

UNIVERSITY OF CALGARY
FACULTY OF SCIENCE
DEPARTMENT OF CHEMISTRY
COURSE SYLLABUS
FALL - WINTER 2019-2020

Course: CHEMISTRY 502, Research in Chemistry

Instructor: Individual Supervisor

Coordinator: Dr. Gregory C. Welch, gregory.welch@ucalgary.ca, EEEL 546, 403-210-7603

To avoid IT problems, it is recommended that the students use their U of C account for all course correspondence..

Desire 2 Learn (D2L): CHEM 502
<https://d2l.ucalgary.ca/d2l/home/171384>

Departmental Office: Room SA 229, Tel: (403) 220-5341, e-mail: chem.undergrad@ucalgary.ca

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.

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:

Friday, September 12, 2019.

2. 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/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. Three copies are required, one for your supervisor, one for your committee member, and one for the Course Coordinator.

The deadline is:

Friday, October 11, 2019.

(Value: 10% of Final Grade)

3. Midterm Research Progress Meeting

A meeting will be held on with your supervisor and your committee member, and open to the course coordinator, fellow 502 students, and chemistry department members. Supervisor and committee member to assess your progress during the first half of the course. These meetings will be held during the period **January 6-10, 2020.** 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: 15% of Final Grade)

4. 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 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).

The deadline is:

Friday, April 10, 2020.

(Value: 25% of Final Grade)

5. Final Oral Presentation

The final oral presentations must be made prior to the last day of the exam period, **April 29th 2020** 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. Times will be arranged by the course coordinator. They will be open to the department and it will be recommend you attend your fellow 502 students presentations.

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)

6. 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: 25% of Final Grade)

All grades due to the course coordinator on or before April 29th, 2020.

Department Approval

Electronically Approved

Date

August 29, 2019