ENVIRONMENTAL ENGINEERING (CE111)
Fall Semester 2019

Class: M,W,F 9:10AM-10:00AM in 2 LeConte Hall (3 units | Class No. 27429)

Instructor: Dr. Jennifer Stokes-Draut jsdraut@berkeley.edu
office hours: Weds 10:15 - 11:45AM (or by appointment); 619 Davis Hall

Graduate Student Instructors (GSIs):
Eric Troyer eric_troyer@berkeley.edu
Shelby Witterby shelby_witherby@berkeley.edu
GSI office hours: Thursday 1:15-2:30 (Shelby), Friday 1:15-2:30 (Eric); 305 Davis Hall
Discussions: Mon 12-1 (Shelby) or Mon 4-5 (Eric) in 534 Davis Hall; starting Monday September 9

Course description *(from catalog)*: Quantitative overview of air and water contaminants and their engineering control. Elementary environmental chemistry and transport. Reactor models. Applications of fundamentals to selected current issues in water quality engineering, air quality engineering, air quality engineering, and hazardous waste management.

Textbook: William W Nazaroff and Lisa Alvarez-Cohen, *Environmental Engineering Science*, Wiley, 2001. The material covered in class will complement rather than duplicate what is covered in the text. It is important to do the assigned reading *and* to attend class.

Approximate Outline (subject to change; see bCourses for updated and more detailed schedule)

Week	Topics	Chapter	Assignments (due date)
1	Introduction, units, engineering analysis	1	Assignment 0 (8/30, optional)*
2	Constituents of water and air	2	Assignment 1 (9/6)
3	Equilibrium, phase partitioning	3	Assignment 2 (9/13)
4	Acids and bases	3	Assignment 3 (9/20)
5	Reaction kinetics, redox reactions	3	Assignment 4 (9/27)
6	Diffusion and particle settling	4	Assignment 5 (10/4)
7	Dispersion and transport	4	MIDTERM 1 (10/9)
8	Reactor models	5	Assignment 6 (10/11)
9	Water quality	5	Assignment 7 (10/18)
10	Treatment processes	6	Assignment 8 (10/25)
11	Drinking water treatment	6	MIDTERM 2 (11/8)
12	Wastewater treatment	6	Assignment 9 (11/22)
13	Air quality	7	
14	Air pollution control	7	Assignment 10 (12/6)
FINAL EXAM Thursday 12/19 7-10PM (Location TBD)			

Grading: There will be 10 required assignments, two midterm examinations (Weds. October 9 and Fri. November 8), and a final examination (Thurs. December 19 7-10PM). Each student's assignment grade will be based on the 9 highest required assignment scores; the lowest score will be discarded. Assignment 0 will be included in your assignment grade only if it helps you. Final grades will be weighted as follows:

- Assignments 20%
- Midterms (2) 50%
- Final Exam 30%

A note on the font: I know some people have strong feelings against the Comic Sans font. I have intentionally chosen to use it for many of my teaching materials because studies indicate it is easier for people with dyslexia to read.

Course Policies

Student preparation: College-level physics (Phys 7AB), chemistry (Chem 1A) and one year of calculus are required. Environmental science/engineering principles (e.g., CE 11) and fluid mechanics (CE 100) are useful.

bCourses: Important course information will be distributed and posted using bCourses. It is important that you receive and read e-mail messages concerning the course. To lessen our environmental footprint, some course materials will only be posted on bCourses. PDFs of lecture slides and course capture videos will be available on bCourses after each class ends.

Email: I try to respond to emails quickly but can only guarantee a response within 48 hours. Do not expect responses to last minute emails, especially over weekends. Substantive questions should be saved for class or office hours.

Academic Honesty: You are encouraged to form study groups and work together to understand course material and discuss how to approach homework problems, but you may not copy the work of another student. Cheating will result in a zero on the assignment and may be reported to the University Office of Student Conduct.

Accommodation Policy: If you have a DSP accommodation letter, please have it sent to me no later than the first week of classes. If you need other disability-related accommodations in this class, if you have emergency medical information you wish to share, or if you need special arrangements in case the building must be evacuated, please inform me immediately. You may speak to me privately after class or during office hours. Please notify me in writing by the second week of classes about known or potential extracurricular conflicts (e.g., religious observances, graduate school interviews, or team activities). I will try to accommodate you but cannot promise it in all cases.

Technology policy: Keep your cell phones on silent and put away in your bag or pocket during lecture. Laptop/tablet use should be limited to the class's current activities. Multi-tasking inhibits your own ability to learn and distracts other students. We don't always realize how our choices impact others unless we are told. I encourage you to tell your classmates if you find their unrelated technology use distracting.

Policy on Assignments:

- Assignments will typically be posted on or before 5PM on Friday and due at **5PM on the following Friday.** All assignments must be turned in electronically on Gradescope, unless specified otherwise. You may need to create a Gradescope account if you haven't done so previously, using the link on bCourses. Campus libraries have scanners you can use to scan to your email or a flash drive without charge. You are responsible for ensuring your electronic files are complete and readable.
- **Late assignments** will be accepted within 24 hours of the deadline for 20 points off and 24-48 hours late for 40 points off. Assignments more than 48 hours late will not be accepted. I will exclude (drop) your lowest grade from your assignment average. The purpose of this policy is to account for any unforeseen circumstances (e.g., personal illness, family emergency), or simply to help students balance this course with other obligations. Assignment 0 is optional.
- **Neatness and clarity count** in school and in the real world. You are responsible for the clarity of your work. If the grader cannot follow what you have done, you may not receive full credit even if the work is correct. The grader is authorized to deduct points for work that is sloppy or difficult to follow.
- Solutions to the problem assignments will be posted to bCourses after the assignment is due. It is valuable to study the solutions even if you have earned high scores.
- Regrades will be handled by me in office hours or electronically via Gradescope. Do not contact the GSIs about regrades. They will not be able to help you.