

ENVS 23
Physical & Chemical Environment
Summer Session 2 2015

Instructor: Katie Monsen
NS2 Rm. 471 ✧ Office hours – Mon 1-3 and by appointment

This is a draft syllabus and subject to change.

Course description: *Provides an overview of the physical and chemical environment of planet Earth. Fundamental chemistry and physics are introduced in the process of learning about Earth in a holistic way. The influence of human societies on the global environment is one focus of discussion. Earth's many "spheres" are explored first: the lithosphere; the atmosphere; the hydrosphere, and the ecosphere. Then global cycles of carbon, nitrogen, and several other elements are studied in the context of basic sciences and societal issues.*

Understanding the chemical, geologic, and physical processes at work in our world will help you be able to engage more deeply in upper division Environmental Studies courses, as well as critically read news articles about the environment, engage meaningfully in conversations -- interpersonal to institutional -- on environmental issues, and help adapt to, diminish, or reverse human-induced changes in the environment. As the course instructor, my goal is to facilitate your learning of these concepts; the course requirements are how I evaluate your knowledge of the material.

Course requirements: Students will be graded on four course components:

- a. Two online quizzes per week (20%)
- b. Eight in-class small-group assignments (20%)
- c. Midterm exam (25%)
- d. Final exam (35%)

Quizzes: Each week, **two quizzes** will be available on eCommons (see "Tests & Quizzes" under Course Tools); both quizzes will close on **Sunday at 11:59 pm**. You may submit the quiz up to three times; your highest score will be counted. It is entirely your responsibility to take the quiz on time.

In-class assignments: Most class days, you will complete and submit a short in-class assignment in a group of 2-3 people. The assignments are meant to allow you to work with the current course material as we go. Your highest 7 assignment grades will be counted.

Midterm & final exams: The midterm exam will be **August 10 at 11 am**, and will cover material through August 5. The final exam will be **August 26 at 11 am**, and will focus on material after August 5, although you will be expected to be able to use concepts from throughout the quarter. Make-ups for quizzes, assignments, and exams are not allowed.

Bonus assignment: There will be an extra credit opportunity near the end of the quarter; it will count for one in-class assignment.

DRC: If you have permission for accommodations through the UCSC Disability Resource Center, please bring your paperwork to me the first week so I can do my best to help you get the services you need. If you have a disability that affects your learning but have not yet enrolled with the DRC, please see their [website](#) for information on how to be able to use their services.

Academic integrity: By enrolling in the university, students are automatically agreeing to abide by policies, including those on academic misconduct. Academic integrity and scholarship are core values that should guide our conduct and decisions as members of the UCSC community. Plagiarism and cheating contradict these values, and so are very serious academic offenses. Penalties can include a failing grade in an assignment or in the course, or suspension or expulsion from the university. This course follows the university's [Rules of Conduct](#) regarding student conduct and discipline. Students who submit work containing plagiarized material or information they did not collect or whose quizzes, assignments or exams are not clearly their own will fail the course and be referred to their college provost for disciplinary action. Anyone who tries to help a friend by letting them copy their work is also considered guilty of academic dishonesty according to university regulations. If you have any questions about what constitutes unfair collaboration or plagiarism, please contact the instructor. Students who violate the academic integrity policy typically fail the course. Finally, as a member of the campus community, you are expected to demonstrate integrity in all of your academic endeavors and will be evaluated on your own merits. So be proud of your academic accomplishments and help to protect and promote academic integrity at UCSC. The consequences of cheating and academic dishonesty — including a formal discipline file, possible loss of future internship, scholarship, or employment opportunities, and denial of admission to graduate school — are simply not worth it.

Textbook: Mackenzie, Fred T. 2011. Our changing planet: an introduction to earth system science and global climate change. 4th ed. Available at Bay Tree Bookstore.

Course schedule (estimated):

July 27 & 29

Course introduction, Gaia hypothesis, earth's processes, the lithosphere
Mackenzie ch. 1-3

July 29 includes a rock hike on campus

August 3 & 5

Atmosphere, hydrosphere, and air-sea interactions
Mackenzie ch. 4-5

August 10 & 12

Midterm exam; ecosphere, carbon cycle, global environmental change over time
Mackenzie ch. 6-8

Midterm exam is the last half of class on August 10

Aug. 17 & 19

Biogeochemical cycles; terrestrial vegetation; land changes; water pollution
Mackenzie ch. 7-11

Class will be in the Sinsheimer greenhouse on August 17

Aug. 24 & 26

Acid deposition, photochemical smog, factors influencing climate & climate change; final exam
Mackenzie ch. 11-14

Final exam is the last half of class on August 26