

Analytical Chemistry

Concepts students to know for lecture

Understand and discuss acid-base theories
Carry out stoichiometric calculations
Understand and discuss redox reactions
Understand principles of reaction equilibria
Carry out equilibrium calculation

Concepts students need to know for laboratory

Measure mass, volume, and temperature
Measure pH
Know basics of gravimetric analyses
Carry out titrations
Use safe laboratory techniques
Properly dispose laboratory wastes
Use word processing software
Use graphing software
Use spreadsheet software
Write formal laboratory reports

Lecture and Laboratory Objectives

Prepare samples for quantitative analysis
Prepare solutions of a given concentration
Learn basics of chromatographic methods
Learn the use of ion specific electrodes
Use titrimetric methods of quantitative analysis
Use spectrophotometric methods of analysis
Use redox methods of quantitative analysis
Learn calibration methods
Carry out methods of error analysis
Carry out methods of statistical analysis
Learn additional uses of computers
Learn additional uses of computer software