Department of Biology 2022-2023 Biology 4999E: Honors Research Thesis

Course Coordinator: Dr. Susanne Kohalmi, WSC319; skohalmi@uwo.ca

Office hours will be held in person unless COVID requires online meetings which will use zoom.

Students must use their Western (@uwo.ca) email addresses when contacting their instructors and place the course number into the header.

Course Assistant: Ms. Beata Malczewski, NCB301D, bmalcze@uwo.ca

Classes:
Monday 6:30-8:30 pm in BGS1056. The classes for this course will be taught in person unless COVID rulings require changes then the class will be taught over zoom synchronously. This class will not be recorded.

Prerequisites:
Registration in year 4 of an Honors Specialization module offered through the Department of Biology. Students must have arranged a project with a supervisor before completing registration.
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 you are dropped from a course for failing to have the necessary prerequisites.

Learning outcomes:
By the end of this course, students should be able to:

- Create and write a research proposal. The central hypothesis or goal will be developed in collaboration with a research supervisor.
- Search, read, and evaluate the primary scientific literature associated with the project.
- Conduct and troubleshoot research. Evaluate and analyse the data collected.
- Write and present a progress report and final thesis based on the research conducted.
- Defend the data, approach, and interpretation.

Course Communication:
Students should check OWL (http://owl.uwo.ca) 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. The missing of critical information due to your failure to check OWL cannot be used as a basis

for appeal. Announcements about the course, will be sent to your UWO email address. It is your responsibility to keep this account in a state that allows you to receive email, and to check it regularly. As above, a failure to check your UWO email cannot be used as a basis for appeal.

Online Etiquette (if required)

Some components of this course might involve online interactions. To ensure the best experience for both you and your classmates, please honour the following rules of etiquette:

- "arrive" to class on time
- use your computer and/or laptop if possible (as opposed to a cell phone or tablet)
- ensure that you are in a private location to protect the confidentiality of discussions in the event that a class discussion deals with sensitive or personal material
- to minimize background noise, mute your microphone for the entire class until you are invited to speak, unless directed otherwise
- In order to give us optimum bandwidth and web quality, turn off your video camera after the lecture starts unless you are invited to speak or if requested otherwise
- please be prepared to turn your video camera off at the instructor's request if the internet connection becomes unstable
- unless invited by your instructor, do not share your screen in the meeting

The course instructor will act as moderator for the class and will deal with any questions from participants. To participate please consider the following:

- If you wish to speak, use the "raise hand" function and wait for the instructor to acknowledge you before beginning your comment or question.
- Please remember to unmute your microphone and turn on your video camera before speaking.
- Self-identify when speaking.
- Please remember to mute your mic and turn off your video camera after speaking (unless directed otherwise).

General considerations of "netiquette":

- Keep in mind the different cultural and linguistic backgrounds of the students in the course.
- Be courteous toward the instructor, your colleagues, and authors whose work you are discussing.
- Be respectful of the diversity of viewpoints that you will encounter in the class and in your readings. The exchange of diverse ideas and opinions is part of the scholarly environment. "Flaming" is never appropriate.
- Be professional and scholarly in all online postings. Use proper grammar and spelling. Cite the ideas of others appropriately.

Note that disruptive behaviour of any type during online classes, including inappropriate use of the chat function, is unacceptable. Students found guilty of Zoom-bombing a class or of other serious online offenses may be subject to disciplinary measures under the Code of Student Conduct.

Admission Procedures and Finding a Supervisor

Students interested in completing a Biology Honors Research Thesis must apply through the Course Coordinator, using the application form available from the Biology Undergraduate Office (NCB301D) or from the Biology Department Website. It is the responsibility of the student to find an appropriate Supervisor. Available faculty and potential research thesis topics are normally posted within the Department in the winter term for theses to be completed in the following academic year. Students are required to make appointments and discuss potential thesis topics with faculty with whom they would like to work, before submitting their applications. The application form needs to be signed by the supervisor of the proposed research project and submitted to the course co-ordinator by the posted deadline.

Evaluations

Biology 4999E is 1.5 FCE (full course equivalents) and runs for the entire 2022/23 academic year. Expect to invest a significant amount of time, as appropriate for this weighting.

Item	**Source**	**Value (%)**
Proposal	From advisors	15
	From supervisor	5
Progress report	From advisors	15
	From supervisor	10
Written thesis	From advisors	25
	From supervisor	15
Public presentation	From a judging panel	15

Marks are submitted to the course coordinator/assistant and will be posted by us as soon as we have received them from **ALL supervisors and advisors**. If you have issues with your marks, please make an appointment with the course coordinator.

Requirements

- Students must have arranged a supervisor prior to starting this course. and met with that supervisor prior to Friday September 16.
- Attendance of scheduled classes is mandatory (see schedule below, changes will be posted on OWL if required).
- Submission and evaluation of the proposal, progression report, final thesis presentation and final written thesis are mandatory. You cannot complete the class without completing these milestones.
- Submission of various forms as detailed below is mandatory.
- Students are required to maintain a 'Research Investment Log' (RIL) and to provide this to the course coordinator and supervisor(s) as detailed below.
- The presentation of two lighting talks is mandatory.
- Attendance of the Biology Thesis Day on Saturday April 1 is mandatory.

Attendance

Attendance of scheduled classes is mandatory, and a roll will be taken. There are 15 scheduled classes. Attendance of fewer than 13 without appropriate accommodation will incur a 3% penalty on the final grade. Falsifying attendance information (e.g. signing the attendance register on behalf of someone else, or pretending to attend on zoom) will be treated as an academic offense.

Attendance at proposal and progression meetings is mandatory.

Attendance of the entire biology thesis day is mandatory. Those who arrive late, leave early, or fail to attend without appropriate accommodation will incur a penalty of 5% on the final grade (in addition to whatever marks they lose by failing to perform the public presentation).

Attendance of lab meetings, meetings with your supervisor and laboratory/field/experimental time is arranged through your supervisor.

Time investment

You will get out of this course what you put in. In addition to the mandatory classes and thesis day, you are expected to attend lab meetings, department seminars, and one-on-one meetings with your supervisors as required by your supervisor. On top of this, anticipate investing at least 15 h/week in the various aspects of your research, ranging from reading to experimental work, to writing. We will discuss time management strategies in class, and you will also keep a 'Research Investment Log' (RIL) to help you evaluate your input more objectively.

Supervisors, co-supervisors, and mentors

You must have arranged a supervisor, and met with them, by June 30, 2022. You will be withdrawn from the course if we haven't received the application form on time.

In addition to a Supervisor, a Co-supervisor is required if:

- the supervisor is an adjunct appointment in biology.
- the supervisor has not previously supervised a Biology 4999E student.

The Co-supervisor must be a regular or cross-appointed faculty member in the Department of Biology. Co-supervisors are found with the help of the supervisor. The roles and responsibilities of the Supervisor & Co-supervisor are described below. Note that both the supervisor and the co-supervisor can contribute to evaluations and must attend the proposal and progress report meetings.

Sometimes, a postdoc or PhD student from a lab will be involved in mentoring honours thesis students in the lab. These mentors (optional) cannot replace a supervisor or co-supervisor, and do not contribute to evaluations, but are allowed to attend the proposal and progress report meetings. Only one mentor is allowed to attend the meeting.

Advisory committee

In addition to the Supervisor/Co-Supervisor and mentor (optional), each thesis is overseen by two advisory committee members, who evaluate the proposal, progress report, and final thesis, and who provide formal and informal advice as required. Select this advisory committee in consultation with your Supervisor. At least one of the advisory committee members must be a regular or cross-appointed faculty member in the Department of Biology (i.e. not an adjunct, or a faculty member whose academic appointments are elsewhere in the University). One of the advisory committee members may be a PhD student or Postdoc from the Department of Biology, although they **cannot** be from your supervisor's lab group.

The composition of the advisory committee is subject to approval by the course coordinator. Please confirm the composition of your advisory committee by submitting the form by 5 pm on Friday September 23.

Health and Safety

Working in a safe environment is everyone's responsibility: the student, co-workers and supervisor. No student will be allowed to start their research project until they have completed the necessary safety training. It is part of your supervisor's responsibility to ensure you have the appropriate training. Once you have completed the necessary training, you must provide your supervisor with proof of completion (e.g. certificate) for her/his records. Almost all training is offered through ttps://www.uwo.ca/hr/learning/required/index.html. Use website to sign up for the appropriate training.Most training is online and will be available through OWL once you sign up.

- WHMIS (**Comprehensive version**).
- Health and Safety Awareness (for workers)
- Safe Campus Community – preventing Harassment, Violence and Domestic Violence
- Accessibility in service (AODA)
- Mental Health

If you are working in a laboratory, you will also need to do one or more of:

- General Laboratory Safety and Hazardous Waste
- Biosafety

And any additional training in animal handling and procedures or radiation safety, as required by your situation.

Keeping track of your progress and RILs

Time management is one of the biggest challenges you will face during your hours of thesis work. To help you and your supervisor objectively evaluate your progress, you will be required to keep a 'Research Investment Log' in which you keep a broad record of the time you spend on different activities. The form will be available through a link. Please fill these weekly, submissions are required appr. biweekly and a schedule is provided under submissions. Be prepared to bring it to class to aid in discussions about progress and time management. In

addition, you are required to email a copy of your up-to-date Research Investment Log to your (co-)supervisor when you submit your proposal, your progress reports, and your thesis, to assist them to evaluate your work. Deliberately falsifying your Research Investment Log will adversely affect your supervisor evaluations and may constitute an academic offense.

Data management and backups

Discuss with your supervisor their expectations and lab protocols for data recording and backups. Expect to provide the original of your lab notebook and both summarized and raw data in electronic format to them when you finish your thesis.

Computer failure or loss of data will not be grounds for accommodation or appeal. Keep off-site backups of your data. For your lab notebook, you might take a photo of each full page of your lab notebook, and back that photo up on the cloud. For data entered into spreadsheets, as well as drafts of your work, raw data in electronic format (e.g. electronic images), and collections of journal articles, ensure that these are backed up on the cloud, even if it is just by emailing them to yourself periodically (although there are much more satisfactory solutions).

Lighting talks

You have to give two lighting talks in the fall term (Sept 30 or Oct 3 and Nov 21 or 28. During the first one, tell us about your project. For the second one, provide an update of your research: what has worked and what has not. Lighting talks are quick and to the point. You will have 3 min (2 min for the second one) and one slide (NO animations) so make the most of it! You have to speak freely without hanging onto notes.

Giving Lighting Talks is mandatory. Missing your talk without appropriate accommodation will incur a penalty of 5%.

Proposal

You are required to submit a written research proposal to your advisory committee by 5 pm on Friday October 14. The purpose of the proposal is to ensure that you have a good grasp on the context of your project and on your methods, and that the project is likely to produce useable data (which you will need for your thesis!)

- The proposal should be 2000-2500 words, the word count is excluding the References, Tables, Figure legends, timeline, and summary, in 12 point font, with 2.54 cm margins, 1.5 or double spaced.
- The proposal should include a summary, background/literature search, a clear statement of your research question(s), hypothesis(es) or objective(s), proposed methods, rationale for your experimental approach preliminary data or progress and a timeline (visual i.e. a GANTT chart format).
- You may include up to 3 pages of Figures and Tables. Figure legends should be submitted on a separate page (12 point font, 2.54 cm margins, 1.5 or double spaced)

and provide all the details necessary to understand the Figure. Place all Figure legends, Figures and Tables at the end of your document and DO NOT imbed in the text.

- Please submit your proposal electronically (i.e. by email) as a word document, unless your advisory committee members request a hard copy (please inquire). Submissions have to go to all members of your advisory committee. In addition, and at the same time, please submit a copy of the proposal to Turnitin.com on the OWL site. Ensure that file content is identical to the version you provide to your advisory committee. Submission is only complete if a copy is sent out as required and uploaded.
- Ensure that any images are of an appropriate resolution for reading and to keep the total file size below 5 MB.
- Remember to submit your Research Investment Logs to your supervisor(s) at the same time.

You are expected to include preliminary data in your proposal. This is to demonstrate that you have made a start on your project and that it is feasible. For example, you may have done one or more of the following: made some sample analysis with the instrument or program you will be using, tried your microscopy technique on your tissue, provide details on your samples for subsequent analysis, designed approaches for your analysis, practiced some assays, familiarized yourself with computer programs etc. The description will be project dependent. The point is to satisfy your advisers that you have actually made a start, and that your project will generate data (it's *really* hard to write a thesis without any numbers!). Be prepared to discuss your Plan B!

You must present your proposal to your advisory committee in a meeting between 9 am on Tuesday October 18 and 5 pm on Friday October 28.

- Arranging this meeting can be a challenge. Begin by discussing your supervisor's availability, and then make a doodle poll that takes into account your class schedule and your supervisor's availability. You must organize your progress report and report the date and time by 5 pm on Friday September 30.
    - Unless expressly indicated by your advisors, assume that all meetings will take place 8.30 am-5.30 pm Monday to Friday.
    - Suggest times that begin on the half hour (like your classes) – this means you will be less likely to intersect with teaching schedules.
    - You will require a one hour slot for this meeting.
    - Don't be afraid to nudge non-responders a week after your initial email!
    - Meetings should be conducted in person (unless COVID dictates otherwise).
    - Please book one of the biology meeting rooms.
    - Make sure you confirm the time and place with your committee, supervisor(s) and mentor (if applicable) once it is confirmed – schedules fill up fast!
    - You are responsible to send a reminder (and a link if necessary) for your meeting to your advisory committee, supervisor(s) and mentor (if applicable) the day before the proposal.

- Prepare a brief (10-12 min) presentation. Powerpoint is expected. You will then discuss your proposal, and answer questions. This is not intended to be an interrogation (although it may feel like it).
- At the conclusion of the meeting, the committee will fill in a project approval form. Your advisory committee members can provide you with written feedback on your proposal (often in the form of notes on a printed or electronic version of the proposal). They also will submit a grade to the Course Assistant.
- In the event that the proposal is judged unsuitable, the grade from the original proposal and meeting will stand. However, you may be required to prepare a revised proposal for submission to your advisers within 2 weeks of the date of the original meeting. The purpose of this is to ensure that your project has a likelihood of success.

If you plan to collect data in the summer for your honours research thesis, you should write a proposal and hold your committee meeting prior to beginning data collection. Contact the course coordinator for details.

Progress Report

You are required to submit a written progress report to your advisory committee by 5 pm on Friday January 13, 2023. The purpose of this report is to summarise your progress to date, update the advisory committee members on how your project has changed, and detail your plans for on-time completion of the experimental work necessary for your thesis. The date for your progression meeting has to be submitted to the Course Co-ordinator and Course Assistant by Wednesday Dec 7, 2022.

- The progress report should focus on progress – while you should remind your advisory committee of the background, hypotheses (or objectives/questions), and methods, the focus should be on your progress, the challenges you have faced, the outcomes of your work, and your plans to completion. There is no rigid order, but the aim is to provide a report with a good story line and flow. You will be expected to present data, although you may not have completed the analysis and interpretation of those data yet. This is a brief suggested outline of the progress report (12 point font, 2.54 cm margins, 1.5 or double spaced):
    - Introduction/background, Objectives/hypotheses/questions (may be updated from your proposal) (Up to 500 words).
    - Brief summary of experimental design/rationale or main methods (150-250 words).
    - Explanation of any major changes to experimental design or methods (up to 250 words).
    - Progress to date (up to 500 words and up to 10 Figures or Table; Tables and Figures and Figure legends are not part of the word count), which may include your preliminary interpretation of the results. Figures, Figure legends and Tables are placed on designated pages at the end of your report.

    - Plans for completion (up to 200 words plus a table or GANTT chart).
    - Bibliography is not part of the word count.
- Please submit your proposal electronically (i.e. by email) as a word document, unless your advisory committee members request a hard copy (please inquire). Submissions have to go to all members of your advisory committee. In addition, and at the same time, please submit a copy of the proposal to Turnitin.com on the OWL site. Ensure that file content is identical to the version you provide to your advisory committee. Submission is only complete if a copy is sent out as required and uploaded.
    - Late progress reports will not be accepted without appropriate accommodation.

You must present your progress report to your advisory committee in a meeting between 9 am on Tuesday January 17 and 5 pm on Friday January 27.

- As for the proposal, organizing this meeting will not necessarily be easy! You must organise your progress report and report the date and time to the Course Coordinator and Assistant by email by 5 pm on Wednesday December 7
- The meeting will take place in person (unless COVID dictates otherwise). You are responsible to send a reminder to your committee members by the day before the meeting.
- This meeting will last about an hour. You are expected to make a brief (10-12 minute) presentation (accompanied by Powerpoint) of your progress and plans for completion. This will be followed by a discussion of the project, your progress, and your plans.
- At the conclusion of the meeting, the committee will fill in a progress report form, which you need to return to the Course Assistant within a day of your meeting. Your advisory committee members can provide you with written feedback on your report (often in the form of notes on a printed or electronic version of the proposal) and will submit a grade to the course assistant.
- In the event that your progress is deemed insufficient, you may be required to have another advisory committee meeting within one month of the first date. This meeting will not necessarily require another formal report and will have no bearing on your mark for the progress report component of the course: its purpose is to assist you in making appropriate progress towards an adequate thesis.

Supervisor evaluations

Your supervisor(s) will evaluate your performance at three points during the year: at the proposal, at the time of your progress report, and when you submit your thesis. The purpose of these evaluations is to provide you with formal feedback on your work ethic, laboratory skills, time management, interpersonal skills, and other 'soft' aspects of your performance in the laboratory. We will discuss these expectations in class. To aid your supervisor(s) in understanding your investment in the project, you will provide them with an updated Research Investment Log at each of these junctures. The supervisors will provide you with formal feedback at each of these points.

Thesis

The thesis presents the major findings of your project, and is due to your advisory committee, Course Co-ordinator/Assistant by 5 pm on Thursday April 5, 2023.

- Prepare and submit the thesis in a format suitable for submission to an appropriate journal in your discipline (consult with your supervisor to select one). Please keep your thesis concise and within 20 pages of text (12 point font, 2.54 cm margins, 1.5 or double spaced). Figures, Figure legends Tables, and Bibliography are not included into the page count but keep it to a reasonable number – no one wants to read a book. Do not integrate Figures into the text but provide them on separate pages. If the thesis text will be longer than 20 pages total, discuss this with your supervisor, and provide justification and seek approval (by email) from your advisors. Inefficient writing is not appropriate justification. Take the thesis evaluation rubric into consideration when preparing your thesis.
- Please submit your proposal electronically (i.e. by email) as a word document, unless your advisory committee members request a hard copy (please inquire). Submissions have to go to all members of your advisory committee. In addition, and at the same time, please submit a copy of the proposal to Turnitin.com on the OWL site. Ensure that file content is identical to the version you provide to your advisory committee. Submission is only complete if a copy is sent out as required and uploaded.
- Late theses will not be accepted without appropriate accommodation.

Your advisors will evaluate the thesis and submit a mark and a feedback sheet to the Course Assistant. You do not need to make any changes to the thesis based on the feedback, but it may be helpful either for you to further hone your scientific skills in future, or in preparing your thesis for publication. The evaluators may also provide feedback in the form of comments on a hard or electronic copy.

Biology Day

You will present and defend your major findings in an oral presentation at Biology thesis day, Saturday April 1, 2023. Oral presentations will be 12 minutes, allowing three minutes for questions, and will be evaluated by at least two examiners (who may or may not be members of your advisory committee). Presentations will be timed to ensure that schedules are kept on time. We are hoping for on campus presentations. However due to COVID presentations might have to occur through zoom. Details will be announced closer to the actual presentation day.

Accessibility

Please contact the course instructor if you require lecture or printed material in an alternate format or if any other arrangements can make this course more accessible to you. You may also wish to contact Student Accessibility Services (SAS) at 661-2147 if you have any questions regarding accommodations.

Policy on Accommodation for Students with Disabilities:
www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_disabilities.pdf

Study / Life Balance:
Learning-skills counsellors at the Student Development Centre (http://www.sdc.uwo.ca) are ready to help you improve your learning skills. They offer presentations on strategies for improving time management, multiple-choice exam preparation/writing, textbook reading, and more. Individual support is offered throughout the Fall/Winter terms in the drop-in Learning Help Centre, and year-round through individual counselling.

Students who are in emotional/mental distress should refer to Mental Health@Western http://www.uwo.ca/uwocom/mentalhealth/ for a complete list of options about how to obtain help

Additional student-run support services are offered by the USC, http://westernusc.ca/services.

The policy on Accommodation for Religious Holidays can be found here:
http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_religious.pdf

Accommodation for Medical Illness or Other Serious Circumstances

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-reporting of absence or via the Dean's Office/Academic Counselling unit of your Home Faculty. If you are a Science student, the Academic Counselling Office of the Faculty of Science is located in NCB 280, and can be contacted at scibmsac@uwo.ca.
For further information, please consult the university's policy on academic consideration for student absences:
https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic_Consideration_for_absences.pdf
Policy on Accommodation for illness:
http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_medical.pdf.

Plagiarism and Scholastic Offenses

Scholastic offences are taken seriously, and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at this website:
https://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf
"Plagiarism: Students must write their essays and assignments in their own words. Whenever students take an idea, or a passage from another author, they must acknowledge their debt both by using quotation marks where appropriate and by proper referencing such as footnotes or citations. Plagiarism is a major academic offence (see Scholastic Offence Policy in the Western
Academic Calendar)."

Plagiarism is not only cheating – since you are now researchers, it undermines the entire scientific enterprise. This concept applies with equal force to all assignments in Biology

4999E, including laboratory reports, figures, and computer projects. The following guides will help you avoid committing plagiarism:
http://www.lib.uwo.ca/tutorials/plagiarism/
http://www.uwo.ca/ombuds/guides/cheating_brochure.pdf

Turnitin.com

You will be required to submit your proposal, progress report, and thesis to turnitin.com, as well as to your advisors. In the unlikely event that you haven't come across it yet, turnitin.com is an anti-plagiarism tool that checks the text of your submission against the work of your classmates (which shouldn't be a problem, since you all do different projects), the turnitin.com database (previous assignments submitted to turnitin.com) and the entire internet. This means that if you copy things from the internet (or from other students), you will be caught. Please be aware that turnitin.com is clever enough to detect plagiarism where a few words are changed in an attempt to make the passage 'different'.

And for the legalese:
Assignments will be subject to submission to turnitin.com for textual similarity review by the commercial plagiarism software under license to the University. All documents submitted to the turnitin.com system will be included as source documents in the reference database for the purpose of detecting plagiarism in documents subsequently submitted to the system. Use of this service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com (http://www.turnitin.com).

Support Services

Learning-skills counsellors at the Student Development Centre (http://sdc.uwo.ca/learning/) are ready to help you improve your learning skills. They offer presentations on strategies for improving time management and more. Individual support is offered throughout the Fall/Winter terms in the drop-in Learning Help Centre, and year-round through individual counselling. Of particular value to Biology 4999E students is the Writing Support Centre http://www.sdc.uwo.ca/writing/.

A Biology honours thesis year is a rewarding but intense experience. If you are in emotional or mental health distress, there are several sources of support (in addition to student health):
The Wellness education centre can be a great first stop: http://wec.uwo.ca/
There is also a resource guide
http://studentexperience.uwo.ca/student_experience/wellness_initiatives/mental_health_resource_guide.html,
and a dedicated health and wellness page, including crisis contacts
https://uwo.ca/health/mental_wellbeing/.
USC also runs a peer support centre http://westernusc.ca/peersupport/.

Submission Deadlines and other Dates

Submission (proposal, progress report, thesis) must be uploaded to Turnitin.com and to the advisory committee. For the advisory committee (advisors and supervisor) please inquire if they prefer a submission by email or as a hard copy.

Late submissions will be determined by the Turnitin.com time recorded.

If you are late without accommodation: -10% from the value of the submission for every day being late. Regardless of deductions the submissions are mandatory – you cannot pass the course without submitting all mandatory items.

For other items (composition of advisory committee, meeting times, RILs etc.) online submission forms will be provided through OWL. -1% from final mark for being late.

The RIL should also be provided to the Supervisor at the time of the proposal, time of progression meeting and at the time of thesis submission.

Item	**Deadline/notes**
Submit composition of advisory committee	5 pm Friday Sept 23
Submit date for proposal meeting	5 pm Friday Sept 30
Proposal	Due 5 pm Friday Oct 14 Meeting between 9 am Tues Oct 18 and 5 pm Fri Oct 28
Submit date for progression meeting	5 pm Wed Dec 7
Progress report	Due 5 pm Fri Jan 13 Meeting between 9 am Tues Jan 17 and 5 pm Fri Jan 27
Submit written thesis	Due 5 pm Thu April 6
Thesis presentation	Saturday April 1; date might subject to change due to COVID

RILs must be filled out biweekly and submitted on the following Mondays:

Sept 26, Oct 17, Nov 7, Nov 21, Dec 5, Jan 23, Feb 6, Feb 27, Mar 13, Mar 27, Apr 10.

An optional presentation at Ontario Biology Day if it takes place this year. Details will be provided during class.

Schedule

Check OWL for updates and specific details on in-class activities and homework.

	Class
September 12	Introduction
September 19	Proposals
September 26	LIGHTING TALKS
October 3	LIGHTING TALKS
October 10	No class: Thanksgiving
October 17	Study Design
October 24	Writing
October 31	No class: Reading Week
November 7	Research Ethics
November 14	Progress reports
November 21	LIGHTING TALKS
November 28	LIGHTING TALKS
December 5	No class *Don't let the exam period and Christmas break derail your momentum!*
January 9	No class *Get sorted out 😊 your reports and meetings are due soon*
January 16	Data Analysis
January 23	Grad school etc.
January 30	No class
February 6	Presentations
February 13	Conferences
February 20	No class: Reading Week *Reading week is an excellent time for a final push! Aim to complete your experimental work this week!*
February 27-March 29	No class 9 *It is the final stretch. Spend your time wisely.*
April 3	Wrap-up meeting