first half of the class focuses on the four components of the earth system, providing a knowledge base on the atmospheric energy and water budgets and the roles of anthropogenic greenhouse gases, the oceans, land and cryosphere in altering these budgets. Students also learn how to run a climate GCM (general circulation model). The second half of the class focuses on impacts of climate change on a number of societal sectors including natural ecosystems, energy use, water resources, the food system and the built environment. SC

A yearlong workshop designed primarily for majors in Film and Media Studies or American Studies who are making documentaries as senior projects. Seniors in other majors admitted as space permits. RP

Independent research under the supervision of members of the faculty, resulting in a senior essay. Students meet with peers and faculty members regularly throughout the fall term to discuss the progress of their research. Projects should offer substantial opportunity for interdisciplinary work on environmental problems. Students typically complete a two-term senior essay, but students completing the requirements of two majors may consider a one-term senior project.