

GUJARAT TECHNOLOGICAL UNIVERSITY

M.E Semester: II Environmental Management

Subject Name Treatment Process Design and Drawing

Sr.No	Course content
[A]	Process Design: Engineering design of pollution control processes and devices including hydraulics and dimensions of any ten or following units:
1.	Multicyclone,
2.	Bag filter,
3.	Venturiscrubber,
4.	Electrostatic precipitator,
5.	Parshall flume,
6.	Clariflocculator,
7.	Tube Settlers,
8.	Rapid sand filters – Verities,
9.	Activated Sludge Process system and its modifications
10.	Trickling filter , Rotating Biological Contractor
11.	Desalination systems :Reverse Osmosis, Ultra Filtration, Nano Filtration
12.	Hydraulic design of plumbing in multi-storeyed buildings;
13.	Hydraulic design of distribution networks including modifications to dead end systems;
14.	Hydraulic design of sewerage systems; sizing of air blowers and air compressors for various practices in vogue.

15.	High Rate Anaerobic systems: Up flow Anaerobic Sludge Blanket (UASB), Upflow Anaerobic Filter
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Term work

1. Term work will comprise of assignments on the questions related to Volume reduction, strength reduction, equalization and sketches and description of
 - i. Conventional & modification of Activated Sludge Process,
 - ii. Types of aeration devices
 - iii. Types of mixing devices
 - iv. Flow measuring devices
 - v. Filtration systems
2. Detailed design and drawing of treatment units like clarifloculator, ASP, Trickling filter, Screen, UASB, RSF, Plant hydraulics

Reference Books:

1. Waste Water Treatment, disposal & reuse - Metcalf & Eddy
2. Wastewater treatment plant: By Qasim
3. Waterworks Engineering: By Qasim
4. Biological Process Design for Wastewater Treatment: By Benefield and Randall
5. Manual on Sewage Collection and Treatment
6. Manual on Water Supply and Treatment