



Course Number Course Name	CHEM 221 QUANTITATIVE & ANALYTICAL CHEMISTRY
Credit Value (Breakdown of theory and lab credits)	3 Theory
Catalog Course Description	Basic theory and techniques of quantitative chemical analysis. Concepts of sampling and separation techniques with an emphasis on precision measurements and statistical analysis in volumetric and gravimetric procedures.
Student Learning Outcomes/Objectives /Competencies of the Course	Understand and practice the technique, knowledge, and methods allowing students to: (1) prepare histograms and estimate and interpret confidence intervals for a given set of experimental results, (2) to use optical spectroscopy, titrations and least squares regression to measure how much of a given chemical is present in a solution, (3) draw up a recipe for preparing a buffered solution at any specified pH, predict chemical concentrations in and pH of acid/base buffering systems, and (4) isolate individual components from complex samples via chromatography. This course is accompanied by a four-hour laboratory that focuses on implementing the concepts being covered in lecture, developing good analytical technique, developing basic data analysis & reporting skills.
College-Wide Student Learning Outcomes	<i>1. Critical Thought Critical thought will be assessed by assignment related to interpretation of titrations.</i>