Minor in Structural Engineering

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Structural engineering services are in high demand in virtually every engineering industry, spanning from construction to manufacturing to aerospace. This minor has been developed for students with an interest in the principles of solid mechanics who wish to learn how to design structures in practical applications. Topics covered in this minor include various methods and theories for structural analysis and design; finite-element methods; design with steel, concrete, timber, and masonry; and an introduction to the seismic design of structures.

Students are encouraged to explore other courses relevant to this minor and propose their own plan of study that would support the Structural minor. For preapproval on potential course substitutions to fulfill this minor, please contact the undergraduate program manager for Civil/ Environmental Engineering.

Six courses (18 credits) are required for this minor.

Required		**3.0**
CEEN314	STRUCTURAL ANALYSIS [1]	
Electives (See List)		**15.0**
Total Semester Hrs		**18.0**

Elective List: Select five of the following seven courses:

CEEN406	FINITE ELEMENT METHODS FOR ENGINEERS
CEEN430	ADVANCED STRUCTURAL ANALYSIS
CEEN433	MATRIX STRUCTURAL ANALYSIS
CEEN442	DESIGN OF WOOD STRUCTURES
CEEN443	DESIGN OF STEEL STRUCTURES
CEEN445	DESIGN OF REINFORCED CONCRETE STRUCTURES
CEEN449	INTRODUCTION TO THE SEISMIC DESIGN OF STRUCTURES

In order to ensure sufficient distinction between the degree and the minor, Civil Engineering students must meet additional requirements to earn this minor. Courses that are required for the degree (CEEN314 and either CEEN443 or CEEN445) may not be double counted toward the minor. Therefore, the remaining six courses on the list must be taken in order to earn the minor (CEEN406, CEEN430, CEEN442, CEEN443/CEEN445, CEEN433, CEEN449). None of the six courses may be double counted as Civil Engineering technical electives, but a maximum of three may be double counted as free electives. The remaining courses used for the minor may not be applied to the BS Civil degree.

Students may also propose the substitution of other CEEN-prefixed structural engineering courses, such as 500-level graduate courses or approved special topics courses with approval of the department.

[1]The prerequisite to CEEN314, Structural Analysis, is CEEN311 Mechanics of Materials. Students who have completed MEGN 312 Introduction to Solid Mechanics are encouraged to pursue a prerequisite override.

Primary Contact

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https://cee.mines.edu/