

## **GEO 401 – Physical Geology (Spring 2012)**

Unique Numbers: 27050-27120 (increment of 5)

Lecture: JGB 2.324; TTh 9:30-11:00 AM

Laboratory Sections: JGB 2.310; time according to your unique number

**Professor:** Jung-Fu “Afu” Lin, JGB 4.140, 471-8054, afu@jsg.utexas.edu

Office hours: TTh 11:00am - 12:00pm, or by appointment

### **Textbooks (both mandatory):**

*Lecture:* **Understanding Earth**, by Grotzinger, Jordan, Press, and Siever, 6<sup>th</sup> edition

*Laboratory:* **Laboratory Manual in Physical Geology**, by Busch, R. M., ed., 9<sup>th</sup> edition

### **General:**

This course is an introduction to the basic concepts of physical geology. There are no prerequisites for this course. There are 3 hours of lecture each week (TTh 9:30-11:00), and one 2-hour laboratory session (specific to your unique #).

### **The goals of this course are for you to:**

Understand physical geology of our planet

Realize that the Earth changes in time and space

Critically evaluate scientific information

### **Lecture:**

The lecture schedule (see below) includes the reading assignments for each date and is intended as a guideline only: the lecture schedule is subject to change as needed. The lectures and reading assignments are designed to complement and reinforce each other. *Anything* presented in either the lectures or reading assignments is “fair game” on examinations. I do not take attendance, but you will likely do better on the exams if you come to class and review session. Prolonged disruptions during lecture will not be tolerated--**please be considerate to your classmates and to me. Please turn off cell phones and pagers!** If you bring a laptop to class, please sit where you will not disturb your neighbors.

### **Exams:**

During the semester there will be three lecture exams (multiple choices only), given during the regular lecture period, and one final exam. Each exam will cover material from the date of the previous exam up through the class before the exam. Please realize that the material in this course builds upon itself to some degree. The lecture final exam is cumulative and will cover material from the entire course. ***I do NOT give lecture make-up exams, except legitimate reasons (medical illness or family emergency).*** You will be allowed to drop your lowest test score from the lecture exams (see grading below). You must bring your UT ID cards to all exams. You will need a pencil and an eraser but not a calculator and you will not be allowed to have cell phones, laptops or anything else out during exams. Pencils and erasers will NOT be provided. I may also give a few pop quizzes during my lectures.

## Laboratory:

**Laboratory attendance is mandatory.** Credit will not be given for work turned in without attending a lab session. You must attend the lab for which you enrolled (unless prior arrangements have been made with the TA or with me). It will be MUCH efficient for you to complete each lab assignments by working diligently during each lab period. Most of the assignments require materials only available to you in the lab. However, in case you need extra time to finish writing up the assignments, lab exercises are due at the *beginning* of the next session for that specific lab section (e.g., for a lab session meeting Wednesday from 2-4, the lab assignment is due the following Wednesday at 2 pm). Late assignments will not be accepted. **You are permitted to drop one lab assignment from your final grade.** For all labs, plan on bringing standard supplies: laboratory textbook, mechanical pencil, eraser, pen, ruler, protractor, and calculator. Group discussion about laboratory projects is encouraged, but **all work submitted for grading must be an individual's sole effort and all written work must be in your own words! Do not let anyone copy your work.** Academic honesty is expected, and the usual University rules will be applied to plagiarism or cheating.

Lab exams will be administered during the regular lab times. The laboratory final exam will NOT be comprehensive, but the final 6 labs build upon the material covered prior to the lab midterm exam and thus you will need to retain knowledge of material from the first 6 labs for optimal performance on the lab final exam.

## Grading:

### Lecture (>66%)

2 mid-term exams: 40% (20% each)

Final exam is worth 25%

Pop quizzes: extra credits of 5-10%

### Laboratory (35%)

Laboratory exercises (11%)

Laboratory midterm exam (10%)

Laboratory final exam (14%)

There are 3 exams during normal lecture hours and one final exam. **I will drop the lowest score of the 3 mid-term exams.** Everyone must attend the final exam which is worth 25%. There are 12 lab exercises. I will drop the lowest score. The remaining 11 exercises make up 11% of your grade. There is one lab midterm (worth 10% of your grade) and one lab final (worth 14% of your grade). *The laboratory component of this class is worth 35% of your total grade.* Pop quizzes will be counted as extra credits (approximately 5-10 points of your total grade). ***I do not give make-up exams!***

## Office Hours:

Office hours: TTH 11am - 12pm, or by appointment

The instructor and TAs are happy to meet with you outside of class during office hours or by appointment to discuss any material. My office hours are for your benefit. I would be happy to schedule an appointment with you if you cannot come to my normal office hours. Please come see me if you have questions. . Exam review sessions will be scheduled approximately one week prior to the lecture exams. Your TAs will be of great help to your questions as well.

## **Blackboard:**

In this class I use Blackboard (<https://courses.utexas.edu/webapps/login/>) to distribute course materials, to communicate online, and to post grades. Call the ITS Help Desk at 475-9400, Monday through Friday 8 a.m. to 6 p.m., for help with Blackboard. Check your Blackboard and email regularly for class updates. Email is recognized as an official mode of university correspondence; therefore, you are responsible for reading your email for university and course-related information and announcements.

## **Special Needs:**

The University of Texas is committed to helping students with special physical or learning needs. Any student with a documented disability who requires academic accommodations should contact Services for Students with Disabilities (SSD) at (512) 471-6259 (voice) or 1-866-329-3986 (video phone). Students with special needs should contact me as soon as possible to ensure that your needs are met in a timely manner. Students with special test-taking needs should contact me *at least* one week before a scheduled exam.

**The University of Texas Honor Code:** “The core values of The University of Texas at Austin are learning, discovery, freedom, leadership, individual opportunity, and responsibility. Each member of the University is expected to uphold these values through integrity, honesty, trust, fairness, and respect toward peers and community.”

Students are expected to read and to strictly adhere to the University’s Honor Code and written policies on academic dishonesty. Cheating or plagiarism will not be tolerated. Any student caught violating University policy will be referred to the Dean of Student Affairs for disciplinary action. **All written work must be in your own words!**

## Physical Geology: Class Schedule

Week	Date	Topic	Reading	Lab
1	17-Jan	Introduction-Why should we care about Physical Geology? Scientific method		No lab this week
	19-Jan	#1: Earth system	Ch.1	
2	24-Jan	#2: Plate tectonics	Ch. 2	1: Plate tectonics
	26-Jan	#3: Earth materials I	Ch. 3	
3	31-Jan	#4: Earth materials II	Ch. 3	2: Minerals
	2-Feb	#5: Igneous rocks and processes	Ch. 4	
4	7-Feb	#6: Sedimentary rocks	Ch. 5	3. Igneous rocks
	9-Feb	#7: Metamorphic rocks and processes	Ch.6	
5	14-Feb	#8: Deformation	Ch. 7	4. Sedimentary rocks
	16-Feb	<b>****FIRST EXAM****</b>		
6	21-Feb	#9: Geological time	Ch. 8	5. Metamorphic rocks
	23-Feb	#10: Terrestrial planets	Ch. 9	
7	28-Feb	#11: Continents	Ch. 10	6. Geological time
	1-Mar	#12: Geobiology	Ch. 11	
8	6-Mar	#13: Volcanoes	Ch. 12	<b>Lab Midterm Exam</b>
	8-Mar	#14: Earthquakes	Ch. 13	
9		<i>Spring break—no classes, no labs</i>		
10	20-Mar	No class		7. Earthquakes
	22-Mar	<b>****SECOND EXAM****</b>		
11	27-Mar	#15: Interior of the Earth	Ch. 14	8. Topographic maps
	29-Mar	#16: The climate system	Ch. 15	
12	3-Apr	#17: Weathering and soils	Ch. 16	9. Geological structures
	5-Apr	#18: Hydrologic cycle and groundwater	Ch. 17	
13	10-Apr	#19: Rivers and streams	Ch. 18	10. Streams
	12-Apr	<b>****THIRD EXAM****</b>		
14	17-Apr	#20: Winds, deserts, and desertification	Ch. 19	11. Groundwater
	19-Apr	#21: Oceans and costal processes	Ch. 20	
15	24-Apr	#22: Glaciers	Ch. 21	12. Field geology
	26-Apr	#23: Landscapes	Ch. 22	
16	1-May	#24: Human impact on Earth	Ch. 23	<b>Lab Final</b>
	3-May	Overview		
17		Final Exam		