

STRUCTURAL ENGINEERING MINOR

GENERAL:

The Minor in Structural Engineering is designed primarily for students in the College of Environmental Design to experience the engineering approach to the solution of design problems but is available to students from any department who meet the requirements.

- Understanding of material behavior (CE60) for structural response and ability to describe such behavior with simple models (CE30)
- Understanding of structures and methods of analysis (CE120)
- Design of structures made of steel, concrete, or timber (CE122, CE123, CE124)

These basic fundamental courses are complemented by additional courses in materials and construction and analysis; see below for a complete course listing.

The Minor offers to students of the College of Environmental Design access to the joint graduate MS/MARCH Degree of the two departments. With it comes the ability to practice either as an architect or as a structural engineer with a very thorough knowledge of the other field. Whereas engineering focuses on analytical methods for the solution of problems, the visual, socio-economical approach of architecture courses is an indispensable complement. The same is true the other way.

ADVISOR:

The Faculty Advisor for the Structural Engineering Minor is Professor Matthew DeJong. He can be reached by e-mail at dejong@berkeley.edu

REQUIREMENTS:

To be considered for admission to the minor, students should have:

- An overall grade-point average of 3.0
- Completed the lower division prerequisite courses with a grade point average of 3.0. (These courses are: Math 51 and 52 (formerly 1A and 1B) (or Math 16A and 16B), Physics 7A (or Physics 8A), and CE C30/ME C85.

Note: All prerequisite course work must be taken for a letter grade.

- Observe also that CE C30/ME C85 has a listed prerequisite of Math 53 and 54 (one of which may be taken concurrently). Students with only Math 16A and 16B MUST speak with the CE C30/ME C85 instructor to assess if their math background is adequate. While the department does not require Math 53 and Math 54 as part of the minor, it does recommend that these courses be taken if at all possible.
- Upon admission to the minor, completion of a minimum of five (5) courses.
- A minimum of a grade-point average of 2.0 in the minor. All courses for the minor must be taken for a letter grade.
- Completion of the minor cannot delay graduation.
- Only one course of the minimum five (5) courses may be counted for both a student's major and the minor.

PROCEDURES:

- After completion of the prerequisite courses, students need to complete and submit to the Civil and Environmental Engineering Academic Affairs Office (AAO, 750 Davis Hall) a Minor Program Application form.
- The Department of Civil and Environmental Engineering will approve or deny the application. Upon approval, the CEE Undergraduate Advisor will enter the minor into the student's CalCentral account.
- Upon completion of the minor requirements, the student must complete and submit to the Civil and Environmental Engineering Department's Office of Academic Affairs the Confirmation of Completion form, preferably during the semester of completion, but no later than two weeks after the end of the semester of completion.
- The CEE Undergraduate Advisor will verify the completion of the minor and input the minor into the Registrar's record keeping system.
- A notation in the memorandum section of the student's transcript will indicate completion of the minor.

PREREQUISITES:

Course	Units	Title
Math 51 and 52 or Math 16A and 16B	4 /4	Calculus Analytic Geometry and Calculus
Physics 7A or Physics 8A	4	Physics for Scientists and Engineers Introductory Physics
CE C30/ME C85	3	Introduction to Solid Mechanics

REQUIRED COURSES:

Course	Units	Title	Prerequisites
CE 60	3	Structure and Properties of Civil Engineering Materials	Chem 1A recommended
CE 120	3	Structural Engineering	CE C30/ME C85, CE 60 (concurrently)
CE 122 or CE 123	3	Design of Steel Structures or Design of Reinforced Concrete Structures	CE 120

TWO additional courses from the following list:

Course	Units	Title	Prerequisites
CE 122 or CE 123	3	Design of Steel Structures or Design of Reinforced Concrete Structures	CE 120
CE 124	3	Structural Design in Timber	CE 120
CE 132	3	Applied Structural Mechanics	CE C30/ME C85, Math 53 & Math 54
CE C133/ME C180	3	Engineering Analysis: Using the Finite Method	CE C30/ME C85, ENGIN 7 or CS 61A; Math 53 & 54; senior status in engineering or applied science
CE 140	3	Failure Mechanisms in CE Materials	CE 60
CE 165	3	Concrete Materials and Construction	CE 60
CE 166	3	Construction Engineering	CE 167 recommended
CE 175	3	Geotechnical and Geoenvironmental Engineering	CE C30/ME C85; CE 70 & CE 100 recommended
CE 193	3	Engineering Risk Analysis	Upper Division Standing