

Seismology and Earthquake Engineering

Instructor:	M.O. Eberhard	Teaching Asst: Yi-Min Huang
Office:	233 More Hall	Office: 132 More Hall
Phone #:	543-4815	Phone #: 616-5697
E-mail:	<i>eberhard@u.washington.edu</i>	E-mail: <i>ninerh@u.washington.edu</i>
Office Hours:	TuTh 11-12	Office Hours: MWF 2-3
Website:	<i>http://faculty.washington.edu/eberhard/teaching.htm</i>	

This course is directed towards seniors in Civil and Environmental Engineering, and Earth and Space Sciences who wish to obtain an introduction to seismology and earthquake engineering. The course covers a wide range of topics. For each topic, the goal of the course is to develop a general understanding of the important issues and a specific capabilities in the simpler aspects of applications.

Course Outline

<u>Course Topic</u>	<u>Reading (Kramer)</u>
1. Introduction	Chapters 1 & 2
2. Global and Local Seismicity	Handouts/Websites
3. Elementary Structural Dynamics	A.1-A.2, B.1-B.7
4. Earthquake Ground Motions	3.1-3.4
5. Seismic Hazard Analysis	4.1-4.5
6. Site Response	5.1-5.2.1, 7.1-7.2.1, 8.1-8.4.2.1
7. Seismic Response of Structures	Handouts/Websites
8. Ground Failure	9.1-9.5.3.2, 9.6-9.7, 10.1-10.6.1.3
9. Earthquake-Resistant Design	Handouts/Websites
10. Retrofit and Hazard Mitigation (as time permits)	Handout/Websites

Text

Kramer, S.L. Geotechnical Earthquake Engineering, Prentice-Hall, 1996.

Homework and In-Class Assignments

Homework assignments are important parts of this class. You are encouraged to consult with classmates while completing homework assignments to understand concepts and procedures, and to check the accuracy of your solutions.. However, unless specifically instructed, each student must complete and submit his/her own assignments himself/herself.

A deduction of 10% will be applied for each school day that a homework assignment is late. No homework will be accepted (or credit given) after the solutions have been distributed in class or posted on the class website.

In practice, it is important to communicate your ideas and designs clearly, because miscommunication can lead to faulty construction, lawsuits and injury. To receive full credit for your homework solutions, all homework solutions must be completed as follows:

- Attach copy of the problem statement to the front of assignment (you do not need to copy the assignment by hand).
- Hand-written portions of the homework assignments should be completed on engineering paper.
- The heading on each page should include your name, the date, an identification of the homework set and of the particular problem number. Right-hand corner should include page number and total number of pages.
- Document your solutions neatly such that another engineer (such as the teaching assistant) can understand your assumptions and procedures.
- Draw a box around your answer to each problem, so that the answers can be identified easily.

Grading

Homework and in-class assignments	30%
Midterm	30%
Final Exam	40%

Important Dates

Martin Luther King, Jr's Birthday Holiday	Monday, January 16
President's Day Holiday	Monday, February 20
Last Day of Instruction	Friday, March 10
Final Exam	Monday, Mar. 13, 2006, 8:30-10:20 a.m.