GEOL 105
Introduction to Environmental Geosciences
Wednesday, 9:10am – 12:00pm
HN 1036
Spring 2012

Instructor: Traci Warkentin, PhD
Office location: Hunter North, 10th Floor, Room 1043
Email: twarkent@hunter.cuny.edu (students must include the course name and number in their subject line)
Office hours: Wednesdays, 12:00pm – 2:00pm, or by appointment.

Brief description/purpose of course: 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, energy use, alternative energies, sustainable agriculture, water pollution and water use. 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 environmental health, and how they each figure in solving environmental problems. (3 credits; satisfies GER)


Course objectives: Students in this course will develop an understanding of:

1. The fundamental principles of the physical and biological sciences that govern ecosystems;
2. The production and uses of energy, mineral and agricultural resources and their related issues of sustainability;
3. The main sources of environmental pollution and their local and global implications for human and nonhuman life;
4. The promises and limitations of science and technology for addressing environmental problems;
5. 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, interpreting graphs and tables, critical thinking, and how to locate and read scientific materials. While examinations and quizzes will be used to mainly assess student comprehension of content, to meet these additional learning objectives, students will learn and develop these skills and understandings by completing the applied assignment and participating in various in-class exercises.
Course evaluation:
Midterm Examination 30%
Final Examination 20%
Applied Environmental Geosciences Assignment 20%
Chapter Quizzes 25%
In-class Exercises & Participation 5%

Classroom policies: Participation entails more than just attending class. It means coming to class prepared, having done the required readings and actively engaging in various activities including class discussions, asking questions, and taking part in small group and individual in-class exercises. It also means actively respecting your peers and contributing positively to the group dynamic, for example, by being courteous and respectful of others, not dominating conversations and discussions, allowing others to speak and be heard. To further help create a respectful and productive space for learning, please turn off and put away cell phones.

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.

Schedule of topics and readings:
Note: This schedule is subject to change by the Instructor.

Week 1: February 1  Science and Sustainability: An Introduction to Environmental Science
Required Reading: Chapter 1

Week 2: February 8  Earth’s Physical Systems: Matter, Energy, and Geology
Required Reading: Chapter 2

Week 3: February 15  Applied Environmental Geoscience Assignment

Week 4: February 22  Evolution, Biodiversity, and Population Ecology
Required Reading: Chapter 3

Week 5: February 29  Species Interactions and Community Ecology
Required Reading: Chapter 4

Week 6: March 7  Applied Environmental Geoscience Assignment

Week 7: March 14  Environmental Systems and Ecosystem Ecology
Required Reading: Chapter 5

Week 8: March 21  MID-TERM EXAM

Week 9: March 28  Environmental Health and Toxicology
Required Reading: Chapter 14
Week 10: April 4  
Applied Environmental Geoscience Assignment

Week 11: April 11  
Spring Recess – College is closed

Week 12: April 18  
Minerals and Mining & Environmental Ethics and Economics
Required Reading: Chapter 23 & Chapter 6

Week 13: April 25  
Fossil Fuels, Their Impacts and Energy Conservation
Required Reading: Chapter 19

Week 14: May 2  
New Renewable Energy Alternatives
Required Reading: Chapter 21

Week 15: May 9  
Final Exam