

Sample Course Syllabus
The Earth Around Us: An Introduction to the Geology of Environmental Issues
to accompany *The Earth Around Us: Maintaining a Livable Planet*

The following syllabus was developed for a freshman course whose goal is to teach students the geology of environmental issues and to attract them to geology as a course of study. The course is built around the book *The Earth Around Us: Maintaining a Livable Planet* (Westview, 2003). The book consists of short, readable essays that provide solid grounding in the geology of environmental issues. The book offers an alternative to traditional geology texts that may be somewhat dry to read. The syllabus could be used for a large lecture course or for a writing-intensive freshman course. Feel free to use the syllabus for your course if you would like to do so (you may email schneiderman@vassar.edu to have a copy sent electronically).

Geology 100/ Environmental Studies 100
Syllabus

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COURSE OBJECTIVES

In this course we will examine environmental issues from a geological perspective. That is, through a series of lectures on subjects either historical or contemporary and at local, regional, or global scales, you will become acquainted with the 21st century environmental issues—and the earth science behind them—of which every citizen of this planet needs a working knowledge. You will learn the geological principles that affect the atmosphere, hydrosphere, biosphere and rock sphere. Also, you will come to understand that a little bit of knowledge about how the earth works can go a long way towards formulating sensible environmental policies and responses to natural ‘hazards.’ Upon completing the course you should be able to judge for yourselves the presence or absence of geological common sense behind human actions on this planet and to use your new knowledge to influence future land-use decisions.

COURSE STRUCTURE

In general, I will cover a new topic each class session. Often there will be a video at the beginning of class followed by lecture, questions, or discussion. I expect that the reading for each class will be done *before* the class for which it is assigned. On Thursday I will take a few moments of class time to review answers to the weekly homework. Course information including syllabus, reading assignments, links to websites, week-by-week guide to the course, and review questions for class sessions are available on our Blackboard internet site. Please note that our Blackboard course site also contains a discussion board on which you can post thoughts about the readings or subjects raised in class.

READING

Readings for the course will come from the following book: Schneiderman, Jill S., ed., *The Earth Around Us: Maintaining a Livable Planet* (New York: W.H. Freeman, 2000). I expect that the reading for each class will be done *before* the class for which it is assigned.

SCHEDULE OF CLASSES AND READINGS

<u>Date</u>	<u>Subject</u>	<u>The Earth Around Us</u>	<u>Web reading</u>
Week 1 T	Introduction to the course		
<i>Lessons in Humility</i>			
Week 1 Th	Our place in earth's history	Preface Essay 1 (Kieffer) Essay 4 (Bierman)	"The Dawn of Animal Life" http://geol.queensu.ca/museum/exhibits/dawnex.html
Week 2 T	Geologic time	Essay 2 (McPhee) Essay 9 (Gould)	"Fossils, Rocks, and Time" http://pubs.usgs.gov/gip/fossils/contents.html
Week 2 Th	Ethical considerations	Essay 3 (Savoy) Essay 8 (Fisher)	
Week 3 T	The limits of knowledge	Essay 5 (BjØrnerud) Essay 6 (Oreskes)	
Week 3 Th	Managing the landscape	Essay 7 (Eaton) Essay 10 (Applegate)	
<i>Some Resources for the 21st Century</i>			
Week 4 T	Soils Video: "Weathering and Soils" (30 minutes)	Essay 11 (Swanson) Essay 12 (Amundson)	"Soil Gallery" http://ltpwww.gsfc.nasa.gov/globe/soilgall/gallery.htm "How Much Soil is There?" http://ltpwww.gsfc.nasa.gov/globe/app_soil/hmsoil.htm "The Soil Is:" http://ltpwww.gsfc.nasa.gov/globe/ped/pedhub.gif "Secrets Hidden in Soil" http://ltpwww.gsfc.nasa.gov/globe/forengeo/secret.htm
Week 4 Th	Water quantity Video: "Cadillac Desert: The Mercy of Nature" (55 minutes)		
Week 5 T	Water quantity	Essay 13 (Sharp and Banner)	"How We Use Water in These United States" http://www.epa.gov/OW/you/chap1.html
Week 5 Th	Water quality Video: "The Fight for the Croton Watershed" (28 minutes)	Essay 14 (Schneiderman)	"The Hydrologic Cycle" http://observe.ivv.nasa.gov/nasa/earth/hydrocycle/hydro1.html

Week 6 T	Coasts Video: “The Beaches are Moving” (60 minutes)		
Week 6 Th	Coasts	Essay 15 (Payne) Essay 16 (Pilkey et al.)	“Beach Erosion” http://whyfiles.org/091beach/index.html
Week 7	SPRING BREAK		

Manipulations and Possible Solutions?

Week 8 T	Internal waterways and dams Video: “Cadillac Desert: An American Nile” (55minutes)		
Week 8 Th	Internal waterways and dams	Essay 17 (Singer) Essay 20 (Evans et al.)	“Cracking Dams” http://simscience.org/cracks/advanced/dams1.html
Week 9 T	Wetlands	Essay 18 (Stewart) Essay 19 (Doss)	
Week 9 Th	Soil and water contamination	Essay 20 (Manduca) Essay 21 (Gwinn)	
Week 10 T	Radioactive waste Video: “Radioactive Reservations” (Part 1) (approx. 20 minutes)	Essay 22 (Macfarlane)	

Whole Earth Perturbations and Global Perspectives

Week 10 Th	Climates of the past	Essay 24 (Stanley) Essay 25 (Menking)	
Week 11 T	Changing our atmosphere Video: “The Greenhouse Effect & Global Climate” (30 minutes)	Essay 26 (Nameroff) Essay 27 (Hornung and Downham)	
Week 11 Th	Environmental justice	Essay 29 (Schneiderman and Sharpe)	“Unsung Sheroes and Heroes” http://www.ejrc.cau.edu/(s)heros.html
Week 12 T	Listening to the earth	Essay 28 (Baker)	
Week 12 Th	Limits to sustainability	Essay 30 (Zen)	
Week 13 T	How shall we live?	Essay 31 (Buchwald)	“The Earth Charter Initiative” http://www.earthcharter.org
Week 13 Th	Review for final exam		