

SARDAR PATEL UNIVERSITY**Programme: B.Sc (Chemistry)****Semester: IV****Syllabus with effect from: November/December-2012**

Paper Code: US04ECHE01	Total Credit: 2
Title Of Paper: Analytical Chemistry-II	

Unit	Description in detail	Weighting (%)
I	Titrimetric Methods In Analysis Introduction, Definitions: Standard solutions, Equivalence Point, Indicators, End point, Titration General Aspects of: Primary standards, Desirable properties of standard solution. Volumetric calculations: Molarity, Normality, percentage concentration, parts per million. Neutralization Titration Standard solution and acid-base indicators. Titration curve for strong acid-strong base Systematic equilibrium concentrations for SA-SB titration. Acid-Base indicators, colour change range of an indicator, Indicator error. Determination of Acetic acid in vinegar. Determination of Alkalinity of soda ash.	
II	Complexometric Titration Introduction, terms involved in titration: complex, ligand, buffer solution, chelating agents, chelates, Some Chelating agents, Stability of complexes: stepwise formation constants. Complexometric titration curve. Equilibria involved in EDTA titration, Indicators for EDTA titrations. Hardness of water. Ca in Calcium Gluconate Sample. Numericals based on this titration.	
III	Redox Titration Introduction, Terms involved: oxidation, reduction. Single electrode potential, formal potential, Nernst Equation, Titration curve for Iron(II) and cerium (IV). Types of redox indicators and their selection. Structural chemistry of redox indicators. Numericals: Calculation based on emf of electrode/cell, end point calculations, equation constants.	
IV	Water Pollutants Analysis Water pollution: Introduction. Classification of water pollutants, Sources of water pollution. Origin of waste water, Effect of water pollutants, Water analysis: colour, turbidity, total dissolved solids, conductivity, acidity, alkalinity, hardness, chlorides, sulphates, fluorides. Drinking water standards.	

Basic Text & Reference Books:-

- Fundamentals of Analytical Chemistry, 7th Edition by skoog, west, Holler.
- Quantitative Analysis 6th Edition - R.A. Day, Jr., A.L. Underwood.
- Analytical Chemistry –Dr. Alka Gupta, Pragati Prakashan.

