Syllabus
CE 8372: Reinforced concrete Theory and Design
TTh 12:30 to 2:00, Lafferre E2511
Fall 2011

Instructor: Dr. Sarah Orton
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Office hours: TTh 2-3 pm, or stop in any time; or call or email for appointment.

Course Description: This course will cover advanced topics in the theory and design of reinforced concrete members. Topics include formulations for concrete behavior under bending, axial, shear, and torsion using a unified theory based on the three fundamental principles of mechanics of materials. Topics also include strut and tie design, concrete plasticity, yield line analysis in slabs, and shear models for concrete.

TEXT: Suggested
Hsu T.T., Mo, Y. L. “Unified Theory of Concrete Structures” 2010, Wiley

PREREQUISITES: CV ENG 3312 (Concrete)

TOPICS
1) Introduction
   a. Fundamental Principles of Mechanics of Materials
   b. Overview of Unified Theory
   c. Plastic Design
2) Concrete Behavior under Bending and Axial loads
3) Strut and Tie Design
4) Concrete Plasticity – models for combined actions
5) Yield line Analysis in Slabs
6) Shear Models of Reinforced Concrete

CREDIT DISTRIBUTION
Homework  20%
2 Exams  40%
Project  20%
Final Exam  20%
Total  100%

GRADING SCALE
Graduate: 90-100(A), 80-89(B), 70-79(C), 69 or less (F)

Homework: All homework will be completed in a neat and clear manner following the example handed out in class. Homework is due at the beginning of class on the due date. Late homework is not accepted except in special circumstances.

ADA Statement: If you need accommodations because of a disability, if you have emergency medical information to share with me, or if you need special arrangements in case the building must be evacuated, please inform me immediately. Please see me privately after class, or at my office.

To request academic accommodations (for example, a notetaker), students must also register with the Office of Disability Services, S5 Memorial Union, 882-4696. It is the campus office responsible for reviewing documentation provided by students requesting academic accommodations, and for accommodations planning in cooperation with students and instructors, as needed and consistent with course requirements. For other MU resources for students with disabilities, click on “Disability Resources” on the MU homepage.
**Academic Integrity**: Students who violate University rules on scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and/or dismissal from The University. Since such dishonesty harms the individual, all students, and the integrity of The University, policies on scholastic dishonesty will be strictly enforced.

Academic honesty is fundamental to the activities and principles of a university. All members of the academic community must be confident that each person’s work has been responsibly and honorably acquired, developed, and presented. Any effort to gain an advantage not given to all students is dishonest, whether or not the effort is successful. The academic community regards breaches of the academic integrity rules as extremely serious matters. Sanctions for such a breach may include academic sanctions from the instructor, including failing the course for any violation, to disciplinary sanctions ranging from probation to expulsion. When in doubt about collaboration, plagiarism, paraphrasing or quoting, please consult with me.

The University community welcomes intellectual diversity and respects student rights. Students who have questions concerning the quality of instruction in this class may address concerns to either the Departmental Chair or Divisional leader or Director of the Office of Students Rights and Responsibilities (http://osrr.missouri.edu/). All students will have the opportunity to submit an anonymous evaluation of the instructor(s) at the end of the course.