Geological Sciences 104 - Earth Science - Spring 2007

The holistic study of our home planet

Textbook: Earth Science and the Environment, by Thompson and Turk (third edition)
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Integrated Earth Science? What's this course about? What are the course goals?

1. To develop a basic understanding of the most essential natural and physical processes that have shaped the Earth throughout its history and continue to shape the planet and the life on it today. These include, for example:

- The structure and large-scale movement of the Earth's interior, and effects of this on the surface of the Earth including earthquakes and plate tectonics
- The nature and movement of water in the Earth's oceans, atmosphere, and land.
- The Solar System and Planetary Astronomy, including the Earth/Sun and Earth/Moon system

2. To develop a basic understanding of the interconnected and dynamic nature of all processes on and around Earth

Modern Earth science is not a static collection of rocks or memorized lists of facts. Earth science more than other "basic" sciences is more about similar processes occurring over different time scales in different materials, and is, therefore, highly interdisciplinary and integrated. Understanding the Earth involves understanding integrated systems, and the interactions of all the component parts.

3. To build confidence and familiarity with scientific inquiry, analysis, and quantification.

Investigating scientific ideas personally is the best way to build understanding of science, and it may help development of your math and other quantitative skills, as well as general abilities to develop and test hypotheses.

Policies and Grading:

3 Exams (at 100 points each), 2 out of 3 count...……....200
Final exam…….....200
Set of assignments through Blackboard.....….100 Total Points: 500

Grades are based on a percentage of the total points achieved as follows:

90-100% = A; 80-89% = B; 70-79% = C; 60-69% = D, below 60% = F

(Grades within a boundary will receive + or –, depending on class average, improvement, participation, and attendance.)

- Exams consist of MC and matching questions. The lowest or missed exam score will be dropped for your convenience. The final exam is not dropped. It will be *cumulative.* Exam questions primarily will be drawn heavily from the lectures and class discussions.

- The Blackboard assignments may include quizzes and short written exercises. No late assignments are accepted at all. To get credit, you must submit assignments directly through Blackboard, as directed, and not through personal email. You will have a window of time to submit your assignments of 1 to 2 weeks.

- Note: Computer or printer problems are not valid excuses for missing any homework deadlines.

- Announcements will be both delivered in class and posted in Blackboard.

- Attendance will be noted. Attendance is found to be directly proportional with overall grade quality. Please do not miss class! If you miss classes, it is your responsibility to get notes from a fellow student and not to fall behind. The instructor will not provide notes personally or electronically outside of class time.

- **Please note:** Exams will not be rescheduled for your personal convenience. Exams cannot be made up. If *you plan to miss an exam, then that is the exam that you will drop*. No extra credit given.

- If you are taking the course CR/NC, and want to pass the class, you must obtain a C or above.
- Grading errors, if any, must be brought to my attention within 1 week of receiving an exam/assignment score.

Scantrons: You need the large red scantron form Parscore F-288 (enrollment form) for the first exam only. Thereafter, you will need the smaller red scantron form Parscore F-289.

TENTATIVE CLASS SCHEDULE

Note that the following lecture and exam schedule *is subject to change* depending upon the progression of the course. You will be notified in class.

Week of		General Topic	Readings Covered
M	18 Jan	Course Intro: The Earth System; Energy, Matter, Time	Ch. 1
		Earth in Space:	
M	22 Jan	Solar System: The Terrestrial Planets and Other Local Rocks Solar System: The Jovian Planets and Other Local Snowballs	Ch. 23, 24
M	29 Jan	The Sun, our star **The Solid Earth:** Geologic Processes: Plate Tectonics	Ch. 24 Ch. 6
M	5 Feb	Geologic Processes: Plate Tectonics Earthquakes and Earth's Interior	Ch. 6, 9 Ch. 7
M	12 Feb	Earthquakes and Earth's Interior	Ch. 7
W	**14 Feb**	***EXAM 1 (on or around this date)* – Chapters 1, 6, 7, 9, 23, 24**	
M	19 Feb	Minerals and Rocks: Building blocks of Earth Minerals and Rocks: the Rock Cycle	Ch. 2 Ch. 3, 10
M	26 Feb	Minerals and Rocks; Natural resources Heat within - Volcanism	Ch. 3, 5 Ch. 8
M	5 Mar	The Earth's Evolving Crust and Geologic Time Life on Earth – Life History	Ch. 4 Ch. 4
M	12 Mar	Geochemistry and Life on Earth: a mutual balance	
W	**14 Mar**	***EXAM 2* – *(on or around this date)* – Chapters 2, 3, 4, 5, 8, 10**	
M	19 Mar	**Earth's Oceans and Ice:** Water on Earth 1: Surface water & Ice Water on Earth 1: Surface water & Ice	Ch. 11, 12 Ch. 13
		26-30 Mar – Spring Break	
M	2 Apr	Water on Earth 2: Earth's Oceans Earth's Oceans: Circulation, Waves, Sea level	Ch. 15 Ch. 16
M	9 Apr	Earth's Oceans: Circulation, Waves, Sea level Summary and Review	Ch. 16
M	**16 Apr**	***EXAM 3* – *(on or around this date)* – Chapters 11, 12, 13, 15, 16** **Earth's Atmosphere:** Our Atmosphere – characteristics	Ch. 17, 18, 19
M	23 Apr	Weather and Climate Deserts	Ch. 20 Ch. 14
M	30 Apr	Climate Change and Human Civilization Changing Earth: Global Warming	Ch. 21 Ch. 21

M 7 May – last day of class. Summary and Review for final (time permitting)

Wed 16 May – *FINAL EXAM*, 10.30 – 12.30. The final is cumulative but emphasizes the last part of semester, that is, chapters 14, 17, 18, 19, 20, 21. Total points: 200/500. The **final cannot be re-scheduled! The final cannot be dropped!**

Note: Please no mobile phone handling during lecture and, particularly, during exams.