

ARCH and CAP Elective Options- Spring 2023

All ARCH and CAP electives require sophomore-standing or higher. Some courses may have additional pre-requisites; see description for pre-requisite information. All meeting days/time are subject to change; please double-check listing in UCDAccess.

Classes offered by *Interior Design (INTD)* and *Landscape Architecture (LDAR)* contained in this guide may apply only as “CAP Electives” (not ARCH Electives) for students declared in the Arch. Design or Arch. Studies tracks (Fall 2021 or later). INTD and LDAR courses may count toward “ARCH Electives” only for students declared in the pre-Fall 2021 degree requirements and who do NOT have “CAP Elective” requirements. Please check with your CAP academic advisor if you are unsure how these courses will apply for you.

LDAR 1015 Engaging Landscape for Wicked Change is approved for Core Arts credit, only.

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- **ARCH 3600.001 – Special Topics Cultural: Architecture & Nature**

- The emerging fusion between human needs and wants and the natural environment is unprecedented. Blurring the limits between the two creates an opportunity for a deeper understanding of the natural world and systems that materialize as the foundation for meaningful investigation. Fostering contemplation of the relationship between nature, land, and building may, in turn, empower us to begin to frame a new discourse for sustainable design, passive architectural strategies, and building technology.

This course is experimental rather than numerical. It is about contemplating, assessing, and weaving ecological ideas with other influences in design. Because of the tremendous physical impact of the human dwelling on the natural environment, the course will focus on architecture and its relationship to the land and environment as a low-impact, physical intervention from the following three perspectives:

Within the structure– an internal, personal, contemplative awareness focuses on balancing the emotional, spiritual, social, and physical elements through spatial experiences connected to the natural environment.

Outside of the structure– an external holistic experience that (re)connects to context, land, and the natural environment.

The Interface– the transitional threshold, between in and out, separating, blurring, and (re)connecting.

Through lectures and individual and group projects, students will explore the integration of the natural environment with design, understand the relationship between land and building, explore current ecotechnology, and analyze traditional building practices.

- **ARCH 3600.002 – Special Topics Cultural: Embodying Memory**

- In response to public tragedies, architects, designers, and artists are often called to respond by creating sites of public memory. Such monuments, memorials, and sites can serve to create a common spatial frame for otherwise disparate experiences and

understandings. However, “memory” is far from a neutral recollection of the past. How and why are memorial sites constructed? What is the power of mourning, of memory?

In *Embodying Memory*, we will explore a history and theory of memory in the form of monuments and memorials. Whose lives count as grievable, and whose do not? Who, exactly, is the “public” that public art serves?

As a class we will explore these questions through a variety of readings and case-studies. Students will be asked to develop discussion questions, to present on case-studies, and to develop responses to critical questions presented by the instructor. These responses will serve as the foundation for the final assignment, which will be to conceptualize a site of public memory through a series of sketches, collage, and/or digital media.

- **ARCH 3600.003 – Special Topics Cultural: Other Modernism**

- The Western dominated historiography of modern architecture has recently been revisited in support of a polycentric historiography that recognizes the plurality, diversity, and heterogeneity of modern architecture across the globe. The recent revisionist histories and critical theories have emphasized the need to shift the architectural history/theory focus from a central or exclusively Western dominated modernisms to the peripheral geographies— “non-Western” or “other” modernisms.

This course highlights the need to widen the discourse of modern architecture through an exploration of modernism and modernities in the non-Western world. We will explore how the imported discourses of modern architecture and urbanism were manifested, contested, selectively appropriated, and altered in the peripheral geographies.

- **ARCH 3600.H04- Special Topics Cultural: Communicating Architecture**

- Architecture needs to be an ethical profession. Our practice is largely based on the ability to successfully understand, process, and communicate a vision for a “better future.” For whom? How? At what cost (whose expense)?

This course critically explores the techniques we use to make our case. What kind of portfolio gives us a leg upon a first job? How do we convince the boss we actually know something? We need to present to a client; what do they expect? Our client’s “users” say they want something different than the official program, now what? A community meeting suggests neighbors are opposed to the client’s concepts; should we just push forward? City planning officials see “problems”, what do they expect? How do we respond? Buildings require natural resource extraction and environmental disruption; how do we control or mitigate the negative impacts? The builder has ideas for cutting costs, are we confident that we can understand the consequences, and the risks? A mason or a carpenter on the site asks our opinion, should we answer?

All these questions are possible, and many will certainly occur during an architectural career. While the specifics can’t be precisely predicted, their very likelihood makes their consideration crucial. In this class we will sequentially and cumulatively confront these issues through a series of short writing exercises, graphic explorations, ‘play acting’ and

discussions. Students must be willing to participate through: critical readings (historical and contemporary); engaged, in-class discussion; collaborative “what-if” exercises; short, but insightful, written analyses, and speculative—and maybe even ‘utopian’—projections.

Learning Outcomes-

- Better understand the complexities of bringing a design idea into the material world.
 - Gain experience and confidence in thinking through and presenting your ideas and work.
 - Become more knowledgeable about power relationships and potential inequities in practice.
- **ARCH 3700.001- Special Topics Design: Bio-Design for the Built Environment**
 - Introduces the biodesign innovation process, which involves identifying important human needs and inventing meaningful solutions to address them. The course examines how biotechnology and bio-inspired innovation improve the form and function of our design world through innovative materials and novel approaches to developing buildings, food, medicine, infrastructure and more. Readings and in-class debates will raise critical issues in contemporary bioethics. For their final projects, students will choose to create and prototype a speculative biodesign concept, or work in the bio lab on the development of a real-world biodesign solution of their choosing. The course will introduce students to research methods and build analytical and problem-solving skills.
 - **ARCH 3701.H01- Survival Sketching**
 - The focus of this course will be the sketchbook and the keeping of a sketchbook.
 - **ARCH 3706- 3D Design, Computation, and Prototyping**
 - Introduces the design and computer-controlled fabrication of three-dimensional objects using both additive (3D printing) and subtractive (laser cutter, CNC router/mill) processes. Increasingly complex projects throughout the semester using various CAD/CAM software tools will explore design strategies for digital fabrication.
 - **ARCH 3708.001 – Introduction to the Essentials of Biomimicry**
 - Biomimicry is the conscious emulation of nature's genius that can be applied to the fields of design, engineering, medicine, transportation, and social interaction. This class will be geared towards designers and will give an overview of the discipline, the (3) Essential Elements, the human-nature connection, The Biomimicry Thinking Methodology, and Life's Principles.
 - **ARCH 4440 Building Systems II (*only applies as an ARCH or CAP elective in the Arch. Studies or Arch. Design tracks; does NOT apply as an ARCH or CAP elective if this course is already specified as a required course in the pre-Fall 2021 curriculum*)**
 - Focuses on the environmental systems in commercial and other nonresidential buildings. Discusses natural and artificial lighting, HVAC systems, acoustics, vertical transportation and fire protection.
 - *Pre-req: ARCH 3110 or 2121*
 - *Recommended pre-req: Pre-Calc equivalent and PHYS 2010/2321*

- **ARCH 4340 Theory of Structures II (*only applies as an ARCH or CAP elective in the Arch. Studies or Arch. Design tracks; does NOT apply as an ARCH or CAP elective if this course is already specified as a required course in the pre-Fall 2021 curriculum*)**
 - Focuses on the relationship between architectural concepts and the selection of structural systems. Addresses the qualitative and quantitative analysis of reinforced concrete, steel, and wood structural systems and members.
 - *Pre-req: ARCH 3340 with a C- or higher grade*
 - *Recommended pre-req: Pre-Calc equivalent and PHYS 2010/2321*

- **INTD 3686.H01- Special Topics in Interior Design: Light & Color**
 - Students will understand and apply principles and theories of light and color in relation to environmental impact and well-being.

- **INTD 3686.H02- Special Topics in Interior Design: Interior Design Materials**
 - Exploration of the various materials, finishes, and textiles available to the interior designer for interior specifications. Emphasis on interior finish materials and textiles.

- **LDAR 4430.001- Site, Society and Environment**
 - Sites are defined by relationships within environmental and social settings. Therefore, site design should be primarily ethical and secondarily technical. This course examines the implications of this idea through site methodologies, conceptual construction of site, site analysis and site typologies.

- **LDAR 4432.001- Landform Manipulation**
 - Focuses on the fundamental technical aspects of landscape architectural design and site engineering of related topography, grading, drainage design, landform manipulation, earthwork calculations, and road alignment.