

Fall 2009
GEOL 101 – Fundamentals of Geology
Professor Randy L. Rutberg
Monday and Thursday, 9:45 to 11:00 a.m.

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Read this entire document thoroughly. It sets the goals, expectations, grading procedures, rules and schedule for this class. You are responsible for this information

Prerequisites: none

Course Overview: This course will describe the Earth and the forces that shape it. It will be shaped around five primary questions:

- How is Geology relevant to us? Case study: Climate change
- How was the Earth created?
- How does plate tectonics work?
- What are rocks and what have we learned from them?
- How do scientists probe the inner earth and what are its physical and chemical characteristics?

These questions will help us create sub-units but will also permeate the entire course, as many of the chapters touch on more than one of these threads.

The course will begin with a discussion of why geology is relevant to all of us. Modern climate change will be used as a case study. We will continue with a discussion of the formation of the solar system and the Earth. Next, plate tectonics, earth materials and geologic time will be discussed. The goals of the course include introducing students to geology, "systems thinking", the methods of scientific inquiry, and also to engender an appreciation for the wonder, fragility and robustness of the Earth.

The lectures will be composed of an exciting mix of multi-media displays. Videos, virtual field trips, clickers and PowerPoint presentations will be used.

Academic Honesty

"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."

TEXTBOOK:

Visualizing Geology, by: Murck, Skinner and Mackenzie, published by Wiley. There are three versions of this book available. You should buy one version only. Your choices are:

Murck Visualizing Geology 2e with WP ISBN 9780470439883 (traditional textbook with access to online resources)

Binder Ready Murck Visualizing Geology 2e with WP, ISBN 9780470439814 (binder ready version, with access to online resources)

In addition, you may purchase an online *only* version at the bookstore (ISBN 9780470437537) or at the Wileyplus website once you register there (cheapest option).

Lab Manual: *Laboratory Manual in Physical Geology*, 7th ed., Richard M. Busch, Editor, prepared for Hunter College (ISBN 978-053-623-2748)

Other Materials: You should purchase a metric/English ruler, compass (for drawing circles) and a hand lens. The Hunter College Bookstore has these materials. In addition, you must purchase a bound black and white or green and white composition notebook. It should be lined or have a grid. This notebook will be your lab notebook, i.e. a permanent record of your observations and class work. Bring your laboratory notebook and a ruler, and other tools as specified in the lab for that week to each laboratory meeting. It may be necessary to purchase a few additional materials as the semester progresses. You will be informed by your lab instructor in advance. You will also need to bring your lab manual to each laboratory meeting.

Exams: The exams will be based on the text and on the material covered in class. At least forty percent of the exam material will be drawn directly from the lecture. Hence, reading the book and failing to attend class will most likely result in a grade of F. The exam dates are given on the calendar portion of the syllabus. You must bring at least one #2 pencil and eraser to the exams and they will be multiple choice tests. The answer sheets must be filled out so that you write and bubble in your name **last name first**. You must not fill in any other fields except the answers themselves. If you fail to bubble in your name or bubble in additional information points will be deducted from your score.

COURSE POLICIES:

Attendance: will not be taken during lecture, but the exams will include some material that will be exclusively covered in the lecture. Therefore, if you miss class and fail to get the notes from another student your test grade will be negatively impacted. I strongly suggest attending all the lectures, as this will be the easiest and most efficient way to learn the material. Attendance will be taken in the labs and will be included in your lab grade.

Class Meetings: The lectures will be given Monday and Thursday from 9:45am to 11am, and the laboratory sections will be given at the times specified in the college's schedule of courses. Each laboratory will begin with a 5 – 15 minute lecture; hence it is important that you be on time. Your lab instructor will take attendance. Your attendance and timeliness will be factored into your grade.

Grading: The laboratory section of the course will count for 50% of your total grade. The lecture material will count for 50% of the total grade. You will have three exams (two mid-terms and a final). There will be NO make-up exams. The lowest grade of the two mid-term exams (or 1 missed exam) will be dropped, and the final will count twice. Together, the exams will comprise 70% of your lecture grade. The other 30% of your lecture grade will be from the required pre-lecture quizzes that you will take online (see below for details).

The laboratory will be graded as follows: Your lab reports will count for 45%, laboratory exams 45%, attendance 5% and participation 5%. Consideration will be given for effort and class participation. Points will be deducted for tardiness. The lecture grade and the lab grade will be added to determine your grade for the course.

Professor Rutberg's Office Hours: Thursday 1:15 to 2:15 p.m. and by appointment

Web Site: <http://bb.hunter.cuny.edu>

The website will have an up-to-date version of the syllabus, helpful notes and lecture notes where appropriate. I strongly suggest that you check it twice per week.

In addition to Blackboard we have another website that is linked to the text. Follow the instructions on the flyer posted on Blackboard.

<http://edugen.wiley.com/edugen/class/cls121199/>

Laboratory Preparation: It is imperative that you read the laboratory manual before coming to class. The laboratories are complex, and if you do not read them before class you will have difficulty turning them in on time.

Lab manual preparation: The lab book is the most important record a scientist can keep. In it they keep a record of their experiments, observations, results, successes and failures. In this class you are required to keep a laboratory notebook as a record of your laboratory work. This book will serve as an important record of your experiments and observations. 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 as a study tool. You are required to follow the following 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) Number all the pages in the lab manual and label the first three pages "Table of Contents".
- 2) 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.
- 3) 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 keeping a permanent record that would 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. Notes that your TA will give you in the beginning of each laboratory in this notebook, or you may choose to keep these in a separate book.
- 4) Each laboratory 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 laboratory manual, and a conclusion. You must include the relevant figures, charts, graphs etc. that a given question/answer refers to. Any charts, tables, maps etc. from the lab 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. You must attach all relevant maps, charts etc. 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 that to which your answer/conclusions. You will be shown an example of a laboratory notebook during your first laboratory or second meeting.
- 5) 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 on line dictionary is at: www.m-w.com
- 6) It is your responsibility to make your notebook clear and legible. Your TA's must grade your notebooks efficiently and if they cannot find your answers easily points will be deducted.

Homework: The laboratory exercises will be one component of the homework for the course. As outlined in the syllabus you will be required to complete approximately one laboratory per week, and since the laboratory will count for 50% of your total course grade it is important for you to do the assigned work. Moreover, the laboratories are designed to complement the class material and help reinforce what you learn in class.

The introductions and conclusions of your labs must be in your own words. You may work with the other students at your laboratory table, but each student must turn in his/her own notebook. I do not regard homework as something to be furiously scribbled down during class while other things are going on. Therefore, at the beginning of each class in which a notebook is to be collected your books will be checked to see that you have completed the laboratory before coming to class. The books will be collected for grading at the end of class. Labs are due at the time the new laboratory begins. Your instructor will provide you with specific dates. Late labs (i.e. those not finished at the time class begins) will not be accepted. 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. Your instructor will not have time to search for your answers. Grading of the laboratories will be as follows: 5=excellent, 4=good 3=fair, 2=poor, 1=terrible, 0=not handed in. You will automatically lose points if your laboratory is sloppy, or done in pencil (unless specified by the instructor) and if your pages are not numbered and dated. Make-up labs will not be given, except under extenuating circumstances. If you fail to hand in a laboratory because you did not attend lab, you will receive a "0". If you have extenuating circumstances, contact me (or your laboratory instructor) before the class is to meet or soon afterwards, but expect the mandatory attendance and no late labs policies to be enforced.

The other portion of the homework will be the online Pre-lecture quizzes. The due date for each of these quizzes is given in the syllabus. The quizzes are designed to be taken before you come to class, hence you must turn them in on time to receive credit. In order to have access to the quizzes, you must purchase one form of the textbook that should include a Wileyplus code. You must then register for Wileyplus. I have provided a step-by-step set of

instructions on how to do this on the blackboard site. It is entitled "[student flyer GEOL101.doc](#)" and can be found on the documents page.

Please note that you can view your pre-lecture quiz grades in the grade book portion of the Wileyplus website.

Blog:

This class will maintain a blog of recent articles having to do with earth science. Students are encouraged to post and comment on articles. The blog will be located on our Blackboard site.

Study Habits:

- a) As a general rule of thumb for a college course you should plan to study two hours outside of class for each hour spent in class.
- b) Do not expect to understand everything that I say the moment I say it, but do keep trying to understand it. Geology is like a jigsaw puzzle, as each new piece is added the whole picture will become clear.
- c) The following are useful tips to do well in this or any class:
 - 1) Attend class & take detailed notes.
 - 2) Read the assigned material in the text *before* coming to class and do the pre-lecture quizzes.
 - 3) 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 prepare questions for the next time the class meets.
 - 4) Test yourself by answering the questions in the book and on the web site.
 - 5) Reinforce your knowledge by using the study tools on the Wileyplus website.
 - 6) Memorize new geological terms
 - 7) Carefully study the diagrams and charts in the book and in the lectures.

Office Hours:

- a) Walk-in hours (subject to change) are given above; all other times by appointment only. If you come to my office at any other time I may not be able to see you: my job involves many aspects in addition to teaching.
- b) Please prepare your questions ahead of time.
- c) If you arrive at my office and the door is closed, please knock and wait. If the door is open but I am talking to someone else, please wait in the hall, NOT IN THE OFFICE.
- d) I encourage all students to make use of my office hours. If you have a few questions, e.g. about points in a lecture or problems in the book, feel free to come and discuss them.

Examinations (for the lecture part of the course):

- a) If the school is unexpectedly closed, e.g. because of snow, on the day of a scheduled examination other than the final, that exam will be given during the next regular class meeting. If the school is unexpectedly closed on the day of the final examination you should do what I will do: listen to the radio and/or contact the school for information.
- b) The grading on examinations is: 90-100 = A; 80-89 = B; 70-79 = C; 60-69 = D; <59 = F.
- c) Examinations (except the final) are always 65 minutes and must be turned in promptly or you will automatically lose 10 points.
- d) I do not give make-up examinations, even in cases of other examinations on the same day, illness, or family emergencies. The final examination is an exception; in some cases a make-up can be arranged by you through the administration and is given on a weekend, for a fee, some six to eight weeks into the following semester. I do not regard having other finals on the same day as a valid reason for missing that exam.
- e) If you miss an exam other than the final it will not count against you. However, two missed exams is another matter.
- f) If you miss two exams prior to the final and still want a grade for the course you must come to see me before the end of the end of the course, and even then I make no promises.

The Final Grade:

- a) If you miss the final and have a D or F average in the course at that point (without dropping any grade!) You fail the course. The reason you missed is irrelevant.
- b) I will automatically agree to the CR-NCR option only if you earn grades at least 40 on at least 1 of the first two examinations (count a missed exam as a 0). If you do not meet this criterion I strongly suggest you come to speak with me during my office hours before the end of the term. I do not believe that writing little or no more

than you name on an examination form constitutes taking that exam. Students on probation are not eligible for this option.

- c) If you choose the CR-NCR option then a grade of ≥ 70 = CR and a grade of <70 = NCR
- d) I will not agree to “a B if I get a B and a CR if I get a C.” If you want a B in this course, work towards that goal from day one!! If you want an A in this course, work towards that goal from day one!
- e) In cases of flagrant academic dishonesty I may not follow these procedures to compute your final grade. In particular, I may not drop your lowest examination score, I may record that score as a 0, and I may not agree to a CR-NCR option. I will report you to the appropriate dean for disciplinary action.

How to get into trouble in this course:

- a) Arrive late or miss class on a regular basis.
- b) Pay a tutor to do the work for you
- c) Maintain the belief that I will grade you differently because of personal difficulties you are experiencing.
- d) Stop attending class without notifying the registrar. If you are not officially dropped from the course by the registrar you will be assigned a final grade of WU, which means you failed for non-academic reasons. Every semester at least one student who hasn't been to class in 8 weeks arrives just before the final pleading with me not give this grade, claiming they were unaware of the rule (you are all now aware). They want a NC, or a chance to make up the work. They get neither.
- e) Do not hand in laboratories and/or skip an exam because you know one will be dropped. At the end of every semester students in deep trouble ask if there is anything they can do to raise their grade. When I look at my grade book these are students who have consistently failed to hand in homework over the semester, and/or have missed an exam. If you want a good grade in the class, consistently work towards that goal from the first day onwards.

Laboratory Teaching Assistant's names and email addresses:

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How is Geology relevant to us?

Monday, August 31: An introduction to the course: Why study geology?
Why study geology? Case Study: Climate Change

Thursday September 3: Why study geology? Case Study: Climate Change continued.
Chapters 12 & 13

How was the Earth created?

Thursday, September 10: The Formation of the solar system and the Earth
Chapter 1

Monday, September 14: Earth as a Planet
Chapter 1

How does Plate Tectonics Work?

Thursday, September 17: Plate Tectonics, Chapter 4

Monday, September 21: Plate Tectonics, Chapter 4

Thursday, September 24: Plate Tectonics, Chapter 4

Monday, September 28: No Classes

What are rocks and what can we learn from them?

Tuesday, September 29: Monday Schedule

Thursday, October 1 Igneous Rocks, Chapter 6

Monday, October 5: Igneous Rocks, Chapter 6

Thursday, October 8: Igneous Rocks, Chapter 6

Monday, October 12: No Classes

Wednesday, October 14: Exam 1 (chapters covered to date)

How do Scientists Read the Rocks?

Thursday, October 15 Weathering and Erosion, Chapter 7

Monday, October 19 Weathering and Erosion, Chapter 7

Thursday, October 22 : Sedimentary Rocks, Chapter 8

Monday, October 26: Sedimentary Rocks, Chapter 8

Thursday, October 29: Sedimentary Rocks, Chapter 8

Monday, November 2: Metamorphic Rocks, Chapter 10

Thursday, November 5 : Metamorphic Rocks, Chapter 10

Monday, November 9: Metamorphic Rocks, Chapter 10

How do learn about the inner earth?

Thursday, November 12: Exam 2 (material covered since exam 2)

Monday, November 16: Earthquakes and the Earth's interior, Chapter 5

Thursday, November 19: Earthquakes and the Earth's interior, Chapter 5

Monday, November 23: Earthquakes and the Earth's interior, Chapter 5

Thursday, November 26: No Classes

Geologic time and the history of the Earth

Monday, November 30: Geologic Time, Chapter 3

Thursday, Dec 3: Geologic Time, Chapter 3

Monday, Dec 7: A brief history of life on Earth, Chapter 14

Thursday, Dec 10, A brief history of life on Earth, Chapter 14

Thursday, Dec 17, Final Exam , 11:30 a.m. to 1:30 p.m.

Schedule of Pre-lecture quiz due dates: All quizzes due by 9 a.m. unless otherwise noted.

Pre-lecture quiz:	Due date
Chapter 12	9/3 (suggested)*
Chapter 13	9/3 (suggested)*
Chapter 1	9/10
Chapter 4	9/17
Chapter 6	10/1
Chapter 7	10/15
Chapter 8	10/22
Chapter 10	11/2
Chapter 5	11/16
Chapter 3	11/30
Chapter 14	12/7

* quiz will actually close on 9/10