

GUJARAT TECHNOLOGICAL UNIVERSITY

B.E Semester: 4

Environmental Science & Engineering

Subject Code 141302

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

REFERENCE BOOKS:

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