

CE 336 Introduction to Structural Engineering (formerly Structural Mechanics I)

Course Outline Fall 2004

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Grader: TBA

Text: Structural Analysis: Using Classical and Matrix Methods/Nelson and McCormac
3rd Edition, Wiley. Plus WebCT

Time: MW 11:45 am - 1:00 pm.....Cushing 302

Synopsis: Introduction to structural engineering; analysis of statically determinate structures; deflection analysis; analysis of indeterminate structures using classical and matrix methods; introduction to analysis software, structural design concepts and codes and standards.

Dates	Topics
Aug 25	Introduction to Structures
Aug 30	Understanding Structures
Sept 1	Structural Loads Natural Hazards Structural Performance---Sensors---IT Safety and Risk Analysis; Ethics in Structural Engineering
Sept. 6 & 8	Truss Analysis
Sept 12 & 15	Bending Moment Analysis-----Beams and Frames
Sept. 20	Influence Lines
Sept. 22 & 27 Sept. 29, Oct 4, 6	Deflection Analysis Conjugate beam Virtual Work
Oct. 11	Deflection Analysis – Experimental Demonstration
Oct. 13	First Exam
Oct. 18-22	Fall Break -- have fun!
Oct. 25 & 27, Nov. 1	Analysis of Indeterminate Structures Force- Methods -- Consistent deformation
	Analysis of Indeterminate Structures Contd.

Nov. 3 & 8	Displacement methods – Slope deflection
Nov. 10 & 15	Approximate Methods
Nov. 17	Second Exam
Nov. 22 & 24 Nov. 29	Introduction to Matrix Methods Displacement Methods Analysis Software
Dec. 1 Dec. 6	Introduction to Structural Design Design Concepts Codes and Specifications
Dec 10	Project presentations
Dec 15	Final Exam 8:00- 10:00 am

Homework: At least one homework set will be assigned related to each topic. The homework will be due at the BEGINNING of the class a week from the day it is assigned. Please avoid late submissions as a late homework will result in a 10% reduction in your assigned score for that homework set.

Project: The project entails learning about a special structure, already built, and writing a report not to exceed 10 double spaced pages. You should describe the structure, the loads it was designed for, analysis technique (if available), any the construction technique used, any historical importance, pictures, etc. You may pick a topic of your choice, e.g., the Golden Gate Bridge. Examples from the last fall will be posted on the class web for your information. Each one of you will also be required to make a short presentation of your project using Power Point.

Grade:

Two exams during the semester	40%
Homework	15%
Project	15%
Final Exam	30%