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**CEE/PUBH 3610: Environmental Management**  
Fall 2016

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**Instructor**

Dr. Laurie McNeill

Email: Laurie.McNeill@usu.edu

Office: ENGR 216

Phone: 435.797.1522

Office Hours: W: 11:30 am – 1:20 pm; R: 1:00 – 2:20 pm, or by appointment

**Undergraduate Teaching Fellows (UTF)**

Tyler Christensen, Adam Jones, Rashelle Wegelin

Office: ENGR 235

Office Hours: see Canvas

**Course Administration**

Course meets M,W, F: 10:30 – 11:20 am, ENGR 108.

You must also register for one lab session: M, W: 2:30 - 5:30 pm; T, R: 3:00 - 6:00 pm.

Prerequisites: MATH 1210, CHEM 1210, BIOL 1010/1610/BLS.

Graded work will be available outside my office. Handouts, scores, and other information will be posted in Canvas. Note that scores posted in Canvas are informational only; final official grades will be posted in Banner (Access).

Recording (audio or video) during lecture is prohibited.

**Course Objectives**

This course will introduce you to topics in environmental engineering and science, including: sociological framework; fundamental physical, chemical, and biological processes; engineering technology; current environmental issues; and legislation. In this course, you will:

1. Gain factual knowledge
2. Learn fundamental principles and theories
3. Learn to apply course materials to solve problems

**Required Course Materials**

Mihelcic, J.R. and Zimmerman, J.B. (2014) Environmental Engineering: Fundamentals, Sustainability, Design. 2nd Edition. John Wiley & Sons, Hoboken, NJ. 704 pp.  
(also available as an e-textbook: <http://www.coursesmart.com/9781118741498>)

You must also have an *i>clicker* (1 or 2). Register your *i>clicker* using your USU A-number at:  
<http://www1.iclicker.com/register-clicker>

## **Workload and Grading**

	Number Assigned	% of Overall Grade
Homework	13	50
Field Trip attendance	4	10
Field Trip assessments		20
Final exam (on field trips)	1	10
Class participation quiz	several daily	10

Daily class participation quizzes on course material will be given during lecture. Most quizzes will be administered with the *i>clicker*, and you must have your own *i>clicker* to take the quiz. You cannot make up a missed quiz, but your 3 lowest quiz scores will be dropped.

There will be no curve, so it is possible for everyone to get an “A”. You are not competing against your classmates. If you have a question about grading, please see me within one week of the graded assignment being returned. The overall grading scale is given below.

Overall Score and Corresponding Letter Grade				
93 – 100 A	87 – 89 B+	77 – 79 C+	60 – 69 D	< 60 F
90 – 92 A-	83 – 86 B	73 – 76 C		
	80 – 82 B-	70 – 72 C-		

## **Academic Integrity**

To enhance the learning environment at Utah State University and to develop student academic integrity, each student agrees to the following Honor Pledge:

*"I pledge, on my honor, to conduct myself with the foremost level of academic integrity."*

A student who lives by the Honor Pledge is a student who does more than not cheat, falsify, or plagiarize. A student who lives by the Honor Pledge:

- Espouses academic integrity as an underlying and essential principle of the Utah State University community;
- Understands that each act of academic dishonesty devalues every degree that is awarded by this institution; and
- Is a welcomed and valued member of Utah State University.

For more information, see: <https://studentconduct.usu.edu/studentcode/article6>.

I encourage you to collaborate with classmates on assignments, including discussing the solution approach and checking final answers. However, the following are prohibited:

- copying someone else’s assignment, or allowing another student to copy yours
- having another student use your *i>clicker* if you miss class
- using “kufers” (material from previous years’ classes)
- using the instructor’s solution manual for this class’s textbook

A violation of the Academic Integrity Standard may result in a zero on that assignment; further violations may result in a grade of “F” for the course.

## Homework Standards

Homework is the main way you will demonstrate that you have learned the material in this class. Homework is not just practice for exams. I put great emphasis on the entire homework process, including figuring out what a problem is asking, identifying needed information, solving the problem, and presenting your solution. There is partial credit; computation-based assignments will be graded on your problem solving approach ( $\frac{2}{3}$  of points) and the correct answer ( $\frac{1}{3}$  of points), while essay assignments will be graded on content ( $\frac{2}{3}$  points) and language mechanics ( $\frac{1}{3}$  points).

Homework is due at the **beginning** of class. Late assignments will not be accepted unless prior arrangements have been made.

*Computation-based assignments:* Presenting your homework in a format that is organized and clear is a critical part of the learning process. Assignments should be LEGIBLE and your work should be NEAT. Illegible work will be counted as wrong, and up to 20% of the grade can be deducted from assignments that do not follow the required format (see next page).

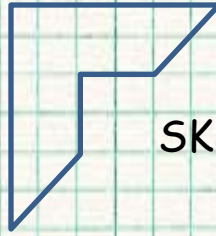
*Essay assignments.* All essays must be word processed, using 12 point font, 1.5 line spacing, and 1" margins. Each essay will have a specific grading rubric that includes points for technical content as well as for language mechanics. Essay assignments must be submitted via Canvas.



## Disability Accommodations

Reasonable accommodation will be provided for all persons with disabilities in order to ensure equal participation within the program. If a student has a disability that will likely require some accommodation by the instructor, the student must contact the instructor and document the disability through the Disability Resource Center (797-2444), preferably during the first week of the course. Any request for special consideration relating to attendance, pedagogy, taking of examinations, etc., must be discussed with and approved by the instructor. In cooperation with the Disability Resource Center, course materials can be provided in alternative format, large print, audio, diskette, or Braille.

## PROBLEM NUMBER

Given:Find:

SKETCH (if needed)

Page 1 of 2

separate problem statement with single line

Solution

1. Use engineering (E-2) paper, one side only, do not fold.
2. Staple multiple pages, more than one problem may be worked on a single page.
3. Use pencil and erasers, no pen, no cross outs.
4. Print, no script, all printing must be neat and horizontal.
- ~~5. Do not cut and paste in the problem statement, print it by hand.~~
6. Use a straight edge and compass as appropriate.
7. Include the symbolic form of all governing equations used.
8. Use symbolic format / variables as much as possible in your solution.
9. Show numerical values with an appropriate number of significant figures.
10. Organize your solution so that it can be easily followed.
11. ~~Underline intermediate answers, double underline final answers.~~
- ~~12. Indicate final answers with an arrow from the right margin and label the arrow with the name of the variable.~~
13. Include units with all intermediate and final answers.
14. Reference any tables of figures used to import information.
15. Each solution should be complete.
16. Your work must have a professional appearance and be neat.

Answer and Units

double line to show end of problem

## Tentative Schedule

Class #	Date	Topic	Reading due	Homework Due
1	M, 29 Aug	Syllabus and course description	see Canvas	
2	W, 31 Aug	Sustainability, Challenges in Env Mgmt	1.1 - 1.2	
3	F, 2 Sept	Units, Chemistry review	2.1 - 2.5, 3.1, 3.3 - 3.4, 3.7	HW #0
	M, 5 Sept	No class (Labor Day)		
4	W, 7 Sept	Chemistry review	3.5, 3.6, 3.8, 3.9	
5	F, 9 Sept	Kinetics, Reactors, Mass balances	3.11, 4.1	HW #1
6	M, 12 Sept	Kinetics, Reactors, Mass balances	3.11, 4.1	
7	W, 14 Sept	Kinetics, Reactors, Mass balances	3.11, 4.1	
8	F, 16 Sept	Energy balances	4.2	HW #2
9	M, 19 Sept	The Practice of Environmental Management		
10	W, 21 Sept	National Environmental Policy Act	see Canvas	
11	F, 23 Sept	Growth / Decay	5.2 (pg. 188-196)	HW #3
12	M, 26 Sept	Human population growth		
13	W, 28 Sept	Environmental risk	6.1 - 6.4	
14	F, 30 Sept	Environmental risk	6.5	HW#4
15	M, 3 Oct	Environmental risk	6.6.1	
16	W, 5 Oct	Clean Water Act	7.1 + see Canvas	
17	F, 7 Oct	Clean Water Act	7.1 + see Canvas	HW #5
18	M, 10 Oct	Water resources, water characteristics	7.3, 7.4, 8.2	
19	W, 12 Oct	Biochemical oxygen demand	5.4	
20	F, 14 Oct	BOD in rivers	7.7	HW #6
21	M, 17 Oct	BOD in rivers	7.7	
22	W, 19 Oct	Water quality in lakes/reservoirs	7.8	
23	R, 20 Oct	Drinking water treatment	8.1 - 8.6	HW#7

Class #	Date	Topic	Reading due	Homework Due
	F, 21 Oct	No Class (Fall Break)		
24	M, 24 Oct	Drinking water treatment	8.7 - 8.9	
25	W, 26 Oct	Wastewater treatment	9.1 - 9.7	
26	F, 28 Oct	Wastewater treatment	9.8 - 9.13	HW #8
27	M, 31 Oct	Radioactive waste	see Canvas	
28	W, 2 Nov	Hazardous waste	10.2.6 + see Canvas	
29	F, 4 Nov	CERCLA (Superfund)	see Canvas	HW#9
30	M, 7 Nov	Air Pollution, Clean Air Act	11.1, 11.4.1-6	
31	W, 9 Nov	Criteria pollutants, Cache Valley PM2.5	see Canvas	
32	F, 11 Nov	Stationary sources, Gaussian plume model	11.5.1-2, 11.8	HW #10
33	M, 14 Nov	Gaussian plume model	11.8	
34	W, 16 Nov	Gaussian plume model, Motor vehicle emissions	see Canvas	
35	F, 18 Nov	Motor vehicle emissions	11.5.3 (pg. 612-617)	HW#11
36	M, 21 Nov	Motor vehicle emissions		
	23-25 Nov	No Class (Thanksgiving Break)		
37	M, 28 Nov	Indoor air quality	11.4.9	
38	W, 30 Nov	Indoor air quality	see Canvas	
39	F, 2 Dec	Municipal solid waste	10.1 - 10.2	HW #12
40	M, 5 Dec	Municipal solid waste	10.3.1-4	
41	W, 7 Dec	Municipal solid waste	10.3.5	
42	F, 9 Dec	Municipal solid waste, Review		HW #13
	T, 13 Dec	Final Exam due by 5 pm (at the Testing Center). Note: if the Testing Center is not completed as scheduled, the Final Exam will be Friday Dec 16, 9:30 - 11:20 am		