Chemistry 4490E
Research Project

A Notice from the Registrar:

"Unless you have either the prerequisites for this course or written special permission from your Dean to enroll in it, you will be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites."

Prerequisites: Completion of the courses required for a Major in Chemistry and registration in Specialization in Chemistry, Honours Specialization in Chemistry or Honours Specialization in Biochemistry and Chemistry. Permission of the department is required.

Course Facilitators:

Professor John F. Corrigan	ChB 16
Professor François Lagugné-Laberthet	ChB 22
Professor Mark S. Workentin (coordinator)	ChB 223

Please feel free to contact any of the course facilitators about any aspect of this course.

Course Web-Page: **http://instruct.uwo.ca/chemistry/490/**

Course E-mail: **instrmsw@uwo.ca**

Emails **must** be from your @uwo.ca address. Please put Chem 4490 in the subject line.

About the Course:
Chemistry 4490E is regarded as the signature course in our Specialization and Honours Specialization in Chemistry and the Honours Specialization in Biochemistry and Chemistry Modules. The course provides the student with the opportunity to integrate the breadth of knowledge gained in pre-requisite courses and apply it towards a hands-on chemistry experience while doing an independent research project under the direction of a faculty member in the department. In addition to learning advanced laboratory skills and techniques needed to do research in an active chemistry research group, the course culminates with the writing of a thesis summarizing the year`s work and then presenting and defending the project to a panel of faculty examiners and their peers.

Expectations:

The minimum requirements for this course are 12 hours/week throughout the 13 weeks in each term working on your research project with your assigned supervisor AND attendance with participation at the following Chem 4490E events (times to be determined):

Initiation Meetings: Attendance is REQUIRED.

Thursday September 4, 2:30 pm Rm ChB 115: Course Initiation Meeting

AND

Friday September 12, 2:00-4:00 pm. Rm ChB 115: Laboratory Safety. Attendance is REQUIRED. This special presentation is required in order to be able to work in a research laboratory.

Additional Meetings, usually on a Friday afternoon in Room ChB 115 at 1:30 p.m.:
Dates and times will be communicated by email. Attendance is required.

September Meeting:

"Scientific Ethics" Friday, September 26, 1:30 pm. ChB 9
Dr. Natasha Patrito, Educational Developer, Teaching Support Centre

October Meeting:

"Professionalism in Science and Chemistry"
Dr. K. M. Baines, Chair, Department of Chemistry. Friday, October 24 1;30 p.m. ChB 9

November Meeting:

"How to give a Scientific Presentation"
Dr. Mark Workentin Time TBA

Early December Meetings:

"Mid-year research Summary Presentations" Time TBA

January Meeting:

"Strategies for resumes and Job-Hunting"
Tentative Date: Friday, January 16, 2009. 1:30 p.m. ChB 9.

February Meeting:

"Employment Skills: Mock Interview"
Tuesday, February 10. Times to be scheduled and announced.

Saturday April 4, 2009: Chemistry 4490E Research Presentation Day

In addition, information sessions on "how to apply for graduate school scholarships" and "information on how/when to apply for graduate school" will be provided.

Evaluation:

Assuming that the minimum requirements above are met then the final grade for the course will be determined by the following:

Mid-year (December) Evaluation by Supervisor: 5%

The supervisor will provide a grade based on the level of active participation and research activities. This will include an evaluation of achieving the 12 hour/week over the 12 weeks participation in the laboratory and the abilities to integrate the skills learned to the project. Feedback will be provided.

Mid-year (December) Research Project Progress Presentation: 5%

Each student will present a short (5 minute max) presentation outlining the project and progress towards its goals to their peers and the course facilitators. Feedback will be provided.

Research Performance Grade 25%

The faculty project supervisor(s) will assign a grade based on the student`s research performance throughout the year.

Thesis: (2 x 20% from each of the two faculty examiners) 40%

Each student will write a formal thesis (guidelines will be provided) of their research project. *(Final day for laboratory work is March 2, 2009)* This thesis will be read and graded by two faculty members (who are not supervisors of the project). These grades will be submitted prior to the Presentation and Oral Examination.

Due date: Monday, March 30, 2009 no later than 1:00 p.m.

Research Project Presentation and Oral Examination: 25%

Each student will present a 15 minute formal oral presentation of their year`s work, and answer 20 minutes of questions from the two examiners. All faculty in attendance will provide a grade based on the quality of the presentation and the overall comprehension displayed.

Date: Saturday, April 4, 2009. Please reserve from 8:00 a.m.- 3:00 p.m. You must be present for the entire day.

Additional Administrative Notes:

Plagiarism is a serious scholastic offense and more importantly a serious breach of scientific ethics in research. Any cases of cheating or plagiarism will incur appropriate penalties, possibly including failure in the course.

Plagiarism: Students must write their laboratory reports, assignments and tests on their own and in their own words. Whenever students take an idea, or a passage from another author or student, they must acknowledge their debt both by using quotation marks where appropriate or by proper referencing such as footnotes or citations. Plagiarism is a major academic offence (see Scholastic Offence Policy in the Western Academic Calendar):

http://www.westerncalendar.uwo.ca/western/web/2005(new)/ACADEMIC_RIGHTS_AND_RESPONSIBILITIES_305144.html

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It is the Department of Chemistry policy that when a student undertakes a test, an examination or any other evaluation procedure, they have deemed themselves fit to do so. Claims of distress or other medical issues after the fact will not be considered as the basis of a grade appeal.

If you are unable to meet a course requirement due to illness or other serious circumstances, you must provide valid medical or other supporting documentation to the Dean's office as soon as possible and contact your instructor immediately. It is the student's responsibility to make alternative arrangements with their instructor once the accommodation has been approved and the instructor has been informed. In the event of a missed final exam (for Chem 4490 this is the thesis presentation Day), a "Recommendation of Special Examination" form must be obtained from the Dean's Office immediately. For further information please see:
http://www.uwo.ca/univsec/handbook/appeals/medical.pdf

A student requiring academic accommodation due to illness, should use the Student Medical Certificate when visiting an off-campus medical facility or request a Records Release Form (located in the Dean's Office) for visits to Student Health Services. The form can be found here:
https://studentservices.uwo.ca/secure/medical_document.pdf

English Language Proficiency for Assignment of Grades: Each student granted admission to Western must be proficient in spoken and written English. Students must demonstrate the ability to write clearly and correctly. Work presented in English in any subject, at any level, which shows a lack of proficiency in English and is therefore unacceptable for academic credit, will either be failed or, at the discretion of the instructor, returned to the student for revision to a literate level. To foster competence in the use of the English language within their own discipline, all instructors will take proficiency in English into account in the assignment of grades.

Chemistry 4490E 2008-2009

To achieve optimal Student-Project-Supervisor matching, all students must proceed as follows:

1) Review the project descriptions available this year

2) Take the opportunity to meet with the potential supervisors to get more information about the project. This meeting can take place at the general group meeting times that will be organized and communicated to you by the course facilitators or via direct communication with the supervisor or designate as indicated on their project description.

3) Indicate below your FOUR preferred projects. Two would be your first preferences and the next two would be your second preferences. This list of four must include *at least three different supervisors (co-supervisors excluded)*.

4) Before Friday, September 12th at 4:00 p.m. give this form to Ms. Clara Fernandes in the Chemistry Main Office, ChB 119 or email your selections to instrmsw@uwo.ca. The selections will be announced via email sometime on Monday, September 15

5) After you are assigned a project you must arrange to meet your assigned supervisor immediately and no later than Wednesday, September 17. Laboratory work should start immediately. We recommend Thursday, Sept. 18.

Name: (please print): _____

Signature: _____

	Supervisor(s)	**Project Number** (as indicated on the project description)
First Preference A		
First Preference B		
Second Preference A		
Second Preference B		

Preliminary Guidelines for the Thesis (more details will be provided later)

The thesis must conform to these guidelines:

- The thesis will include a Title Page (example to be provided), Abstract, Table of Contents, Acknowledgements, and List of Abbreviations. These pages must be numbered in roman numerals from (i) onward (the title page does not have to show the number)
- Introduction, Results/Discussion, Experimental, Conclusions and References. **The maximum number of pages allowed for items listed in this bullet is 25 pages, including all figures, schemes and tables.** These pages must be numbered.
- Print must be in black ink and letter quality.
- Minimum 1.5 line spacing for the text.
- Acceptable fonts are Arial (11 pt), Times New Roman (12 pt), or comparable.
- Figures/schemes have to be large enough so that the text/scales are readable.
- Use white paper only, 21.5 cm x 28 cm, in portrait format.
- Set margins at a minimum of 1 cm on top, bottom and right. The left margin must be a minimum of 1.9 cm.
- Print on one-side of the paper only.
- The experimental section must be contained within the 25 page limit that describes key experiments and or representative procedures and characterization of new compounds. Occasionally, as in the case of synthetic chemistry, summarizing the characterization data for new compounds within the thesis will be difficult with the page limit. In these types of cases an appendix may be included. The thesis itself must be a self-contained document independent of the appendix. Someone reading the thesis must not be required to look at the appendix for additional information, figures, schemes etc. in order to understand the results/discussion presented. The purpose of the appendix is to provide interested readers with more details to critically evaluate the completeness of the work. The function is similar to supporting information provided in many scientific journals.

Additional Notes on Appendix:

1. The appendix may only contain supporting experimental details and characterization information. There can be no additional discussion of results. Typical information may include: experimental details, melting points, Rf values, summaries of IR, NMR or other spectroscopic data, combustion analysis, mass spectrometry data summaries, X-ray data and tables. It may also include computer programs or other lengthy information.
2. Raw data, such as spectra, may be included where warranted. (consult your supervisor)
3. The appendix is not intended to make it look like someone as done more work and it can not be used to expand the thesis beyond the allowed page limit except as indicated above.