ENGINEERING GEOLOGY

EEES-3250, Fall Semester 2010

Instructor

Dr. James Martin-Hayden
Office: 3034 Bowman-Oddy
Telephone: 419-530-2634
Email: jhayden@utnet.utoledo.edu

Class

	Place	**Time**
Lecture:	Bowman-Oddy 1059,	Tu 3:45-5:25
Lab:	Bowman-Oddy 1045,	Th 3:45-5:25

Credits: 3 hrs

Office Hours: M-Th: 11:00am-12:00pm; (or by appointment. Walk in if my door is open)
Web Site: www.EEEScience.UToledo.edu/Faculty/Hayden/Default.htm

Class Objective: This class introduces the application of geologic principles to engineering practices through a series of readings, laboratory exercises and practical problems. The first portion of the class covers the fundamentals of geology including: plate tectonics and the resulting distributions of geologic materials and phenomena; mineral, rock and soil characterization; geologic structures; and construction and use of geologic maps. The remainder of the course investigates specific geologic processes and applications to engineering practices.

Required Text: *Geology for Engineers and Environmental Scientists* . A.E. Kehew, Prentice-Hall, 2nd ed. 1995.

Lab Manual: *Laboratory Manual in Physical Geology*, American Geological Institute, Prentice-Hall, 6th ed. or 7th ed. 2002.

Grading: Laboratory 25%, Homework 25%, Exams (2) 15% each, Final 20%

Class Schedule

Week	***Lecture and Laboratory Topic***	***Reading*** for Tues.	***Laboratory Exercise***
1 8/23	Intro to Geology and Plate Tectonics	Ch. 1	
2 8/30	Minerals	Ch. 2	
3 9/6	Igneous Processes and Rocks	Ch. 3	
4 9/13	Sedimentary Processes and Rocks	Ch. 4	
5 9/20	Metamorphic Processes and Rocks (**Exam 1: 9/23**)	Ch. 5	
6 9/27	Weathering, sediments and soil	Ch. 6	
7 10/4	Rock mechanics	Ch. 7	
8 10/11	Earthquakes	Ch. 8	
9 10/18	Weathering and Erosion (Fall break Mon. and Tues)	Ch. 9	
10 10/25	Soils, Soil Hazards, and Land Subsidence	Ch. 10	
11 11/1	Ground Water	Ch. 11	
12 11/8	Mass Movement and Slope Stability (**Exam 2: 11/11**)	Ch. 12	
13 11/15	Rivers	Ch. 13	
14 11/22	Oceans and Coasts (Thanks Giving break Wed.-Sun)	Ch. 14	
15 11/29	Glacial Processes and Permafrost	Ch. 15	
16 12/6	Subsurface contamination	Ch. 16	
	Final Exam, Friday, December 17 @ 2:45-4:45		