Good analytical techniques and methods are essential for a wide-range of research, development and quality control in many types of laboratories. This course will look at some of these methods and in particular more recent developments that have greatly improved the accuracy, precision and information content of analyses done in a variety of application fields. In all cases, regulatory agencies have increased the requirements with respect to the major components found in samples as well as the minor constituents that provide little or no beneficial value to products and in some cases may have toxic effects.

**Course Learning Objectives:**

Program Learning Objectives #1 - To demonstrate an advanced understanding of selected topics in chemistry.

Program Learning Objectives #2 - To demonstrate information literacy skills for acquiring knowledge of chemistry, both as a student and as a life-long learner.

Program Learning Objectives #3 - To demonstrate an understanding of experimentation, observation and data analysis, and their application to defined questions in chemistry.

Program Learning Objectives #4 - To demonstrate a familiarity with available instrumentation for conducting specific scientific research.

Program Learning Objectives #5 - To communicate effectively, verbally and written, for the purposes of conveying chemical information to both professional scientists and to the public.

Professor Joseph J. Pesek  
Office: DH-501  
Phone: 924-4950  
e-mail: joseph.pesek@sjsu.edu

**Grading:**  
Hour exam 100 pts.  
Final exam 200 pts.  
Report 200 pts.

**TOTAL 500 pts,**

**Hour Exam:** Thursday March 21st  
**Final Exam:** Monday, May 20, 0715 - 0930
Report: This is a major part of the course that is designed to help familiarize you with the literature in some area of chromatography or mass spectrometry. Pick a topic relating to a recent (within five years) application of chromatography or mass spectrometry in biological, pharmaceutical, environmental, forensic, clinical, medicinal chemistry or any other area that is of interest to you. Have the subject approved and then write a review (5-10 pages using a minimum of five references) that describes a topic not discussed in class with some examples of applications. None of the specific material discussed in the lecture and the references given for them can be used for your review. The report must be in your own words and be a summary of the literature articles that you are citing. REMEMBER!!! Direct copying of any part of a reference is consider plagiarism and will result in zero credit for the report. To receive any credit for the report all of the references used for your review must be attached to the report.

Text: The text for this course: Skoog, Holler, Nieman Principles of Instrumental Analysis. 6th Ed., Saunders 1998, available at Spartan Bookstore. There will be electronic handouts, articles from the literature, for some of the lectures. These are available on D2L and Canvas.

ACADEMIC INTEGRITY: Your own commitment to learning, as evidenced by your enrollment at San Jose State University, and the University’s Academic Integrity Policy requires you to be honest in all your academic course work. Faculty are required to report all infractions to the Office of Judicial Affairs. The policy on academic integrity can be found at http://sa.sjsu.edu/judicial_affairs/index.html

AMERICANS WITH DISABILITIES ACT: If you need course adaptations or accommodations because of a disability, or if you need special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive 97-03 requires that students with disabilities register with the DRC to establish a record of their disability.