

Hunter College
Introduction to Environmental Geosciences
Geology 10500
Fall 2017

Hunter West W415 Wednesdays, 10:10 a.m.-1 p.m.

Instructor

Peter Matt

Email

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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.

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:

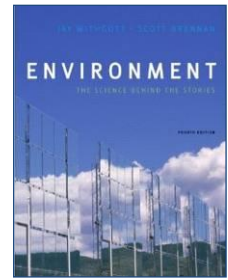
- How science works
- Quantitative and qualitative reasoning skills
- How to interpret graphs and tables
- Critical thinking skills
- How to locate and read scientific materials



Required Text:

Jay Withgott and Scott Brennan (2011) *Environment, The Science Behind the Stories*, San Francisco: Benjamin Cummings. ISBN-13: 9780321712738.

Although lectures are based on the current (6th) edition of this text, students may wish to buy an older edition because used copies can be very inexpensive. The basic concepts do not change from edition to edition.



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.



Course Policies

Participation

Proactive engagement with the required readings, daily preparation, and participation in class 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.

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.

Group Project-Synthesizing a Scientific Article

You will work with a small group (2-4 people) to prepare an oral presentation on a scientific article relevant to the syllabus. Each presentation will be approximately 12 minutes long. In addition, each group will submit a written summary of its work. Further details will be provided after the semester begins.

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

Laptops, phones and tablets permitted solely for taking notes. No other use in the classroom is allowed. **Phones** should be turned off or set to silent before entering the classroom. Absolutely no texting or calling is allowed during class. If you are alerted to a personal matter that requires your attention during class, you must leave the classroom to use an electronic device. **ABSOLUTELY NO ELECTRONIC DEVICES OF ANY KIND ARE PERMITTED 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.



Grading Policies

Your final grade will be calculated as follows:

Attendance and participation.....	10% of your total grade
Scientific article projects	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. Quizzes must be submitted between the time the material is presented in class and the time of the next class.

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.

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.

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.

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 access and accommodations for its registered students. Hunter College students with disabilities and medical conditions are encouraged to register with 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 relationships. Students who have experienced any

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	-

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.

- a. 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, or contacting the College's Public Safety Office (212-772-4444)
- b. 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>

	<h2 style="text-align: center;">Schedule*</h2> <p style="text-align: center;">*This schedule is tentative and subject to change by the Instructor. Any changes will be announced in advance.</p>
8/30	<p>Course Introduction, (Text Ch. 1); Earth's Physical Systems: Matter, Energy and Geology (Text Ch. 2) <u>Required Reading:</u>Textbook, Ch. 1; Textbook, Ch. 2; Wackernagel et al., 1999, National natural capital accounting with the ecological footprint concept.</p>
9/6	<p>Evolution, Biodiversity and Population Ecology (Text Ch. 3) <u>Required Reading:</u>Textbook, Ch. 3; Steffen et al. 2007, The Anthropocene</p>
9/13	<p>Species Interactions and Community Ecology (Text Ch. 4) <u>Required Reading:</u>Textbook, Ch. 4; Pace et al., 2010, Recovery of native zooplankton associated with increased mortality of an invasive mussel</p>
9/20	<p>No Class-CUNY official holiday</p>
9/27	<p>Environmental Systems and Ecosystem Ecology (Text Ch. 5) <u>Required Reading:</u>Textbook, Ch. 5; Vitousek et al., 1997, Human alteration of the global nitrogen cycle</p>
10/4	<p>Ethics, Economics and Sustainable Development (Text ch. 6); Environmental Policy-Making (Text Ch. 7) <u>Required Reading:</u>Textbook, Ch. 6; Textbook Ch. 7; Cobb et al., 1995, If the GDP is up, why is America down?</p>
10/11	<p>Human Population (Text Ch. 8) <u>Required Reading:</u> Textbook, Ch. 8; Hooke et al., 2012, Land Transformations by Humans</p>

10/18	Midterm Exam (45 mins) Soil and Agriculture (Text Ch. 9) Textbook, Ch. 9; Montgomery, 2007, Soil Erosion and Sustainability
10/25	Biotechnology and the future of food (Text Ch. 10); Biodiversity and Conservation Biology (Text Ch. 11) <u>Required Reading:</u> Textbook Ch.10 and Ch. 11
11/1	Forests and Forest Management (Text Ch. 12) <u>Required Reading:</u> Textbook Ch.12
11/8	Freshwater Systems and Resources (Text Ch. 15); Marine and Coastal Systems and Resources (Text Ch. 16) <u>Required Reading:</u> Textbook Ch. 15; Textbook Ch. 16
11/15	Atmospheric Science (Text Ch. 17) <u>Required Reading:</u> Textbook Ch.17; Lacis et al 2010, Atmospheric CO2: Principal Control Knob Governing Earth's Temperature
11/22	Global Climate Change (Text Ch. 18) <u>Required Reading:</u> Textbook, Ch. 18; Rignott, 2014, Widespread, rapid grounding line retreat...(of West Antarctic glaciers)
11/29	Applied Environmental Geoscience Assignment Presentations
12/6	Applied Environmental Geoscience Assignment Presentations (cont'd.)
12/13	No class-reading day
5/17	Final Exam