GEOLOGY OF NYC AND VICINITY
GEOL 38333/PGEOG 70179
Friday 3:35 PM-7:35 PM
Hunter North 1021

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Course Materials:


Blackboard- Course Materials: I will post information about the Geology of New York City needed for your home works and test preparation, including pamphlets about field trips.

Course Description:
This course is designed to familiarize earth science students with the geology of the New York Metropolitan area and vicinity. Using urban public transportation, walking and hiking, students will observe directly and record geologic information in the natural exposure. The large variety of rock formations outcropping in our area will help students to understand the complexity of geologic structures and processes involved in the formation and evolution of earth’s crust. All the observations and interpretations will be done according to the modern geologic timescale and in the frame of plate tectonics. The course consists of lectures, laboratory and geologic field trips and it is recommended for Earth Science Education Program and also for Teachers of Earth Science MA Program.

The first part of semester we’ll review information you already have from geology 101,102, and we’ll update your knowledge with information about geology of the major American and local geologic units. We’ll review also minerals and rocks as much as possible applied to the local geology to prepare students for the field trips in the second part of semester in order to observe, identify and interpret earth materials and processes. The trip program will be very important to improve your field earth science experience and also it will connect you to the metropolitan environment and also to the bedrock structure and petrology of NYC and Vicinity for a correct appreciation of local geology.
# Tentative Spring Semester Syllabus

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Lecture title</th>
<th>Homework</th>
<th>Quiz*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>01/29/16</td>
<td>Geologic units of North America and geologic units of NYS</td>
<td>Structural Units - maps</td>
<td>Q1-Intro to NYC geology</td>
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<tr>
<td>2</td>
<td>02/05/16</td>
<td>Geologic Time-Historical Geology of NYS; geologic column and cross section.</td>
<td>Geologic time column and tectonic events</td>
<td>Q2-Structural Units</td>
</tr>
<tr>
<td>3</td>
<td>02/09/16</td>
<td>Plate Tectonic North America and NYS area</td>
<td>Structural scheme of north America</td>
<td>Q3- geologic time</td>
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<tr>
<td>4</td>
<td>02/19/16</td>
<td>Mineralogy and ore deposits in NYS</td>
<td>Minerals identify, classify, describe</td>
<td>Q4-plate tectonics</td>
</tr>
<tr>
<td>5</td>
<td>02/26/16</td>
<td>Petrology of igneous rocks</td>
<td>Igneous rocks identify, classify, describe</td>
<td>Q5-Minerals and Ores</td>
</tr>
<tr>
<td>6</td>
<td>03/04/16</td>
<td>Petrology of sedimentary rocks</td>
<td>Sedimentary rocks identify, classify</td>
<td>Q6-Igneous Petrology</td>
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<tr>
<td>7</td>
<td>03/11/16</td>
<td>Petrology of metamorphic rocks. Ice age in NY City area. Review for the</td>
<td>Metamorphic rocks identify, classify, describe</td>
<td>Q7-Sedimentary Rocks</td>
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<tr>
<td>8</td>
<td>03/18/16</td>
<td>*Midterm: Chapters 1-6. Quiz 7 Metamorphic rocks+ ice age</td>
<td>Reading about Central Park</td>
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<tr>
<td>9</td>
<td>03/23/16</td>
<td>Central Park field trip – Manhattan Formations</td>
<td>Reading Geology of NYC Power point CP</td>
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<td>10</td>
<td>04/01/16</td>
<td>Inwood Park field trip- Inwood And Manhattan formation</td>
<td>Power point Inwood</td>
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<td>11</td>
<td>04/08/16</td>
<td>Palisades field trip-Triassic and Jurassic Second team distribution</td>
<td>Power point Palisade</td>
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<tr>
<td>12</td>
<td>04/15/16</td>
<td>Orchard Beach Field trip</td>
<td>Power point Orchard Beach</td>
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<tr>
<td>13</td>
<td>05/07/16</td>
<td>Staten Island Field trip Final team distribution.</td>
<td>Power point Staten Island</td>
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<tr>
<td>14</td>
<td>05/13/16</td>
<td>Field trip individual and team presentation – LAST DAY OF CLASSES</td>
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<tr>
<td>15</td>
<td>05/27/16</td>
<td>* Final exam: Geology of NYC and vicinity</td>
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Field trips are scheduled in the second part of the spring semester and the dates can be flexible based on weather condition. All changes will be announced on Blackboard. During the trip we’ll observe outcrops, rocks and geological structures, record information in your field note book and take pictures with a digital camera.

For field trips you need good walking shoes to walk on rocks, warm wind jacket, back pack, camera, small hard cover field note book, 10 small plastic and paper bags, water bottle, and hat. For public transportation you need a Metro Card or cash.
For the each of the five mandatory trips we'll create five teams of students to study and present five synthetic Power Points, one for each trip, before the individual presentations at the final school day.

I have added four optional field trips. These trips are recommended and will be day trips and we'll use Metro North for transportation on Hudson for trips 1, 2, 4 and a van for the trip 3.

**Grading:**
Midterm=20%
Final test =20%
Field work note book and field work and collection -10%
Power points*-=10%;
Graduate Students will submit a 15 pages field trip reports synthesis =10%* includes power points
*Geology of NYC and Vicinity* text, maps and pictures: 15-Pages submitted by the final exam.
Quizzes = 7×5%=35%
Attendance and participation at the team work =5%
*Quizzes and tests we'll be different for GEOL 38333 and for PEGEOG 70179*

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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.”

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**Attendance and Punctuality**
Although there is no point value associated with attendance and punctuality, you cannot expect to do well in this course if you do not attend class on a regular basis. Arriving late is disrespectful of your classmates and your instructor. There will be eight field trips over the course of the semester. If you miss a trip day the grade for your field note book will be reduced by 12.5%. If you miss either the midterm exam or the final exam you must contact me within 24 hours of the exam with a valid and documented reason for your absence. If you miss the final exam *for any reason*, I will determine your semester grade based on the work done up to the time of the final. I will not submit a grade of IN if you do not take the final or do not contact me within 24 hours of the time and date of the final exam.
**Addenda**

Name of the research students’ teams:

1. Geology of Central Park
2. Geology of Inwood area
3. Geology of Palisades area
4. Geology of Orchard Beach
5. Geology of Staten Island

Graduate students PGEOG70179 will have individual synthesis report of the fieldtrips

Format of each team research paper, poster or power points; pictures and text are mandatory

1. Geography of the area - topographic map - 5%
2. Physical environment - 5%
3. Cultural and historic info - 5%
4. General Geology - Physical-historical - 10%
5. Local Physical Geology - 5%
6. Outcrops description - 60%
7. Conclusion - 10%

PGEOG 70179: Format for the individual field trips synthesis report: 15 pages;

1. Introduction to Geology of NYC Metropolitan area
2. Description of the main geologic units and also a simplified geologic map, column, and cross section
3. Manhattan Prong: essential outcrops of Central Park, Inwood and Orchard Beach
4. Newark Basin: Palisades outcrops sedimentary, igneous and contact metamorphic rocks
5. Atlantic Coastal Plain: Staten Island outcrops of Glacial Deposits and beaches
6. Conclusion; Personal opinion and suggestions about geologic fieldtrips.