King Fahd University of Petroleum and Minerals
Civil Engineering Department

CE 370 (01) - Water Supply and Wastewater Engineering

Dr. Muhammad Shariq Vohra

Course Outline:

Topic (Lectures)	Week
Water Treatment (18 Lectures)	
Introduction & Water Quality	1
Continued	1
Water Demand & Supply	1
Water Chemistry	2
Continued	2
Treatment Operations & Processes	
Screening	2
Coagulation	3
Flocculation	3
Sedimentation	3
Filtration	4
Disinfection	4
Water Softening	4
Continued	5
Iron & Manganese Removal	5
(1st Midterm)	**5**
Color, Taste, & Odor Control	6
Removal of Dissolved Salts	6
Continued	6
Wastewater Treatment (17 Lectures)	
Wastewater Characteristics	7
Fundamentals of Biological Treatment	7
Biological Kinetic Equations	7
Treatment Operations & Processes	
Preliminary Treatment	
Screening	8
Grit Removal	8
Primary Treatment	8
Secondary Treatment	
Activated Sludge Process	9-10
(2nd Midterm)	**10**
Stabilization Ponds	11
Trickling Filters	11

Rotating Biological Contactors 11
Secondary Clarifiers 12

Advanced Treatment
Phosphorus & Nitrogen Removal 12

Water Supply & Wastewater Collection (8 Lectures)

Water Stability 12
Clearwells 13
Pumping 13
Continued 13
Water Distribution System
Storage Reservoir & Tanks 14
Hydraulic Analysis
Hardy Cross Method 14
Computer Program 14
Wastewater Collection 15

Presentations (2 Lectures) 15

Text: Water and Wastewater Technology (Hammer and Hammer, 2001).

WebCT: I will post the lecture handouts on the CE 370 WebCT site. The lecture handouts would contain both the theory and design-details.

Points-Distribution:

1st Midterm	60
2nd Midterm	60
Final	120
HWs	50
Quizzes	15
Lab [CE 370 (51)]	65
Paper & Presentation	30
Total:	400