Syllabus
CE 4330/7330: Structural System Design
MWF 9 to 10am,
S2009

Instructor: Dr. Sarah Orton
E2503 Lafferre Hall; Phone: 573-884-5089; OrtonS@missouri.edu
Office hours: MWF 1-2pm, or Open, stop in any time; or call or email for appointment.

Course Description: This course will cover the design of steel and reinforced concrete buildings. Topics include estimation of loads (gravity, wind, seismic), design of gravity and lateral force resisting systems, analysis techniques (uses of computers in design), and review of design codes (AISC, ACI ASCE) pertinent to buildings. A major part of the course will be a design project in which student teams will conduct a complete structural design of an average building.

Recommended Text:
Codes:
ACI 318-08 Building Code and Commentary
AISC Steel Construction Manual 13th edition
ASCE 7-05 Minimum Design Loads for Buildings and Other Structures

Other:
Portland Cement Association “Simplified Design: Reinforced Concrete Buildings of Moderate Size and Height” 2004
Taranath B. "Steel, Concrete, and Composite Design of Tall Buildings"

PREREQUISITES: CE3312, CE3313, Steel and Reinforced Concrete Design

TOPICS Reference
1. Design Process
2. Review of Steel and Reinforced Concrete Design AISC, ACI
   a. Review of design codes and LRFD design
3. Estimation of building Loads ASCE 7,
   a. Gravity loads Taranath
   b. Wind loads
   c. Seismic Loads
4. Gravity Systems ACI, PCA, AISC,
   a. Reinforced Concrete Taranath,
   b. Steel Newman
5. Lateral Systems ACI, AISC,
   a. Bracing Taranath,
   b. Shear Walls
   c. Moment resisting frames
6. Analysis Techniques
   a. Computer programs (SAP 2000)
   b. Approximate Analysis

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Advanced/Additional Work for Graduate Students
Students enrolled for Graduate credit (7330) will be "lead engineer" for their design group and take a greater responsibility for the design project.

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

Questions: Students will be called on in class to answer questions. Students are expected to attempt to answer the question. (No penalty is given for wrong answers)

GRADING SCALE

Undergraduate: 92-100(A), 90-91(A-), 88-89(B+), 83-87(B), 80-82(B-), 78-79(C+), 73-77(C), 70-72(C-), 60-69(D), 59 or less(F)

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

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. When in doubt about collaboration, plagiarism, paraphrasing or quoting, please consult with me.