

Electives List
Fall 2019
College of Architecture & Design
3/15/19

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>
AD 490	001	UI-UX Design Wed 11:30 – 2:30	H. Kum-Biocca
AD 490	003	Watch Design T/F 8:30- 10:00 am	J. Ferrar
AD 490	451	3D Animation - Online course (DD students cannot take this course.)	A. Wendell
AD 490	453	Non Western Art, Design, and Material Culture ONLINE COURSE	E. Altin
Arch 331	001	Landscape Architecture Wed 11:30 – 2:30 pm	T. Navin
Arch 531E	001	History of Non Western Arch Wed 11:30 – 2:30	Z. Celik
Arch 541	001	Material Systems for Design Wed 11:30 – 2:30	T. Ogorzalek
Arch 583	001	TBD Wed 11:30 – 2:30 pm	S. Moore
Arch 583	003	Interdisciplinary Collaboration and Prototyping for Innovation Wed 11:30 – 2:30	M. Decker
Arch 583	005	Design Strategies for Net-Zero Energy and Zero carbon Buildings Thurs 8:30 – 11:30	A. Zarzycki

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>Course #</u>	<u>Section</u>	<u>Title</u>	<u>Instructor</u>
Arch 630	001	Methodology of Arch History, Theory, and Criticism Tues 2:30 – 5:30 pm	Z. Celik
Arch 647	101	Grad BIM Wed 6:00 – 9:00 pm	V. Benanti
Arch 679	HM1	Envisioning Newark Wed 11:30 – 2:30 pm	T. Schuman
MIP 631	001	History and Theory of Infrastructure Mon 8:30 – 11:30	G. Theodore
MIP 652	001	Geographic Information Systems Thurs 6:00 -9:00	Y. Han
USYS 702	101	Global Metropolis Tues 6:00 – 9:00 pm	G. Esperdy

Course Descriptions:

AD 490-001: Watch Design (Ferrer) Students are introduced to the design and manufacturing of watches as well as the various business and marketing elements involved in the lifecycle of the product. Students will design through research and understanding of the engineering, aesthetics, production, materials, costs, and the relationship with the end user.

AD 490-003: UI-UX Design (Kum-Biocca) Application of theories, research methods, ethics, and design processes of User Interface/Users Experience (UI/UX) for designers. Students will research, develop, UI Design, and test UX designs. Design strategies will be discussed as they apply to physical, virtual, and hybrid solutions for desktop and mobile computer interfaces.

AD 490-451: Nonwestern Art, Design and Material Culture (Altin)

This ONLINE course explores unique design features and sophisticated material culture of the selected nonwestern contexts from Asia, Latin America, Africa and Oceania as well as the problematic nature of the term, Nonwest.

Arch 331 – 001: Landscape Architecture (Navin) An overview of the opportunities and constraints of landscape designs. Emphasis on developing a practical understanding of the potentials of earth, water and plants in architecture. Students given an overview of social and ecological determinants of relations between land and buildings.

Arch 531E – 001: 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 541-001: Material Systems in Design (Ogorzalek) Prerequisite: 4th year undergraduate standing or approval from instructor. 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 583-001: TBD (Moore)

Arch 583-003: Interdisciplinary Collaboration and Prototyping for Innovation (Decker) This course is looking at two key drivers for innovation: Interdisciplinary Research (IDR) and Rapid Prototyping. The transformative force of IDR has spurred on innovation in many fields. By working across the often-rigid boundaries of various research fields, we might be able to address issues of great societal concern in a timelier manner. Interdisciplinary collaboration can not only support a knowledge and technology transfer between the various fields, it can also accelerate the development of entirely new solutions that are tailored to real world challenges. Students will survey current examples of interdisciplinary collaborations and will be introduced to a selection of interdisciplinary teams that are currently operating on campus. Furthermore, students will learn about the benefits of rapid prototyping to add in the testing and validation stage necessary in many research endeavors. Hands on rapid prototyping exercises will expose students to 3D printing and other rapid prototyping techniques.

Arch 583-005: Design Strategies for Net-zero Energy and Zero carbon Buildings (Zarzycki) This course discusses recent precedents for zero-energy and zero-carbon buildings. It surveys state-of-the-art practices and technologies with in-depth analyses of high-performance designs, smart systems, and low-carbon solutions. Students will research various aspects and scales of resilient and sustainable designs starting with passive house (Passivhaus/MINERGIE-P standards) to active and smart building/city strategies. They will benchmark developed case studies against AIA's 2030 carbon-neutral commitment and its 2030 Design Data Exchange (DDx) database to understanding matrices involved in tracking of buildings' impact on the environment. As part of the course, students will develop a research paper and conduct a case study that investigates zero-energy and zero-carbon, and/or smart buildings. This course is intended for the research-minded students, particularly for those who are looking to develop sustainable/resilient design research agenda.

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 630 – 001: Methodology of Architectural History, Theory and Criticism Prerequisites: [ARCH 528G](#), [ARCH 529G](#). 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 647-101: 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 679-001: Envisioning Newark (Schuman) This seminar combines classroom discussion based on historical, analytical and literary texts; field visits to Newark's districts and neighborhoods; and meetings with leaders in government, business, art, education, and community-based organizations. The objective is to introduce students to the redevelopment process underway in Newark, and to use the city as a springboard for a broader investigation of the theory and practice of urban development.

MIP 631-001: History and Theory of Infrastructure (Theodore) 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 652-101: Geographic Information Systems (Han) 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](#) and [TRAN 602](#).

USYS 702-101: The Global Metropolis (Esperdy) This course introduces the morphological and cultural evolution of the US metropolis, historical and economic, political, geographic, contemporary perspectives. The emphasis is on the intersection of social, and environmental conditions that gave rise to distinct urban areas and that have influenced urban populations for over three centuries. A chronological overview of the settlement, growth, decline and revitalization of American cities is combined with detailed case studies.