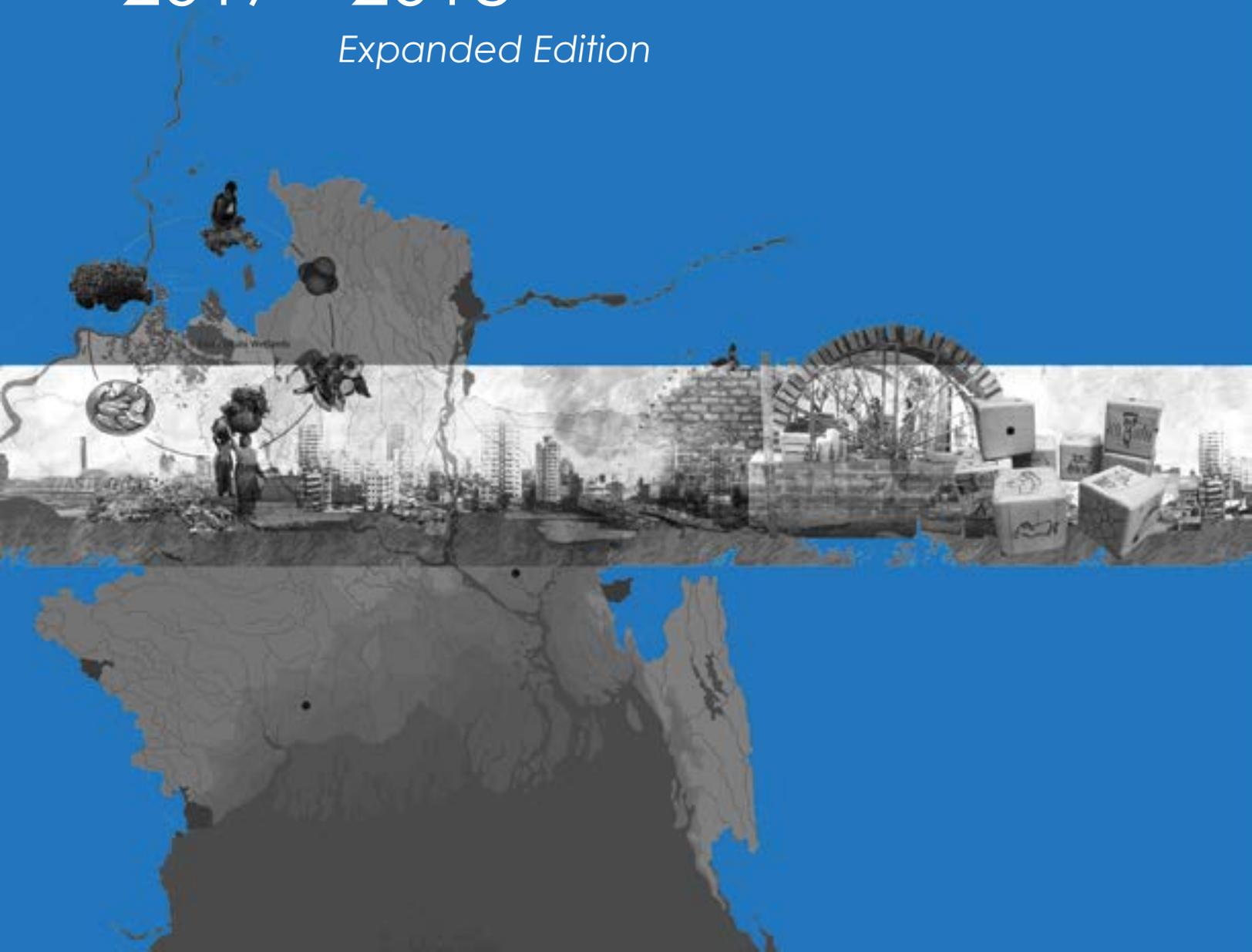


NATURE CULTURE SUSTAINABILITY 2017 - 2018

Expanded Edition



NATURE-CULTURE-SUSTAINABILITY STUDIES

UNDERGRADUATE CONCENTRATION IN NATURE-CULTURE-SUSTAINABILITY STUDIES (NCSS)

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The Nature-Culture-Sustainability Studies Concentration (NCSS) is a 21- credit concentration that allows RISD students to construct a pathway for undergraduate environmental education working across liberal arts and the studio departments. Whilst housed-in and administered-by the Division of Liberal Arts, the NCSS is an all-college interdisciplinary undergraduate concentration. The concentration allows students to create their own pathway of study drawn from the fields of: sustainable design, the environmental social sciences, the environmental humanities, social and environmental justice studies, the environment, and the fine arts. Courses that can earn NCSS credit and are open to NCSS concentrators are identified as such in the NCSS course catalog. Students will also complete a 3-credit core course in Nature-Culture-Sustainability Studies – The NCSS Core Seminar.

The NCSS is a capped program. All RISD BFA students can apply to join the NCSS Concentration. However, concentration numbers are limited to 30 students per academic year. Students are selected by the NCSS Advisory Board in the Spring semester of the academic year. Application forms are available from the NCSS Coordinator, Peter Dean (pdean@risd.edu).

Typically, concentrators meet or communicate with the concentration coordinator once or twice a year to discuss course options and to update their records. NCSS concentrators may pre-register for a select range of Liberal Arts courses that are identified in the NCSS catalog as NCSS credit-worthy courses. The concentration coordinator will contact all concentrators with the relevant instructions shortly before the official registration period. This pre-registration option is available in fall and spring only.

The learning and making objectives of this concentration are to enable students to:

- Study the historical and contemporary causes and consequences of environmental challenges.
- Advance a sophisticated, critical understanding of the ways aesthetics, objects, and language interact with culture, power relations, and institutions to shape our perceptions of the natural and built world.
- Identify the connections among cultural, social, political, philosophical, and scientific perspectives that shape human-environment interaction.
- Reflect on the contours of their own socio-ecological identity and its potential impact in the world.
- Refine the intellectual, conceptual, and technical skills they need to generate art and design-based responses, critiques, and solutions to contemporary and future environmental challenges.
- Expose and expand the connections between the environmental social sciences, nature-culture studies, design, and the fine arts through the lens of sustainability.
- Develop the leadership skills they need to become critical voices, innovators, and actors, extending our understanding of nature, culture, and sustainability through art and design.

The NCSS concentration can be completed within a 4-or 5-year degree program. Requirements: To complete this interdisciplinary undergraduate concentration in Nature-Culture-Sustainability Studies (NCSS), students will complete a minimum of 21 credit hours of relevant coursework.

Students will also complete a 3-credit core course in Nature-Culture-Sustainability Studies – The NCSS Core Seminar. This course will receive credit as a non-major studio elective cross-listed in the Divisions of Liberal Arts, Fine Arts, Architecture and Design. Students may distribute their remaining credits for the concentration according to their individual needs and creative passions.

Brown classes may qualify for NCSS credit, but do not appear in the NCSS catalog. Concentrators may petition for inclusion of these classes by submitting a request to the concentration coordinator that includes the course description.

NCSS Concentrators may also petition the concentration coordinator for the inclusion of studio classes in the student's major department or a non-major studio elective by virtue of the way the student chooses to do the work in that studio. If the content of the student's work reflects the values of the NCSS Concentration, then the course's six credits may qualify for NCSS credit. The minimum grade for NCSS credit of B- still applies.

Note:

- RISD students will be able to 'double count' up to 9 credits of courses they have taken in their major as NCSS courses as long as such courses are identified as fulfilling NCSS requirements;
- Students must receive a B- or above for any RISD course they wish to count toward the NCSS concentration;
- NCSS concentrators will be able to transfer a maximum of 6 credits from other universities to fulfill their NCSS concentration requirements; all these courses must receive at least a B-, or in the case of universities where letter grades are not issued, a passing grade;
- All 4-credit courses from other universities will transfer into this concentration as 3-credit courses;
- Discretion regarding whether courses from other universities meet the standards for an NCSS course rests with the NCSS concentration coordinator;
- RISD students will be able to petition the NCSS coordinator to request consideration for NCSS credit for work completed in studio courses that are not designated NCSS courses. Students need to demonstrate and document to the satisfaction of the NCSS coordinator that their work is substantively informed by the themes of the concentration.

COURSE OFFERINGS 2017-2018

APPAREL

JUNIOR DESIGN/TECHNOLOGY/SOURCING

APPAR-3135

Kathleen Grevers / 3 credits / Fall

Research, design process and structural principals of tailoring are developed during this Spring semester course. Students tailored collection sources materiality and fundamentals of local sourcing, production, and insight into the hidden structure of State of Rhode Island's regional supply chain. Technology and ethical design advancement towards low-waste, low-water and reusable materials will be exposed and approached with creative, artistic logic along with examination towards future trends to unveil students ethical and sustainable final collections.

ARCHITECTURE

ENVIRONMENTAL DESIGN I ARCH 2156

J. Geisinger / 3 credits / Fall

The study of basic concepts of Human Environmental Comforts. Inherent within 'physio-environ' considerations are principles of temperature, humidity, heat transfer, air movement, and hydrostatics. These principles will be studied in terms of their abstract physics and mathematics, through empirical benchmarking and as the basis for a design proposal that includes considerations of larger scale strategies as well as assemblies. Emphasis will be placed on the principles behind the technology, the behavioral characteristics and the qualities of the systems' operation considered in making building design decisions.

*Major requirement; ARCH majors only
Registration by Architecture department.
Course not available via web registration.*

ENVIRONMENTAL DESIGN II ARCH 2158

J. Geisinger / 3 credits / Spring

This equally distributed three part course will continue with the principles from "Physics", the application of electric energy, lighting and

sound to building environs. Building technology continues to demand a larger percentage of the building's budget and thus should receive a greater degree of time and understanding by the Architect. Topics and principles to be included are: electronic generation, distribution, and building systems; electronic and communication systems; lighting fundamentals, design and control; and enviro-acoustical fundamentals, sound transmission, amplification, and absorption principles.
*Major requirement; ARCH majors only
Registration by Architecture department.
Course not available via web registration.*

HISTORY OF ART AND VISUAL CULTURE

SCIENCE OF ART HAVC H463

Matthew Landrus / 3 credits / Winter

This course will examine scientific and technical applications developed by Western artists and visual theorists from the Renaissance to the nineteenth century. Concentrating on pictorial traditions, the course will address what artists, authors and artist/engineers have referred to as scientific, technical, mechanical, and purely mental solutions to optical, proportional and quantitative visual problems. General themes will be perspective, form, color, and mechanical devices, and will include discussions on intellectual training, notebooks, treatises, and collecting. The course will examine artists such as Masaccio, Leonardo, Piero della Francesca, D|rer, Serlio, Carlo Urbino, Cigoli, Rubens, Vel`zquez, Saenredam, Vermeer, Poussin, Andrea Pozzo, Canaletto, Phillip Otto Runge, Turner, Delacroix, Monet, and Seurat.

HISTORY, PHILOSOPHY, AND THE SOCIAL SCIENCES

RETHINKING GREEN URBANISM HPSS S151

Damian White / 3 credits / Spring

As over half the world's population has come to live in cities, urbanization has moved to the center of the environmental debate. This course will provide an interdisciplinary reflection on the past, present and future of ecological urbanism. Co-taught between a liberal arts and an architecture professor, (but open to all majors) the course will attempt to interrogate the ways in which green urban design has been conceptualized to date. It will interrogate the limits

of present conceptions and it will explore cutting edge contemporary debates around the future of the green urban project.

ENVIRONMENTAL PSYCHOLOGY HPSS S431

Bryce DuBois / 3 credits / Fall

This course offers an overview of the interdisciplinary field of environmental psychology. We will explore the dynamic relationships between people and places in order to understand how our behavior and cultural values shape our environment, and how in turn, our surroundings affect us. Using the lens of environments where we live, work and play, we will examine the everyday experience of different types of places including the home, institutional settings, public space, and play spaces. Attention will be placed upon social and spatial inequalities, local and global relations, and intersections of race, gender, sexual orientation, culture, and power. We will explore psychological questions of perception, place identity, culture, place attachment, cognition, and the meaning of spaces through readings, film, visual exercises, and environmental analysis.

CITIES OF THE GLOBAL SOUTH HPSS S436

Namita Dharía / 3 credits / Fall

In this class we compare and contrast various cities of the Global South and examine their relationship to the Global North. We ponder upon the valences and representations of the terms Global South and North, and examine the politics and processes of urban life. We will travel the world to examine the built environment, economies, and experience of cities such as Mumbai, Kunming, Sao Paulo, Cairo, Bangkok, and Bogota. The course will explore the resonances between these cities and the kinds of challenges they face as they encounter rapid urban growth and renewal.

THE POLITICAL ECONOMY OF GLOBAL SUPPLY CHAINS HPSS S439

Alero Akporiaye / 3 credits / Fall

How do design objects, transformed into good/products in the production process, get from producers to consumers? In this course, we examine the global supply chains involved in the global system of organizations, people, processes, and resources that transform raw materials into finished products. We will first lay a foundation for understanding global supply chains, drawing from political science, economics, and management. Next, we will engage in critical analysis of the process and network with

respect to issues that include human rights, gender, the environment, and labor standards. We will correspondingly examine the roles of actors such as governments, firms, consumers, international organization, and non-governmental organizations involved in global supply chains.

INDIGENOUS KNOWLEDGE HPSS S469

Claudia Ford / 3 credits / Spring

The course will examine why indigenous knowledge systems have been portrayed as more effective ways of addressing pressing environmental challenges: sustainable development, climate change, biodiversity conservation, energy, sustainable agriculture, and the negative effects of globalization. We will demonstrate how art and design can make visible the often marginalized knowledge systems and practices of indigenous communities.
Open to undergraduates only

SEM: GLOBAL ENVIRONMENTAL INEQUALITY, LOCAL ENVIRONMENTAL JUSTICE HPSS S481

Claudia Ford / 3 credits / Winter

In this course we will explore the interdisciplinary subjects of global environmental justice, environmental racism, and other environmental inequalities. The primary goal of this course is for students to comprehend the multiplicity of critical issues, debates, and responses within global and local environmental justice. We will discuss and analyze environmental justice as a movement that involves marginalized communities in diverse ways in a globalized world. Using case studies, this course will consider examples of toxic distribution and exposure, accidents and disasters, regulatory failures, barriers to political participation, and the commodification of land and labor. The course will identify contemporary responses to environmental inequalities including grassroots local and international advocacy, climate justice, food justice, indigenous rights, ecofeminism, and Julian Agyeman's concept of "just sustainabilities."

CLIMATE FUTURES AND A SOCIOLOGY OF A JUST TRANSITION HPSS S487

Damian White / 3 credits / Fall

We have to change. In this course students will learn how to critical interrogate, probe and appraise the diverse visions of the sustainable transition that are now being conceptualized and, in part,

implemented in the global North and South. We will draw from emerging discussions of the sustainable transition occurring in environmental sociology, political ecology, critical design studies and energy/technology studies concerned (variously) with ecological modernization, "green growth" degrowth and "the green new deal." We will sociologically evaluate the contributions that organized labor, women, indigenous people, and diverse peoples of color have made to imagining the "just sustainable transition", "redirective practices", plenitude, and buen vivir. We will look at how transition talk is transforming, ecology, design and the arts. Finally, students will be encouraged to consider how their own creative and critical practice might generate new reconstructive fusions between environmental sociology and art/design and film that might move us beyond our current impasse and towards a more hopeful vision of our planetary futures.

NCSS CORE SEMINAR LAEL 2403/IDISC 2403

Nicole Merola + Lili Hermann / 3 credits / Fall and Spring

In the NCSS Core Seminar, students explore key issues in nature-culture-sustainability studies, developing an inter-disciplinary understanding of the need for integrative approaches to issues including mobility and infrastructure, environmental justice and equity, sustainable food and water systems and the very real present and future of climate change. Beginning with definitions of "nature" and natural systems, drawn from environmental literature and history, we will dig into questions of what we mean by "culture" and "sustainability". The vitality of the ecologic and social and built environment upon which we all depend will form the core of our investigations. How and where we live matters; in the present Anthropocene, questions of resiliency and adaptation take on ever greater urgency. We will study contemporary conditions with examples from across the globe, with an eye to understanding how innovation and creative practices in art and design impact future planetary health.

This course lays the foundation for students pursuing the NCSS concentration. The seminar will include lectures and discussions of readings and case studies. Occasional guests will include scientists, designers and others engaged at the forefront of environmental activism and research. Students may ground their final course project in a topic connected to their own work, relating it to their major or another concentration, in addition to NCSS.
Offered as LAEL S564/IDISC 2403. Register in the course

for which credit is desired.

Sophomore and above

LITERARY ARTS AND STUDIES

BIRDS IN BOOKS LAS E326

Michael Fink / 3 credits / Spring

We begin with a study of the bird painters, illustrators and photographers, most notably, of course, John James Audubon, and continue with the symbolic bird of poetry and literature, such as Green Mansions by W.H. Hudson--the bird as woman--and examine the bird as omen and warning--the ecological and environmental indicator of human fate. Our books include such recent essays and memoirs as Jonathan Safran Foer's Eating Animals - an indictment of the poultry industry and a plea for vegetarianism - and also the arguments both personal/subjective and yet also scientific for the intelligence of birds such as the bestseller books Alex: The Parrot that Owned Me and Wesley the Barn Owl, in which birds appear not so much as pets but rather as companion creatures who share our destiny and condition.

Our course will include actual birdwatching during times of migration or nest-building, either locally within the borders of our campus world, or beyond its frontiers. Migration has always meant the crossing of national barriers, and therefore a promise of peace and order despite the turmoil under the skies. We read, we watch, and we design projects relevant to the various meanings of birds to be found in books.

SEM: "FROM MACONDO TO McONDO": THE BOOM AND BUST OF THE LATIN AMERICAN NOVEL

LAS E747

Patricia Barbeito / 3 credits / Fall

Associated for many years with the exoticism of magical realism (el boom), the Latin American novel has turned to the gritty realism of urban settings shaped by mass media and global corporate capitalism (McOndo). In this course we will examine the political and cultural meaning of this shift in literary styles and focus. The course begins with a short overview of magical realism to set the stage for our subsequent discussions. The majority of the class, however, is dedicated to an examination of the contemporary writers and sub-genres that constitute the McOndo movement, including the noir crime novel, the crack generation, and the postmodern novel of biculturalism. Authors may include: Alberto Fuguet, Giannina Braschi, Ignacio Padilla, and Paco Ignacio Taibo.

THREE AFRICAN WRITERS LAS E790

Jonathan Highfield / 3 credits / Fall

Focusing on the representation of the environment and material culture, this course takes a close look at the work of three writers from the African continent. The writers examined will change regularly each time the course is taught. What narrative techniques does each writer employ? How does history inform each writer's work? What is each writer's relationship to the environment, her country, and the continent as a whole? What is the trajectory of each writer's work, and how do the styles employed alter over time? Some writers who might be considered are Chinua Achebe, Ama Ata Aidoo, Ayi Kwei Armah, J.M. Coetzee, Nuruddin Farah, Nadine Gordimer, Bessie Head, Ngugi wa Thiong'o, Ben Okri, Sembene Ousmane, Tayeb Salih, Wole Soyinka and M.G. Vassanji.

LIBERAL ARTS ELECTIVES

ISSUES IN LANDSCAPE HISTORY LAEL 1020

Eric Kramer / 3 credits / Spring

This course examines current issues raised by the design of built environments and explores the cultures, conditions, events, attitudes and design works of the past that form the ideological, physical and practical background against which today's landscapes are made, interpreted and valued. Critical to this course will be the establishment of frameworks for historical inquiry, the refinement of research methodologies, and the development of multiple perspectives through which to question and understand the designed environment.

Major requirement; LDAR majors only

Registration by Landscape Architecture Design department, course not available via web registration

PORTUGAL: MATERIAL PRACTICES LAEL 1520*

Nicole Merola/Laura Briggs / 6 credits / Winter

Although separated by the Atlantic Ocean, Providence and surrounding New England towns have deep ties to Portugal. An influx of immigrants from Portugal, who settled in New England in the late-18th century, links the two regions. Providence, East Providence, Central Falls, Fall River, and New Bedford, among other towns, continue to function as vital hubs for Portuguese Americans today. Students in the co-requisite liberal arts and studio courses that comprise "Portugal: Material Practices" will use the methodologies of architecture, design, and the

environmental humanities to investigate how two different materials—wood and cork—function as nodes in intersecting biological, cultural, economic, geological, material, political, social, and theoretical networks that route through Portugal. Although stone and cork and the material explorations students will conduct in relation to these materials are specifically linked to the areas of Portugal we will visit, these explorations are applicable to broader contexts, both local and global.

Students will spend the first three weeks of the course in Portugal, which offers a unique context in which to study making and adapting the natural and built environment towards sustainable models of design innovation. While abroad, students will study the roles natural resources play in the future of historic places; will investigate principles for the design of artifacts, systems, and/or building technologies that engage both local and global knowledge; and will use literature, theory, and other cultural texts to test, frame, and deepen their ideas. Locations will include the San Miguel, Lisbon, Porto, and the Alentejo region, with additional day trips. The last two weeks of the course will take place in Providence. Students will complete regular design, drawing, collecting, reading, and writing assignments throughout the entire course. Producing the final project for the course—a publication that will weave together architectural and environmental humanities approaches to a site from the travel component of the course—will be the focus of the last two weeks of the course.

Students in this course will receive 6 credits, 3 IDISC credits and 3 LAEL credits.

****Off campus study****

Registration begins in October at a TBA

Permission of Instructor Required

Estimated course fee: \$2500.00

SCIENCE ELECTIVES

The Liberal Arts Electives in Science are developed specifically for student artists and designers interested in biology, ecology, cognitive science, mathematics, physics, geology, and the natural world in general. All emphasize science literacy, and many encourage students to connect the subject matter to their studio work. The following 11 courses are science electives.

WATER EMERGENCY: THE SCIENCE OF WATER, HUMANS, + DESIGN SOLUTIONS SCI 1001

Bonnie Epstein Silverman / 3 credits / Winter

"Water is the driving force of all nature" - Leonardo da Vinci. Humanity's relationship with water is fickle - although necessary for life, when it is plentiful we

take it for granted. We use water to make electricity, remove our waste, cool our power plants, irrigate our crops and - of course - drink. Sometimes we do several of these at once, leading to unfortunate results. Learn the science behind the planet's water and how humanity interacts with it. We will visit water treatment and sewage treatment plants examine the causes and results of drought, wild fire, salt-water contamination wells, shrinking aquifers, "nutrient pollution" of oceans and more. The goals of this course are threefold: (1) To clarify how water works in earth's systems spanning geology, chemistry, biology and physics (2) To outline how humans interact and leave their mark on every step of these cycles and (3) To encourage students to understand these water issues as challenges in need of the intelligent and creative solutions that they are equipped to deliver. This course will include a final project design solution to an aspect of one of the water problems touched on in class. No prior science background is required.

BOTANY IN THE KITCHEN SCI 1002

Hope Leeson / 3 credits / Winter

While we eat foods from over 60 different plant families, we rarely stop to consider how any of those plants might be related from an evolutionary standpoint, or why we might eat one species of the family (say the potato), but not another (the deadly nightshade). This course will look at the context in which the plants we eat exist among the hundreds of thousands of plants on this planet. Organized around the human culinary uses of plants, the class will explore the evolutionary relationships between foods, and discover what it is, that links them together. We will examine the parts of plants humans consume, and in so doing discover how taste and nutritional value found in leaves, seeds, and roots, is linked to nutrition and protection for plants themselves. The seminar will culminate with a botanical feast, created by the class and featuring unique dishes created from taxonomically related groups of plants.

TOPICS IN PHYSICS SCI 1045

Donald Thornton / 3 credits / Fall

Advanced and basic topics in the physical sciences are explored in this class. An overview of space-time and the expanding universe is followed by topics in: light quantum, the atom, and quantum physics. Other topics include wave-particle duality, gravity, time, black holes, and the special and general theories of relativity. Then we examine the unification of physics through the emerging result of (super) string theory which in spite of the incompatibility between general

relativity and quantum mechanics harmoniously unites (and also requires) these conflicting theories. The already non-intuitive dimensions of space-time beautifully expand in the quantum geometry of string theory.

BIOLOGY OF ANIMAL-HUMAN INTERACTIONS

SCI 1084

Lucy Spelman / 3 credits / Fall

This course examines how human activity impacts the animal world, how animals impact us, and how both are affected by the health of the environment. We may find it convenient to think of humans as living in one sphere while plants and animals occupy another, but it's not that simple. All creatures share the same basic needs for air, water, shelter, food, space, and companionship - and we compete for these resources. In order to maintain the balance necessary for healthy ecosystems, it's essential that we understand how one species impacts another. Using a series of examples, we'll explore these connections, beginning with simpler animals and ecosystems, and moving up to more complex ones. Topics covered include coral bleaching, the extinction of frogs, the use of DDT to control malaria, why dolphins strand, the future of polar bears - and more. We'll also study the potential solutions to these problems.

EVOLUTIONARY BIOLOGY SCI 1087

Lucy Spelman / 3 credits / Winter

Evolution is the process by which living Organisms change over generations of time. This course examines how evolution occurs through natural selection, mutation, and genetic drift, beginning with the search for the origin of species (speciation) by artist-naturalists Charles Darwin, Alfred Wallace, and Henry Bates. Their observations of animal diversity (species variation, island geography, and mimicry) provided evidence for common descent within the animal kingdom, and led to the development of the theory of evolution by natural selection. Studies of the fossil record paleontology yielded more evidence. Eventually, the genetic basis of evolution was explained by Gregor Mendel's discovery of heritable traits, later named genes. Today, studies of evolution continue on a molecular scale with DNA and RNA (genomics) and proteins (proteomics). Students will be graded based upon responses to study questions, participation during class discussion, performance on two written exams and a project on scientific visualization.

INTRODUCTION TO INSECT MORPHOLOGY AND ECOLOGY SCI 1089

Maria Aliberti Lubertazzi / 3 credits / Fall

Has the unfathomable diversity of insects ever fascinated you, but left you wondering where to begin? This is a basic course in entomology for the natural historian and artist. All orders of Class Insecta will be introduced, with both field and lab components whenever possible. Basic insect morphology and ecology will be covered for most orders, with opportunities for artistic rendition and use of both live and dead specimens as models. Students will learn basic insect anatomy and taxonomy for the identification of insects to order-level. Elements of insect ecology will infiltrate everything we look at, in both the field and the lab. Emphasis will be placed on the major orders (beetles, flies, butterflies/moths, etc.); the minor orders will be covered to varying degrees, but this can be adjusted according to the class consensus. Coursework will include field collecting trips, observation and drawing of specimens using a microscope, identification quizzes, and a course project that will emphasize the creation of materials for educational outreach. Additionally, students will finish with their own curated insect collection identified to order-level (or beyond, if student desires). Fee: \$55.00

OPTICS AND MAKING HOLOGRAMS SCI 1014

Donald Thornton / 3 credits / Winter

This Wintersession seminar has a focus on making holograms with lasers and on understanding the physics that makes holograms and lasers work. Ideas from familiar phenomena help us see the connections between everyday life and the abstract ideas of physics. This non-mathematical presentation of optics leads us to an appreciation of the logic and beauty behind the behavior of light. Starting with the fundamental properties of light, we pass through the geometric optics of reflection and refraction, and the wave optics of interference and diffraction to the clarity of particle waves, lasers, holography, and special relativity.

ENVIRONMENTAL DISASTERS AND DESIGN SOLUTIONS SCI 1068

Bonnie Epstein Silverman / 3 credits / Fall

The goals of this course are threefold: (1) to explain how the natural world works, and how humans physically change and are changed by some of its processes, (2) To emphasize how society understands, evaluates and confronts the dangers posed by these

natural processes and (3) To encourage students to view the unique sets of problems caused by flooding, earthquakes, tsunami, climate change and other earth functions as challenges demanding intelligent and creative solutions that they are equipped to deliver. Case studies of recent natural disasters and design solutions will be discussed, and students own creativity and concepts for potential design solutions will be employed. No prior science background is required.

MIND, BRAIN, AND BEHAVIOR SCI 1088

Thomas McKeeff / 3 credits / Winter

This course will address questions of how psychological and cognitive functions are produced by the brain. The field of cognitive neuroscience aims to link the mind, the brain and behavior by trying to understand the biological nature of human thought and behavior. In this introductory course we will discuss several topics including: How is the brain built and how well can it rewire itself? How can we measure the living brain? What functions do various parts of the brain support? In particular we will discuss the neural underpinnings of perception, attention, memory, language, executive function, emotion, social cognition, and decision-making.

VISUALIZING THE NATURAL SCIENCES

SCI 3912/ILLUS 3912

Lucy Spelman/Nicholas Jainschigg / 3 credits / Spring

This 6-credit course invites undergraduate and graduate students to improve their skills in communicating and illustrating science. The general topic is changing biodiversity, how humans impact plants, animals, and their environment. Examples will be presented from around the world, as well as from Rhode Island. Through a series of exercises, students will practice analyzing and interpreting scientific information in order to both understand and present it. The science content will be delivered through lectures, visits to research labs, and to a nearby nature sanctuary. The course is designed to introduce students to relevant scientific concepts and challenge them to use their art to make these ideas more concrete and meaningful. In some cases, the goal may be to educate; in others, it may be to raise awareness, stimulate debate, or entertain. Students will explore the use of different media, including 2-D, 3-D animated, and interactive modes. They will also target different audiences and venues, including: general interest or editorial publications, art for public spaces including galleries, educational and peer-to-peer science materials. Class work includes assigned

reading, several minor projects, an exam, and a comprehensive final project. Students will choose a recent research study on the topic of human impacts on biodiversity for the subject of their final project, which is a written paper combined with original artwork designed for a public space or public interaction. The Departments of Illustration and History, Philosophy, and Social Sciences will teach the course collaboratively. *Students must register for both LAEL 3912 and ILLUS 3912.*

CONCEPTS IN MATHEMATICS SCI 1007

Donald Thornton / 3 credits / Spring

Mathematicians are artists of the imagination. This course is an exploration of their abstract conceptual systems which have almost inadvertently yielded spectacularly successful real world results. It also looks at suggested artistic modes of thought and strategies of artistic exploration. Discussions will include imagination as a valid perception of the world (a sixth sense); high orders of infinity; abstraction, idealization and reality; the geometry of vision, other non-Euclidean geometries and the relation of these geometries to our universe. Regular attendance, some assignments and outside reading are required.

GLOBAL ENVIRONMENTAL CHANGE SCI 1040

Jason Gear / 3 credits / Spring

Most scientists agree that humanity is changing Earth's environment and consuming natural resources at rates that are unsustainable. These changes are more problematic or immediate for some regions or socioeconomic groups than others. An understanding of the causes, magnitude, geography and time scales of environmental change prepares us to consider socially just and sustainable solutions, whether through design, analysis, communication, expression, or governance. This course will focus on perceptions of environmental change arising from the so-called natural sciences: ecology, evolutionary biology, geology, oceanography, climatology. Smaller portions of the course will consider environmental justice and the social consequences of histrionics in both climate activism and denialism. Course time will be divided between lectures and group discussions, the latter being motivated by readings, observational exercises, and local field trips. Scientific background is not required but critical thinking and participation are essential.

VISUAL PERCEPTION SCI 1092

Gerry Glaser / 3 credits / Spring

In this course we will examine some prominent psychological theories of color, form, depth, and motion perception. As much as possible, we will experience specific examples of visual processes through a number of in class experiments. The roles of learning, memory, imagination, and other cognitive processes will be explored.

URBAN ECOLOGY: HOW WILDLIFE INTERACTS WITH URBANIZING LANDSCAPE SCI 1096

Maria Aliberti Lubertazzi / 3 credits / Spring

We frequently hear about animal (and plant) species that become common nuisances in urban areas, and we hear about how natural habitat loss leads to the disappearance of other species-not to mention the emergence of new diseases. This course will approach the area of urban ecology from a natural science perspective. We will learn about a broad variety of North American organisms (vertebrate, invertebrate, plant and pathogen), from diverse habitat types, and their ecological patterns and processes with regard to urbanization. We will also conduct field experiments to evaluate certain patterns in our greater Providence landscape for ourselves. Ultimately, how do urban wildlife patterns affect the lives of our species, Homo sapiens? Coursework will include frequent readings, outdoor field trips, observational chronicling and group discussions.

FILM/ANIMATION/VIDEO

COMMUNICATING SCIENCE THROUGH ANIMATION FAV 4599/LAEL 4599

Steven Subotnick / 3 credits / Fall

This class, offered jointly by professors at RISD and Brown and in partnership with the Science Center and the Creative Mind Initiative, will explore and develop the pedagogy of using visual media to convey scientific concepts. There is a growing library of online content but often times it is not well suited for seamless adoption into educational use. The goal of this course will be to assess the quality of existing material and design new material that not only fills an educational need but makes science engaging and accessible. Class will be comprised of lectures, labs, screenings, discussions, critiques

and guest speakers. After an introduction to science teaching pedagogy and the basics of animation and visual design, small student teams with a balance of science and art backgrounds will collaborate on a series of short exercises leading to the creation of final videos or animations that explain scientific concepts. Topic selection will be based on filling an educational need, where a satisfactory example does not yet exist and where the topic benefits from a visual presentation. Student groups will be paired with faculty mentors from the life or physical sciences to design an educational tool that is appropriate for a particular audience. Projects will be evaluated on accuracy, clarity of explanation, educational value, engagement with the viewer, and creativity. The skills of lesson plan design along with writing, recording, animating and editing short educational videos will give students experience within the growing field of supplements to traditional learning and online learning.

Estimated cost of material \$25

Class meets at Brown Campus, Granoff Rm. MML

Permission of Instructor Required

FURNITURE DESIGN

WITNESS TREE PROJECT FURN 2451/HPSS S732

Dale Broholm/Daniel Cavicchi / 6 credits / Spring

Witness trees, as designated by the National Park Service, are long-standing trees that have "witnessed" key events, trends, and people in history. In this joint studio/liberal arts course, students have the unique opportunity to study and work with a fallen witness tree, shipped to RISD from a national historic site. The course will involve three components: 1) a field trip to the tree's site at the beginning of the semester; 2) classroom-based exploration of American history, memory, landscape, and material culture; and 3) studio-based building of a series of objects from the tree's wood, in response to both the site and students' classroom study. Overall, the course will explore both how material artifacts shape historical understanding and how historical knowledge can create meaningful design. Wood this year has been designated from the Martin Van Buren National Historical Site in Kinderhook, New York.

Students must also register for HPSS S732

Students will receive 3 credits in Furniture and 3 credits in HPSS, for a total of 6 credits

A single fee of \$100.00 will be charged for your concurrent registration in HPSS S732/FURN 2451 courses.

Permission of Instructor Required

GRADUATE STUDIES

ENCOUNTERING THINGS GRAD 155G

Hannah Carlson / 3 credits / Fall

This class explores the ways that objects and bodies come into contact with one another, asking how objects adorn, articulate, equip, augment, and constitute the person. Our exploration follows three tracks: we examine artifacts from the fields of design, fashion and medical engineering, as well as experimental propositions from the visual and conceptual arts, literature and film; we pair these case studies with scholarship that critically engages issues of embodiment and material agency; and we attend to the political and ethical debates raised by dynamic conceptions of posthuman bodies. Interdisciplinary readings across the humanities and social sciences include: Appadurai, Freud, Haraway, Hayles, Heidegger, Latour, Marx, Miller, and Scary. *Graduate elective seminar.*

DESIGN IN THE DEVELOPING WORLD GRAD 091G

Elizabeth Dean Hermann / 3 credits / Spring

The Art and Design for Development graduate seminar is for students interested in exploring the role art and design can play in addressing social justice issues in vulnerable, under-resourced and often still-developing regions of the world. The seminar positions the artist/designer as an innovator and activist and explores methodologies and rationale for applying strategic design thinking, processes, and outcomes to issues as complex and diverse as persistent poverty; displaced communities, human and environmental devastation due to war; human trafficking and enslavement; resource deprivation, lack of educational opportunity; livelihood needs, etc. Strategic planning and action, systems thinking, participatory methods, resilience theory, and capacity building provide the theoretical underpinnings for the course and are discussed within a critical framework of the history of international development and ethics of engagement. Critical to this effort will be the students' development of rigorous research skills and clear methodological approaches, and their ability to map and critique their own progress through a strategic design thinking process.

The seminar is project based, and situates this effort within an overview and critique of the methodologies and scales of engagement represented by contemporary social impact focused design practice. Projects are undertaken by interdisciplinary teams and focus on the design of strategic action plans for communities and/or organizations currently

partnering with RISD's DESINE-Lab-an interdisciplinary applied research group focused on employing design, innovation, and entrepreneurship to address social and environmental justice issues and drive community-based social and economic development. As key players in these on-going relationships, class participants have opportunities to stay involved with DESINE-Lab activities, help implement the steps of the various plans through interning with partnering organizations, lead workshops in the field, and collaborate with future design-build efforts. *Graduate elective seminar*

ETHICS OF HUMANITARIAN DESIGN GRAD 142G

Ijlal Muzaffar / 3 credits / Spring

Designers and artists have become central to projects of humanitarian intervention in different parts of the world. From designing refugee camps and village schools to water filtration systems and weaving patterns that could compete in Western markets, they are not only making physical objects for disenfranchised across the world, but also shaping how we understand the problems at hand as well as the people in need. This extended role demands a new ethical sensibility and historical knowledge in addition to technical know-how and aesthetic capability. What does it mean to act ethically in a global context? What is the nature of responsibility? How do we communicate across difference without turning whom we seek to help into convenient caricatures of helpless poor? Can art and design only provide stopgap solutions, leaving larger political and policy discussions for other disciplines? Or can they address questions beyond the object and change our understanding of the problem itself? This course will ask these hard questions and unpack them with the help of rigorous theoretical thinking and historical study. This is not a "how-to" course. Nor will we use ready-made definitions of ethics to endorse convenient and familiar ways of working. This is a course about thinking. We will slowly shape an understanding of ethics as a way of introducing reflective friction in our modes of operation and learn to criticize what we must simultaneously use. Course material will include mind-opening historical and theoretical texts, uncomfortable fiction, and fraught films. Only serious thinkers hopelessly invested in their making, and vice versa, invited. *Graduate elective seminar*

STUDIO LANGAUGES GRAD 159G

Maya Krinsky / 3 credits / Fall

This combination studio/seminar course explores the

relationship between art and language on multiple scales. We collectively examine – through in-class discussions, lectures, readings, and critique of studio assignments – how our relationships to language make possible an aesthetics of communication, a space where visual and verbal intersections speak of interactions between cultures. Lectures present the work of artists who use text, translation, voice, and language learning as strategies to parlay their socio-linguistic perceptions into agency. Critique of student work produced in response to assignments focuses on an exploration of language within and around each student's art practice. This course is recommended for those who speak more than one language or are interested in multiple Englishes and intercultural communication as material, subject, and foundation for creative excavation.

MATERIAL INTO THINGS GRAD 166G

Janet Zweig / 3 credits / Spring

Material into Things: what the world is made of, and what we make of it.

"It is ... a political decision to focus on the materials of art; it means to consider the processes of making and their associated power relations, to consider the workers – whether they are in factories, studios or public spaces ... and their tools of production."
– Petra Lange-Berndt, *How to be Complicit with Materials*

This is an interdisciplinary course about materiality. We explore the many materials we use as artists and consumers – how they are formed, extracted, developed, circulated, and used, and how we think about them. We look at the physical world through three lenses: science/production, theory, and art practice. These three approaches run concurrently throughout the semester so that students are simultaneously investigating, reading, and making work. The course has films, guest speakers, readings, participant presentations, course resources, and field trips.

ILLUSTRATION

ARTISTIC ANATOMY ILLUS 3108

Fritz Drury / 3 credits / Fall and Spring

Students in this course will investigate the specific physical structure of the human body, with the aim of producing drawings of greater structural and visual integrity and more fluid descriptions of movement and weight in the figure. We will proceed

through the skeletal and muscular systems at a brisk but reasonable pace, learning names, points of articulation and the dynamic functions of each component of the body. Each weekly assignment will consist of a careful, descriptive drawing of an element of the skeletal or muscular system, and a 'dynamic' drawing in which that same element is shown in action in the living figure. We will also review the work of artists, both contemporary and historical, who have made vital artistic use of the elements of anatomical study. The course includes an optional field trip to the Brown University Evolutionary Biology Lab to draw from cadavers. There will be at least one written test on anatomical facts and terminology. The course culminates in a final project on the theme of 'A Human Ideal', exploring past concepts of idealized form in the figure in relation to anatomical reality and contemporary cultural perspectives.

Major elective; Restricted to Illustration juniors and seniors; open to non-majors pending seat availability and permission of instructor.

DESIGN FOR GOOD ILLUS 3428

Annalisa Oswald / 3 credits / Winter

The goal of this course is to allow students to apply conceptual skills and image-making talents to issues that matter to society and the world. This course combines illustration, infographics, graphic design, brand identity, and story-telling. Working across print, digital, mobile and social media platforms, this course will challenge students with assignments that will cause them to think and create innovative visual communication that motivates people around a social cause.

VISUALIZING THE NATURAL SCIENCES

ILLUS 3912/LAEL 3912

Lucy Spelman/Nicholas Jainschigg / 6 credits / Spring

This 6-credit course invites undergraduate and graduate students to improve their skills in communicating and illustrating science. The general topic is changing biodiversity, how humans impact plants, animals, and their environment. Examples will be presented from around the world, as well as from Rhode Island. Through a series of exercises, students will practice analyzing and interpreting scientific information in order to both understand and present it. The science content will be delivered through lectures, visits to research labs, and to a nearby nature sanctuary. The course is designed to introduce students to relevant scientific concepts and challenge them to use their art to make these ideas

more concrete and meaningful. In some cases, the goal may be to educate; in others, it may be to raise awareness, stimulate debate, or entertain. Students will explore the use of different media, including 2-D, 3-D animated, and interactive modes. They will also target different audiences and venues, including: general interest or editorial publications, art for public spaces including galleries, educational and peer-to-peer science materials. Class work includes assigned reading, several minor projects, an exam, and a comprehensive final project. Students will choose a recent research study on the topic of human impacts on biodiversity for the subject of their final project, which is a written paper combined with original artwork designed for a public space or public interaction. The Departments of Illustration and History, Philosophy, and Social Sciences will teach the course collaboratively.

Major elective; restricted to Illustration juniors and seniors; open to non-majors pending seat availability and permission of instructor.

Students must register for both LAEL 3912 and ILLUS 3912 and will receive 3 elective plus 3 LAEL credits.

SCIENTIFIC ILLUSTRATION ILLUS 3916

Jean Blackburn / 3 credits / Spring

From Leonardo's rich notebook studies to Audubon's great horned owl, to NASA's Mars Rover simulations, scientific illustration derives from rich traditions stressing scientific investigation, good design, close observation and technical mastery. We will begin with a study of the structuring strategies nature uses to create its enormous diversity of forms. Scientific drawing conventions, interesting drawing techniques and tools will be presented. Students will produce a variety of black and white, color and digital solutions exploring aspects of this broad field. The class will culminate with a final project allowing each student to explore a scientific area of interest.

Major elective

Restricted to Illustration juniors and seniors; open to non-majors pending seat availability and permission of instructor.

INDUSTRIAL DESIGN

Please check with NCSS Concentration Coordinator, Peter Dean, if you are interested in registering for an ID course and are wondering if it may be counted for NCSS credit.

INTERIOR ARCHITECTURE

INTRO TO INTERIOR STUDIES I INTAR 2301

Wolfgang Rudolf / 6 credits / Fall

This course, the first in a sequence, explores design principles through design problems involving the unique fundamental framework for the reuse of existing structures. The semester is arranged around several projects, providing access to the discipline from as many related perspectives. The project assignments require to visually and verbally convey clear design intent, think visually in two and three dimensions, formulate and develop abstract design concepts, discern relationships between design interventions and their physical and contextual setting and develop presentation skills to effectively communicate propositions and positions.

Major requirement: BFA

INTAR majors only, though interested NCSS concentrators may attend with Instructor Permission. Registration by Interior Architecture department, course not available via web registration

APPLIED BUILDING SYSTEMS: ADAPTIVE REUSE

INTAR 2360

Kurt Teichert / 3 credits / Fall

This course approaches the subject of adaptive reuse through environmental issues, economic analysis and design. These fundamental concepts are applied in real-world projects of reuse to reduce negative impacts to the built environment.

Course objectives include an understanding of energy and environmental context, the ability to develop schematic designs for energy efficient interventions in an existing building, the ability to perform basic analyses of the energy and economic performance of building measures and to apply course material to case studies of completed buildings.

Students should develop familiarity with energy and environmental impacts associated with the built environment and the rationale for responsible design, energy modeling and calculations, passive and active lighting systems (including daylighting techniques and fenestration) and the thermal performance of buildings including the thermal envelope and passive and active heating systems. The course structure includes a midterm examination, case studies, an individual research paper and a final design project.

Major Requirement: MA

INTAR majors only, though interested NCSS concentrators may attend with Instructor Permission.

PRINCIPLES OF ADAPTIVE REUSE INTAR 2361

Markus Berger / 3 credits / Spring

This course approaches the subject of adaptive reuse through the understanding of the rules and methods of design interventions. Analysis and synthesis regarding construction methods, structure, use, scale and the regulations pertaining to existing structures will be explored.

Building on the framework of the International Building Code for Existing Structures, this course also examines the feasibility of reuse as defined by construction regulations and practice.

The semester will be based upon case studies of completed projects in adaptive reuse to demonstrate the principles of design and construction within the context of existing structures. Through this course, students develop an understanding for the design process necessary in implementation of adaptive reuse in the design profession.

Assigned papers and projects through the semester require the understanding and implementation of these methods and regulations on projects of adaptive reuse.

Major Requirement: MA

INTAR majors only, though interested NCSS concentrators may attend with Instructor Permission.

THEORY OF ADAPTIVE REUSE INTAR 2370

Brian Kernaghan / 3 credits / Fall and Spring

Routinely defined as "transforming an unused or underused building into one that serves a new use," the practice of adaptive reuse is rich and varied.

This lecture course will examine the pluralism of this practice through weekly lectures that focus on these varying aspects. The course will also focus on the differences in the implementation of this practice from countries in Northern Europe with its longstanding regard for reuse to countries with emerging practices such as China and Korea.

The lectures will include case studies of buildings, unbuilt projects, and urban assemblages, which will be contextualized in through the common themes which are critical to understanding reuse.

Requirements: weekly lectures and discussions, readings, a mid-term examination and a final paper.

Major Requirement: MA, MDES

INTAR majors only, though interested NCSS concentrators may attend with Instructor Permission.

HISTORY OF ADAPTIVE REUSE INTAR 2378

Liliane Wong / 3 credits / Fall

This course will examine the major architectural personalities working in Europe (Italy, France, England, Spain, Germany, the Netherlands) and in North America in the period 1800 to 2010. Areas of study will include an examination of adaptive reuse related issues that will be studied in the context of their social, political, technological, and economic circumstances, as they pertain to the design culture of the period. Special emphasis will be given to interior renovations, additions, transformations and other interventions of adaptive reuse. Other areas of study will include the development of architectural drawing, and the way in which designs often evolved through committees, or ongoing consultations among patrons, designers, administrators, and scholars. Attention will also be given to design theory, and the doctrines relating to site, orientation, proportion, decorum, and the commercial design market.

This course will be conducted in seminar form with discourse and discussions at the graduate level.

Major Requirement: MDES

INTAR majors only, though interested NCSS concentrators may attend with Instructor Permission.

LANDSCAPE ARCHITECTURE

THEORY I: LANDSCAPE THEORY LDAR 225G

TBA / 3 credits / Fall

Landscape is a term that can refer to a specific locale, design, or a collection of ideas. The term usually implies a system of interrelated cultural and natural forces operating within a context of a defined scale or disciplinary boundaries. In this course we examine and discuss the foundational definitions of the term landscape and the theoretical stances that are active in the creation of contemporary landscape architecture, land art and other creative disciplines. Writing assignments will be based upon fundamental texts, direct experience, and contemporary projects. Weekly readings will be discussed and diagrammed in

class for content and structure. Students will produce a series of five short (2 to 3 page) analytical essays and case studies. There will be weekly discussion sections with course TAs to review readings, two field assignments, and one field trip to the Isabella Stewart Gardner Museum in Boston.

Graduate major requirement; LDAR majors only

Registration by Landscape Architecture department, course not available via web registration

Open to qualified undergraduates and non-majors by instructor permission

Permission of Instructor Required

Lab Fee: \$25

PLANT MATERIALS LDAR 2252

Richard Johnson / 3 credits / Fall

Botanical topics relating to a general understanding of plant growth, classification, and horticultural and arboricultural practices. Course work will include a further understanding of plant communities, plant identifications, and an introduction to planting design.

Major requirement; LDAR majors only

Registration by Landscape Architecture Design department, course not available via web registration;

Open to non-majors by permission of Instructor

Permission of Instructor Required

Fee: \$35.00

HISTORY OF LANDSCAPE ARCHITECTURE

LDAR LE44/LAEL 1044

Eric Kramer / 3 credits / Fall

This survey course focuses on the history of landscapes in the pre-industrialized world. Landscapes will be considered as an evolving condition, even when their defining characteristics were conceived and built at a specific point in time. Critical to this course will be the establishment of frameworks for historical inquiry, the refinement of research methodologies, in the development of multiple perspectives through which to question and understand the design environment.

Major required; LDAR majors only

Registration by Landscape Design department, course not available via web registration

Offered as LAEL 1044, Liberal Arts elective credit, for non-majors on a space available basis.

NCSS concentrators encouraged.

PLANNING & CULTURAL GEOGRAPHY SEMINAR

LDAR 223G

Nadine Gerdt / 3 credits / Spring

Through spatial and cultural analysis this course explores the history and meaning of various

geographical realities in the Western and non-Western world. A critical examination of urban, suburban and rural land-use patterns; utopian and applied planning practices; models of urban and suburban change; the role of conservation and preservation advocacy and their interface with development, settlement and ecology, allows for an evaluation of new ideas and recent experiments seen against a historical and cultural background.

Graduate major requirement; LDAR majors only

Registration by Landscape Architecture Design department, course not available via web registration

Open to non-majors & Brown University students by permission of instructor

Fee: \$35.00

PLANTS & DESIGN LDAR 2253

Theodore Hoerr (section 01) / Adam Anderson

(section 02) / 3 credits / Spring

This course will explore the use of plants as a design medium while balancing the horticultural considerations. There will be analyses of existing gardens, field trips, and the creation of schematic and detailed planting plans for different types of sites. Topics such as seasonality, texture, color and form will be discussed.

Major requirement; LDAR majors only

Registration by Landscape Architecture Design department, course not available via web registration;

Open to non-majors by permission of Instructor

Prerequisite: LDAR-2252

Fee: \$35.00

ECOLOGICAL PLANNING & DESIGN LDAR 2257

Emily Vogler / 3 credits / Spring

This course instructs landscape architects and students from other disciplines in collecting, interpreting and mapping landscape site data, both natural and cultural, in order to program and design new uses. Employing diverse projects, from specific sites to municipal and regional contexts, it offers experience in site analysis, mapping, air photo interpretation, planning report preparation, programming for site development, and an introduction to GIS.

Open to non-majors by permission of Instructor.

Registration by Landscape Architecture Design department, course not available via web registration

Brown University students are encouraged to participate

PAINTING

PRIMARY SOURCES ILLUMINATING THE OCEAN DEEP AT THE NEW BEDFORD WHALING MUSEUM

PAINT 4222

TBA / 3 credits / Winter

“For there is no folly of the beast of the earth which is not infinitely outdone by the madness of men.” - Herman Melville, Moby Dick

Located just 35 minutes east of RISD, the New Bedford Whaling Museum offers a fascinating and often disturbing perspective on the emergence of modernity along side the systematic hunting and harvesting of whales to the brink of extinction. Through several visits to the museum this course asks students to reflect upon and interpret a wide range of interrelated subjects including folk art, nautical culture, colonial politics, marine biology and museum display. With additional access to museum archives students address these topics through research-based projects that employ drawing, painting, and installation with particular attention to contextualizing within differing modes of museum display.

The New Bedford Whaling museum boasts a rich collection of unique and unusual artifacts that together issue a cautionary tale by asking visitors to contemplate the tenuous line between pursuit of profit and the destruction of that which we hold most sacred.