C&EE 243A
BEHAVIOR AND DESIGN OF RC STRUCTURAL ELEMENTS

Professor:
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Course Information:
Enrollment number: 547-216-200
Lecture 4 hours/week (4 units)
Time/Room: Mon./Wed. 12:00-1:50P MS 6201

Office Hours:
Tue/Thur 3:30 – 5:00 pm Room 5731C Boelter Hall

Grading:
Midterm 30%
Homework 40% See notes below
Final 30% Code: 05 - Monday, December 12, 2005, 11:30am-2:30pm

Homework Policy: Weekly homework sets will be assigned and due one week after they are assigned. The homework grade constitutes a significant portion of your grade in this class due to the effort that is required. The homework problems must be done in a neat and orderly fashion on engineering or graph paper using a pencil (no ink). Homework results must be summarized and answers clearly indicated. Discussion, as appropriate, should also be provided. Late homework will be accepted for one class period following the due date, with a 20% penalty.

Exam Policy: The date and format for the Midterm exam will be set at least one week prior to the exam date.

Prerequisites:
C&EE142 or equivalent - Reinforced Concrete Design (undergraduate)

Texts – Required/Recommended:
“Building Code Requirements for Structural Concrete: ACI 318-05,” American Concrete Institute, Farmington Hills, MI. (required)
C&EE 243A: Behavior and Design of RC Structural Elements
TENTATIVE COURSE OUTLINE
Professor John Wallace
Fall 2005

<table>
<thead>
<tr>
<th>WEEK</th>
<th>TOPICS</th>
<th>READING/ASSIGNMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Flexural Response and Nominal Strength</td>
<td>Reinforcing Steel: Handouts (Papers &amp; Reports), Plain Concrete: Handouts (Papers &amp; Reports), Moment – curvature analysis, Deflections</td>
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<td>2-3</td>
<td>Confined Concrete</td>
<td>Background and Models: Handouts (Papers &amp; Reports), Concrete Modeling, Reinforcement Modeling, Moment-Curvature Analysis: Computer Programs</td>
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<td>6</td>
<td>Beam-Column Joints</td>
<td>Design approaches: Committee 352; ACI 318-05, Use of Headed Reinforcement: Handouts (Papers &amp; Reports), Rehabilitation: FEMA 274/356</td>
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<td>7-8</td>
<td>Moment Frames</td>
<td>Definition/Non-participating: Beams/Columns, Capacity design and Detailing: ACI 318-05, Evaluation: Introduction: FEMA 356/ATC 40</td>
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<td>9-10</td>
<td>Slender Walls:</td>
<td>Code Design: ACI 318-05; UBC-97, Displacement-Based Design: Handouts, Stress-based Design: ACI 318-05, Shear strength requirements: ACI 318-05 &amp; Handouts</td>
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<td>11</td>
<td>FINAL EXAM</td>
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