SYLLABUS
GEOL 101 - Introductory Geology Laboratory Syllabus
Tuesdays and Fridays, 8:10-9:25 p.m., HN 1021, Spring 2016
Instructor: Peter Matt email address: pm70@hunter.cuny.edu
Office Hours: Tuesdays, 9:30-10:30, Room HN 1032

Contact Policy: You can email me from you @myhunter email account 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 48 hour reply window. Do NOT email me the night before a lab is due or the morning of and expect an answer from me.

Brief description/purpose of course:
GEOL 101, Introductory Geology Lab, is a hands-on laboratory science course. It is an introduction to the Earth sciences and will prepare students for further coursework in the Environmental Studies program, with particular relevance to physical geography and geology. Because the focus is on learning through individual observations and exercises, lectures are short and generally use about 25% of class time. This course will fulfill the Common Core Requirement for category C, Life and Physical Sciences.

The objectives and goals of this course are for students to develop:
- An understanding of the nature of science and the scientific method.
- An understanding of how Earth formed and the processes of its continuing evolution
- The ability to identify the most important types of rocks and minerals and know how they are formed
- A basic understanding of plate tectonics.
- An understanding of the vastness of geologic time, and the methods of geologic dating
- An understanding of mountain building processes and how they relate to the geologic history of New York City

This course is designed to produce the following learning outcomes. Students will be able to:
- Apply the concepts of plate tectonic theory to the rock cycle, and to stresses that cause deformation
- Observe and measure geological samples
- Understand how remotely sensed data, seismic data, stratigraphic data and chemical data are combined to generate a comprehensive view of Earth.
- Know the processes that create and modify Earth materials.
- Conduct collaborative laboratory explorations

Further specific learning outcomes include:
1. A working knowledge of the International System (SI) of Units
2. An ability to interpret data from scientific charts and tables
3. An understanding of the basic principles and tools of direct and remote observation that are used by geoscientists
4. An ability to test physical and quantitative models of isostasy and apply them to the Earth system
5. Understand convection and its role in plate tectonics
6. Interpret spatial geologic data in the framework of plate tectonic theory
7. Be able to use graphical information about rock melting to infer how magma forms
8. Use laboratory observations to help interpret the origins of igneous, sedimentary and metamorphic rocks
9. An ability to deduce basic information about earth processes and history by “reading the rock record”
10. An ability to apply the principles of relative and absolute dating to analyze the geologic history of an outcrop/region

Required textbook(s):


_It is essential that students have a print copy of the textbook with them at each and every class._ In addition, students must bring a black and white (or green and white) college-ruled composition notebook, pens, pencils, eraser, calculator and ruler to each class.

_*Students are strongly encouraged to buy a 10x hand lens, such as Bausch and Lomb’s Coddington magnifier. This extremely handy tool makes observing rocks much easier and more interesting. Good quality magnifiers of this type are widely available for $30 or less._*

Course evaluation/grading:

<table>
<thead>
<tr>
<th>Assignments</th>
<th>Weighting</th>
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<tbody>
<tr>
<td>8 labs, 1 field report</td>
<td>50%</td>
</tr>
<tr>
<td>3 practical exams</td>
<td>40%</td>
</tr>
<tr>
<td>Attendance and participation</td>
<td>10%</td>
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</tbody>
</table>

Make-up exams are NOT given except unless students can provide a documented reason for absence, e.g. physician’s note. Make up exams may then be scheduled at a mutually convenient time.

A final grade of IN (incomplete) is available except under extraordinary, 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 grades and record what you have earned. To qualify for Credit/No Credit you must have completed all nine 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 final exam. 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/](http://catalog.hunter.cuny.edu/).

Classroom policies

**Class Preparation:** Students are expected to have read the introductory material to each chapter before coming to class. This will make your class time working on assignments more productive.

**Cell phones and computers:** Cell phones should be set to vibrate before class and are not to be used except as calculators or for internet access related to class activities if requested by the instructor. If you have an urgent reason to use your phone, take it outside the classroom. Earphones are not to be worn in the classroom. Computers may be used in class for the sole purpose of taking notes or for internet access related to class activities if requested by the instructor. Any other activities such as checking your email or social media, internet shopping, etc. are not allowed.

**Eating and drinking:** No food is allowed in the classroom; non-alcoholic drinks are allowed. Be sure to remove any beverage containers that you bring into the classroom.

**Attendance and Punctuality**

Attendance is part of your class participation, so I take attendance at the beginning of every class. I expect students to be present for the entire class. Lateness is sometimes unavoidable but repeated lateness will be penalized. Please keep in mind that late entry disrupts the classroom. If you miss the roll call, you can see me after class to explain your lateness and I will decide whether or not to mark you present for that class.

**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. If you haven’t read the explanatory text for each activity before class, you will have difficulty completing the activities on time.

**Laboratory notebook preparation:**
You are required to keep a laboratory notebook as a record of your laboratory work. The notebook allows you to keep all of your assignments in one place, so that you can use it as a reference and study tool. Use a standard, ruled black and white (or green and white) composition notebook for this purpose. Prepare your notebook as follows:

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, fill in the table of contents with page numbers and activities. Page numbers should be on the upper left of the left-hand pages and the upper right of the right-hand pages.
4. For each laboratory exercise, write an introduction summarizing the information presented in the explanatory text for the unit. The introduction must be prepared before each class. 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.
5. All assigned activities must be completed on the laboratory manual pages, then neatly 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.
6. Write a conclusion for each activity. This should reflect how your understanding of the topic has changed as a result of performing the related activity.
7. Introductions and conclusions must be written in grammatically correct English. Slang, colloquialisms and conversational style are not usually appropriate for your notebook. For example, concluding that “I found out minerals are really cool,” would not be acceptable language. Dig deeper. Tell me and tell yourself what you learned.
8. Your notebook must be clear and legible. If I can’t read your writing, you will have to print answers to questions and paste them into your notebook. Otherwise, points up to the total value of the exercise (5) may be deducted.

**Lab Homework:**
You will perform laboratory exercises in class and complete them outside of class, if necessary.
Since the laboratory exercises will count for 50% of your total course grade, it is important for you to do the assigned work and submit it on time.

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 his or her 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, and have an excellent study tool.

Grading of your laboratory exercises will be based on the quality and accuracy of the introduction, observations, explanations, answers to questions and conclusions, and on the appearance of your notebook, per guidelines above. A five point scale is used for grading in which 5=excellent, 4=good, 3=fair, 2=poor, 1=terrible, 0=not handed in.

**When are lab exercises due?**
See the class schedule below for lab due dates. Late lab exercises will have their grade **reduced 20% for each day received late** unless you have a valid excuse that can be documented. Once labs are collected, any labs handed in are considered late. 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, take it to the office of the
Department of Geography, HN1004, and have the department’s Administrative Assistant, Ms. Martha Taylee, initial and date your lab. This will “stop the clock.”

**Extra Credit:**
No extra credit is given in this course. Whatever effort you would put into an extra credit assignment put into completing the lab exercises and studying for exams.

**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 Accessibility to secure necessary academic accommodations.

**Schedule of topics and readings:** Below is a schedule of class meetings, topics, reading assignments and laboratories. I reserve the right to change the schedule and/or assignments as necessary.

<table>
<thead>
<tr>
<th>Date</th>
<th>Laboratory Assignment</th>
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<th>Laboratory Assignment</th>
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<tbody>
<tr>
<td>Fri Jan 29</td>
<td>Lab 1, Observing and Measuring Earth Materials and Processes</td>
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<tr>
<td>Tue 2/2</td>
<td>Lab 1, cont’d.</td>
<td>Fri 2/5</td>
<td><strong>Lab 1 due</strong> Lab 2, Plate Tectonics and the Origin of Magma</td>
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<tr>
<td>Tue 2/9 (Fri schedule)</td>
<td>Lab 2, cont’d.</td>
<td>Fri 2/12</td>
<td>Abe’s birthday, college closed</td>
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<tr>
<td>Tue 2/16</td>
<td>Lab 2, cont’d.</td>
<td>Fri 2/19</td>
<td><strong>Lab 2 due</strong> Lab 3, Mineral Properties, Uses, and Identification</td>
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<tr>
<td>Tue 2/23</td>
<td>Lab 3, cont’d.</td>
<td>Fri 2/26</td>
<td>Lab 3, cont’d.</td>
</tr>
<tr>
<td>Tue 3/1</td>
<td><strong>Lab 3 due</strong> minerals review</td>
<td>Fri 3/4</td>
<td>Mineral Practical</td>
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<tr>
<td>Tue 3/8</td>
<td>Lab 5, Igneous Rocks</td>
<td>Fri 3/11</td>
<td>Lab 5, cont’d.</td>
</tr>
<tr>
<td>Tue 3/15</td>
<td>Lab 5, completed</td>
<td>Fri 3/18</td>
<td><strong>Lab 5 due</strong> Lab 6, Sedimentary Rocks, Processes, and Environments</td>
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<tr>
<td>Tue 3/22</td>
<td>Lab 6, cont’d.</td>
<td>Fri 3/25</td>
<td>No class</td>
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<tr>
<td>Tue 3/29</td>
<td>Lab 6, completed</td>
<td>Fri 4/1</td>
<td><strong>Lab 6 due</strong> Lab 7, Metamorphic Rocks, Process, and Resources</td>
</tr>
<tr>
<td>Tue 4/5</td>
<td>Lab 7, completed</td>
<td>Fri 4/8</td>
<td><strong>Lab 7 due</strong> Rock review</td>
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<td>Date</td>
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<tr>
<td>Tue 4/12</td>
<td><strong>Rock Practical</strong></td>
<td>Fri 4/15</td>
<td>Lab 8 – Dating of Rocks, Fossils and Geologic Events</td>
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<tr>
<td>Tue 4/19</td>
<td>Lab 8, cont'd.</td>
<td>Fri 4/22-29</td>
<td>Spring Break</td>
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<tr>
<td>Tue 5/3</td>
<td>Lab 8 completed</td>
<td>Fri 5/6</td>
<td><strong>Lab 8 due</strong></td>
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<td>Central Park Field Trip 1</td>
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<td>Tue 5/10</td>
<td>Central Park Field Trip 2</td>
<td>Fri 5/12</td>
<td>Discussion-Understanding Central Park</td>
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<tr>
<td>Tue 5/17</td>
<td><strong>Central Park Field Reports Due</strong></td>
<td>Fri 5/20</td>
<td>Reading day</td>
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<td></td>
<td>Lecture-Glaciers</td>
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<td>Fri 5/27</td>
<td>Final Exam</td>
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