

Analytical Chemistry – Fall 2014

CHEM 2080 4.0

Three lecture hours and three lab hours per week

Term: Fall 2014

Prerequisite: SC/CHEM 1000 3.00 and SC/CHEM 1001 3.00

Time: MWF 10:30 – 11:20

Location: SLH F

Course Director

Jennifer Chen

E-mail: jilchen@yorku.ca

Office: CB456

Office hour: TBD

Course Description:

This course introduces the fundamental principles of analytical chemistry. Concepts on sampling, calibration, experimental uncertainty and statistical data analysis are introduced and applied in laboratory experiments. The principles of solution equilibria including solubility, acid-base, metal-ligand complexation, and redox reactions are fully developed, and titration experiments based on these principles are carried out in the laboratory. An introduction on various analytical techniques including gravimetry, spectrophotometry and potentiometry are presented.

Course Objectives:

At the end of the course students will have developed more in-depth understanding of chemical equilibria and acquired the skills and knowledge to carry out a variety of analytical chemistry measurements. Students will apply statistical and error analysis to correctly interpret, compare and comment on experimental results.

Required textbook:

Quantitative Chemical Analysis by D.C. Harris, 8th edition (older edition is fine but it is your responsibility to find out the corresponding assigned homework problems)

Relevant course materials are posted on Moodle.

Evaluation:

Two midterms – 30% (15% each)[†]

LON-CAPA assignments – 10%

Laboratory – 30%

Final exam – 30%[†]

[†]Alternative marking scheme: 10% midterms, 50% final exam

**If you miss a midterm, you are required to provide the necessary documents (e.g. Attending Physician's Statement for illness) within 2 business days of the missed exam. The weight of the missed midterm will be added to the final exam (pending on my approval of your reason).*

**If you miss both midterms AND provide acceptable documentations, you will be required to write a make-up test for 15% of your mark.*

Tentative Schedule:

Classes: Sept. 8 – Dec. 6

Labs start: Sept. 15

Midterms: Oct. 15, Nov. 12

Co-Curricular days: Oct. 29 – Nov. 2

Thanksgiving: Oct. 13

Final exam: Dec. 9 – Dec. 22 (You must stay for the whole exam period in the event of weather-related rescheduling. See University rules.)

Important Information for All Students:

All students are expected to familiarize themselves with the following information, at www.yorku.ca/secretariat/policies/index-policies.html.

- York's Academic Honesty Policy
- Policy on Accommodation for Students with Disabilities

- Code of Student Rights and Responsibilities
- Policy on Religious Observance Accommodation

Academic Honesty

Any student who breaches York's Academic Honesty Policy will be charged. It will at minimal result in a visit to the Associate Dean's office. Some offences include:

- plagiarism (see *White Paper - Plagiarism Spectrum* on Moodle)
- students who misrepresent themselves during a quiz or examination or provide documentation for absence from any of these that is not legitimate
- students who submit any material for remarking that has been modified in any manner to misrepresent the original assessment