

**CHM 416S/1104S – Separation Science
Winter/Spring 2019**

Course Staff:

Instructor: Prof. Aaron Wheeler
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Office Hours: Tue. 4:00-5:00 PM, Thu. 4:00-5:00 PM or by appointment
(in LM629 unless otherwise posted)

Lecture Schedule and Format:

Lectures are held on Tuesdays and Thursdays from 3:00-4:00 PM in LM157, beginning on Jan 8th and ending on April 4th.

Topics:

1. General Separations Concepts and Principles
2. Liquid Chromatography
3. Gas Chromatography
4. Supercritical Fluid Chromatography
5. Capillary & Gel Electrophoresis
6. Miscellaneous Techniques (TLC, LLE, SPE, FFF)

Texts:

- *Principles of Instrumental Analysis*, Skoog, Holler and Crouch, 6th Edition (Thomson & Brooks/Cole) or 7th Edition (CENGAGE Learning)
- *Introduction to Modern Liquid Chromatography*, Snyder, Kirkland, Dolan, 3rd Edition (Wiley) – available electronically at the library

Marking Scheme:

Your final mark in this course will comprise the average of three graded assignments (as per the table on the following page), including two tests and a final exam (for undergrads in CHM416), or two tests and a presentation (for graduate students* in CHM1104). The two tests will be held outside of regular lecture time (*February 5, 6:00-8:00 PM & March 12, 6:00-8:00 PM, place TBD*), and the final exam will be held after the end of lectures (location and time TBD). You are advised to mark these dates and times in your calendar and make every effort to attend them, as *alternate dates (and makeup tests) will not be offered*. If an emergency or other unavoidable circumstance causes you to miss an assignment, appropriate arrangements should be made with the instructor, in advance.

CHM416 (undergrads)	CHM1104 (grad students)
Test 1 (33.3%)	Test 1 (33.3%)
Test 2 (33.3%)	Test 2 (33.3%)
Final Exam (33.3%)	Presentation (33.3%)

* In rare circumstances, a graduate student may elect to also take the final exam, in which case the top three scores will count toward the final mark.

Course website:

<https://q.utoronto.ca>

- Lecture notes
- Course schedule
- Announcements
- Assignments
- Problem Sets

Presentation Assignment:

Graduate students in CHM1104 will give one 20-minute presentation to the class on a topic agreed upon by the student and the instructor. Detailed information about expectations, format, and scheduling will be provided separately.

Problem Sets:

There will be three problem sets assigned, each corresponding to a test or final exam. The problem sets will not be collected or marked, but working them is the best method to prepare for the tests and exam.

Plagiarism:

Plagiarism is a serious offense. Assignments found to be plagiarised will be given a zero. More information about what constitutes plagiarism and how to avoid it can be found at: <http://www.chem.utoronto.ca/undergrad/plagiarism.php>.

E-mail Policy:

E-mail is the worst way to contact the course instructor; *there is no guarantee that e-mails will be answered*. Communication is far better in person before or after lectures, in office hours, or by special appointment. If you must send the instructor an email, include your full name, course, and student number. E-mails must be sent from utoronto accounts. Do *not* forward your utoronto account to a Hotmail or gmail account since Hotmail and gmail periodically block or delay e-mail from utoronto accounts. E-mails should follow the guidelines: <https://www.studentlife.utoronto.ca/hello/your-profs#node-2448>.

Absences:

Students are advised to attend and participate in all course lectures, but attendance will not be marked or collected. Participation in all graded assignments [the term tests, the lecture (for graduate students), and the final exam (for undergrads)] is mandatory; absences are only excusable because of illness or other medical emergency. In such a case, you must submit a "Verification of student illness" form completed by the medical professional with whom you consulted (<http://www.illnessverification.utoronto.ca/>). If you need to submit this form for more than one course, contact your college registrar's office for assistance.