

Spring 2020 Courses Relating to Sustainability & Environmental Awareness

Anthropology

ANTH BC3868 Ethnographic Field Research in New York City. 4 points.

BC: Fulfillment of General Education Requirement: Cultures in Comparison (CUL).
Not offered during 2019-20 academic year.

Prerequisites: Recommended for majors prior to the senior year. Open to non-majors by permission of the instructor. Enrollment limited to 20 students.

A seminar-practicum on field research in New York City. Exploration of anthropological field research methods followed by supervised individual field research on selected topics in U settings.

Credits: 4 points

Offerings: Spring semesters

Architecture

ARCH UN3400 Environmental Visualizations of NYC. 4 points.

Prerequisites: (ARCH UN1020) or (ARCH UN3101) or (ARCH UN3103) or Students must have taken at least one architectural design studio or an equivalent multimedia production course.

The goal of this seminar + workshop course is to develop new visual representations of impact of environmental issues on New York City.

We will focus on two catastrophic events and sites: Greenpoint Oil Spill (1978), Newtown Creek; and Hurricane Sandy (2012), Lower Manhattan; and examine related toxic histories, environmental damage, impacted communities, clean-up and protection efforts and planning and design possibilities.

Students will conduct research at The Map Division of the New York Public Library, meet with environmental and design experts, and visit sites in Brooklyn and Manhattan. Based on this research, students will use digital mapping techniques, 360 videos, VR (virtual reality) and AR (augmented reality) technologies to create compelling experiential, spatial, analytical, critical, and reflective reconstructions of catastrophic events and remediation. Course readings further examine environmental issues and climate change from four unique perspectives: mapping and urban/ecological histories; design research reports; global and planetary views; and graphic, audio-visual imaginaries.

Credits: 4 points

Offerings: Spring semesters

ARCH GU4250 COLONIAL PRACTICES. 4 points.

In this seminar, we will consider colonial practices through architectures, institutions, infrastructures, and territories. Material architectures of extraction, settlement, occupation, and development have been used to occupy territories—and thus take on a special character in deserts, oceans, and jungles, which resist colonial mapping—just as conceptual architectures have produced forms of “coloniality,” following Maldonado-Torres, occupying the mind and spirit as well as the physical world. The seminar asks students to explore colonial practices in institutional structures, cultural production, built architecture, settlement, and ecologies—as sites with which to feel and think.

Students will lead discussion of shared readings, making presentations on concrete studies of the construction, destruction, maintenance, and use of architecture, infrastructure, and territories: for example, examining the figuration of Chiapas by the Zapatista movement, the colonization of space via launch sites in the Algerian desert, or the settlement of Indian coasts by abolitionist missionaries. Students are invited to bring their own historical objects of interest into the course and should expect to follow deep inquiry into an independent research question. The thematic arrangement of empirical studies is intended to frame open questions, structuring a debate on colonial practices as a theoretical framework that takes seriously the im/possibility of decolonizing architectural history. Our discussions will be propelled by the work of artists and architects, scholarly histories of architecture, space, and territory, and critical as well as radical indigenous, black and brown consciousness, feminist, and anticolonial and decolonial theory. Using actual places as intellectual problems—around which colonial maps have been constructed, across which nomads and migrants have moved, and within which insurgents have configured—this course attempts to offer strategic positions from which to sense, write, and think with architecture.

Credits: 4 points

Offerings: Spring semesters

Professor: Anooradha Siddiqi

Art History

AHIS BC3841 REFRAMING OLD MASTERS. 4 points.

GERs: Arts & Humanities, Thinking with Historical Perspective

This course historicizes the medium of painting and the institutional frame of the art museum in order to posit new solutions for presenting Old Master painting. At an art historical juncture in which medium-specificity and national traditions are increasingly rare and at a political juncture attuned to unequal histories of race, class and gender, how to engage with these works? What is the potential for subverting longstanding assumptions about the role of art by

reframing the Old Masters through innovative juxtaposition, installation and interpretation by contemporary artists, curators and the public? This course, led by a curator in European Paintings at The Metropolitan Museum of Art, takes place primarily at the museum. Assignments take the form of acquisition and exhibition proposals.

Credits: 4 points

Offerings: Spring semesters

Professor: David Pullins

AHIS BC3842 Design Designing. 4 points.

GER: Arts & Humanities

Everything we contact has been designed. Design makes and unmakes desires on a global scale. It organizes our lives—from the way we move to the interface that tracks our movements. We've trained for the end for a while now, apocalypse is announced on every image channel. In a world, soon impossible to physically inhabit, the things we consume now consume us. The stakes have never been higher. To make a new world, we must use design.

Our planet need not be disposed. It is an infrastructure for another one. To make contact with it we need to understand design as a value system for propelling possibility, not possession. The designed world requires new relation to things and fullness of use. As we read, write, experience and make our own projects, *Designing Design* helps us: acquire intimate knowledge of how we got here, recognize our historical allies and foes, and foster imagination and intelligence to live and make responsibly.

This course requires no prior design experience.

Credits: 4 points

Offerings: Spring semesters

Professor: Irena Haiduk

Biological Science

BIOL BC2272 Ecology. 3 points.

Prerequisites: BIOL BC1500, BIOL BC1501, BIOL BC1502, BIOL BC1503 or the equivalent. This course is a pre- or co-requisite for BIOL BC2873 Laboratory in Ecology.

Introduction to evolutionary ecology; life history strategies, population growth, competition, predator-prey interactions, population regulation, species diversity, community organization, and biogeography. Lectures integrate theory with empirical studies.

Credits: 3 points

Offerings: Spring semesters

BIOL BC2841 Laboratory in Plant Evolution and Diversity. 3 points.

Prerequisites: (BIOL BC2240) Enrollment is limited to 16; must attend first lab to hold place.

Studies of the structure, ecology, and evolution of plants. Laboratory exercises include field problems, laboratory experiments, plant collections and identification, and examination of the morphology of plant groups.

Credits: 3 points

Offerings: Spring semesters

Professor: Hilary Callahan

BIOL BC1599 Science Journal Club. 1 point.

Prerequisites: Limited to 16 students who are participating in the Science Pathways Scholars Program.

Students in this seminar course will be introduced to the scientific literature by reading a mix of classic papers and papers that describe significant new developments in the field. Seminar periods will be devoted to oral reports, discussion of assigned reading, and student responses.

Section 1: Limited to students in the Science Pathways Scholars Program.

Section 2: Limited to first-year students who received a 4 or 5 on the AP and are currently enrolled in BIOL BC1500.

Credits: 1 point

Offerings: Fall and Spring semesters

Professor: Paul Hertz

BIOL BC2262 Vertebrate Biology. 3 points.

Prerequisites: BIOL BC1500, BIOL BC1501, BIOL BC1502, and BIOL BC1503 or the equivalent.

Systematic survey of the Phylum Chordata: fossil history, biogeography, systematics, natural history, body architecture, energetics, locomotion, feeding, and behavior.

Credits: 3 point

Offerings: Spring semesters

Professor: Paul Hertz

BIOL BC2278 Evolution. 3 points.

Prerequisites: BIOL BC1500, BIOL BC1501, BIOL BC1502, BIOL BC1503 or the equivalent.

Study of the process of evolution with an emphasis on the mechanisms underlying evolutionary change. Topics include the origins of life, rates of evolutionary change, phylogenetics, molecular evolution, adaptive significance of traits, sexual selection, and human evolution.

Credits: 3 point

Offerings: Spring semesters

Professor: Brian Morton

BIOL BC2490 Coding in Biology. 3 points.

GER: Thinking Technologically & Digitally

Prerequisites: BIOL BC1500, BIOL BC1501, BIOL BC1502, BIOL BC1503, BIOL BC2100

An introduction to the basics of Python and R coding in the context of solving basic problems in molecular biology. Python will be used to write programs that analyze various features of DNA sequence data and R will be used to analyze output from RNA-seq experiments. No prior programming experience is necessary. The work will involve modifying existing code as well as developing simple programs from the ground up.

Credits: 3 point

Offerings: Spring semesters

Professor: Brian Morton

BIOL BC2500 MATLAB for Scientists. 3 points.

Prerequisites: BIOL BC1500, BIOL BC1502, and MATH UN1101

Introduction to MATLAB programming and numerical methods applied to the analysis of biological data. Topics range from foundational programming concepts and algorithms and an introduction to MATLAB, to more advanced concepts such as data visualization, curve fitting and data interpolation, basic statistical methods, modeling biological systems of ordinary differential equations, and image analysis.

Credits: 3 point

Offerings: Spring semesters

Professor: Allison Lopatkin

BIOL BC3590 Senior Seminar. 4 points.

Prerequisites: BIOL BC1500, BIOL BC1501, BIOL BC1502, BIOL BC1503, and BIOL BC2100 or the equivalent. Enrollment is limited to 12; must attend first class to hold place.

Required for all majors who do not select the year-long Senior Thesis Research & Seminar (BIOL BC3593 & BC3594) to fulfill their senior capstone requirement. These seminars allow students to explore the primary literature in the Biological Sciences in greater depth than can be achieved in a lecture course. Attention will be focused on both theoretical and empirical work. Seminar periods are devoted to oral reports and discussion of assigned readings and student reports. Students will write one extensive literature review of a topic related to the central theme of the seminar section. *Topics vary per semester and include, but are not limited to: **Plant Development, Animal Development & Evolution, Molecular Evolution, Microbiology & Global Change, Genomics, Comparative & Reproductive Endocrinology, and Data Intensive Approaches in Biology.***

Credits: 4 point

Offerings: Fall and Spring semesters

Chemistry

CHEM BC3230 Organic Chemistry I. 3 points.

Prerequisites: CHEM BC2001 or equivalent. Credit will not be given for any course below the 3000 level after completing CHEM BC3230 or its equivalent. Lecture: MWF: 10:00 - 10:50 AM
Corequisites: With lab, counts towards Lab Science requirement.

Atomic and molecular structure; stereochemistry of organic molecules; introduction to organic reactions, reaction mechanisms, and synthesis.

Credits: 3 points

Offerings: Spring semesters

Professor: Christian Rojas

CHEM BC3282 Biological Chemistry. 3 points.

Prerequisites: (CHEM BC3230) and (CHEM BC3231) BIOL BC1502.

Introduction to biochemical building blocks, macromolecules, and metabolism. Structures of amino acids, lipids, carbohydrates, nucleic acids. Protein structure and folding. Enzyme mechanisms, kinetics, allostery. Membranes and biosignaling. Catabolism and anabolism with emphasis on chemical intermediates, metabolic energy, catalysis by specific enzymes, regulation.

Credits: 3 points

Offerings: Spring semesters

Comparative Literature and Economics

CPLT BC3145 DERRIDA & LITERATURE. 3 points.

Jacques Derrida was one of the most important thinkers of the 20th century and his impact on literary studies was enormously significant. The objective of this course is to take stock of Derrida's contribution to literature, and to do so by assessing the intricate relations he establishes between literature, philosophy, economic and political theory, gender studies, translation studies, postcolonial theory, and theology. The course is divided into six parts. Part 1 introduces Derrida's approach to 'deconstruction,' particularly as regards his engagement with the fundamental concepts of Western thought and the importance he confers upon the notion of 'writing' itself. Part 2 examines Derrida's autobiographical texts wherein he positions himself as a subject for deconstruction, interrogating his own gender, his sense of being an organic, creaturely life-form, the relationship he has to his own language, and the matter of his identity as French, but also as Algerian, and Jewish. While the majority of the Derrida texts we will be reading are excerpts from larger works or short essays and interviews, in this section we will read a full-length text – *Monolingualism of the Other* – so that we can trace Derrida's train of thought from beginning to end. In Part 3 we will use an interview conducted by Derek Attridge, "This Strange Institution Called Literature," as a template for thinking about Derrida's relation to literature, and in Part 4 we will read our second full-length text by Derrida, namely *Given Time I: Counterfeit Money*, an in-depth analysis of a prose poem by the French poet Charles Baudelaire. Part 5 considers an aspect of Derrida's work that reveals the extent of his embrace of provisional, in-between positions for thought in general, and for literary texts in particular, namely translation. For deconstruction is keenly invested in words beginning with 'trans':

transposition, transplant, trans-valuation, and indeed trans-gender. Translation provides Derrida with a scenario whereby crossings and transits can be imagined – for literary texts, and for identities that wish to remain un-determined by fixed poles or normative values. The course finishes with an assessment of Derrida’s reflections on death, mourning, and the matter of leaving a legacy. In Part 6, we therefore read more of the essay “Living On,” and also Derrida’s final interview, “Learning to Live, Finally.” Not even Derrida could deconstruct away the finality of death, but he did hope to live on. My corresponding hope is that you will feel sufficiently attuned to Derrida’s thought that you consider it important to continue his legacy – to be one of the agents of his living on, survival or *survie*, a translator and transporter of his thought towards contexts that he could not have foreseen, but which he would doubtless have welcomed as a precious chance for his own work to be considered differently. Taking intellectual risks, thinking otherwise, and inventing new ways of knowing are, after all, the hallmarks of Derridean deconstruction.

Credits: 3 points

Offerings: Spring semesters

Professor: Brian O’Keeffe

Economics

ECON BC3039 Environmental and Natural Resource Economics. 3 points.

Prerequisites: ECON BC1003 or ECON W1105. Prerequisite for Economics majors: ECON BC3035.

Link between economic behavior and environmental quality: valuation of non-market benefits of pollution abatement; emissions standards; taxes; and transferable discharge permits. Specific problems of hazardous waste; the distribution of hazardous pollutants across different sub-groups of the U.S. population; the exploitation of commonly owned natural resources; and the links between the environment, income distribution, and economic development.

Credits: 3 points

Offerings: Spring semesters

Economics and Social History

ECHS BC2590 Measuring History: Empirical Approaches to Economic and Social History. 4 points.

This course examines big themes in economic and social history—population history and human well-being, inequality and poverty, and gender differences. Using these themes, it adopts a

hands-on data-driven approach to introduce tools and concepts of empirical reasoning. Datasets related to each theme create opportunities for learning by doing.

Credits: 4 points

Offerings: Spring semesters

Professor: Alan Dye

Education

EDUC BC3050 Science in the City. 4 points

Prerequisites: the instructor's permission.

In partnership with the American Museum of Natural History students investigate science, science pedagogical methods, and ways to use New York City as a resource for science teaching and learning. Sessions will be held at Barnard and the museum. Field trips and fieldwork required. Non-science majors' pre-service elementary students and first year students, welcome. Note: Students in the Childhood Urban Teaching Program may use this course as a pedagogical elective.

Credits: 4 points

Offerings: Spring semesters

Professor: Althea Hoard

EDUC BC3250 EDUCATION IN A POLARIZED AND UNEQUAL SOCIETY. 4 points.

The rise in political polarization and social inequality over the past few decades has challenged the ideals that public schools were founded on nearly two centuries ago. In the past few years, we have witnessed a surge in homophobic, racist, misogynist, and xenophobic rhetoric in our society and our schools. At the same time, teachers in classrooms across this country have been engaged in the difficult work of challenging oppression and injustice in their schools, communities, and nation. These teachers know that the future of our democracy is at stake. Using a historical and sociological framework, this course examines the past and present conditions that have led to political polarization, escalating inequality, and persistent injustice. It seeks to examine the lineage of racism, sexism, nativism, and imperialism on our nation and its schools and to consider the extent to which these challenges are uniquely American or part of a more global phenomenon. It offers an introduction to the deep current of American social, political, and economic culture that many argue has produced the challenges that our nation faces today: personal and political gain marred by intolerance, derived from wealth, and rooted in the history of segregation, sexism, and exploitation. Instead of seeing these challenges as separate entities,

the course acknowledges the intersectional nature of power and politics. Students will consider how these conditions affect their roles as educators and the lives of the youth and families in their schools and communities. They will leave the course with a deeper appreciation and understanding of the historical and sociological antecedents that have contributed to polarization, inequity, and injustice around the globe.

Credits: 4 points

Offerings: Spring semesters

Professor: Erika Kitzmiller

English

ENGL BC3130 The American Cowboy and the Iconography of the West. 3 points.

We will consider the image and role of the cowboy in fiction, social history, film, music, and art. Readings will include Cormac McCarthy's The Border Trilogy.

The seminar focuses on the establishment of the National Parks, viewing "Dances with Wolves" as an ecological western, and reading two essays on the exploitation of nature. This seminar encounters issues of "virgin" nature vs. the plans and protocols of capitalist civilization throughout the term--in Turner's "Frontier Hypothesis," in Theodore Roosevelt's plans for the National Park System, in viewing "environmental western" movies, and in reading critical essays.

Credits: 3 points

Offerings: Spring semesters

Professor: Margaret Ellsberg

ENGL BC3207 THE "GLOBAL" NOVEL. 3 points.

"Yes, globalization can produce homogeneity, but globalization is also a threat to homogeneity."
--Kwame Anthony Appiah, "The Case for Contamination," New York Times Magazine, 2006

Thinking through the arguments both in favor of and against globalization, particularly in the realm of cultural productions, in this course we will discuss the "global" novel. To that end, we will read essays from The Global Novel: Writing the World in the 21st Century about works such as Americanah, Snow, and The Reluctant Fundamentalist (along with the novels themselves) to investigate what is meant by "global" and what the criteria for including novels in

this categorization are. We will also consider whether there is an erasure of cultural difference and nuance in reading novels using a globalizing perspective in order to render them more approachable for a (primarily) US audience.

In order to think through and challenge this category of the global, we will also read novels that can be roughly categorized as postcolonial. We will thus consider how struggles for independence and the desire to locate one's identity either within freshly liberated nation-states or in the process of immigrating to former metropolises could give rise to cultural and psychological anxieties. We will also consider the manner in which late-stage capitalism could indeed push toward homogenized senses of self that manifest in a category such as the "global novel" and whether arguments could be made in favor of such homogenization. Ultimately, we will think about the politics of globalization and the desire to include in or exclude from the "global" certain locations, cultural products, or peoples.

Credits: 3 points

Offerings: Spring semesters

Professor: Aftefeh Akbari Shahmirzadi

ENGL BC3281 *Illegal Is Not a Noun: Disrupting Narratives of the Immigrant Experience.* 4 points.

This course engages with narratives about detention and deportation in the modern United States, with special attention to the stories of Latinx people. We will analyze how journalistic writing, documentaries, and personal narratives shape public policy and American attitudes about the "the immigrant experience." What are these narratives, how are they told, and what are their implications? How do writers disrupt these narratives? We will develop four scholarly essays over the course of the semester to investigate these questions.

Credits: 4 points

Offerings: Spring semesters

Professor: Maria Hinojosa

ENGL BC3291 *Fictions of Law and Custom: Whiteness in American Literature.* 3 points.

This course examines "white" American identity as a cultural location and set of discourses and traditions with a history—in Mark Twain's terms, "a fiction of law and custom." What are the origins of "Anglo-Saxon" American identity? What are the borders, visible and invisible, against which this identity has leveraged position and power? How have these borders shifted over time,

and in social and cultural space? How has whiteness located itself at the center of political, historical, social and literary discourse, and how has it been displaced? How does whiteness mark itself, or mask itself, in literature and in larger cultural practices? What does whiteness look like, sound like, and feel like from the perspective of the racial "other"? And in what ways do considerations of gender and class complicate these other questions?

Credits: 3 points

Offerings: Spring semesters

Professor: Kristin Carter

ENGL BC3196 Home to Harlem: Literature of the Harlem Renaissance. 4 points.

This course explores the cultural contexts and aesthetic debates surrounding the Harlem or New Negro literary renaissance, 1920s to 1930s. Through fiction, poetry, essays, and artwork, we will consider the movement within the context of American modernism and African American cultural history, focusing on the relationship or tension between art/literature and socio-political change. Topics considered include patronage, passing, primitivism and the problematics of creating a "racial" art in/for a community comprised of differences in gender, class, sexuality, and geographical origin. In Spring of 2020, this course may partner with Harlem Stage in the Barnard Harlem Semester Initiative.

Credits: 4 points

Offerings: Spring semesters

Professor: Kristin Carter

ENGL BC3250 Introduction to US Latinx Literature. 3 points.

This course introduces students to a growing body of work by Latina and Latino writers in the United States and engages with the critical tools necessary for analyzing a field of inquiry and practice that continues to reframe itself, right down to the label "Latinx." What does that name include, and what does it exclude, in cultural productions born of conflicts of origin, language, race, gender, sexuality, and nationality? For some understanding of context, we will turn to the history and pressures of transnational migration, exile, assimilation, bilingualism and queerness as these variously affect the means and modes of the literary productions with which we're concerned. At the same time, the course will emphasize the invented and hybrid nature of Latinx literary and cultural traditions, and it will investigate the place of those inventions in the larger framework of American intellectual and literary traditions. Readings will be drawn from work written primarily in English, but we will also consider graphic novels, Latinx performance, and

works in translation. Authors studied may include Rudolfo Anaya, Americo Paredes, Piri Thomas, Cherríe Moraga, Richard Rodriguez, Cristina García, Ana Castillo, Victor Hernández Cruz, Lorna Dee Cervantes, Junot Díaz, Coco Fusco, Yuri Herrera, and Juana María Rodríguez.

Credits: 3 points

Offerings: Spring semesters

Professor: Kristin Carter

ENGL BC3901 Senior Seminar: Women of Color in the US Public and Private Cultures. 4 points.

Enrollment limited to Barnard senior English majors. This course will explore cultural production and consumption by "women of color" in the U.S., with a focus on the way various groups have negotiated the presumed gap between private experience and public or political form. Historical, social, and cultural connections and disjunctions between African-American, Arab-American, Asian-American, Native American, Latina, and other women will be examined, especially in the context of feminism, cultural nationalism, and the scholarly discipline and practice of critical legal feminism and critical race studies. We will explore the varied ways in which family, labor, and leisure practices can place women of color in social positions which blur the distinction between private and public culture, and which call for a reconsideration of the notion of "experience," itself. Authors and critics to be considered may include Louise Erdrich, Cherríe Moraga, Valeria Luiselli, Chela Sandoval, Maxine Hong Kingston, Theresa Hak Kyung Cha, Cathy Hong Park, Mohja Kahf, and Chandra Mohanty.

Credits: 4 points

Offerings: Spring semesters

Professor: Kristin Carter

ENGL BC3292 QNYC. 3 points.

The cultural history of New York City is inextricable from the history of LGBTQI+ life. American poetry, theatre, ballet, opera, and visual art would be unrecognizable if New York had not been a hub for LGBTQI+ people. In this sprawling city, life could be characterized equally by its anonymity as by the sometimes-exacting bonds of its many tight-knit sub-communities. This course will provide a survey of LGBTQI+ literature and some related arts based in the city, starting in the colonial era and extending to the present day.

Credits: 3 points

Offerings: Spring semesters

Professors: Christopher Baswell, Rachel Eisendrath

Environmental Science

EESC BC3021 Forests and Environmental Change. 4 points

Prerequisites: Enrollment limited to 12 students. One year of college science or permission of instructor. Alternate years.

Seminar on forests in global change framework: forest distribution and link to climate, forest ecology, paleoecology, role of forests in global ecosystem, biological invasions, habitat fragmentation, biodiversity, conservation and management strategies. Format: class discussion of readings, student presentations on scientific papers, field trips, data collection and analysis.

Credits: 4 points

Offerings: Spring semesters

Professor: Terryanne Maenza-Gmelch

EESC BC3026 Bird, Plant and Land-use Dynamics. 3 points.

Prerequisites: Enrollment limited to 12 students. Permission of the instructor required.

This class looks at the response of wildlife (birds and plants) to climate change and land-use issues from the end of the last glaciation to the present. We visit wildlife refuges along a rural-suburban-urban gradient in order to observe and measure the role refuges play in conservation. Case study topics are: (1) land-use change over time: a paleoenvironmental perspective, (2) environmental transformations: impact of exotic and invasive plants and birds on local environments and (3) migration of Neotropical songbirds between their wintering and breeding grounds: land-use, crisis and conservation. Format: lecture, student presentations, field trips and data collection/analysis.

Credits: 3 points

Offerings: Spring semesters

Professor: Terryanne Maenza-Gmelch

EESC BC3040 Environmental Law. 3 points.

Process-oriented introduction to the law and its use in environmental policy and decision-making. Origins and structure of the U.S. legal system. Emphasis on litigation process and specific cases that elucidate the common law and toxic torts, environmental administrative law, and environmental regulation through application and testing of statutory law in the courts. Emphasis also on the development of legal literacy, research skills, and writing.

Credits: 3 points

Offerings: Spring semesters

Professor: Elena Neascu

EESC GU4050 Global Assessment and Monitoring Using Remote Sensing. 3 points.

CC/GS: Partial Fulfillment of Science Requirement, Lab Required
Enrollment limited to 24. Priority given to graduate students in the natural sciences and engineering.

Prerequisites: Course Cap 20 students. Priority given to graduate students in the natural sciences and engineering. Advanced level undergraduates may be admitted with the instructor's permission. Calculus I and Physics I & II are required for undergraduates who wish to take this course.

General introduction to fundamentals of remote sensing; electromagnetic radiation, sensors, interpretation, quantitative image analysis and modeling. Example applications in the Earth and environmental sciences are explored through the analysis of remote sensing imagery in a state-of-the-art visualization laboratory.

Credits: 3 points

Offerings: Spring semesters

Professor: Christopher Small

EESC BC3001 Conservation and Preservation: The Materiality of Art and Architecture. 3 points.

Conservation and preservation are an interdisciplinary study of earth materials, their transformation into art objects and architectural structures, and the philosophy and analytical techniques required to prepare conservation and preservation strategies for these objects and structures. The course is Beyond Barnard being hands-on and field trip oriented with a focus on the Metropolitan Museum of Art and local geology and infrastructure.

Credits: 3 points

Offerings: Spring semesters

Professor: Peter Bower

First Year Seminar

FYSB BC1114 Hot Stuff. 3 points.

Long before humans walked the earth; before dinosaurs were wiped out; before any sign of sentient life on earth; volcanoes were a feature of our planet. With the power to help create life, as well as wreak devastation and destruction, volcanoes inspire awe and terror in equal measure. This seminar will explore the science behind volcanoes, their impact on the environment and societies, as well as our enduring fascination with them through the lenses of history, arts, mythology and religion. Where and why do volcanoes erupt? How do they affect nature, climate and society? How has our understanding of these amazing natural phenomena evolved over time? Why do people stay in close proximity to volcanoes, despite the dangers? Can we predict when the next catastrophic eruption will occur? Can we harness the power of volcanic activity as alternative energy source? These are some of the many questions that students will seek to answer and will serve as a starting point for our deeper investigation into the subject throughout the semester. Students will study historical texts, case studies, current data and methods of analysis, as well as depictions of volcanoes in art and film. Group discussion, independent study and individual and group presentations. Students will research case studies and present their findings to the class.

Credits: 3 points

Offerings: Spring semesters

Professor: Sedelia Rodriguez

FYSB BC1466 Sustainability. 3 points.

Sustainability is being hailed as the solution that is going to link activists, citizens, and corporations to solve the world's environmental problems. However, there are many ways to define the term and assess the longterm effects of so-called "sustainable" measures. In this course, we will examine current and historical writings about human interactions with the environment in order to understand and identify our most profound environmental challenges and the most appropriate responses. Responding critically to the ideas of the past, we will also ask how our views have changed over time and what it might take to tackle the current large-scale environmental issues facing society. Projects for the course include a critical essay, a political opinion piece, and a survey of environmental attitudes which is informed by the data studied and collected in class.

Credits: 3 points

Offerings: Spring semesters

Professor: Brian Mailloux

FYSB BC1107 Race, Science, and Reproductive Justice. 3 points.

This course is about reproduction -- a biological and social process that is often the target of deep-seated ideas about nation, culture, conflict, and definitions of the "human." Looking at the relationships between reproduction, science, health, and identity formation, we will explore a variety of literary works, films, journalism, public health studies, and policy/legal texts, all of which differently narrate, debate, script, and theorize about reproduction. Questions we will explore include: what is reproduction -- scientifically, culturally, politically, and rhetorically? How do different historical and geopolitical contexts shape our understandings and management of reproduction, from ancient Egyptians who used pebbles as IUDs, to in-vitro fertilization and so-called "DIY" abortions, to population and development projects all over the world? How do long histories of reproductive violence shape modern definitions of reproductive health and justice, and what is the role of recent medical/technological/pharmaceutical developments in (re)configuring radically disparate reproductive experiences? Our conversations will both reveal and challenge the way we understand the reproductive body, the bodies it creates, and the contradictory meanings associated with these processes.

NOTE: Students in this FYS section will be required to participate in a 1-credit "writing lab" that will meet about six times over the course of the semester. The labs will focus on the writing, revision, and critical thinking goals specific to the major assignments in the course. All writing labs will be scheduled at the beginning of the Spring semester, and students will add the 1-credit lab to their course schedule at that time.

Credits: 3 points

Offerings: Spring semesters

Professor: Cecelia Lie-Spahn

History

HIST BC3177 Scarcity: Economy and Nature. 3 points.

GERs: Social Science, Thinking with Historical Perspective

Current patterns of economic growth are no longer environmentally sustainable. Global industrialization and the associated transference of carbon from the ground to the air are leading to a rapid exhaustion of resources and a warming of the planet. These changes have triggered a set of dangerous climactic transformations that are likely to cause massive ecological disruptions

and disturbances of food production systems. These changes, in turn, might have a profound impact on poverty, migration, and geopolitics. To better understand how we have arrived at the present predicament, this seminar explores the history of how social and economic theorists have conceptualized the interaction between the economy and nature. The focus will be on the concept of scarcity as a way of understanding the relationship between economic growth and environmental sustainability. The course begins in the Renaissance and traces the evolution of the nature/economy nexus to the present.

Credits: 3 points

Offerings: Spring semesters

Professor: Carl Wennerlind

Political Science

POLS BC3451 COLLOQUIUM ON INEQUALITY AND POWER IN THE U.S. 4 points.

GERs: Social Science

In recent decades, economic inequality in the United States has soared to levels not seen for nearly a century: Wages for workers have stagnated, while the proportion of wealth concentrated among the most well-off Americans has steadily increased. These trends may have dire consequences for the state of representative democracy in the United States, as they endow a relatively small number of citizens with a disproportionate amount of resources to deploy politically. The result is a political system that often responds to the preferences of the wealthiest Americans, while frequently ignoring the views of most ordinary citizens.

This course, in diverse ways, explores the political causes and consequences of rising inequality, especially with regards to who has political power. We will begin by examining the contours of inequality in the U.S. while also exploring the various ways that power manifests itself in politics. We'll then explore the relationship between wealth and public policy outcomes in the United States, along with the ways that the very wealthiest Americans – both individually and collectively – work to advance their policy views. Beyond just examining national-level politics, we will also discuss inequality and power on the state- and local-levels. We'll then explore how political and economic inequality are interrelated with race and social class, and how all of this connects to the rise of Donald Trump. Finally, we will assess potential remedies to political and economic inequality.

Credits: 4 points

Offerings: Spring semesters

Professor: Matthew Lacombe

Religion

RELI UN3430 Indigenous Religious Histories. 4 points.

Nomads, natives, peasants, hill people, aboriginals, hunter-gatherers, First Nations—these are just a handful of the terms in use to define indigenous peoples globally. The names these groups use to describe themselves, as well as the varying religious practices, attitudes, and beliefs among these populations are far more numerous and complex. For much of recorded history however, colonial centers of power have defined indigenous peoples racially and often in terms of *lacking* religion; as pagan, barbarian, non-modern, and without history or civilization.

Despite this conundrum of identity and classification, indigenous religious traditions often have well-documented and observable pasts. This course considers the challenges associated with studying indigenous religious history, as well as the changing social, political, and legal dimensions of religious practice among native groups over time and in relationship to the state. Organized thematically and geographically, we will engage with classic works of ethnohistory, environmental history, indigenous studies, the history of anthropology, and religious studies as well as primary sources that include legal documentation, military records, personal testimony, and oral narrative.

Credits: 4 points

Offerings: Spring semesters

Professor: Tiffany Hale

RELI UN2779 Introduction to Native American Religious Traditions. 3 points.

GERs: Thinking about Social Difference, Thinking about Historical Perspective

There are over 800 distinct Native American nations currently within the borders of the United States. This course offers a broad introduction to the diversity of American Indian religious systems and their larger functions in communities and in history. We will explore general themes in the study of Native American religious traditions as well as look at some specific examples of practices, ideas, and beliefs. Of particular importance are the history and effects of colonialism and missionization on Native peoples, their continuing struggles for religious freedom and cultural and linguistic survival, and the ways in which American Indians engage with religion and spirituality, both past and present, to respond to social, cultural, political, and geographical change.

Credits: 3 points

Offerings: Spring semesters

Professor: Tiffany Hale

Sociology

SOCI UN3701 Sociology of Energy. 4 points.

This course explores many of the social forces that determine how energy is produced and what the consequences are. The course will focus in particular on how geographic communities, social identities, and related economics, cultures, and politics shape energy production.

Credits: 4 points

Offerings: Spring semesters

Professor: Deborah Becher

SOCI BC3750 How Race Gets Under Our Skin: The Sociology of Race, Health, and Biomedicine. 4 points.

GERs: Social Science, Thinking about Social Difference

One of the glaring forms of inequalities that persists today is the race-based gap in access to health care, quality of care, and health outcomes. This course examines how institutionalized racism and the structure of health care contributes to the neglect and sometimes abuse of racial and ethnic minorities. Quite literally, how does race affect one's life chances? This course covers a wide range of topics related to race and health, including racial inequalities in health outcomes, biases in medical institutions, immigration status and health, racial profiling in medicine, and race in the genomic era.

Credits: 4 points

Offerings: Spring semesters

Professor: Amy Zhou

Theater

THTR UN3997 Senior Thesis: Performance. 4 points.

Prerequisites: Appropriate coursework and substantial production experience, including a major crew assignment in the junior year. Enrollment limited to senior Theatre majors. Combined and special majors may be considered under exceptional circumstances. Permission of the instructor required.

Students will act in, direct, design, or dramaturg a play in the Barnard Department of Theatre season or write a short play or solo performance piece that will be produced (according to departmental guidelines) in the Senior Thesis Festival. Collaboration is expected and students will meet weekly with faculty and other seniors. A written proposal must be submitted in the spring of the junior year and be approved. In addition to the performance, an extensive written Casebook is required: see departmental guidelines.

Credits: 4 points

Offerings: Fall and Spring semesters

Professor: Sandra Goldmark

Urban Studies

URBS UN3350 Environment, Climate Change, and Vulnerability of Cities: Our New “Normal”. 3 points.

For majors; non-majors by permission at 1st class.

GERs: Social Science, Thinking about Social Difference, Thinking through Global Inquiry

Urban experts face one of the greatest challenges in the history of urbanization: the multidimensional environmental crisis unfolding on our planet. Policymakers have responded by formulating the “sustainable development model” as an option to be implemented in our growing cities. Popularized by the 1987 United Nations’ report “Our Common Future,” commonly known as the “Brundtland Report,” the term “sustainable development” has acquired different meanings and contents depending on its socio-economic context and its historical moment. This course will explore what urban sustainability means today in light of the climate change crisis from a gender and intersectional perspective. What can urban experts do to respond to urgent consequences of environmental deterioration in both industrialized and less industrialized world regions? What are the proper interventions to mitigate the burden on vulnerable social groups of phenomena such as: weather extremes, displacement, interethnic and social conflicts, food insecurity, and spread of diseases, among others? By examining case studies and applied methodologies we will analyze how climate change impacts different social groups in our cities, identifying adaptation and mitigation strategies being currently implemented. Tools to apply climate change scientific data will be provided. Students will have the opportunity to study and engage in climate change action platforms, such as the Conference of the Parties to the United Nations Framework Convention on Climate Change.

Credits: 3 points

Offerings: Spring semesters

Professor: Marcela Tovar-Restrepo

URBS UN2200 Introduction to GIS. 3 points.

Prerequisites: Must attend first class for instructor permission.

Due to the high demand for our limited-enrollment spatial analysis course (URBS V3200) the Urban Studies program is offering an introductory course to the fundamentals of GIS (Geographic Informational Systems), specifically for non-majors. Students create maps using ArcGIS software, analyze the physical and social processes presented in the digital model, and use the data to solve specific spatial analysis problems. Note: this course does fulfill the C requirement in Urban Studies.

Credits: 3 points

Offerings: Spring semesters

Professor: Christian Siener

URBS UN3450 Neighborhood and Community Development. 3 points.

This course traces the history of the community development movement in the US from its roots in the early Progressive Era settlement house movement where reformers worked to address social and environmental impacts of rapid urbanization and poverty. It examines labor community organizing campaigns in the 1930s-40s which often included environmental conditions in their platforms. It examines the roots of community development in relation to the community control movements of 1950-70s often responded to hazardous environments instigated by local land use, segregation and planned shrinkage. We move forward to examine the environmental justice movements that organize around noxious neighborhood conditions and the sighting of undesirable land uses in low income neighborhoods. In the 21st century, we examine the work of community development to promote and plan sustainable communities that are resilient and inclusive. The course addresses the interconnection between the built environment and community which requires attention to issues of sustainability, resilience and environment in the context of neighborhoods.

Credits: 3 points

Offerings: Spring semesters

Professor: Mary Rocco

URBS UN3992 Senior Seminar: The Built Environment. 4 points.

Prerequisites: Senior standing. Year-long course; participation is for two consecutive terms. No new students admitted for spring.

Emphasizes the study of the built environment of cities and suburbs, and the related debates. Readings, class presentations, and written work culminate in major individual projects, under the supervision of faculty trained in architecture, urban design, or urban planning.

Credits: 3 points

Offerings: Spring semesters

Professor: Christian Siener

Women's and Gender and Sexuality Studies

WMST BC3132 Gendered Controversies: Women's Bodies and Global Conflicts. 4 points.

The course explores how gendered social relations are implicated with climate change and how gender justice and environmental justice intersect.

Investigates the significance of contemporary and historical issues of social, political, and cultural conflicts centered on women's bodies. How do such conflicts constitute women, and what do they tell us about societies, cultures, and politics? - D. Ko

Credits: 4 points

Offerings: Spring semesters

Professor: Janet Jakobsen and Rebecca M Young