

**CHM 317S – Introduction to Instrumental Methods of Analysis  
Winter/Spring 2018**

**Course Staff:**

Course Instructor: Prof. Aaron Wheeler  
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Office Hours: Mon. 3-4 PM, Wed. 3-4 PM or by appointment  
(in LM629 unless otherwise posted)

Laboratory Instructor: Prof. David Stone  
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Office Hours: During laboratory sections or by appointment

Laboratory Supervisor: Dr. Jared Mudrik  
Analest (LM9), 416-978-3599

**Schedule:**

Lectures are held Mondays and Wednesdays 2:00-3:00 pm in SS 1071, beginning on Jan 8<sup>th</sup> and ending on April 4<sup>th</sup>. Labs are held on Monday, Tuesday or Wednesday, 9 AM–1 PM in LM6/9 (Analest). Mandatory lab orientation sessions will take place in LM6 between 11 AM and noon on Monday Jan 8<sup>th</sup>, Tuesday Jan 9<sup>th</sup>, and Wednesday Jan 10<sup>th</sup>. Regular labs start the following week.

**Course Topics:**

1. Overview: Instrumental Analysis, Quantitation, and Signals and Noise
2. Introduction to Optical Spectroscopy: Theory, Instrumentation
3. Spectroscopy Methods: AA, AE, UV-Vis, IR, Raman, Fluor., Applications
4. Mass Spectrometry: Theory, Instrumentation, Applications
5. Separations: Theory, GC, LC, CE, Instrumentation, Applications
6. Other topics

**Text:** *Principles of Instrumental Analysis*, Skoog, Holler and Crouch  
6<sup>th</sup> Edition (Thomson & Brooks/Cole) or 7<sup>th</sup> Edition (CENGAGE Learning)

**Marking Scheme:**

Laboratory Mark	40%
Term Test 1	20%
Term Test 2	20%
Final Examination	20%
Total	100%

Note that two term tests will be held outside of regular lecture time (January 31 6:00-8:00 PM & March 5 6:00-8:00 PM, both in Galbraith Building Room 204), and the final exam will be held after the end of lectures (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 a test, appropriate arrangements should be made with the instructor.

**Course websites:**

<http://www.chem.utoronto.ca/coursenotes/CHM317/>

- General information about the course and laboratory classes
- Lab timetable, updates, and other resources

<https://portal.utoronto.ca/>

- Lecture notes
- Lab marks and demo-group sign-up
- Course announcements

**Problem Sets:**

There will be three problem sets assigned. The problem sets will not be collected or marked, but they are the single best method to prepare for the two midterms and the final exam.

**Penalties for Lateness:**

If you know ahead of time that a lab assignment will be late, please discuss this with the appropriate instructor. The standard penalty is 5% per day. Further instructions relating to the laboratory component of the course can be found in the introductory section of the lab manual.

**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 who are unable to attend any regularly scheduled lab period as a consequence of illness or other personal circumstances must contact the lab instructor within one week with appropriate documentation. Because of the size of the course and the limited availability of instrumentation, it is difficult to arrange make-up lab sessions; opportunities to make up the missed experiment will be considered on a case-by-case basis.

If you have missed a test or missed deadlines for submission of any term work because of illness or unavoidable circumstances, you must also submit appropriate documentation.

**In the case of illness or other medical emergency:** university policy now requires that you submit a "Verification of student illness" form completed by the medical professional 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.