Spring 2017
GEOL 10100 - Introductory Geology Laboratory
Hunter North 1021
Section 06
Wednesday 9:10 a.m.-12:00 p.m.

Instructor: **Dr. Charuta Kulkarni**
Office Hours: HN 1032N, Wednesday 1:15-2:15 PM and by appointment.
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Brief description/purpose of course:
GEOL 101, Introductory Geology Lab, is a hands-on laboratory science course. It is an introduction to the Earth sciences and will prepare students for further coursework in the Environmental Studies program, with particular relevance to physical geography and geology. Because the focus is on learning through individual observations and exercises, lectures are short and generally use about 25% of class time. This course will fulfill the Common Core Requirement for category C, Life and Physical Sciences.

The objectives and goals of this course are for students to develop:

- An understanding of the nature of science and the scientific method.
- An understanding of how Earth formed and the processes of its continuing evolution
- The ability to identify the most common and minerals and know how they are formed
- A basic understanding of plate tectonics.
- An understanding of the vastness of geologic time, and the methods of geologic dating
- An understanding of mountain building processes and how they relate to the geologic history of New York City

This course is designed to produce the following learning outcomes. Students will:

- Be able to apply the concepts of plate tectonic theory to the rock cycle, and to stresses that cause deformation
- Learn how to observe, characterize and identify geological samples
- Understand how remotely sensed data, seismic data, stratigraphic data and chemical data are combined to generate a comprehensive view of Earth.
- Know the processes that create and modify Earth materials.
- Conduct collaborative laboratory explorations

Further specific learning outcomes include:

1. A working knowledge of the International System (SI) of Units
2. An ability to interpret data from scientific charts and tables

3. An understanding of the basic principles and tools of direct and remote observation that are used by geoscientists
4. An ability to test physical and quantitative models of isostasy and apply them to the Earth system
5. Understand convection and its role in plate tectonics
6. Interpret spatial geologic data in the framework of plate tectonic theory
7. Be able to use graphical information about rock melting to infer how magma forms
8. Use laboratory observations to help interpret the origins of igneous, sedimentary and metamorphic rocks
9. An ability to deduce basic information about earth processes and history by "reading the rock record"
10. An ability to apply the principles of relative and absolute dating to analyze the geologic history of an outcrop/region

Required textbook:
AGI/NAGT Laboratory Manual in Physical Geology, 10th ed. Richard M. Busch,
ISBN -10: 0321944518; ISBN – 13: 9780321944511.
Electronic and used copies are not allowed in this course.

You will also need:

- a plastic binder to compile your lab work. Any standard flexible 1-inch binder is fine for this purpose, but it has to be exclusively used for this lab class.
- a notebook/notepad for noting down important points from the classroom discussion; old/used notebooks are fine with me.
- a pen(s), a pencil(s), an eraser, a calculator, and a metric ruler, and colored pencils.

All other lab materials will be supplied at the time of lab.

Course evaluation/grading:

Assignments	**Weighting**
8 labs	48% (6%)
3 practical exams	36% (12%)
1 field report	6%
Attendance, punctuality and participation	10%

Because this class meets once weekly, attendance is particularly important. Students are strongly encouraged not to miss a class unless absolutely unavoidable, i.e. for illness, religious observance, etc. **Also, showing up on time is equally important.**

While the exams are technically not cumulative, materials covered in the latter part of the course is dependent on the materials from the earlier part of the course. **Do not miss an exam. Make-up**

exams will not be given except under the most extraordinary circumstances such as documented illness, documented death in the family, etc. Make up exams may then be scheduled at a mutually convenient time and while they will cover the same information as the original exam, the questions and/or practical materials will be different.

A final grade of IN (incomplete) is not given in this course except, again, under the most extraordinary and documented circumstances. You must contact me within 48 hours of the scheduled day/time of the final exam and complete a Contract to Resolve an Incomplete Grade. Otherwise, I will average your laboratory, exam, and attendance and participation grades and record what you have earned. To qualify for Credit/No Credit you must have completed all nine laboratory assignments, have taken the three exams, and have satisfactory attendance and participation. Credit/No Credit forms will be accepted up to 15 minutes prior to the start time for the third exam. I will not accept a Credit/No Credit slip after the third exam is distributed. The Hunter College grading system will be used in this class and can be viewed in the latest undergraduate catalog available online at http://catalog.hunter.cuny.edu/.

Classroom policies:

- There is no texting permitted in the classroom — turn your phones off.
- Earphones are not to be worn in the classroom either on ears or around your neck.
- Laptops/netbooks, etc. are not to be used for taking notes.
- No electronic devices are allowed during exams.
- No food or drink is allowed in the laboratory.
- Samples and equipment must be handled gently.

Contact policy:

You can email me with any questions you have regarding the laboratory material. You can expect to have your email messages returned within 24 hours except over the weekend when you should expect a 48-hour reply window. DO NOT email me the night before (the morning of) a lab is due and expect an answer from me.

Class preparation:

Come to class prepared. **I expect you to have read the laboratory exercise listed for each class *prior* to the beginning of that class period.** Laboratory exercises are complex, and if you do not read them before class you will have difficulty turning them in on time.

Lab work compilation and submission:

As outlined in the Class Schedule below, you are required to complete one laboratory approximately one to two class periods, although occasionally some of the laboratory exercises are needed to be completed at home. Since the laboratory exercises will count for 48% of your total course grade, it is important for you to do the assigned work in timely manner.

At the end of each lab, you must compile all the assigned lab exercises, relevant figures, charts, graphs etc. in a binder. I will explain the procedure once again, when we complete the first lab.
Important instructions for compiling your lab and homework in a binder:

1. **Print your name** and semester on the outside cover of your binder.
2. **Table of Contents**: Add a page in the front for 'Table of Contents' (TOC). The TOC should have three distinct columns - Lab no., lab name, and grade. When you complete and compile each lab, fill in the TOC for each lab details before you submit it for grading.
3. **Structure of labs**: Each laboratory will include the following sections: **an introduction, lab exercises and a conclusion**. At the beginning of each new lab, you must come to class with the introduction already written. This is to make sure you are familiar with the laboratory material and have thought about the purpose and methods of the lab. This will enhance your enjoyment of the lab and help you use the laboratory period efficiently. We will discuss the important concepts at the beginning of the new lab and then work on relevant exercises.
4. **Lab submission**: At the end of each lab, assigned lab exercise pages are to be taken out carefully from the textbook and are to be hole-punched into the binder so that both sides of a page are easily readable. Your name must be printed neatly in the space on the first page of each activity. The lab introductions and conclusions should be added on separate pages at the beginning and end of the lab respectively.
5. **All lab work must be done in pen**, unless otherwise instructed.
6. **Answer all questions in full sentences.** For instance, if the question is, "What color is the rock on table A?" your answer might be, "The color of the rock on table A is gray." An unacceptable answer would be "gray." Use proper grammar, punctuation, and spelling. If you are not sure of the spelling use a dictionary. A very convenient online dictionary can be found at: www.m-w.com
7. Submitted work including introductions and conclusions of your labs must be in your own words. You may work with other students at your table, but each of you must turn in his/her lab or homework compiled in a binder.
8. **It is your responsibility to make your lab work clear and legible.** If you need to change an answer, use a white out and then write on to make the desired change. The presentation of your work is very important and will influence your grade. Grading of your laboratory exercises will be based on the quality, accuracy, thoroughness and appearance of your work. If these criteria aren't met, points will be deducted. It is to your advantage to make your answers and work very clear so that your work can be graded quickly and accurately.
9. The concepts I discuss at the beginning of each laboratory are generally in the PowerPoint format, which I email you as soon we complete the discussion. If you wish to take down any notes from our class discussion, then you should add additional pages at the back of your binder.

When are lab exercises due?

Lab exercises are due at the beginning of your next class meeting – when you start the next lab. Late lab exercises will have their grade **reduced 20% for each day received late** unless you have a valid excuse that can be documented. Once labs are collected, any labs handed in are considered late**.** This policy will be strictly enforced.

What if a lab is missed?
If you miss a lab, do not wait until the next lab meeting to hand in your lab and email me as soon as you can. Attendance will be taken in each lab and is included in your lab grade. This includes lateness. Habitual lab lateness or leaving early can result in points deducted from your lab average (see grading section).

Also, **no extra credit is given in this course**. Whatever effort you would put into an extra credit assignment put into completing the lab exercises and studying for exams.

Hunter College statement on Academic Integrity:
Hunter College regards acts of academic dishonesty (e.g., plagiarism, cheating on examinations, obtaining unfair advantage, and falsification of records and official documents) as serious offenses against the values of intellectual honesty. The College is committed to enforcing CUNY Policy on Academic Integrity and will pursue cases of academic dishonesty according to the Hunter College Academic Integrity Procedures. Plagiarism, dishonesty, or cheating in any portion of the work required for this course will be punished to the full extent allowed according to Hunter College regulations.

ADA Policy:
In compliance with the American Disability Act of 1990 (ADA) and with Section 504 of the Rehabilitation Act of 1973, Hunter College is committed to ensuring educational parity and accommodations for all students with documented disabilities and/or medical conditions. It is recommended that all students with documented disabilities (Emotional, Medical, Physical, and/or Learning) consult the Office of AccessABILITY to secure necessary academic accommodations.

Schedule of topics and readings:
Below is a schedule of class meetings, topics, reading assignments and laboratories. I reserve the right to change the schedule and/or assignments as necessary.

*The field trip to Central Park is dependent upon the weather. You will be expected to meet the class at a predetermined location from which we will walk and examine various surface features of the landscape. More information will be provided in the week before the field trip.

Lab Schedule

No.	Date	Laboratory	Lab Submission Dates
1	2/1	Introduction; Lab 1: Thinking Like a Geologist	
2	2/8	Lab 1	
	2/15	Monday Schedule – no class!	
3	2/22	Lab 2: Plate Tectonics	**Lab 1 due**
4	3/1	Complete Lab 2; Start Lab 3: Minerals	
5	3/8	Lab 3	**Lab 2 due**
6	3/15	Complete Lab 3 and mineral review	
7	3/22	**Mineral Practical Exam**; Lab 5: Igneous Rocks	**Lab 3 due**
8	3/29	Lab 5	
9	4/5	Lab 6: Sedimentary Rocks	**Lab 5 due**
		Spring Recess!	
10	4/19	Complete Lab 6; Start Lab 7: Metamorphic rocks	
11	4/26	Complete Lab 7; Rock cycle exercise-Rock review	**Labs 6, 7,** **Activity 4.4 due**
12	5/3	**Rock Practical Exam**; Central Park Field trip	
13	5/10	Start Lab 8: Geologic time scale	
14	5/17	Complete Lab 8	
Both Lab 8 due and need to be picked up on a mutually decided time during the following week Central Park Report (should be emailed to me) due on May 20th at noon			
5/24		**Final Exam: 9:00-11:00 am**	