

GUJARAT TECHNOLOGICAL UNIVERSITY
ENVIRONMENTAL ENGINEERING
B.E SEMESTER: 4

Subject Name: Environmental Sciences – II

Sr. No.	Course content
1.	Quantitative Chemical Concepts: Chemical equilibrium, solubility products, common and diverse ion effects, shifts in chemical equilibrium, pH concepts, Chemical buffers, applications to iodometry and ORP metry.
2.	Physicochemical Concepts: Surface chemistry applied to colloids, physisorption and chemisorption, sorption osmosis and dialysis, solvent extractions, applications to environmental problems.
3.	Organo chemical Concepts: Nomenclature, properties and biodegradation of aliphatic, aromatic and heterocyclic compounds, carbohydrates, fats, proteins and vitamins and their biodegradation. Biodegradation of detergents, pesticides and insecticides
4.	Applied Chemical Concepts : Chemical principles involved in estimations of sulphates, chlorides, DO, BOD, COD, TOC, nitrogen species, phosphorus species, solids, grease and oils, volatile acids and coloured complex formations of F,CN ,F, NO ₂ and NO ₃ – N

REFERENCEBOOKS:

1. Chemistry for Env. Eng. by Sawyer and McCarty
2. Standard methods for analysis of water and waste water-Published by AWWA.
3. Environmental Chemistry by A.K.De