

CHEMISTRY 3610
QUANTITATIVE ANALYSIS LABORATORY
FALL 2005

Course Name: Quantitative Analysis Laboratory

Time/Location: M 3:30-6:20 or Th 12:30-3:20 p.m.

Instructor: Stephen Bialkowski *Office* ML-359 *Phone:* 797-1907, email:
Stephen.Bialkowski@USU.edu

Office Hours: During the laboratory meeting, by appointment, or using electronic mail.

Text: USU Department of Chemistry and Biochemistry *Chemistry 3610 Laboratory Manual* is in the bookstore and on-line.

Materials: Bound laboratory notebook, safety goggles; laboratory coat highly recommended. Pencil, pen, etc.

Course Content: This course consists of 8 laboratories. Laboratories include experiments in volumetric, gravimetric, and instrumental methods of chemical analysis. Instrumental methods include electrochemistry, emission and absorption spectrophotometry, and ion-exchange and gas chromatographic separations.

Learning Objectives:

- Comprehend the importance of stoichiometry, chemical equilibrium and kinetics in analysis.
- Understand laboratory and chemical safety
- Formulate concepts of validation of data and experimental design
- Comprehend concept of and perform chemical measurement calibration
- Apply and assess concepts of availability and evaluation of analytical standards and formulate standardization methodology
- Demonstrate knowledge of sampling methods for all states of matter
- Use statistical methods for evaluating and interpreting data
- Assess sources of error in chemical and instrumental analysis and account for errors in data analysis
- Recognize interferences in chemical and instrumental analysis
- Apply theory and operational principles of analytical instruments

Examinations: Course performance will be evaluated based on the accuracy of reported experimental results, laboratory notebook data entry and general quality, and in-class quizzes.

Grading: Each experiment has a maximum score of 100 points. Laboratory notebook checks will count 50 points each. The final quiz is 100 points.

Maximum Points	Task
800	8 Experiments
100	Laboratory notebook checks
100	Final quiz
1000	Total Points

The maximum letter grade ranges will be: A, 90-100%; B, 80-89%; C, 70-79%; D, 60-69%. The ranges may be lowered but will not be raised. Plus (+) and minus (-) grade modifier will be used. The upper 1/3 of a letter grade % range will be assigned (+), the lower 1/3 will receive a (-) modifier.

Withdrawal Policy: This course will follow the University policy on withdrawals stated in the current Undergraduate Catalog. Drop dates are listed in the Schedule of Classes.

Missed Examination Policy: Students may be excused from a laboratory in cases of emergency. Documentation must be supplied to be excused. In cases of excused absence, grades will be assigned based on % of adjusted total score. For other absences, late assignments will be penalized 10% of the maximum score per meeting day to a maximum of 50%. No repetition of experiments is permitted once a result is submitted.

Attendance Policy: Attendance is mandatory for successful performance in this course. Attendance is monitored through laboratory notebook checks.

Student Disability Statement: Any student with a disability that requires accommodations must contact the Instructor. The disability must be documented by the Disability Resource Center. Course materials may be requested in alternative formats.

Laboratory Fee Statement: A laboratory fee is required for this course. Laboratory fees for this course are used for the purchase of equipment and supplies for the laboratory.

Be sure to watch the on-line Chemistry 3610 laboratory manual at:
<http://www.chem.usu.edu/~sbiolkow/classes/3610/chem3610.html>