



Bridge Engineering

CIVILEN 5360

Credit Hours:

3.00 - 3.00

Course Levels:

Undergraduate (1000-5000 level)

Graduate (5000-8000 level)

Course Components:

Lecture

Course Description:

Types of bridges; aesthetics in bridge design; loads on bridges; selection of bridge type; AASHTO specifications for bridge design; design of steel bridges.

Prerequisites and Co-requisites:

Prereq: 4310 (531) and 4320 (532).

Course Goals / Objectives:

- Be introduced to the world of bridges from various aspects including aesthetics
 - Learn about various loadings on bridges according to AASHTO specifications
 - Learn how to select a bridge type
 - Learn analysis of moving loads on bridges
 - Learn how to design bridges according to the AASHTO specifications with an example of a steel bridge
 - Learn about current research on bridges such as health monitoring of bridges and vibration control of smart bridges
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Course Topics:

- Historical Background
 - Bridge Failures
 - Types of Bridges
 - Aesthetics in Bridge Design
 - Selection of Bridge Type
 - Loads on Bridges
 - Historic Bridges
 - Influence Functions and Girder-Line Analysis
 - System Analysis
 - Design of Steel Bridges
 - Overview of Recent Research on Bridges
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Designation:

Elective