STRUCTURAL ENGINEERING

This program has been designed to build upon a student's undergraduate background and provide additional depth and breadth in the challenging and versatile profession of Civil Engineering. Subdiscipline focus in offered coursework is in structural engineering. In addition to courses in engineering, technical electives may be chosen from a variety offered in mathematics, physics, and chemistry.

Students interested in the areas of Environmental Engineering and Water Resources should refer to the Master of Science in Environmental Engineering Program.

Department emphasis is on the one-year course-based Master of Structural Engineering, summarized below. However, students with an interest in multi-year, thesis-based Master of Science in Structural Engineering, also summarized below, may explore options in the department to pursue this degree.

The objective of both programs, the Master and Master of Science in Structural Engineering, is to prepare graduates for early career advancement in the field of Civil Engineering by building upon their undergraduate training with advanced coursework and concentrated study of problems and topics relevant to the field.

Upon completion of the Master and Master of Science in Structural Engineering, students will be able to

1. Evaluate the results of a solution to a civil engineering problem.
2. Apply advanced concepts and principles to solve complex problems in a technical area appropriate to the practice of civil engineering.
3. Justify appropriate problem approaches and techniques for complex problems in a technical area appropriate to the practice of civil engineering.
4. Describe or demonstrate professional responsibilities relevant to the practice of civil engineering.

Requirements

Master of Structural Engineering (Course Based) (p. 1)

Master of Science Structural Engineering (Thesis Based) (p. 1)

Master of Structural Engineering Requirements (Course-Based)

48 credit hours of course work as approved by student's academic advisor.

- The following courses are required unless completed as an undergraduate:

Code	Title	Hours
CE 421	Structural Mechanics II	4
CE 436	Foundation Engineering	4
CE 520	Structural Engineering Externship	4
CE 521	Matrix Methods for Structural Analysis	4
CE 522	Structural Dynamics	4
CE 523	Advanced Solid Mechanics	4
CE 524	Building Design	4
CE 525	Bridge Engineering	4
CE 532	Structural Design in Concrete II	4
CE 533	Connections and Detailing	4
CE 535	Structural Design in Prestressed Concrete	4

- At least 32 credit hours must be upper-level CE courses (CE4xx or CE5xx).
- At least 36 credit hours must be graduate-level courses. Thus no more than 12 credit hours may be 400-level.

Course of Study Prerequisite for Structural Engineering Master's degrees

The required courses have the following prerequisite courses: CE 321 Structural Mechanics I, CE 336 Soil Mechanics, CE 431 Structural Design In Steel I, and CE 432 Structural Design in Concrete I. Students without these requirements or equivalent will be required to take any missing prerequisites, and these prerequisites will not be counted in the 48 hours required for the Master's degree.

Master of Science in Structural Engineering Requirements (Thesis-Based)

Courses must be 400 or 500 level CE courses approved by the student's committee and distributed as follows:

- 20 credit hours of core CE courses
- 12 credit hours of CE599 Thesis Research
- 8 credit hours of mathematics courses
- 8 credit hours of elective courses

Course of Study Prerequisite for Structural Engineering Master's degrees

The required courses have the following prerequisite courses: CE 321 Structural Mechanics I, CE 336 Soil Mechanics, CE 431 Structural Design In Steel I, and CE 432 Structural Design in Concrete I. Students without these requirements or equivalent will be required to take any missing prerequisites, and these prerequisites will not be counted in the 48 hours required for the Master's degree.