

Water& Waste-Water Treatment Scheme-I

Sem.1					
Subject Code	Subject Name	Teaching Scheme (Hours)			
		Theory	Tutorial	Practical	Total Credits
	Water& Waste-Water Treatment Scheme-I	3	2		5

Course structure

- 1 Wastewater- Source, nature and characteristics
Introduction, Systems of sanitation, Types of sewage and sewerage systems, Components of sewerage systems
- 2 Estimating the design sewage discharge
Quantity estimation of sewage, Design period for different components of sewerage scheme, Future forecasts and estimating design sewage discharge, Quantity estimation of storm water
- 3 Construction and maintenance of sewers, sewer appurtenances
- 4 Analysis of wastewater
Determination of BOD, COD, solids and their significance, BOD progression and formulation
- 5 Design of wastewater treatment systems
Primary, secondary and tertiary treatments, screen, grit chamber, aeration, sedimentation, coagulation and flocculation, Biological treatment, Design of activated sludge and rotating biological contractor, oxidation pond and aerated lagoon
- 6 Sewage sludge-it's treatment, disposal and reuse, Effluent standard and disposal

Reference Books:

- 1 Wastewater engineering: treatment and reuse by Metcalf & Eddy, George Tchobanoglous- McGraw Hill
- 2 Water Treatment Processes Hammer and Hammer McGraw Hill Inc
- 3 Water & Wastewater Engineering Vol. II by Fair, Geyer & Okun - John Wiley
- 4 Unit Processes by L.G. Rich - John Wiley
- 5 Water Treatment: Principles and Design Published by American Water Works Association
- 6 Chemistry for Environmental Engineering -Clair Sawyer, Perry McCarty and Gene Parklin
- 7 Environmental Engineering by Peavy, Rowe & Tehobanoglous - McGraw Hill

