

CE 421 Environmental Biotechnology - Fall 2004

Week	Date	Topic	Reading Assignment
Fundamentals of Microbiology			
1	Aug 24, 26	Introduction/The Microbial World	Chapters 1 & 2
2	Aug 31 Sep 2	Microbial Metabolism and Growth	Chapter 3
3	Sep 7, 9	Role of Microorganisms in Biogeochemical Environment	Chapter 14
4	Sep 14, 16	Environmental Effects of Biogeochemical Cycles	Chapter 15
5	Sep 21, 23	Biodegradation	Chapter 16
Public Health Microbiology			
6	Sep 28, 30	Pathogens and Parasites in Water and Wastewater	Chapter 19
7	Oct 5, 7	Indicator Microorganisms and Disinfection/First Exam	Chapters 20 & 23
Water and Wastewater Treatment Microbiology			
8	Oct 12, 14	Water Treatment	Chapter 22
9	Oct 19, 21	Wastewater Treatment	Chapter 21
10	Oct 26, 28	Wastewater Treatment: Stoichiometry and Kinetics	supplement
11	Nov 2, 4	Treatment Plant Modeling/Biological Nutrient Removal	supplement
12	Nov 9, 11	Biological Nutrient Removal/Anaerobic Processes	supplement
13	Nov 16, 18	Anaerobic Processes/Second Exam	supplement
	Nov 23, 25	Thanksgiving Break	
14	Nov 30, Dec 2	Student Reports	
15	Dec 7, 9	Student Reports	
	TBA	Final Exam	

Text: Environmental Microbiology, by Maier, Pepper, and Gerba, Academic Press, 2000.

Supplementary texts: Wastewater Microbiology 2nd edition, by Gabriel Bitton, John Wiley & Sons, 1999.

Biological Wastewater Treatment, 2nd edition, by Grady, Daigger, and Lim, Marcel Dekker, 1999

Grading:	2 exams @ 20% each	40%
	Final exam	25%
	Class Participation	15%
	Term Paper	20%

Assignments:

- Conduct a literature review and prepare a term paper (10 to 15 pages) on a selected topic (not related to your thesis) involving an environmental biotechnology application. The term paper topic will be due September 7, outline due Sept. 21, list of references due Oct 5, first draft due Nov. 11 and final paper will be due Nov. 18. These are strict deadlines. Missed dates will cause a decrease in the term paper grade.
- In groups of 3 or 4, lead a discussion of a current environmental research article. Each group will be responsible for leading at least one discussion. It is expected that everyone in the class will have critically read the article prior to the discussion. Literature discussions will be held on Thursdays.

Lecture Instructor:

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