SE 180 Earthquake Engineering Syllabus

Time and Place: Tuesday, Thursday 5:00 PM – 6:50 PM Pepper Canyon Hall 122

Instructor: Professor Ahmed Elgamal
Office Hours: TBD
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Course Website: http://webshaker.ucsd.edu

Teaching Assistant
Mr. Kyungtae Kim kyk002@ucsd.edu

Readers
Ms. Ning Wang
Mr. Adrian Caudillo

Homework
Homework will be assigned in class, along with due date.

Grading
Final 35%, Midterm1 25%, Midterm2 25%, Hwk 15%

Week 1
09/22: Course Syllabus & Single-Degree-of-Freedom (SDOF) and Response Spectrum
Assignment: Read Earthquake San Diego Danger Zones and write 1-page review

Week 2
09/27: Single-Degree-of-Freedom (SDOF) and Response Spectrum (continued)
09/29: Single-Degree-of-Freedom (SDOF): Introduction to Lab Project
Assignment: SDOF & Response Spectrum
1st Webshaker Project
Elastic Design Spectra

Week 3
10/4: Earthquake effects on structures (Intro. to Earthquake Eng)
10/6: Earthquake effects on structures (cont.)
Assignment: Earthquake effects on structures

Week 4
10/11: Single-Degree-of-Freedom (SDOF) Numerical Methods
Assignment: Single-Degree-of-Freedom (SDOF) Numerical Methods
10/13: Bracing
Assignment: Bracing
Week 5
10/18: Introduction to the Frequency Domain
10/20: Seismic Waves and Earthquake Magnitude

Week 6
10/25: 1st Midterm and Mercalli Intensity Scale and Earthquake Energy Release Mechanisms
   Assignment:
   Seismic Waves
   Earthquake Magnitude
   Modified Mercalli Intensity Scale
   Earthquake Energy Release Mechanism
10/27: Ground Motion parameters
   Assignment:

Week 7
11/01: Building Codes
   Assignment: Building Codes
11/03: Multi-Degree-of-Freedom shear frames, MDOF Systems and Modal Analysis

Week 8
11/08: MDOF Systems and Modal Analysis (cont.)
   Assignment: 2nd Webshaker project
11/10: Veteran’s Day (UCSD Holiday)

Week 9
11/15: Midterm 2, and MDOF Systems and Modal Analysis – Numerical Methods
11/17: MDOF Systems and Modal Analysis – Numerical Methods (cont.), and
   Earthquake Reconnaissance
   Assignment: Earthquake Reconnaissance review report

Week 10
11/22: Ductility and Inelastic Design Spectra
   Assignment: ..
11/24: Thanksgiving Day (UCSD Holiday)

Week 11
11/29: Base Isolation
12/01: Earthquake Preparedness
   Review for Final Exam

Finals Week
12/09: Final Exam 7:00 – 10:00 PM