

Civil Engineering Program Structures, Mechanics, and Materials EFA

Civil and Environmental Engineering Updated April 2020

Description

The *Structures, Mechanics, and Materials EFA* is designed for students who wish gain more depth in structural engineering topics. BS graduates with this EFA can find work in civil engineering positions involving more structural design and construction tasks. The EFA is also good preparation for students who wish to pursue graduate study (MS or PhD) in structural engineering.

CEE Design Electives (6 sh)

The Civil Program requires two CEE Design Electives. For the *Structures, Mechanics, and Materials EFA*, the following CEE Design Elective is required:

- ✓ CEE:4506 Design of Concrete Structures

You must choose a second CEE Design Elective from the following list:

- CEE:4157 Environmental Engineering Design
- CEE:4374 Water Resources Design
- CEE:4762 Design of Transportation Systems

Any course not chosen as a CEE Design Elective may be taken as an EFA Elective.

EFA Electives (21 sh)

For the *Structures, Mechanics, and Materials EFA*, the following EFA Elective is required:

- ✓ CEE:4535 Design of Steel Structures

You must choose at least 4 (or a maximum of 6) of the following courses:

- CEE:4135 Structural Modeling & Health Monitoring
- CEE:3783 Surveying and Remote Sensing
- CEE:4160 Introduction to Bridge Engineering
- CEE:4164 Design of Wood Structures
- CEE:4511 Scientific Computing & Machine Learning
- CEE:4512 Engineering Design Optimization
- CEE:4532 Fundamentals of Vibrations
- CEE:4533 Finite Element I
- CEE:4539 Foundations of Structures
- CEE:5540 Intermediate Mechanics of Deformable Bodies
- CEE:4162 Structural Systems for Buildings
- CEE:5236 Optimization of Structural Systems
- CEE:5179 Continuum Mechanics

Any remaining EFA Electives (a maximum of 2) may be chosen from the following:

- Any of the five design courses not taken as a CEE Design Elective
- Any 3000 level or above course(s) in CEE
- Any 3000 level or above course(s) in MIE
- Any 3000 level or above course(s) in Business Administration (MGMT, MKGT, MSCI)
- Any other course(s) approved for EFA Elective credit. Other courses require written justification for relevance to the EFA. (Note that many 2000 level or below courses will not be approved for EFA Elective Credit).

EFA Submission

Fill out the attached PDF form electronically, and submit for approval by the CEE Curriculum Committee to:

<https://workflow.uiowa.edu/form/cee-and-environmental-efa-submission>

Keep a copy to bring to Academic Advising with your CEE Advisor.

Civil Engineering Program EFA Form

Updated May 2018

Student Name/Date: _____

Student ID #: _____

Expected Graduation Date: _____

Do you plan to take FE exam? _____

Indicate your chosen Elective Focus Area:

- | | |
|-------------------------------------|-----------------------------|
| Civil and Environmental Practice | Pre-Architecture |
| Environmental | Urban and Regional Planning |
| Hydraulics & Water Resources | Management |
| Structures, Mechanics and Materials | Student Tailored |
| Transportation | |

Session	Year	Course #	CEE Design Electives	S.H.	Pre-Requisites
Enter your Choice of Two Required CEE Design Electives					

Session	Year	Course #	EFA Electives	S.H.	Pre-Requisites
Enter your Choice of Courses for the Seven Required EFA Electives					

For the **Pre-Architecture, Urban and Regional Planning, Management, and Student Tailored EFAs**, list courses that are required but do not count as EFA Electives. These courses may be used to satisfy the General Education Component (GEC) requirements.

Session	Year	Course #	Additional Required Courses	S.H.	Pre-Requisites
Enter any additional required courses for this EFA					

For the **Student Tailored EFA**, include a career statement to justify the elective focus area. Provide information on the requirements of the minor field or certificate program when the EFA form is submitted.

Career Objective(s) Statement: