

University of Guelph, CEPS, Department of Chemistry
CHEM*2070 **Course Outline and Regulations** **Summer 2019**

Course Title: Structure and Spectroscopy [0.5 credits]

This course provides an introduction to spectroscopy and its relationship to molecular structure and dynamics. Rotational, vibrational, electronic and magnetic resonance spectroscopies will be studied. Concepts introduced in [CHEM*2060](#) will be applied to chemical and biochemical problems through spectroscopic techniques. Central to this course is the use of spectroscopy for the determination of molecular structures and the investigation of molecular motions. *Pre-requisite: CHEM*2060 Structure and Bonding*

Instructor: Dr. Sameer Al-Abdul-Wahid (s.wahid@uoguelph.ca)

Lectures: Tue/Thu 1:00 PM – 2:20 PM, ALEX 309

Tutorials: Thu 8:30 AM – 9:50 AM, ALEX 309

Office Hours: Tue 9:00 AM – 10:00 AM, SCIE 1246. I have other responsibilities at the University and may ask you to make an appointment if you 'drop by' outside of office hours.

Textbook: Course notes, which will be posted to Courselink.
 Various supplementary texts are available at <http://ares.lib.uoguelph.ca>

Course Contents:

1. Introduction to Spectroscopy, Light, and basic concepts in Quantum Mechanics
2. Rotational Spectroscopy (Microwave)
3. Vibrational Spectroscopy (Infrared and Raman)
4. Electronic Spectroscopy (UV/Vis) (time permitting: PE, fluorescence, phosphorescence)
5. Magnetic Resonance Spectroscopy (NMR and EPR)

Evaluation:

Five problem sets:	30% (6% each: due 5/28, 6/18, 7/2, 7/30, and 7/30)
Two in-class exams:	40% (20% each: 6/6 and 7/4)
Final exam:	30% (8/13)

Policies:

Electronic devices (e.g. cell phones, tablets, laptops) may be used during lectures and tutorials for course-related purposes, provided they are set to silent mode and do not distract other students.

Problem sets are due at 1:15 PM in class on the due date. **E-mail/electronic submission is forbidden**, unless with the permission of the instructor. Late problem sets will be **penalized at 25% per calendar day** (at 1:15 PM), unless a *bona fide* medical, psychological, or compassionate letter is submitted to and accepted by the instructor.

Students who miss a midterm must submit a signed letter explaining the absence, including a doctor's note or other relevant documentation, to the instructor as soon as reasonably possible. If the explanation is accepted, the final exam mark will be used in place of the missed midterm. If the explanation is not accepted, a mark of zero will be given.

All requests for grade re-assessment must be submitted in writing. The entire document will be re-assessed and the outcome may be a grade increase, a grade decrease, or no change to the grade.

General Policies and Regulations:

E-mail Communication

As per university regulations, all students are required to check their <mail.uoguelph.ca> e-mail account regularly: e-mail is the official route of communication between the University and its students.

When You Cannot Meet a Course Requirement

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons, please advise the course instructor (or designated person, such as a teaching assistant) in writing, with your name, id#, and e-mail contact. [See the undergraduate calendar for information on regulations and procedures for Academic Consideration.](#)

Drop Date

Courses that are one semester long must be dropped by the end of the fortieth class day; two-semester courses must be dropped by the last day of the add period in the second semester. The regulations and procedures for [Dropping Courses](#) are available in the Undergraduate Calendar.

Copies of out-of-class assignments

Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.

Accessibility

The University promotes the full participation of students who experience disabilities in their academic programs. To that end, the provision of academic accommodation is a shared responsibility between the University and the student. When accommodations are needed, the student is required to first register with Student Accessibility Services (SAS). Documentation to substantiate the existence of a disability is required, however, interim accommodations may be possible while that process is underway. Accommodations are available for both permanent and temporary disabilities. It should be noted that common illnesses such as a cold or the flu do not constitute a disability. Use of the SAS Exam Centre requires students to book their exams at least 7 days in advance, and not later than the 40th Class Day.

More information: www.uoguelph.ca/sas

Academic Misconduct

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community – faculty, staff, and students – to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. **University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study;** faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection.

Note: **Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt.** Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

[The Academic Misconduct Policy is detailed in the Undergraduate Calendar.](#)

Recording of Materials

Presentations which are made in relation to course work—including lectures—cannot be recorded or copied without the permission of the presenter, whether the instructor, a classmate or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

Resources

The [Academic Calendars](#) are the source of information about the University of Guelph's procedures, policies and regulations which apply to undergraduate, graduate and diploma programs.