

## GENERAL INFORMATION

### GEOLOGY 401, SUMMER SESSION, 2011

Lecture: MTuWThF 10-11:30 a.m.  
Geology Building (JGB) 3.222

Lab section 1: MW 2:30→5 p.m. (unique number 80615)

Lab section 2: TTh 2:30→5 p.m. (unique number 80620)

Each unique number corresponds to a unique combination of lecture and lab meeting times.

**Professor:** Leon E. Long, JGB 4.156  
Office hours: MTuWTh 11:30→12:30, or whenever the door is open  
Office phone: 471-7562  
Home phone: 459-7838  
e-mail: leonlong@jsg.utexas.edu

**Teaching Assistant (TA):**  
Scott H. Hoag, MA aspirant  
Office hours: TuW 1:30→2:30, or by appointment  
e-mail: shoag@mail.utexas.edu

Dr. Long will lecture in the mornings, and Scott Hoag will teach labs in the afternoons. During the mornings of June 13 through 17, Dr. Laurie Duncan will be a guest lecturer.

**Textbook and lab manual** (combined into a single volume): Long, L. E., 2009, *GEOLOGY*: 14<sup>th</sup> ed., Pearson Custom Publishing, 600 pages.

**Lab:** You are already registered for both lecture and lab (in **Room 2.306**), and participation in the latter is required in order to pass GEO 401. There will be no labs during the first two days of class. Labs begin on Monday, June 6.

Weights assigned	1 <sup>st</sup> quiz	17%
to grades:	2 <sup>nd</sup> quiz	18%
	Laboratory grade	35%
	Lecture final exam	<u>30%</u>
		100%

**Assignment of final grade:** The grades will be curved, but the boundaries between letter grades are determined by the instructors' judgment and are different every semester. Recently in GEO 303, which is a "sister" course taught during the long semesters, the *A/B* boundary has been in the high 80s, the *B/C* boundary in the high 70s, the *C/D* boundary in the high 60s, and the *D/F* boundary in the high 50s. All of these estimates are approximations and may vary according to class performance. We are purposely vague about grade boundaries until the end of the course when we can examine in detail the distribution of final weighted averages.

**Absences:** Dr. Long takes an understandably dim view of unexcused absences from quizzes. Unexcused absences generally will result with a severe penalty, possibly a grade of zero. Please contact your instructors as soon as possible if you must miss a quiz or lab for a legitimate reason.

**Students with disabilities:** Upon request, UT provides appropriate academic accommodations for qualified students with disabilities. For more information, contact the Office of the Dean of Students at 471-5017 or see the web site: <http://deanofstudents.utexas.edu/>

## Objectives of GEO 401

GEO 401 is a one-semester survey of the entire field of physical geology. We recognize that you probably have had no formal instruction in geology. Polls show that nearly all of you have taken high school biology and chemistry, and nearly as many of you have taken physics. We will draw upon certain elementary concepts in these other sciences, and they will be reviewed when they are discussed in GEO 401. Mathematics in this course consists of simple arithmetic.

Geology draws heavily from these other disciplines. The earth is complex, and not many aspects of it can be studied in isolation in a laboratory. This very complexity means also that geology includes a greater variety of subject material than many other sciences have. We may classify the subject of geology into three main areas: the *configuration* of the earth (the shapes, sizes, and compositions of its parts), the *processes* that constantly change the configuration, and the *origin* and *history* of the earth. Traditionally, introductory geology has been taught as two courses. GEO 401 (*physical geology*) emphasizes the configuration and processes. A follow-up course in *historical geology* addresses origins, fossils, organic evolution, etc. In GEO 401, lectures present the more theoretical subjects, and you will have opportunity in lab to look at minerals, rocks, maps and cross sections, etc., go into the field locally in Austin, and hold small-group discussions.

In addition, we invite you to participate in an optional activity, which is a brown-bag lunch discussion (time to be announced) about how geology fits into your larger philosophical or theological worldview.

## SCHEDULE OF LECTURE TOPICS

### Part I: *Introduction to the earth* (Chapters 1, 2, 3, 5, 7, 9, and 11)

- Origin of the solar system; the earth's constituent parts
- Chemistry of the earth; crystals and minerals
- Igneous, sedimentary, and metamorphic rocks
- Measurement of geologic time, earliest earth history

### Part II: *Reading the strata* (Chapter 13, but not Chapters 12 and 15)

- Principles of stratigraphy
- History of the development of geologic thought

### Part III: *Geophysics, plate tectonics* (Chapters 16, 21, and 22)

- Earthquakes, seismic waves
- Earth's deep interior
- Continental and oceanic crust, and the mantle
- Gravity, isostasy, origin of mountains
- Earth magnetism
- Physiographic features of the ocean basins
- Continental drift, plate tectonics

### Part IV: *Processes occurring at the earth's surface: geology and you* (Chapters 23, 24, and 25)

- Streams, deltas, coasts
- Glaciers
- Past and future climates
- Geology of petroleum and natural gas
- Population, natural resources, looking to the future of humanity

Chapters 4, 6, 8, 10, 17, 18, 19, 20, 26, and 27 (but not 14) are covered in lab.

## LECTURES, READING ASSIGNMENTS, AND EXAMS

<i>Material on</i>	<i>Dates of lectures</i>	<i>Reading assignment</i>
<i>Quiz 1</i>	June 2 through June 13: 7 lectures	Chapters 1, 2, 3, 5, 7, 9, 11, and 13

Tuesday, June 7. Last day to drop GEO 401 with a *Q* (= *Quit* with no academic penalty) for a possible refund.

Friday, June 10. (Tentative) voluntary **review session** for Quiz 1; time and place to be decided.

To assist you in preparing for lecture exams, we shall publish the lecture PowerPoint files (with explanatory notes) on Blackboard. Immediately preceding an exam, we shall publish condensed lecture notes on Blackboard.

Monday, June 13. **Quiz 1** covering the first 7 lectures, and textbook chapters mentioned above.

<i>Material on</i>	<i>Dates of lectures</i>	<i>Reading assignment</i>
<i>Quiz 2</i>	June 14 through June 22: 7 lectures	Chapters 25 through page 538, and then 16 and 21

Wednesday, June 22. Last day to change registration in GEO 401 from a letter grade to pass/fail, or the opposite.

Wednesday, June 22. (Tentative) voluntary **review session** for Quiz 2; time and place to be decided.

Monday, June 27. **Quiz 2** covering lecture material *since* Quiz 1 (i.e., second group of 7 lectures) and corresponding portion of the textbook.

Monday, July 4. Independence Day holiday; no lecture or lab.

<i>Material emphasized on final exam</i>	<i>Dates of lectures</i>	<i>Reading assignment</i>
	June 23 through July 7: 8 lectures	Chapters 22, 23, 24, and 25, pages 538 through 554

Morning of Friday, July 8. (Tentative) "extended office hours" for questions and summaries of class topics; participation is voluntary.

## LECTURE FINAL EXAMINATION

Times and places of final examinations are not set until after Summer Session has begun. Based upon recent history, we anticipate that the lecture final exam will occur on Friday, July 8, 2-5 p.m. in a room to be assigned, subject to confirmation by the Office of Official Publications. The lecture final examination is comprehensive, but with heavy emphasis on material given post-Quiz 2.

## GEO 401 LABORATORY

### *Grade in laboratory*

Performance in the laboratory accounts for 35 percent of your total grade in GEO 401. Grades from the lecture examinations and laboratory will be weighted together and calculated as *one* combined grade for the course. Thus you will either pass or fail the entire course, *not* the lecture or laboratory separately.

The 35 possible points in the laboratory will be distributed as follows:

- 33% on a laboratory mid-term examination to be given on Monday, June 20, or Tuesday, June 21.
- 32% on a laboratory final examination to be given on Wednesday, July 6, or Thursday, July 7.
- 35% on attendance, participation in discussions, and performance on exercises and short quizzes.

### *Homework assignments and short quizzes*

Scott Hoag has the option to conduct unannounced quizzes. There will also be homework assignments and discussion topics to prepare. Consistent attendance and participation in lab, and performance on such quizzes and exercises, constitutes 35% of your laboratory grade, which translates to 12% of the course grade.

### *Make-up labs, late papers*

If for any reason you must miss a laboratory session, there will be no make-up laboratory as such. If you are registered in a MW lab, you could (with permission) make up a missed lab on a Tu or Th.

Homework assignments will not be accepted late. Their solution will be discussed when they are turned in, and therefore persons who submit late papers would have an unfair advantage.

## GEO 401 AND YOUR COMPUTER

Note: the discussion below contains computer jargon. Please ask Dr. Long to explain any unfamiliar terms.

**Blackboard:** We will post course general information, course materials, and grades to Blackboard, a UT supported computer-based course management system that is accessible *only* to those enrolled in UT courses, such as GEO 401.

### *How to access Blackboard:*

- Use a web browser to access the main UT web page: <http://www.utexas.edu/>
- Click the link to Blackboard at the center of the page under “Learn Here.”
- You will be asked to provide your UT-EID and password.
- There will be a link for each course in which you are enrolled, including “(11SU) PHYSICAL GEOLOGY.” For more information on how to access and use Blackboard, see this web site: <http://www.utexas.edu/cc/blackboard/tutorials/student/index.html>
- You will need the ability to open, close, and save files and attachments, in particular a PDF reader (Adobe Acrobat Reader, which is free software)
- Also necessary is an e-mail account.

*Uses of Blackboard in GEO 401:*

Below are definitions and uses of the major subunits in the Blackboard facility.

- *Announcements* regarding logistics of GEO 401 (example: schedule of review sessions)
- *Syllabus* an electronic copy of this document
- *Faculty Information* how to contact your instructors
- *Course Documents* where we post figures from class, copies of class handouts, lab materials etc.  
This is the most important domain in Blackboard. Among other things, we will post condensed lecture notes here immediately before each quiz and before the lecture final exam. We will also post lecture PowerPoint files.
- *Communication* tool to send course-related e-mails to classmates and instructors
- *My Grades* where we will post your laboratory and lecture grades

**Electronic Posting of Grades:** Quiz grades, lecture final exam, and laboratory mid-semester and final exam grades will be posted under the “My Grades” link on Blackboard. Blackboard is protected with your UT-EID and password such that your grades can be viewed only by you and your instructors.

**Access to Computers at UT:** You do not have to own a computer to access the computer-based GEO 401 resources. All libraries and the SMF (Student Microcomputer Facility) have public computers for student use *for free*, but many require you to set up an IF (Individually Funded) account. Use of the computers via the IF account is free, but other services such as printing will be charged to your IF account.

To set up an IF account, subscribe online (using UT-EID) at this site:

[https://utdirect.utexas.edu/its/account/user\\_agreement.WBX](https://utdirect.utexas.edu/its/account/user_agreement.WBX)

Consult this site for more information: <http://www.utexas.edu/its/account/index.html>