1. Course Information

Biochemistry 4999E: Advanced Research in Biochemistry
Fall and Winter Term 2021-22

This laboratory course is intended for students interested in pursuing graduate-level research. Lectures on literature searches, data mining, and effective communication; an independent research project (topic and advisor chosen by consultation between student and faculty); scientific communication (introduction to topic, mid-year report, seminar).

Laboratories, Workshops and Seminars:
  a) 12 Laboratory hours per week
  b) 10 Total hours of workshops (estimated)
  c) Participation in the Biochemistry Graduate Seminars

Prerequisites:
One of Biochemistry 4483E, Biochemistry 4486E, or the former Biochemistry 4485E, and permission of the department.

Senate regulation regarding the student’s responsibility regarding requisites:
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 coordinator or your supervisor 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 contact Accessible Education for any specific question regarding an accommodation: http://academicsupport.uwo.ca/accessible_education/.

COVID-19 Resurgence
If a resurgence prevents in-person lab work, your supervisor will provide alternate research activities for you to complete the course remotely. Workshops and assessments (presentations) may be conducted online using Zoom or other video conference software.
2. Contact Information

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<thead>
<tr>
<th>Name and Position</th>
<th>Email</th>
<th>Office</th>
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<tbody>
<tr>
<td>Dr. Ken Yeung (Course Coordinator)</td>
<td><a href="mailto:kyeung@uwo.ca">kyeung@uwo.ca</a></td>
<td>MSB 374, by email appointment</td>
</tr>
<tr>
<td>Ms. Megan Luckovitch (Grad/UG Program Administrator)</td>
<td><a href="mailto:mluckovi@uwo.ca">mluckovi@uwo.ca</a></td>
<td>MSB 342, (519) 661-3074</td>
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All course material will be posted to OWL: [http://owl.uwo.ca](http://owl.uwo.ca)

Students are responsible for checking OWL on a regular basis for news and updates. This is the primary method by which information will be disseminated to all students in the class. If students need assistance, they can seek support on the OWL Help page. Alternatively, they can contact the Western Technology Services Helpdesk.

3. Course Syllabus

This course will provide research skills to prepare students for graduate studies in biochemistry. The major component of the course will involve 12 hours per week of independent research. The course will also include approximately 10 total hours of workshops focusing on key aspects of research; for example, statistics, scientific writing, scientific communication, analysis of the literature and bioethics. The student will also undertake a literature review of the research area and a research poster presentation and seminar.

4. Evaluation and Expectations

All required safety and other training courses that must be completed before starting in the lab ([https://www.uwo.ca/hr/learning/required/index.html](https://www.uwo.ca/hr/learning/required/index.html)). Consult with your supervisor on what training is required. You are not permitted to work in the lab unsupervised in the evening or on weekends.

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.

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<tr>
<th>Components</th>
<th>Due Dates (when applicable)</th>
<th>% of Final Mark</th>
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<tbody>
<tr>
<td>Research Proposal</td>
<td>Monday, September 27th, 8 am</td>
<td>10%</td>
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<tr>
<td>Mid-term Progress Report</td>
<td>Monday, January 3rd, 8 am</td>
<td>10%</td>
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<tr>
<td>Poster</td>
<td>Stewart Research Day (January)</td>
<td>10%</td>
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<tr>
<td>“Chapter 1”</td>
<td>Monday, March 14th, 8 am</td>
<td>20%</td>
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<tr>
<td>Research Presentation</td>
<td>Tentatively late-March</td>
<td>15%</td>
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<tr>
<td>Workshops</td>
<td>First one due on September 30th</td>
<td>5%</td>
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<tr>
<td>Supervisor Assessment</td>
<td>End of the course</td>
<td>30%</td>
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Submission of all reports must be done by emailing them to Dr. Yeung (kyeung@uwo.ca), and copying it to your supervisor, using your “@uwo.ca” email account. No reminders on the due dates will be sent. A late penalty of 10% per day will apply. When applicable, inclusion of literature citation, figures and tables outside of the page- or word-limit is allowed.

**Research Proposal** (2-page limit)
Prepare a mini version of research grant proposal on your work. This will include a title, a summary of research background, work accomplished in 4483E and your research plans for the 4999E course (with supervisor’s input). This will be graded by the 4999E coordinator.

**Midterm Progress Report** (3-page limit)
Remove the background from your research proposal and expand your research plan into a detailed outline that lists the experimental work (in bullet form). Indicate the progression on each experiment with a %-scale. For any incomplete work, lay out the plans to complete and the estimate time it will take. Inclusion of literature citation outside of the page limit is allowed. It will be graded by the 4999E coordinator.

**Poster Presentation**
Students are required to present a poster (in-person) of their work conducted in Biochemistry 4999E on the Stewart Research Day. This usually takes place in January, with the exact date to be announced later by the department.

**Research Seminar Presentation** (20 minutes)
Students will present a seminar in March. The presentation and presenter’s ability to address questions from audience will be evaluated by faculty members present.

**“Chapter 1”** (25000-character limit)
In this report, student is expected to summarize the key literature in the field of research, with a statement of hypothesis and experimental goals. This document is intended to be used as a draft of the introductory chapter for a MSc thesis. It will be graded by the supervisor and/or the 4999E coordinator.

**BMSUE 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.
Biochemistry 4999 Workshops
There are several online or in-person workshops required, where marks are allocated for attendance or completion. The following are tentative the topics and dates:

1% **Research Ethics/Integrity Online Tutorial** (must complete by September 30th)
*Students are required to complete online learning modules on **Research Integrity**, using the "[responsible conduct of research training](https://www.uwo.ca/research/ethics/research_integrity.html)" subscribed by Western:* 
Instructions are available on OWL (under Resources).

2% **Online Writing Assistance with Writing Support Centre** (complete before April 1st)
*Arrange a 50-minutes ‘Zoom Appointment’ counselling session on how to improve your writing. You are recommended to provide your 4483 final report for as your writing sample. This is the website ([http://writing.uwo.ca/undergrads/appointments.html](http://writing.uwo.ca/undergrads/appointments.html)), but it is subject to change. After the end of the sessions, request your TA to send an email to Dr. Yeung to confirm your participation.*

1% **Biostatistics Workshop** by Prof. G. Gloor (to be scheduled at late Fall or early Winter)

1% **Advanced Literature Searches/Research Skills** (check schedule at link below)
*Attend at least one of the workshops offered by Western Libraries. Check this website later for Workshops offered this year: ([https://www.lib.uwo.ca/researchskillworkshops/index.html](https://www.lib.uwo.ca/researchskillworkshops/index.html))*
*At the end of the workshop, request the organizer to send an email to Dr. Yeung to confirm your attendance.*

5. **Western Academic Policies and Statements**

**Masking Guidelines**
*Students will be expected to wear triple layer, non-medical, paper masks at all times in the classroom, research lab and research student offices, as per University policy and public health directives. Students who are unable to wear a mask must seek formal accommodation through Western Accessible Education, and present medical documentation.*

*Students are not permitted to eat or drink while in class to ensure masks stay in place. Students will be able to eat and drink outside of the classroom during scheduled breaks. Students unwilling to wear a mask as stipulated by Western policy and public health directives will be referred to the Dean, and such actions will be considered a violation of the student Code of Conduct.*

**Course Absences due to Daily COVID Screening Questionnaire**
*Missed assessments (e.g., presentations, essays, quizzes, tests, midterms, etc.) require formal academic considerations (typically self-reported absences and/or academic counselling).*
Methods for dealing with missed work and course content are at the discretion of the instructor(s). Students should be aware that some learning outcomes cannot be easily made up and may need to be completed in a subsequent year. Your instructor will provide you with further information as to how this applies within this course.

Students who demonstrate a pattern of routinely missing coursework due to self-reported COVID symptoms, and therefore do not demonstrate mastery of the learning outcomes of the course, will not receive credit for the course.

**Absence from Course Commitments**

If you are unable to meet a course requirement due to illness or other serious circumstances, you must seek approval for the absence as soon as possible. Approval can be granted either through a self-reported absence or via the Academic Counselling unit. Students have two self-reports to use throughout the academic year; absence from course commitments including tests, quizzes, presentations, labs, and assignments that are worth 30% or less can be self-reported. Self-reported absences cover a student for 48 hours (yesterday + today or today + tomorrow). The course coordinator will receive notification of your consideration; however, you should contact your course coordinator and/or supervisor immediately regarding your absence. Students are expected to submit missed work within 24 hours of the end of the 48-hour period. Please review details of the University’s Policy on Academic Consideration for Student Absences.

If you have used both their self-reported absences or will miss more than 48 hours of course requirements, a Student Medical Certificate (SMC) should be signed by a licensed medical or mental health practitioner, and you should contact Academic Counselling at: https://www.uwo.ca/sci/counselling/

**Accommodation for Religious Holidays**

The policy on Accommodation for Religious Holidays can be viewed here.

**Academic Offenses**

“Scholastic offences are taken seriously, and students are directed here to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence.

**Accessibility Statement**

Please contact the course coordinator and/or supervisor 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 Accessible Education (AE) at 661-2111 x 82147 for any specific question regarding an accommodation or review The policy on Accommodation for Students with Disabilities.

**Correspondence Statement**

The centrally administered e-mail account provided to students will be considered the individual’s official university e-mail address. It is the responsibility of the account holder to ensure that e-mail received from the University at his/her official university address is attended to in a timely manner. You can read about the privacy and security of the UWO email accounts here.
**Turnitin and other similarity review software**

All assignments will be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University for the detection of plagiarism. Students will be able to view their results before the final submission. 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 Western University and Turnitin.com.

**Contingency plan for an in-person class pivoting to 100% online learning**

In the event of a COVID-19 resurgence during the course that necessitates the course delivery moving away from face-to-face interaction, all remaining course content will be delivered entirely online, either synchronously (i.e., at the times indicated in the timetable) or asynchronously (e.g., posted on OWL for students to view at their convenience). The grading scheme will not change. Any remaining assessments will also be conducted online as determined by the course instructor. In the event that online learning is required, a stable internet connection with working microphone and webcam will be required. As has been the case in the past, the decision to pivot to online learning will be made by Western, and not individual instructors or departments (excepting temporary online instruction in the event of instructor illness).

**Use of Zoom Software for Presentations**

In the event of a lockdown due to a pandemic, presentations and answering of questions from audience will be conducted using Zoom. Students will be required to keep their cameras on for the entire session and share their screens with the attendants during their presentations. The Zoom session will not be recorded. You are responsible in making sure you have a reliable internet connection and a device that meets the system requirements for Zoom.

**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.

**Additional Support Services**

The following links provide information about support services at Western University.

- [Academic Counselling (Science and Basic Medical Sciences)](https://www.uwo.ca/univsec/pdf/board/code.pdf)
- [Appeal Procedures](https://www.uwo.ca/univsec/pdf/board/code.pdf)
- [Registrarial Services](https://www.uwo.ca/univsec/pdf/board/code.pdf)
- [Student Development Services](https://www.uwo.ca/univsec/pdf/board/code.pdf)
- [Student Health Services](https://www.uwo.ca/univsec/pdf/board/code.pdf)