
Introductory Geosciences I: Physical Geology

GEOL 1121, Sec. 01, Fall 2007

T, Th 12:30-1:45

Boyd Lecture Hall

Instructor: Dr. Phil Novack-Gottshall **E-mail:** WebCT Mail

Office: Calloway G 1-4
(groundfloor)

Office hours: T 9:30-11, 2-3; W 1-4;
R 9:30-11, 2-4, or by appointment

Course Description

Geologists are scientists who study the earth. We seek to understand the composition of, the processes that operate upon and within, and the history of this planet Earth we all call home. In this course, we'll focus on the first two of these aims. Although we tend to think of Earth as a static body, it's anything but fixed. The movement of land during earthquakes and the production of new rock during volcanic eruptions are dramatic signs of change, but so are smaller signs like the waves breaking on a beach, the erosion of soil during rain, and the dissolution of a shell. Starting with basic geological materials and their properties, you'll use critical thinking and evidential reasoning to build your knowledge of the processes that shape the earth. In other words, you'll practice thinking like a geologist.

Learning objectives

- 1) Explain the scientific method used by geologists to understand the world around us.
- 2) Describe the basic geological materials, material properties, and conditions that explain why and how the earth changes.
- 3) Use your knowledge of these materials, properties, and conditions to explain the causes of geological processes.
- 4) Describe several ways in which geological processes affect society, including volcanoes, earthquakes, flooding, groundwater, and landslides, among others.
- 5) Evaluate real geological case studies of societal impact and propose geologically sound solutions.
- 6) Apply class information to real geological problems in your own life.
- 7) Reflect on your learning by evaluating your learning strengths and weaknesses and considering your own educational and personal goals.

Required textbook and course packet

Tarback, E.J. and F.K. Lutgens, 2005. *Earth: An Introduction to Physical Geology*. 8th ed. Pearson Prentice Hall, NJ. ISBN 0-13-114865-6

Physical Geology (section 1) course packet. Available for \$18.75 at the University Bookstore.

Programmatic designation

This course satisfies the non-lab science component of Area D of the Core Curriculum.

WebCT

Although regular attendance is vital to success in this course, it's not sufficient. The WebCT site will also have important information for you, such as announcements, on-line quizzes, learning evaluations, and study guides. You can get to the course site using the WebCT portal: <http://webct.westga.edu>. Once there, log-in and click on the course site. If you have problems logging in or locating the site, just follow the links, contact the Distance Learning helpdesk (678-839-6248 or distance@westga.edu).

A note on my office hours

The best science teachers are those who also conduct scientific research. Although I do research throughout each week, I reserve Fridays for uninterrupted research. So I will not be available to meet with you on this day except for exceptional circumstances. You are still welcome to e-mail me with questions and concerns during this time, and I will make every effort to respond in a timely manner. However, an e-mail response cannot be guaranteed until the following work day. On other days, you're welcome to call me on campus (678-839-4061), stop by when the door is open, or e-mail me (pnovackg@westga.edu). **I don't accept phone calls at my home.**

Grading Policies

Your grades will be assigned on a percentage scale, as follows:

≥90% = A; 80-89% = B; 70-79% = C; 60-69% = D; <60% = F

Exam #1 (Sept. 13)	30%
Exam #2 (Oct. 30)	30%
Cumulative Final Exam (Dec. 13)	30%
WebCT quizzes	15%
Learning evaluations	10%
Earth Watch	10%
Attendance and participation	5%

Exams

This course will have three exams, including a comprehensive final exam. The lowest exam score will be dropped. Exams can not be made up; a missed exam will count as your dropped exam score. The format of the exam may include a mixture of multiple choice, matching, fill in the blank, and short answers. On the exams, I will have you apply concepts learned in class instead of asking you to repeat facts I have told you. Memorization, last minute studying, and dependence on lecture notes are not useful strategies. Treat the weekly quizzes as practice for the exams.

The final exam is cumulative, although it will emphasize material since the second exam. Although longer than previous exams, it will have the same general format. It will occur on Thursday, December 13, 11-1 in our regular lecture hall.

WebCT quizzes

There will be a short, graded quiz on WebCT each week. Unlike the exams that will require synthesis of information and evaluation of complex geological problems, the weekly WebCT quiz will cover the basic information covered in lecture and in the textbook. **The quiz will be available each week, from Tuesday, 12:15 PM until 12:15 PM the following Tuesday**, covering material from the previous week's lectures. If you come to class regularly and read the textbook, the quiz should only take about 10 minutes. **However, the quiz will be open note, and you will have 2 hours to take it. Once you start a session, you will have only one opportunity to finish it.** Make sure that you set enough time to finish the quiz. These quizzes are graded and you will have immediate feedback after you submit the answers. **Although there will be 16 quizzes, your quiz grade will be based only on your 10 best scores.** This gives you room to drop low scores or to miss a weekly quiz for whatever reason. Under no circumstances will you be able to take any quiz once the session time has ended. I suggest you do not wait until the last minute; power outages, hurricanes, snow storms, and other unpredictable events seem to occur at the worst times!

Learning evaluations

In order to have the best course learning experience, there will be regular opportunities to gauge both your learning and my teaching. An example of a learning evaluation might be to reflect on your lifetime goals and to see how (or if) your current college experience is useful for these goals. An example of the latter might be to offer suggestions on what is most successful about class and what is least successful. In this way, we are both mutual learners. For each of these assignments, I will give you an evaluation of 2, 1, or 0 based on my determination of your thoughtful participation. **Although there will be several learning evaluations during the semester, your grade will be based only on your 5 best evaluations. However, you must take the first two.**

Earth Watch

Geology is occurring all around us, every day of our lives! To help you appreciate this fact, you will post **five** recent geological events (floods, earthquakes, mud slides, etc.) to the course Bulletin Board on WebCT. The only requirements for these events are that (1) they are geological in nature (not weather or human-caused), (2) they are reported in a legitimate newspaper or website (you must cite your source), (3) they have not been reported from someone else in the class, and (4) your post is done within one week of the event happening. In addition to satisfying these criteria, your grade will be based on your reporting of the event: the “what, where, and when” of each event. **If you find an event that others in the class have already reported on, you can only get credit for your post if you add new information to the report.** Good sources include the internet and newspapers (many available for free around campus). Great references are the Earthweek section of the Sunday *Atlanta Journal-Constitution* (also available at <http://www.earthweek.com>) and the United States Geological Survey (<http://www.usgs.gov>), which give timely updates for important geological events.

Attendance and participation

I will take attendance at random times throughout the semester. Regular attendance and participation will give you full credit; regular absences and indifference will not. Appropriate participation includes attentiveness, participation in class discussions, respectful behavior, and courteousness to your peers. If you do not wish to participate in this class, you should strongly consider withdrawing before you have wasted your money, time, and effort.

Lateness

Lateness is to be avoided. To compel you to hand learning evaluations in when they are due, there is a lateness policy. **I will deduct 1 point per class that each is handed in late.** However, you can still hand in very late learning evaluations for up to negligible credit (25%) until the last day of lectures.

Withdrawing from class

The last day to withdrawal from class with a W is Monday, October 8. **If you are considering withdrawing, please come to speak with me first.** I want to help you do the best you can in this class.

Extra credit

Opportunities for extra credit in this course will be scarce and at my discretion. Details will be announced as appropriate. Although I want to support you in all your efforts, your success is ultimately your responsibility. Make the most of every exam and quiz, knowing you have limited opportunities to counter grades you later regret.

A promise

I want you to do well in this course, and I know you can. To encourage you to do the quizzes and learning evaluations (as if you wouldn't want to anyway), I will add 3% to your **final** course grade if you do **every** quiz, **every** learning evaluation, and **all five** Earth Watches, regardless of your performance in the class.

Academic honesty policy

I take academic honesty seriously. Plagiarism of any sort will not be tolerated. Plagiarism is the use of someone else's ideas or words as your own. This definition includes copying answers from another student's exam or assignment as well as using material from a book or internet site without acknowledging the source. **If you plagiarize any part of an exam or assignment for this course, you will receive a zero for the entire assignment and disciplinary action will be taken, including formal notification of the Vice President's office, who may take further disciplinary action.**

What if I miss a class?

It is your responsibility to come to class regularly and to take notes. If you miss a class, I assume you will contact at least two other classmates to learn what happened in class on the day you were absent, and to receive any materials distributed that day.

What if I come late to a class?

Students who arrive to class late not only miss important information, but also disrupt other students' learning. For this reason, I expect that you will be on time and ready to begin work.

12 ways to do well in this course:

- 1) Attend class regularly.
- 2) Visit the WebCT site regularly.
- 3) Come to class curious about the earth and prepared to learn.
- 4) Come to class early and open your notes before class starts.
- 5) Look over your notes from the previous class before class starts.
- 6) Introduce yourself to me. I ask questions to those I don't yet know!
- 7) Ask questions! Ask during class, ask during office hours, ask whenever.
- 8) Be courteous and respectful. Turn off your cell phone and iPod, do not chat, and do not walk around class. Your peers and I will be offended, and you may be asked to leave.
- 9) Look over your notes sometime after each class ends.
- 10) Read your textbook, and use it to make sense of those areas you didn't quite understand from lecture. A different perspective always helps.
- 11) Have a good night's sleep.
- 12) Attend class regularly.

Some additional things you should know

There are many resources available to you outside of class beside your professors. The Division of Student Services (<http://www.westga.edu/~stusrv/>) offers many resources, including disability, health, and career services. If you have or believe you have a documented disability, it is important to contact both them and me so that we can best facilitate your learning. Another useful resource is the Student Development Center (<http://www.westga.edu/~sdev/>) that offers personal, psychological, and academic counseling. If you feel overwhelmed, you should consider contacting them. Finally, the EXCEL Center (<http://www.westga.edu/~EXCELCenter/>) offers **free tutoring for this class**, assistance on study skills, student mentorships, academic advising, multicultural achievement programs, and much more. You have already paid for these excellent services; you should take advantage of them.

A final caveat

Your professor is not capricious, but he does reserve the right to alter this syllabus, class policies, or the class schedule to best accommodate the needs of the class. If such a change is needed, you will be given sufficient and timely notice, as well as the ability to contest or contribute to the alterations thereof.

Schedule		
<i>Date</i>	<i>Topic</i>	<i>Readings</i>
Aug. 16	Introduction to Earth and its composition	pp. 12-26, 53-64
Aug. 21	Minerals: The building blocks of rocks	Ch. 3
Aug. 23	The rock cycle: From minerals to rocks	Ch. 3. & pp. 26-31, 110-112, 128-131, 212-214, 246-253
Aug. 28	The rock cycle continued: The three rock types	pp. 112-124, 214-228, 253-256
Aug. 30	Igneous rocks	Ch. 4
Sept. 4	Volcanoes and igneous activity	Ch. 5
Sept. 6	...Case studies in volcanology	Ch. 5 continued
Sept. 11	Weathering and soil	Ch. 6
Sept. 13	EXAM #1	
Sept. 18	Sedimentary rocks! Coarse, crude, and limey	Ch. 7
Sept. 20	The nature of scientific inquiry	Ch. 1
Sept. 25	Origins: How geologists answered some of the most important scientific questions	Ch. 9 & pp. 36-53
Sept. 27	Landslides and mass wasting! Gravity in action	Ch. 15
Oct. 2	Running water, floods, and rivers: It's all downhill	Ch. 16
Oct. 4	...Running water continued	Ch. 16 continued
Oct. 9	Coasts and shorelines: Life's a beach	Ch. 20
Oct. 11	FALL BREAK (NO CLASS)	
Oct. 16	...Coastal processes continued	Ch. 20 continued
Oct. 18	Groundwater, wells and caves: Watch out below	Ch. 17
Oct. 23	Glaciers: Watch frozen water shape mountains	Ch. 18
Oct. 25	Deserts and wind: More hot air?	Ch. 19
Oct. 30	EXAM #2 (HAPPY HALLOWEEN)	
Nov. 1	Metamorphic rocks and metamorphism	Ch. 8
Nov. 6	Energy and earth's resources	Ch. 21
Nov. 8	Introduction to plate tectonics	pp. 53-64 & Ch. 3
Nov. 13	The dynamics and deformation of earth's crust	Ch. 10
Nov. 15	...Structural geology continued	Ch. 10 continued
Nov. 20	Earthquakes: Shake, rattle, and roll	Ch. 11
Nov. 22	HAPPY THANKSGIVING (NO CLASS)	
Nov. 27	The impact of earthquakes	Ch. 11 continued
Nov. 29	Vicious cycles of orogenous contact and nasty divorce: A tectonics primer	Ch. 13
Dec. 4	Geology of Georgia and the US	Ch. 14