ES473 ENVIRONMENTAL GEOLOGY
POLICIES AND PROCEDURES
Spring 2009 Term - Western Oregon University
4 CR TR 3:00 – 4:50 PM Natural Sciences Bldg, Rm 218

INSTRUCTOR: Dr. S. Taylor
OFFICE HOURS: TR 1-3 PM
By Appointment

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COURSE DESCRIPTION:

This course serves as an upper division introduction to environmental geology. The emphasis is placed on the technical aspects of human interaction with near-surface environments of the Earth. The range of topics include an overview of environmental and land-use regulations, geomorphic hazards (soil erosion, flooding, mass wasting, landslide, debris flow, coastal erosion), tectonic hazards (earthquakes, tsunamis, ground disturbance, volcanic eruptions), water resource issues (source, supply and quality), mining impacts, and waste management.

THE PROFESSOR'S PHILOSOPHY ON UPPER DIVISION EARTH SCIENCE / GEOLOGY COURSES:

The upper division Earth Science / Geology course sequence is designed for students who are willing to work hard, play hard, have fun, and learn in-depth skills / concepts in a professional academic setting. By default, our student population is very diverse with a wide array of skills, interests, and career goals. The student population ranges from serious Earth Science majors with focused career objectives, to Environmental Studies minors to Science Education majors. As such, the professor is charged with serving a diverse array of student interests and career goals in the most professional manner possible. The problem-solving and technical skills acquired via training in the Earth Sciences are highly valuable (and marketable), regardless of career track. Students are expected to actively participate in the learning process and make a significant contribution to the academic integrity of the Earth Science program at Western Oregon University. The ultimate goal of the program is to provide graduates with the academic skills that will enable them to be highly competitive in graduate school or the career marketplace. *GO TEAM!*

TEXT:
Keller, E.A., 2000, Environmental Geology, 8th Ed., Prentice Hall, 562 p.
Sources: bookstore is backordered, Amazon.com has many used copies available for ~$50.00 or less.

ADDITIONAL READING:
Journal and assorted text readings to be provided by the instructor on an as-needed basis.

CLASS NOTES:
A comprehensive set of instructor class notes are available for download via the internet. The class web site is at URL http://www.wou.edu/taylor ... and follow the links to the "ES473 Environmental Geology" home page.

The class notes, lab exercises, answer keys, and study guides are available as Adobe Acrobat Reader files (*.pdf file). Acrobat Reader is free and is installed on many campus PC's. For home installation, Acrobat Reader is also available for download at the class web site, but you will be responsible for properly installing the software (and will do so at your own risk!). Based on prior student suggestions, I have assembled my class notes and made them available. These notes may be freely printed at any campus internet station (e.g. ITC Bldg - Student Lab, Library, local department computer labs). The notes are in outline form and are very comprehensive. "Exam Study Guides" will also be posted on the web site as the term progresses.

FIELD TRIPS
Attendance on field trips is mandatory, however alternative assignments can be arranged on an as needed basis for students with irreconcilable time conflicts. Given the close proximity of the class field trips, we may also opt for use of personal vehicles.

EVALUATIONS AND EXPECTATIONS:
Student performance will be evaluated on the basis of lab exercises, writing assignments, and two (2) exams. The following is a breakdown of evaluation points and letter grades:

Written Paper Reviews and Field Trip Summaries	50	13%
Academic Excellence Poster Project	35	9%
Class/Lab Exercises	90	22%
Midterm Exam	100	25%
Final Exam	125	31%
	400	100%

Final Grading Scale

Percent Range of Total Points	Letter Grade	Percent Range of Total Points	Letter Grade		
94-100%	A	77-79%	C+		
90-94%	A-	73-76%	C		
87-89%	B+	70-72%	C-		
83-86%	B	67-69%	D+		
80-82%	B-	63-66%	D		
		60-62%	D-	<60%	F

Exams: Exams will be administered at evenly spaced increments throughout the term; the final will be 20% comprehensive with test material drawn from throughout the term. Exams will largely consist of essay questions and homework-type problems. *Warning: the exams are very comprehensive and will likely require a full 2+ hours to complete, please plan accordingly.*
SPECIAL NOTE ON EXAM ANSWERS: **Never** use "etc." in an essay or short answer on an exam. This means nothing in terms of demonstrating your content knowledge. Sketches and drawings help support your written word.

Make-Up Exams: Under NO circumstances will make-up exams be administered without prior arrangement (at least five days) and good reason. Please show up on exam day!

Class and Lab Assignments: Class and lab assignments will be worked BOTH during class time and outside of class time each week. You will have lab, reading, and homework assignments that **may** take up to 3 or 4 hours to complete outside of class time, maybe more in some cases, depending on your skill levels and ability. Please plan your schedule accordingly. Due dates for class exercises will be prescribed by the instructor. Late work will be accepted up to 1 week after the due date, but will be automatically assessed a penalty of -20% off the point total.

Due to the volume of students assigned to the instructor each term, he will not be able to grade the lab exercise work in detail. The homework and lab assignments will be checked for completeness, with questions randomly chosen for content and accuracy. Grade points will be assigned on the basis of these two criteria. Exercise answer keys will be posted on the class web site by the instructor. **It is your responsibility to: (1) check your work against the lab / homework keys, (2) make sure you understand how to complete the exercises, (3) find help if you have trouble with lab exercises, and (4) study / learn the exercise skills and material for the exams.**

A Note About Incompletes: No incomplete grades will be given during the last week of class. If you have a problem that warrants an incomplete, make arrangements prior to the last week (no exceptions!!).

Writing Assignments: Students are required to write a 500-800 word (~1-2 typed pages) summary for a series of field trips and journal articles that will be assigned. This exercise is designed to enhance the writing skills of students. The general format should include: (1) Introduction to the Problem / Issue, (2) Summary of Main Points, (3) Final Discussion of the Relevance of the Presentation / Field Trip to Environmental Issues in the State of Oregon, (4) References Cited, and (5) pertinent figures and tables (items 4 and 5 are in addition to the 1-2 type-written pages).

A variety of student writing guides are available on the class web site. The summaries should be neatly word-processed, double spaced, with 1 inch margins, and checked for spelling errors with a "spell checker" tool. ***Miss-spellled*** words will not be tolerated. Save your word-processing files as you may be required to modify and edit the summaries.

OTHER REQUIRED MATERIALS:
Students will also need access to a scientific calculator, ruler, protractor, and desktop computer. You will be required to use these materials during lecture, lab, and exams. The Natural Sciences Computer Lab will be available for student use during class time and at other times during the day. Weekend use of the computer lab is possible, with prior arrangement.

STUDENT HONOR POLICY:
Plagiarism and cheating will not be tolerated. Cheating includes copying others work and using cheat sheets on exams. However, students are encouraged to interact in small groups during class assignments, i.e. you can freely discuss concepts in all portions of the class, except exams.

A NOTE ABOUT LAB EXERCISES:
Lab exercises will be quantitative in nature with an expectation that students have or will develop skills in the areas of applied algebra and trigonometry. Students will learn computer applications with emphasis on data analysis and problem solving in the Earth sciences. As such, lab exercises will require an additional time commitment outside of the scheduled weekly meeting (i.e. you will have "homework" and "projects" to work on outside of the scheduled class time).

STUDENTS WITH DISABILITIES:
Any student who has a disability that requires accommodation, please make an appointment to see me.

A NOTE ABOUT THE LAST WEEK OF CLASS:
Given that the Oregon University System employs the "quarter method" of academic scheduling, upper division courses are by nature "compressed" with much detailed information to cover in a relatively short period of time. Please note that most upper division text books are geared for courses at universities with a 16 week semester system (i.e. we are truly trying to pack 10 pounds of contaminated dirt in a 5 pound bag). As such, the 10th week of class is as critical to content coverage as the 1st week. Students should anticipate a full slate of "normal" activities during the last week of class, including lectures, lab exercises, written reports, etc. The class is not over until after the final exam! **Plan your schedule accordingly!**

CHANGE OF SYLLABUS - POP QUIZZES - UNANNOUNCED HOMEWORK ASSIGNMENTS
The instructor reserves the right to modify the syllabus and class schedule at any time during the term. Students will be notified of such changes in a timely manner. The instructor also reserves the right to administer pop-quizzes and assign unscheduled homework / class assignments at any time. All students will be responsible for completing this work and it will comprise part of the final class grade.

TENTATIVE CLASS SCHEDULE: This outline should be considered tentative at best. The following schedule may be modified as class ideas evolve throughout the semester.

Week	Dates	Class Content	Text Reading	Class Assignments
1	Mar 31	Class Policies, Introduction	Keller, Ch. 1, 4	-Intro to Quant. Apps.
	Apr 2	**Taylor off to Seattle for Meeting: In-Class Video, Lab, and Reading Assignment**		-Video Review Quest. -Reading/ Summary 1
2	Apr 7	Natural Hazards / Mitigation Overview	Keller, Ch. 4 Journal Articles	-Reading/Summary 2 -Earthquake Video
	Apr 9	Seismic / Tectonic Hazards	Keller Ch. 7	-Seismic Hazards Lab
Student Poster Topics Assigned for Academic Showcase. ***Theme: Seismic Hazards of the Pacific Northwest (in collaboration with ES407 Senior Seminar)***				
3	Apr 14	Seismic / Volcanic Hazards	Keller Ch. 8	Volcanic Hazards Lab
	April 16	Volcanic Hazards		
4	Apr 21	**Field Trip - PSU Student Night: OR Assoc. of Environmental and Engineering Geologists; Social, Dinner, and Scientific Presentations; Starts at 5:30 PM; LV WOU at 4:00 PM**		PSU Trip Summary 3
	Apr 23	Landslide and Mass Wasting Hazards ***Draft Academic Showcase Abstracts Due***	Keller Ch. 6	Landslides Lab
5	Apr 28	Waste Management Issues ***Final Academic Showcase Abstracts Due***	Keller Ch 12	Landfill Planning Lab
	Apr 30	**Field Trip to Coffin Butte Landfill (Lv WOU 2:30 PM)**	Journal Article(s)	Landfill Summary 4
6	May 5	**Midterm Exam**		
	May 7	Water Resources	Keller Ch 10 Journal Article(s)	Willamette Valley Water Reading Summary 5
7	May 12	Water Quality and Treatment	Keller Ch. 11	Water Quality Lab
	May 14	Open Lab / Poster Preparation	Journal Articles(s)	Groundwater Video
8	May 19	Groundwater	Keller Ch 10-11	Groundwater Lab 1
	May 21	**Field Trip to Monmouth-Independence-Dallas Area (Lv 2:30 PM)**		Mon-Ind-Dallas Trip Summary 6
9	May 26	Groundwater (cont.)	Keller Ch 10-11	Groundwater Lab 2
	May 28	**Academic Showcase – Thurs. May 28, 2009 – Student Presentations**		
10	June 2	Showcase Poster Reviews and Summaries		AES Poster Summary
	June 4	Watershed Restoration Overview	Journal Article(s)	
11	Week of June 8	Finals Week, check schedule		

ES473 Lab Portfolio Checklist – Spring 2009

/5	Intro to Quantitative Applications Exercise
/5	Introductory Video Review Sheets
/8	Summary 1 – Overview of Geologic Hazards in Oregon (DOGAMI PAPER)
/8	Summary 2 – Seismic Hazards in the Pacific Northwest
/5	Earthquake Video Review Sheet
/10	Seismic Hazards Lab
/10	Volcanic Hazards Lab
/8	Summary 3 – PSU Student Research Posters and Abstracts
/10	Landslides Hazards Lab
/7	Academic Showcase Abstract
/10	Landfill Planning Lab
/8	Summary 4 – Coffin Butte Landfill Summary
/8	Summary 5 - Willamette Valley Water Resources
/10	Water Quality Lab
/5	Groundwater Video Review Sheet
/10	Groundwater Lab 1
/8	Summary 6 – Monmouth-Independence-Dallas Field Trip
/10	Groundwater Lab 2
/20	Academic Showcase Poster
/10	Academic Showcase Poster Summaries

Total 175 pts