

GEOL 101 - Introductory Geology Laboratory Syllabus

Section #W01: M,T,W,Th 5:00 – 8:08

Hunter North, Room 1021

Winter 2020

1/2/19 – 1/23/19

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Office Hours: TBD

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Contact Policy: You may email me with any questions you have regarding the laboratory material. You must include GEOL 101 in the subject line and sign your full name as it appears in CUNYfirst. I do not respond to unsigned email messages. You can expect to have your email messages returned within 24 hours except over the weekend when you should expect a 24-48 hour reply window. If I do not respond within that time frame, feel free to forward the same email to me again.

Brief description/purpose of course:

BEWARE! This will be a VERY intensive class and I cannot stress this enough. There are 8 labs to complete and only 12 days of class. This means we have to complete a lab every day or every other day. In a normal semester a typical lab is spread out over 3 - 4 classes or 10 -14 days. When you sign up for this class you are agreeing that you can handle the intensity of the required coursework. A third of the class time will be lecture while the other two-thirds will be reserved for working on the lab. After class you will be expected to complete the labs at home and submit them the next day at the beginning of class. Please be absolutely positive that you can make such a commitment before signing up and following through with the class.

GEOL 101, Introductory Geology Lab, is a hands-on laboratory science course. GEOL 101 assists you, in learning and expanding your understanding of the scale of the Earth and the forces that shape it with hands-on laboratory and field experiences. This course will serve as an introduction to the earth sciences and will prepare you for further coursework in the Environmental Studies program. It will also give you a working knowledge and vocabulary to take other physical geography and geology courses. Moreover, it will introduce you to some of the cutting edge technologies used in the earth sciences, potentially drawing some of you into an earth science related career path. In general, there will be a 1:2 ratio between lecture and lab work over the course of each week.

The objectives and goals of this course include:

- An understanding of the nature of science and the scientific method.
- The importance of thinking critically about scientific data.
- A basic understanding of the rocks and minerals that make up the earth and the ability to identify the most important types of rocks and minerals and how they are formed (the rock cycle).
- A basic understanding of plate tectonics.
- An understanding of the vastness of geologic time, the Principle of Uniformitarianism and how geologists assess the ages of geologic features.
- An understanding of the formation and distribution of natural resources and the costs and benefits of their extraction.

*This course will fulfill the **Common Core Requirement for category C, Life and Physical Sciences.**

Learning Outcomes:

By the end of this course, students will be able to:

- interpret data by learning to read and create scientific graphs, test physical and quantitative models of isostasy and apply them to the Earth system
- define and discuss Plate Tectonic Theory
- identify the common minerals using basic tools of observation
- classify and identify igneous, sedimentary and metamorphic rocks
- apply the principles of relative and absolute dating to analyze the geologic history of an outcrop/region

Required textbook(s):

AGI/NAGT *Laboratory Manual in Physical Geology*, 10th ed. Richard M. Busch, ISBN-10: 0321944518; ISBN-13 9780321944511

Course evaluation/grading:

Assignments	Weighting
8 labs	45% (~6.5% per lab)
3 exams	45% (15% per exam)
Participation	10%

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, documented alien abduction, etc. Make up exams will be given 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.

Participation is a very important part of your final course grade. It can include anything from asking questions and participating in class discussions during the lecture, lab, via email, before, and/or after class. In addition, you will be unable to do most of the labs without in class access to the materials—specimen trays are not available outside your normal class time. It is important to come to class prepared with the lab activities printed out and be diligent in class to receive a good participation grade.

A final grade of IN (incomplete) is not normally 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 participation grades and record what you have earned. To qualify for Credit/No Credit you must have completed **all laboratory exercises, 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/>.

As per CUNY policy, an **Unofficial Withdraw (WU)** is assigned to students who attended a minimum of one class and cease attendance at some point in the semester. It is important to understand the definition of a WU and the difference between this grade and an F grade. The conditions for assigning the WU grade include:

1. A student's enrollment has been verified by the course instructor, and
2. The student has severed all ties with the course at any time before the final exam week and, consequently, has failed to complete enough course work -- as specified in the course syllabus -- to earn a letter grade, and
3. The student has not officially withdrawn from the course by completing the process for a W grade, or made arrangements to receive an INC.

Classroom policies:

We cannot avoid texting these days but please keep it at a minimum and pay attention while I am lecturing. Earphones are not to be worn in the classroom either on ears or around your neck. You may use laptops or any tablet in the class but be aware that we are handling rocks and minerals in this class. If you break your electronic device in any way, it is on you and not mine or the department. Samples and equipment must be handled gently. No electronic devices are allowed during exams. No food or drink is allowed in the laboratory.

Laboratory Preparation:

Come to class prepared. This means you are expected to have read the laboratory exercise listed for each class *prior* to the beginning of that class period and also have all materials printed out or have the book present in class. Laboratory exercises are complex, and if you do not read them before class you will have difficulty turning them in on time.

Laboratory notebook preparation:

The lab book is the most important record that you, as a scientist, can keep. It is a detailed record of your experiments, observations, results, successes and failures. In this class you are required to keep a laboratory notebook as an important record of your laboratory work. It will also serve the practical purpose of keeping all of your assignments in one place, so that you can use it as a reference and a study tool. Your laboratory notebook is a simple black and white (or green and white) composition notebook that can be purchased in the Hunter College Bookstore or any office supply store.

You are required to follow these directions to prepare and keep your notebook: 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.

1. Print your name and semester on the outside cover of your lab book.
2. Number all the pages in your lab book and label the first three pages "Table of Contents".
3. As you work in the lab notebook date each page with the current date and fill in the "Table of Contents." All page numbers and dates should be on the upper left of the left-hand pages and the upper right of the right-hand pages.
4. All work must be done in pen. If you need to change an answer, etc., cross out the original with a single line, and clearly make the desired change. The purpose of keeping a lab notebook is to give you experience in creating a permanent record that will allow you, or anyone reading your notebook, to reconstruct your experiment(s) and obtain similar results. Keeping such a record is one of the most important aspects of doing science. You may keep notes that I will give you in the beginning of each laboratory in this notebook, or you may choose to keep these notes in a separate book.
5. Each laboratory exercise will include the following sections: an introduction, procedure, materials used (where relevant), charts and tables that you will fill in on the appropriate pages of your lab manual and attach to your notebook, answers to the questions posed in the AGI Laboratory Manual, Results/Discussion and a conclusion. You must include the relevant figures, charts, graphs, etc., that a given question and/or answer refers to. Any charts, tables, maps, etc., from the AGI manual are to be stapled or taped into your lab notebook so that both sides of a page are easily readable (if necessary) and so that no paper extends beyond the bounds of the notebook. This means that if you refer to any diagrams, maps, charts, etc., they must be included in your notebook. Remember to reference the page

and figure number to your answers and/or conclusions. You will be shown an example of a laboratory notebook during your first or second class meeting.

6. Answer all questions in full sentences. **DO NOT RECOPY THE QUESTION IN YOUR NOTEBOOK.** Rather, answer the question so that the question is implicit in the answer. 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 and spelling. If you aren’t sure of the spelling use a dictionary. A very convenient online dictionary can be found at www.m-w.com
7. It is your responsibility to make your notebook clear and legible. I must grade your notebooks efficiently and if I cannot find your answers easily or decipher your handwriting, points will be deducted.

Lab Homework:

Some of the laboratory exercises will be completed at home. As outlined in the syllabus, you are required to complete one laboratory approximately every 1-2 classes in this intensive session, and since the laboratory exercises will count for 45% of your total course grade, it is important for you to do the assigned work.

The **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 your own notebook. I do not regard homework as something to be furiously scribbled down during class while other things are going on. Your laboratory notebooks must be neat and complete. The presentation of your work is very important and will influence your grade. If you do the most professional job that you can, you will learn more, have an excellent study tool, and a notebook to bring to me if you ever want a recommendation for a job or graduate school. It is to your advantage to make your answers and work very clear so that your work can be graded quickly and accurately. I will not have time to search for your answers.

Grading of your laboratory exercises will be based on the quality and accuracy of the observations, explanations, answers to questions and conclusions. I will grade you on a scale of 0 – 100. You will automatically lose points if your laboratory exercise is sloppy or if your answers lack clarity.

When are lab exercises due?

Lab exercises are due, in lab, at the beginning of your next class meeting – when you start the next lab (see tentative schedule below). **You will lose 20 points per day if the lab is late.** Submitting the lab after the start of class on the same day it is due is considered late as well and will be subjected to a small penalty. This policy will be strictly enforced. If you miss a class session, do not wait until the next meeting to hand in your lab assignment. If I am not available to accept your late lab, please send me pictures of each completed lab page showing me it is complete. This will “stop the clock.”

Tentative Schedule of Topics and Assignments

Week	Day	Date	Laboratory Assignment
1	Th	1/2	- Introduction to GEOL 101 and the Syllabus - Lab 1: Thinking Like A Scientist
2	M	1/6	- Lab 1 Due - Lab 2: Plate Tectonics and the Origin of Magma
	Tu	1/7	- Lab 2 Due - Lab 16 - Earthquakes
	W	1/8	- Lab 16 Due - Lab 3: Mineral Properties, Identification, and Uses - Discuss Mineral Practical Exam
	Th	1/9	- Lab 3 Continued - Mineral Review
3	M	1/13	- Lab 3 Due - Mineral Practical Exam - Lab 5: Igneous Rocks and Volcanic Hazards
	Tu	1/14	- Lab 5 continued - Lab 6: Sedimentary Rocks, Processes, and Environments
	W	1/15	- Lab 5 Due - Lab 6 continued
	Th	1/16	- Last Day to Drop with a Grade of W - Lab 6 Due - Lab 7: Metamorphic Rocks, Processes, and Resources - Discuss Rock Practical and Review
4	M	1/20	- No Classes
	Tu	1/21	- Lab 7 Due - Rock Practical Exam - Lab 8: Dating of Rocks, Fossils, and Geologic Events. - Discuss Final Exam
	W	1/22	- Lab 8 continued - Final Exam Review - Field Trip around UES and Mineral Shop!
	Th	1/23	- Lab 8 Due - Final Exam

*This field trip is dependent upon the weather and sunlight. 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 as well as rock facades on buildings. We may also quickly visit a high end mineral shop on the UES! More information will be provided in the week before the field trip.

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, located in Room E1214B, to secure necessary academic accommodations. For further information and assistance, please call:
(212)772-4857 or (212)650-3230.

Hunter College Policy on Sexual Misconduct

In compliance with the CUNY Policy on Sexual Misconduct, Hunter College affirms the prohibition of any sexual misconduct, which includes sexual violence, sexual harassment, and gender-based harassment retaliation against students, employees, or visitors, as well as certain intimate relationship. Students who have experienced any form of sexual violence on or off campus (including CUNY-sponsored trips and events) are entitled to the rights outlined in the Bill of Rights for Hunter College.

- a. Sexual Violence: Students are strongly encouraged to immediately report the incident by calling 911, contacting NYPD Special Victims Division Hotline (646-610-7272) or their local police precinct, on contacting the College's Public Safety Office (212-772-4444)
- b. All Other Forms of Sexual Misconduct: Students are also encouraged to contact the College's Title IX Campus Coordinator, Dean John Rose (jtrose@hunter.cuny.edu or 212-650-3262) or Colleen Barry (colleen.barry@hunter.cuny.edu or 212-772-4534) and seek complimentary services through the Counseling and Wellness Services Office, Hunter East 1123.

CUNY Policy on Sexual Misconduct Link: <http://www.cuny.edu/about/administration/offices/la/Policy-on-Sexual-Misconduct-12-1-14-with-links.pdf>