



## UNIVERSITY OF CALGARY

DEPARTMENT OF CHEMISTRY  
COURSE SYLLABUS  
FALL 2016-WINTER 2017

**COURSE:** CHEMISTRY 502, Research in Chemistry

**Instructor:** Individual Supervisor

**Coordinator:** Dr. Viola Birss, [birss@ucalgary.ca](mailto:birss@ucalgary.ca), 403-220-6432

The following procedures have been established for this course. **Note that it is a full course and requires at least nine hours per week (on average) 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. The deadline for providing the name of this committee member to the Chemistry 502 coordinator is **Monday, September 19, 2016.**

### 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 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 **Monday, October 17, 2016. Three copies are required**, one for your supervisor, one for your committee member, and one for the Course Coordinator.

(Value: 10% of Final Grade)

### 3. January Research Progress Meeting

A meeting will be held early in 2017 with your supervisor, your committee member, and the course coordinator to assess your progress during the first semester. These meetings will be held **sometime in the week of January 9, 2017.** 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. A meeting will be held sometime in November/December of 2016 to discuss this more fully.

(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 by **the last day of classes of the Winter session (April 12, 2017).** 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. In terms of 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. More details on this will be provided at a meeting early in 2017 to discuss issues concerning the content and style of the report, and how to find and comply with the journal requirements.

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)

#### 5. Final Oral Presentation

**The final oral presentation must be given prior to the final day of the Winter Session Final Examinations period (April 26, 2017) at a time convenient for you and the members of your committee.** When the final exam schedule for the Winter Session is announced, these presentations will be scheduled as soon as possible. **The presentation should be approximately 35 to 40 minutes in length and will be followed by a discussion period of up to 15-20 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. More details on what is expected in this presentation will be provided at a meeting early in 2017.

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: 20% of Final Grade)

#### 6. Research Work

It is anticipated that your commitment to Chemistry 502 will average at about nine hours per week over the Fall and Winter terms. While the month of September will probably be occupied with the reading of the literature and the writing of your literature review, active research should commence no later than mid- to late October. It is common for Chemistry 502 students to carry out research experiments over the Christmas break, particularly as the exam period in December often precludes the carrying out of much research. 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 mid-to late March and the writing up of the final report should then 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)

#### Summary of Evaluation and Important Dates:

Committee Member chosen: **September 19, 2016**

Literature Review/Proposal (10%): **October 17, 2016**

Meeting in November or early December to discuss January progress presentation

January Research Progress Meeting (15%): **Sometime in the week of January 9, 2017**

Meeting in February to discuss final report and final presentation

Final Written Report (25%): **April 12, 2017**

Oral Presentation (20%): **To be completed by April 26, 2017**

Research Work (30%)

Department Approval: Approved by Department Head

Date: August 31, 2016