ARCHITECTURAL DESIGN UNDERGRADUATE MAJOR

Architectural Design (AD)

Completion of the undergraduate program in Architectural Design leads to the conferral of the Bachelor of Science in Engineering. The subplan “Architectural Design” appears on the transcript and on the diploma.

Mission of the Undergraduate Program in Architectural Design

The mission of the undergraduate program in Architectural Design is to develop students’ ability to integrate engineering and architecture in ways that blend innovative architectural design with cutting-edge engineering technologies. Courses in the program combine hands-on architectural design studios with a wide variety of other courses. Students can choose from a broad mix of elective courses concerning energy conservation, sustainability, building systems, and structures, as well as design foundation and fine arts courses. In addition to preparing students for advanced studies in architecture and construction management, the program’s math and science requirements prepare students well for graduate work in other fields such as civil and environmental engineering, law, and business.

Requirements

### Mathematics and Science (36 units minimum)

- **Mathematics**
  - MATH 19: Calculus 3
  - MATH 20: Calculus 3
  - MATH 21: Calculus 4
  - CME 100: Vector Calculus for Engineers (Recommended) 5

- **Science**
  - PHYSICS 41: Mechanics (or PHYSICS 41E) (requires Physics diagnostic test or application) 4/5
  - EARTHSYS 101: Energy and the Environment
  - EARTHSYS 102: Fundamentals of Renewable Power
  - CEE 64: Air Pollution and Global Warming: History, Science, and Solutions
  - CEE 70: Environmental Science and Technology
  - PHYSICS 23: Electricity, Magnetism, and Optics
  - PHYSICS 43: Electricity and Magnetism

- **Technology in Society**
  - One course required; course chosen must be on the SoE 3-5

### Engineering Fundamentals

- Two courses minimum, see Basic Requirement 3 6-8
- ENGR 14: Intro to Solid Mechanics 3
- AD Depth Core 2
  - CEE 31: Accessing Architecture Through Drawing 5
  - CEE 31Q: Accessing Architecture Through Drawing
  - CEE 100: Managing Sustainable Building Projects (or CEE 32B, CEE 32D, CEE 102W, or CEE 136) 4
  - CEE 120 3

For additional information and sample programs see the Handbook for Undergraduate Engineering Programs (http://ughb.stanford.edu).


2. Engineering depth options: Choose at least 12 units from the following courses: CEE 101A, CEE 101B, CEE 101C, CEE 120B, CEE 120C, CEE 134B, CEE 156, CEE 159, CEE 172, CEE 172A, CEE 176A, CEE 180, CEE 181, CEE 182, CEE 183, CEE 226, CEE 241, OR CEE 242; ME 203. Students should investigate any prerequisites for the listed courses and carefully plan course sequences with the AD director.

3. A course may only be counted towards one elective or core requirement; it may not be double-counted. All courses taken for the minor must be taken for a letter grade if that option is offered by the instructor. Minimum Combined GPA for all courses in Engineering Fundamentals and Depth/Core is 2.0.

### Architectural Design Honors Program

The AD honors program offers eligible students the opportunity to engage in guided original research, or project design, over the course of an academic year. For interested students the following outlines the process:

1. The student must submit a letter applying for the honors option endorsed by the student’s primary adviser and honors adviser and submitted to the student services office in CEE. Applications must be received in the fourth quarter prior to graduation. It is strongly recommended that the honors student select a faculty advisor in the fall quarter of their junior year. Students will be expected to take a variety of technical upper division classes, complete an honors thesis, and engage in guided original research, or project design, over the course of an academic year.

- Basic Requirements: All honors students must complete the following coursework: CEE 100, CEE 101A, CEE 101B, CEE 101C, CEE 120B, CEE 132A, CEE 132B, CEE 132C, CEE 132D, CEE 139, CEE 172A, CEE 176A, CEE 180, CEE 181, CEE 182, CEE 183, CEE 226, CEE 241, OR CEE 242; ME 203. Students should investigate any prerequisites for the listed courses and carefully plan course sequences with the AD director.

- Honors Thesis: The student must submit a letter applying for the honors option endorsed by the student’s primary adviser and honors adviser and submitted to the student services office in CEE. Applications must be received in the fourth quarter prior to graduation. It is strongly recommended that the honors student select a faculty advisor in the fall quarter of their junior year. Students will be expected to take a variety of technical upper division classes, complete an honors thesis, and engage in guided original research, or project design, over the course of an academic year.

### Electives

Elective units must be such that courses in ENGR Fundamentals, Core, Depth Options, and Depth Electives total at least 63 units. One of the following must be taken:

- CEE 32A: Psychology of Architecture
- CEE 32F: Light, Color, and Space
- CEE 32H: Responsive Structures
- CEE 32Q: Place: Making Space Now
- CEE 32R: American Architecture
- CEE 32V: Architectural Design Lecture Series Course
- CEE 131C: How Buildings are Made – Materiality and Construction Methods
- CEE 133H: Painting: Architecture in the Environment
- CEE 139: Design Portfolio Methods

Total Units: 70-80

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suggested that students meet with the Architectural Design Program Director well in advance of submitting an application.

2. The student must maintain a GPA of at least 3.5.

3. The student must complete an honors thesis or project. The timing and deadlines are to be decided by the program or honors adviser. At least one member of the evaluation committee must be a member of the Academic Council in the School of Engineering.

4. The student must present the work in an appropriate forum, e.g., in the same session as honors theses are presented in the department of the advisor. All honors programs require some public presentation of the thesis or project.

5. A pdf of the thesis, including the signature page signed by both readers, should be submitted to the student services officer. Students will be sent email instructions on how to archive a permanent electronic copy in Terman Engineering library.