

GEOL 120 - Earth's Environments

Instructor

F. Zeb Page (lecture & Tue. lab)
Carnegie 405
x5-6701
zeb.page@oberlin.edu

Office Hours - M 11-12, Th 1:30-2:30, F 1:30-2:30

Lecture TR 9:30-10:50, West Lecture Hall (SCI 163)
Lab T or W 1:30 - 4:20, Carnegie 212

Text - Marshak, Steven, 2008, *Earth: Portrait of a Planet*, 4th (or any) edition, W.W. Norton & Co.
Software - Google Earth available free at <http://earth.google.com>

Overview: Earth's Environments is an introduction to the materials, forms, history, and hazards of the planet upon which we live. This course is the gateway course for the major in Geology and is also a required course for the Environmental Studies major. You will also find that Earth's Environments is relevant to all who look at the natural world with a curious eye. No previous natural science background is required. Upon completion of the course you should be able to think about the geologic history of an area based on the rocks and relationships between rocks, structures, and surface landforms. You should be able to use topographic and geologic maps. You should be able to apply what you have learned to make predictions about geologic hazards. Finally, you will be aware of the importance of earth materials to human existence on our planet.

Lectures: Lectures will be a combination of traditional-style lecturing (w/chalk on the board) and projected diagrams and photographs. I do not plan to post these materials on Blackboard. Most of the lecture material will be delivered in a manner that will allow you to take notes. If you miss a class due to illness, please check with a classmate for the topics covered. Textbook readings are most useful to you if you complete them prior to the corresponding lecture.

Labs: Laboratory exercises are designed so that they can be completed within the lab period. You can use your textbook and other sources during labs (including discussions with your classmates). Be aware that each student must hand in his/her own laboratory exercise and is responsible for understanding the material covered in the lab. Field trips are an important part of this course and will take place within the lab time (once the weather warms up). Trips will depart promptly at 1:30 from the Asia House parking log.

Homework: This will usually involve making observations about the earth using Google Earth.

Lab Fees - The Geology Department requests, nay, requires each student in lab courses to pay a fee of \$10 to help defray lab costs. Please pay Pat Sturges (Carnegie 403) by cash or check made out to "Oberlin College".

Grading: Your grade will be based on three exams (two during the semester and one final exam), lab exercises, homework exercises and class participation. The grade will be based on the following formula: Each exam = 20% (total=60%) and the remaining 40% will come from your lab work (weekly exercises plus lab exams), homework and participation.

Honor Code: Each student is responsible for understanding and abiding by the Oberlin College Honor Code (<http://www.oberlin.edu/students/links-life/honorcode.html>). All exams and lab exams are to be completed individually and are closed book/note tests. You are expected to work in small groups and seek help from instructors and TAs while working on lab exercises or homework, but the hand-in portion should reflect your own understanding of the topics.

Services for students with disabilities - If you have a documented disability and will require accommodations in this course, please see me or Jane Boomer (Services for Students with Disabilities, Peters Hall G27, x5-8467) in the first two weeks of the semester to develop a plan to address your needs.

		TOPIC	READINGS 3rd edition
Tuesday	Feb. 5	Intro to the course	Prelude Ch. 1
LAB		Google Earth homework	
Thursday	Feb. 7	Earth's interior	Ch. 2
Tuesday	Feb. 12	Continental Drift	Ch. 3, Interlude A
LAB		Maps	
Thursday	Feb. 14	Plate tectonics	Ch. 4
Tuesday	Feb. 19	Minerals	Ch. 5
LAB		Crystals & Minerals	
Thursday	Feb. 21	Magma & igneous rocks	Ch. 6, Interlude B
Tuesday	Feb. 26	Igneous terranes, weathering, & erosion	Ch. 7, p. 184-192
LAB		Igneous Rocks	
Thursday	Feb. 28	Sedimentary rocks & soils	Ch. 7, p. 193-209
Tuesday	Mar. 5	Sedimentary environments	Ch. 7 p. 209-226
LAB		Sedimentary Rocks	
Thursday	Mar. 7	Exam I	
Tuesday	Mar. 12	Metamorphism	Ch. 8; Interlude C
LAB		Metamorphic rocks	

Thursday	Mar. 14	Volcanoes: big trouble	
Tuesday	Mar. 19	Volcanoes: forms, features, and dangers	Ch. 9
LAB		Rock/mineral lab exam	
Thursday	Mar. 21	Begin Earthquakes: Faults	Ch. 10; Interlude D
BREAK			
Tuesday	Apr. 2	Crustal deformation	Ch. 11
LAB		Structural geology	
Thursday	Apr. 4	A volcanic interlude	
Tuesday	Apr. 9	Orogeny into relative chronology	Ch. 12
LAB		Geologic Maps	
Thursday	Apr. 11	Geologic Time – radiometric dating	Ch. 12
Tuesday	Apr. 16	Geologic Time – earth history	Ch. 13
LAB		More maps!	
Thursday	Apr. 18	NSFExam II	
Tuesday	Apr. 23	Hydrologic cycle, streams	Ch. 17
LAB		Field Trip: stream gauging at Mill Hollow	
Thursday	Apr. 25	Groundwater	Ch. 19
Tuesday	Apr. 30	Glaciers	Ch. 22
LAB		Field Trip: Costal Processes	
Thursday	May 2	Energy Resources	Ch. 14
Tuesday	May 7	Earthquakes!	Ch. 10
LAB		Field Trip: Cascade Park	
Thursday	May 9	Climate	Handout/Ch. 23

FINAL EXAM date: Thursday, May 16th, 2 – 4 p.m.