

Course Name:

Water and Wastewater Treatment

Course Number:

20605

Credit:

3

Course Content (outline):

- Water quality, physical, chemical and biological properties of natural waters
 - An overview on process analysis methods and the reactors
- Physical treatment processes
 - Screening, aeration, mixing, coagulation, sedimentation, filtration, adsorption, solids processing
- Chemical treatment processes
 - Disinfection, chemical precipitation, chemical oxidation, ion exchange
- Biological treatment processes
 - Types of biological treatment processes, activated sludge, fixed film reactor, suspended growth and biofilm processes
- Treatment and disposal of sludge
 - Characteristics and amount of solids in sludge, sludge digestion
- Disinfection
- Supplementary treatment methods including nutrient removal

References:

- “Wastewater Engineering, Treatment and Reuse”, Metcalf & Eddy, 4th Ed., McGraw-Hill Book Co., 2003.
- “Water Quality and Treatment”, American Water Works Association, 4th Ed., McGraw-Hill Book Co., 1990.