

GEOL 200: GEOLOGY FOR ENVIRONMENTAL SCIENTISTS FALL 2007

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Office Hours: 2:30-5:00 p.m., Monday and Wednesday; other hours by appointment; check both office and lab. You are encouraged to come and see me whenever you feel the need to discuss course materials. It's always a good idea to make an appointment, even for times during the scheduled office hours, as I sometimes have to step out of my office or lab to attend to departmental or university chores.

Class Sessions: Geology 200, a 4 credit course, in principle is based on 3 lecture credits and 1 lab credit. We are scheduled to meet from 2:30-4:15 on Tuesday and Thursday each week; either or both days could be labs in any given week. Geology is a hands-on subject and we may spend almost as much time on lab exercises as we do with lecture material. Early in the semester, when the weather is good, we will spend time in the field actually doing geology. When doing field work we may need to stay out past 4:15 (driving time is not really class time), but usually no later than 5:00. It's a good idea not to schedule other classes before 5:30 pm.

Prerequisites: Geology 101, 102, Planet Earth, or Geo 110, 111, Environmental Geoscience, **and** Geology 103, 104, Earth Through Time

Text: **Earth's Dynamic Systems**, by Hamblin and Christiansen, 10th edition, 2004

Web Page: cw.prenhall.com/hamblin/

Attendance: All class sessions have learning activities that require your attendance and are difficult, or impossible (e.g., field trips), to make-up. If you have a legitimate reason to be absent, please let the instructor know as soon as possible. You must provide an acceptable excuse, but this does not excuse you from completing all assignments. You may have up to 3 unexcused absences, which would include any days of special concern. After that your final course average will be lowered by 2% for any additional unexcused absences up to a maximum of 10%. The Saturday field trip is worth two regular class attendances.

Field Trips: All field trips are required, including a Saturday field trip on November 3 to study Appalachian structural geology. Five local field trips will also occur during class time. The

Saturday trip time is compensated by no class on October 30 and Nov. 1. If you have a legitimate reason to miss a field trip you can make it up by reading and outlining assigned research from the library (longer papers for missing the Saturday trip). Non-legitimate reasons count as two class absences for the Saturday trip.

Grades: Your final grade will be determined as follows:

Tests (multiple choice, short answer, fill-in-the-blank, matching, and essay questions):	45%
Lab Quizzes	8%
Saturday Field Trip	2%
Exercises (lab and field)	<u>45%</u>
	100%

Educational Goals:

1. To develop a basic understanding of bedrock geology beyond the introductory level for application in environmental sciences.
2. To be able to identify common minerals and the rocks they form.
3. To develop an understanding of the chemistry of common minerals and the properties of the rocks they form.
4. To become familiar with geologic data collection in the field.
5. To understand the principles of stratigraphy.
6. To understand the basics of structural geology by being able to read and understand geologic maps and cross sections.
7. To be able to read and understand professional geology reports.

SOCIAL JUSTICE STATEMENT

West Virginia University is committed to social justice. I concur with that commitment and expect to foster a nurturing learning environment based upon open communication, mutual respect, and non-discrimination. Our University does not discriminate on the basis of race, sex, age, disability, veteran status, religion, sexual orientation, color, or national origin. Any suggestions as to how to further such a positive and open environment in this class will be appreciated and given serious consideration.

If you are a person with a disability and anticipate needing any type of accommodation in order to participate in this class, please advise me and make appropriate arrangements with Disability Services (293-6700).

A note on Academic Dishonesty

Each student is expected to submit their own work on exercises, quizzes, and tests. While working on exercises it is normal to discuss aspects of the assignment with other students -- this is an important way of learning. However, it is not acceptable to submit someone else's work as your own. I expect each student to be familiar with the regulations on plagiarism and cheating as described in the WVU student handbook, the Mountie (Section 3.1.1.3). ww.arc.wvu.edu/rightsa.html

<u>Date:</u>	<u>Topic</u>	<u>Text</u>
Aug. 21	Course Introduction, Silva Compass exercise	
Aug. 23	Mineralogy, and Intro to Joint Exercise	Ch. 3, p. 52-79
Aug. 28	Joint measurement exercise at Cooper's Rock – Field Trip	
Aug. 30	More Mineralogy	
Sept. 4	Lab: Minerals	
Sept. 6	Igneous Rocks	Ch. 4, p. 80-113
Sept. 11	Lab: Igneous and Metamorphic Rocks	
Sept. 13	Metamorphic Rocks	Ch. 6, p. 144-165
Sept. 18	Global Positioning System, or GPS Lab Quiz on minerals	
Sept. 20	GPS Field Exercise – Field Trip	
Sept. 25	Weathering of Rocks	Ch. 10, p. 248-273
	Lab Quiz on igneous and metamorphic rocks	
Sept. 27	Sedimentary Rocks, part 1	Ch. 5, p. 114-143
Oct. 2	Test 1: Minerals, Igneous and Metamorphic Rocks, GPS	
Oct. 4	Sedimentary Rocks, part 2	Ch. 8, p. 188-215
Oct. 9	Depositional Environments Trip: Goshen Rd outcrop – Field Trip	
Oct. 11	Depositional Environments Exercise: Sabraton outcrops – Field Trip	
Oct. 16	Stratigraphy Exercise: Morgantown Mall outcrops – Field Trip	
Oct. 18	Geologic Time and Stratigraphic Correlation	
Oct. 23	Structure of Rock Bodies, Part 1, Folds	Ch. 7, p. 166-187
Oct. 25	Structure of Rock Bodies, Part 2, Faults	
Oct. 30	GSA Meeting in Denver - no class	
Nov. 1	GSA Meeting in Denver - no class	
Nov. 3	<i>(Sat., 8 am-9pm) Appalachian Structural Geology Trip (rain date Nov. 4)</i>	
Nov. 6	Lab: Tectonic modeling	
Nov. 8	Test 2: Weathering, Sedimentary Rocks, Time, and Correlation	
Nov. 13	Lab: Climate data analysis using an Excel spreadsheet – Room 425	
Nov. 15	Tectonics and Landscapes	Ch. 23, p. 658-687
	and Intro to geologic maps and reports	
Nov. 27	Lab: Geologic maps and reports: Somerset Co., PA	
Nov. 29	Lab: Geologic maps and reports: Somerset Co., PA	
Dec. 4	Lab: Geologic maps and reports: Giles Co., VA	
Dec. 6	Lab: Geologic maps and reports: Giles Co., VA	

Thursday, December 13, 8:30-10 AM: TEST 3: Structure, Tectonics, and Geologic Maps