CIE 762/862 – Introduction to Geotechnical Earthquake Engineering

Course Syllabus, Spring 2017

General Information:

Time and Location:	TR 9:40-11:00 PM; KINGS N204
Instructor:	Dr. Majid Ghayoomi, Kingsbury W175, majid.ghayoomi@unh.edu Office Hours: By appointment Email your questions or make an appointment for the other times.
Course Website:	Blackboard (http://mycourses.unh.edu): You can login using your Username and password.
References:	***No Textbook is required; Handout and Reference Articles will be posted on Blackboard. Additional References are:*** Main Reference: • *Geotechnical Earthquake Engineering, Steve L. Kramer, Prentice Hall, 1996.* • *Geotechnical Earthquake Engineering Handbook, Robert W. Day, McGraw Hill, 2012.* • *Earthquake Engineering – From Engineering Seismology to Performance-Based Engineering, Yousef Bozorgnia and Vitelmo V. Bertero, CRC Press, 2004.* • *Geotechnical Earthquake Engineering, Ikuo Towhata, Springer, 2008.* Other references May also be available in the library

Course Description: This class overviews earthquake source mechanisms; magnitude and intensity; risk assessment, seismicity of the United States; dynamics of simple structures; strong ground motion evaluations; selection of design parameters; source, magnitude, input records for design; measurement of dynamic characteristics of soils; site response, liquefaction, and ground deformations; review of seismic design guidelines and procedures.

Prereq: CIE 665 and 760; or equiv. or permission. 3cr.

Topics:

1. Introduction to Geotechnical Earthquake Engineering
2. A review on Engineering Seismology
3. Strong Ground Motions
4. Seismic Hazard Analysis
5. Dynamic Soil Properties
6. Ground Response Analysis
7. Site Effects and Design Ground Motion
8. Liquefaction
9. Building Codes
10. Seismic Applications in Geo-Systems
11. Mitigation Strategies

Student Evaluations:

Exams: CIE762/862 will have two exams; one midterm and one final.

Homework: There will be approximately 8 homework assignments over the semester including standard problems and software applications.

Paper: There will be a paper review and presentation.

Grade Summary:

Item	Number	Percent of Final Grade
Homework	~8	30%
Midterm Exam	1	30%
Final Exam	1	30%
Paper	1	10%

Organization/Neatness of Written Submissions: A significant part of the engineering is written documents. Heavy emphasis will be place on clarity, organization, and readability of your work.

Academic Honesty: University of New Hampshire students abide by the Academic Honesty Code.

Accommodations: If you qualify for accommodations because of a disability please submit to me a letter from Disability Services in a timely manner so that your needs may be addressed.

Exam Dates: Following dates are suggested for the exams based on the class schedule.
Midterm Exam 1: TBD
Final Exam: Date, Time, and Location to be announced