1. Course Information

Biochemistry 4483E: RESEARCH PROJECT AND SEMINAR
Summer Term 2020

The major laboratory course for the Honors Specialization in Biochemistry and Honors Specialization modules combined with Biochemistry. Lectures on laboratory safety, biosafety, use of animals in research, scientific integrity; an independent research project (topic and advisor chosen by consultation between student and faculty); scientific communication (two seminars and a written report).

23 hours per week in research laboratories (Summer Term: May 4th to August 14th)

Prerequisites:
Biochemistry 3380G, Biochemistry 3381A and Biochemistry 3382A, with marks in each of at least 70%, and permission of the department.

See Academic Calendar for Antirequisites.

2. Contact Information

Course Coordinator: Dr. Ken Yeung Email: kyeung@uwo.ca
Course Administrator: Ms. Lindsay Ralph (MSB 342) Email: lhabere@uwo.ca

3. Learning Outcomes

The project course is the core of our honors modules. As a course, it is first and foremost a guided educational program in which students work in research labs under the mentorship of faculty and other lab members. Students will learn about the scientific process by participating in it to answer real research questions. Students will also learn about scientific communication through oral presentations and written reports. The goal of the course is to give students the opportunity to participate in science, rather than simply consume it.
4. Expectations and Evaluation

All projects offered in summer of 2020 are designed to be done remotely due to social distancing restriction. However, for consistency with the Fall/Winter 4483 Course, students are required to complete the following safety training courses by May 31st:

- Worker Health & Safety Awareness
- WHMIS 2015 - Workplace Hazardous Materials Information System
- Western Safe Campus Community
- Laboratory Safety & Hazardous Waste Management

Also by the end of May, students are required to complete online learning modules on Research Integrity, using the "responsible conduct of research training" subscribed by Western: https://www.uwo.ca/research/ethics/research_integrity.html

Instructions are available on OWL (under Resources). The penalty for not completing this by the deadline is 2% deduction of course grade.

You should discuss additional expectations with your supervisor. Most labs will have group meetings that you should plan to attend. The quality of your experience in this course is highly dependent on the efforts that you put in.

<table>
<thead>
<tr>
<th>Evaluation Components</th>
<th>Dates</th>
<th>% of Final Mark</th>
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</thead>
<tbody>
<tr>
<td>First Presentation (online)</td>
<td>May 28th</td>
<td>8%</td>
</tr>
<tr>
<td>First Report</td>
<td>Due June 15th, 8 am</td>
<td>4%</td>
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<tr>
<td>First Supervisor Evaluation</td>
<td>Mid-June</td>
<td>6%</td>
</tr>
<tr>
<td>Final Report (Thesis)</td>
<td>Due August 10th, 8 am</td>
<td>50%</td>
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<tr>
<td>Final Presentation (online)</td>
<td>August 13th</td>
<td>12%</td>
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<tr>
<td>Final Assessment by Supervisor</td>
<td>Mid-August</td>
<td>20%</td>
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(The evaluation forms for the above assessments can be found on OWL under Resources)

First Presentation:
The first oral presentation is limited to 10 min. Submission details will be provide on OWL Announcements. Students should present the research question(s) that their proposal will address, background information and preliminary results, and outline the methods that will be used. Slides should be prepared in PowerPoint or similar. Students should discuss details of content and form with their supervisor prior to preparing their presentations. It is typical that students rehearse their talks in (virtual) group meetings with their supervisors and lab mates.

Your first presentation will be evaluated on: Background, Organization, Rationale/Objectives, Presentation skills, and Response to questions (if applicable).
**First Report:**
A written Introduction will be submitted online via the OWL course site. It should be up to 3 pages long (double spaced), plus references. It should provide an introduction and the background of your project, state your research questions, and summarize your proposed experimental approach. This Introduction will be graded by your supervisor.

**First Supervisor Evaluation:**
Your progress to date in the lab will be evaluated by your supervisor in the following categories: a) understanding of the project, b) time and effort spent on the research project, c) quality of research work, d) record keeping and e) progress to date.

**Final Report (Thesis):**
Final reports will be submitted via the OWL course site. Late reports will lose 10% per day up to 3 days. Reports will not be accepted if more than 3 days late.

Reports should follow the style of a research paper (e.g., Journal of Biological Chemistry) with an Abstract, Introduction, Methods, Results, Discussion, and References sections.

Figures and legends should be prepared as if for publication and appended to the end. References should be handed appropriately. Specifics of content and style should be discussed with your supervisor.

Reports should not be longer than 20 pages, double-spaced, not including abstract, figures, and references. An outline of your thesis is due to your supervisor approximately ONE to TWO WEEKS prior to the deadline.

Your supervisor can give you general feedback and guidance at this time, but will not re-write your paper for you. It is also acceptable to get feedback from other colleagues in the lab. After submission, your paper will be marked by at least two faculty that are not your supervisor, but that are familiar with the subject.

**NOTE:** A completed and signed **Statement of Contribution** form (available on OWL, under Resources), stating the project start date and outlining your contribution to the presented research, must be also submitted as a separate document to the OWL site. If you have worked previously in the lab that you do your project in, you MUST clearly indicate the work that was actually accomplished during the summer, which will be taken into account in the evaluation of your thesis.

**Final Presentation:**
The final oral presentation should be no longer than 15 min. Submission details will be provide on OWL Announcements. Students should present an introduction to their project, rational, research question(s), and results from the year. Slides should be prepared in PowerPoint or similar. Students should discuss details of content and form with their supervisor prior to
preparing their presentations. Again, you are strongly encouraged to prepare your presentation early so you will have time to rehearse it in group (virtual) meetings.

Your final presentation will be evaluated on five categories: Background, Organization, Experimental content, Presentation skills, and Response to questions (if applicable).

**Final Assessment by Supervisor:**
At the end of the course, your supervisor will evaluate your overall performance in the lab. This will be based on your commitment, effort, initiative, overall understanding of the project and intellectual contribution and performance.

Note on Evaluation: Keep in mind that different projects can have very different types of outcomes. Negative results are common, especially in short time frames such as this course. Sometimes experiments just don’t work. The excitement of the projects that you are undertaking is that you and your supervisor do not know what the outcome will be, and therefore evaluations are not based necessarily on how much data is produced. All faculty are experienced in what kind of effort is required for any given type of project and this will be taken into consideration at all levels of evaluation.
5. Course Policies

If problems arise in your project or lab, discuss it first with your supervisor. If this does not resolve the issue, contact your course coordinator.

Statement on Academic Offences
Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following website: [http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf)

Turnitin and other similarity review software
All required papers may be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com.

Policy on the Rounding and Bumping of Marks
Across the Basic Medical Sciences Undergraduate Education programs and within the department of Biochemistry we strive to maintain high standards that reflect the effort that both students and faculty put into the teaching and learning experience during this course. All students will be treated equally and evaluated based only on their actual achievement. Final grades on this course, irrespective of the number of decimal places used in marking individual assignments and tests, will be calculated to one decimal place and rounded to the nearest integer, e.g., 74.4 becomes 74, and 74.5 becomes 75. Marks WILL NOT be bumped to the next grade or GPA, e.g. a 79 will NOT be bumped up to an 80, an 84 WILL NOT be bumped up to an 85, etc. The mark attained is the mark you achieved and the mark assigned; requests for mark “bumping” will be denied.

Absence from course commitments
Students who are unable to complete any form of course evaluation are required to obtain a medical certificate that is taken to the Academic Counseling Office, NCB 280 (for Science and Basic Medical Science students) or to your appropriate Home Faculty Counseling Office. In the case of an unexpected absence on compassionate grounds, documentation is also requested. Such documentation must be submitted by the student directly to the Academic Counseling office and not to the instructor. An academic counselor in that office will review and either approve or deny the accommodation request. It will be the Academic Counseling office that will determine if accommodation is warranted. This policy applies to all forms of assessment, including evaluations that are less than 10%.

Deadline extensions will be granted on documented illnesses. An opportunity for make-up presentation will be offered for excused absences.
6. Additional Information

**Senate regulation regarding the student's responsibility regarding prerequisites:**
Unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you may 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.

**Student Accessibility Services**
Please contact the course instructor if you require material in an alternate format or if you require any other arrangements to make this course more accessible to you. You may also wish to contact University Student Accessibility Services at (519) 661-2147 or visit **http://www.sdc.uwo.ca/ssd/** for any specific question regarding an accommodation.

**Statement on Student Conduct**
Western’s Code of Student Conduct ([https://www.uwo.ca/univsec/pdf/board/code.pdf](https://www.uwo.ca/univsec/pdf/board/code.pdf)) prohibits assault, harassment, intimidation, threats, or coercion, as well as discrimination based on grounds including race, ethnic origin, sex, sexual orientation, gender identity, and disability. Students in this course are expected to speak and act in ways that maintain an environment in which all people feel safe and respected.

**Support Services**
Registrial Services: **http://www.registrar.uwo.ca**
Academic Counselling (Science and Basic Medical Sciences): **http://www.uwo.ca/sci/counselling**
USC Student Support Services: **http://westernusc.ca/services/**
Student Development Services: **http://www.sdc.uwo.ca**
Student Health Services: **http://www.shs.uwo.ca/**
Students who are in emotional/mental distress should refer to Mental Health@Western [https://www.uwo.ca/health/mental_wellbeing/self/student.html](https://www.uwo.ca/health/mental_wellbeing/self/student.html) for a complete list of options about how to obtain help.