

Physical Geology Laboratory (GLY 101) Spring 2010: Course Syllabus

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Lab Manual: Laboratory Manual in Physical Geology, American Geological Institute, 8th ed., R. M. Busch, ed., 2009

Journals, Magazines, Newspapers, our Library, and Websites are all important sites of information as well. You are encouraged to keep up with local, national, and world events that are related to geology – you will find that geology is an “active science”.

Laboratory Description: Our goals in this lab are to provide hands-on exercises and materials to reinforce and expand your knowledge of selected topics covered during the lecture. The lab is not a one for one match of lecture topics, though we will cover many of the same topics. And knowing the lab materials will help you with the lecture materials, and vice versa. However, the emphasis in lab is doing (classification, mapping, assessing risks, etc.) exercises on the different topics.

All fields have their own vocabulary and Geology is certainly no different. It will be necessary for you to memorize some facts and definitions; this “jargon” is necessary for communication and understanding. However, our emphasis will be on developing interpretation and critical thinking skills that will help you evaluate and solve problems. For instance, what do you think about 1) resources and energy needs (where do all of those resources come from and how much do we use?), 2) development along shorelines and in floodplains (should they be allowed and how do you mitigate damage?), 3) water availability and quality, and 4) geologic hazards like earthquakes, volcanoes, storms, etc.?

There are five main topics that are critical to the study of Introductory Geology, and we will cover those in varying degrees. The first two are fundamental and will be covered in detail in lecture, but you must know the basics of these for lab also. We will concentrate on 3 through 5 below but remember that you are responsible for 1 and 2.

- 1) Plate Tectonics (the unifying concept in Geology)
- 2) Geologic Time (catastrophic and more importantly the slow, continual changes)
- 3) Minerals, Rocks, Sediments/Soils (geologic raw materials and resources)
- 4) Maps (Topographic, Geologic, etc.). This will also include Structural Geology, Stratigraphy, Aerial Photography, Climatic Maps, and Remote Sensing
- 5) Geohazards and Environmental Issues (The impact of geology on man and man’s impact on the earth environment; examples include rivers and floods, coastal processes and storms, groundwater, climate change, energy, earthquakes and volcanoes, etc.). We will use local examples where possible to illustrate these concepts and hazards.

The examples and skills that you gain in this lab should help you to a) gain knowledge about the earth you live on and understand that Geology is an integrative science, b) become familiar with current issues that will allow you to make more informed and better decisions (voting, participation in your community, etc.) on a variety of earth science and related topics; you may be surprised at how many “events” and products that affect you are earth science-related, and c) develop a wealth of knowledge about the local area and global issues that you might even share with friends and at important social events (when the conversation drags what better way to get it going than to impart some Earth Science facts and lore; seriously).

Grading: Grades will be based on Exams, Lab Exercises, and possibly projects. The grading breakdown is:

Minerals, Rocks, and More Test: 25%
 Final Exam: 30%
 Lab Exercises/Assignments/Projects: 45% (Project to be Discussed)

Attendance, as shown above, is basically **mandatory!** If you must miss class, contact the lab instructor immediately. It is up to you to call and arrange for a make-up of the class or test, **if you missed for a legitimate reason. Do not** expect an automatic make-up.

Supplies: We have tried to provide all of the supplies needed but there may be an occasional item that you will need to supply. **Please bring pencils (not pens) and a calculator to class as well as your lab manual.** Damaging of any of the lab materials and tables will not be tolerated. You will be responsible for replacing any damaged materials.

Etiquette: NO cell phones (that includes texting) or players are acceptable (turn them off before class), These will not be allowed during lecture or testing. In addition, laptops are fine but not for checking email or running other programs/chatting during the lecture. These activities disturb those around you - and me. Questions are great, please ask me as others are probably asking or thinking the same thing; however, a running dialogue with your neighbor is not acceptable.

Academic Honor Code: **Academic dishonesty will not be tolerated. It is this Institution's stated policy that no form of dishonesty among its faculty or students will be tolerated. Please consult the Student Handbook for further information. UNCW practices a zero-tolerance policy for violence and harassment of any kind. For emergencies contact UNCW CARE at 962-2273, Campus Police at 962-3184, or Wilmington Police at 911. For University or community resources visit <http://uncw.edu/wrc/crisis.htm>.**

"Tentative" Laboratory Schedule

Week	Topics	Lab Manual
1/12	Introduction: Geologic Concepts: Plate Tectonics and The Earth's Surface Introduction to Minerals and Earth Materials	Lab 1 (Review) Lab 2 and Scan 8 Lab 3 (Read for Week 2)
1/19	Minerals: Properties and Classification Mineral Resources (esp. N.C.) and Rock Forming Minerals	Lab 3
1/26	Rock Cycle; Igneous Rock Classification Volcanoes (Distribution and Remote Sensing Map)	Labs 4 and 5
2/2	Weathering, Sediments, Sedimentary Rocks (Soils, Fossils) Application: Why Sediments/Sed. Rocks are Important Geologic Time	Lab 6 (Review Lab 8)
2/9	Metamorphic Rocks North Carolina Geology – Putting Geologic Materials and Interpretations Together; Intro to Geologic Maps	Lab 7 N.C. Materials Provided
2/16	TEST: Minerals, Rocks, Environments, Volcanoes, North Carolina Geology	Labs 1 – 8 Plus Handouts
2/23	Topographic Maps, Aerials, and Remote Sensing	Lab 9
3/2	Geologic Time, Geologic Maps, Structure, Stratigraphy Surface to Subsurface Relationships	Lab 10 (Lab 8 Review)
3/6-3/14	Spring Break – No Labs	Have Fun
3/16	Groundwater and Subsurface Interpretation	Lab 12
3/23	Streams: Characterization and Flooding	Lab 11
3/30-4/1	Easter Break Week – No Labs	

4/6	Coastal Processes and Issues	Lab 15
4/13	Energy Resources and More	Handouts
4/20	Final Lab Exam Week	Labs 8 – 12 and 15 Plus Handouts