

**M.Sc. Environmental Science**  
**Semester-II**  
**ANALYTICAL TECHNIQUES**

**UNIT-I**

Basic concepts of quantitative analytical chemistry - Buffer solution, common ion effect, , oxidation reduction reactions, preparation of standard solution, primary standard and secondary standard, normality, morality, molality, mole fraction.

**UNIT II**

Titrimetric methods: Acid base titration, precipitation titration, complexometric titration, oxidation-reduction titration.

**UNIT-III**

Chromatography- Thin Layer chromatography, Liquid Chromatography, High Pressure Liquid Chromatography, Gas Chromatography, ion chromatography.

**UNIT IV**

Spectroscopy- General Principle, Atomic Absorption spectroscopy- Theory, Instrumentation, graphite furnace techniques, hydride generation, monochromators, Detectors, Atomic emission spectroscopy- Flame emission spectroscopy, Plasma emission spectrometry, Inductively coupled plasma, ICP instrumentation.  
Spectrophotometer, X – ray diffraction- principles.