

ANALYTICAL CHEMISTRY (BS-ADP 8th Semester)

Module Code:	Chem-464
Module title:	Electroanalysis Method-II
Name of Scheme:	BS-ADP 8th Semester
Department:	School of Chemistry
Faculty:	Science
Module Type:	Compulsory
Module Rating:	2 credits

OBJECTIVES:

This course deals with the electroanalytical techniques. The students will learn the details about the theory and applications of advanced electroanalytical techniques including coulometry, voltammetry, polarography, amperometry and conductometry. After this course, the students will be able to understand the mechanisms involved in these techniques and their applications for multielemental analysis

SYLLABUS OUTLINE:

1. **Voltrametry:**
Excitation signals in voltametry, voltametric Instrumentation, Hydrodynamic Voltrametry, Cydic Voltametry, Stripping methods, voltametric with ultra-micro-electrodes
2. **Polarography:**
Introduction and principle of polarography, basic instrumentation, working and advantages of DME (dropping mercury electrode); limiting and residual current; half-wave potential; qualitative and quantitative aspects of polarographical analysis
3. **Amperometry:**
Principle of Amperometry, types of amperometry and amperometric titrations, amperometric titrations with one micro-electrode, amperometric titration with twin microelectrodes, applications of amperometry.

RECOMMENDED BOOKS:

1. Vogels, s text book of quantitative inorganic analysis by J. Bassett. The English language book Society and Longman.
2. Vogels, text book of Quantitative chemical analysis by J. mendham, RCDenny, JDBarnes, MJ KTHomas, Pearson education Ltd.
3. Fundamentals of Analytical Chemistry by Skoog, West and Holler (5th Edition).
4. Principles of Instrumental Analysis, Skoog, Holler and Neman (5th Edition).