

Faculty of Science Course Syllabus

Department of Chemistry Honours & Major Research Project

CHEM4902 and CHEM4903 Fall 2020 and Winter 2021

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The following pages constitute the syllabus for this combined course, CHEM4902 and CHEM4903. You can consider the syllabus to be a contract, which delineates responsibilities and expectations for both the students, the course coordinator and the individual supervisors. You should review the syllabus at your earliest convenience, refer to it as necessary throughout the term, and contact the course coordinator with any questions and/or concerns you may have.

Course Description

CHEM4902 and CHEM4903 are required for students in the latter stages of the Honours BSc programs and are elective for students in the Majors BSc program or combined Major BSc programs. Students carry out research projects under the supervision of a faculty member and submit reports and make oral presentations to the Department. The class is split into two terms with a grade of 'IP' being issued for the fall term. The class must be completed as CHEM4902 and CHEM4903 together for 6 credits. The final grade will be given for both terms at the end of the winter term. The fall term is worth 35% of the final mark and the winter term is worth 65% of the final mark. This is because of the slower progress associated with the fall term compared to the winter term in CHEM4902 and CHEM4903 and the more significant final thesis report at the end of the winter term. This class is currently run as a full year class that is split into two terms because of Dalhousie's class policies.

Course Prerequisites

PREREQUISITES: A minimum GPA of 3.0 is required for this course. Permission of instructor.

Course Objectives/Learning Outcomes

- Carry out original research in a topic in chemistry under the supervision of a chemistry faculty member.
- Develop the ability to carry-out research activities through independent study and participate in the research activities associated with the chemistry project.
- Develop how to prepare and disseminate research results through both written and oral means.
- Communicate the research results through oral presentations and written reports.
- Develop the ability to reference the literature within a written report.
- Like a conference all project students should be available to attend all student presentations at the end of the fall and winter terms, unless another academic conflict arises.
- All submitted material in this class must be independently created by the student to meet the learning outcomes of the class.

Course Materials

- Web of Science Citation Databases (Chemistry search; Dalhousie library)
http://apps.webofknowledge.com/UA_GeneralSearch_input.do?product=UA&search_mode=GeneralSearch&SID=4CqG4ooiIR25p7YLkk2&preferencesSaved=
- Scifinder Scholar (chemistry search; Dalhousie library)
<https://scifinder.cas.org/scifinder/login>

WHMIS

All students who will be working in-person within the Department of Chemistry must complete WHMIS training prior to entering the workplace.

WHMIS, or the Workplace Hazardous Materials Information System, is a global harmonized system used to classify and label hazards and regulate handling procedures within industry and academic fields, especially those in science. Regardless of your chosen field of study within science being familiar with WHMIS is a significant asset. As such, the Department of Chemistry requires ALL students participating in their laboratory programs to complete WHMIS 2015 training provided by the Environmental Health and Safety Office. This training course is provided through the Dalhousie College of Continuing Education. Upon completion of your WHMIS 2015 course you will receive a Letter of Completion (as a PDF document) via email from the College of Continuing Education (cceehs@dal.ca) within 3 business days. Please email the course coordinator your completion date of your WHMIS training and your certificate when you receive it from CCE.

Please ensure that you register and complete the WHMIS course well in advance of the letter submission deadline. After you have received your Letter of Completion please upload the PDF document to the Brightspace site. Instructions on how to register for the course and upload your letter of completion can be found on the Brightspace Site.

NOTE: WHMIS training MUST be completed before doing any work in any laboratory at Dalhousie University. The deadline to complete WHMIS training for CHEM4902 students is Monday, September 14 at 11:30 am. If conducting work in-person and WHMIS training is not completed at this time you will no longer be eligible to continue on in CHEM4902.

In-Person Research

In agreement with your project supervisor in-person research is allowed if necessary for the learning outcomes of the assigned project. This arrangement will be between the student and the supervisor. The student must follow all Dalhousie University protocols in the Return to Research document, in addition to any protocols set up by the Department of Chemistry and the individual research group supervisor. All students working in-person must sign in and out of the Chemistry Building and must work at assigned times agreed upon by the student and supervisor. The student must take care to work carefully, independently and safely at all times. Safety manuals are included in appendix A of the syllabus. Social distancing, hand-washing and other precautions will be necessary throughout the 2020/2021 academic year. Students must adhere to all COVID policies in the research group (supervisor) they are working with. All additional protocols must be followed if required by your research group (supervisor).

COVID-19 Return to Campus Guidance Instructional Video. All students must watch the following video prior to entering the Department of Chemistry. Once the video has been viewed please let your supervisor know. The video can be found here. <https://www.youtube.com/watch?v=4Oco1BfcYII>

Off-Campus Research

In agreement with your supervisor, off-campus computer-based research is preferred if sufficient for the learning outcomes of the assigned project.

Synchronous Delivery

Weekly check-in on Monday (time to be determined) in a synchronous fashion with the students and course coordinator via Microsoft Teams will be arranged. Discussion of class content and organization will be discussed. Participation in the weekly check-ins are optional.

Weekly meetings in a synchronous fashion should be arranged via Teams (or in person if necessary) with the student and supervisor. Participation in the weekly supervisor/student meetings are required.

The two oral presentations will be delivered in a synchronous fashion by the student to an audience on the Teams platform. Participation in the oral presentations at the end of CHEM4902 and CHEM4903 are required.

If significant technological malfunctions occurs, the missed synchronous event will be rescheduled.

Course Assessment and important due dates

CHEM4902 Fall Grading Scheme:

WHMIS training completed	
<i>Due Monday, Sept. 14, at 11:30 am</i>	
Research Proposal	5%
<i>Due Friday, Sept. 25, at noon</i>	
Supervisor Evaluation 1	5%
<i>Complete by Oct 12-Oct 16</i>	
Fall Term Report	10%
<i>Due Friday, Nov 27, at noon</i>	
Oral Presentation & Defence Synchronous Video delivery.....	10%
<i>The afternoon of Thursday, December 3</i>	
Supervisor Evaluation 2	5%
<i>Complete between Nov 30-Dec 4</i>	

CHEM4903 Winter Grading Scheme:

Winter Term Report	35%
<i>Due Monday, March 22, at noon</i>	
Final Oral Presentation & Defence Synchronous Video delivery	20%
<i>The afternoon of Thursday, April 1</i>	
Supervisor Evaluation 3	10%
<i>Complete between Apr 5-Apr 9</i>	

Conversion of numerical grades to Final Letter Grades follows the Dalhousie Common Grade Scale

A+ (90-100)	B+ (77-79.9)	C+ (65-69.9)	D	(50-54.9)
A (85-89.9)	B (73-76.9)	C (60-64.9)	F	(<50)
A- (80-84.9)	B- (70-72.9)	C- (55-59.9)		

Course Policies

Emergencies:

If illness or a significant personal issue prevents you from participating in the oral presentations or otherwise meet a deadline in this class, please submit a student declaration of absence to the course coordinator as per the regulations in the University Calendar. Alternative due dates will be arranged.

Feedback on Student Assessment:

Students will be returned all written forms of assessment, following grading (normally within 2 weeks of submission). Grades for oral presentations will be communicated to the student within 2 weeks of their presentation day. This will take the form of an email prepared by the course coordinator and distributed to the student.

Student Participation in Oral Presentations:

Students should be available to attend all student presentations via the Teams platform at the end of the fall and winter terms, unless another academic conflict arises.

Website: Brightspace CHEM4902 space:

The course coordinator will convey relevant information on the course website, as well as by email. It is your responsibility to regularly consult the course website, as well as your Dalhousie email.

Cancellations:

Weather-related closure of the University implies the cancellation of all courses, and includes this one. Power disruptions may also impact submission of written assessment components, in which case the due date will be moved to next day to accommodate any power or storm related issues. Power disruptions that compromise the oral presentations may result in the rescheduled dates which have been reserved during the examination period, as set by the Registrar's office.

Laboratory Safety:

The Chemistry Department recognizes its responsibility to undertake teaching and research activities in a safe and environmentally responsible fashion. Responsibilities of the University, departmental chairs, laboratory supervisors, staff and students are defined in Dalhousie policy manuals made available by the Office of Environmental Health and Safety at <http://safety.dal.ca>. The Department of Chemistry has adopted additional safety policies, which are appended to this document and are found in Appendix A. The supervisor should review these policies with the student prior to commencing any work in the laboratory.

Recognizing the shared responsibility to uphold a safe working environment, the student should immediately alert the research supervisor, or the course coordinator, if any safety concerns should arise. A student should never conduct any research activity that they are not fully comfortable with performing. If this situation occurs contact your supervisor, course coordinator or departmental chair for further guidance.

This syllabus has the follow appendices with contain significant information regarding the running of CHEM4902 and CHEM4903:

- A. Dalhousie Chemistry Safety Policy and Chemical Laboratory Safety Manual
- B. Intellectual Honesty
- C. Reports, Presentations and their Evaluation
- D. Evaluation Forms:
 - Supervisor Evaluation Form
 - Research Proposal Evaluation Form
 - CHEM4902 Fall Term Report Evaluation Form
 - CHEM4903 Winter Term Report Evaluation Form

**Faculty of Science Course Syllabus (Section B)
Fall 2020 and Winter 2021**

CHEM 4902 and CHEM 4903

University Policies and Statements

This course is governed by the academic rules and regulations set forth in the University Calendar and by Senate

Missed or Late Academic Requirements due to Student Absence

As per Senate decision instructors may not require medical notes of students who must miss an academic requirement, **including the final exam**, for courses offered during fall or winter 2020-21 (until April 30, 2021).

Information on regular policy, including the use of the Student Declaration of Absence can be found here:

https://www.dal.ca/dept/university_secretariat/policies/academic/missed-or-late-academic-requirements-due-to-student-absence.html.

Academic Integrity

At Dalhousie University, we are guided in all of our work by the values of academic integrity: honesty, trust, fairness, responsibility and respect (The Center for Academic Integrity, Duke University, 1999). As a student, you are required to demonstrate these values in all of the work you do. The University provides policies and procedures that every member of the university community is required to follow to ensure academic integrity.

Information: https://www.dal.ca/dept/university_secretariat/academic-integrity.html

Accessibility

The Advising and Access Services Centre is Dalhousie's centre of expertise for student accessibility and accommodation. The advising team works with students who request accommodation as a result of a disability, religious obligation, or any barrier related to any other characteristic protected under Human Rights legislation (Canada and Nova Scotia).

Information: https://www.dal.ca/campus_life/academic-support/accessibility.html

Student Code of Conduct

Everyone at Dalhousie is expected to treat others with dignity and respect. The Code of Student Conduct allows Dalhousie to take disciplinary action if students don't follow this community expectation. When appropriate, violations of the code can be resolved in a reasonable and informal manner—perhaps through a restorative justice process. If an informal resolution can't be reached, or would be inappropriate, procedures exist for formal dispute resolution.

Code: https://www.dal.ca/dept/university_secretariat/policies/student-life/code-of-student-conduct.html

Diversity and Inclusion – Culture of Respect

Every person at Dalhousie has a right to be respected and safe. We believe inclusiveness is fundamental to education. We stand for equality. Dalhousie is strengthened in our diversity. We are a respectful and inclusive community. We are committed to being a place where everyone feels welcome and supported, which is why our Strategic Direction prioritizes fostering a culture of diversity and inclusiveness

Statement: <http://www.dal.ca/cultureofrespect.html>

Recognition of Mi'kmaq Territory

Dalhousie University would like to acknowledge that the University is on Traditional Mi'kmaq Territory. The Elders in Residence program provides students with access to First Nations elders for guidance, counsel and support. Visit or e-mail the Indigenous Student Centre (1321 Edward St) (elders@dal.ca).

Information: https://www.dal.ca/campus_life/communities/indigenous.html

Important Dates in the Academic Year (including add/drop dates)

https://www.dal.ca/academics/important_dates.html

University Grading Practices

https://www.dal.ca/dept/university_secretariat/policies/academic/grading-practices-policy.html

Student Resources and Support

Advising

General Advising https://www.dal.ca/campus_life/academic-support/advising.html

Science Program Advisors: <https://www.dal.ca/faculty/science/current-students/academic-advising.html>

Indigenous Student Centre: https://www.dal.ca/campus_life/communities/indigenous.html

Black Students Advising Centre: https://www.dal.ca/campus_life/communities/black-student-advising.html

International Centre: https://www.dal.ca/campus_life/international-centre/current-students.html

Academic supports

Library: <https://libraries.dal.ca/>

Writing Centre: https://www.dal.ca/campus_life/academic-support/writing-and-study-skills.html

Studying for Success: https://www.dal.ca/campus_life/academic-support/study-skills-and-tutoring.html

Copyright Office: <https://libraries.dal.ca/services/copyright-office.html>

Fair Dealing Guidelines <https://libraries.dal.ca/services/copyright-office/fair-dealing.html>

Other supports and services

Student Health & Wellness Centre: https://www.dal.ca/campus_life/health-and-wellness/services-support/student-health-and-wellness.html

Student Advocacy: <https://dsu.ca/dsas>

Ombudsperson: https://www.dal.ca/campus_life/safety-respect/student-rights-and-responsibilities/where-to-get-help/ombudsperson.html

Safety

Biosafety: <https://www.dal.ca/dept/safety/programs-services/biosafety.html>

Chemical Safety: <https://www.dal.ca/dept/safety/programs-services/chemical-safety.html>

Radiation Safety: <https://www.dal.ca/dept/safety/programs-services/radiation-safety.html>

Scent-Free Program: <https://www.dal.ca/dept/safety/programs-services/occupational-safety/scent-free.html>