GS1100, section 1 (lecture MWF 12-12:50) Fall 2005

Instructor: Dr. Alan Whittington
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Office Hours: Mondays 1 pm to 3 pm, or by appointment (email me)
WebCT page: **https://courses.missouri.edu/**

Note on WebCT: Log in using your pawprint and password. On-line quizzes (for credit, see below) will be available through the WebCT site, as will all your grades (lecture and lab). I will update the class WebCT page regularly, with lecture outlines and other material. Please check WebCT any time you miss a class because I will post important announcements and schedule changes here.

Lectures: MWF, 12:00-12:50 p.m., Keller Auditorium, Geology Building
Textbook: Earth: Portrait of a Planet (with CD-ROM), 2nd edition, by S. Marshak [W.W. Norton], ISBN 0-393-92502-1
Web site: **http://www.wwnorton.com/earth/earth/**

Labs: Make sure you attend the lab section you are registered for
Lab manual: Laboratory Manual in Physical Geology, 7th edition, edited by Richard M. Busch [Prentice Hall] ISBN 0-13-149745-6
Web site: **http://www.prenhall.com/agi/**

Exams: There will be two midterm lecture exams (**15% each**) and a comprehensive final exam (**30%**). All lecture exams will be multiple choice and graded by computer. If you wish to look over one of your lecture exams, you must see me during my office hours *within two weeks following that exam*. Most exam questions are taken from material covered in lectures, but when writing questions I assume that you have read every chapter of the textbook that has been assigned.

On-line quizzes: There will be 15 on-line multiple-choice type quizzes available through WebCT, that make up **15%** of your final grade. The quizzes can all be answered by reading the relevant chapter in the textbook (feel free to refer to the textbook while you are taking the quizzes). You will do best in this class if you *read the book in advance of lecture*. Five quizzes will close by the start of midterm 1, another 5 by midterm 2, and the last 5 will close at the start of the final exam. Each quiz is graded automatically by WebCT.

Laboratory: Lab scores make up **25%** of your final grade (5% for each of three quizzes during the semester; 10% for the comprehensive lab final in the last week of class), so make sure you attend lab regularly. The subject matter overlaps a lot with lecture, but the approach is different (more hands-on) so this is a great opportunity to learn in a different way. Any questions regarding your lab scores must be addressed with your lab instructor *in advance of the final lecture exam*.

Office hours: are to help you with questions related to materials covered in the lectures, not for making up for the class you missed. I will expect you to have tried to answer your question on your own by reading the textbook, CD-ROM or web site. If you have classes during my office hours, email me to arrange a different time.

If you miss a lecture exam or lab quiz: the final will be weighted more (e.g. miss one lab quiz, the final is worth 15% instead of 10%; miss one lecture exam and the final is worth 45%). If you miss a second quiz or midterm you will get a zero for that exam. Extra weighting of the final will ***only be allowed with written documentation, and ADVANCE NOTICE where possible*** – if necessary call the department office on (573) 882-6785 to leave a message during the exam (e.g. your vehicle has broken down). The same policy applies to lab quizzes - in this case inform your lab instructor.

Score distribution and grading: Because there are over 300 students in this class, there will always be someone who only needs one more point to receive the next higher letter grade. In fairness to your classmates, please do not ask for points to be added to your final score except in cases warranted by arithmetical error(s). There is **no work for extra credit** in this course; you are simply expected to complete all the work assigned. Letter grades will be *approximately* in accordance with ≥ 85% = A; ≥ 75% = B; ≥ 65% = C; ≥ 50% = D; < 50% = F. However, I grade on a natural curve, with cutoffs at breaks in the score distribution, and the cutoffs for particular grades may end up lower than listed here. This course has +/- grading.

Labs	25%	(3 quizzes worth 5% each, one final worth 10%)
Online quizzes	15%	access through WebCT; 15 total, due in three batches of 5
Midterm 1	15%	50 multiple choice questions
Midterm 2	15%	50 multiple choice questions
Final	30%	100 multiple choice questions (Fully comprehensive)

Accommodation of students with disabilities: If you need accommodations because of a disability, if you have emergency medical information to share with me, or if you need special arrangements in case the building must be evacuated, please inform me immediately. Please see me privately after class, or at my office (312 Geological Sciences).
To request academic accommodations (for example, a note-taker), students must also register with Disability Services, AO38 Brady Commons, 882-4696. It is the campus office responsible for reviewing documentation provided by students requesting academic accommodations, and for accommodations planning in cooperation with students and instructors, as needed and consistent with course requirements. For other MU resources for students with disabilities, click on "Disability Resources" on the MU homepage.
Students who have special conditions as addressed by the Americans with Disabilities Act, and who need any test or course materials to be furnished in an alternative format, should notify the instructor immediately. Reasonable efforts will be made to accommodate the needs of these students. Such students should also register with the Disability Services Office, A038 Brady Commons, phone 882-4696.

MU policy on academic honesty: Academic honesty is fundamental to the activities and principles of our university. Members of our academic community must be confident that every student's work has been responsibly and honorably acquired, developed, and presented. Any effort on the part of a student to gain an advantage not given to all students (***including the asking of an instructor to arbitrarily change a grade***) is viewed as dishonest, whether or not that effort is successful. Our academic community regards academic dishonesty as an extremely serious matter, with serious consequences that range from probation, to suspension, to expulsion. If you are ever in doubt about plagiarism, paraphrasing, quoting, or collaboration, consult your course instructor. In the event of a suspected incident of misconduct, I plan to use option B (M-book, page 11)

Important dates:	First day of classes	Monday Aug. 22nd
	Last day to register, add or change sections	Tuesday Aug. 30th
	First midterm	**Wednesday Sept. 21st**
	Last day to drop a course without a grade	Monday Sept. 26th
	Second midterm	**Friday Oct. 21st**
	Last day to withdraw from a course*	Monday Oct. 31st
	Last lecture	Friday Dec. 9th
	Final exam**	**Friday Dec. 16th 1.00 p.m.**

* On withdrawing from a course, you receive a grade of "WP" if passing based on all work assigned up to the date on the withdrawal slip. A grade of "F" is assigned if the student is judged to be failing at the time of the withdrawal and will be calculated into the GPA.
** Note that the date and time of the final exam is fixed by the university and alternative times cannot be arranged. Failure to turn up for the final exam will result in a score of zero.
See the University's "M-book" for more information: http://www.missouri.edu/~mbook/mbook.pdf

Aims of the course:

(1) To learn some geology (how the Earth works)
Geology means "the study of the planet Earth", including the materials of which it is made, the processes that act on these materials, the products formed, and the history of the planet and its life forms since its origin. This is a broad definition, including lots of physics, chemistry and biology in its many sub-disciplines. In this course we take a quick tour of pretty much everything.

(2) To learn how geology is relevant to you
Most of you are not Geology majors. Why should you care about geology? Some examples of why I find geology fascinating, and why it is important to everyone:
• One of the largest earthquakes in recorded history occurred in 1811-1812 at New Madrid, MO. Many small earthquakes happen all the time in this area, but why here? Can we predict them?
• Rocks in the St. François Mountains are nearly 1.5 billion years old. How did they form?
• Geologists are involved in locating and evaluating the natural resources that we all use and often take for granted (e.g. oil, coal, uranium, water). We are using many of these resources faster than they are naturally replenished. Will we run out of oil and/or safe drinking water? How can we reduce shortages and environmental problems in the future?

(3) To see how science gets done
Earth Science underwent a scientific revolution in the 1960's that was as profound as Einstein's relativity theory was to physics, or the theory of evolution was to biology. So how does a scientific revolution happen? Find out about the scientific method, and understand the difference between a "fact", a "theory" and a "hypothesis". Understanding <u>how</u> scientists "know" things is at least as important <u>what</u> they claim to know. This leads on to the final course aim.

(4) To encourage independent critical thinking and learning new concepts
If this course was just about learning "facts", we could distill the textbook into lots of definitions, and a few "facts". It would be incredibly dull. Of course we have to learn some definitions, but more important is to constantly ask yourself (and me) "how do we know this?" and "how can I apply this way of looking at things to other subjects?"

PROVISIONAL LABORATORY SCHEDULE, PRINCIPLES OF GEOLOGY, FALL 2005
(remember: check the WebCT site regularly for changes, other announcements, etc.)

Lab no.	Tuesday	Thursday	Lab Topic (# in lab book)	Quizzes
1	Aug. 23rd	Aug. 25th	Observing and Measuring (1)	
2	Aug. 30th	Sep. 1st	Topographic Maps (9)	
3	Sep. 6th	Sep. 8th	Plate Tectonics (2)	
4	Sep. 13th	Sep. 15th	Minerals (3)	
5	Sep. 20th	Sep. 22nd	Minerals (3) & Rock Cycle (4)	Quiz #1 (1-4)
6	Sep. 27th	Sep. 29th	Igneous Rocks (5)	
7	Oct. 4th	Oct. 6th	Sedimentary Rocks (6)	
8	Oct. 11th	Oct. 13th	Metamorphic Rocks (7) & Rock review	
9	Oct. 18th	Oct. 20th	Dating Geologic Events (8)	Quiz #2 (5-8)
10	Oct. 25th	Oct. 27th	Streams and floods (11)	
11	Nov. 1st	Nov. 3rd	***Rock Bridge State Park***	***Field Trip***
12	Nov. 8th	Nov. 10th	Groundwater (12)	
13	Nov. 15th	Nov. 17th	Geologic Structures (10)	Quiz #3 (9-12)
	Nov. 22nd	Nov. 24th	Thanksgiving Break – no Lab	
14	Nov. 29th	Dec. 1st	Earthquakes (16)	
FINAL	Dec. 6th	Dec. 8th	Lab Final Exam	comprehensive

PROVISIONAL LECTURE OUTLINE, PRINCIPLES OF GEOLOGY, FALL 2005
(remember: check the WebCT site regularly for changes, other announcements, etc.)

	Topic	Textbook chapter(s)
	Introduction	Prelude and Appendix
1.	Cosmology	1
2.	Earth's Interior	2, Interlude C
3.	Continental Drift	3
4.	Plate Tectonics	4
5.	Minerals	5
6.	Rock Cycle & Igneous Rocks	6, Interludes A and B
7.	Sedimentary Rocks	7
8.	Metamorphic Rocks	8
9.	Geologic Time	12, Interlude D
10.	Rivers	17, Interlude E
11.	Groundwater	19
12.	Glaciers and climate change	22, 23
13.	Energy and Natural Resources	14
14.	Structural Geology	11
15.	Earthquakes	10
16.	Volcanoes	9