GY 111 Lecture Note Series
Introduction and Geo Careers

Lecture Goals:
A) Introduction to class set up, policy etc.
B) Stuff you need to survive
C) What is geology and what do geologists do?


A) Introduction:
Today you get the basic information that you need to survive GY 111. The first portion of this lecture will be dedicated to a general overview of this course (GY 111) as regards to material, readings, assignments, labs exams etc. Refer to this year's current syllabus or the class web page for due dates, assignments/exam values etc.

If you are visiting this website without the benefit of first attending the lecture, I cannot stress enough the following points:

1) Attend all lectures! Some of the material we discuss will not be in your textbook. If you miss a class, you miss the material that might be on a test. There is also an attendance policy in this class. You will be docked marks for not attending classes. Why do I do this (or as one student commented on www.ratemyprofessor.com), “Why do I treat you like “kids” instead of adults? Because I want you to not only pass GY 111, I want you to do well. Past data in GY 111 shows a positive correlation between academic success (A, B or C) and good attendance. Check out the chart to the right.

An even more telling plot is this one which shows letter grade versus attendance in overall percentages. In 6 years, over 90% of the A’s awarded were to students who missed fewer than 4 lectures/labs. In contrast, more than 90% of the F’s went to students who missed more than 8 lectures/labs. Now you know why I insist on attendance and why it’s accessible in my class.
By the way, for those of you interested in statistics, I can give you the following grade distribution for my GY 111 class (Data from 2000-2005):

Grot

2) All of you need to be doing a GY 111 lab (GY 111L) simultaneously with GY 111. This advice pertains to any lab section that you might be doing (mine or someone else’s). Come prepared to the labs. There are a lot of things for you to learn, and the longer you stuff around in the lab getting prepared, the longer it will take to learn the stuff. Get your lab kits put together ASAP (see B below). And for crying out loud, STAY for the entire lab period. You have me (or another instructor) and a student lab instructor at your beckon call. We won’t be around at 12:00 midnight the day before the lab exam and if you leave your studying to the last minute, you are likely to be in trouble.

3) While we’re at it, don't wait until the last minute to do your labs/assignments. All that does is burn you out (for this class and other classes too!)

4) Your humble instructor talks a lot and rather rapidly. You may miss important stuff in the classes. If this happens, stop him and ask him to repeat the stuff you missed. Your humble instructor also likes to draw pictures on the chalk board. Most of those are found in your textbook (if not, he will tell you!). In some cases (you may be warned about them), it might be better for you to listen rather than trying to write everything down that you hear.

5) There is no such thing as a dumb question! If you want to raise an issue or seek a point of clarification, do us all a favor and ask your question.

6) Cell phones and beepers suck! Turn them off before you come into the class (or else).

7) Geology is a fun science. Enjoy yourself (or else).

**B) Stuff you need to survive**

You will need to obtain some items for the class:

1) Lab manual (free download on my webpage)
2) Web notes (free downloads from my webpage)
3) Optional: a textbook (e.g., Grotzinger’s et al., *Understanding Earth*)

Moral of the story: regularly check the webpage for this class. Apart from web notes, sample tests, word lists and other useful info are (or will be) posted that might make your life easier.

http://www.southalabama.edu/geology/haywick

You also need to put together a lab kit:

1) Minerals Rock testing **(Needed for the second lab session next week):**

   - magnifier\hand lens
• pocket knife
• copper penny
• magnet
• glass plate*
• streak plate (frosted porcelain plate)*
• bottle containing dilute acid*

* these items are optional. You may elect to purchase them as a kit from the Bookstore, but they will be provided free of charge during the lab sessions.

2) Geological Maps (Not needed until the 10th week or so of labs)

• ruler (with cm and mm)
• protractor (for measuring angles)
• colored pencils (red, green, brown, yellow, blue etc)
• pencil pencils (graphite-type, soft lead)
• a HUGE eraser (trust us, you will need it)

Once all of this background stuff is over, we actually will get around to having a lecture.

C) Geocareers
Your humble instructor will ask you several questions during the lecture (this is more for his information than yours).

1) How many people in the class are majoring in geology? (usually no one is)
2) How many people are taking geology because they have an interest in this science? (maybe one or two)
3) How many people are taking geology because they have to take a lab science? (usually most of them)
4) How many people are taking geology because it is the easy science? (ditto for most of them)
5) How many people know what geologists do? (everyone thinks they know, but there are a lot of possibilities that most people did not know).

The purpose of these questions is to make a point. Geology is the forgotten science. Students know about physics and chemistry and biology from high school, but few people have ever encountered geology. This is a real pity because geology is the glue that encompasses all sciences and mathematics (this is often disappointing to students who want to avoid physics, math, chemistry and biology). Here's how it works:
Another thing that people commonly do not realize about geology is the job potential in this field. Geologists currently work in the following fields:

1) Petroleum (exploration, exploitation, research)
2) Environmental Geology (UST's, land use, landfill regulation, groundwater)
3) Hydrology (water supply, waste disposal)
4) Risk assessment (volcanoes, earthquakes, landslides, floods)
5) Engineering geology (building site assessment, dam engineering)
6) Paleontology (dinosaurs, marine beasties, evolution)
7) Hydrothermal energy
8) National Parks
9) Marine Geology (geophysics, ecology, sediment)
10) Mineralogy (this is GY 111!)
11) Planetary Geology (NASA, space station)
12) Remote sensing (satellite imagery)
13) GIS, mapping, urban development
14) Global Change (sea level rise, paleoclimatology, extinctions)
15) Teaching
16) State and Federal Governments
17) Police and law enforcement
18) Depositional modeling (reefs etc).
and lots, lots more.

Some would argue that every discipline has lots of possible employment routes (this is true), but geology has a couple major advantages over most of them. Check out these figures for the sciences (all of this comes from Holbrook’s article):

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<th>1998 Physical Sciences Employment within the United States</th>
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<tbody>
<tr>
<td>Biologists</td>
</tr>
<tr>
<td>Chemists</td>
</tr>
<tr>
<td>Geologists</td>
</tr>
<tr>
<td>Physicists</td>
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<table>
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<tr>
<th>1998 Average Physical Sciences Salaries within the United States (BS degrees)</th>
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<tbody>
<tr>
<td>Chemists</td>
</tr>
<tr>
<td>Geologists</td>
</tr>
<tr>
<td>Biologists</td>
</tr>
<tr>
<td>Physicists</td>
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* there are too few physicists with BS degrees working to compute this average

<table>
<thead>
<tr>
<th>Number of BS Degrees Granted between 1970 and 1974</th>
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<tbody>
<tr>
<td>Biology</td>
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<tr>
<td>Chemistry</td>
</tr>
<tr>
<td>Physics</td>
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<tr>
<td>Geology</td>
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Using these data, Holbrook calculated the jobs to degrees ratio for the four sciences:

Biology: 1:5.6; Physics 1:4.7; Chemistry 1: 2.5; Geology 1:1.9
An even better way to view this is through Holbrook's replacement rate (better known as the drop dead index). This assumes that every person employed in a particular discipline were to suddenly die tomorrow.

<table>
<thead>
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<th>Holbrook Drop Dead Replacement Rate (time to replace all jobs)</th>
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<tr>
<td>Geology</td>
</tr>
<tr>
<td>Chemistry</td>
</tr>
<tr>
<td>Physics</td>
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<tr>
<td>Biology</td>
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These data more or less show that geology is the best science in which to get a job (that is assuming that you wish to work in the area that you were trained). Geologists are also among the most contented workers (that means they enjoy their jobs; biologists were also quite happy with their jobs - when they could get them).

Lastly, consider starting salaries for graduates. In 2006-07, nine geology majors graduated from USA. Five are on their way to graduate school. One was hired by a petroleum support company for around $60,000.00/year. One was hired by a uranium exploration company for around $50,000.00 a year. The remaining students were hired by hydrogeology companies for between $35,000.00 and 42,000.00/year. Please note, these are starting salaries for students straight out of university without any additional practical experience. I can’t think of any other degree that offers such opportunities. If you want to discuss the possibility of doing Geology as your major, talk to me.

**Important terms/concepts from today’s lecture**

*(Google any terms that you are not familiar with)*

Nothing this lecture; but wait for the next one!

**Useful Websites**

Geocareers page: [http://web.syr.edu/~elwallac/ewjobs.htm](http://web.syr.edu/~elwallac/ewjobs.htm)

Geology information page [http://web.syr.edu/~elwallac/ewlinks.htm](http://web.syr.edu/~elwallac/ewlinks.htm)