Prerequisite:
3103, 3105, and 3302 preferred but 3301 is allowed.

Co-Requisite:
The other of Chemistry 3301 and 3302

Course Description
Chemistry 4196 is a writing intensive course designed to introduce the theory and application of spectroscopic and chromatographic instrumental techniques. Lecture topics will include the theory, instrument design, operation and maintenance for: infrared, atomic, molecular, and luminescence spectroscopy, gas and high-performance liquid chromatography, mass spectrometry, nuclear magnetic resonance spectrometry.

The required textbook is “Quantitative Chemical Analysis, 9th Edition” by Daniel C. Harris. In the laboratory, students will work through a variety of exercises in qualitative and quantitative analysis. Reports will be a combination of group and individual projects. These reports will require library research and additional reading.

Persons with disabilities at Temple University are entitled to reasonable accommodations and academic adjustments under Section 504 of the Rehabilitation Act of 1973. Combined with requirements from the Americans with Disabilities Act of 1990 (ADA), Temple University strives to offer equal opportunities for access to all programs, activities, and services for students and other persons with disabilities.

Grades will be based on your performance on end of chapter quizzes (18% total for 6 tests), DUCK (7%), final (15%), two reports requiring revisions (see * and ‡ on schedule) (40%), and six summary lab reports (20%). Attendance is mandatory; unexcused absences will adversely affect your grade. Students who miss lab must perform a make-up lab. Students who miss the final and do not make appropriate arrangements to make up the exam will receive the grade of F for the course.

Office hours are MWF after lecture or by appointment.

Projects
Laboratory experiments are designed to be performed in one or two weeks. The class will be divided into groups of 3-4 students. No group may exceed this size. Both full and summary lab reports will be due 2 weeks after completing the experiment. Graded reports are returned within a week. Revisions will be due two weeks after the reports are returned. Late lab reports are not accepted.

Teaching Assistants
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Ms. Lauren Profitt  Beury 311
Lab Report Formats

Trends in American Chemical Society journals for reporting original research (in contrast to reviews, comments, etc.) have evolved to produce articles that are reference rich but contain very brief introductory comments (for space considerations). Such articles have a brief introduction, a lengthy discussion of the results, a summary, and an experimental (procedural) section. The writing assignments for the course are based on this model.

Prior to this course, the students will have written lab reports in general and organic chemistry. Those reports tend to be descriptive and reinforce knowledge from the associated lecture course. The reports for this course will require greater detail and argument driven interpretation of the data. It is expected that the students learn to write at the proper level for a journal publication.

For many students, this type of report will be a new form of writing. To better learn and reinforce this format, revisions of 2 reports (see schedule for exact assignments) must be submitted. You will have 2-3 weeks (depending on the experiment) to write up a paper. The instructor will grade, comment, and return the paper within a week. You will then have one week to make revisions.

The grades for an original report and its revisions will be averaged and recorded as the grade for the report. For example, if a report earns an initial grade of C and its revision earns a grade of A, then a grade of B will be recorded for the assignment.