

CE457
Spring 2007

Reinforced Concrete Design
(Analysis and Design)

Prof. Yan Xiao
Tel: 740-6130
yanxiao@usc.edu

GENERAL INFORMATION

The course is focused on the fundamental concepts and methods used in structural analysis and design reinforced concrete structures. The emphasis is on the section capacity analysis and design. Homework assignments and mini design projects are provided along with the exams to assess the achievements.

Texts: "Reinforced Concrete Design," The Seventh Edition, C.K.Wang; C.G. Salmon; and J.A. Pincheira, John Wiley and Sons, Inc.

(Optional reference)"Building Code Requirements for Reinforced Concrete," (ACI 318-05), and commentary, American Concrete Institute, Farmington Hills, MI.

Grading: Final grade (100%) will be composed of

- 30% Homework and Project Report
- 40% 2 Midterm Exams
- 30% Final exam.

Grade ranges: 60-69: C-, C and C+; 70-84: B-, B, B+; 85-100: A-, A, A+.

	<u>Location</u>	<u>Time</u>
Lecture	KAP 158	9:30am-10:50am TTh
TA	Mr. Wu, Yuntian; yuntianw@usc.edu	

First Half:

Week	Date	Lecture	Topics	HW
1	1/9	1	Introduction	
	1/11	2	Material Properties	
2	1/16	3	Design Code	
	1/18	4	Performance of RC beams under bending	
3	1/23	5	Elastic Beam Theory and Allowable stress design	HW1
	1/25	6	Elastic Beam Theory (transformed section)	
4	1/30	7	Serviceability (cracking and deflection)	
	2/1	8	Flexural strength and design of beams (balanced failure)	HW2
5	2/6	9	Flexural strength and design of beams	
	2/8	10**	Midterm Exam-1.	
6	2/13	11	Flexural design and design of beams (T section)	HW3
	2/15	12	Demonstration problems	
7	2/20	13	Diagonal tension and shear	
	2/22	14	Shear design of beams	
8	2/27	15	Shear design of beams	HW4
	3/1	16	Bond strength and development length	

Second Half:

Week	Date	Lecture	Topics	
9	3/6	17	Demonstration problems	
	3/8	18**	Midterm Exam-2.	
10	3/13	NO!	☺ <i>Spring recess!</i> ☺	☺
	☺ 3/15	NO!	☺ ☺ ☺ ☺ ☺ ☺ ☺ ☺ ☺	☺
11	3/20	19	Anchorage	HW5
	3/22	20	Comprehensive design of simply supported beams	
12	3/27	21	Short column design	
	3/29	22	Short column design	
13	4/3	23	Short column design	HW6
	4/5	24	Short column design (moment - axial force interaction curve)	
14	4/10	25	Short column design (general method)	
	4/12	26	Demonstration problems	
15	4/17	27	Introduction to connection design	
	4/19	28	Introduction to continuous beam design	HW7
16	4/24	29	Demonstration problems	
	4/26	30	Review	
18	5/8	-	Final Exam. 8:00-10:00am.	

Note: Any student requesting academic accommodations based on disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to the instructor (or the TA) as early in the semester as possible. DSP is located in STU301 and is open 8:30am-5:00pm., Monday through Friday. The phone number for DSP is 213-740-0776. (This statement is suggested by the Office of the Provost.)