



## COURSE OUTLINE

1. **Course:** CHEM 502.1, Research In Chemistry - Fall 2020 & Winter 2021, Topic: Research In Chemistry I

### Coordinator(s)

Name	Email	Phone	Office	Hours
Dr Gregory Welch	gregory.welch@ucalgary.ca	403 210-7603	EEEL 546	Wednesdays 3-4 pm or by appointment

### Section(s)

Lab 01:

Instructor	Email	Phone	Office	Hours
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The following procedures have been established for this course. Note that it is a full course and requires a strong commitment over both the Fall and Winter sessions.

Owing to COVID-19 and University of Calgary laboratory restrictions this course can be taken remotely and/or have a physical laboratory component.

#### 1. Selection of Committee Member

In consultation with your supervisor, another faculty member must be identified to serve on your supervisory committee and then determine if that person is willing to serve in this capacity. This individual should have research interests that are related to your project and thus should be able to provide advice to you over the course of your project. Email the course coordinator the name of the committee member.

**The deadline is: September 18, 2020.**

#### 2. Literature review/proposal and outline of any laboratory and remote learning work

An approximately 10-page summary (typed, 12 point, double-spaced, with figures), including a review of the prior published literature, the relevant research carried out in your group, your research goals/objectives/hypothesis and how these relate to past work, and a few pages covering the methods/approaches/techniques you expect to use during your work. A clear outline of how this work will be carried out remotely if applicable, i.e. with no access to the research laboratory, must be detailed. Three copies are required, one for your supervisor, one for your committee member, and one for the course coordinator. It is highly recommended that you start early on this document and provide several rough drafts to your supervisor/committee member for early feedback.

**The deadline is: October 16, 2020.**

(Value: 15% of Final Grade)

#### 3. Midterm Research Progress Meeting

A meeting will be held with your supervisor and your committee member, and open to the course coordinator, fellow 502 students, and chemistry department members (via Zoom) if you choose. Supervisor and committee member to assess your progress during the first half of the course. During this meeting, a brief progress report must be given by the student in the form of a 15-20-minute talk (this can also be quite informal, using few or no slides, and if remote learning is in place via an online platform). This presentation should include a clear indication of the objectives of your research project and a description of what has been done and observed to date. Also, a brief description of the work that is planned for the remaining months should be provided. You should then be prepared to discuss your work with your committee members. You will be assigned a grade on the first semester's work by the committee members, based on the degree of motivation shown, the quality of results obtained, the clarity of your talk, and your knowledge and understanding of the project.

**The meeting must be held on/before last day of exams: December 23, 2020.** Please schedule on/before the first week of December.

(Value: 15% of Final Grade)

#### 4. Online Poster Presentation

To showcase your research to date you are required to complete a poster presentation. This poster should be

in the format established by your research group. If you do not have a poster template, contact the course coordinator and he/she will provide a PowerPoint poster template and aid in creating the poster. This poster will be available to the entire chemistry department and thus should not contain any confidential information. The aim is to highlight yourself, research project, and research team. The content of the poster should be accessible to all chemistry department members and be visually appealing. The poster will be graded on clarity of research project goals/progress and visual presentation.

The posters must be complete and sent to the course coordinator as a **PDF file**.

**Deadline is: January 22, 2021** the poster will be made available for viewing/grading the week of January 25th.

(Value: 10% of Final Grade)

## 5. Written Report

A written report must be submitted to the course coordinator, your supervisor, and the other member of your committee. The Chemistry 502 report is to be written as if it were being submitted for publication to a scientific journal. Therefore, the report must be in typed form using a journal manuscript preparation template and all figures and tables must be clearly and carefully drafted according to the standards set by your chosen journal. While the report should be written in the style of a paper for a scientific journal, it could be somewhat more detailed. Regarding format, you will be required to download the "Instructions to Authors" for the journal most suited for your work and follow them explicitly in writing your report. The original copy of your report, as well as all photocopies, should be bound (soft cover coil type binding would be adequate). Your supervisor will keep the original copy of your report. You may also be required to submit to your supervisor an electronic copy of the final report, your lab notebook and any data acquired during the project (e.g. spectra, X-ray data, etc.). Discuss these requirements with your supervisor.

The Final Report is one of the key components of the course and should be like a Final Examination. It **MUST** be handed in by the prescribed date or you will lose marks (10% deducted for each day late).

**The deadline is: April 15, 2021.**

(Value: 30% of Final Grade)

## 6. Final Oral Presentation

The final oral presentations must be made prior to the last day of the exam period, April 29, 2020. You will be graded by your supervisor and committee member. The presentation will be made via Zoom and open to the department unless the work contains confidential information. The presentation should be 20 minutes in length and will be followed by a discussion period of up to 20 minutes. A maximum of 40 minutes will be available for the presentation plus the question period. The presentation is to meet with current standards of professionalism, e.g., utilizing PowerPoint presentation software. The presentations will be organized by the course coordinator and ideally all will occur back to back in conference format.

The oral presentations will be evaluated using the following criteria:

1. Organization of material
2. Clarity of the presentation
3. Quality of slides
4. Conclusions
5. Handling of questions and discussion (knowledge and understanding of project)

**The deadline is: April 29, 2021.** (date/time will be scheduled by the course coordinator)

(Value: 30% of Final Grade)

**All grades due to the course coordinator on or before April 30th, 2020.**

### In Person Delivery Details:

Laboratory research allowed. Student must have approval from VPR office, FoS office, and Chemistry department head to work in the research laboratory.

### Re-Entry Protocol for Labs and Classrooms:

To limit the spread of COVID-19 on campus, the University of Calgary has implemented an Instructional Space Re-Entry Protocol that must be followed. Details are found in the [Covid-19 Protocol for Class and Lab re-entry.pdf](#) document. **Online Delivery Details:**

This course is being offered online in real-time via scheduled meeting times, you are required to be online at the same time.

To be determined by research supervisor.

**Course Site:**

D2L: CHEM 502.1 B01-(Fall 2020 - Winter 2021)-Research In Chemistry

**Note:** Students must use their U of C account for all course correspondence.

Course materials will be posted on DL2 throughout the duration of the course. These materials include PowerPoint slides of lectures and tutorial questions/answers.

2. **Requisites:**

See section [3.5.C](#) in the Faculty of Science section of the online Calendar.

**Prerequisite(s):**

Consent of the Department.

**Note(s):**

- a. It is recommended that students have completed the third year of their program in Chemistry, Applied Chemistry or Chemical Physics. MAY BE REPEATED FOR CREDIT

3. **Grading:**

The University policy on grading and related matters is described in [F.1](#) and [F.2](#) of the online University Calendar.

In determining the overall grade in the course the following weights will be used:

Component(s)	Weighting %	Date
Selection of committee member	0	September 18, 2020
Written literature review and outline of lab/remote learning	15	October 16, 2020
Research progress meeting	15	December 23, 2020
Research poster	10	January 22, 2021
Final written report	30	April 15, 2021
Final oral presentation	30	April 29, 2021

**Note:** The grading for 'research work' has been removed this year owing to COVID-19 and the inability to work full-time in the laboratory.

**Note:** If the student and supervisor wish to change the course grading scheme owing to full remote learning, they must receive permission from the course coordinator and curriculum committee chair.

There will not be a final examination in this course scheduled by the Registrar, but the final oral presentation will be arranged on or prior to last day of exams, April 29, 2021. This oral presentation will occur via an online platform (e.g. Zoom, MS Teams).

Each piece of work (literature review, midterm presentation, poster, final report, and final presentation) submitted by the student will be assigned a percentage score. The student's average percentage score for the various components listed above will be combined with the indicated weights to produce an overall percentage for the course, which will be used to determine the course letter grade.

Each piece of work (reports, assignments, quizzes, midterm exam(s) or final examination) submitted by the student will be assigned a grade. The student's grade for each component listed above will be combined with the indicated weights to produce an overall percentage for the course, which will be used to determine the course letter grade.

The conversion between a percentage grade and letter grade is as follows.

	A+	A	A-	B+	B	B-	C+	C	C-	D+	D
<b>Minimum % Required</b>	95 %	87 %	82 %	77%	72%	66 %	62 %	58%	54%	50 %	45 %

4. **Missed Components Of Term Work:**

The university has suspended the requirement for students to provide evidence for absences. Please do not attend medical clinics for medical notes or Commissioners for Oaths for statutory declarations.

In the event that a student legitimately fails to submit any online assessment on time (e.g. due to illness etc...), please contact the course coordinator, or the course instructor if this course does not have a coordinator to arrange for a re-adjustment of a submission date. Absences not reported within 48 hours will not be accommodated. If an excused absence is approved, then the percentage weight of the legitimately missed assignment could also be pro-rated among the components of the course.

There are no midterm/ term test examinations

#### 5. **Scheduled Out-of-Class Activities:**

There are no scheduled out of class activities for this course.

#### 6. **Course Materials:**

In order to successfully engage in their learning experiences at the University of Calgary, students taking online, remote and blended courses are required to have reliable access to the following technology:

- A computer with a supported operating system, as well as the latest security, and malware updates;
- A current and updated web browser;
- Webcam/Camera (built-in or external);
- Microphone and speaker (built-in or external), or headset with microphone;
- Current antivirus and/or firewall software enabled;
- Stable internet connection.

For more information please refer to the UofC [ELearning](#) online website.

#### 7. **Examination Policy:**

No aids are allowed on tests or examinations.

Students should also read the Calendar, [Section G](#), on Examinations.

#### 8. **Approved Mandatory And Optional Course Supplemental Fees:**

There are no mandatory or optional course supplemental fees for this course.

#### 9. **Writing Across The Curriculum Statement:**

For all components of the course, in any written work, the quality of the student's writing (language, spelling, grammar, presentation etc.) can be a factor in the evaluation of the work. See also Section [E.2](#) of the University Calendar.

#### 10. **Human Studies Statement:**

Students will not participate as subjects or researchers in human studies.

See also [Section E.5](#) of the University Calendar.

#### 11. **Reappraisal Of Grades:**

A student wishing a reappraisal, should first attempt to review the graded work with the Course coordinator/instructor or department offering the course. Students with sufficient academic grounds may request a reappraisal. **Non-academic grounds are not relevant for grade reappraisals.** Students should be aware that the grade being reappraised may be raised, lowered or remain the same. See [Section I.3](#) of the University Calendar.

- a. **Term Work:** The student should present their rationale as effectively and as fully as possible to the Course coordinator/instructor within **ten business days** of either being notified about the mark, or of the item's return to the class. If the student is not satisfied with the outcome, the student shall submit the Reappraisal of Graded Term work form to the department in which the course is offered within 2 business days of receiving the decision from the instructor. The Department will arrange for a reappraisal of the work within the next ten business days. The reappraisal will only be considered if the student provides a detailed rationale that outlines where and for what reason an error is suspected. See sections [I.1](#) and [I.2](#) of the University Calendar
- b. **Final Exam:** The student shall submit the request to Enrolment Services. See [Section I.3](#) of the University Calendar.

#### 12. **Other Important Information For Students:**

- a. **Mental Health** The University of Calgary recognizes the pivotal role that student mental health plays in physical health, social connectedness and academic success, and aspires to create a caring and supportive campus community where individuals can freely talk about mental health and receive supports when needed. We encourage you to explore the mental health resources available throughout the university community, such as counselling, self-help resources, peer support or skills-building available through the SU Wellness Centre (Room 370, MacEwan Student Centre, [Mental Health Services Website](#)) and the Campus Mental Health Strategy website ([Mental Health](#)).
- b. **SU Wellness Services:** For more information, see [www.ucalgary.ca/wellnesscentre](http://www.ucalgary.ca/wellnesscentre) or call [403-210-9355](tel:403-210-9355).
- c. **Sexual Violence:** The Sexual Violence Support Advocate, Carla Bertsch, can provide confidential support and information regarding sexual violence to all members of the university community. Carla can be reached by email ([svsa@ucalgary.ca](mailto:svsa@ucalgary.ca)) or phone at [403-220-2208](tel:403-220-2208). The complete University of Calgary policy on sexual violence can be viewed at (<https://www.ucalgary.ca/policies/files/policies/sexual-violence-policy.pdf>)
- d. **Misconduct:** Academic misconduct (cheating, plagiarism, or any other form) is a very serious offence that will be dealt with rigorously in all cases. A single offence may lead to disciplinary probation or suspension or expulsion. The Faculty of Science follows a zero tolerance policy regarding dishonesty. Please read the sections of the University Calendar under [Section K](#). Student Misconduct to inform yourself of definitions, processes and penalties. Examples of academic misconduct may include: submitting or presenting work as if it were the student's own work when it is not; submitting or presenting work in one course which has also been submitted in another course without the instructor's permission; collaborating in whole or in part without prior agreement of the instructor; borrowing experimental values from others without the instructor's approval; falsification/ fabrication of experimental values in a report. **These are only examples.**
- e. **Academic Accommodation Policy:** Students needing an accommodation because of a disability or medical condition should contact Student Accessibility Services in accordance with the procedure for accommodations for students with disabilities available at [procedure-for-accommodations-for-students-with-disabilities.pdf](#).  
  
Students needing an accommodation in relation to their coursework or to fulfill requirements for a graduate degree, based on a protected ground other than disability, should communicate this need, preferably in writing, to the Associate Head of the Department of Chemistry, Dr. Yuen-Ying Carpenter by email [ahugchem@ucalgary.ca](mailto:ahugchem@ucalgary.ca) or phone 403-220-6908. Religious accommodation requests relating to class, test or exam scheduling or absences must be submitted no later than **14 days** prior to the date in question. See [Section E.4](#) of the University Calendar.
- f. **Freedom of Information and Privacy:** This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPP). Students should identify themselves on all written work by placing their name on the front page and their ID number on each subsequent page. For more information, see [Legal Services](#) website.
- g. **Student Union Information:** [VP Academic](#), Phone: [403-220-3911](tel:403-220-3911) Email: [suvpaca@ucalgary.ca](mailto:suvpaca@ucalgary.ca). SU Faculty Rep., Phone: [403-220-3913](tel:403-220-3913) Email: [sciencerep@su.ucalgary.ca](mailto:sciencerep@su.ucalgary.ca). [Student Ombudsman](#), Email: [ombuds@ucalgary.ca](mailto:ombuds@ucalgary.ca).
- h. **Surveys:** At the University of Calgary, feedback through the Universal Student Ratings of Instruction ([USRI](#)) survey and the Faculty of Science Teaching Feedback form provides valuable information to help with evaluating instruction, enhancing learning and teaching, and selecting courses. Your responses make a difference - please participate in these surveys.
- i. **Copyright of Course Materials:** All course materials (including those posted on the course D2L site, a course website, or used in any teaching activity such as (but not limited to) examinations, quizzes, assignments, laboratory manuals, lecture slides or lecture materials and other course notes) are protected by law. These materials are for the sole use of students registered in this course and must not be redistributed. Sharing these materials with anyone else would be a breach of the terms and conditions governing student access to D2L, as well as a violation of the copyright in these materials, and may be pursued as a case of student academic or [non-academic misconduct](#), in addition to any other remedies available at law.

Electronically Approved - Sep 15 2020 14:25

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**Department Approval**

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**Associate Dean's Approval**