**Introduction to Environmental Science**

EESC 1201 Sections 4818 and 4333

Spring 2023 / Mondays 9:30-10:45 / Ingersoll 2310

**Instructors:**

**Sara “Perl” Egendorf, PhD**

**aka Professor Perl**

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Office hours on Mondays 10:45-12 or by appointment

Ingersoll 3129

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**Course Readings:**

*Environmental Issues* by Andrew Frank:

<https://www.oercommons.org/courses/environmental-issues/view>

All chapter readings are from this Open Educational Resource (OER) textbook

and all other readings are given as free pdfs

**Welcome to Introduction to Environmental Science!**

What is “The Environment”? How do people come to understand, interact with, and study their environments, particularly in cities? What tools of science can be used to quantitatively and qualitatively observe and describe ongoing dynamics and changes in environmental systems? How can these scientific tools be used to assess and ultimately steward environments? This course will introduce students to the following big ideas: a) systems science: understanding the Earth and its various environments as interacting systems of the geosphere, hydrosphere, atmosphere, pedosphere, and biosphere (which includes the anthroposphere – humanity); b) critical thinking: synthesizing and evaluating data, as well as attention to power in systems; and c) hands-on and applied knowledge: field and lab-based analytical methods and communication.

**CUNY First Course Description:**

Introduction to environmental science in urban centers; physical, chemical, biological and human influences on environmental systems; project-based study of a local environmental problem with emphasis on field methods, data analysis and technical communication skills; one field trip required.

**Course Objectives:**

By the end of this course, you will be able to:

1. identify and discuss the specific physical, chemical, biological and human processes that contribute to environmental issues;

2. collect, analyze and present field data;

3. evaluate scientific claims made in the media and in conversations

**Course Expectations:**

1. **Attendance**
   1. You are expected to attend all lectures, labs, and field trips. If you are unable to attend class, you are expected to email Professor Perl or Professor Begum ahead of time.
   2. If you miss more than two classes (even with excused absences) you must reach out to Professor Perl to meet and discuss accommodations.
   3. Each unexcused absence will deduct 10 points from your grade. Note that 4 unexcused absences will result in a non-passing grade.
2. **Reading**
   1. You are expected to complete all assigned readings before the class they are due. You are expected to spend at least 2-3 hours reading for this course every week.
   2. Reading is essential for this, and all courses. Do not let reading become a lost art!
3. **Blackboard Discussion Boards and Quizzes**
   1. Blackboard is an online class management tool provided by CUNY. There, we will post reading material, messages to the class, important upcoming deadlines, send emails, etc.
   2. This will be our primary means of communicating with the class outside of our scheduled meetings. You are responsible for logging in to Blackboard and checking for updates.
   3. You will be asked to hand in several **short writing responses on Blackboard by midnight on Saturday (or two days) before the next lecture class**.
   4. Two quizzes will be assigned on Blackboard to help you stay on top of course content.
   5. Your interests and questions are essential for this course. Your writing will help guide discussions and activities and may also be used to create the final exam.
4. **Respect**
   1. It is a privilege to be in an institution of higher education. You are expected to treat everyone, including yourself, with the utmost respect. As such, you are expected to put time and effort into all the work you do in this course, and to know what constitutes academic integrity (i.e., cheating and plagiarism of any kind is disrespectful to yourself and others, and will not be tolerated).
   2. When someone is speaking in class, please look at the speaker, listen attentively, and respond with questions or comments.
   3. Texting, scrolling, or looking at screens while classmates or professors are talking is disrespectful and will not be tolerated. 10 points will be taken off your grade each time this occurs.
   4. Communication is key to learning and success in college. You are expected to participate actively in class, and to stay on top of communication via email and Blackboard outside of class.
   5. If you face any challenges with course material or with circumstances in life that might impact your attendance or ability to stay up to date with reading and assignments, it is imperative that you communicate with your professors. Please write respectful and formal emails. We will do everything we can to support you in ensuring your success in the course. This is our job. But we can only do so in response to your proactive communication.
5. **Field Trips and Plumb Beach Presentation**
   1. There will be a mandatory field trip to Plumb Beach in Brooklyn (precise date TBD by weather and tides). You must attend. We will depart Brooklyn College at 9:30 AM and return by 4:00 PM (please arrive early).
   2. During this field trip, you will be collecting data to assess the impacts beach erosion and erosion control measures on sensitive coastal habitat.
   3. Again, this field trip is an essential component of the course and is mandatory. If you have a schedule conflict, you MUST discuss this with me within the first two weeks of the semester.
   4. For the final project, each group will assume the role of an environmental consulting firm and present their results from the field investigation at Plumb Beach. Though this is a group presentation, each group member will be assigned an individual grade based on the quality of their contributions to the final product.
6. **Creative Final Project**
   1. In lieu of a midterm, you will have the opportunity to work on a creative final project. The purpose of this project is for you to conduct some research on a topic of interest to you, and to find a creative way of sharing the information with others.
   2. First, consider: what topics, issues, or solutions to environmental issues are most interesting to you? This can be something we covered in class, or something we did not.
   3. Second, search the internet, academic journals, books, etc. to learn as much as you can about this topic.
   4. Third, think about ways you can share this important information with others. What would be a meaningful and engaging way to teach others about this? Memes? Videos? Songs? Zines? Visual images? Concept maps? Choose any form that is interesting to you. If you prefer to write a standard report, this is fine, but please do your best to write something you would want other people to read (perhaps you should submit it to a newspaper, a journal, even a Brooklyn College publication?).
   5. Finally, feel free to collaborate with your peers, but make sure everyone has their own final product. Reach out to Professor Perl with questions or for feedback at any point along the way.
   6. Be prepared to share your final project with the class on May 8.
7. **Grading**
   * 15% Blackboard Writing Assignments / Quizzes
   * 15% Creative Final Project
   * 20% Cumulative Final Exam
   * 50% Lab assignments, including attendance and final presentation

Your letter grade will be based on your final cumulative points as follows:

A+ (98 - 100), A (93 - <98), A- (90 - <93), B+ (87 - <90), B (83 - <87), B- (80 - <83), C+ (77 - <80), C (73 - <76), C- (70 - <73), D+ (67 - <70), D (63 - <67), D- (60 - 63), F (<60)

**Course Outline:**

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| **Week** | **Date** | **Topic** | **Reading** | **Discussion Board** |
| 1 | 10/30/23 | "The Environment." What does this mean? How do people know and understand environments? | -Chapter 1: Environmental Science |  |
| 2 | 2/6/23 | The geosphere: deep space and time, origin stories, and intro to Earth systems science | -Skinner et al, Dynamic Earth, Chapter 1: Meet Planet Earth  -Robin Wall Kimmerer, Braiding Sweetgrass, "Sky Woman Falling" | What cultural ways of knowing inform how you understand environments? |
| 3 | **Tuesday 2/21/23** | The biosphere: matter, energy, life, and ecosystems | -Chapter 2: Matter, Energy and Life  - Chapter 3: Ecosystems and the Biosphere |  |
| 4 | 2/27/23 | Environmental issues, environmental pollution, and environmental justice: understanding harms and organizing responses | -Chapter 6: Environmental Hazards and Human Health  -Bullard, "Anatomy of Environmental Racism and the Environmental Justice Movement”  -Principles of Environmental Justice | How did EJ form as a movement? In your view, what are the most important tenets, and why? |
| 5 | 3/6/23 | The hydrosphere: changing oceans, rivers, and lakes | -Chapter 7: Water Availability and Use |  |
| 6 | 3/13/23 | Plastics, pollution, and anti-colonial research | -Liboiron, Pollution is Colonialism, "Introduction" | List 3 key ideas and at least 2 discussion questions in response to Liboiron’s text. |
| 7 | 3/20/23 | Soils: the pedosphere | -Dirt, the ecstatic skin of the Earth, Part I  -Chapter 10: Feeding the World | Quiz 1: geosphere, biosphere, hydrosphere |
| 8 | 3/27/23 | Soils: the anthro-pedosphere and human interactions | -Egendorf, "Applying a novel systems approach to address systemic environmental injustices: Constructing soil for limiting the legacy of lead (Pb)" | How might you use a systems approach to understand and engage with an environmental issue? |
| 9 | 4/3/23 | Urban agriculture and food Justice | -Penniman, Farming While Black, "Introduction" and "Urban Farming"  -Bradley and Herrera, "Decolonizing Food Justice" | -What is “the original notion of food justice?” Why is this important?  -Research organizations working for food justice. What are they doing and why? |
| 10 | 4/17/23 | Energy: conventional and sustainable sources | -Chapter 9: Conventional Energy and Sustainable Energy |  |
| 11 | 4/24/23 | The climate system: atmospheric science and anthropogenic climate change | -Chapter 8: Air Pollution and Climate Change | Quiz 2: pedosphere, energy, atmosphere |
| 12 | 5/1/23 | Climate Justice | -Hebdon et al, "Pedagogy and Climate Change"  -Lennon, "Energy transitions in a time of intersecting precarities: From reductive environmentalism to antiracist praxis"  -Shephard and Corbin-Mark, “Climate Justice”  -Bali Principles of Climate Justice | -What pedagogies are needed to effectively teach about climate change? Why?  -What are some differences between an extractive and regenerative economy? |
| 13 | 5/8/23 | Final Project Presentations |  |  |
| 14 | 5/15/23 | Reflect / Review |  |  |
| 15 | 5/22/23 | **Final Exam** |  |  |

**College Policies:**

**Policy on Academic Integrity:** The faculty and administration of Brooklyn College support an environment free from cheating and plagiarism. Each student is responsible for being aware of what constitutes cheating and plagiarism and for avoiding both. The complete text of the CUNY Academic Integrity Policy and the

procedure for policy implementation can be found at [www.brooklyn.cuny.edu/bc/policies](http://www.brooklyn.cuny.edu/bc/policies). If a faculty member suspects a violation of academic integrity and, upon investigation, confirms that violation, or if the student admits the violation, the faculty member MUST report the violation. Students should be aware that faculty may use plagiarism detection software.

**Statement Regarding the Center for Student Disability Services**: The Center for Student Disability Services (CSDS) is committed to ensuring students with disabilities enjoy an equal opportunity to participate at Brooklyn College. In order to receive disability-related academic accommodations, students must first be registered with CSDS. Students who have a documented disability or suspect they may have a disability are invited to schedule an interview by calling (718) 951-5538 or emailing [Josephine.Patterson@brooklyn.cuny.edu](mailto:Josephine.Patterson@brooklyn.cuny.edu) If you have already registered with CSDS, email [Josephine.Patterson@brooklyn.cuny.edu](mailto:Josephine.Patterson@brooklyn.cuny.edu) or [testingcsds@brooklyn.cuny.edu](mailto:testingcsds@brooklyn.cuny.edu) to ensure accommodation emails are sent to your professor.

**Nonattendance because of religious beliefs:** The New York State Education Law provides that no student shall be expelled or refused admission to an institution of higher education because he or she is unable to attend classes or participate in examinations or study or work requirements on any particular day or days because of religious beliefs. Students who are unable to attend classes on a particular day or days because of religious beliefs will be excused from any examination or study or work requirements. Faculty must make good-faith efforts to provide students absent from class because of religious beliefs equivalent opportunities to make up the work missed; no additional fees may be charged for this consideration. Please see the Undergraduate Bulletin for more information: <http://www.brooklyn.cuny.edu/web/off_registrar/2022-2023_Undergraduate_Bulletin.pdf>

**Student Bereavement Policy**: Students who experience the death of an immediate family member must contact the Division of Student Affairs, 2113 Boylan Hall, 718.951.5352, studentaffairs@brooklyn.cuny.edu, if they wish to implement either the Standard Bereavement Procedure or the Leave of Absence Bereavement Procedure (see below). The Division of Student Affairs has the right to request a document that verifies the death (e.g., a funeral program or death notice). More information is available at:

<http://www.brooklyn.cuny.edu/web/about/initiatives/policies/bereavement.php>

Please familiarize yourself with all the resources that the **Brooklyn College Library** has available to you: <https://library.brooklyn.cuny.edu/resources/>

**Special Dates:**

Wednesday, January 25 First day of Spring 2023 classes

Tuesday, January 31 Last day to add a course

Sunday, February 12 No classes scheduled

Monday, February 13 College Closed – No classes scheduled

Monday, February 20 College Closed – No classes scheduled

Tuesday, February 21 Conversion Day – Classes follow a Monday schedule

Wednesday, April 5 - Spring Recess – No classes scheduled

Thursday, April 13

Tuesday, May 16 Last day to withdraw from a course with a “W” grade

Wednesday, May 17 Final Examinations Begin

Tuesday, May 23 Final Examinations End / End of Spring Semester