

GEOL 201: Observing the Earth Fall 2011

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INTRODUCTION

This course is both (A) a field-based introductory course in physical geology and (B) an exploration of the role of geology in forming physical and social landscapes. Towards those ends, we will investigate geologic processes and products and how they contribute to one's sense of place. Whereas inquiry-based learning during field trips forms the core of the course, we will supplement this learning with classroom activities and lectures on fundamental geologic principles. The course will culminate with a three-day field trip across the Southern Appalachian Mountains, where we will tie together and apply many of the course's themes.

LEARNING OUTCOMES

The course is designed to provide you with the fundamentals and inspiration to pursue an appreciation of geologic phenomena, be it in a career or as an educated citizen. Students who successfully complete this course will be able to:

1. Identify the major rocks, minerals and other important Earth materials in the laboratory and field.
2. Develop and probe hypotheses about the origin and significance of Earth materials for geology, physical & cultural landscapes, and as natural resources.
3. Understand the composition and mechanics of Earth with a focus on the 'solid Earth' and plate tectonics.
4. Interpret all aspects of the geologic history of southeastern North America from 1 billion years ago to the present as an introduction to Earth history.
5. Develop skills of inquiry-based learning.
6. Become proficient in the collection of geologic field observations.
7. Gain an appreciation and rudimentary understanding of the role of geologic processes on humanity and vice versa.

CLASS LOGISTICS

M 1:25 - 2:15pm, EWS 209

W 1:25 - 5:30 PM, EWS 209, or meet by the vans during days with field trips (underlined on schedule)

On most Wednesdays we will head directly into the field from 1:30 – 5:30 PM. A few Wednesdays will be composed of a four-hour classroom-based laboratory or lesson. The Monday meeting will be used as necessary, to fulfill learning goals that require classroom facilities.

We will have two weekend day-long field trips in addition to the three-day Appalachian field trip. All field trips are mandatory. If you have a conflict that absolutely cannot be changed, the last resort is to make arrangements with the instructors for an alternative assignment. These arrangements must be made at least two weeks in advance, and require permission of the professor.

FIELD TRIPS

Whereas we will do our very best to return to campus by 5:30 PM each Wednesday, there may be unforeseen circumstances (such as traffic, weather, or exceptional geology) that could delay our return. Whenever possible, we will provide you with advanced notice of a potentially late return time. It will be helpful and appreciated if you can maintain a flexible schedule through 6 PM or so on Wednesday afternoons, although most weeks we will have you home on time.

Fieldwork can be one of the most rewarding aspects of geology, but it is not always comfortable. You can limit your discomfort and maximize your learning by being prepared for the unexpected. Most importantly, you will find that patience, flexibility, respect, and a good sense of humor will get you through the tough times that are inevitable. Sturdy, but comfortable, shoes are essential. Carry a raincoat, a sweater and a winter hat in a comfortable knapsack. Bug repellent and sunscreen can be useful during the warmer months. One or more water bottles are important, no matter the season. Snacks are never a bad idea.

A more comprehensive list of helpful camping gear for weekend field trips will be provided as those trips approach. The Department of Earth & Ocean Sciences has the vast majority of camping and cooking supplies required for the Appalachian trip, although you will need to arrange for your own outdoor clothing, sleeping pad and sleeping bag. Many of these items can be rented for a nominal fee from the University at the Strom Thurmond Wellness Center – see Ben for guidance.

GRADES

2 exams (20% each)
2 sense of place papers (10% each)
1 regional geology term paper (10%)
Quizzes, Laboratory & Homework assignments (10%)
Participation (20%)

RESOURCES

I have requested that the University bookstore arrange for two textbooks for the course, only one of which each of you need. If you are a current or prospective Geology major or minor, I strongly recommend that you choose *Earth: Portrait of a Planet*. For the rest of you, *Essentials of Geology* should suffice. In addition, course participation requires the purchase of a useful field book.

1a. *Earth: Portrait of a Planet*, by Stephen Marshak (W.W. Norton & Company Publishers, any edition).

OR:

1b. *Essentials of Geology*, by Stephen Marshak (W.W. Norton & Company Publishers, any edition)

2. A field notebook. Field notebooks are best if portable (~5" x 7") and hardbound.

ATTENDANCE

Due to the field-based nature of the course, you are required to attend every lab (Wednesday and weekend) session. Excused absences require written documentation and a legitimate academic, medical, or extra-curricular justification. Advance written or verbal (voice-mail is acceptable) communication of an expected excused absence is required. See University policies related to attendance:

<http://bulletin.sc.edu/content.php?catoid=10&navoid=1781&hl=&returnto=search>

ACADEMIC INTEGRITY

You are encouraged to collaborate with your fellow students. However, verbatim duplication or other forms of plagiarism are unacceptable. See the university policy on academic responsibility at the URL:

<http://www.sc.edu/academicintegrity/policy.html>

DATES	MONDAY	WEDNESDAY
Week 1: August 22, 24	Introduction	Rocks & Minerals
*** FIRST SENSE OF PLACE PAPER DUE MONDAY, AUGUST 29, IN CLASS ***		
***FORTY ACRE ROCK FIELD TRIP: SATURDAY, AUGUST 27: 8 AM – 3 PM ***		
Week 2: Aug. 29, 31	Rocks & Minerals Practical	Igneous & Metamorphic Rocks The Internal Earth
Week 3: Sept. 5, 7	NO CLASS: LABOR DAY	<u>Lake Murray Spillway</u>
Week 4: Sept. 12, 14	Plate Tectonics	Discovering Plate Boundaries
Week 5: Sept. 19, 21	REVIEW SESSION	EXAM 1
Week 6: Sept. 26, 28	Weathering	<u>Liberty Hill Quarry</u>
Week 7: Oct. 3, 5	Sediments & Sedimentary Rocks	<u>Peachtree Rock</u>
Week 8: Oct. 10, 12	NO CLASS: GEOLOGICAL SOCIETY OF AMERICA MEETING	
Week 9: Oct. 17, 19	Mountain Building	FALL BREAK
Week 10: Oct 24, 26	*** <u>APPALACHIAN FIELD TRIP FRI-SUN OCTOBER 28-30</u> ***	
Week 11: Oct 31, Nov 2	APPS Reprieve	Folly Beach Reprieve
*** <u>FOLLY ISLAND FIELD TRIP: SUNDAY, NOVEMBER 6: 9 AM – 5 PM</u> ***		
Week 12: Nov. 7, 9	Rivers	<u>Congaree River</u>
*** SECOND SENSE OF PLACE PAPER DUE NOVEMBER 12, 5 PM ***		
Week 13: Nov. 14, 16	Climate	<u>Santee State Park</u>
*** REGIONAL GEOLOGY TERM PAPER DUE NOVEMBER 21, 1:30 PM ***		
Week 14: Nov. 21, 23	NO CLASS: THANKSGIVING	
Week 15: Nov. 29, Dec. 1	REVIEW SESSION	EXAM 2, OPTION 1
EXAM 2, OPTION 2: DECEMBER 10, 2 PM		