



<b>GRADING SYSTEM:</b>	270 Points and Above	A
	240 to 269 Points	B
	210 to 239 Points	C
	180 to 209 Points	D

**GRADING SYSTEM DEFINITIONS:** A = Exceptional level of work  
B = Expected level of work  
C = Passing, but below expected level of work for graduate students.  
D = Well below expected level of work

**COURSE OBJECTIVES:** Be able to identify major contaminants in natural, potable, and wastewaters, and be able to perform the necessary bacteriological, chemical and physical analysis to determine the quality of these waters.

Be able to utilize the results of analytical testing and statistical methods for the measure and/or evaluation of hazards in the environment, and be able to communicate these results to policy makers.

Be able to apply key concepts and an analytical framework in the area of water quality in order to understand and assess the fate, transport, and health effects of waterborne contaminants in both potable water, wastewaters, and urban runoff.

Be able to describe the precautions and treatment methods necessary to make a water supply safe for human consumption.

Be able to discuss the problems (in terms of human health and ecological resources degradation) presented by the discharge of poorly treated sewage into the environment, and know the treatment methods to ameliorate such problems.

Be able to describe both state-of-the-art and newly proposed technology that will be used to prevent water pollution and the risk to human health.

LECTURE OUTLINE

<u>Date</u>	<u>Topic</u>	<u>Readings</u>
Aug. 30	Overview-Water Sources and Water Quality: Setting Priorities	
	Water, A Unique Medium	Wetzel, Ch. 2
Sept. 6	Water and Human Health	Salvato, Ch.1 Feachem Ch. 9-11 13-17
Sept. 13	Disease Indicators	Feachem, Ch. 4
Sept. 20	Essentials of Limnology	Wetzel, Ch. 9,10
Sept. 27	Nitrogen & Phosphorous Cycling Productivity & Eutrophication	Wetzel, Ch. 12,13 Wetzel, Ch. 15
Oct. 4	Sulfur Cycling and Heavy Metals	Wetzel, Ch. 14
Oct. 11	Pollution of Flowing Waters Oceans and Estuarine Pollution	--- ---
<b>October 18</b>	<b>MIDTERM EXAM</b>	
Oct. 25	Water Quality Laws and Regulations	---
Nov. 1	Groundwater Hydrology & Private Water Supplies	Salvato, Ch. 3
Nov. 8	Public Water Supplies Water Disinfection	Salvato, Ch. 3 Salvato, Ch. 3
Nov. 15	Characteristics of Wastewater	Salvato, Ch. 4
Nov. 22	On-Site Wastewater Disposal Wastewater Treatment	Salvato, Ch. 4 Salvato, Ch. 4
Nov. 29	Non-point Source Pollution and Control Characteristics of Stormwater	
Dec. 6	Watershed Management: The Key to Clean Water	
<b>December 13</b>	<b>FINAL EXAM</b>	

LABORATORY EXERCISE OR FIELD-TRIP

**REQUIRED READING: LABORATORY METHODS AND READINGS (Available on Blackboard Site- Please read before corresponding Lab activity)**

<u>Date</u>	<u>Topic</u>	<u>Readings</u>
Aug. 31	Diss.O <sub>2</sub> and BOD(Biochemical Oxygen Demand)	Lab MethodsMeeting 1.PDF
Sept. 7	Water Chemistry - Nitrate, Ammonia, and Phosphorus	Lab Methods Meeting 2-3
Sept. 14	Water Chemistry (continued)	Lab Methods Meeting 2-3
Sept. 21	Water Bacteriology-MPN Method(Demo) and Membrane Filter Method for Total Coliforms and Fecal Coliforms	Lab Methods Meeting 5
Sept. 28	Water Bacteriology (IDEXX Method)	Water Bact. IDEXX.PDF
Oct. 5	Video-"Marine Pollution"	Health Effects Marine Waters.PDF
Oct. 12*	Visit Escondido Drinking Water Treatment Plant	
Oct. 19	Instrumental Analyses-GC,GC-MS,AA	
Oct. 26*	Field Trip to Santee Lakes	Padre Dam Bardenpho.PDF; Title 22.PDF
Nov. 2*	Analyses on Santee Lakes	
Nov. 9	Lead Analysis-ICP-MS	
Nov. 16	Field Trip to North City Water Reclamation,Advanced Wastewater Treatment Pilot Process	Title 22.PDF
Nov. 23	HOLIDAY	

