

## CE 321: Introduction to Environmental Engineering and Science

### Course Schedule - Fall 2019 - Updated 8-28-19

Class	Date	Topic	Subtopics and Reading	Laboratory (Tues/Thurs)
1	Mon., Aug. 26	Scope of Course	Review Syllabus/Schedule <i>Find a 7 Passenger Van Certified Driver for each class</i>	1) Watershed Interaction and Water Quality Indicators (Conductivity/Turbidity)
2	Wed., Aug. 28	Watershed Introduction	Watershed Perspective - Why?; Handout on Moodle	Introduce Cheston/Lafayette Mini-Lesson Information
3	Fri., Aug. 30	Watershed	Watershed Delineation (Continuation from Lab)	Tue. 8/27 and Thurs 8/29
4	Mon., Sept. 2	Material Balance - Hydrological Cycle - Hydrograph	Hydrologic Cycle - 7-1	2) Bushkill Watershed Tour (Lauren 5/1 - NATE, JOE 5/1, Jen) Students meet at William Center
5	Wed., Sept. 4	Material Balance - Reservoir Storage	Water Storage Problem	Bus Tour. SATURDAY - Sept. 7 Meet in front of AEC 7:50 am Joe, Nate, Annie, Andy
6	Fri., Sept. 6	Material Balance - Contaminant MB Basics	Water Storage Problem and Introduce Mass Balance	Lauren/Andy: 610-746-2808 NHSpez(Nate): 610-746-1371#7 Joe: 610-762-9289 - Annie: 610-428-8042
7	Mon., Sept. 9	Mass Balance - Steady State, Conservative	Units, Mass Balance Basics, Types of Reactors; 4-1 through 4-4	3) Water Budget
8	Wed., Sept. 11	Mass Balance - Steady State, Non Conservative	Equations and Problems; 4-1 through 4-4	Computer Lab, Sept. 10 and 12
9	Fri., Sept. 13	Mass Balance - Reactors	Mass Balance Problems	Meet in RISC 230 Bring Personal Computers
10	Mon., Sept. 16	Mass Balance - Non Steady State, Non Conservative	Mass Balance Problems	4) Coliform-Water Quality
11	Wed., Sept. 18	Mass Balance - Non Steady State, Non Conservative	Mass Balance Problems	Sept. 17 and 19 Ordered 6 box (20) FC/TC tests - XXXX
12	Fri., Sept. 20	Mass Balance - Practice Problems	Mass Balance Problems	Tom DeFazio Finish Lab with Mini-Lesson Practice
13	Mon., Sept. 23	Mass Balance -Practice Problems	Mass Balance Problems	5) Macroinvertebrates
*	Tues., Sept. 24	Evening Exam #1 - 7 to 9 pm	EXAM #1 ( Room Reserved AEC 239 and 241)	of Bushkill Creek Samples (Confirmed - 5/1/19)
14	Wed., Sept. 25	Introduction to Environmental Chemistry	Molarity and Normality; 2-1 through 2-2 & 2-4	Sept. 24 and 26 Rick Wiltrout
**	Thurs., Sept. 26	Mini-Lesson - Practice Session - 7 to 9 pm	Mini-Lesson - Practice Session with Cheston/Paxinosa Teachers LOCATION - 315	Tom DeF/Lauren: 610-746-2808 Rick, Tom, Marv
15	Fri., Sept. 27	Equivalent Concentrations - Molarity vs. Normality	Buffering Capacity and Reporting as CaCO <sub>3</sub> ; 2-4	
16	Mon., Sept. 30	Environmental Chemistry - Equivalent Wt., CaCO <sub>3</sub>	pH/Conductivity/Turbidity/Solids; 10-1	6) Community Engagement Event
17	Wed., Oct. 2	Environmental Chemistry - Equivalent Wt., CaCO <sub>4</sub>	pH/Conductivity/Turbidity/Solids; 10-2	Oct. 1 (Cheston - Strohl) and 3 (Paxinosa - Kelchner) Room T = 429; R=239
18	Fri., Oct. 4	Equilibrium Relationships, pH, Kw and Ka	Acid Equilibrium Chemistry; 2-2	Cheston Elementary
19	Mon., Oct. 7	Equilibrium Relationships, pH, Kw and Ka	Acid Equilibrium Chemistry; 2-2	7) Water Treatment Plant
20	Wed., Oct. 9	Review Test #1, K <sub>sp</sub> (Solubility)	Review Test #1 and Poster Discussion	Field Trip, Oct. 8 and 10 (Confirmed - 7-25-19 Don) Poster Summary Due
21	Fri., Oct. 11	NO CLASS - Make-up for Evening Exam #1	NO CLASS - Make-up for Evening Exam #1	Don Mauro (or Nolea Giering) : 610-250-6693 or 610-258-7181 (ext. 221)
<b>B</b>	Oct. 14 and 15	<b>Fall Break</b>	<b>Fall Break</b>	
22	Wed., Oct. 16	Henderson Hasselbach and pK <sub>sp</sub>	Acid Equilibrium Chemistry; 2-2	No Laboratory Session
23	Fri., Oct. 18	K <sub>a</sub> - Henry's Law	Acid Equilibrium Chemistry; 2-2	
24	Mon., Oct. 21	Alkalinity - SET UP Titration (Work with Tom D.)	Acid Equilibrium Chemistry; 2-2	
25	Wed., Oct. 23	Alkalinity Review	Introduce Ecosystem - Energy and Mass Flow; 5-1 through 5-3	8) Aik?
26	Fri., Oct. 25	Intro to Ecosystem -Energy/mass flow/Pop dynamics	Introduce Ecosystem - Energy and Mass Flow; 5-1 through 5-3 All Class Members are Expected to HELP with Engineering Open House!!!!	
27	Mon., Oct. 28	Nutrient Cycles - Population Dynamic/Nitrification	Nitrification & Limiting Nutrient - Class Notes	9) Water Resouce and Recovery Facility
28	Wed., Oct. 30	Nutrient Cycles - Nitrification	Carbon and Nitrogen Cycles: 5-4 Nitrification & Limiting Nutrient - Class Notes	Oct. 29 and 31 (Confirmed - 7/12, Chuck)
29	Fri., Nov. 1	Bioaccumulation - Eutrophication ; WT vs WWTP	Midterm Course Assessment Toxic Chemical in the Environment; 5-3	C. Wilson/A. Hoffman 610-250-6705
30	Mon., Nov. 4	Environmental Science/Engineering Overview and Regulations	Dev. of Water Quality Regulations and Pollutants; 1-7, 9-1, 9-2, 9-5, 9-6	10) Movie Silent Spring/Blind Spots Before the Flood (DiCaprio)
31	Wed., Nov. 6	Environmental Science/Engineering Overview and Regulations	Dev. of Water Quality Regulations and Pollutants; 1-7, 9-1, 9-2, 9-5, 9-6	Call Numbers SS - QH545.P4 R23 2007x BS - GE155.C46 B55 2006x BF - QC903.L5 B44.2017
***	Thurs., Nov. 7	Evening Exam #2 - 7 to 9 pm,	EXAM #2 ( Room Reserved AEC 239 and 241)	Phone # = 5151
32	Fri., Nov. 8	Water Quality; Regulations and Solids	Relationship of Oxygen to Organic Matter; 8-1, 9-4 through 9-7	Rm AEC 429 - Nov. 5 and 7 Poster Draft Due

33	Mon., Nov. 11	Water Quality; Solids and BOD	Carbonaceous BOD - Bottle Test; 9-4 through 9-7	11) Grand Central Landfill 610-863-2401/484-221-0085
34	Wed., Nov. 13	Water Quality; BOD - Bottle Dilution	<b>BOD DAY!!!</b> Carbonaceous BOD - Bottle Test; 9-4 through 9-7	Field Trip; Nov. 12 and 14 (Confirmed 7-25-19 - Ron)
35	Fri., Nov. 15	Water Quality; Bottle Dilution	Carbonaceous BOD vs. Nitrogenous BOD; 9-2	Ron Meyer (rmyer@wm.com) 910 W. Pennsylvania Ave.
36	Mon., Nov. 18	Water Quality; NBOD and NBOD vs. BOD	Carbonaceous BOD vs. Nitrogenous BOD; 9-2	12) Hardness Problem Solving Session <b>Final Poster Due (Printina)</b>
37	Wed., Nov. 20	Water Quality; Modeling River Pollution (Streeter)	Streeter-Phelps Practice Problem; 9-3	<b>Laboratory Evaluations</b>
38	Fri., Nov. 22	Water Quality; Streeter-Phelps Problem	Streeter-Phelps Practice Problem; 9-3	Nov. 19 and 21
39	Mon., Nov. 25	Review Test #2, CBOD Model	Streeter-Phelps Practice Problem; 9-3	
<b>B</b>	Wed., Nov. 27	Thanksgiving Break	Turkey Day	No Laboratory Session
<b>B</b>	Fri., Nov. 29	Thanksgiving Break	Don't Eat Too Much	
40	Mon., Dec. 2	Water Quality; Evaluations - Complete S-P Problem	Streeter-Phelps Practice Problem; 9-3	
41	Wed., Dec. 4	TBA	TBA and <i>Class Evaluations and ABET Evaluation</i>	13) Cheston/Paxinosa Poster Presentations
42	Fri., Dec. 6	TBA	TBA	