

Geology 101
Introductory Geology Laboratory Syllabus
Section 5
Summer 2024 6/27-8/15

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Teaching mode: online
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Brief description/purpose of course:

GEOL 101, Introductory Geology Lab, is a 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 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:

- Describe the key components of the scientific method.
- Describe and identify rocks and minerals based on detailed observations.

- Relate geologic processes and the distribution of rocks, minerals, and geologic resources to the theory of Plate Tectonics.
- Interpret geologic cross sections with respect to geologic time and the rate of geologic processes.

COURSE STRUCTURE

This is an in person course. All materials will be available on the **Hunter College Blackboard** site. The Blackboard site will have a **“Weekly coursework”** page. For each week there will be folder labelled by topic containing recommended reading, additional articles, an assignment, and/or other materials. Students are expected to complete all the work in each folder on a weekly basis. Most class meetings in the classroom. There are three field trips to see minerals and rocks. (The dates when there is no class meeting are shown in the schedule on the last page of this syllabus). There will be a **class discussion board** where students can discuss the course material, ask, and answer questions and discuss the case study material. I will respond to Discussion Board posts, email, and have virtual office hours by appointment.

Required textbook:

AGI/NAGT Laboratory Manual in Physical Geology, 10th ed. Richard Busch.

AGI/NAGT Laboratory Manual in Physical Geology, 11th ed. Vincent Cronin, ISBN-10: 013461531X; ISBN-13 9780134615318

E-Textbook and access code for Mastering Geology:

Laboratory Manual in Physical Geology, edited by Vincent S. Cronin, Mastering with eText (ISBN 9780135870389), 12th Edition 2020, Pearson.

<https://hunter.textbookx.com/institutional/?action=browse#books/2264571>

Class meetings and lab exercises:

- All scheduled class meetings will be conducted in person.
- Laboratory 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.
- You will complete the **lab exercises** in the lab manual for each lab and submit it via Blackboard (as a word document including all the figures that you refer to) with an introduction and conclusion in your own words. A link will be available in each module for you to submit your lab exercise.
- Grading of your laboratory exercises will be based on the quality and accuracy of the observations, explanations, answers to questions and conclusions. The grading of your laboratory exercises will be as follows: 10=excellent, 9=good, 8=fair, 7=poor, 6=terrible, 0=not handed in.

- **Rock, Mineral and final exam** will be administered online through Blackboard.
- There will be two self-guided **field trips** that you will make to American Museum of Natural History and Central Park to study the minerals, rocks, and geology of New York City. There will be two field trip reports associated with these field trips.

Course evaluation/grading:

| Assignments | Weighting |
|--|-----------|
| • 8 Labs and field trip reports | 40% |
| • Individual Assignment (final presentation) | 20% |
| • 3 Exams-Mineral/Rock/Final | 30% |
| • Class Participation | 10% |

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 on Blackboard collaborate and on the Discussion Board.

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 attendance and participation grades and record what you have earned. To qualify for Credit/No Credit you must have completed **all eight laboratory exercises, taken the three exams, and have satisfactory attendance and participation.** 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, an **Unofficial Withdraw (WU)** is assigned to students who **attended a minimum of one class.** 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.

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>

Schedule of topics and readings

Below is a tentative schedule of class meetings (based on Spring2021 with a Monday/Thursday schedule), topics, reading assignments and laboratories. The instructor reserves the right to change the schedule and/or assignments as necessary.

Tentative Syllabus for Summer 2024

| week | Laboratory assignment |
|------|---|
| 1 | Introduction of the course & Lab 1 filling your geoscience toolbox |
| 2 | Lab 2 plate tectonics |
| | movie: how earth was made-Hawaii |
| 3 | Lab 3 mineral properties, uses, identification |
| | AMNH field trip-Hall of minerals and gems, field trip report |
| | mineral exam |
| 4 | Lab 4 rocky-forming processes and the rock cycle |
| | Lab 5 igneous rock and processes |
| | Lab 6 sedimentary processes, rocks, and environments |
| | Rock exam AMNH field trip Rose Earth Center: Igneous, Sedimentary, Metamorphic rocks |
| 5 | Lab 7 metamorphic rocks, processes, and resources & Rock exam |
| | NYC geology, movie: how earth was made-New York, history channel Central Park field trip-field trip report |
| 6 | Lab 8 dating of rocks, fossils, and geologic events |
| 7 | Final presentation |
| | Final exam |