

### Design of Reinforced Concrete Structures

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This course is directed towards seniors in civil engineering who are familiar with:

- mechanics of materials and structural analysis at the junior level (CIVE 379 and 380),
- concepts of structural design for safety and serviceability (CIVE 381), and
- material properties of concrete and steel (CIVE 363).

The purpose of the course is to provide seniors with an introduction to the behavior and design of reinforced concrete structures.

	<u>Course Outline</u>	<u>Text Reading</u>
<b>1.</b>	<b>Introduction</b>	Ch. 1, 2
<b>2.</b>	<b>Material Properties</b> - Concrete - Steel	Ch 3.1-3.3, 3.9
<b>3.</b>	<b>Flexure in Reinforced Concrete</b> - Behavior - Strength Design of Beams - Strength Design of One-Way Slabs	Ch 4, 5.1-5.3, 10.3-10.4
<b>4.</b>	<b>Shear in Reinforced Concrete Beams</b> - Behavior - Strength Design	6.1-6.3, 6.5
<b>5.</b>	<b>Bond, Anchorage and Development Lengths</b> - Behavior - Strength Design	8.1-8.7

- 6. Columns** 11.1-11.5  
- Behavior  
- Strength Design
- 7. Serviceability** Ch 6  
- Deflections  
- Crack Control

### **Required Texts**

MacGregor, J. (1997) *Reinforced Concrete Mechanics and Design*, 3<sup>rd</sup> Ed., Prentice Hall, Upper Saddle River, New Jersey.

American Concrete Institute Committee 318 (1995). *Building Code Requirements for Structural Concrete (ACI 318-95)*, American Concrete Institute, Box 19150, Redford Station, Detroit, Michigan. (See Arla Webb in 201 More, \$42)

### **Grading**

Homework	30%
Midterm	30%
Final Exam	40%

### **Important Dates**

Monday, May 25, 1998	Memorial Day Holiday
Friday, June 5, 1998	Last Day of Instruction
Thursday, June 11, 1998	Final Exam, 2:30 -4:20 p.m.