**Fall 2017 Electives**

**College of Architecture & Design**

**March 22, 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.

**Course # Section # Title Instructor**

AD 490 001 FutureBook A. Wendell

Mon 8:30 – 11:30

AD 490 003 Intro to Interactive Product Design K. Persaud

Mon 8:30 – 11:30

AD 490 005 Patents in Architecture & Design M. Decker

Tues 2:30 – 5:30

AD 490 007 History of Industrial Design G. Von Koenig

Thurs 8:30 – 11:30

AD 490 101 Toy Design S. Tartaro

Thurs 6:00 – 9:00pm

DD 321 101 Interactive and Reactive Environments S. Zarzycki

Wed 6:00 – 9:00pm

INT 350 001 History of Furniture D. Brothers

Tues 1:00 – 4:00pm

Arch 301 001 Digital Modeling and Fabrication C. Belmont

Fri 8:30 – 11:30am

Arch 312 001 Environmental Education S. Moore

Fri 1:00 – 4:00

Arch 337 001 Building Information Modeling (For A+D Majors ONLY)

Mon 8:30 – 11:30am V. Benanti

Arch 337 101 Building Information Modeling (for Arch Students ONLY)

Wed 6:00 – 9:00pm V. Benanti

Arch 408 001 Investigation of the Contemporary Landscape T. Navin

Wed 11:30 -2:30

Arch 419 002 Architecture Photography N Prantis

Fri 1:00 – 5:00pm

Arch 531F 001 Thresholds of Arch Theory: T. Wood

***The Meaning of History and Function of Theory***

Thurs 830 – 11:30am

Arch 538 101 Sustainable Architecture -----------

Tues 6:00 – 9:00pm

Arch 541 001 Material Systems for Design T. Ogorzalek

Wed 11:30 -2:30pm

Arch 546 001 Design and Optimization of the Bldg Enclosure -------------

Wed 8:30 – 11:30am

**Graduate Electives**

Undergraduate students with cumulative g.p.a. of 2.8 or higher are encouraged to take 600-level graduate level

electives. For special permission to do so, print and fill out the form at the back of this document, 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 her approval is conveyed to the graduate advisor, you will be given permission to enter the course.

Arch 630 001 Methods of Arch History Theory and Criticism Z. Celik

Tues 10:00 – 1:00pm

Arch 662 001 Extraordinary Life in the Public Realm K. Franck

Tues 1pm – 4pm

Arch 662 101 History of the Global Metropolis G. Esperdy

Tues 6:00 – 9:00pm

Arch 686 001 Research Methods for Environmental Design K. Franck

Wed 11:30 – 2:30pm

MIP 652 101 Geographic Information Systems M. Marini

Wed 6:00 – 9:00pm

MIP 674 101 Infrastructure & Architecture D. Sollohub

Tues 6:00 – 9:00pm

MIP 675 001 Elements of Infrastructure Planning T. Schuman

Tues 1:00 – 4:00pm

**Course Descriptions**

**AD 490 -001 FUTURE BOOK: Contemporary and Interactive Graphic Design (Wendell)**

The tradition of paper printed volumes delivered to our homes or purchased from newsstands is losing viability in the face of ubiquitous computing and networked mobile devices. Print media is clinging to outdated models for publishing and distribution. Publishers and technology start-ups are exploring new modes of image and text based media distribution. From the Kindle to Issuu, from Blurb to custom app platforms, each year brings new players into the publishing marketplace. These new players and technologies empower the individual to place themselves into the publishing sphere in disruptive and innovative positions. FUTURE BOOK will build a foundation of typographic and graphic design skills upon which forward thinking explorations of media will spring. Projects may include typographic print compositions, bespoke short run publications, digital publications and investigative design explorations into new models of linear media packaging. Final projects will address historical paradigms of publishing within bleeding edge publishing and distribution technologies.

**AD 490 – 003 Intro to Interactive Product Design (Persaud)**

Coming soon.

**AD 490 – 005 Patents in Architecture & Design (Decker)**

Throughout history, architects and designers have prided themselves in their problem-solving skills and their ability to overcome obstacles. They have found new ways to use materials to conquer seemingly inherent material limitations or invented new methods of making. Unfortunately, the rewards for their ingenuity does not always reach beyond a single design product, building or body of work. This course looks at the protection of Intellectual Property (IP) through trademarks, copyright, utility patents and design patents in context of emerging industry drivers such as nanotechnology or digital fabrication.

**AD 490 – 007 The History of Industrial Design (Von Koenig)**

Coming soon.

**AD 490 – 101: Toy Design (Tartaro)**

An introductory course in toy design that will include analysis, history of toy design, toy taxonomy, packaging/selling/marketing of toys, toy safety, demographic investigation, and more. Students will focus on research, ideation, and relevant image development, and will gain a basic knowledge of the steps involved in the development of a product.

**DD 321 - Interactive and Reactive Environments (Zarzycki)**

Prerequisites: [AD 112](http://catalog.njit.edu/search/?P=AD%20112), [AD 150](http://catalog.njit.edu/search/?P=AD%20150) and [DD 284](http://catalog.njit.edu/search/?P=DD%20284), or [ARCH 155](http://catalog.njit.edu/search/?P=ARCH%20155), [ARCH 156](http://catalog.njit.edu/search/?P=ARCH%20156), [ARCH 263](http://catalog.njit.edu/search/?P=ARCH%20263) andARCH 264, or instructor permission. This course will investigate contemporary attitudes toward digital public spaces, from mainstream media facades, interactive art installations, and mobile applications to guerrilla-like techniques such as tactical media, activist gaming, and electronic civil disobedience. Based on their research of relevant precedents, students will design a 2D and/or 3D interactive environment.

**INT 350 History of Furniture (Brothers)**

Prerequisite: [AD 161](http://catalog.njit.edu/search/?P=AD%20161) and [AD 162](http://catalog.njit.edu/search/?P=AD%20162) or equivalent; or [ARCH 251](http://catalog.njit.edu/search/?P=ARCH%20251), [ARCH 252](http://catalog.njit.edu/search/?P=ARCH%20252) and [ARCH 381](http://catalog.njit.edu/search/?P=ARCH%20381). Survey course studying the history and characteristics of furniture design from antiquity to the present day. Study of social and design forces influencing furniture. Students will analyze furniture in terms of style, aesthetic intent, construction and materials, ergonomics, universal/barrier-free accessibility, sustainability, and technology. Major stylistic movements will be discussed.

**ARCH 301: Digital Modeling and Fabrication (Belmont)**

The seminar in Digital Modeling and Fabrication is a 3-credit course for upper level students exploring advanced 3-dimensional computer modeling techniques and data export for assembly and fabrication to various computer numerically controlled (CNC) hardware available at the School of Architecture. Specifically, students engage in NURBS and solid modeling using Rhinoceros 3D and export data through various Rhino plug-ins including RhinoCAM, which writes G- and M- Codes for 2 and 3D milling operations. CNC hardware available as of Spring 2010 includes two (2) Universal Laser Cutters, each with 18" x 32" beds; two (2) Z-Corporation Z-310 3 dimensional printers; and a Precix 9100 Industrial CNC Router with a 48" x 96" bed. Students model and fabricate full scale assemblies individually and in teams and contribute to a final exhibition of student work. Familiarity with various software tools available at the College of Architecture and Design is encouraged but not required. Admission to the course to students in their second year of study by discretion of instructor.

**Arch 312. Environmental Education (Moore)**

Prerequisite: [ARCH 264](http://catalog.njit.edu/search/?P=ARCH%20264). 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 337 Building Information Modeling (Benanti)**

This course explores both technical and philosophical approaches to the use of the computer in architectural analysis, design development, information management, and document delivery. Autodesk Building Systems and Autodesk Revit Building will be used for 3D modeling and 2D documentation employing a systems-approach framework for spatial allocation, energy analysis, and structural considerations. The workings of the foundational information databases of the respective software will be thoroughly explored. Projects requirements will include building program resolution, solar analysis, asset scheduling, document layout, and design visualization. Proficiency with Autodesk Autocad (2D) and understanding of general CAD principles are required prerequisites; the formal prerequisite course is Arch 316/647.

**Arch 408. Investigation of the Contemporary Landscape**

Introduces the design, construction and management of contemporary landscape projects through case studies, field trips, and personal contact with prominent practicing landscape architects. A historical perspective of landscape architecture is used as a context for discussion.

**ARCH 419. Architectural Photography (Prantis)**

Prerequisite: [ARCH 364](http://catalog.njit.edu/search/?P=ARCH%20364). This course is designed for architecture students in using photography to better visualize form in space in a 2-D format, lighting, color, and composition. The course goal is developing their unique expressive abilities in seeing through the camera. Discussions emphasize correlating historical movements in architecture and the visual arts in photography, using relevant text selections, slide presentations, and museum visits for reinforcement.

**ARCH 531F. Thresholds of Arch: The Meaning of History and the Function of Theory (Wood)**

Prerequisites: ARCH 382, 529G, or AD 162. This seminar investigates the ways in which architectural history and theory have influenced building design in the past and continue to have relevance in contemporary practice.

**Arch 538. Sustainable Architecture (Fry )**

Follows two precepts: accepting responsibility for the consequences of design decisions upon human well-being, and the long-term viability of natural systems. Topics include sustainable site design and development, environmentally sensitive building materials, lifecycle cost benefit analysis of building systems, and adaptive reuse.

**Arch 541. Material Systems for Design (Ogorzalek)**

This seminar will allow students to examine material systems that give design agency to matter as a creative and technical force in the making of architecture. In doing so, it will provide students an opportunity to understand and explore the role material matters play in contemporary architectural theory and praxis. Focused on the exploration and understanding of material systems this course will provide students with the intellectual underpinnings for the re-conceptualization of matter within their own design processes.

**Arch 546. Design & Optimizing the Bldg Enclosure ( )**

Prerequisites: Arch 386, CIS 104. Considers the "building envelope”, the boundary dividing the inside of a structure from the outside environment. Study and design optimal enclosures considering energy exchange, the relationship between energy and light, and life cycle costs

**Arch 630. Methodology of Arch History Theory and Criticism (Celik)**

Prerequisites: [ARCH 528G](http://catalog.njit.edu/search/?P=ARCH%20528G), [ARCH 529G](http://catalog.njit.edu/search/?P=ARCH%20529G). This seminar is structured around notable readings on architectural history, theory and criticism to provide students with a sound basis for critical analysis and assessment. It is recommended for students who select history and theory as their area of concentration.

**Arch 662. Extraordinary Life in the Public Realm (Franck)**

Urban public space is the scene of diverse but largely ordinary activities including all manner of circulation, recreation, athletics and commerce. However, sidewalks and streets, parks and squares also host collective events outside of the everyday routine such as parades, festivals and demonstrations. In this seminar we will examine those events that have either a religious or a political dimension. We will take a historical and an international perspective, drawing from existing scholarship as well as from media accounts in text, photographs and film. Students will make in-class presentations of a particular case and will pursue a course-long research project on a topic of their choice.

**Arch 662 History of the Global Metropolis (Esperdy)**

This graduate seminar introduces students to the formal and cultural evolution of the global metropolis in historical and contemporary perspectives, with a focus on transnational developments in the industrial and post-industrial eras. As a core Urban Systems course, emphasis is on the intersection of social, economic, political, geographic, and environmental conditions that gave rise to distinct metropolitan areas and that have influenced urban populations for more than three centuries. The course includes a chronological overview of metropolitan settlement, growth, decline and revitalization along with case studies that provide the opportunity to examine the past and present of specific urban areas in the developed and developing worlds. The course pays particular attention to the global migration of urban/suburban morphologies and architectural typologies during the past half century—especially as they relate to changing transportation infrastructures. Course format includes lectures and discussions of readings, as well as student research presentations. The interdisciplinary nature of urban systems is stressed throughout.

**Arch 686. Research Methods for Environmental Design (Franck)**

Course introduces methods of inquiry useful to professionals planning and designing buildings, communities and cities. Skills developed in defining research questions and applying appropriate methods include on-site observation, focus groups, questionnaire design focus groups and spatial analysis. Open to undergraduates with permission of instructor.

**MIP 652. Geographic Information Systems (Marini)**

Prerequisite: course or working knowledge of CADD or permission of instructor. Geographical/Land Information System (GIS/LIS) is a computerized system capable of storing, manipulating and using spatial data describing location and significant properties of the earth's surface. GIS is an interdisciplinary technology used for studying and managing land uses, land resource assessment, environmental monitoring and hazard/toxic waste control, etc. Introduces this emerging technology and its applications. Same as [CE 602](http://catalog.njit.edu/search/?P=CE%20602) and [TRAN 602](http://catalog.njit.edu/search/?P=TRAN%20602).

**MIP 674. Infrastructure and Architecture (Sollohub)**

Examination of areas of overlap and continuity between architecture, landscape architecture, urban design, building science and infrastructure. Topics include the typology, programming and design of public facilities; the housing fabric; the relation between built form, urban space and infrastructure. Same as ARCH 674.

**MIP 675. Elements of Infrastructure Planning (Schuman)**

Introductory survey of the basic principles, operation and design of physical infrastructure systems including roads, public transportation, community facilities, public open space, surface drainage, and electric, gas, water, waste disposal, and telecommunications services.