

COLLEGE OF DESIGN AND ENGINEERING

TBD

Professor X

- Integrated Design, Engineering, Arts & Society Major (<https://catalog.wesleyan.edu/departments/cdes/ugrd-idea/>)
- Integrated Design, Engineering, Arts & Society Minor (<https://catalog.wesleyan.edu/minors/ugrd-idea-mn/>)

IDEA110 Vectors to Volumes: The Fundamentals of Digital Fabrication

This project-based course will cover the fundamentals of digital fabrication in a hands-on introduction to software-driven object making. The central concern will be process rather than concept, with a firm focus on how instead of why, as well as best safety practices. Instruction will be given in four areas sequentially, each building on the last: Vector Design & Execution, 3D Modeling & Printing, CNC Wood Routing, and CNC Metal Milling. Machine setup and best practices will be taught alongside foundational knowledge of applications such as Adobe Illustrator, Adobe Photoshop, Vectric VCarve, Autodesk Fusion360, and Ultimaker Cura. Throughout the course, there will be a consistent emphasis on fabrication methods and finishing techniques.

Offering: **Host**

Grading: **Cr/U**

Credits: **0.50**

Gen Ed Area: **HA-ART, NSM-IDEA**

Prereq: **None**

IDEA120 Ecological Design I: Being at Home in the World

Being at Home in the World is an introduction to the skills and thinking involved in the ecologically responsible creation of objects. This course is intended to provide a foundational understanding of the language of design, sources of materials, and energy systems. The studio encourages students to develop a rigorous, iterative working method to deeply analyze the nature of land and resources, explore options, and test ideas. This process of making is complemented and supported by an introduction to the history and theory of design, training with techniques and equipment, and active practice in keeping a sketchbook. Early exercises and projects in the course build familiarity and confidence with analytical drawing, making, and modeling techniques, which build toward the creation of a novel piece of design work presented at the final review.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **HA-ART**

Identical With: **ARST220, ENVS232**

Prereq: **None**

IDEA154 Working with MATLAB

The content of this course focuses on learning the basics of utilizing MATLAB to program and solve basic problems. We will operate on the assumption that students have no prior experience with programming. The goals of the course will be to develop algorithmic thinking, problem solving, and quantitative skills within the context of MATLAB. The course will cover essential mechanics of programming, many of which are common to all programming languages, as well as some selected advanced topics. With the expectation that students with a broad background with various motivating factors lead them to enroll in the course, students will be invited to apply the skills learned in the course to completing the culminating final project related to their specific interests.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **0.50**

Gen Ed Area: **NSM-QAC, SBS-QAC**

Identical With: **QAC154, CIS154**

Prereq: **None**

IDEA160 Product Design I

In this introductory product design course, students will experience basic design processes such as problem identification and possible resolutions; the use of design development and communication skills via design observation and research; iterative process and prototyping; and representation and presentation in two and three-dimensional forms. Students will explore how design can play a role in our community and how it can impact our society. Students will work both individually and collaboratively in a studio environment. Field trips to New York City fabricators, galleries, and workshops may be expected as part of this course.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **HA-ART**

Identical With: **ARST270**

Prereq: **None**

IDEA170 Introduction to Mechanical Design and Engineering

This course will provide a hands-on introduction to design and engineering. Students will engage in individual and team projects in a studio environment where we seek to develop a shared practice and understanding of the engineering design process. We will study biological organisms to find inspiration for design of hoppers, swimmers, and climbers. Students will build skills using computer-aided design (CAD) software and using tools for fabrication and prototyping including laser cutting and 3D printing. We will also hone skills in identifying which scientific and engineering principles need to be understood to achieve design goals.

Offering: **Host**

Grading: **Cr/U**

Credits: **1.00**

Gen Ed Area: **NSM-CIS**

Identical With: **PHYS170, CIS170**

Prereq: **None**

IDEA170Z Introduction to Design and Engineering

This course will provide a hands-on introduction to design and engineering. Students will engage in individual and team projects in a studio environment where we seek to develop a shared practice and understanding of the engineering design process. We will study biological organisms to find inspiration for design of hoppers, swimmers, and climbers. Students will build skills using computer-aided design (CAD) software and using tools for fabrication and prototyping including laser cutting and 3D printing. We will also hone skills in identifying which scientific and engineering principles need to be understood to achieve design goals.

Offering: **Host**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **NSM-CIS**

Identical With: **CIS170Z, PHYS170Z**

Prereq: **None**

IDEA173 Introduction to Sensors, Measurement, and Data Analysis

This course is an engineering fundamentals course supporting the Integrated Design, Engineering, and Applied Science (IDEAS) minor. It will involve a sequence of hands-on projects that introduce students to basic measurement devices and data analysis techniques using inexpensive modern sensors, a microprocessing platform (Arduino), and a computational software package (Matlab). The course will provide foundational knowledge of available resources and techniques that allow students to more confidently implement

measurement systems in subsequent courses of the IDEAS minor and better understand experimental devices used in scientific research activities.

Offering: **Host**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **NSM-CIS**

Identical With: **CIS173**

Prereq: **None**

IDEA175 Introduction to Electrical Design & Engineering

Students will learn about engineering mechanics, electronic control systems, and physical actuators (e.g., for movement) using a microprocessor platform, sensors and motors. The final project will require a student team to ideate, design, analyze, and optimize a mechatronic system. This course will allow students to better understand components, methods, and challenges in mechatronics systems commonly found in automation and robotics.

Offering: **Host**

Grading: **Cr/U**

Credits: **1.00**

Gen Ed Area: **NSM-CIS**

Identical With: **CIS175**

Prereq: **None**

IDEA180 Design Studies

This course examines the human dimensions of engineering and design by looking at the ways artifacts are designed, produced, circulated, and used in context. Rather than a comprehensive survey of movements or paradigms in the history of design, this course employs a thematic approach to understanding the ways objects can articulate and reflect social and cultural concerns. Through a series of readings, projects, lectures, and seminars, we will study the surprising ways everyday objects influence and articulate our identities, desires, biases, and experiences.

This course is intended to support students in developing a critical toolkit for use as designers, users, consumers, and citizens. Throughout the term we will seek to challenge our assumptions about the politics of design and interrogate the ways its products mediate and are changed through human activity. We will write about and visualize these relationships, thinking critically how objects are made, what makes them relevant, and whether things have the power to change our economic, environmental, and social realities.

Offering: **Host**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **SBS-IDEA**

Prereq: **None**

IDEA185 Form and Code

This introductory survey explores practices in design and digital media through a sequence of design exercises, workshops, and hands-on projects. Advancing towards an independent final project, participants will hone their skills as makers and thinkers while developing a portfolio of original work for both print and web. While primarily concerned with visual experimentation and expression, this course exposes students to critical topics in media and design through readings, seminars and student presentations. Techniques surveyed in this course include: digital imaging and animation (Adobe Creative Cloud), creative coding (Processing), digital printing, and light fabrication.

Offering: **Host**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **HA-CIS**

Identical With: **CIS185**

Prereq: **None**

IDEA185Z Form and Code

This introductory survey explores practices in design and digital media through a sequence of design exercises, workshops, and hands-on projects. Advancing towards an independent final project, participants will hone their skills as makers and thinkers while developing a portfolio of original work for both print and web. While primarily concerned with visual experimentation and expression, this course exposes students to critical topics in media and design through readings, seminars, and student presentations. Techniques surveyed in this course include: digital graphics, creative coding, and digital fabrication (if taught in person).

Students will require access to a personal computer and Adobe Creative Cloud.

If the course runs remotely, students are responsible for locating these resources individually.

Offering: **Host**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **NSM-CIS**

Identical With: **CIS185Z**

Prereq: **None**

IDEA186 Text & Visual Imagination: Introduction to Eco Design for Performance

Eco-scenography is an introduction to design for performance. In this course, students will learn the core principles of design for performance while exploring sustainability and environmental practices with an emphasis on understanding of materials, such as production cycle and manufacturing process, as well as integrating environmental justice paradigms by analyzing specific case studies. Through three specific project-based assignments--1. object design, 2. garment design, and 3. environmental design--students will train their visual imagination, as well as develop an aesthetic literacy and knowledge of performance design concepts and practice within eco-sustainable practices.

This course counts towards the Theater Arts category for the THEA major.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **HA-THEA**

Identical With: **THEA185**

Prereq: **None**

IDEA190 Digital Foundations

This course introduces the foundations of digital art through contemporary artistic practice. Students will research the history of digital art and examine relationships of digital media and contemporary art. The class has a theoretical focus on machine use within the process of art making while building foundational digital skills. Projects will focus on four key areas including: Digital Imaging, 3D Modeling and Virtual Design, Time Based Media, and Digital Fabrication. Building on these four areas the course will culminate in an individualized research based final project and presentation. Through experimentation, critical analysis, critique and peer review; students will generate a unique portfolio of digital art works.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **HA-ART**

Identical With: **ARST190**

Prereq: **None**

IDEA190Z Digital Foundations

This introduction to the digital studio engages software and electronic media as an expanded field of creative production in contemporary art and design. Through a sequence of workshops, exercises, and hands-on digital projects, students will develop their critical and creative toolkits and learn to conceive, refine, and present original work. Open to all skill levels, this course prioritizes sustained and rigorous engagement with digital practice as well as conceptual and formal problem-solving.

Workshops in image manipulation, compositing, motion graphics, and visual communication will be led synchronously online by the instructor. This will be complemented with weekly online studio sessions, discussions, screenings, and reviews. Students will be provided access to all course materials using Google Drive and other digital platforms. Access to Adobe Creative Cloud software will be provided by Wesleyan, but individual licensing is also encouraged. Course assistants will offer peer mentoring and technical support in person through the DDS and online through Zoom.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **HA-ART**

Identical With: **ARST190Z**

Prereq: **None**

IDEA203 The Secrets of Ancient Bones: Discovering Ancient DNA and Archaeology

New analyses of ancient DNA preserved for millennia in bones and soils have revolutionized the field of archaeology. Suddenly, archaeologists have gained new insight into human origins, past population migrations, ancient diseases, plant and animal domestication, and even the factors that contributed to the extinctions of megafauna such as woolly mammoths. Recent genetic case studies will provide a lens for learning about the archaeology of diverse world regions and time periods, from Oceania to Mesoamerica and from the Paleolithic through recent history. Topics will include: human evolution and genetic relationships between humans, Neanderthals, and Denisovans; the peopling of the globe; extinction and de-extinction; domestication and the origins of agriculture; paleodiseases and paleodiets; and ethics in genetic research.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **SBS-ARCP**

Identical With: **ARCP203, ENV203, ANTH212, SISP203**

Prereq: **None**

IDEA204 Introduction to Archaeology

What can fragments of pottery, stones, and bones reveal about the lives of people who lived thousands or even millions of years ago? What does the archaeological record reveal about human evolution, past human diets and health, ancient socioeconomic systems, and the emergence of early cities? And how can we preserve archaeological sites and artifacts for future generations? This course will introduce students to the interdisciplinary field of archaeology. We will discuss key methods and principles that archaeologists use to study the human past while covering a survey of world prehistory from the earliest stone tools to the archaeology of contemporary material culture. Students will have the opportunity to examine real archaeological artifacts--including artifacts excavated from historic Middletown--and will be encouraged to think critically about the ways that archaeology informs our understanding of both the past and the present.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **SBS-ARCP**

Identical With: **ARCP204, ANTH214, ENV207**

Prereq: **None**

IDEA209 Educational Gaming Lab: Project-Based, Game-Based Pedagogy Approaches

In the past two decades, crowdfunding and renewed interest in games--board games, role-playing games, digital games, and instructional games--have created an increased and diverse gaming production, which has become the subject of several studies, articles, and projects related to all areas of education, from hard sciences to language learning and the arts. In an effort to explore how a game-informed pedagogy can work in various types of courses and to highlight analog and/or digital gaming approaches that have worked inside and outside the language classroom, this course will explore the basics of game-based learning (GBL) and discuss how games of all kinds can inform pedagogical discussions and the creation of learning materials.

Educational Gaming Lab is designed as a project-based gaming laboratory that will focus on why and how analog games can be effective tools for pedagogy. Examples will include board games, tabletop role-playing games, escape games, and puzzles. Participants will discuss the application of gaming principles to various subjects and types of classrooms; then, they will engage in a final project in which they will either adapt existing games for specific learning outcomes or create brand new educational games. The course will be conducted in English and games will be created in English.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **SBS-EDST**

Identical With: **EDST210**

Prereq: **None**

IDEA210 How Things Fail: Mechanics and Materials

This lab/lecture engineering course is a foundational cornerstone of structural analysis and mechanical design. It will provide students with a theoretical and practical understanding of static equilibrium force systems, material response to loading, and analysis of failure modes for each of the fundamental types of stress and strain (axial, flexural, and torsional). These skills are vital for students from a range of disciplines, including mechanical engineering and architecture. The final project will require the design, implementation, and performance testing of an optimized structural system model, such as a truss bridge, building, or other structure.

Offering: **Host**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **NSM-IDEA**

Identical With: **CIS210, PHYS210**

Prereq: **IDEA170 AND (PHYS111 OR PHYS113)**

IDEA215 Introduction to Sensors, Measurement, and Data Analysis

This course is an engineering fundamentals course supporting the Integrated Design, Engineering, Arts, and Society (IDEAS) minor. It will involve a sequence of hands-on projects that introduce students to basic measurement devices and data analysis techniques using sensors, a microprocessing platform, and computational software. The course will provide foundational knowledge of available resources and signal processing techniques that allow students to more confidently implement measurement systems in subsequent courses of the IDEAS minor and better understand experimental devices used in scientific research activities. Students will complete a final team project of their choice (with approval) exploring areas of interest in measurement, data analysis, machine learning or other avenues. Some previous programming experience is

expected. Prior experience in IDEA175 or with Arduino, Raspberry Pi or other physical computing platforms are preferred, but not required.

Offering: **Host**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **NSM-CIS**

Prereq: **None**

IDEA221 A Thousand Years of Iteration: Design for an Uncertain Future

The climate emergency is a product of design. Centuries worth of aesthetic and industrial innovation have created extractive infrastructure, efficient machines, and disposable products that make it increasingly easy to consume energy and resources on a global scale. As new conversations about just transitions, a circular economy, and a Green New Deal have begun to proliferate among designers, the discipline's troubled relationship to notions of "progress" remains largely unquestioned.

This reading- and research-intensive studio asks students to examine this history of technology and to critically evaluate shifting theoretical perspectives on nature and human development as they relate to design. Topics will include the lifespan of buildings and products, relationships with and obligations to materials and resources, and strategies for de-growth in indigenous and vernacular design precedents. These will be studied through assigned readings and in-class discussion, a series of design exercises, and the production of a final project from materials immediately at hand in Middletown.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **HA-ART**

Identical With: **ARST221, ENV5227**

Prereq: **None**

IDEA222 Fluid Mechanics: Theory and Applications

This course focuses on the behavior of fluids under various conditions. Students will develop a framework to analyze situations involving stationary (fluid statics) or moving fluids (fluid dynamics), discover tools used to predict fluid behavior, and learn how to interpret aspects of this behavior. Homework problems and examples reviewed in-class will help students connect theory with real-world applications, particularly in the areas of mechanical, structural/civil, and aerospace engineering. At the end of this course, students should have the ability to solve simple fluid problems and apply those solutions in complex engineering situations.

Offering: **Host**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **None**

Prereq: **None**

IDEA233 Studies in Computer-based Modelling and Digital Fabrication

This course operates at the intersection of design and production, introducing students to digital tools critical to contemporary architecture and design. Throughout the semester, students will develop a series of projects that fluidly transition between design, representation, and fabrication with an emphasis on understanding how conceptual design interfaces with material properties. The course will offer a platform for students to research, experiment, and, ultimately, leverage the potential of digital tools toward a wide array of fields and disciplines. Students will be expected to utilize the Digital Design Studio's resources, including 3D printers, laser cutter, and 4-Axis CNC mill, as well as a selection of fabrication equipment housed in the school's metal and wood shops to represent, model, and realize a series of design projects.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **HA-ART**

Identical With: **ARST233**

Prereq: **None**

IDEA234 Architecture I

This course is a synthesis of fundamentals of design principles and introduction to design vocabulary, process methodologies, and craft. Emphasis is placed on developing students' ability to examine the relationship between production (the process of creating things) and expression (the conveying of ideas and meaning) involved in the making of architecture. The intent of the course is to develop students' awareness and understanding of the built environment as a result of the investigations, observations, and inquiries generated in the studio.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **HA-ART**

Identical With: **ARST235**

Prereq: **None**

IDEA235 Activism and Theories of Change

In this course we will explore strategies and theories of change that shape social justice movements, with particular reference to recent movements in the United States. We will discuss the benefits and risks of the many available strategies including direct action, grassroots mobilization, impact litigation, legislative campaigns, electoral campaigns, artistic protest, and public education. What strategic, ethical, or moral questions are raised by various types of protest and communications? The instructor will draw on her own experiences as an activist for women's rights, queer rights, and economic justice. In addition, the course will feature a guest teacher for a segment of the semester: Beverly Tillery, Executive Director of the Anti-Violence project in NYC will look at the ways BIPOC and Queer BIPOC communities are reshaping the social justice landscape by addressing the safety of trans women, challenging the gender binary and reforming and ending the carceral legal system. We will allow time to discuss events that may occur in real time over the course of the semester. This course will be relevant to students interested in public policy, feminism, gender and sexuality studies, and other social sciences, and will provide useful insight for future organizers and activists, lawyers, and public policy makers.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **SBS-ALLB**

Identical With: **CSPL235, FGSS236, AFAM235**

Prereq: **None**

IDEA236 Fast & Furious

Fast and Furious is a class which explores the power of the multiple through the production of zines, posters, t-shirts, tote bags, pins and more. Beginning in the 1930s, the production of zines mainly in the sci-fi fan world became popular after the advent of the mimeograph—the first widely available duplicating machine. This way of making content was able to circumvent mainstream and institutional publishing models creating channels for more creatives to distribute their work. Today, there are even more technologies that can be used in the production of zeitgeist material. In this class, we will learn how to create with a Xerox machine, silkscreen, letterpress, polymer, and more. In each assignment we will contend with the power of quantity. What does it mean to make five of something? Ten? Fifty? One hundred? We will also experiment with format. How can a message be told through a wearable garment? How does the narrative change when it's a tote bag? And finally, we will explore the poetics of distribution. What are the artistic possibilities of a zine when it can be sent through the mail or left in a pile for the public?

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **HA-ART**

Identical With: **ARST236**

Prereq: **None**

IDEA243 Introduction to Graphic Design

Introduction to Graphic Design is a course that aims to open a window of understanding and communication through the visual language. It will serve as a beginner's guide to an abundant artistic tool box, while attempting to expand your perceptions of graphic design and offering innovative outlooks to convey your ideas visually. The course will guide students through the fundamentals of designing programs as well as traditional art methods. This will be an active making and researching time for students to be exposed to the potential of the medium, as well as broadening its boundary.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **HA-ART**

Identical With: **ARST243**

Prereq: **None**

IDEA261 Science Materials For a Malagasy Classroom

Students will design and produce a variety of educational science materials to be used in a fifth grade classroom in Madagascar. These items include a science logo, bookmarks, educational science games, posters, and a comic book with conservation themes for children. Students who are interested in design and natural history as a means through which to communicate science themes on wildlife endemism, evolution, and climate change would be appropriate for this course. All students will need to conduct independent research into science topics, distill down the salient features, and use that information to design elementary school materials. Working both individually and in teams, students will conceive, design, critique, and move into product production (MakerSpace). In addition, prototypes of the materials will be reviewed and rated by fifth graders in a Middletown elementary school for feedback.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **NSM-BIOL**

Identical With: **BIOL161, ENV5261**

Prereq: **None**

IDEA267 Engineering Biology: Cells and Tissues

This course explores the intersection of biology, medicine, and engineering, where scientists are developing novel platforms to promote understanding, diagnosis, and treatment of human diseases. We cover modern techniques for manipulating biological systems, spanning single molecules to ensembles of cells. We will examine the trajectory of the field from studying cells in a plastic dish to the advent of organ-on-a-chip and organoid models and discuss how this transition from 2D to 3D biology has propelled increased understanding of both normal physiological homeostasis and also the pathophysiology of disease. Topics will include controlling behavior of cells through cell-matrix interactions, learning through building via synthetic biology, and advances in regenerative medicine. These topics will be explored through the thematic lenses of transport processes (supply of nutrients and removal of waste) and mechanoreciprocity (the sensing of and response to the physical properties of the cellular microenvironment). Lectures will review fundamental concepts in cell biology and physiology before delving into topical examples from current literature. Lectures and assessments will include opportunities to develop skill in thinking analytically and critically about using engineering tools to study fundamental questions in human disease, formulating original ideas and experiments, and communicating science through written and oral formats.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **NSM-BIOL**

Identical With: **BIOL267, BIOL567**

Prereq: **MB&B181 OR MB&B181Z AND MB&B182 OR MB&B182Z**

IDEA271 Biodegradable Design: Soft and Hairy

In this course, we will develop an understanding of soft materials and how softness is explored in design. We will explore the notion of softness in design with particular focus on how soft, biodegradable materials can form our experience of a product. We will study how soft materials, plants, and living organisms can be utilized as a living material to form a built ecology. In particular, we will learn how mycelium used in novel ways can produce experiential affect in spaces, especially in relation to the human body. We will study how to design for impermanence--sometimes using waste materials--and develop an understanding for material recovery. The goal of the course is to introduce students to bio and living materials used in design as well as zero-waste design methodology, and develop digital and physical skills associated with the making of soft products. Students will work both individually and collaboratively in a studio environment. Field trips to New York City museums, fabricators, and galleries may be expected as part of this course.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **HA-ART**

Identical With: **ARST271, ENV5271**

Prereq: **ARST131 OR IDEA110 OR IDEA180**

IDEA285 Digital Projects Lab

This intermediate course in design engages form and process as vital lineaments in digital images, systems, and objects today. Through a series of short, hands-on, thematic projects, students will move past the basics of digital technique and challenge themselves to articulate how and why things appear as they do. Rather than focus on specific tools or software, assignments will straddle creative platforms and media, incorporating methods such as live signal processing, data moshing, remixing, and interaction design. Early assignments will address narrow thematic concerns while a long-term final project driven by students' own directives will be developed and executed in the second half of term.

Offering: **Host**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **HA-CIS**

Identical With: **CIS285**

Prereq: **None**

IDEA291 East Asian Archaeology

This course will introduce students to remarkable archaeological discoveries from East Asia, focusing on the archaeology of ancient China, but also including finds from Japan, Korea, and Mongolia. Beginning with "Peking Man" and Asia's earliest hominin inhabitants, we will explore the lives of Paleolithic hunter gatherers, the origins of domestic rice and pigs, the emergence of early villages and cities, the origins of writing, ancient ritual systems, long-distance interactions through land and maritime Silk Roads, and the archaeology of Chinese diaspora populations living in the 19th-century United States. We will also consider the current state of archaeological research in East Asia, focusing on site preservation, cultural heritage management, and the political roles of archaeology.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **SBS-ARCP**

Identical With: **ARCP291, ANTH291, CEAS291, ENV5291**

Prereq: **None**

IDEA292 Interdisciplinary Project Lab

Interdisciplinary Project Lab fosters a holistic approach to engineering and design. Inviting students to reconcile vision with precision, hands-on coursework will involve a broad range of fabrication techniques, integration of systems, prototyping, and iterative design methods, culminating in a final project. The theme of this semester will be designing with light.

The first half of the semester will focus on developing facility in both modeling and prototyping through digital and analog fabrication practices through a series of short, intensive design and engineering projects. Students will expand their knowledge of materials and fabrication, develop skills for effective communication through visualizations and physical objects, and evaluate the efficacy of their designs. The second half of the semester will focus on a single project, developed in groups, planned in consultation with the instructors, and developed with feedback from all-lab reviews and individual desk crits. Complementing each of the lab projects, presentations and workshops will introduce the conceptual underpinnings of the course and develop requisite technical skills.

IDEA292: Interdisciplinary Project Lab is a required course for all IDEAS linked major tracks in the College of Design & Engineering Studies. It may also be counted towards the IDEAS minor as an elective in most minor concentrations (see <https://www.wesleyan.edu/codes/> for more information).

Offering: **Host**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **NSM-IDEA**

Identical With: **ARST335**

Prereq: **IDEA170 OR ARST190 OR IDEA285 OR IDEA175 OR ARST235**

IDEA301 Unsettling Times: Clocks for Ghosts, Monsters, and Aliens

Tracking the rhythms, cycles, and ruptures of collective life is essential for studies of sociocultural and environmental dynamics. Yet such studies are mostly undertaken with the unquestioned assumption that Western apparatuses of time reckoning and historical periodization can be applied as universal and stable frames of reference for all kinds of phenomena. Temporal units of years, months, days, minutes are used, rendering insensible relations that do not align with such metrics. These simplifying moves limit our capacity to understand continuity and change, and places countless lives and landscapes at great risk.

This seminar draws from the social and natural sciences, humanities, and arts to unsettle these simplifications. Through readings and audio/video screenings, we will consider how apparatuses for time keeping (or clocks, broadly defined) become power tools, creating haunted, monstrous, and alienated subjects. Through exercises and field walks throughout the semester, students are invited to notice, record, and engage with multiple temporalities of more-than-human worlds. The final project will involve research and design of a speculative clock for futures otherwise.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **SBS-SISP**

Identical With: **SISP301**

Prereq: **None**

IDEA305 Lighting Design for the Theater

This course will introduce students to the history, basic principles, and practical application of lighting design through lecture, discussion, demonstration, and practical application. Students will develop a deeper understanding of the methodology and applications of light in storytelling, which will help them communicate with collaborators.

This course counts towards the Theater Arts category for the THEA major.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **HA-THEA**

Identical With: **THEA305**

Prereq: **THEA105 OR DANC105**

IDEA308 Comparative Urban Policy

Cities are home to more than half of the world's population, generate more than 80% of world GDP, and are responsible for 75% of global CO2 emissions. Once viewed as minor political players with parochial concerns, they are now--individually and collectively--major players on the global stage. This course will examine how cities are coping with the major policy issues governing our lives--from waste management and public safety to energy and housing policy. We will be examining how policies differ between big cities and small cities, what cities in the global north are learning from the cities in the global south, and how cities are bypassing toxic partisan politics in their nations' capitals to form global networks promoting positive change. The class will involve local field trips and participant observation to see how some of these urban issues are playing out in the city of Middletown.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **SBS-GOVT**

Identical With: **GOVT308, CEAS308, ENV308**

Prereq: **None**

IDEA320 Ecological Design II: Worn Out/Broken In

This course will function as a design studio that examines the afterlife of material production. While designers have traditionally focused their attention on the creation, distribution, and consumption of new products, this course asks students to carefully consider everything that follows those acts. By scrutinizing the use, care, maintenance, repair, and eventual demise of designed objects, students come to understand the intended and unintended consequences of making. Rigorous observation and research lead to the creation of analytic drawings and models for presentation at project reviews.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **HA-ART**

Identical With: **ARST320, ENV321**

Prereq: **ARST270 OR ARST235 OR ARST220**

IDEA321 Wood: Building with the Forest

This studio introduces students to full-scale design and construction through the production of a single, collaborative project over the course of the semester. Working from land-based research and precedent analysis, students develop a detailed design for a structure on a specific site in Middletown, then build it together in the field. Materials will be sourced from the northern hardwood forest and the design crafted to suit its ecosystem.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **HA-ART**

Identical With: **ARST321, ENV5324**

Prereq: **ARST270 OR ARST235 OR ARST220**

IDEA336 Architecture II

This course is a second-level architecture studio whose focus will be a single, intensive research and design project. As the semester progresses, additional design, representation, and production tools will be introduced and used for developing work for the project, from graphics software to the laser cutter. Additional information about the architecture studio at Wesleyan and its past projects may be found at: <http://www.facebook.com/wesnorthstudio>

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.50**

Gen Ed Area: **HA-ART**

Identical With: **ARST336**

Prereq: **ARST235**

IDEA350 Computational Media: Videogame Development

This course examines the interplay of art and science in the development of contemporary videogames using the Unity development platform and commercial artistic game tools. Students develop a comprehensive understanding of computational media, including legal and commercial aspects, combined with hands-on experience in a creative process that integrates design, art, and coding. There will be discussions with invited industry leaders in various subject areas. Students will have the opportunity to work as part of development teams and create working prototypes to better understand the challenges and rewards of producing graphic interactive software within a professional context.

Offering: **Host**

Grading: **A-F**

Credits: **2.00**

Gen Ed Area: **NSM-IDEA**

Identical With: **FILM250, COMP350, CIS350**

Prereq: **None**

IDEA359 Space Design for Performance

In this course, students will study, construct, and deconstruct the performative space, whether in the theater or site-based, by analyzing the space as a context to be activated by the body of the performer and witnessed by an audience. Through practical assignments, the class will learn the aesthetic history of the theatrical event (considering plays, rituals, street parades, and digital performances, among others), while developing and discovering the student's own creative process (visual, kinetic, textual, etc.). Students will be guided through each step of the design process, including close reading, concept development, visual research, renderings or drawings, model making and drafting.

In this course, special emphasis is given to contemporary performance as a mode of understanding cultural processes as a relational system of engagement within our ecosystem, while looking at environmental and sustainable design, materials, and the environmental impacts of processing. Students will create and design performance spaces, while realizing scale models and drawings and integrating the notions of design and environmental principles and elements.

Students will have the opportunity to develop skills using 3D-drafting and 3D-modeling software.

This course counts towards the Theater Arts category for the THEA major.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **HA-THEA**

Identical With: **THEA359, DANC359, ENV5359**

Prereq: **THEA105 OR THEA150 OR THEA185 OR ARST131 OR ARST190**

IDEA360 Media for Performance

This course examines the use of media and technology as it relates to dramaturgy and design for performance. Class time will be used for lecture, discussion, and experimentation, during which we will explore new technologies used in the industry, including projections, motion tracking, and software such as After Effects and Isadora. Throughout the semester, students will use the skills learned to create their own digital performances.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **HA-THEA**

Identical With: **THEA360, DANC364**

Prereq: **None**

IDEA370 Product Design II

This course builds on the exploration and knowledge learned in Product Design I to discover opportunities for systems thinking in product design. Students will study systemic challenges related to aging, education, food, and mobility to investigate potential opportunities through the lens of product design. The course will support students in developing digital modeling skills as well as rapid prototyping and fabrication techniques. Students will work both individually and collaboratively in a studio environment. Field trips to New York City design ateliers, fabricators, and workshops may be expected as part of this course.

Offering: **Crosslisting**

Grading: **A-F**

Credits: **1.00**

Gen Ed Area: **HA-ART**

Identical With: **ARST370**

Prereq: **ARST270 OR ARST235 OR ARST220**

IDEA383 Introduction to Costume Design for Performance

This course is an exploration of costume design concepts for contemporary performance including theater and other genres. The class will include beginning elements of costume design, including character/script analysis, research, costume lists, action charts, visual design concepts and techniques, and collage and drawing skills.

This course counts towards the Theater Arts category for the THEA major.

Offering: **Crosslisting**

Grading: **OPT**

Credits: **1.00**

Gen Ed Area: **HA-THEA**

Identical With: **THEA383**

Prereq: **THEA105 OR THEA185 OR ARST131 OR ARST445**

IDEA401 Individual Tutorial, Undergraduate

Topic to be arranged in consultation with the tutor.

Offering: **Host**

Grading: **OPT**

IDEA402 Individual Tutorial, Undergraduate

Topic to be arranged in consultation with the tutor.

Offering: **Host**

Grading: **OPT**

IDEA419 Student Forum

Student-run group tutorial, sponsored by a faculty member and approved by the chair of a department or program.

Offering: **Host**

Grading: **Cr/U**

IDEA420 Student Forum

Student-run group tutorial, sponsored by a faculty member and approved by the chair of a department or program.

Offering: **Host**

Grading: **Cr/U**

IDEA429 Senior Thesis Tutorial

Offering: **Host**

Grading: **OPT**

IDEA491 Teaching Apprentice Tutorial

The teaching apprentice program offers undergraduate students the opportunity to assist in teaching a faculty member's course for academic credit.

Offering: **Host**

Grading: **OPT**

IDEA492 Teaching Apprentice Tutorial

The teaching apprentice program offers undergraduate students the opportunity to assist in teaching a faculty member's course for academic credit.

Offering: **Host**

Grading: **OPT**