ARCE 483: SEISMIC ANALYSIS AND DESIGN

Prerequisite: ARCE 412, ARCE 372

Office: Building 21, Room 219-C, Phone: 756-1343

Office Hours: M 10-11, T 2-3, W 11-12, R 2-3, F 1-2 and by appointment

E-mail: aneuenho@calpoly.edu


Handouts by instructor


PEER Strong motion database: http://peer.berkeley.edu/smcat/

Earthquake Resistant Design – An Interactive Course in Earthquake Engineering, by Mahin, Stephen A., University of California Berkeley, URL: http://peer.berkeley.edu/course_modules/eqrdf

Lectures: TR 8.10-9.30

Activities: TR 12.10-2.00

Grading: 50% Homework/Activities/Projects, 50% Quizzes and Exams

Learning Outcomes:

- Describe ground motion and its relationship to seismic design of structures.
- Determine the response of simple structural systems to different types of ground motion.
- Perform analytical procedures for preliminary and conceptual design and for the proportioning of structural systems.
- Develop a perspective on seismic design of structures in the profession – past, present and future.

Course Objectives:

This course integrates information from various engineering and scientific disciplines in order to provide a rational basis for the design of earthquake-resistant structures. As such, the course touches upon pertinent information from engineering seismology, geotechnical engineering, economic, risk and reliability theory and architecture in addition to advanced topics related to the dynamics and the analysis and design of structures. The focus of the course is on structures that may in the event of a major earthquake be allowed to respond in the inelastic range. The course emphasizes a theoretical understanding of the fundamental factors influencing and controlling the response of these structures, and on the development of effective, but simplified, design procedures capable of achieving specified performance goals.