

Spring 2018
College of Architecture & Design
Electives List
11/15/2017

Undergraduate Electives

**In addition to the electives below, there are courses that are regularly offered under *AD, ARCH, DD, ID, and INT* course numbers which students may opt to take to fulfill design and/or arch elective requirements. The schedules for those courses can be found on the Registrar's Course Schedule website under the course prefixes noted above.

<u>Course #</u>	<u>Section #</u>	<u>Title</u>	<u>Instructor</u>	<u>Enrollment</u>
AD 340	002	Photography and Imaging Wed 830 – 1130am	G. Goldman	16
AD 490	004	Gifts Friday 1:00 – 4:00pm	K. Mead	17
AD 490	006	Interactive Product Design Mon 8:30 – 11:30am	K. Persaud	15
AD 490	104	History of Industrial Design: Theory & History of Industrial Products Tues 6:00 – 9:00pm	G. Van Koenig	16
AD 490	106	VR- Educational Game Design Thursday 6:00 -900pm	J. Ross	7
DD 320	102	Computational Design: Robotics for Architects and Designer Thurs 8:30 – 11:30am	T. Narahara	11
Arch 312	002	Environmental Education Wed 11:30 – 2:30pm	S. Moore	14
Arch 531E	002	History of Non Western Architecture Wed 11:30 – 2:30pm	Z. Celik	20
Arch 537	002	Advanced Structures: Building Design for Hazards And Resilience Wed 11:30 – 2:30pm	R. Taher	11
Arch 546	002	Designing and Optimizing the Building Enclosure For Resilience Thurs 8:30 – 11:30	C. Liaukus	25
Arch 583	102	Designing for Sustainability Fri 1:00 – 4:00	E. Zipori	0

Graduate Electives

Undergraduate students with cumulative g.p.a. of 2.8 or higher are encouraged to take 600-level graduate electives. For special permission to do so, print and fill out the form attached, obtain the approval of your undergraduate advisor and the graduate architecture advisor, and submit the completed form to the Office of the Registrar.

Masters students are also encouraged to take 700-level doctoral electives. For special permission to do so, contact the course instructor. Once this approval is conveyed to the graduate advisor, you will be given permission to enter the course.

				<u>Enrollment</u>
Arch 619	002	Architectural Photography Wed 8:30 – 11:30	N. Prantis	11
Arch 647	002	Computer Applications Tues 11:30am or 1pm	V. Benanti	11
Arch 662	004	CityLab: Cities by Design Wed 11:30 – 2:30pm	C. Harp	9
Arch 662	102	Scripting Environments Tues 6:00 – 9:00pm	M. Schwartz	1
MIP 631	102	History & Theory of Infrastructure Thurs 8:30 – 11:30	G. Theodore	7
MIP 655	002	Land Use Planning Wed 830 – 11:30am	T. Navin	14
USYS 711	002	The Good City Tuesday 5:30 – 8:30pm	K. Franck	3

Course Descriptions:

AD 340-002. Photography and Imaging (Goldman) (Goldman) Prerequisites: [AD 150](#) or ([ARCH 155](#), [ARCH 156](#), [ARCH 163](#), [ARCH 164](#)) or permission of instructor. Photography is introduced as an artistic medium in a digital context. General photographic principles and techniques will be discussed including digital flash photography, image processing, in/on-camera filters and post-processing filters, camera controls, and compositional elements. Photographic student projects will be required. Students must provide their own interchangeable lens camera capable of shooting "RAW" format (DSLR or mirrorless).

AD 490-004. Gifts (Mead) Creating product for the gifting industry is harder than one might think. Products that have mass appeal have to be unique but also price conscious. Not to mention, there is also a TON of competition out there! Coming up with a plan to market your product so that it has the best chance to make it big can be extremely difficult. In this class students will study Stores(online/brick & mortar), Trade Shows, Product Categories, Trends, Marketing, PR, Price Points, Buyers vs Customers, Purchasing, Invoicing, Basic Bookkeeping, Designers working in the field, as well as the History of popular gifts and why they sell well. The class will result in students designing a product that they believe will be a hit seller. This class has a strong focus on entrepreneurship. Taught by Kiel Mead, NJIT lecturer and founder/owner of the American Design Club. A representation company with over 50 designer brands on roster, selling to over 2000 stores across the USA.

AD 490-006 Interactive Product Design (Persuad)

AD 490-102. VR- Educational Game Design (Ross)

AD 490-104. History of Industrial Design: Theory & History of the Industrial Products (Von Koenig)

This seminar style course will explore issues of class, race, globalization, innovation, sustainability and national identity through the lens of industrial design. We will focus on analyzing and theorizing the greater role objects play in shaping our environments, informing social interactions, as well as other humanistic inquiries into the problematic relationships between design, designers and the industrialized world. This course is focused in theory and history, but is assessed through a variety of deliverables based in critical, design thinking. For more information please contact. For more information please contact gretchen.a.vonkoenig@njit.edu

DD 320 -102 Computational Design: Robotics for Architects & Designers (Narahara) This course is for upper level students exploring interactive and kinetic prototypes using microcontrollers (Arduino), sensors, and actuators. The course will take a hands-on approach to learn about sensors (such as Kinect), actuators (such as servo motors), graphic/game design software (Processing and Unity3D), and prototyping using laser cutting and 3-D printing. The course will focus on producing creative and aesthetically articulated applications of robotic technologies. Topics include adaptable, responsive, and distributed systems. Recommended for 5th, 4th and 3rd year students with basic knowledge on programming and digital fabrication skills. Open to students from any collage.
(<https://dl.dropboxusercontent.com/u/9376557/DD320%20Movie.mp4>)

Arch 312-002. Environmental Education (Moore) Prerequisite: [ARCH 264](#). Involves architecture students in working with grade school or high school students in the solution of a joint environmental design project. Participants first work toward developing their own understanding and sensitivity of the manmade environment. Emphasis on learner-directed and discovery-guided inquiry, and educational methods to increase awareness of the physical settings created for human activities. Projects developed in nearby schools which focus on the interaction of individuals and small groups with the environment.

ARCH 531E -002 History of Non-Western Architecture (Celik) Prerequisites: [ARCH 382](#). An examination of major architectural traditions of China, Japan, Southeastern Asia, India, and the Middle East. Each area is considered with reference to a conceptual, iconographic and stylistic paradigm that evolved from a particular historical context.

Arch 537-002. Advanced Structures: Building Design for Hazards and Resilience (Taher) This course discusses the topic of building design for various hazards which are mainly earthquakes, high winds/hurricanes and floods. Each type of hazard is discussed separately. First, the nature of the hazard, expected damages and the corresponding response of a structure are explained. Then the structural building design process is covered based on the requirements of the latest codes and standards. Design examples are used to illustrate the various design methods. Eligible for Sustainability minor.

Arch 546-002. Designing and Optimizing the Building Enclosure for Resilience (Liaukus) Prerequisites: ARCH 386, CS 104. Considers the building envelope, the boundary dividing the inside of a structure from the outside environment. Study and design enclosures designed for high performance with a specific focus on resilience. Eligible for Sustainability minor.

Arch 583-002. Designing for Sustainability (Zipori) This seminar class will provide an overview of different tools available to measure sustainability conditions of buildings, communities, and infrastructure systems. This will be done by lectures, assigned readings, roaming outdoors, presentations by students, and an analysis exercise in which Weston Hall and the NJIT campus will be assessed by the students using a sustainability measurement tool. The class will prepare a "publishable" flyer on the sustainability conditions of NJIT's built environment.

Arch 619-002. Architectural Photography (Prantis) Prerequisites: [ARCH 501G](#), [ARCH 502G](#), [ARCH 503G](#). Photography for architectural presentations and portfolios. Lectures include orientation on light and space, slide presentations, and the use of text to reinforce experimentation in photography.

Arch 647-002. Grad Building Information Modeling (Benanti) This course will introduce students to the principles and practice of Building Information Modeling. Course exercises and projects are designed to enrich the students' understanding of the potential of this emerging technology on both a practical and theoretical level. The principal software that we will be using for this course is the latest version of Autodesk Revit Architecture.

Arch 662-004. CityLabs: Cities by Design (Harp) What constitutes the urban? How are urban constructs begun, developed, and given their characteristic forms? What conditions and values conspire to influence the making of memorable and lasting towns, cities, and urban places? Against a contemporary backdrop of rapid globalization, a focused look at patterns, processes, and examples of the distant and more recent past can serve as guides toward building a more enlightened and sustainable future for both man-made and natural environments.

Arch 662-102. Scripting Environments (Schwartz) Computation has many roles within architecture and design. At the most common level, the use of a CAD program for modeling and rendering is in itself a usage of computation in design. As new features are added to programs, from allowing lines to become splines, from 2d drawings to extruded 3d models, designers continue to embrace the tools enabling their creativity created by others. In this class the designer learns to be an active participant in the role computation plays in design. From BIM models taking data from excel sheets to drive the design, to algorithms generating cities based on the Fibonacci sequence, the designer is able to use 'the right tool for the job', even when that tool does not yet exist. The class focuses on the python programming language. While the skills in python can be applied to numerous software, for consistency Rhino 3D will be used in the class, although no prior knowledge is required. The class is a mix of projects and quizzes, with no knowledge in python required. For those with previous experience in python the class will allow for projects to go beyond what is taught. The final projects will be either evaluative or generative designs of the built environment. Highly motivated students from other fields are encouraged to join the class upon permission of the professor.

MIP 631. History and Theory of Infrastructure (LeCavalier) The historical role of infrastructure in the formation of cities and the relation of planning theories to urban culture. Case studies are used to develop effective ways of learning urban design; method and substance are equally emphasized. Concentration on the social, economic, political, technological and topographic factors that affect urban form; analysis of urban design schemata and their relation to patterns of use; and the critical appraisal of planning ideologies and strategies.

MIP 655. Land Use Planning (Navin) Spatial relations of human behavior patterns to land use: methods of employment and population studies are evaluated; location and spatial requirements are related to land use plans; and concepts of urban renewal and recreational planning are investigated by case studies. Same as [TRAN 655](#) and CE 655.

USYS 711. The Good City: Environmental Design and the Quality of Metropolitan Life (Franck) Prerequisites: Enrolment in Urban Systems Program or by permission of instructor. This course introduces urban systems doctoral students to the various ways in which architects, urban designers, and planners have sought and continue to seek to improve the quality of everyday life in urban and suburban environments through the design of the built environment, both at the scale of neighborhoods and communities and at the scale of buildings. The emphasis is on manipulation of built form, transportation, and public space as responses to perceived problems.

* The following is an honors course that is also open to non-Honors students. It fulfills Humanities GER CAPSTONE requirement, so any third or fourth year student who has fulfilled their 3XX Humanities Req could use this for

***HSS 403-H02. Madness, Technology and the City (Burcak Ozludil Altin) Tues 10:00 – 1:00**

The course aims to introduce methodologies and tools in digital humanities to students from various fields by focusing on madness, technologies of control and surveillance, and their relation to the cities. Students will investigate new methodologies that digital tools can offer, how such tools can help make connections they cannot otherwise, and understand some theoretical underpinnings of using them. Under themes such as Annotation, Collaboration, Display,

Visualization, and Mapping, the course will introduce some current tool types to students and invite them to experiment with different ones. Readings will be done by using an annotation platform as participants "read collectively." As the final project, students can choose to use an existing tool, manipulate a tool, or develop a tool based on their research interest and fields. Some project ideas include creating a digital "exhibition," mapping, visualization of data, temporospatial analysis, art/architectural visualization, Virtual Reality, and Augmented Reality. This is a hands-on class and students are expected to bring a laptop.