

21 December 2012

Department of Civil Engineering
2012 Autumn Semester
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Water Quality Dynamics

Outline #8: Equilibrium Chemical Model

1. Report of the last exercise (Ex7-1, 7-2, 7-4)
 - Presentation (Murata, Mohamed)
 - Discussion
 2. Chemical Reaction Kinetics
 - Michaelis-Menten Enzyme Kinetics
 - Arrhenius equation
 3. Streeter-Phelps Equation
 - Mass balance of BOD and DO in plug-flow system
 - First-order reaction
 - Deoxygenation rate constant
 - Reaeration rate constant
 - Effect of temperature on rate constants
 4. Equilibrium Chemical Model
 - Activity corrections
 - Equilibrium constant and temperature
 5. Exercise (Ex8-1 to Ex8-3)
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