Spring 2007

End-of-Course Survey

CE 457

Professor Yan Xiao

Reinforced Concrete Design

Course Objectives and Outcomes		How well did you learn? Not at all → Very Well 1 2 3 4 5 CIRCLE YOUR RATINGS ↓ BELOW ↓
Objective. To analyze reinforced concrete beams under service loads and ultimate loads. **Outcome.** How well did this course increase your ability to understand and/or do the following?		
1	Material properties	1 2 3 4 5
2	Analyze for service loads	1 2 3 4 5
3	Deflections; control of cracking	1 2 3 4 5
4	Analyze for strength	1 2 3 4 5
5	Design for strength	1 2 3 4 5
6	Design for shear	1 2 3 4 5
7	Anchorage and bond	1 2 3 4 5
8	Analyze and design of short columns	1 2 3 4 5
9	Understand the characteristics of reinforced concrete materials	1 2 3 4 5
10	Evaluate stresses and deflections of beams at service load.	1 2 3 4 5
11	Determine the capacity of beam sections at ultimate load.	1 2 3 4 5
Objective. Learn to design beam sections for demanded flexural strength and shear strength. **Outcome.** How well did this course increase your ability to understand and/or do the following?		
12	Proportion economical beams in reinforced concrete for ultimate loads considering rectangular sections, sections with compression reinforcement and sections with flanges.	1 2 3 4 5
13	The concepts of the balanced section and of curvature ductility	1 2 3 4 5
14	Select size and spacing of reinforcement for ultimate shear considering the effect of moments and axial loads acting on the section.	1 2 3 4 5
15	Identify regions of beams where the flexural reinforcement and shear reinforcement can be reduced.	1 2 3 4 5
16	Determine anchorage lengths required to develop the strength of reinforcing and the use of hooked bars.	1 2 3 4 5
Objective. To analyze and design short columns **Outcome.** How well did this course increase your ability to understand and/or do the following?		
17	Select section and reinforcement for columns subjected to axial loads.	1 2 3 4 5
18	Develop interaction diagrams for columns subjected to axial load and moment	1 2 3 4 5
19	Design sections for axial load and moment	1 2 3 4 5
20	Design spiral reinforcement and locate plastic centroid	1 2 3 4 5

Relationship of Civil Engineering Program Course Objectives to Outcomes

Objective. The Civil Engineering program is designed to teach beyond the technical content of the curriculum and prepare the students to utilize what they learn in a professional setting. Engineering projects and research activities enlist skills and demonstrate ability to understand the subject matter and communicate in a proficient manner. This course contributes to the overall program goals in the following ways.

Outcome. How well did this course increase your ability to understand and/or do the following?		
(a)	an ability to apply knowledge of mathematics, science, and engineering.	1 2 3 4 5
(c)	an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.	1 2 3 4 5
(e)	an ability to identify, formulate, and solve engineering problems.	1 2 3 4 5
(f)	an understanding of professional and ethical responsibility.	1 2 3 4 5
(i)	a recognition of the need for, and an ability to engage in life-long learning.	1 2 3 4 5
(j)	a knowledge of contemporary issues.	1 2 3 4 5
(k)	an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.	1 2 3 4 5