

# ARCHITECTURAL DESIGN UNDERGRADUATE MAJOR

## COVID-19-Related Degree Requirement Changes

For information on how Architectural Design (AD) degree requirements have been affected by the pandemic, see the "COVID-19 Policies" tab (<http://exploreddegrees.stanford.edu/schoolofengineering/civilandenvironmentalengineering/#covid19policies>) in the "Civil and Environmental Engineering" of this bulletin. For University-wide policy changes related to the pandemic, see the "COVID-19 and Academic Continuity" (<http://exploreddegrees.stanford.edu/covid-19-policy-changes/>) section of this bulletin.

## 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

	Units
<b>Mathematics and Science (36 units minimum) <sup>1</sup></b>	
<b>Mathematics</b>	
MATH 19      Calculus	3
MATH 20      Calculus	3
MATH 21      Calculus	4
Or 10 units AP Calculus or MATH 41 & MATH 42	
CME 100      Vector Calculus for Engineers (Recommended)	5
One course in Statistics (required)	3-5
<b>Science</b>	
PHYSICS 41      Mechanics	4/5
Recommended:	
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	
or PHYSICS 43      Electricity and Magnetism	
Or from School of Engineering approved list	
<b>Technology in Society</b>	

One course required; course chosen must be on the SoE Approved Courses list at [ughb.stanford.edu](http://ughb.stanford.edu) the year taken.

<b>Engineering Fundamentals</b>		
Two courses minimum, see Basic Requirement 3		6-8
ENGR 14	Intro to Solid Mechanics	3
<b>AD Depth Core <sup>2</sup></b>		
CEE 31	Accessing Architecture Through Drawing	5
or CEE 31Q	Accessing Architecture Through Drawing	
CEE 100	Managing Sustainable Building Projects (or CEE 32B or CEE 32D)	4
CEE 120A	Building Modeling for Design & Construction	3
CEE 130	Architectural Design: 3-D Modeling, Methodology, and Process	5
CEE 137B	Advanced Architecture Studio	6
ARTHIST 3	Introduction to World Architecture	5
<b>Depth Options</b>		12
See Note 2 for course options		
<b>Depth Electives</b>		
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 32D	Construction: The Writing of Architecture	
CEE 32G	Architecture Since 1900	
CEE 32H	Responsive Structures	
CEE 32T	Making and Remaking the Architect: Edward Durrell Stone and Stanford	
CEE 32U	California Modernism: The Web of Apprenticeship	
CEE 32V	Architectural Design Lecture Series Course	
CEE 32W	Making Meaning: A Purposeful Life in Design	
CEE 33B	Japanese Modern Architecture	
CEE 33C	Housing Visions	
CEE 131C	How Buildings are Made -- Materiality and Construction Methods	
CEE 131D	Urban Design Studio	
CEE 139	Design Portfolio Methods	
CEE 151	Negotiation	
Total Units		70-80

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

<sup>1</sup> School of Engineering approved list of math and science courses available in the Handbook for Undergraduate Engineering Programs at <http://ughb.stanford.edu>.

- <sup>2</sup> 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.

Electives:

- CEE 32A, CEE 32B, CEE 32D, CEE 32F, CEE 32G, CEE 32H, CEE 32Q, CEE 32R, CEE 32S, CEE 32T, CEE 32U, CEE 32V, CEE 32W, CEE 33B, CEE 33C, CEE 101B, CEE 101C, CEE 120A, CEE 120B, CEE 120C, CEE 122A, CEE 122B, CEE 124, CEE 131A, CEE 131B, CEE 131C, CEE 131F, CEE 134B, CEE 139, CEE 172A, CEE 176A, CEE 180, CEE 181, CEE 182, CEE 183
- ENGR 50, ENGR 103
- ME 101, ME 110, ME 115A/B/C, ME 120, ME 203
- ARTSTUDI 13BX, ARTSTUDI 140, ARTSTUDI 145, ARTSTUDI 151, ARTSTUDI 153, ARTSTUDI 160, ARTSTUDI 162, ARTSTUDI 163, ARTSTUDI 164, ARTSTUDI 168, ARTSTUDI 170, ARTSTUDI 171, ARTSTUDI 181
- ARTHIST 142, ARTHIST 143A, ARTHIST 188A
- FILMPROD 114
- TAPS 137
- SINY 122; URBANST 110, URBANST 113, URBANST 163, URBANST 171

- <sup>3</sup> A course may only be counted towards one elective or core requirement; it may not be double-counted. All courses taken for the major 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 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.