



UNIVERSITY OF CALGARY

DEPARTMENT OF CHEMISTRY
COURSE SYLLABUS
FALL 2015-WINTER 2016

COURSE: CHEMISTRY 502, Research in Chemistry

Instructor: Individual Supervisor

Coordinator: Dr. Belinda Heyne, SB 419, bjmheyne@ucalgary.ca, 403-220-3887

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

After consultation with your supervisor, select another faculty member to serve on your supervisory committee and ask that person if he or she would be willing to act in that capacity. This individual should have research interests that are related to your project and will be available to provide advice to you over the course of your project. The deadline for informing the coordinator of your Committee member selection is **Friday, September 18, 2015**.

2. Literature Review/Proposal

An approximately 10 pages (typed, 12 point, double-spaced) summary of the prior published literature and the relevant research carried out in your group, as well as a section concerning your goals and how these relate to past work, is due by **Friday, October 16, 2015**. **Three copies are required:** One for your supervisor, one for your Committee member, one for the Course Coordinator.
(Value: 10% of Final Grade)

3. Research Progress Meeting

A meeting must be held between yourself, your supervisor, your committee member and the course coordinator to assess your progress during the first semester. These meetings will be held on **January 5/6 2016**. During this meeting a brief progress report must be given by the student in the form of a 15-20 minute talk (*can be informal using few of no slides*). This should include a clear indication of the objectives of your research project and a description of what you have done and what you have observed to date. Also, a brief description of the work you plan to carry out in 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 based on the first semester's work at this point by the committee members present. Criteria used to arrive at this assessment will be your level of industry, presentation of the chemistry, ability to talk about your results and the quality of the results obtained. We will have a meeting together sometime in November or December to discuss this more fully.
(Value: 20% of Final Grade)

4. Written Report

A written report should be submitted to the course coordinator, your supervisor and the other member of your committee by **the last day of classes in the Winter session (April 13, 2016)**. The Chem 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. 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.

The report should be written in the style of a paper for a scientific journal, but perhaps be somewhat more detailed. In terms of format, you will be required to download the "Instructions to Authors" for the ACS Journal most suited for your work and follow them explicitly in writing your report. More details on this will be provided at a meeting next February, 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's delay).

(Value: 25% of Final Grade)

5. Final Oral Presentation

The oral presentation must be made prior to the final day of the Winter Session Final Examinations period (April 27, 2016) 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 in consultation with the parties involved.

The presentation should be approximately 30 to 40 minutes in length and it will be followed by a discussion period. Only ONE hour should be taken in total for the presentation plus question period. The presentation is to meet with current standards of professionalism, utilizing Powerpoint presentation software, or the like. More details on what is expected in this presentation will be provided at a meeting next February.

Students will be evaluated on the following:

- (i) Organization of material
- (ii) Clarity of the presentation
- (iii) Quality of slides, transparencies or other aids
- (iv) Conclusions
- (v) Handling of questions and discussion

(Value: 20% of Final Grade)

6. Research Work

It is anticipated that your commitment to Chemistry 502 averages to 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 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 and other contributions to the project and their overall research skills.

(Value: 25% of Final Grade)

Summary of Evaluation Important Dates:

Committee Member chosen **September 18, 2015**

Literature Review/Proposal 10% **October 16, 2015**

1st Semester Progress Meeting 20% **January 5/6, 2016**

Final Written Report 25% **April 13, 2016**

Oral Presentation 20% **To be scheduled (prior to April 27, 2016)**

Research Work 25%

Department Approval: Approved by Department Head

Date: September 2, 2015