Water Treatment for Sustainable Water Systems

2024 •ITSTP

Basic information

Course Title	Water Treatment for Sustainable Water Systems
Instructor	Professor Joe Dallas Moore, Ph.D. Professor of Civil and Environmental Engineering Carnegie Mellon University
Prerequisites	Chemistry, especially redox reactions and stoichiometry. Mass balances and systems thinking.
Required Text & Tools	All material will be provided in class in the form of PowerPoints.
Grading Criteria	Exam: 50% Homework: 40% Class Participation: 10%
Course Key Words	Environmental Science and Engineering, Environmental Chemistry, Inorganic Chemistry, Water Chemistry, Electrochemistry, Water Treatment

Schedule

No.	Topics
Lecture 1	1. Water Chemistry. Water Quality
Lecture 2	2. Drinking Water Treatment
Lecture 3	3. Adsorption and Oxidation Technology
Lecture 4	4. Electrochemical Technology
Lecture 5	5. Reverse Osmosis and Membrane Filtration
Lecture 6	6. Biochemical Wastewater Treatment
Lecture 7	7. Planktonic and Biofilm-based Treatment
Lecture 8	8. Sludge Treatment and Recycling
Lecture 9	9. Biotech applications
Lecture 10	10. Other Advanced Technologies