OXFORD COLLEGE

Geology 142Q - Evolution of the Earth

Spring 2014

Goals for the course: Geology 142Q (Evolution of the Earth) has been designed for either the geology/environmental studies major or for a student who wants to complete an interesting laboratory science course sequence as part of their liberal arts education. This course continues the concepts learned in physical geology. Thus, Geology 141 is a prerequisite.

Some key elements in the study of geology include the scientific method and observational skills. The course will introduce these early in the semester and continue to reinforce them throughout the rest of the term. At the end of the course, students will understand how the scientific method applies to geology. Their observational skills will be considerably improved through the analysis of rock and fossil specimens.

The focus of the course is on the history of the earth in context of changing environments. As such, the methods for analysis of Earth history are highly stressed. The students will critically examine the evidence for the interpretation of Earth history throughout the semester. At the end of the course, students will be able to understand the nature of evidence and the basis of scientific interpretations. This will be done through an integration of lecture, laboratory, and field trips.

Much of this evidence is in the form of changes in tectonic plate distribution, changing environments as represented by the rock record, and biological change as seen through fossils. The students will gain a considerable knowledge of biology, ecology, and paleoecology. We will spend time studying modern environments of deposition so that we may interpret past environments as seen in the rocks. The geologic history of North America will be the primary focus. It is my hope that at the end of the course, students will have developed a deep appreciation for the planet that we live on through an understanding of its geologic nature and history.

Course Announcements

Instructor: Dr. Stephen W. Henderson

Office: 106 Pierce Hall

Office Phone: (770) 784-8345

Office Hours: Monday and Wednesday (10:45–12:00) and other times by appointment or stopping by. I'm usually in my office and available.

Text: Levin, 2013 The Earth Through Time, 10th ed.

Organization: The class will meet for lecture two times each week on Tuesdays and Thursdays from 10:00-11:40 a.m. The laboratory section is from 1:40-4:40 p.m. on Tuesday.

Attendance: All students are expected to attend all scheduled lecture and laboratory sessions. Attendance will be taken. No unexcused cuts are allowed in lab. Students who have an unexcused absence in lab will have their final grade reduced 3 points per absence. A student who has three or fewer lecture absences for the entire semester will receive the addition of two points to the final course average. There are no excused absences. Students having five or more lecture absences will have their final course grade reduced one point per absence starting with the fifth absence.

Being late to class can be rude and distracting. If it happens, please be as unobtrusive as possible when you enter class. Three times of being late will be considered equal to one absence. If you come in late, it is your responsibility to see me immediately after class to ensure that you are marked late and not absent. No adjustments will be made at a later time. When you are in class, you must be attentive and not disturb others. Leaving a class early will be counted as an absence as does sleeping through a class or being generally inattentive. Cell phones are to be turned off and put away and can't be used during lecture or laboratory tests (including use as calculators).

Reading Assignments: You must read the text assignments prior to class so that you are best prepared for an in depth understanding of the material presented in lectures. You will be responsible for the text readings on the tests. Prior to laboratory, you must read over any material given out in advance for that day's exercise. Otherwise, you will find yourself lost and out of favor with your instructor.

Class Etiquette: In class, you should be concentrating on learning. Anything that distracts from this is contrary to the educational process. Therefore, cell phones are to be turned off and cannot be used in class or lab (including as calculators during tests). Bring a calculator to lab.

Honor Code: The Honor Code of Oxford College applies to Geology 142. All quizzes, tests, and exams will be done individually with no non-sanctioned additional materials or help. The laboratory exercises can be done with other students and with the instructor's help. If you are unsure whether or not an action may result in an honor code violation, ask the instructor first. The Honor Code at Oxford College is quite serious.

Grading System: Geology 142 will use the plus-minus grading system. The distribution of grades is as follows:

A	93-100	C+	77-79
A-	90-92	C	73-76
B+	87-89	C-	70-72
B	83-86	D+	67-69
B-	80-82	D	60-66
		F	59 and below

Evaluation: Lecture work will comprise 48% of your final average and lab will comprise 52%.

Highest half-test (lowest half-test grade is dropped) Lecture Half-Test #1 on 2/4 Lecture Half-Test #2 on 4/3	15%
Lecture Test on 3/6	15%
Final Exam Weds 4/30 from 2:00-5:00 pm	15%
Lab Reports	22%
Lab Exam #1 on 2/11 in Lab	10%
Lab Exam #2 on 4/22 in Lab	10%
Barrier Island Field Trip Report or Paper	10%
Class Participation in lecture	3%

The **lecture half-tests, full test, and final exam** will consist of short to medium-length essays, combined with objective multiple choice and matching questions. The **lab reports** will be turned in at the end of lab and the **lab exams** will cover material learned in lab.

The **barrier island field trip report** will be based upon our weekend field trip to one of the barrier islands on the Georgia coast and will contain the original field notes combined with a typewritten narrative. If you have a very serious excuse for not making the trip, a 7-10 page research paper on some aspect of barrier islands can be substituted for this grade. The trip will be scheduled as soon as possible. We will leave on Friday after classes and return Sunday night. In addition, I am planning a one-day field trip to go fossil collecting in north Georgia (either a Saturday or Sunday).

Class participation is based primarily upon responses in lecture, including asking questions, providing insights into the material, and answering questions. In other words, being part of the discussion. Being an active learner is an excellent way to gain much from the course and receive the high participation grade that you deserve.

Student work submitted as part of this course may be reviewed by Oxford College and Emory College faculty and staff for the purposes of improving instruction and enhancing Emory education.

Tentative Lecture Schedule and Reading Assignments:

Day	**Topic for the Week**	**Text Assignment for the Week**

Tu 1/14	Early History of Geology	Chapters 1 & 2
Th 1/16	Time & Geology	Chapter 3
Tu 1/21		
Th 1/23	The Sedimentary Archives	Chapters 4 & 5
Tu 1/28		
Th 1/30		
Tu 2/4	**Lecture Half-Test #1**	
Th 2/6		
Tu 2/11	The Fossil Record	Chapter 6
Th 2/13		
Tu 2/18	Evolution	Chapter 6
Th 2/20		
Tu 2/25	Earth: Origin & Evolution	Chapter 8
Th 2/27		
Tu 3/4		
Th 3/6	**Lecture Test**	

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Tu 3/18	Origin of Life	Chapter 8
Th 3/20		
Tu 3/25	Precambrian	Chapters 8 & 9
Th 3/27		
Tu 4/1	Early Paleozoic Geologic History	Chapter 10
Th 4/3	**Lecture Half-Test #2**	
Tu 4/8	Late Paleozoic Geologic History	Chapter 11
Th 4/10		
Tu 4/15	Life of the Paleozoic	Chapter 12
Th 4/17		
Tu 4/22	Mesozoic Geologic History	Chapter 13
Th 4/24	Life of the Mesozoic	Chapter 14

Laboratory Schedule for Geology 142Q:

Lab Day	Title of Exercise
1/14	**No Lab**
1/21	Description & Classification of Sedimentary Rocks
1/28	Interpretation of Sedimentary Rocks
2/4	Geologic Maps & Earth History
2/11	**Lab Test #1**
2/18	Taphonomy & Fossil Preservation
2/25	Early Paleozoic Life
3/4	Late Paleozoic Life
3/18	Mesozoic Life
3/25	Cenozoic Life
4/1	Paleoecology & Environmental Reconstruction
4/8	Paleoecology Slab Lab
4/15	Field Mapping, Geologic History, & Environments
4/22	**Lab Test #2**