

## **GEOLOGY 101 (4 CR) – SYLLABUS (Fall 2011)**

“INTRODUCTION TO THE EARTH”

**INSTRUCTOR:** Dr. Art Cohen, EWSC Rm 404, Ph 7-4502, cohen@geol.sc.edu --  
BS -Univ Del; PhD -The Pennsylvania State University. (Office Hrs: 10:45-12:45, T/Th)

**LAB COORDINATOR:** Darrell Terry, EWSC 211, 7-3143, dterry@geol.sc.edu

**LECTURES:** Tues/Thurs: 9:30-10:45PM, PSC 210. **If you miss a lecture, it is your obligation to obtain notes from someone else in class. Do not ask the professor for notes & do not expect to pass the exams by reading only the book chapters, as exams come from lectures not the book.**

**LABS:** All labs are held in EWSC Rm 101. EWSC is the connecting wing between Coker Life Sciences Bldg. and the Jones Physical Sciences Bldg. Note: labs meet at a different times from the lectures. To find the time your lab meets, check your course schedule in VIP.

**FINAL EXAM:** Tuesday, Dec 6th - 2:00 p.m. in PSC 210.

**TEXTBOOK:** Tarbuck & Lutgens –“Earth: An Intro to Physical Geology” (9<sup>th</sup> or 10<sup>th</sup> ed), Pub by Pearson, ISBN: 9780321663047 - **Note: The textbook is a supplement to the lectures. It is not a replacement for the lectures. Do not expect to pass exams by reading only the textbook chaps.**

**LAB MANUAL:** Lab Manual in Physical Geology, 9<sup>th</sup> ed., Busch (AGI/NAGT): 9780321689573

**OVERALL COURSE OBJECTIVES:** This course introduces the science of Geology, with a primary emphasis on the physical processes that form and transform the Earth. The lectures and laboratory assignments are intended to complement one another, so it is imperative that you pay due attention to both.

**LEARNING OBJECTIVES:** By the end of the term, successful students should be able to do the following:

- Describe the **techniques used to tell minerals apart and to group them** into families
- Understand **the rock cycle** and why we have igneous, metamorphic, and sedimentary rocks
- Explain the difference between **absolute** and **relative** dating and how these dating methods are being used by geologists to reconstruct the history of the earth
- Define the concept of **plate tectonics** and understand how it helps to explain many other geologic features and processes
- Describe the characteristics of the two kinds of igneous rocks, those that extrude onto the earth’s surface (e.g., **volcanoes**) and those that harden deep within the earth
- Understand the concept of the **hydrologic cycle** & how water flows beneath & above ground
- Describe how **coal** forms and how studying SC swamps can help to understand its origin
- Explain to someone without any scientific background what **fossils** are and how they can be used to reconstruct the history of the earth

- Explain to your little brother or sister how **sand dunes** are formed
- Give the geologic evidence that **glaciers** once covered most of the State of New York
- Imagine what the earth was like when **dinosaurs** ruled; when **trilobites** inhabited the ocean floors; or when there were no **flowers**.
- Use the methods learned in this course to “**read the history hidden in rocks**”\*

\*Disclaimer: The above learning objectives are not intended to encompass all things that I will expect you to learn for the exams. I will be very clear in the lectures what I expect you to know for each exam, so I would strongly advise that you not miss even one of the lecture classes.

#### **ATTENDANCE:**

**Lecture:** Attendance at lectures is not required but is **strongly recommended**, as exam questions will be based on anything that I cover in the class. Also, the extra credit opportunities will only be offered in the lectures. If you miss a lecture, please obtain notes from someone else in the class. Do not ask the professor for notes and do not expect to be able to pass the exams by reading the book chapters.

**Lab:** Attendance at all labs is **mandatory**. If you miss a lab, you will get a zero for the lab unless you have a valid doctor’s note or can provide evidence of some emergency. If you miss a lab for any reason, **please contact your lab instructor immediately (!), not the lecture professor**. The lab instructor will make arrangements for you to make up the lab you missed.

**EXAMS:** All exams will be based on the lectures, not the book. There will be four exams. None of these will be cumulative. Exam questions may be multiple choice or true or false.

**GRADING:** The final course grade will be determined by averaging the four exam scores (70%) and the lab grade (30%).

**EXTRA CREDIT:** Extra credit opportunities will be presented during lectures. These short optional assignments must be returned either during the same lecture period or during the following lecture period (whichever is specified at the time they are offered). Extra credit points will be added to the exam score that follows the assignment and will not be carried over to the next exam.

**CELL PHONES:** All cell phones must be turned off & stowed inside of a book bag or case during classes and exams. No earphones or other electronic devices will be permitted during exams.

**CHEATING:** Cheating will not be tolerated! **All students are required to bring their student ID's to exams and to show them to us when they hand in their exams**. Although it is unpleasant to have to warn against cheating, past problems in classes of this type make it necessary to mention that there is an official USC "Code of Student Academic Responsibility". Penalties for cheating or aiding someone else in cheating can be very severe, including suspension from the University.

## CLASS LECTURE SCHEDULE

DATE	Chapter	Topic
Aug 18 (Thurs)	CHAPTER 1	Intro/Interior of Earth
Aug 23 (Tues)	CHAPTER 3	Matter and Minerals
Aug 25 (Thurs)	CHAPTER 3	Matter and Minerals
Aug 30 (Tues)	CHAPTER 6	Weathering and Soils
Sept 1 (Thurs)	CHAPTER 6	Weathering & Soils
Sept 6 (Tues)	CHAPTER 7	Sedimentary Rocks
Sept 8 (Thurs)	CHAPTER 7	Sedimentary Rocks
<b>Sept 13 (Tues)</b>	<b>EXAM 1</b>	
Sept 15 (Thurs)	NO CHAPTER	Uniformitarianism: Swamps to Coal
Sept 20 (Tues)	CHAPTER 15	Mass Wasting
Sept 22 (Thurs)	NO CHAPTER	Fossils and Fossilization
Sept 27 (Tues)	CHAPTER 16	Running Water (Above Ground)
Sept 29 (Thurs)	CHAPTER 16	Running Water
Oct 4 (Tues)	CHAPTER 17	Groundwater (Below Ground)
Oct 6 (Thurs)	CHAPTER 17	Groundwater (Below Ground)
<b>Oct 11 (Tues)</b>	<b>EXAM 2</b>	
Oct. 13 (Thurs)	CHAPTER 19	Deserts and Winds
Oct 18 (Tues)	CHAPTER 18	Glaciers and Glaciation
<i>Oct 20 (Thurs)</i>	<i>FALL BREAK</i>	<i>NO CLASS</i>
Oct 25 (Tues)	CHAPTER 20	Shorelines: Where Ocean Meets the Land
Oct 27 (Thurs)	CHAPTER 20	Shorelines (Cont.)
Nov 3 (Thurs)	CHAPTERS 4/5	Volcanoes & Igneous Rocks
Nov 8 (Tues)	CHAPTER 8	Metamorphic Rocks
<b>Nov 10 (Thurs)</b>	<b>EXAM #3</b>	
Nov 15 (Tues)	CHAPTER 2	Plate Tectonics
Nov 17 (Thurs)	CHAPTER 9	Geologic Time
Nov 22 (Tues)	CHAPTER 22	Brief Geologic History of N. America
<i>Nov 24 (Thurs)</i>	<i>THANKSGIVING</i>	<i>NO CLASS</i>
Nov. 29 (Tues)	NO CHAPTER	Brief Geologic History of N. America
Dec 1 (Thurs)	NO CHAPTER	Brief Geologic History of N. America
<b>Dec. 6 (Tues)</b>	<b>EXAM 4 , FINAL</b>	<b>2 PM, PSC 210</b>

**\*Note:** The timing of lecture topics might change somewhat throughout the course. You will be notified of these changes as the course progresses.