

## GEOLOGY 303 SYLLABUS (revised)

### SPRING SEMESTER, 2014

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

Lecture section 1: MW 2 → 3 p.m. (unique numbers 27710 through 27760)

Lecture section 2: TTh 8:30 → 9:30 a.m. (unique numbers 27650 through 27705)

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: MTuWTh 9:30 → 10:30 a.m., or by appointment

Office phone: 512-471-7562

e-mail: leonlong@jsg.utexas.edu

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

Office hours: MW 3 → 4 p.m., TuTh 10 → 11 a.m., or by appointment

Office phone: 512-232-3906

e-mail: 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*: 15<sup>th</sup> ed., Pearson Learning Solutions, 600 pages. An “iClicker+” remote is also required (earlier or later models are also acceptable).

**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 21.**

Weights assigned	1 <sup>st</sup> lecture quiz	16%
to grades:	2 <sup>nd</sup> lecture quiz	17%
	Laboratory grade	35%
	Lecture final exam	27%
	Lecture participation (iClicker)	5%
		100%

**Assignment of final grade:** The grades will be curved, but the boundaries are determined by the instructors' judgment and are different every semester. We assign grades on a plus/minus scale. Recently the boundaries have been as follows. *A-/B+*: high 80s; *B-/C+*: high 70s; *C-/D+*: high 60s; *D-/F*: high 50s. All of these estimates are approximations that may vary a point or so according to class performance, to be examined in detail at the end of the semester.

**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. Sharing of quiz and exam questions outside of your lecture or lab section is forbidden. Page 5 discusses our computer policies.

**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 471-6259, or consult the web site: <http://ddce.utexas.edu/disability/>. If you have already received permission for accommodations in this course, please give your letter to Dr. Duncan *and* send her a brief email message so we can send you specific information about SSD accommodations in GEO 303.

## 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 15, 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.

## REVISED GEO 303 LECTURE/EXAM SCHEDULE

### LECTURES, READING ASSIGNMENTS, AND EXAMS

<i>Material on</i>	<i>Dates of lectures</i>	<i>Reading assignment</i>
<i>Quiz 1</i>	January 13 (or 14) through February 12 (or 13): 9 lectures	Chapters 1, 2, 3, 5, 7, 9, 11, and 12 through page 214

Monday, January 20. **Martin Luther King Holiday**; no lecture or lab.

Wednesday, January 29. Last day to drop GEO 303 for a possible refund.

Saturday, February 15. **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.

Monday, February 17, 7:30 p.m., JGB 2.324. **Review session** for Quiz 1; participation is voluntary.

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

<i>Material on</i>	<i>Dates of lectures</i>	<i>Reading assignment</i>
<i>Quiz 2</i>	February 17 (or 18) through March 26 (or 27): 9 lectures	Chapters 12 (page 215 and following), 13, 16, and 21 through page 431

Monday, March 10 through Friday, March 14, **Spring Break Holiday** (no lectures or labs).

Monday, March 31. Last day to drop GEO 303 with a *Q* (= Quit with no academic penalty) except for an 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, March 31, 7:30 p.m., JGB 2.324. **Review session** for Quiz 2; participation is voluntary.

**Wednesday, April 2 (or Thursday, 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 31 (or April 1) through April 30 (or May 1): 9 lectures	Chapters 21 (page 432 and following), 22, 23, 24, 25

Monday, May 5, 10 a.m., JGB 2.324. "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 TuTh at 8:30 a.m., or MW at 2 p.m. We anticipate **Thursday, May 8, 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 9, 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 PhD. 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.

In lab, you will be organized into small groups. Typically, at the beginning of lab your group will discuss and answer questions proposed by your TA. We encourage you to work collaboratively, although your submitted product will be your own.

The 35 possible points in the laboratory are distributed as follows:

- **33%** on a laboratory **mid-semester examination** given during the week of Monday, March 3 through Friday, March 7.
- **32%** on a laboratory **final examination** given during the week of Monday, April 28 through Friday, May 2.
- **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 arrange 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, please contact Dr. Long and/or Dr. Duncan.

## GEO 303 and your Computer

**Canvas** We will post course general information, course materials, and grades on Canvas, a UT supported computer-based learning management system (LMS) that is accessible *only* to those enrolled in UT courses such as GEO 303. Canvas is protected with your UT-EID and password such that your grades and other confidential information can be viewed only by you and your instructors.

### *How to access Canvas:*

- Use a web browser to access the main UT web page: <http://www.utexas.edu/>
- Click on “Blackboard/Canvas” below “Learn Here,” provide your UT-EID and password, and click the “Canvas Login” button.
- You will find a link for each course in which you are enrolled in the “Courses” pull-down menu, including two links for this class: “GEO 303 Lecture” and “GEO 303 Lab.”
- “GEO 303 Lecture” is our main Canvas site where you will find general course information, lecture materials, and the major components of your final course grade. Your TA will post laboratory materials and assignments at the “GEO 303 Lab” link.
- 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 Canvas in GEO 303:*

- *Home* Information regarding logistics of GEO 303 including announcements, a course calendar, and a link to an electronic version of this document.
- *Modules* Where we post figures from class, copies of class handouts and lecture PowerPoint files. We also will post review materials immediately before each quiz, and before the lecture final exam.
- *Grades* Where we will post your grades. The major components of your final course grade and your iClicker tally will be posted at “GEO 303 Lecture” link. Your TA will post weekly lab grades at the “GEO 303 Lab” link.
- *Discussions* Where you can discuss GEO 303 related topics with your classmates and instructors.
- *Clicker* Register your iClicker remote within Canvas.

**iClicker** You must have an “iClicker+” remote for lecture participation in GEO 303, worth 5% of your final weighted average grade. To ensure iClicker credit, **register your remote within Canvas** by the beginning of our third lecture (January 21 or 22). You will need to enter your first name, last name, UT EID, and remote ID. The remote ID consists of numbers (and possibly letters) visible on the back or bottom of your remote.

Please bring your iClicker to every lecture to receive full credit for 5% of your final course grade. Because everyone occasionally forgets, we will drop the lowest two iClicker sessions with no penalty. If you have a problem with your iClicker, please send Dr. Duncan an email message. For more information, visit <http://www.iclicker.com>.

**Computers and academic honesty** Our desire is for every student to have equal opportunity to succeed. Please do not discuss GEO 303 study materials on Facebook or Twitter, which are social media. Instead, use the open forum “Discussion” on Canvas, which accomplishes the same purpose and is available to all GEO 303 students. We also discourage reposting of GEO 303 course materials (practice quizzes, review notes) online.

Sharing of exam questions between lecture or lab sections, whether by digital or other means, is cheating, and will result in serious disciplinary action. Loaning your iClicker to another student to record your attendance when you are absent is cheating. The penalty is a 0% lecture participation grade for both of you.

**Access to computers at UT** If you do not have to own a computer, you can use a public computer *for free* in all libraries and the SMF (Student Microcomputer Facility). If you print material, you may have to set up an IF (Individually Funded) account to pay for costs.

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>

**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/its/email/>

### **The University of Texas Common Core Curriculum**

GEO 303 may be used to fulfill three hours of the natural science and technology (Part I or Part II) component of the common core curriculum and addresses the following four core objectives established by the Texas Higher Education Coordinating Board: communication skills, critical thinking skills, teamwork, and empirical and quantitative skills.