September 24, 2004 SE221 Earthquake Engineering

M, W, F 9:00 – 9:50 WLH 2115

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Office hours: Wednesday 4 PM - 5 PM
Textbook: Dynamics of Structures, A. Chopra, Prentice Hall
Final Exam: Thursday, Dec. 9th 2004 (8 AM-11 AM)
Course Notes: http://webshaker.ucsd.edu (Click on SE221 course materials)

Week 0
9/24: Course Syllabus, Part 1 of Survey (last 10 minutes of 1st day), Earthquake San Diego Danger Zones

- Assignment 1: Read "Earthquake San Diego Danger Zones" and see Hwk

Week 1
9/27: Single-Degree-of-Freedom (SDOF)
9/29: Single-Degree-of-Freedom (SDOF)-Numerical Methods

- Assignment 2: "1st Webshaker Homework"

10/1: Single-Degree-of-Freedom (SDOF)-Numerical Methods

- Assignment 3: "Numerical Methods"

Week 2
10/4: Response Spectrum
10/6: Response Spectrum

- Assignment 4: "Single-Degree-of-Freedom (SDOF) and Response Spectrum"
- Assignment 5: "Elastic Design Spectra"

10/8: Earthquake Motion Databases/Ground Motion Parameters/Attenuation Relationships

- Assignment 6: "Earthquake Motion Databases"

Week 3
10/11: Seismic Waves

- Assignment 7: "Seismic Waves"

10/13: Earthquake Magnitude

- Assignment 8: "Earthquake Magnitude"

10/15: Mercalli Intensity Scale & Earthquake Energy Release Mechanisms

- Assignment 9: "Mercalli Intensity Scale"

Week 4
10/18: Mercalli Intensity Scale & Earthquake Energy Release Mechanisms

- Assignment 10: "Earthquake Energy Release Mechanisms"

10/20: Earthquake Effects on Structures

10/22: Earthquake Effects on Structures (continued)

- Assignment 11: Earthquake Effects on Structures

Week 5

10/25: Stiffness Coefficients for a Flexural Element (and Static Condensation)
10/27: Bracing

- Assignment 12: "Bracing"

10/29: Uniform Building Code

Week 6

11/1: Uniform Building Code (cont.)

- Assignment 123: "Uniform Building Code"

11/3: Multi-Degree-of-Freedom (MDOF) Shear Frames
11/5: MDOF Systems and Modal Analysis

- Assignment 14: "2nd Webshaker Homework"

Week 7

11/8: Multi-Degree-of-Freedom Systems and Modal Analysis

- Assignment 15: "MDOF Systems and Modal Analysis"

11/10: MDOF Systems and Modal Analysis-Numerical Methods

- Assignment 16: "MDOF Systems-Numerics"

11/12: Introduction to FFT

Week 8

11/15: Continuous Systems-Numerics
11/17: Continuous Systems (analytical methods)
11/19: Continuous Systems (approximate Methods)

- Assignment 17: "Continuous Systems"

Week 9

11/22: Base Isolation

- Assignment 18: "Earthquake Preparedness"

11/24: Video – "In the Wake of the Quake"
11/26: Thanksgiving Break

Week 10

11/29: Frequency Domain Analysis
12/1: Frequency Domain Analysis
12/3: Frequency Domain Analysis

Finals Week

12/9: Final Exam 8:00 – 11:00 AM