

**King Fahd University of Petroleum and Minerals**  
**Civil Engineering Department**  
**CE 547 – Physical and Chemical Processes**

**Dr. Muhammad Shariq Vohra**

**Course Outline:**

<b><u>Topic (Lectures)</u></b>	<b><u>Week (Tentative)</u></b>
Introduction, Water Quality, Pre-Design Considerations (2)	1
Intake Structures, Screening (2)	2
Aeration, Gas Transfer (1)	3
Coagulation (2)	3, 4
Flocculation (2)	4, 5
<b>Midterm</b>	<b>5</b>
Sedimentation (3)	6, 7
Field Trip	7
Filtration (2)	8
Disinfection, Fluoridation (2)	9
Ion Exchange (1)	10
Membrane Processes (1)	10
Softening (2)	11
Fe/Mn, Color, Taste, & Odor Control (1)	12
Air Stripping, DAF/IAF, Adsorption (1)	12
Redox Processes (1)	13
Stabilization (1)	13
Field Trip	14
Pumping Systems (1)	14
Presentations	15

**Text:** Water Treatment Principles and Design by J.M. Montgomery

**Lib. Reserves:** Water Works Engineering by S. R. Qasim  
Integrated Design of Water Treatment Facilities by S. Kawamura

**WebCT:** Please check out the CE 547 WebCT site for class notes and other related information

**Points-Distribution:**

Midterm	20%
Final	35%
HWs and Quizzes	10%
Term Paper	35%

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Total: 100%