School of Engineering and Applied Science
Civil & Environmental Engineering Department

CE 192, Reinforced Concrete Structures (3 credits), Spring 2004

Meet in 1776 G street, Room 143, on Tuesday & Thursday, at 02:00 pm - 03:15 pm

Tentative Course Outline

Prerequisites: CE 122, Structural Theory II

Instructor: Sameh S. Badie, Ph.D., P.E.
Academic Center, Phillips Hall, Suite 638
Tel: 202-994-8802, Fax: 202-994-0127
E-mail: badies@gwu.edu
Office hours for class questions: M, W & F from 1:00 to 3:00 PM

Text Book:

1. "Design of Reinforced Concrete Structures," Arthur H. Nilson, **13th Edition, 2003**, McGraw-Hill, Inc., New York, ISBN 0-07-292199-4
2. "Building Code Requirements for Reinforced Concrete **ACI 318-02** and commentary (318R-02)," by American Concrete Institute (ACI)

References:

1. Notes on ACI 318-02 by Portland Cement Association (PCA)
2. "Design and Control of Concrete Mixtures", by Portland Cement Association (PCA)
3. "Structural Welded Wire Reinforcement", Manual of Standard Practice, by Welded Wire Institute (WRI)

Course Objectives:

The purpose of the course is to develop the student's ability to comprehend and apply basic design procedures to reinforced concrete members. After completion of the course, the student should be able to recognize possible failure conditions caused by excessive moments, shears or bond stresses and to design members to prevent such failure. Also, design of non-slender axially compressed members will be covered.

Tentative Course Content:

1. Introduction to design philosophies and safety provisions (chp. 1)
2. Properties of concrete and reinforcing steel (chp. 1)
3. Design of singly reinforced concrete members (chp. 2)
4. Deflection and crack control (chp. 5)

5. Design of doubly reinforced concrete members (chp. 4)
6. Design of T-beams (chp. 4)
7. Design for shear in beams (chp. 7)
8. Development of reinforcement and bond strength (chp. 6)
9. Design of one-way slabs (chp. 3)
10. Introduction to axially loaded members (chp. 8)

Course Operation:

1. Homework problems will be assigned in class.
2. Homework must be done on engineering paper, utilizing pencil and straight edges for sketches.
3. Homework must be turned in before the announced deadline. No late homework can be accepted for grading.
4. No make-up exam will be given without prior consent of the instructor and only under very unusual circumstances.
5. A design project will be assigned to the students during the third week of the course. A professional final report as well as a Power Point presentation should be delivered by every student by the end of the course

Components of Final Grade:

Homework	20%
Quizzes	20%
Mid Term Exam	20%
Project	20%
Final Exam	20%

Tentative Letter Grades:

100%	≥	A	≥ 95%
95%	>	A-	≥ 90%
90%	>	B+	≥ 87%
87%	>	B	≥ 83%
83%	>	B-	≥ 80%
80%	>	C+	≥ 77%
77%	>	C	≥ 73%
73%	>	C-	≥ 70%
70%	>	D+	≥ 65%
65%	>	F	

Course Website:

Visit the course website at:

You can use it to check the new assignments, your grades, any other information related to the course