GEOS-114-01, 02 Historical Geology Fall 2007

Lecture: Tuesday s & Thursdays, 1:00 to 2:15, University Hall 1050
Lab: Section 01: Mondays 10:00 to 11:50, Mallory 353
Section 02: Thursdays 2:30 to 4:20, Mallory 353

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Office hours: Tuesdays, 10-11
Wednesdays, 2-3

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Office hours: 1 hour before and after lab

Class Summary and Course Goals: Historical geology is an introduction to the basic history of the Planet Earth. I am going to introduce the basic systems that make up the planet (biosphere, lithosphere, atmosphere, and hydrosphere) and how those systems have changed over time. The interconnectedness of the systems will also be addressed. By the end of the course, you will hopefully understand basic concepts such as:

- The age of the Earth
- Plate tectonics
- The major eras of Earth's history
- History of life on earth
- Evolution & Mass Extinctions
- How different systems interact other
- Climate change over time

Required Texts and Readings: Earth System History, by Steven Stanley is the textbook. Other readings will be posted to Blackboard.

Materials: Notebooks and pencils/pens required for lab and lecture. Bring a notebook to lab. Other materials will be provided.

Class attendance and activities: I don't technically take attendance in class. However, there will be several in-class activities, some of which are graded, that you can't participate in if you're not there. Readings are meant to supplement, not replace, the lectures, so you will miss valuable material if you miss class. Can you pass this class and not come lecture? Probably. Will you do well? Probably not. However, missing lab is different. Exercises done in lab almost always involve material physically in the classroom; if you're not there, you can't do it. If you need to rarely miss lab for a pre-excused absence, arrangements can be made. However, rescheduling will not become a routine and will only be done on a case-by-case basis.

Exams/Paper: There will be 3 in-class exams and a final/term paper. The final will focus on the material covered in the last part of the course but will include other material presented throughout the semester. Unless there are dire circumstances, make-ups will not be provided for tests or other assignments without prior arrangements.

Grading: The total points for the class are:

Labs:	180	(12 labs x 15 pts. each)	31%
Exams:	250	(3 tests: 100 pts., 75 pts., 75 pt.s)	43%
In-class participation:	45		8%
Final EXAM ***OR*** TERM PAPER:			
	100		17%
TOTAL:	575		100%

You have the option to take the final exam OR to write a term paper. If you do one option you CANNOT do the other. The final exam is described above. The term paper option should be a well-written, properly referenced paper 4-5 pages long that explores a topic we covered in class. The topics could include evolution, the formation of the planet, future climate projections, mass extinctions, plate tectonics, or some other topic we've covered in class. IF you would like to talk to me about your topic let me know. If you choose a broad topic such as evolution you should focus on one aspect or example of evolution rather than trying to cover the entire topic in 5 pages. The paper should be properly referenced so that I know where you obtained your information, and your sources should be more than websites and the textbook. If you need help on referencing let me know. If you ***ANY QUESTIONS*** let me know beforehand: saying you didn't know about the above conditions after the fact will not count. The paper is due the last class of the semester: December 13th.

Final grades are determined on the standard system:

A:	>93%
A-:	90 to <93%
B+:	87 to <90%
B:	83 to <87%
B-:	80 to <83%
C+:	77 to <80%
C:	73 to <77%
C-:	70 o <73%
D+:	67 to <70%
D:	63 to <67%
D-:	60 to <63%
F:	<60%

Academic honesty: I expect your final grade in this course to reflect the effort and thought **you** put into it. I further expect each of you to hold yourself to the highest standard when it comes to academic integrity. On group assignments I encourage sharing and collaborating, but there are certain exercises when you and you alone are responsible for the work. If you have any questions about this policy, please just ask me or the TA.

This is directly from the university's code of conduct: "*Academic dishonesty is any attempt by a student to submit as his/her own work that which has not be completed by him/her or to give improper aid to another student in the completion of an assignment, i.e., plagiarism. No student may intentionally or knowingly give or receive aid on any test or examination, or on any academic exercise, that requires independent work.*"

For a complete list see: http://www.montclair.edu/deanstudents/regulations1.html#violations

Historical Geology (GEOS 114): subject to change

1	Thur	6-Sep	Class #1	Welcome to the course, intro to geology; major themes	Stanley, Ch. 1
2	Tue	11-Sep	2	Examining the Earth's system: Lithosphere, Atmosphere	Stanley, Ch. 2, pp 85-87
2	Thur	13-Sep	3	Examining the Earth's system continued: Hydrosphere and Biosphere	Stanley, Ch. 4, pp. 18-20, 61-78
3	Tue	18-Sep	4	Deep Time: Age of the Earth; Dating methods; Major Eras	Stanley, Ch. 6
3	Thur	20-Sep	5	Sedimentary Depositional Environments and Fossils	Stanley, Ch. 5, pp. 49-54
4	Tue	25-Sep	6	Evolution as a Process; Evolution and the Fossil Record	Stanley, pp. 61-76, Ch. 7
4	Thur	27-Sep	7	Plate tectonics	Stanley, Ch. 8
5	Tue	2-Oct	8	Mountain building	Stanley, Ch. 9
5	Thur	4-Oct		EXAM 1	
6	Tue	9-Oct	9 Archean	Formation of the solar system and planet; formation of the continents	Stanley, pp. 245-262
6	Thur	11-Oct	10 Precambrian	Early life, Atmospheric oxygen levels; Snowball Earth	Stanley, pp. 262-294
7	Tue	16-Oct	11 Early Paleozoic	Cambrian Explosion and Mass extinctions	Stanley, Ch. 13
7	Thur	18-Oct	12	Taconic Orogeny & Sea level/Glaciation connections	Stanley, Ch. 13 cont.
8	Tue	23-Oct	13 Middle Paleozoic	Expansion of marine life	Stanley, Ch. 14
8	Thur	25-Oct	14 Late Paleozoic	Marine life and plants on land; Evolution of Insects	Stanley, Ch. 15
9	Tue	30-Oct		EXAM 2	
9	Thur	1-Nov	15	Atmospheric CO_2 and Climate; CO_2 and weathering; Regional Examples	Stanley, pp. 234-238, Ch. 15
10	Tue	6-Nov	16 Early Mesozoic	Life in the Oceans and on Land	Stanley, Ch. 16
10	Thur	8-Nov	17	Paleogeography; Regional Examples;	Stanley, Ch. 16
11	Tue	13-Nov	18 Cretaceous	Life: Flowering plants; Dinosaurs; Evidence for Mass Extinctions	Stanley, Ch. 17
11	Thur	15-Nov	19 Paleogene	Evolution of Mammals and other life	Stanley, Ch. 18
12	Tue	20-Nov		EXAM 3	
12	Thur	22-Nov		NO CLASS: Happy Thanksgiving	
13	Tue	27-Nov	20	Climate Change in the Paleogene	Stanley, Ch. 18
13	Thur	29-Nov	21 Neogene	Evolution of land plants; Migration of Mammals; Evolution of Humans	Stanley, Ch. 19
14	Tue	4-Dec	22	Glaciers and Climate Change	Stanley, Ch. 19
14	Thur	6-Dec	23 Holocene	Retreat of the glaciers and rapid climate change	Stanley, Ch. 20
15	Tue	11-Dec	24	Extinctions of mammals	Stanley, Ch. 20
15	Thur	13-Dec	25	Holocene climate records and implication for future climate predictions ***TERM PAPER DUE*** *if choosing that option*	Stanley, Ch. 20