

The Earth Around You

Southern Illinois University-Carbondale
Geology 351s

Fall, 2008

Instructor: Scott Ishman
Office: Parkinson 303
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Hours: TBA *or by appt.* (please ask for appointments in advance)

Class Times: TBA Park. 215

Required Text: Introduction to Environmental Geology. E.A. Keller (3rd or 4th edition)
and selected other readings

Grading:

Tests	25%
Quizzes	15%
Attendance & Participation . .	20%
Final Exam	20%
Final Project	20%

Exams: Tests: TBA
Final: TBA

Quizzes: Students are expected to complete assigned readings by the dates listed in this syllabus and to take concise, well organized notes. Starting with Week #2, there will be a quiz each week during one of the lectures. Quizzes will be closed-book, but students may look at any hand-written notes they have taken. No make-up quizzes will be given, but the lowest quiz grade will be dropped in lieu of one excused absence. Note that at **15%**, quizzes are a major portion of each student's final grade.

Field Trip: The most effective way to learn about the Earth and its processes is to observe it first hand. Two to 3 Saturday field trips **or** an extended field trip are proposed for this course. Students will have the opportunity to discover and observe the geologic processes, structures and treasures that shape the world around them. Each field trip will have a central theme on which the students will be required to research aspects within the theme and lead the discussion in the field on their particular topic.

Final Project: During the second half of the semester, students in the class will be working on a research project. Projects will be presented in the form of posters, which will be presented to the class and members of the Geology Dept. on the last class session of the semester.

Course Schedule

BUILDING BLOCKS

Week 1	Class mechanics and Introduction	<u>Due</u>
M	Class mechanics	
W	Understanding Earth through “deep” time <i>Sample quiz</i>	<i>Handout</i>
F	Geological timeline exercise	<i>Read lab</i>

Week 2 The Earth: Foundation of the Human Environment

M	Tectonics of the Earth	<u>Chap. 2</u>
W	Tectonics exercise	
F	No Class	

NATURAL HAZARDS

Week 3 Earthquakes

W	Causes and effects of earthquakes	<u>Chap. 5</u>
F	Epicenter exercise	

Week 4 Volcanic Hazards

M	Volcanoes and magma	<u>Chap. 6</u>
W	Volcanic eruptions and other hazards	
F	Using the GEOREF database; <i>Meet at Morris Library</i>	

Week 5 Landslides

M	Slope stability	<u>Chap. 8</u>
W	Hazards and mitigation	
F	Field Trip #1	

Week 6 Rivers and Flooding

M	<i>EXAM #1</i>	Study
W	Rivers and river processes	<u>Chap. 7</u>
F	Flood hazards	

Week 7 Coastal Processes

M	Flood exercise	
W	Coastal processes	<u>Chap. 9</u>
F	Field trip #2	

NATURAL RESOURCES

Week 8 Global Climate

M	Acid rain, ozone, and El Niño	<u>Chap. 18</u>
W	Greenhouse effect and global warming	
F	Seminar	<i>Watch Gore DVD</i>

Week 9 Water and Mineral Resources

M	Water and water resources	<u>Chap. 3</u>
W	Minerals and mining	
F	Rocks and minerals exercise	<i>Read lab sheet</i>

Week 10 **Fossil Fuels**
 M Petroleum and gas pp. 402-425
 W Coal and other fossil fuels
 F Field trip #3

Week 11 **Alternative Energy Resources**
 M Nuclear energy pp. 425-454
 W Other alternatives
 F *Instructions for final project + Exam Review*

ENVIRONMENTAL DEGRADATION

Week 12 **Contamination and Mitigation**
 M *EXAM #2*
 W Toxicology, pollution, and mitigation Chap. 12
 F Pollution exercise

Week 13 **Waste Disposal** (*Depending on field trip schedule*)
 M Solid and hazardous waste Chap. 16
 W Radioactive waste
 F Climatic history of the Earth

11/19-23 **THANKSGIVING BREAK**

Week 14 **Global Change**
 M Glaciers and the Pleistocene Earth handout
 W Impact events
 F *Preparation time for final project*

Week 15 **Landscapes Large and Small**
 M Landscapes of the U.S. and landscape-shaping processes
 W Landscapes of Mars and Venus
 F Poster session *Final Project*

TBA **Final Exam**

*The syllabus and its contents are subject to change at the discretion of the instructor.