

SYLLABUS

GEOLOGY 303, SPRING SEMESTER, 2013

Lectures are in Jackson Geology Building (JGB) 2.324, the Boyd Auditorium

Lecture section 1: MW 2→3 p.m. (unique numbers 27300 through 27350)

Lecture section 2: TTh 11→12 noon (unique numbers 27240 through 27295)

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

Professors: Leon E. Long, Geology Building (JGB) 4.156

Office hours: MTWTh 10→11, or by appointment

Office phone: 471-7562

email: leonlong@jsg.utexas.edu

Laurie S. Duncan (Catherine), E. P. Schoch Building (EPS) 4.102A

Office hours: MW 3→4, TTh 12 noon→1, or by appointment

Office phone: 413-5917

email: laurieduncan@jsg.utexas.edu

Drs. Duncan and Long take turns lecturing to both lecture sections.

Textbook and lab manual (combined into a single volume): Long, L. E., 2011, *GEOLOGY*: 15th ed., Pearson Learning Solutions, 600 pages.

Lab: You are already registered to attend one 2-hour laboratory session per week in Geology Building 2.306. Participation in laboratory is required in order to pass the course. There will be no labs during the first several days of class. **Labs begin on Tuesday, January 22.**

Weights assigned	1 st lecture quiz	17%
to grades:	2 nd lecture quiz	18%
	Laboratory grade	35%
	Lecture final exam	30%
		100%

Assignment of final grade: The grades will be curved, but the boundaries between whole letter grades are determined by the instructors' judgment and are different every semester. Recently 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 a point or so 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 and academic honesty: Drs. Long and Duncan take an understandably dim view of unexcused absences and have no tolerance for any type of cheating. Unexcused absences from quizzes generally will result in a grade of zero. Please contact one of the instructors as soon as possible if you have missed a quiz 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 consult the web site: <http://deanofstudents.utexas.edu/>

Objectives of GEO 303

GEO 303 is a one-semester survey of the entire field of geological science. 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 303. 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. GEO 303 treats all of these categories, emphasizing one or another of them differently along the way. The lectures present the more theoretical subjects, and you will have opportunity in lab to study minerals, rocks, fossils, and maps, go into the field locally in Austin, and hold small-group discussions.

In addition we invite you to participate in two optional activities. They are a one-day field trip west of Austin to visit the Llano Uplift, scheduled for Saturday, February 23, and 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. *History and development of life* (Chapters 12, 13, and 15)

- Origin of life
- Stratigraphy, fossils, earliest metazoans
- Geologic history of vertebrate animals
- 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, 14, 17, 18, 19, 20, 26, and 27 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>	January 14 (or 15) through February 12 (or 13): 9 lectures	Chapters 1, 2, 3, 5, 7, 9, 11, and 12 through page 214

Monday, January 21. **Martin Luther King Holiday**; no lecture or lab.

Wednesday, January 30. Last day to drop GEO 303 for a possible refund.

Monday, February 18, 7:30 p.m., JGB 2.324. **Review session** for Quiz 1; participation is voluntary.

Tuesday, February 19 (or Wednesday, February 20). **Quiz 1** covering first 9 lectures, and textbook chapters and pages mentioned above.

Saturday, February 23. All-day field trip (approximately 10 hours) to the Llano Uplift west of Austin. Transportation by air-conditioned bus equipped with restroom is **free**; participation is voluntary and all are invited. Also invited at a modest expense are guests who are not students in GEO 303 as long as bus space is available; priority goes to students registered for GEO 303.

<i>Material on</i>	<i>Dates of lectures</i>	<i>Reading assignment</i>
<i>Quiz 2</i>	February 14 (or 18) through March 26 (or 27): 9 lectures	Chapters 12 (page 215 and follow- ing), 13, 15, 16, and 21 through page 431

Monday, March 11 through Friday, March 15, **Spring Break Holiday** (no lectures or labs).

Monday, April 1. Last day to drop GEO 303 with a *Q* (= *Quit* with no academic penalty) except for urgent, and substantiated, nonacademic reason approved by your dean. Last day to change registration in GEO 303 from a letter grade to pass/fail, or the opposite.

Monday, April 1, 7:30 p.m., JGB 2.324. **Review session** for Quiz 2; participation is voluntary.

Tuesday, April 2 (or Wednesday, April 3). **Quiz 2** covering lecture material *since* Quiz 1 (i.e., second group of 9 lectures) and corresponding portion of the textbook.

<i>Material emphasized on final exam</i>	<i>Dates of lectures</i>	<i>Reading assignment</i>
	March 28 (or April 1) through April 30 (or May 1): 9 lectures	Chapters 21 (page 432 and fol- lowing), 22, 23, 24, and 25

Thursday, May 2. No lecture. This is necessary to make the MW and TTh lecture sections have the same number of lectures. Paired lectures are given Tu-W and Th-M, and there had been no Monday lecture on January 21, Martin Luther King Holiday.

Monday, May 6, 10 a.m., Welch 1.316. "Extended office hours" for questions and summaries of class topics; participation is voluntary.

LECTURE FINAL EXAMINATION

A special time and date will be arranged for the lecture final exam with **both lecture sections together**. This unified examination will **not** occur during a period designated in the Course Schedule for classes that meet TTh at 11 a.m., or MW at 2 p.m. We anticipate Thursday, May 9, 7-10 p.m. in a room to be assigned, subject to confirmation by the Office of Official Publications. We will offer the exam at an alternative time if you have a scheduling conflict; we anticipate Friday, May 10, 7-10 p.m.

GEO 303 LABORATORY

Grade in laboratory

Laboratory sessions are conducted by Teaching Assistants (TAs), who are graduate students pursuing Masters or Ph.D. degrees in geological science. Performance in the laboratory accounts for 35 percent of your total grade in GEO 303. 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 are distributed as follows:

- **33%** on a laboratory **mid-semester examination** to be given during the week of Monday, March 4 through Friday, March 8.
- **32%** on a laboratory **final examination** to be given during the week of Monday, April 29 through Friday, May 3.
- **35%** on **attendance, participation** in discussions, and **performance** on homework exercises and short quizzes: your “weekly grade.”

Homework assignments and short quizzes

Your TA 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. Your laboratory TA teaches more than one section, and if she or he is willing, you may make arrangements with your TA (or another TA) to attend a later section in which the same material is being taught.

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.

Office hours, problems

Each TA will maintain office hours this semester, and will notify you of office hours and room location. If you should have problems in laboratory that cannot be handled by your Teaching Assistant, you should contact:

Prof. Leon Long
Office phone: 471-7562
email: leonlong@jsg.utexas.edu

or

Dr. Laurie Duncan
Office phone: 413-5917
email : laurieduncan@jsg.utexas.edu

GEO 303 and your Computer

Blackboard: We will post course general information, course materials, and grades on Blackboard, a UT supported computer-based course management system that is accessible *only* to those enrolled in UT courses such as GEO 303.

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 two links for this class: “(13S) GEO 303 Lecture” and “(13S) GEO 303 Lab.”
- 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 email account.

Uses of Blackboard in GEO 303:

Below are definitions and uses of the major Blackboard subunits for GEO 303.

- *Announcements* Information regarding logistics of GEO 303
- *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 and lecture Power-Point files. We also will post review materials here immediately before each quiz, and before the lecture final exam. This is the most important domain in Blackboard for GEO 303.
- *My Grades* Where we will post your laboratory and lecture grades. The major components of your final course grade will be posted under “My Grades” at the “(13S) GEO 303 Lecture” link. Your TA will post weekly lab grades under “My Grades” at the “(13S) GEO 303 Lab” link.

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 303 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

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

Procedure to Obtain Email (if you do not already have an email account): Information may be found at this web site:

<http://www.utexas.edu/computer/email/>