

MCB*7500 - PhD Research Topics in Molecular and Cellular Biology

Summer 2024 Course Outline

Section: 01

Credits: 1.00

Land Acknowledgement: Guelph

The University of Guelph resides on the ancestral lands of the Attawandaron people and the treaty lands and territory of the Mississaugas of the Credit. We recognize the significance of the Dish with One Spoon Covenant to this land and offer respect to our Anishinaabe, Haudenosaunee and Métis neighbours. Today, this gathering place is home to many First Nations, Inuit, and Métis peoples and acknowledging them reminds us of our important connection to this land where we work and learn.

Calendar Description

This mandatory two semester course emphasizes the development and refinement of the skills of scientific communication. Students submit a written thesis proposal and present a public seminar on a contemporary subject in the molecular biosciences. MCB PhD students normally complete this course within the first two semesters of their program. Students will register in each semester and receive a grade of INP (in progress) at the end of the first semester and a grade at the end of the second semester.

Department(s): Department of Molecular and Cellular Biology

Course Description

Welcome to the graduate program in Molecular and Cellular Biology! One of the graduate degree requirements is completion of the two-semester course MCB*6500 (M.Sc.) or MCB*7500 (Ph.D.). In this course you will prepare a written research proposal related to your thesis project and present it to the department in a seminar. These tasks will help you develop the writing and oral presentation skills you will need to write and defend your thesis, as well as help you to prepare for a career in science or a science-related field. This document is the Course Outline for both MCB*6500 and MCB*7500; it outlines all the requirements. Please read this outline carefully. If you have any questions, please ask the Course Coordinator.

Instructor Information

Jennifer Geddes-McAlister
Coordinator
Email: jgeddesm@uoguelph.ca

Krassimir Yankulov
Email: yankulov@uoguelph.ca

Emma Allen-Vercoe
Email: eav@uoguelph.ca

Melanie Alpaugh
Email: alpaughm@uoguelph.ca

Learning Resources

Required Resources

Course link (Website) (<https://courselink.uoguelph.ca/>)

Campus Resources

If you are concerned about any aspect of your academic program: Make an appointment with a Program Counsellor (<https://www.uoguelph.ca/uaic/programcounsellors/>) in your degree program. If you are struggling to succeed academically: There are numerous academic resources offered by the

Learning Commons (<https://www.lib.uoguelph.ca/using-library/spaces/learning-commons/>) including, Supported Learning Groups for a variety of courses, workshops related to time management, taking multiple choice exams, and general study skills.

Library Course Reserve (Ares)

For this course, you will be required to access course reserve materials through the University of Guelph McLaughlin Library. To access these items, select **Ares** on the navbar in CourseLink. Note that you will need your Central Login ID and password in order to access items on reserve.

For further instructions on accessing reserve resources, visit How to Get Course Reserve Materials (<https://lib.uoguelph.ca/find/course-reserves-ares/how-get-course-reserve-material/>).

If at any point during the course you have difficulty accessing reserve materials, please contact the e-Learning Operations and Reserve Services staff at:

Tel: 519-824-4120 ext. 53621 | Email: libres2@uoguelph.ca | Location: McLaughlin Library, First Floor, University of Guelph

Course Level Learning Outcomes

As you move from passive to active involvement in your field, you are going to create new knowledge and put your own ideas forward, instead of just learning what other scientists have done.

These courses are focused on the development of your intellectual independence. You will learn how to study the literature, identify important papers, read them critically, summarize them, and think about their significance. Most importantly, you will learn how to synthesize what you have read: that is, rather than just reading specific papers or reviews one at a time and repeating their conclusions, you will integrate them into a coherent whole, making a "mental map" of how they fit together. Perhaps you read a 2001 paper that hypothesizes that one particular gene is regulated by another; and a 2007 paper that proved that this hypothesis is correct; but then a 2015 paper said, "No, it's not so". Finally, a 2018 paper resolved the apparent contradiction by showing that the hypothesis is correct in yeast but is incorrect in mammals. What you have now assembled is a narrative: a sequence of contributions that fit together to make a story, advancing our knowledge of the subject. Making coherent sense out of these distinct facts is integration. Learning to do this is an important part of your maturation as a student. Based on your understanding of the state of the field, you will then explain the contribution that you hope to make. Finally, in the seminar, you will convey all these ideas to your audience.

READING THE SCIENTIFIC LITERATURE: A naive reader will take everything he or she reads "for granted", as the plain truth. A sophisticated reader recognizes that each writer - even a scrupulously honest author - has a particular point of view, with biases, preconceptions, or misunderstandings that colour their work. Sorting out the true from the false, the brilliant from the mediocre, the innovative from the mundane - these are aspects of critical analysis. They are examples of the most general question that we all must grapple with: what is the nature of the "good"?

The understanding and wisdom you are developing as a graduate student will bring little reward unless you can express them in words that others can follow and understand. So, another key aspect of the course is development of your writing skills. Scientific writing is a specialized art: you need to learn the rules and practices of good general writing, and you also need to learn the disciplinary conventions. The skills you develop now will serve you throughout your career - when you write manuscripts, prepare your thesis, and, later, when you write grant applications, contract proposals, technical reports, and so on.

ORIGINALITY: Your written and oral presentations for this course are understood to be your own original creative work. Putting your name on your presentations is a type of warranty, certifying that you are the author of the work and are responsible for its content. Scientists are deeply aware of the problem of plagiarism. This is because our most important outputs are our words, data, and drawings. Baseball players can point to their home runs; contractors can show off the houses they have built; but most scientists can only list their publications - their ideas. If someone else takes credit for those ideas, the real author feels violated. A person who advances his or her career by presenting other peoples' ideas as his own is cheating - gaining an undeserved advantage over his or her peers.

Schedule and Checklist

When?

Friday May 17, 2024 @ 12:00 noon – SSC 1511

Fridays @ 12:00 noon – SSC 1511

What?

First class meeting. All new graduate students are required to attend. Advisors and second-semester graduate students are also welcome to attend.

Students (W24 and S24 cohorts) are required to attend the seminar presentations start on May 24. Attendance will be recorded. Expected absenteeism should be reported to the course coordinator prior to the date, providing an appropriate reason. An incomplete grade will be assigned for undocumented absenteeism..

Later in the semester

Friday, August 9 2024 @ 4:00 pm

The Graduate Program Assistant will contact students in the first semester to organize and schedule your seminar slot for next semester. By this time, you will have established your Advisory Committee. **Remember to register again for the second semester of the course.**

Submit by e-mail an electronic copy of your RP to the Course Coordinator and each member of your Advisory Committee. Deposit an electronic copy in the Courselink Dropbox. The graded RPs will normally be returned to you two weeks before your "brown-bag" seminar.

A penalty of 10% will be applied for any late submission.

Teaching and Learning Activities

Summary of Your Tasks

In the first semester, you will write a Research Proposal (RP) describing your research plans and attend the seminar presentations given by the students who started their programs one semester before you. In the second semester, you will give your own oral presentation and attend the presentations given by your classmates.

The Research Proposal

This component of the course provides you with an opportunity to develop and refine your skills in scientific communication. The emphasis is on writing skills in the context of developing a thesis proposal. You are not expected to present preliminary data from your thesis research.

The RP is prepared under the guidance of your Advisor and Advisory Committee members. The literature review section gives an introduction to your area of research, a detailed description of the significance of the research, and a discussion of relevant background literature, focused on the key experiments leading to your proposal. The research proposal section includes a clear, testable hypothesis; specific objectives; experimental approaches (including rationale for choice of the experimental systems and techniques); possible pitfalls or limitations (and how they might be circumvented); anticipated outcomes and how they will be interpreted.

For **MCB*6500**, the RP should be ~3500 – 4000 words or about 15 pages in length, consisting of 10 pages of literature review and 5 pages of research proposal. For **MCB*7500**, the RP should be ~5500 – 6500 words or about 25 pages in length, consisting of 15 pages of literature review and 10 pages of research proposal. (Title page, references, tables, and figures/figure legends are not counted as part of the page-length.) Bibliography references must include article titles; please use the same format as the journal *Molecular and Cellular Biology*.

RP documents should be prepared single-sided, double-spaced, using a standard 12-point font (e.g., Times New Roman) and 1" margins. Please do not use extra-wide margins and do not leave blank lines between paragraphs. Use a cover page (not numbered) and number the pages. Reproducing some tables and figures from the literature is acceptable, as long as the sources are clearly indicated; however, preparing your own figures is preferable, since that will allow you to focus on the specific message that you want to convey.

RP Submission and Grading

Submit by e-mail an electronic copy of your RP to each member of your Advisory Committee and the Course Coordinator. Also deposit an electronic copy (.pdf format) in the Courselink Dropbox. Each member of your Advisory Committee will evaluate your RP independently and submit a grade to the Course Coordinator. These grades will be averaged (grade A). Two members from the faculty panel will submit grades (grades B and C). The three grades (A+B+C) will be averaged to give the final grade. The RP evaluations will be returned to you two weeks before your brown-bag seminar.

The "Brown Bag" Seminar (BB)

In the second semester, you will make your oral presentation ("brown-bag" seminar, based on your Research Proposal), providing you with the opportunity to develop your skills in scientific communication. You will prepare the seminar under the guidance and direction of your thesis advisor. Your seminar should be 30 min. long. **Presentations that deviate more than 5 min from this timing will be penalized 5%.**

Prior to the start of the Summer 2024 semester, you must sign up for a seminar slot: The Graduate Program Assistant, Laura Faris, will send an announcement by email when the sign-up period begins. Students should ensure that their Advisors and Advisory Committee members are available to attend, before confirming their seminar dates. You will be contacted about this near the end of the W24 semester.

You must submit your seminar title and an abstract (maximum, 250 words) by email to the Graduate Program Assistant **by noon Wednesday of the week before your seminar.** A 5% penalty will be applied for late submissions.

Assessment Breakdown

Description	Weighting (%)	Due Date
Research Proposal	50%	August 9th
"Brown Bag" Presentation	50%	Throughout

Assessment Details

Research Proposal

Research Proposal

See Teaching and Learning Activities.

50%

Presentation

"Brown Bag" Presentation

See Teaching and Learning Activities.

50%

Last Day to Drop Course

The final day to drop Summer 2024 courses without academic penalty is the last day of classes: August 02

After this date, a mark will be recorded, whether course work is completed or not (a zero is assigned for missed tests/assignments). This mark will show on the student's transcript and will be calculated into their average.

Standard Statements for Graduate Courses

Academic Integrity

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community – faculty, staff, and students – to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

The Academic Misconduct Policy (<https://calendar.uoguelph.ca/graduate-calendar/general-regulations/academic-misconduct/>) is outlined in the Graduate Calendar.

Accessibility

The University promotes the full participation of students who experience disabilities in their academic programs. To that end, the provision of academic accommodation is a shared responsibility between the University and the student.

When accommodations are needed, the student is required to first register with Student Accessibility Services (SAS). Documentation to substantiate the existence of a disability is required; however, interim accommodations may be possible while that process is underway.

Use of the SAS Exam Centre requires students to make a booking at least 10 business days in advance, and no later than the first business day in November, March or July as appropriate for the semester. Similarly, new or changed accommodations for online quizzes, tests and exams must be approved at least a week ahead of time. For students at the Guelph campus, information can be found on the SAS website. (<https://www.uoguelph.ca/sas/>)

Accommodation of Religious Obligations

If you are unable to meet an in-course requirement due to religious obligations, please email the course instructor within two weeks of the start of the semester to make alternate arrangements.

See the Academic calendar for information on regulations and procedures for Academic Accommodation of Religious Obligations (<https://calendar.uoguelph.ca/graduate-calendar/general-regulations/academic-accommodation-religious-obligations/>)

Copies of Out-of-class Assignments

Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.

Drop Date

Courses that are one semester long must be dropped by the end of the last day of classes; two-semester courses must be dropped by the last day of classes in the second semester. The regulations and procedures for Dropping Courses (<https://calendar.uoguelph.ca/graduate-calendar/general-regulations/registration/>) dropping courses are available in the Graduate Calendar (<https://calendar.uoguelph.ca/graduate-calendar/general-regulations/registration/>).

Email Communication

As per university regulations, all students are required to check their <uoguelph.ca> e-mail account regularly: e-mail is the official route of communication between the University and its students.

Health and Wellbeing

The University of Guelph provides a wide range of health and wellbeing services at the Vaccarino Centre for Student Wellness (<https://wellness.uoguelph.ca/>). If you are concerned about your mental health and not sure where to start, connect with a Student Wellness Navigator (<https://wellness.uoguelph.ca/navigators/>) who can help develop a plan to manage and support your mental health or check out our mental wellbeing resources. (<https://wellness.uoguelph.ca/shine-this-year/>) The Student Wellness team are here to help and welcome the opportunity to connect with you.

Illness

Medical notes will not normally be required for singular instances of academic consideration, although students may be required to provide supporting documentation for multiple missed assessments or when involving a large part of a course (e.g., final exam or major assignment).

Recording of Materials

Presentations that are made in relation to course work—including lectures—cannot be recorded or copied without the permission of the presenter, whether the instructor, a student, or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

Resources

The Academic Calendars (<http://www.uoguelph.ca/registrar/calendars/?index>) are the source of information about the University of Guelph's procedures, policies and regulations which apply to undergraduate, graduate and diploma programs.

When You Cannot Meet a Course Requirement

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons, please advise the course instructor (or designated person, such as a teaching assistant) in writing, with your name, id#, and e-mail contact. See the Graduate Calendar for information on regulations and procedures for Academic Consideration (<https://calendar.uoguelph.ca/graduate-calendar/general-regulations/grounds-academic-consideration/>).