

GEO 1001 (a.k.a. GEO 1101)

Earth and Its Environments



Spring Semester - 2008, 6:30 – 9:00 T, Science Classroom Building 325

LECTURER: Kent Kirkby, 103 Pillsbury Hall, 624-1392 (voice mail),
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OFFICE HOURS: Call or email to set up a time (anytime!)

Course Description

Geology is the study of the Earth and its life. This is the world you live in and whether you're aware of them or not, geological processes have played an integral role in shaping our society and will affect your entire life. GEO 1001 is an introduction to physical geology, including the Earth's materials, dynamic processes, and evolution. However, the Earth is a relatively closed system. Earth's physical and biological systems are intimately linked - human civilization being the most recent example. Human cultures are based on Earth resources and processes. Geological factors have played a pivotal role in our past and will largely determine our future. In turn, the human impact on Earth Systems is nearly unprecedented. In a relatively short period of time, humans have become one of the most potent geological forces. As human population and consumption continue to increase, it is critical that our society gains a better basic understanding of geological processes, in order to better manage our own future.

Course Resources

Contact me whenever you need help. I have limited formal office hours, since past experience suggests they are of little use to a student body with diverse schedules. So just email or phone me to arrange a meeting time. If I do not reply within 48 hours, send a reminder!

Course Web Site

Most of the course materials (syllabus, lecture outlines, handouts, etc.) will be posted on the web at:

<http://www.geo.umn.edu/courses/1001/>

Note that the course is NOT on WebCT, so you might want to bookmark the above link!

Course Materials

Lecture Text: Geology, by Stan Chernicoff and Donna Whitney – 4th Edition
Copies are available at the University Bookstore in Coffman Memorial Union, and at the Student Book Store on the corner of 15th and University.

Lab Manual: (GEO 1001 students only) Available only at the University Bookstore in Coffman Memorial Union in the same area as the lecture texts. You must pick up the lab manual **before** the first lab. **Labs do NOT meet until Monday, Jan. 28!**

Lec Outlines: Optional copies of lecture overheads with space for writing notes. These are NOT full lecture notes but essentially extended lecture outlines. These have been highly recommended by past students. They will be posted on the web site before class.

Course Grades

Grades will be based on labs, biweekly (every other week) quizzes and a comprehensive final quiz. Quizzes will be short (25 minute) closed-book exams that cover material from lecture and text. Although group work is encouraged for preparing for the quizzes, the quizzes themselves must be completed individually as independent work.

Breakdown of course grade:

GEO 1001:

Biweekly and Final quizzes	65%
Lab Component	35%

GEO 1101:

Biweekly and Final quizzes	100%
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Last Biweekly & Final quizzes will take place on Tuesday, May 13, at 6:30 p.m.

Note: The quizzes will be a combination of multiple choice and short answer questions. Only the best 5 of 7 scores will count towards your course grade. The comprehensive final quiz is mandatory and CANNOT be dropped, but is only weighted the same as each of the biweekly quizzes. The comprehensive final quiz, along with the last biweekly quiz, will be given during the final exam period.

Please do not skip the first two quizzes - this almost always comes back to haunt people!

Scholastic Conduct & Integrity

With the sole exception of the GEO 1001 in-class laboratory assignments, all assignments in GEO 1001 (such as lecture quizzes, lab quizzes or any extra-credit assignments) are expected to be completed individually. Scholastic misconduct is broadly defined as "any act that violates the right of another student in academic work or that involves misrepresentation of your own work. Scholastic dishonesty includes, (but is not necessarily limited to): cheating on assignments or examinations; plagiarizing, which means misrepresenting as your own work any part of work done by another; submitting the same paper, or substantially similar papers, to meet the requirements of more than one course without the approval and consent of all instructors concerned; depriving another student of necessary course materials; or interfering with another student's work." If you are uncertain as to what the University considers inappropriate behavior, please refer to the Regents' Policy on Student Conduct found at: <http://www1.umn.edu/regents/policies/academic/StudentConduct.html>

Grade Distribution

Grades will be based on a class curve or university scale - whichever provides the more generous distribution of grades. The University uses intermediate grades (A-, B+, etc.). **If you take the course on an S-N basis, University rule require that a 'S' must be equivalent to a 'C-' or better.** Note that this means the bar is slightly higher for S/N students to pass the course than A/F students, so if you are worried about passing, A/F may be the better choice.

Posting of Grades

To let you check the validity of my grade records and correct any errors, I will include the 'best 2 of 3', 'best 3 of 4', 'best 4 of 5' and 'best 5 of 6' scores on the 3rd, 4th, 5th and 6th quizzes. If you miss one of these quizzes, please email me to get the update.

COURSE GOALS

My apologies to the class rock hounds, but lectures will focus on processes and human interaction rather than minerals and rocks. The major course goals are to provide students with a better understanding of Earth Systems and the interaction of those systems with human society. To do this, an emphasis will be placed on the 'understanding' of geological processes, rather than factual information about geological processes. Consequently the quizzes will try to emphasize the use and interpretation of geological knowledge, rather than its simple recitation. You will have to know the meaning of some terms in order to do this, but relatively few questions will be on the definition of terms (unless I mess up completely).

Council on Liberal Education (CLE) Requirements:

Geo 1001 is designed to satisfy the CLE requirements as a physical science with lab and the environment theme. As a consequence, GEO 1001 will not just present a current understanding of the Earth, but will explicitly explore how that understanding came to be.

Studying the Earth's surface and present geological processes are relatively straightforward, if exciting, pursuits but, how do we know anything of the Earth's interior or of its nearly 4.6 billion year past? On a more fundamental level, how did our present understanding of the Earth originate? The ways our past and present views of the Earth were shaped by contemporaneous worldviews is one of the best demonstrations of science's social nature and the scientific process. Throughout the course, we'll examine how geological ideas were formulated and tested, and subsequently revised or replaced, as part of an ongoing exploration of our world.

Physical Science with Lab:

As stated above, the course's goal is to not simply to present our current understanding of the Earth, but to explore the reasons why we believe this knowledge is correct. What distinctions exist between data, interpretation, hypothesis and theory? How do we gain and test new information at each step of a scientific investigation? As important, how can we learn to recognize what it is that we still need to discover?

Geology is uniquely suited to portray this process as Plate Tectonics, our discipline's unifying theory, only arose within the past forty years. It is still in its early stages of development, so this is a remarkably exciting time to be involved in earth studies. Taking GEO 1001 this semester is comparable to taking a biology class only a few decades after Darwin's theory of evolution provided a new perspective from which to view the subject. Although we can clearly test and demonstrate many plate tectonic processes, there still remains a great deal we do not know about how the Earth works.

One of the class' other advantages is that, simply by living in the world, you already have an incredible amount of personal knowledge about the Earth. GEO 1001 is a wonderful opportunity to examine that knowledge, to gain new insights and skills in order to test and refine your ideas of how the Earth works, and to finally emerge with a better understanding of the dynamic nature of the Earth and its environments.

Environment Theme:

We live in a world that is an astonishingly complex integration of physical, biological and social systems. A significant amount of the course content revolves around the interactions between geological processes, human society and the biosphere. The scope of geological time and the course's global scale provide a unique perspective from which to explore this deeply integrated system. Throughout the course, the class examines the role of plate tectonics and surface processes in the development of present biotic communities and the ongoing evolution of human societies. In turn, human impacts on natural systems are explored through examination of river management projects, coastal development, ozone-depletion and human-induced climate change. This dual approach provides students with a strong appreciation of their role in a tightly integrated world and a knowledge base with which they can make more informed decisions about the interaction of human activities and natural systems.

The course's overall objective is nothing less than to provide you with a better understanding of the myriad interactions between human society and the environment so you can make informed decisions concerning your own place in a truly global society.

Lab Sections

Refer to the lab description for details on pre-labs, labs and take-home assignments!

This will be available in the lab sections and on the course web site.

Labs start on Monday, January 28!

Be sure to pick up your lab manual BEFORE attending your first lab section.

**You need to read the first lab and prepare for the first Pre-lab
BEFORE going to class!**

Course Policies/Etiquette

- Any reasonable accommodation will be provided for students with physical, sensory, learning and psychiatric disabilities. Please contact me for assistance as early as possible.
- If English is not your primary language and you would like to have additional time in which to take the quizzes, let me know. Anyone who needs additional time for the quizzes will be extended the same courtesy.
- Attendance is not mandatory (although it helps!). If you have to arrive late or leave early, please try to avoid disrupting other students.
- Please turn all cell phones off before coming to class. A ringing phone is almost impossible for others to ignore. Of course, medical conditions can override this request.

Suggestions

- Ask questions! No one wants to hear me prattle on uninterrupted for an hour, least of all myself. Don't be intimidated by the size of the class. If you have a question, a dozen other folks are probably wondering the same thing and they'll appreciate you asking. I've made some wonderful blunders in classes so don't hesitate to raise questions!

FOR GEO 1001 STUDENTS:

- Don't dismiss the lab portion of the course, nor rely on it for your grade. Because lab assignments are completed as group work, lab grades tend to fall within a very narrow range. Provided that you complete the lab portion of the course, your lecture quiz scores tend to have a greater impact on your overall course grade. Historically, the average lab grades fall between 30% and 31%, so earning a perfect score in the lab (35%) can raise your course grade from a 'B' to a 'B+', or from an 'A-' to an 'A', but it will not raise your course grade by a full letter grade. On the other hand, skipping labs can significantly lower your grade.

University policy prohibits sexual harassment as defined in the December 1998 policy statement, available at the Office of Equal Opportunity and Affirmative Action. Questions or concerns about sexual harassment should be directed to this office, located in 419 Morrill Hall.