



Civil and Construction Engineering

CCE 440—Introduction to Structural Design

Course Syllabus

Course Description:

Introduction to the process of structural engineering design; response concrete as structural materials; application of the ACI-318 strength design codes; design of beams, and columns using concrete; principles for designing steel and concrete composite members. (3 hours credit)

Course Objectives:

The primary objective of this course is that students learn to design concrete structural components of a building structure using current strength design building codes. The particular objectives are:

- Introduce students to principles of structural design;
- Develop an understanding of concrete as structural materials;
- Develop an understanding of principles for designing beams, and columns;
- Develop an understanding of the principles for design steel and concrete composite structural components.

Prerequisite Requirements:

CCE 386—Structural Analysis

Textbook:

Structural Concrete: Theory and Design, Third Edition

by Hassoun, Al-Manaseer - ISBN: 0-471-69164-X ©2005

John Wiley & Sons, Inc.,

Building Code Requirements for Reinforced Concrete and Commentary (ACI 318-05)

The American Concrete Institute

Tentative Course Outline:

- Introduction to Structural Design
 - Principles of structural design
 - Reinforced concrete and its behavior
- Concrete strength design codes
 - ACI-318 design code
 - Strength and serviceability requirements
 - Design loads
- Design of beams for flexure and shear
 - Singly and doubly reinforced concrete beams
- Design of one way slabs
- Design of columns and compression members



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CCE 440—Introduction to Structural Design

- Behavior of columns
- Reinforced concrete columns
- Column interaction diagrams

Instructor:

Dr. Sherif Yehia, PE.
G-246 CEAS, Parkview Campus
Office Hours: 2:00 pm to 3:15pm Monday and Wednesday
Telephone: 269.276.3218

Class Time:

Tuesday and Thursday from 2:30 pm to 3:45 am from 05 September 2006 through 16 December 2006.
Class will not meet on November 23 2006 because of university holidays.

Assignments:

Reading and homework assignments will be presented in the class schedule. Some homework assignments may require computer programming in a high level language. Each student is expected to complete the reading assignment before coming to class. Homework assignments are due the Monday after they are assigned and will not be accepted more than one week late unless special arrangements are made with the instructor.

Class Attendance:

Regular class attendance is expected. Students should realize that failure to attend class regularly would generally result in a lower final grade in the course. Hands-on work will be integrated into the lectures. Consequently, missing sessions will put you at a disadvantage as compared with other students who attend regularly.

Grading:

Homework	10%
Quiz(s)	10%
Examination A	20%
Examination B	20%
Team Projects	10%
Final Examination	30%

Assignment of Course Grades:

90%	A
85%	BA
80%	B
75%	CB
70%	C
65%	DC
60	D
<60%	F

You are responsible for making yourself aware of and understanding the policies and procedures in the Undergraduate (pp. 271-272) Catalog that pertain to Academic Integrity. These policies include cheating, fabrication, falsification and forgery, multiple submission, plagiarism, complicity and computer misuse. If there is reason to believe you have been involved in academic dishonesty, you will be referred to the Office of Student Conduct. You will be given the opportunity to review the charge(s). If you believe you are not responsible, you will have the opportunity for a hearing. You should consult with me if you are uncertain about an issue of academic honesty prior to the submission of an assignment or test.