

# Research Project and Seminar Course 4480E/4483E/4485E/4486E/4500E/4970E 2020-2021

## 1. Project Course Coordinators:

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4483E (Biochemistry)  
4485E (Clinical Biochemistry)  
4486E (Biochemistry and Cancer Biology)  
4500E (Chemical Biology)

**Dr. Rodney DeKoter** ([rdekoter@uwo.ca](mailto:rdekoter@uwo.ca) - Room 3007K Dental Sciences Building)  
4970E (Microbiology & Immunology)

**Dr. Silvia Penuela** ([spenuela@uwo.ca](mailto:spenuela@uwo.ca) - Room 426 Medical Science Building)  
4480E (Biochemistry & Cell Biology)

## 2. Course Information

### Course Description:

The project course is the core of our honours modules. As a course, it is first and foremost a guided educational program in which students work on an independent research project under the mentorship of a faculty supervisor and other lab members. The goal of the course is to give students the opportunity to participate in science, rather than simply consume it.

Please note that for 2020-21, access to laboratories for research projects will be limited by recommendations from the Province of Ontario on lab re-opening during the COVID-19 pandemic. Projects may necessarily require a mixture of at-home study and laboratory research. A limited number of projects will be designed to be conducted remotely, with no in-lab component.

**Extra Information:** 15 hours per week

**Course Weight:** 1.5 credits

### Required:



Stable internet connection



Laptop or computer



Working microphone



Working webcam

### Delivery mode:

This course will have in person components and online components. Virtual sessions will be a combination of synchronous (live) and asynchronous (recorded). Students will be expected to complete work prior to attending sessions. Timetabled sessions could be used for lectures, tutorials, discussions, groupwork, etc. Below are details about the sessions.

Mode	Dates	Time	Frequency**	Attendance
In person	M/T/W/Th/F	3 hours	daily	Yes
Virtual synchronous*	TBD 1) General course information session 2) Fall research project presentation 3) December written progress report 4) Winter project outline report 5) Final written project report 6) Spring final research presentation	variable	selected sessions	Yes
Virtual asynchronous	TBD 1) Interviews to match with supervisor 2) Laboratory safety training	variable	selected sessions	N/A

[\*Virtual synchronous sessions will be recorded for later viewing]

[\*\*A schedule will be posted]

### **Learning Outcomes:**

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.

### **Requisites:**

Access to any of the above thesis courses is restricted to students enrolled in one of the Honours Modules offered by the participating departments. Each module has its own prerequisites and requirements. The eligibility of each student is therefore determined prior to enrolment. Nevertheless, meeting the prerequisites and requirements of the thesis course remains the responsibility of the student.

### **Senate regulation regarding the student's responsibility for 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.

### **Course Organization:**

The course is jointly administered by the Departments of Microbiology & Immunology, Biochemistry, and Anatomy & Cell Biology. Together we organize the placements, scheduling, and seminars. Students in any of these programs can select a supervisor in any of these Departments.

Early September is devoted to required safety and other training courses that must be completed before starting in the lab. Project matching must also be completed during this time. Projects begin typically by the third week of September (see schedule).

Students will give their first oral presentation in mid-October (see schedule). This is intended to give students the opportunity to introduce the background and rationale to their project and outline the methods that they will use to answer their research question(s). These presentations are graded by faculty, other members of the department, and peers.

Final written reports are typically due at the end of March/early April (see schedule). These will be graded by at least two faculty members from within the given department. Final oral presentations will occur in early April and will again be graded by faculty, other members of the department, and peers.

**Required Online Courses:**

There are several online courses that do not contribute to your grade in the project course but are absolutely required to receive a grade. Upload your certificates of completion for each module on the OWL assignment page by the required date. You will not be able to continue your project past this date until all certificates are uploaded. Any late certificates will affect your first term performance review marks.

**i) Safety Courses:**

These six safety courses are available online: <https://www.uwo.ca/hr/learning/required/index.html>.

Certificates showing completion for all of the following courses must be submitted to your supervisor prior to starting any work in the lab.

- Worker Health and Safety Awareness Training
- WHMIS - Workplace Hazardous Materials Information System
- Safe Campus Community
- Accessibility in Service
- Laboratory Safety & Hazardous Waste Management
- Biosafety

**ii) Responsible Conduct of Research Modules:**

These five courses are available through the CITI program made available by Western Research. Download instructions from the Resource folder of the course OWL site. You must complete the following modules and associated quiz.

- *Research Misconduct (ID 14367)*
- *Data Acquisition and Management (ID 14355)*
- *Writing with Integrity (ID 16285)*
- *Conflicts of Interest in Research (ID 14381)*
- *Animal Care and Use (ID 14383)*

### **Choosing your Project and Supervisor:**

The research projects undertaken by honours students can take very different forms, depending on the lab and type of research. The guiding principle is that students must perform a project designed to address a specific research question or questions. Discuss this with your supervisor.

Prior to the beginning of the term (see schedule) you can approach faculty that you are interested in working with about potential projects in their research group. If you do find a supervisor prior to the beginning of the term, send an email confirming your match to the coordinator for your course (see above) with the details of your match. Copy your supervisor on this email.

By the middle of the summer, you will be given access to an OWL site with descriptions of available projects to help you with your search. Keep checking the OWL site as new projects will be loaded throughout the summer. Keep in mind that it is not required that you find a supervisor prior to the beginning of the term and projects will still be available. Project pre-matching ends September 1.

For those students who did not arrange for a supervisor prior to September, the second week of the term (see schedule) will be dedicated to interviews to help you find a match. Expect to interview with no more than 3 potential supervisors, after which you will submit your ranked preferences. Faculty will do the same. The course coordinators will do our best to match students with their choice of project based on these rankings.

**NOTE:** Students may not carry out a Work Study placement in the same lab as they are doing their thesis project, as these are two separate programs.

### **Expectations in the Lab:**

Projects begin during the third week of September (see schedule). Students are expected to devote a minimum of 15 hours per week on their project. The actual hours spent in the lab should be discussed with your supervisor, but as a rule you should have kept your afternoons available. 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.

**NOTE:** Safety regulations prohibit anyone from working alone in a research laboratory. Therefore, undergraduate research students are only permitted to work in the lab under the supervision of a senior lab member.

**NOTE:** Labs can be hazardous places. Ask what the hazards are and know how to handle them safely. Basics will be covered in the mandatory courses at the beginning of September, but you should also receive lab-specific training when you start your project.

**RECOMMENDED READING:** *At the Bench: A Laboratory Navigator, Updated Edition* by Kathy Barker. In particular, Chapters 1-6.

### **OWL:**

*Students are responsible for checking OWL at regular intervals.* OWL will be used to communicate information about the course. Students with OWL issues should see: <https://owl.uwo.ca/portal/site/owldocs>

### **Accessibility Statement:**

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 Services for

Students with Disabilities (SSD) at 661-2111 x82147 for any specific questions regarding an accommodation.

### 3. Evaluations:

Component	% of final grade
First Oral Presentation	8%
First Written Report	10%
Final Written Report	50%
Second Oral Presentation	12%
Final Performance Evaluation	20%

#### **First Oral Presentation: 8% of final grade**

The first oral presentation will occur early on in your project (see schedule). It should be no longer than 10 min, followed by 5 min for questions. Presentations that go over this time will be cut off. 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. **For 2020-2021, oral presentations will take place online using Zoom.** Sessions will be held concurrently, grouped by field, attended by Faculty and other department members. Project students must attend the entire session. Attendees will grade presentations.

#### **First Written Report: 10% of final grade (along with performance evaluation)**

A written Introduction is due by the end of December (see Schedule) and will be submitted via the OWL HSP Project site. It should be up to 3 pages long (double spaced), plus references. It should provide an introduction to your project, state your research questions, and summarize your proposed experimental approach. This Introduction and your progress to date in the lab will contribute to your December evaluation by your supervisor.

#### **Final Written Report: 50% of Final Grade**

Final reports are due at the end of March/early April (see schedule for exact date) and will be submitted via the OWL HSP project site. Late reports will lose 10% per day up to 3 days. Reports will not be accepted if more than 3 days late.

Reports are to be written in the style of a research paper with an Abstract, Introduction, Methods, Results, and Discussion 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 after winter term reading week (see schedule). Your supervisor can give you general feedback and guidance at this time, but can't 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 1-page form (see attached example) stating the project start date and outlining your contribution to the presented research must be uploaded as a separate document to the OWL site.

**NOTE:** We will have a lecture specifically on writing your report early in the winter semester (see Schedule).

**Second Oral Presentation: 12% final grade**

The final oral presentation will occur the week after the written report is due (see schedule). It should be no longer than 15 min, followed by 5 min for questions. Presentations that go over this time will be cut off. Students should present an introduction to their project, rationale, 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.

Sessions will be held concurrently, grouped by field, attended by Faculty and other department members. Project students must attend the entire session.

**Final Performance Evaluation: 20% final grade**

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. This will, in part, be based on the THESIS OUTLINE that you submit to your supervisor after Reading Week.

***Final 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 don't 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.

**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.**

#### **4. Western Academic Policies and Statements**

##### **Absence from Course Commitments**

##### [Policy on Academic Consideration for Student Absences](#)

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). Your instructor will receive notification of your consideration; however, you should contact your instructor 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. Academic Counselling will be operating virtually this year and can be contacted at [scibmsac@uwo.ca](mailto:scibmsac@uwo.ca).

### **Accommodation for Religious Holidays**

The policy on Accommodation for Religious Holidays can be viewed [here](#).

### **Special Examinations**

A Special Examination is any examination other than the regular examination, and it may be offered only with the permission of the Dean of the Faculty in which the student is registered, in consultation with the instructor and Department Chair. Permission to write a Special Examination may be given on the basis of compassionate or medical grounds with appropriate supporting documents. To provide an opportunity for students to recover from the circumstances resulting in a Special Examination, the University has implemented Special Examinations dates. These dates as well as other important information about examinations and academic standing can be found [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 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 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](http://Turnitin.com).

## **5. BMSUE Academic Policies and Statements**

### **Copyright and Audio/Video Recording Statement**

Course material produced by faculty is copyrighted and to reproduce this material for any purposes other than your own educational use contravenes Canadian Copyright Laws. You must always ask permission to record another individual and you should never share or distribute recordings.

## **Rounding of Marks Statement**

Across the Basic Medical Sciences Undergraduate Education programs, 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.

## **6. Support Services**

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

[Academic Counselling \(Science and Basic Medical Sciences\)](#)

[Appeal Procedures](#)

[Registrarial Services](#)

[Student Development Services](#)

[Student Health Services](#)