Civ Env 203 (S'2023)
Earth in the Anthropocene
Lectures: MWF 12-12:50 pm (except 3/27 lecture which is moved to 3/28)

Location: Tech L361
Canvas website: https://canvas.northwestern.edu

Instructor: Neal Blair
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Office Hours: After class or by arrangement

Course description: The need for food, water, energy and infrastructure has led to a progressive engineering of Earth's surface. The impacts of our activities are now reaching global scales. In this course, the foundations of the Earth System will be investigated along with the global impacts both current and projected.

Prerequisites: CHEM 103/131/171 or equivalent recommended, MATH 224

Teaching method: Lectures, demonstrations, and discussions

Readings: Posted on Canvas or retrieved from library

Evaluation methods: Progress in the course will be monitored by weekly homework (30%) and assessments (70%). The weekly assessments will typically be short exams given on Friday. Make-up assignments will be provided only if prior notice of expected absence is provided to instructor before lecture. Late assignments will not be accepted without prior approval from the professor.

Final letter grade assignments for course
A = 94-100, A- = 90-93
B+ = 87-89, B = 84-86, B- = 80-83
C+ = 74-79, C = 68-73; C- = 60-67
D = 50-59
F < 50
Bring paper, a writing utensil (preferably a pencil), and a scientific calculator or equivalent (e.g. laptop with Excel) to class. These may be needed for in-class problem solving. The calculator will not be allowed for assessments on Fridays.

This class or portions of this class may be recorded by the instructor for educational purposes. These recordings will be shared only with students enrolled in the course . I will communicate how you can access the recordings.

Unauthorized student recording of classroom or other academic activities (including advising sessions or office hours) is prohibited. Unauthorized recording is unethical and may also be a violation of University policy and state law. Students requesting the use of assistive technology as an accommodation should contact **AccessibleNU**. Unauthorized use of classroom recordings — including distributing or posting them — is also prohibited. Under the University's Copyright Policy, faculty own the copyright to instructional materials — including those resources created specifically for the purposes of instruction, such as syllabi, lectures and lecture notes, and presentations. Students cannot copy, reproduce, display or distribute these materials. Students who engage in unauthorized recording, unauthorized use of a recording or unauthorized distribution of instructional materials will be referred to the appropriate University office for follow-up.

Course goals

By the end of the course the students should be able to:

1. Research information in the scientific peer reviewed literature
2. Assemble and synthesize information to answer research questions
3. Clearly communicate information in written formats
4. Understand the fundamental components of the Earth System.
5. Identify the major global environmental problems, their causes and possible mitigation.

These goals address the following ABET (Accreditation Board for Engineering and Technology) Student Outcomes where the student will gain:

- an ability to develop and conduct experimentation, analyze and interpret data, and use engineering judgement to draw conclusions, and
- an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Collaborations and Academic Ethics

Discussion is encouraged between class participants however assignments turned in for grades should be the work of the individual. Sources of information for all work should be carefully cited. Violations of the principles of academic integrity can result in severe penalties, including expulsion from the University. All students should review College guidelines on Academic Integrity.

Disability Accommodations

Any student with a documented disability needing accommodations is requested to speak directly to the Office of Services for Students with Disabilities (SSD) (847-467-5530) and the

instructor as early as possible in the quarter (preferably within the first two weeks of class). All discussions will remain confidential.

Tentative Schedule

As with the environment, schedule may be changed because of weather or other factors.

Week	Topic
1	Introduction to the Anthropocene
2	The Earth System and Tectonics
3	Global Heat Transport and Climate
4	The Water Cycle
5	The Critical Zone
6	The Carbon Cycle
7	Critical Zone Engineering
8	Water Management
9	Climate Change
10	Geoengineering