

**FRANKLIN & MARSHALL COLLEGE**  
Department of Earth and Environment  
GEO/ENV 114B - Earth, Environment and Humanity    Fall, 2008

*Lecture:* M W F 10:00-10:50 HAC 119    *Lab:* W 1:30-4:20 HAC 119

*Lecture instructor:* Prof. Sternberg    *Office:* Kaufman 12

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*Office hours:* T Th 8:30-10:30; by appointment

*TA:* Justin Herbert

Course Description (from the *College Catalog*)

“An investigation of the Earth with emphases on the opportunities available to and the constraints upon humankind arising from properties of the Earth, and on the effects of human activities on the natural environment. The structure and character of the Earth; natural hazards; the role of humans in changing the face of the Earth; surface and ground water use and management; the generation and degradation of soils; energy resources; human wastes. Laboratories will examine the principles behind geologic environmental problems and local, national, and global environmental problems and issues. Field trips.”

GEO/ENV 114 is an introductory level course (no prerequisites). It fulfills the distribution requirement for lab science. It can serve as the first course for a Geosciences major, and counts towards the Environmental Studies and Science majors.

Some goals

- 1) For you to increase your awareness of the geological component of our environment.
- 2) For you to recognize how various components of the Earth's environment are interrelated to each other and to human wellbeing.
- 3) For you to prepare yourself as a citizen able to make educated analyses of environmental issues.
- 4) For you to realize the scientific importance of modeling, data collection, graphical representation, and analysis.
- 5) For you to understand how scientific theories develop, and how they can be perceived by societal groups other than scientists.
- 6) For you to get direct contact with local aspects of environmental geology through the field trips we take.
- 7) For you to explore the themes of the course through writing, discussion and speaking, and to develop skills in critical thinking, reading, and analysis.

## Texts

*Introduction to Environmental Geology* (4th ed.); Edward A. Keller. Pearson, Upper Saddle River, NJ, 2007, 752 p.

*Applications & Investigations in Earth Science* (5<sup>th</sup> ed.); Edward J. Tarbuck, Frederick K. Lutgens, and Kenneth G. Pinzke. Pearson, Upper Saddle River, NJ, 2006, 336 p.

## Grading

Exams (2)	30%
Final Exam	15%
Assignments and labs	25%
Water lab write-up	10%
Memos (2)	8%
Quizzes (≈6)	<u>12%</u>
TOTAL	100%

No extra credit. Please don't ask. Give it your best shot the first time.

## Assignments

These will be a variety of shorter assignments, including some from the Tarbuck workbook, and some from the *Hazard City* CD accompanying the Keller text. Most of these are listed in the syllabus, but this is subject to change.

## Quizzes

There will be several online quizzes administered through Blackboard.

## Attendance

Lecture attendance is expected. You get two lecture absences without penalty; after that, there is a 1% deduction from your final course grade for each lecture absence. In addition, if you are not present in class to complete an in-class exercise, or turn in an assignment, you will receive a 0.

Lab attendance is mandatory. Each unexcused lab absence will result in a lowering of your grade for the course by 3%. Should you miss lab, you are still expected to make up the work (although field trips cannot be repeated).

Note that there is required attendance at two evening lectures. See me ASAP if you have a conflict to discuss.

An absence is only excused via an official College excuse, such as from the Dean of Students, the infirmary, or a varsity athletic event. If you are ill the day of lab, you might get an excused absence from me, but only if you visit or call me (not email) BEFORE class.

Although I try to allow for one or possibly two conflicts with varsity athletic competitions, I do not consider practices as valid excuses. If you are on a team with many games on Wednesday afternoons, I expect the course to take priority.

“The overwhelming majority of student-athletes will never earn a dime as a professional athlete. That's why the terms "student" and "athlete" are synonymous within the NCAA: When the athlete can no longer play, the student can still succeed” (www.ncaa.org).

### Electronic resources

For this course, it is assumed that you can use both Blackboard and eDisk.

You have all been enrolled in my Blackboard course, but you must still log in to access it. To learn about Blackboard, including how to log in, go to <http://ats.fandm.edu/distribution/internet/blackboard/>

Blackboard will be used for:

- 1) Electronically storing your grades, so that you can check your tabulated grades. Use the Tools button, then the My Grades option. I don't show curved test scores in Blackboard, or the true weights of assignments in terms of their final contribution to our course grade. This is done within my Excel spreadsheet for the course.
- 2) Maintaining internet links (External Links button) for course related topics that I think might be interesting or useful, and that occasionally will be required.

You all have access to eDisk for this course. To learn about eDisk, including how to log in, go to <http://edisk.fandm.edu/>

eDisk will be used for:

- 1) Electronically storing copies of course documents, such as this syllabus. If you lose a document, you should be able to retrieve a copy from eDisk.
- 2) Electronically storing copies of PowerPoint lecture notes, generally before class time.
- 3) a possible depository for electronic copies of assignments in the Drop Box.

You will be asked to bring your laptops to class for some activities. Othersise, you may wish to have your laptops available during lecture to utilize and add to the PowerPoint notes for that lecture. Sometimes websurfing can be useful during lecture to examine related material, but not surprisingly, I would find it objectionable if you used class time to do email, messaging, or other non-course related activities.

CLASS		DATE	LECTURE	READING	ASSIGNMENT	LAB	READING
1	W	9/3	Course introduction			Maps	App. C
2	F	9/5	Concepts	ch. 1, App. D			TLP 23,22,3
3	M	9/8	Concepts	ch. 1			
4	W	9/10	Minerals	ch. 3		Minerals	App. A, TLP 1
5	F	9/12	Discussion - concepts				
6	M	9/15	Rocks	ch. 3			
7	W	9/17	Rocks and deformation	ch. 3	Quiz 1	Rocks	App. B, TLP 2
8	F	9/19	Earth's Interior	ch. 2			
9	M	9/22	Plate tectonics	TLP 10			
10	W	9/24	Plate tectonics	ch. 2	Quiz 2	Pequea Silver Mine (ft)	
11	F	9/26	<i>Forces of Nature</i>	ch. 5			
12	M	9/29	Earthquakes	ch. 6			
13	W	10/1	Earthquakes	ch. 6		Earthquakes/ <i>Hazard City</i>	TLP 8
14	F	10/3	<i>Wave that Shook the World</i>				
	Su	10/2	Anthracite field trip				
15	M	10/6	Discussion - earthquakes	ch. 6			
16	W	10/8	EXAM 1			no class	
17	F	10/10	Rivers	ch. 8			
18	M	10/13	Stream table; floods	ch. 8			
19	W	10/15	Hazard City (memo assigned)	ch. 8	Quiz 3	Flood frequency; <i>Storm that</i>	
20	F	10/17	Discussion - Katrina	TLP 9,11		<i>Drowned a City</i>	
	M	10/20	FALL BREAK				
21	W	10/22	Water resources	ch. 12		Conestoga River; Water plant (ft)	
22	F	10/24	Water resources	ch. 12	memo due		
23	M	10/27	Groundwater (demonstration)	ch. 12	Quiz 4		
24	W	10/29	Water pollution	ch. 13		Indian Echo Cavern (ft)	
25	F	10/31	Mineral resources	ch. 14			
26	M	11/3	Hazard City (memo assigned)	ch. 14	Quiz 5		
27	W	11/5	Energy	ch. 15		Water measurements;	TLP 4
28	F	11/7	Energy	ch. 15		<i>Into the River</i>	
29	M	11/10	Energy	ch. 15	memo due		
			8 pm - <i>Denial of Global Warming</i>				
30	W	11/12	Discussion - lecture	ch. 15		Energy/ <i>Hazard City</i>	
31	F	11/14	Soils				
32	M	11/17	EXAM 2	ch. 16			
33	W	11/19	Soils, <i>On American Soil</i>	ch. 16		Water data and graphs	
34	F	11/21	Discussion - food and water		Quiz 6		
35	M	11/24	Atmosphere	ch 19.3			
			Thanksgiving				
36	M	12/1	Climate	ch. 19			
37	W	12/3	Climate change	ch. 19		Weather	TLP 12,13,14
38	F	12/5	<i>Cracking the Ice</i>	ch. 19	Water paper due		
39	M	12/8	Global warming	ch. 20			
			8 pm - <i>Learning from Katrina</i>				
40	W	12/10	Discussion - lecture			Climate change	TLP 16
41	F	12/12	Conclusion				
		TBA	FINAL EXAM				