UNIVERSITY OF CALGARY
FACULTY OF SCIENCE
DEPARTMENT OF CHEMISTRY
COURSE OUTLINE

1. **Course:** CHEM 502A.1, Research In Chemistry -- Spring 2018, Topic: Research In Chemistry I

Instructor Name	Email	Phone	Office	Hours
B01:				
Course Coordinator(s):				
Gregory Welch	gregory.welch@ucalgary.ca	4032107603	EEEL 546	TBA

Course Site:

D2L: CHEM 502A.1 B01-(Spring 2018)-Research In Chemistry

Department of Chemistry:
Office: Science A 229
Phone: 403 220-5385
Email: chem.info@ucalgary.ca

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

2. **Requisites:**

See section 3.5.C in the Faculty of Science section of the online Calendar.

Prerequisite(s): Consent of the Department.

Notes: 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

Consent of the Department

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
Written literature review	10	May 25
Research progress meeting	10	June 25-29
Research work	30	
Final written report	25	August 15
Final oral presentation	25	August 24

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
Minimum % Required	95 %	90 %	85 %	80%	75%	70 %	65 %	60%	55%	50 %	45 %

This course has a non-registrar scheduled final component.

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

   The regulations of the Faculty of Science pertaining to this matter are found in the Faculty of Science area of the Calendar in Section 3.6. It is the student's responsibility to familiarize himself/herself/themself with these regulations. See also Section E.3 of the University Calendar.

5. **Scheduled out-of-class activities:**

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

6. **Course Materials:**

   Not applicable

7. **Examination Policy:**

   Not Applicable

   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.

    1. **Term Work:** The student should present their rationale as effectively and as fully as possible to the Course coordinator/instructor within **15 days** of either being notified about the mark, orof the item's return to the class. If the student is not satisfied with the outcome, the student shall immediately submit the Reappraisal of Graded Term work form to the department in which the course is offered. The department will arrange for a re-assessment of the work if, and only if, the student has sufficient academic grounds.See sections I.1 and I.2 of the University Calendar

    2. **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. **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**.

c. **Assembly Points:** In case of emergency during class time, be sure to FAMILIARIZE YOURSELF with the information on assembly points.

d. **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. Farideh Jalilehvand by email ahugchem@ucalgary.ca or phone 403-220-5353 . 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.

e. **Safewalk:** Campus Security will escort individuals day or night (See the Campus Safewalk website). Call 403-220-5333 for assistance. Use any campus phone, emergency phone or the yellow phones located at most parking lot pay booths.

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 Email: suvpaca@ucalgary.ca. SU Faculty Rep., Phone: 403-220-3913 Email: sciencerep@su.ucalgary.ca. Student Ombudsman, Email: suvpaca@ucalgary.ca.

h. **Internet and Electronic Device Information:** Unless instructed otherwise, cell phones should be turned off during class. All communication with other individuals via laptop, tablet, smart phone or other device is prohibited during class unless specifically permitted by the instructor. Students that violate this policy may be asked to leave the classroom. Repeated violations may result in a charge of misconduct.

i. **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.

j. **SU Wellness Center:** The Students Union Wellness Centre provides health and wellness support for students including information and counselling on physical health, mental health and nutrition. For more information, see www.ucalgary.ca/wellnesscentre or call 403-210-9355.

13. Laboratory Safety Courses: All undergraduate students participating in a CHEM 402 or 502 project are required to complete the following laboratory safety trainings: 1) WHMIS 2015 (online); 2) Spill Response Training (online); 3) Lab Safety Training (in classroom). To register, please go to EHS Course Listings (https://www.ucalgary.ca/safety/courses). Students who only do theoretical calculations, or have previously completed these trainings at the University of Calgary are exempt/ NOT required to repeat it.

14. CHEM 502 Guidelines

The following procedures have been established for this course. Note that it is a full course and requires a strong commitment over both the Spring and Summer sessions.

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. The deadline for providing the name of this committee member to the Chemistry 502 coordinator is May 21st, 2018.

Literature Review/Proposal

An approximately 10-page summary (typed, 12 point, double-spaced), including a review of the prior published literature, the relevant research carried out in your group, your research goals and how these relate to past work, and a few pages covering the methods/approaches/techniques you expect to use during your work, is due on May 25th. Three copies are required, one for your supervisor, one for your committee member, and one for the Course Coordinator.

(Value: 10% of Final Grade)

Midterm Research Progress Meeting

A meeting will be held on with your supervisor, your committee member, and the course coordinator to assess your progress during the first half of the course. These meetings will be held during the period June 25-29, 2018. 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). 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.

(Value: 10% of Final Grade)

Written Report

A written report must be submitted to the course coordinator, your supervisor, and the other member of your committee by August 15th, 2018. 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 considered to be similar to a Final Examination. It MUST be handed in by the prescribed date or you will lose marks (10% deducted for each day late).

Value: 25% of Final Grade)

Final Oral Presentation

The final oral presentations must be made during the period August 19-24th at a time convenient for you and the members of your committee. The presentation should be

approximately 20-30 minutes in length and will be followed by a discussion period of up to 30 minutes. A maximum of ONE hour 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 oral presentations will be evaluated using the following criteria:

(i) Organization of material

(ii) Clarity of the presentation

(iii) Quality of slides

(iv) Conclusions

(v) Handling of questions and discussion (knowledge and understanding of project)

(Value: 25% of Final Grade)

Research Work

Whenever you are carrying out laboratory research work, be sure that someone else is present in your lab or in a nearby lab in case of an emergency or accident. Active research should be slowing down by the second week of August and then the writing up of the final report and preparation of your final oral presentation should be your primary Chemistry 502 task. Students are graded in this component of Chemistry 502 by their supervisor on the basis of their time commitment, their enthusiasm, their ability to work independently, particularly as the project evolves, their creativity, scientific knowledge and maturity, and their overall research skills.

(Value: 30% of Final Grade)

Department Approval:	Electronically Approved	**Date:** 2018-05-07 10:55
Associate Dean's Approval for out of regular class-time activity:	Electronically Approved	**Date:** 2018-05-07 11:01