

GEOL 10000-02
Introduction to Geology
Mode of instruction: In-person -Web-Enhanced
Tuesday and Thursday 7 to 8.15 pm
Hunter West, Room 415
Spring 2024

Instructor: Dr. Shruti Philips

Office: HC North, Room 1041

Office Hours: *Mondays 12.45 to 1.45 pm. or by appointment*

E-mail: sph0001@hunter.cuny.edu (communications to me must have GEOL-100 in the subject line and you must sign your full name as it appears in CUNYFirst)

Course Description

Introduction to Geology is the study of planet Earth. It includes the study of Earth's materials, the inner workings of the planet and the origin and changes of surface features. In this course you will learn about **how** and **when** the Earth formed, how it continues to evolve, **what** it is made up of, the large-scale processes that shape it and how we know, what we know about its workings. We will answer these questions by describing how the various components of the Earth system interact to create all that we see around us. You will discover how to protect against natural hazards, where to find Earth's resources, and how to predict what its future may bring. This course will cover the geophysical properties of the Earth, plate tectonics, earthquakes, volcanism, metamorphism, crustal deformation, geologic time, geological resources and natural and anthropogenic global change.

This course will be of interest to any student who wants to learn more about the Earth as well as to those contemplating a major in Geography, Environmental Studies or a minor in Geology.

Under the Hunter Core Requirements this course satisfies D, Scientific World. This course also fulfills the Stage 2 group E of the General Education Requirement (GER).

There are no prerequisites for this course. This course may serve as an excellent foundation for other geology/earth science courses such as *GEOL-102 Historical Geology*, *GEOL-180 Oceanography*, *GEOL-205 Environmental Geology* and *GEOL-280 Marine Geology*, *PGEOG -250* and *251 Earth System Science*.

The main goals for this course are to

- Teach key foundational concepts about the Earth and the methodology of science.
- Introduce you to a fascinating subject area that might influence your academic and career path.

This course will cover:

- How geologists apply the scientific method to arrive at major scientific breakthroughs including Plate Tectonic Theory.
- Methodologies employed by geoscientists to study the geophysical properties of the Earth.
- Igneous processes and relationship to Plate Tectonics
- Metamorphic rocks, mechanisms of mountain building and related geologic structures and phenomena.
- Sedimentary rocks, geologic time and a brief history of Earth
- The immensity of geologic time and the timescales and mechanisms of geologic processes.

Expected Student Learning Outcomes

At the end of the course the successful student shall be able to:

- Describe Plate Tectonic Theory and how it relates to the distribution of geologic phenomena and the geophysical properties of the Earth; recognize plate boundaries, associated rock types and relationship to Earth's resources.
- Describe the common tools applied in geology.
- Describe geologic time and Earth history.
- Explain the causes and evidence for anthropogenic climate change in the context of the Earth System.

Course Expectations

1. Attendance: You are expected to attend every lecture

2. Readings: You are expected to read the assigned chapters and readings in their entirety.

3. Assignments: There will be (Norton) Smart Work assignments for each chapter that will be completed via Bb access of the Norton site. Due dates are on the syllabus.

COURSE STRUCTURE

Class meetings will be held in-person at the Hunter College campus. All materials will be available on the **Hunter College Blackboard** site. The Blackboard site will have a **“Weekly coursework modules”** page. For each module there will be a folder containing recommended reading, additional articles and/or other materials. Students are expected to check the site regularly and keep up with the material.

Important: Students should check their Hunter e-mail messages regularly for messages from the instructor!

Required Textbook:

Marshak, S., *Essentials of Geology*, 7th Ed., 2021, Norton Publishing. ISBN: 978-0-393-88309-1.

The textbook **must include Smartwork, the Student Site and Guided Explorations**. The cheapest option is to purchase the e-book directly from Norton for \$59.95. I recommend this. More details will be provided on the first day of class.

Assessment and Grading Policy:

There will be **two midterm** exams given during the semester and a **final** exam at the end of the semester. Exams are based on lectures, assigned readings, and text material.

Three Exams (2 Midterms +1 Final)	60%
Homework Assignments	35%
Attendance	5%

Exams will **not** be cumulative. They will be comprised of **multiple-choice** questions. Some material we cover in class may **not** be covered in the textbook. Anything that is discussed in class is fair game for the exams; therefore, your **attendance, attentiveness, and participation** at in-class lectures and consistent work on **Mastering assignments** will be extremely important to your success in the course.

Grades follow the Hunter College grading system:

<http://catalog.hunter.cuny.edu/content.php?catoid=15&navoid=1433>

Technological requirements: While the course is in person, components of the course require the use of a computer. It will be very difficult to complete the work required for this course using a phone.

ATTENDANCE AND CLASS PARTICIPATION

Attendance will be taken at every class. Attendance is strongly encouraged at all lectures.

There is a direct correlation between good grades and good attendance.

Extra Credit:

I do not offer extra credit. By participating fully and thoughtfully in in-class discussions, completing the assigned readings and assignments, and consistently attending lectures, you can expect to see positive outcomes both in your overall learning in this course as well as in your final course grade.

Tips for getting good grades: *The more time you put in, the better your grade will be.*

- Attend class and take detailed notes.
- Read the assigned material in the text (or other) before coming to class.
- Re-write your notes as soon as possible after class. This will allow you to fill in the details still fresh in your memory, and help you prepare questions for the next time the class meets.
- Test yourself by answering the questions in the book and in class.
- Carefully study the diagrams and charts in the book and in the lectures.

Classroom Etiquette: Conversation during class and walking in and out of the room is disruptive and must be kept to a minimum. Please keep eating and drinking to a minimum.

Cell Phone Policy: Out of respect for preserving a positive learning environment, all cell phones, beepers, and other portable noise-making devices must be SILENCED for the duration of the class period.

CUNY grading policy:

- Your grades will be assigned based on the CUNY grading policy that can be found in the online undergraduate catalog <https://hunter-undergraduate.catalog.cuny.edu/policies-and-requirements/academic-requirements/grading-policies/grading-definition>
- **Pass/No Credit Option:**
You have the option to request a grade of Pass/No Credit for this course. To receive this grade, you must submit the request for a Pass/No Credit grade by completing the form linked to the registrar's website (<https://hunter.cuny.edu/students/registration/register-for-classes/credit-no-credit/#instructions>). The decision is irrevocable. To qualify for a Pass/No Credit grade, you must complete all the requirements for the course, including attendance, assignments, exams, and the final exam/project. To Pass, you must earn at least a D. If you stop attending, stop submitting assignments, and/or do not take the final exam, you receive a grade of **WU (Unofficial Withdrawal)**, which cannot be converted to Pass/No Credit, and may affect your financial aid status.
- Pursuant to CUNY policy, 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.
- For an **IN** to be awarded you must contact me about making up the exam and fill out the 'Contract to Resolve an Incomplete Grade' form **within 72 hours** of the day/time of the final exam. An unresolved IN becomes a FIN at the end of the following semester.

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.

See the following report by the Hunter College Senate for more details:
<http://www.hunter.cuny.edu/senate/assets/Documents/Hunter%20College%20Policy%20on%20Academic%20Integrity.pdf>

Diversity and Inclusion: I am committed to fostering an intellectual environment that is enriched and enhanced by diversity in all dimensions, including race, ethnicity and national

origins, gender and gender identity, sexuality, class and religion. All people have the right to be addressed and referred to in accordance with their personal identity. In this class, we will have the chance to indicate the name that we prefer to be called and, if we choose, to identify pronouns with which we would like to be addressed. I will do my best to address and refer to all students accordingly and support classmates in doing so as well.

Hunter College’s Policy on Students with Disabilities:

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.

Policy on Sexual Misconduct can be found at

<http://www.hunter.cuny.edu/diversityandcompliance/title-ix>

Tentative Syllabus for Spring 2024

Any changes to the syllabus will be posted on Blackboard.

Dates	Topic	Text Chapter
Th 1/25	INTRODUCTION	Prelude
T 1/30	The Earth in Context	1
Th 2/1	Origins	
T 2/6	The way the Earth works: Plate Tectonics	2
Th 2/8	Plate Tectonics	
T 2/13	Plate Tectonics	
Th 2/15	Patterns in nature: Minerals	3
T 2/20	Minerals	
T 2/27	Up from the inferno: Magma and Igneous Rocks	4
Th 2/29	Magma and Igneous Rocks	
T 3/5	The wrath of the Vulcan: Volcanic Eruptions	5
Th 3/7	Midterm-1 <i>Smartwork due 3/7</i>	1, 2, 3, 4, 5
T 3/12	A surface veneer: Sediments and soils	Interlude B
Th 3/14	Pages of Earth's Past: Sedimentary Rocks	6
T 3/19	Sedimentary Environments	
Th 3/21	Metamorphism: A process of change	7
T 3/26	Metamorphic Rocks	
Th 3/28	Rock Cycle	Interlude C
T 4/2	Crustal Deformation	9
Th 4/4	Mountain Building	9
T 4/9	Midterm-2 <i>Smartwork due 4/9</i>	B, C, 6, 7, 9
Th 4/11	A violent Pulse: Earthquakes	8
T 4/16	Seeing inside the Earth	Interlude D
SPRING BREAK		
Th 4/18	Seismic study of Earth's interior	
Th 5/2	Memories of Past life: Fossils and Evolution	Interlude E
T 5/7	Geologic Time: Relative Dating	10
Th 5/9	Geologic Time: Absolute Dating	10
T 5/14	A Biography of Earth <i>Smartwork due 5/15</i>	11
TBA	FINAL EXAM	D, E, 8, 10, 11