

GEOL 10000
Introduction to Geology
Classroom: 714 HW
Mondays and Thursdays 9:45 to 11:00
714 Hunter West

Fall 2019

Instructor: Randy Rutberg
Office location: Hunter North room 1041 (10th floor)
Email (preferred means of contact): rrutberg@hunter.cuny.edu. In order for me to respond to your emails as efficiently as possible please adhere to the following instructions: (1) Include the course name and number in your subject line. (2) Include your entire name as it appears in CUNYfirst in your email (3) Email me from your @myhunter account. I try to answer all emails within 24 hours. Allow for a 48 hour delay on the weekends. Please be sure to write a complete email, including a salutation and a signature.
Office hours: Mondays and Thursdays 12:30 p.m. to 1:30 p.m. and by appointment.
Office phone: 212 772 5326

Brief description/purpose of course: 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 or Environmental Studies. The lecture meets twice per week for 1.25 hours. One meeting is in a traditional lecture setting, the other is “virtual” This will be explained further below*. The lecture 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.

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). Combined with PGEOG14100, Weather and Climate laboratory or GEOL 10100, Geology Laboratory, this course satisfies the core requirements for the “new” geography major. For Psychology majors, the course, combined with GEOL 10100, satisfies one of the laboratory science requirements

The main goals for this course are to:

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

*This course is a partial online (hybrid) course. The lecture portion will be partially online using Blackboard (BB) and Tophat, an online learning platform and in class student response system. Approximately one half of the scheduled meeting times will be virtual classes. The traditional lecture in the class room will be on Mondays (or days scheduled as Thursdays at Hunter). Virtual classes are scheduled on most Thursdays. The online learning portion of the course is intended to provide students with structured materials including podcasts, homework questions and readings that are designed to enhance student learning. The traditional lecture portion of the class will cover key material that builds on the fundamental concept learned in the virtual lectures.

Textbooks: Readings from the textbooks below are required for the course. However, it is not necessary to purchase these texts. Read through this entire section before purchasing an expensive textbook for this course.

(<http://hunter.textbookx.com/institutional/index.php?action=browse#books/2101812/>)

For the first title, I will provide pdf of each chapter (in its format from its original source) on Blackboard. The book is also on reserve in the library. If you wish to purchase the book, you can do so by following instructions at the end of this document.

1) *A Literary Companion to Introductory Geology*, first edition, edited by Randye Rutberg and Shruti Philips (information to be provided here, not yet available)

A copy of an introductory geology textbook. I use the one below to prepare my lectures. However, any introductory text will have nearly the same material. I suggest that you look for a cheaper, older edition or a used copy.

2) *Essentials of Geology*, 5th edition (or an earlier edition) by Stephen Marshak. It is an excellent book and comes with very helpful online learning materials. If you would like to spend less money, I recommend that you purchase the ebook or an older edition. You may also complete the readings using the copy on reserve in the Hunter College library.

If you do not wish to purchase any textbook the following are link to free online textbook. These texts will support the material presented in class and are excellent resources. These are Open Educational Resources (OERs) are free and legal to use. Bookmark this page.

[https://geo.libretexts.org/Bookshelves/Book%3A_Fundamentals_of_Geology_\(Schulte\)](https://geo.libretexts.org/Bookshelves/Book%3A_Fundamentals_of_Geology_(Schulte))

Required Digital Technology:

TopHat student response system

Refer to the link below for information about Top Hat and to enroll:

<https://tophat.com/learning-solutions/students/>

The pricing for Top Hat is as follows:

Single semester \$26

Full year \$38

Life Time \$75

Once you pay for a membership you are entitled to use TopHat for as many courses as you need. There are a variety of courses at Hunter College that use this technology. Consider whether any of your current or future courses will use this technology before you decide which option to purchase.

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
- Natural and anthropogenic global change

Expected Student 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; recognize plate boundaries and associated phenomena
- Describe the common tools applied in geology
- Recall geophysical properties of the Earth
- Describe igneous rocks and volcanic processes
- Describe metamorphism and crustal deformation
- Describe sedimentary rocks, geologic time and Earth History
- Describe Earth's resources in a geologic context

Attendance: You are expected to come to every traditional class meeting (once per week) and take detailed notes. Attendance will be taken via TopHat. You will receive credit for class participation via TopHat. You are expected to check Blackboard at least twice per week. In addition, you must complete weekly online assignments via Tophat or Blackboard.

Course evaluation/grading:

Exams: This course will have three exams. Each exam will cover 4-5 topics. Exams will not be cumulative. They will be multiple choice. Exam questions will cover the material in the online and traditional lecture meetings. Many will be based on questions asked in class and in homework questions.

Exam procedures: All exams are required. Make-up exams will not be given. I will drop the lower of the first two exams. All exams will be multiple choice and must be completed in pencil. You must write your name on the exam sheet and bubble in your name, last name first. If you do not do this, you risk your exam not being graded and receiving a zero. If you take an exam and your grade does not appear on BB within one week of the exam date, you must notify immediately or come to my office hours. If you do not, you risk receiving a zero on the exam.

Homework: This course will have homework for each Virtual Class meeting. The homework will be online, using TopHat (or BB) and will test key ideas presented in the associated podcast.

The homework policy is as follows.

- 1) All homework must be turned in on the due date.
- 2) Students may complete each assignment twice. The higher of the two grades will be used to calculate final grade.
- 3) Students are allowed to miss two assignments with no penalty.
- 4) If all assignments are completed students will receive additional points for the homework assignments portion of their grade.

In addition, most virtual classes will have an assigned reading from "A Literary Companion to Introductory Geology" (LC on schedule). Students will be required to comment and discuss the readings on a group discussion board (on BB) to which they will be randomly assigned.

Participation: Attendance in lecture is required and will be accounted for through attendance records and class participation. Real time questions will be asked and answered using Tophat, an online student response system that can be used via phone, tablet or computer. Participation will count for 15 % of the course grade.

Course Grading Summary:

Homework assignments: 25%

Exam 1 or 2: 20%

Exam 3: 25%

Discussion Board: 15%

Class participation*: 15%

*Class participation will be calculated from attendance and correctly answering 5-10 questions (using TopHat) during each in class lecture meeting. Partial credit (0.25 point) will be given for incorrect answers.

Opportunities for Extra Credit (up to 5 points will be added to your final grade, equivalent to a bump of 1/3 of a letter grade, i.e. going from a B to a B+). In order to obtain EC, you must obtain my approval of your topic and schedule your presentation ahead of time.

- 1) Lead a discussion (5-10 minutes) about one of the assigned articles
- 2) Lead a discussion (5-10 minutes) about a recent scientific discovery or phenomenon that relates to the course material.

About examinations and grades

- a) This course is designed so that if you attend class and complete all of the homework you will pass. Note that the exams count for 30% of the grade, so it is possible to pass the class even if you are a poor exam taker.
- b) Grades follow Hunter's grading system: <http://catalog.hunter.cuny.edu/content.php?catoid=15&navoid=1433>
- c) Examinations are 1 hour and 15 minutes for the mid-term and 2 hours for the final exam and must be turned in promptly. If you arrive late, you lose that time.
- d) Make-up exams are ONLY available in extreme cases, and with medical (or other) forms that confirm the absence. If you miss an exam and have a D or F average in the course at that point, you fail the course irrespective of the reason you missed it.
- e) I will automatically agree to the CR/NC option only if the conditions stated in the CR/NC form are satisfied: all course work has been completed and you earned grades such that you accumulate at least 50 points total in the course. Students on probation are not eligible for this option. Students must make an appointment to discuss this option with me at least one week before the final exam. Requests for CR/NC as a final grade will not be accepted during or after the final exam. <http://www.hunter.cuny.edu/advising/howto/file-credit-no-credit-cr-nc>. This includes both the CR/NC policy and a link to the form.

Classroom policies: There is no texting permitted in the classroom. Earphones are not to be worn in the classroom (either on ears or around neck). I strongly suggest that you take notes by hand. You are responsible for doing all online assignments in a timely fashion, i.e. by the due date listed. I do not grant extensions except under the most extreme of circumstances. You are allowed to miss one assignment without penalty. If you complete all assignments, the extra will count as extra credit. Please remember that access to the internet occasionally fails to work for many reasons beyond your or my control. *I reserve the right to alter or add topics and assignments as needed.*

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.

Inclement Weather and other unknowns: If circumstances prevent me, the professor, from reaching campus on a class day I will notify the entire class using your hunter e-mail account. On snowy days, please check your e-mail an hour or so before our scheduled class time.

HELPFUL INFORMATION

My Teaching Philosophy: My goal in teaching is to help you learn the material and become responsible professionals. I also strive to share my enthusiasm for this subject and make this class an enjoyable one. My approach to teaching involves conveying key information and concepts as well as encouraging discourse in the classroom. Your participation greatly enhances the classroom environment. I understand and respect individual differences in learning and do my best to promote learning in the classroom by working with individual differences rather than against them. At the same time, I wish to impart technical skills and a sense of responsibility by encouraging you to play the role of professionals in the classroom.

I expect you to put your best effort in this course. This involves participating in the in-class exercises, reading the assigned material, doing the homework and preparing for quizzes and exams.

My job is to help you succeed. Please see me as soon as you need help!

Lecture: I will spend part of the in class lecture time explaining the key concepts of geology. Powerpoints will **not** be posted on line for the in class meetings. Lecture outlines will be posted. Use these outlines to review the key concepts covered in class.

You are expected to devote the Virtual Lecture to reviewing the podcast, answering the homework questions, and preparing and posting associated discussion points. (Note: as a general rule of thumb for a college level course, you are expected to spend three hours outside the classroom for each hour in the class room.).

Finally: It is important to start with a good study habit. Consistency is the key. Forming study groups is extremely helpful. Use my time and any resource available to you throughout the semester. Make progress steadily as the material in this course cannot be understood the night before the exam. Concentrate on understanding rather than 'regurgitating'. Put out your best effort every day!

The following are useful tips to do well in this or any class:

- Attend class (traditional and virtual) and take detailed notes. Sketch the relevant diagrams.
- Re-write your lecture notes as soon as possible after class. This will allow you to fill in the details still fresh in your memory, and prepare questions for the next time the class meets.
- "Attend" each virtual class on the day it is scheduled. Complete the work and meet the learning goals each week.
- Carefully study the diagrams you have made and those given in the virtual class.

Hunter College Policy 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 the CUNY Policy on Academic Integrity and will pursue cases of academic dishonesty according to the Hunter College Academic Integrity Procedures.

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.

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)

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.barr7@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 schedule of class meetings, topics and reading assignments. Please note that the readings and assignments are due on the dates indicated. A detailed schedule for readings, activities and assignments is given on the course BB page. The BB page is organized by date. Each class meeting date given on the syllabus has an associated folder that contains readings, additional materials and in some cases an assignment. It is imperative that you go through each folder and complete the work as scheduled on the syllabus so that you do not fall behind in the course. This course is carefully structured so that you learn the material efficiently. The professor reserves the right to change the schedule and/or assignments as necessary. Any such changes will be disseminated through Blackboard.

Lecture Schedule: Readings are from Essentials of Geology unless otherwise noted. “LC” refers to “A Literary Companion to Introductory Geology”. “DB” refers to the BB Discussion Board. Assignments will be posted on the course BB or Tophat page. If you use the Marshak text, I have indicated the required reading by Chapter number. If you use a different text or the online free textbook find the appropriate material by subject name. I will post suggested pages in the online textbook on a weekly basis.

Date	Day of Week	Lecture Style	Subject	Required reading (from Marshak)	Assignment	Due Date
August 29	Thursday	Virtual	Introduction	Syllabus	#1 TopHat Registration and test	9/5
September 2	Monday	Labor Day	Traditional	Chapter 1 LC: Ch 1		
September 5	Thursday	Monday schedule	Plate Tectonics	Chapter 2	#2 Intro to Plate Tectonics	9/9
September 9	Monday	Labor Day	Plate Tectonics	Chapter 2 LC: Ch 1		
September 12	Thursday	Virtual	Plate Tectonics		#3 Plate Tectonics Part B	9/16
September 16	Monday	Traditional	Plate Tectonics	Chapter 2		
September 19	Thursday	Virtual	No class		#4 Rock Cycle & minerals	9/23
September 23	Monday	Traditional	The Rock Cycle & brief intro to minerals	Chapter 2 and Chapter 3		
September 26	Thursday	Virtual	Igneous Processes	Chapter 4	#5 Igneous Processes/Volcanism	10/3
September 30	Monday	College closed				
October 3	Thursday	Virtual	Igneous Processes/Volcanism	Chapter 4 LC: Chapter 5	#6 Igneous Processes/Volcanism	10/7
October 7	Monday	Traditional				
October 10	Thursday	Virtual			#6 Sedimentary Processes	10/14
October 14	Monday	College closed	Sedimentary Rocks	LC: Chapter 6, Interlude B Chapter 6		
October 16	Wed (Monday schedule)	Traditional	Metamorphism	Chapter 7		
October 17	Thursday	Virtual	Metamorphism	Chapter 7 LC: Ch 8	#7 Mountain Building & Geologic structures	10/21

October 21	Monday	Traditional	Mountain Building & Geologic Structures	Chapter 9		
October 24	Thursday	Virtual	Mountain Building & Geologic Structures	Chapter 9 LC: Ch 9	#8 Geologic Structures	10/28
October 28	Monday	Traditional	Geologic Time	Chapter 10		
October 31	Thursday	Virtual	Geologic Time	Chapter 10 LC: Ch 10	#9 Geologic Time	11/4
November 4	Monday	Traditional	Earthquakes			
November 7	Thursday	Virtual	Earthquakes	Chapter 8 LC: Ch 7	#10 Earthquakes	11/11
November 11	Monday	Traditional	The Earth's Interior	Interlude D		
November 14	Thursday	Virtual	Energy and Mineral Resources	Chapter 12	#11 Energy	11/18
November 18	Monday	Traditional	Exam II			
November 21	Thanksgiving!					
November 25	Monday	Traditional	Energy and Mineral Resources	Chapter 12		
November 28	Thursday	Virtual	A Biography of the Earth	Chapter 11	#12 Earth's Biography	12/2
December 2	Monday	Traditional	A Biography of the Earth	Chapter 11 LC: Ch 2		
December 5	Thursday	Virtual	A Biography of the Earth	Chapter 11	#13 Earth's Biography	12/9
December 9	Monday	Traditional	Global Change in the Earth System	Chapter 19 LC: Ch 13		
December 12	Thursday	Last Day of Class -TBD	Global Change and review	Chapter 19		

Purchasing Instructions for *A Literary Companion to Geology*

- A Literary Companion to Geology (First Edition) is published and distributed by Cognella, Inc.
- When you purchase directly from Cognella, you'll receive the lowest price, as well as immediate access to your materials so you can start reading and studying right away.
- **Purchase your course material here:** <https://store.cognella.com/81793-1B-009>
- If you need any help with ordering from Cognella, feel free to email orders@cognella.com or call (800) 200-3908 x503.