Hunter College
Introduction to Environmental Geosciences
Geology 10500
Spring 2017
Hunter West W415 Wednesdays, 10:10 a.m.-1:00 p.m.

Instructor Peter Matt
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Email policy

I encourage students to email me with any questions about the class. In order for me to respond in a timely fashion, it is important for students to identify themselves in the subject line of emails as follows:
LAST NAME, FIRST NAME, GEOL 10500
Emails sent with this format will be answered within 48 hours of receipt. Emails sent without this format may take longer to answer.
Always sign your email with your name at it appears in CUNYfirst.

Course Description

This course explores important environmental issues facing society today and investigates the science behind those issues. We will study earth's physical systems to understand global climate change, pollution, the use of natural resources, alternative energies and sustainable agriculture. We will study the fundamentals of evolution and population ecology to understand biodiversity conservation and the impacts of human activities on habitat. We will also examine the connections between the biological and physical sciences and environmental politics, environmental economics and environmental ethics and how they each figure in solving environmental problems.
(3 credits; satisfies GER 2E, non-laboratory science; Flexible Core-Scientific World)

Course Learning Objectives

You can expect to finish the course with a basic understanding of:

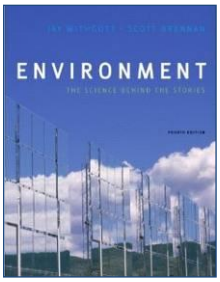
- The fundamental principles of the physical and biological sciences that govern ecosystems
- The production and uses of energy, mineral and agricultural resources and their related issues of sustainability
- The main sources of environmental pollution and their local and global implications for human and nonhuman life
- The promises and limitations of science and technology for addressing environmental problems
- The complex relationship between science, technology, politics, economics and ethics regarding environmental issues and their potential solutions

Additional Learning Objectives

GEOL 105 is designed as a first-year, non-lab science course. As such, in addition to learning the basic concepts of environmental geosciences, students will learn:

- How science works
- Quantitative and qualitative reasoning skills
- How to interpret graphs and tables
- Critical thinking skills
- How to locate and read scientific materials

Required Texts



- Jay Withgott and Scott Brennan (2011) *Environment, The Science Behind the Stories* (5th Edition), San Francisco: Benjamin Cummings. ISBN-10: 0321-897420. ISBN-13: 978-0-321-89742-8

- Any additional readings will be made available on the Hunter College Library EReserve page for this course

Course Policies

Participation

Proactive engagement with the required readings, daily preparation, and participation in in-class and group discussions will correlate with your quality of learning and personal growth from this course. We will cover a lot of material over the course of the semester, and the only way we will be productive as a class is if each individual completes the work expected of him or her. This means you should complete the assigned readings and assignments **PRIOR** to the class for which they are due. For my part, this means I will work diligently to return tests and assignments in a timely manner.

At times we may discuss topics that have strong political or ethical views attached to them. A comfortable and respectful environment is to be maintained in our classroom. Individuals should feel free to express their viewpoints on topics, and we will each respect the views expressed by others. Offensive speech and inflammatory comments will not be tolerated. Keep in mind that while many opinions and solutions may exist for the topics we discuss, we will primarily be concerned with those that can be backed up with information and data obtained through use of the scientific method.

Applied Environmental Geoscience Assignment

- You will investigate an environmental issue or problem occurring at a location of your choice and create a presentation on how environmental geosciences are being applied to understand the problem and to actively address the issue or problem. More details on this assignment will be announced in class.

Attendance

I take attendance at every class meeting. Students should arrive in class **on time.** If you have a legitimate reason for missing a session, you should let me know as soon as possible. In addition, you should ask a classmate or check Blackboard immediately for missed information so that you do not fall behind. We will be moving quickly in this course, and it is your responsibility to keep up.

Extra Credit

I **do not** offer extra credit. By participating fully and thoughtfully in in-class discussions, by having completed the assigned readings, and by 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.

Classroom Electronics Use

I permit the use of laptops and tablets **ONLY** for the purpose of taking notes during lecture. **ALL** other personal electronics should be turned off or set to silent before entering the classroom. Absolutely no texting is allowed during class. Any use of electronics beyond their permitted use is a disruption to the class and will be treated accordingly. **ABSOLUTELY NO ELECTRONIC DEVICES OF ANY KIND ARE PERMITTED DURING EXAMS.**

Grading Policies

Your final grade will be calculated as follows:

Undergraduate		
Quality Points	Grade Definition	(GPA Index)
A+	97.5 - 100%	4
A	92.5 - 97.4%	4
A-	90.0 - 92.4%	3.7
B+	87.5 - 89.9%	3.3
B	82.5 - 87.4%	3
B-	80.0 - 82.4%	2.7
C+	77.5 - 79.9%	2.3
C	70.0 - 77.4%	2
D	60.0 - 69.9%	1
F	0.0 - 59.9%	0
CR	Credit earned (equivalent to A, B, C)	-
NC	No credit granted	-

Attendance and participation. . . . . 10% of your total grade
Applied Environmental Geosciences Project . . . . . 20% of your total grade
Chapter quizzes (on Blackboard) . . . . . 10% of your total grade
Midterm Exam. . . . . 30% of your total grade
Final Exam . . . . . 30% of your total grade

Quizzes and Exams:

The quizzes will be completed on Google forms. Links to the quizzes will be posted on Blackboard. The quizzes will consist of multiple-choice questions from the assigned readings and class presentations. Exams will be multiple choice questions selected from the quizzes. Some material we cover in class may not be covered in the textbook. Anything that is discussed in-class is fair game for the quizzes and exams; therefore, your attendance, attentiveness, and participation at in-class lectures will be extremely important to your success in the course.

ELECTRONIC DEVICES OF ANY KIND ARE PROHIBITED DURING EXAMS. Violation of this rule will result in an automatic grade of zero (0) for the exam, and the possibility of further disciplinary action.

Incompletes

I do not give incompletes (IN) except under the most extraordinary and documented medical emergencies. No late assignments (including examinations) will be accepted. Without a valid medical excuse, students will receive a grade of zero (0) on any test not taken or assignment missed.

If, for a valid medical emergency, you do miss an exam or assignment, you must contact me within 48 hours of the missed exam and present acceptable documentary evidence for your absence. If I approve a make-up exam, it will cover the same material as the regular exam but will not be the same exam that was administered as scheduled.

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.

Blackboard will be used as a communication tool for this course. Any announcements will be posted regularly and important documents, including the syllabus and assignment instructions, will be posted and available for student reference. It is each student's responsibility to ensure that they have access to the course Blackboard site and to check it regularly for notifications and announcements.

Schedule*

***This schedule is tentative and subject to change by the Instructor. Any changes will be announced in advance.**

2/1	**Course Introduction, Introduction to Environmental Science and Sustainability** Required Reading: Textbook, Ch. 1; Wackernagel et al., 1999, National natural capital accounting with the ecological footprint concept.
2/8	**Earth's Physical Systems: Matter, Energy and Geology** Required Reading: Textbook, Ch. 2; Steffen et al., 2007, The Anthropocene: Are Humans Now Overwhelming the Great Forces of Nature?
2/15	**No class-Monday schedule**
2/22	**Evolution, Biodiversity and Population Ecology** Required Reading: Textbook, Ch. 3; Kolbert, 2013, The Lost World
3/1	**Species Interactions and Community Ecology** Required Reading: Textbook, Ch. 4; Pace et al., 2010, Recovery of native zooplankton associated with increased mortality of an invasive mussel
3/8	**Environmental Systems and Ecosystem Ecology** Required Reading: Textbook, Ch. 5; Vitousek et al., 1997, Human alteration of the global nitrogen cycle
3/15	**Ethics, Economics and Sustainable Development** Required Reading: Textbook, Ch. 6, Hardin (1968) "The Tragedy of the Commons"
3/22	**Midterm Exam (1 hour)** **Ethics, Economics and Sustainable Development** Required Reading: Textbook, Ch. 6, Hardin (1968) "The Tragedy of the Commons"
3/29	**Environmental Policy-Making** Required Reading: Textbook, Ch 7; Cobb et al., 1995, If the GDP is up, why is America down?
4/5	**Human Population** Required Reading: Textbook, Ch. 8; Hooke et al., 2012, Land Transformations by Humans

4/12	**No class-spring break**
4/19	**Soil and Agriculture** Required Reading: Textbook, Ch. 9; Montgomery, 2007, Soil Erosion and Sustainability
4/26	**Biotechnology and the future of food** Required Reading: Textbook, Ch.10 ; Hooke et al., 2012, Land Transformations by Humans
5/3	**Global Climate Change** Required Reading: Textbook, Ch. 18; Rignott, 2014, Widespread, rapid grounding line retreat…(of West Antarctic glaciers)
5/10	**Applied Environmental Geoscience Assignment Presentations**
5/17	**Applied Environmental Geoscience Assignment Presentations (cont'd.)**
May 24	**Final Exam – 10:10 AM to 1:00 PM**