

SYLLABUS

GEOLOGY 303, FALL SEMESTER, 2012

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

Lecture section 1: MW noon → 1 p.m. (unique numbers 27230 - 27280)

Lecture section 2: TTh 11 a.m. → noon (unique numbers 27170 - 27225)

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

Professors: Richard Ketcham, Geology Building, JGB 3.316E
Office hours: MW 11→noon, TTh 10→11, or by appointment
Office phone: 471-6942
e-mail: ketcham@jsg.utexas.edu

Laurie (Catherine) Duncan, E.P. Schoch Building, EPS 4.102
Office hours: MW 1→2 pm, TTh, noon- 1 pm, or by appointment
Office phone: 232-7149
e-mail: laurieduncan@jsg.utexas.edu

Drs. Ketcham and Duncan 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

Many items pertinent to GEO 303 (documents, announcements, condensed lecture notes, images, your test scores, and more) can be accessed via Blackboard (see page 5 for detailed instructions).

You are already registered to attend one 2-hour laboratory session per week in JGB 2.306. Participation in laboratory is required in order to pass the course. **Labs begin on Tuesday, September 4th.**

Weights assigned	1 st quiz	19%
to grades:	2 nd quiz	16%
	Laboratory grade	35%
	Lecture final exam	30%
		100%

The final course 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 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. Ketcham and Duncan take a 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.

Upon request, UT provides appropriate academic accommodations for qualified students with disabilities. For more information, contact the Office of the Dean of Students at 471-1201, or open the web site: <http://deanofstudents.utexas.edu/>

Objectives of Geology 303

Geology 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 85% or more have had chemistry and physics. We will draw upon certain elementary concepts from these other sciences, and we will review these topics when they come up in GEO 303. Mathematics in this course will consist of simple arithmetic.

Geology is an interdisciplinary science. 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. 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 through time. 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 in lab you will have opportunity to practice essential geological lab and field methods including classifying minerals, rocks and fossils, using topographic and geologic maps, going into the field locally in Austin, and holding discussions as part of a small group.

In addition, you are invited to participate in two optional activities, neither of which cost money. They are a one-day field trip west of Austin to visit the Llano Uplift, tentatively scheduled for October 20th, and a brown-bag lunch discussion (time and place to be announced) of how geology fits in to your larger philosophical or theological worldview.

Lecture Topics

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

- Origin of the solar system and Earth
- 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
- Processes of organic evolution
- Geologic history of vertebrate animals

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

- Earthquakes, seismic waves
- Deep interior of the earth
- 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
- Geology of petroleum and natural gas
- Glaciers
- Past and future climates
- Population, natural resources, looking to the future

Chapters 4, 6, 8, 10, 14, 17, 18, 19, 20, 26, and 27 are covered in lab.

LECTURE, READING ASSIGNMENT, AND TESTING SCHEDULE

Textbook: Long, L. E., 2011, *GEOLOGY*: 15th ed., Pearson Learning Solutions, 600 pages

<i>Material on</i>	<i>Dates of lectures</i>	<i>Reading assignment</i>
<i>Quiz 1</i>	August 29 (or 30) through September 27 (or Oct 1) 9 lectures	Chapters 1, 2, 3, 5, 7, 9, 11, and 12 through page 214 inclusive

Monday, September 3. Labor Day holiday; no lecture or labs.

Friday, September 14. Last day to drop GEO 303 for a possible refund.

Sunday, Sept 30, 7:30 p.m., JGB 2.324. **Review** session for Quiz 1; participation is voluntary.

October 2 or 3, during your regular lecture period. **Quiz 1**, 19% of your final course grade.

Saturday, October 20. 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.

Tuesday, November 6. 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. Also, last day to change registration in GEO 303 from a letter grade to pass/fail, or the opposite.

<i>Material on</i>	<i>Dates of lectures</i>	<i>Reading assignment</i>
<i>Quiz 2</i>	October 4 (or 8) through October 30 (or 31) 8 lectures	Chapters 12 (following page 214), 13, 15, and 21 through page 431 inclusive

Monday, November 5, 7:30 p.m., JGB 2.324. **Review** session for Quiz 2; participation is voluntary.

November 6 or 7, during your regular lecture period. **Quiz 2**, 16% of your final grade.

<i>Material emphasized on</i>	<i>Dates of lectures</i>	<i>Reading assignment</i>
<i>final exam</i>	November 1 (or 5) through De- cember 5 (or 6) 9 lectures	Chapters 21 (following page 431), 22, 23, 24, and 25

Thursday and Friday, November 22 and 23: Thanksgiving holidays; no lecture. Labs will be held on Monday, November 19, but no labs on November 20 through 21.

FINAL EXAMINATION FOR LECTURE PART OF THE COURSE

Monday, December 10, 10 a.m., JGB 2.324. “**Extended office hours**” review for the final exam; participation is voluntary.

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 *Fall 2012 Course Schedule* for classes that meet MW at noon or TTh at 11 a.m. We anticipate **Thursday, December 13, 7-10 p.m.** in a large auditorium, the date, hour, and locality to be confirmed by the Registrar’s Office.

GEOLOGY 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 averaged and *one* combined grade will be calculated for the course. Thus you will either pass or fail the entire course, *not* the lecture or laboratory separately. See page 1 for the breakdown of your total course grade.

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

- **33%** on a laboratory **mid-semester examination** to be given in your scheduled laboratory period during the week of Tuesday, October 16 through Monday, October 22.
- **32%** on a laboratory **final examination** to be given in your scheduled laboratory period during the week of Monday, December 3 through Friday, December 7.
- **35%** on **attendance, participation** in discussions, and performance on exercises and short quizzes. Thus, this component of your performance in lab is an important 12% of the overall course grade.

Quizzes and homework assignments

Your TA has the option to conduct unannounced quizzes. There will also be homework assignments and discussion topics to prepare.

Make-up laboratories, 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 to attend another 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 students 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 location. If you should have problems in laboratory that cannot be handled by your Teaching Assistant, you should contact:

Prof. Richard Ketcham
Office phone: 471-6942
email: ketcham@jsg.utexas.edu

or

Dr. Laurie Duncan
Office phone: 232-7149
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: “(12F) GEO 303 Lecture” and “(12F) 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 e-mail account.

Uses of Blackboard in GEO 303:

Below are definitions and uses of the major Blackboard subunits we will use in this class.

- *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 PowerPoint files. We also will post review materials here immediately before each quiz and before the lecture final exam. This is the most important domain on Blackboard for GEO 303.
- *Discussion board* Where you will be able to discuss GEO 303 topics and assignments with your classmates. We prefer that you use the Blackboard discussion board instead of other social networking sites, like Facebook, so that no one is left out of the conversations.
- *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 “(12F) GEO 303 Lecture” link. Your TA will post weekly lab grades under “my grades” at the “(12F) 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, and your grades can only be viewed 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 E-mail (if you do not already have an e-mail account): Information may be found at this web site:

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