Course and Instructor Information

Biology 4970F/G: Independent Study in Biology   **2024/2025**

Course Coordinator: Prof. Greg Thorn, Undergraduate Associate Chair, BGS 3047 (biougcha@uwo.ca)

Course Assistant: Beata Malczewski, Undergraduate Program Coordinator, NCB 301D (bmalcze@uwo.ca)

General Course Information

Independent Study projects should be developed to answer an original question posed by the student, in consultation with their supervisor. The project may be research based, literature based, or involve analysis of an existing data set. Emphasis is on acquisition of skills in technique, analysis, and communication in the process of generating a scientific report.

Prerequisites

Only students registered in year 4 of an Honors Specialization module offered by the Department of Biology or an Honors Double Major in Biology (which includes a Major in Biology) are eligible to enroll in Biology 4970F/G. It is the responsibility of the student to find an appropriate supervisor.

Antirequisites

Students enrolled in Biology 4999E are not eligible to take Biology 4970F/G.

Mode of delivery

This course may have in person components (e.g., in the research laboratory). Below are details about the sessions.

Modes	Dates	Time	Frequency	Attendance
In person (or online)	Depending on your Supervisor	6-8 h/wk minimum	Weekly	Yes

For questions about course logistics or grading, please email the course coordinator rgthorn@uwo.ca or Undergraduate Program Coordinator Beata Malczewski bmalcze@uwo.ca For scientific questions about the project and its completion, please contact your supervisor or advisor.

All course material will be posted to OWL: http://owl.uwo.ca Any changes will be indicated on the OWL site and discussed with the class.

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. Students are responsible for checking OWL on a regular basis.

If students need assistance, they can seek support on the OWL Help page. Alternatively, they can contact the Western Technology Services Helpdesk. They can be contacted by phone at 519-661-3800 or ext. 83800.

Students must use their Western (@uwo.ca) email addresses when contacting their supervisors, advisors, course coordinator and course assistant.

Google Chrome or Mozilla Firefox are the preferred browsers to optimally use OWL; update your browsers frequently.

EDI statement
The pronouns used by:
Prof. Greg Thorn are: he / him
Beata Malczewski are: she / her

Land acknowledgement
We acknowledge that Western University is located on the traditional lands of the Anishinaabek, Haudenosaunee, Lūnaapéewak and Chonnonton peoples, on lands connected with the London Township and Sombra Treaties of 1796 and the Dish with One Spoon Covenant Wampum. This land continues to be home to diverse Indigenous peoples (First Nations, Métis and Inuit) whom we recognize as contemporary stewards of the land and whose presence continues to enrich our community.

More information about Indigenous Services (https://indigenous.uwo.ca/) and this Land Acknowledgement (https://communications.uwo.ca/comms/land-acknowledgement/) are available.

Course Syllabus, Schedule, Delivery Mode

Course-Level Learning Outcomes
By the end of the course, students should be able to:
1. Create and write a research proposal. The central hypothesis or goal will be developed in collaboration with a research supervisor.
2. Search, read and evaluate the primary scientific literature associated with the project.
3. Conduct the research. Evaluate and analyze the data collected.
4. Write and present a final thesis based on the research conducted.
5. Defend the data, approach, and interpretation.

Independent Study Format
Students will work under the supervision of a faculty member, with one additional faculty member serving as an Advisor. Students will be responsible for finding an appropriate supervisor prior to registration in the course. In the case where the chosen supervisor is an

adjunct faculty member of the Department of Biology, the Advisor must be a regular Faculty Member of the Department of Biology. Once a student has found a supervisor, they must complete a project registration form, available on OWL.

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 research projects will have to adhere to the SOPS of the Biology department regarding access to research laboratories. The grading scheme will not change.

Course Materials

All Independent Study projects require the following mandatory components:
1. a written proposal,
2. conducting the proposed work,
3. meeting with the Supervisor on a regular basis,
4. presentation of findings at a presentation session, and
5. submission of a final report

Every single component of this course is required to pass the course

Proposal: 20%

The written proposal is assessed by the supervisor and the advisor to ensure it meets expected departmental standards. Only the advisor assigns a mark to the proposal, which is worth 20% of the grade. **Due 1 Oct by 5:00 pm, on OWL [No-late-penalty submission by 4 Oct 2024 at 5:00 pm. After that, a late penalty of 10% per day will be applied. An Academic Consideration Request (ACR) for anticipated extension beyond 72 h must be made BEFORE 5 pm 1 Oct. ACR Requests made after that time will be denied.]**

Guidelines for Research-based Proposals

The proposal must be 5-8 pages in length and include:
1. a preliminary literature review that frames the hypothesis understudy,
2. a clear statement of the hypothesis must be presented,
3. a complete description of experimental design, and
4. a time-line for completion.

Guidelines for Literature-based Project Proposals

The proposal must be 5-8 pages in length and include:
1. a preliminary literature review that frames the hypothesis under study,
2. one or more hypotheses must be presented from which an outline of the project should be developed,
3. a description of how the project will be accomplished, including what types of literature sources will be used, and
4. a time-line for completion.

Guidelines for Data Analysis-based Project Proposals

The proposal must be 5-8 pages in length and include:
1. a preliminary literature review that frames the hypothesis under study,

2. a complete description of the methodology used to collect the data to be analyzed,
3. a description of how the data will be analyzed, and
4. a time-line for completion

Lab/Library/Data Work: 30%

Students are expected to commit 6-8 hours per week to their project. The quality of the work will be assessed by the <u>supervisor</u> at the end of term and is worth 30% of final grade.

Oral Presentation of the Thesis: <u>week of December 2</u> (TBA): 15%

Students will present the results of their project in-person, at a time to be arranged based on the schedules of your other classes, in a joint session with all other course students, supervisors and advisors. If we have new restrictions to reduce the spread of Covid, we may go to a Zoom format. <u>Supervisors and advisors</u> will act as examiners for these presentations. The presentation will be worth 15% of the final grade. The presentation will consist of a 10-minute power-point presentation. A grading rubric will be available on owl, allowing students to know how to organize their presentation. [**Once agreed to, the presentation date and time will be set; any request for academic consideration for temporary extenuating circumstances MUST go through the Academic Advising portal and be supported by documentation.**]

Final Thesis report: 35%

A report presenting the major findings of the project is **due December 6 at 5:00 pm**. The format of the report is dependent upon the type of project undertaken. **Copies of the report must be submitted to your supervisor and advisor** (who will <u>both evaluate the report</u>) **and on OWL**. Within 7 days of receipt of the report, students will receive from their supervisor and advisor a brief written report, highlighting the strengths and weaknesses of the report. The final report will be worth 35% of the final grade. [**No-late-penalty submission by 8 Dec 2024 at 11:00 pm. After that, a late penalty of 10% per day will be applied. An Academic Consideration Request (ACR) for anticipated extension beyond 72 h must be made through the Academic Advising portal BEFORE 5 pm on 6 Dec. ACR Requests made after that time will be denied.**]

<u>Research & Data Analysis Project</u>:

The report must be a minimum of 2500 words (not including figures or tables), and contain an abstract, introduction, materials & methods, results, discussion, conclusion and references.

<u>Literature Review Project</u>:

The report must be a minimum of 2500 words (not including figures or tables), and contain an abstract, introduction, the body of the text divided into appropriate subheadings, conclusions and references.

Roles and Responsibilities

Students

Biology 4970F/G is not a traditional lecture style course. Students are expected to spend 6-8 hours per week in the lab/library/field for the duration of the thesis. Additional time spent out of lab/field/library for reading, writing and data analysis will also be required.

It is the responsibility of the students to arrange for their Biology 4970F/G projects and follow the application procedures outlined in this document.

Students are responsible for completing all necessary forms (Project Registration, Project Approval) and submitting them on time using the links on the owl website. Students are ultimately responsible for their own work, including the meeting of deadlines.

Supervisor

Supervisors can only be faculty members from the Department of Biology.

Supervisors of student projects are expected to:
1. arrange for the appropriate infrastructure and direction for the proposed work,
2. ensure that projects provide sufficient challenge to students, and comply with expectations established within the Department of Biology,
3. establish weekly or otherwise regular meetings with the student to gauge progress and provide advice on troubleshooting challenges encountered in the work,
4. evaluate the performance of students for whom they are supervisor,
5. ensure students are aware of course procedures and timetables, and
6. evaluate the oral presentations of the other 4970F/G students in addition to their own.

Advisor

The Advisor is normally a faculty member of the Department of Biology and assignment of an advisor to a particular project is subject to the approval of the course coordinator.

Advisors are expected to:
1. review, comment on and evaluate all written material, which includes providing the student with a written evaluation of their project,
2. indicating the strengths and weaknesses, provide guidance as necessary, and
3. evaluate the oral presentations of the other 4970F/G students in addition to the student advised.

Course Coordinator/Course Assistant

The Biology 4970F/G independent study course is coordinated by the Biology Undergraduate Education Committee (BUEC) and run by its current chair, Dr. Greg Thorn.

The responsibilities of the coordinator/course assistant include, but are not limited to:
1. facilitating the matching of students to supervisors and projects, approval of the advisor,
2. ensuring that all material is submitted, assignment of grades (based on input from the Supervisor and Advisor),
3. organizing the presentation session, and
4. facilitating student access to appropriate university resources

Methods of Evaluation

Biology 4970F/G students are evaluated according to the following criteria:

Proposal: 20% (evaluated by Advisor)
Progress: 30% (evaluated by Supervisor)
Written Report: 35% (evaluated by Supervisor & Advisor)
Presentation: 15% (evaluated by the Supervisors & Advisors of 4970 projects)

As noted above, **all components of this course are required to pass the course**
Students are responsible for submitting on OWL an electronic copy (Word) of their final report, and for supplying their supervisor and advisor with either a hard copy or an electronic copy of their final report (ask them for their preference).

Written assignments will be submitted to Turnitin (statement in policies below); students will have 2 submissions to Turnitin prior to the final deadline. Rubrics will be used to evaluate assessments and will be posted with the instructions.

After an assessment is returned, students should wait 24 hours to digest feedback before contacting their evaluator; to ensure a timely response, reach out within 7 days.

The table below outlines the University-wide grade descriptors.

A+	90-100	One could scarcely expect better from a student at this level
A	80-89	Superior work which is clearly above average
B	70-79	Good work, meeting all requirements, and eminently satisfactory
C	60-69	Competent work, meeting requirements
D	50-59	Fair work, minimally acceptable
F	below 50	Fail

General information about missed coursework
Students must familiarize themselves with the University Policy on Academic Consideration – Undergraduate Students in First Entry Programs posted on the Academic Calendar:
https://www.uwo.ca/univsec/pdf/academic_policies/appeals/academic_consideration_Sep24.pdf

This policy does not apply to requests for Academic Consideration submitted for attempted or completed work, whether online or in person.

The policy also does not apply to students experiencing longer-term impacts on their academic responsibilities. These students should consult Accessible Education.

For procedures on how to submit Academic Consideration requests, please see the information posted on the Office of the Registrar's webpage:
https://registrar.uwo.ca/academics/academic_considerations/
All requests for Academic Consideration must be made within 48 hours after the assessment date or submission deadline (but see below for assessments with a No-Late-Penalty Period).

All Academic Consideration requests must include supporting documentation; however, recognizing that formal documentation may not be available in some extenuating circumstances, the policy allows students to make one Academic Consideration request without supporting documentation in this course. However, the following assessments are excluded from this, and therefore always require formal supporting documentation:
•   Final presentation.

When a student mistakenly submits their one allowed Academic Consideration request without supporting documentation for the assessments listed above or those in the Coursework with Assessment Flexibility section below, the request cannot be recalled and reapplied. This privilege is forfeited.

Evaluation Scheme for Missed Assessments
No assessments may be missed; turn them in (or make your presentation) when you are able.

Essential Learning Requirements
Even when Academic Considerations are granted for delayed coursework submission, the following are deemed essential to earn a passing grade:
Proposal
Research Progress
Written Thesis
Thesis presentation

Academic Policies

The website for Registrarial Services is http://www.registrar.uwo.ca

In accordance with policy, http://www.uwo.ca/its/identity/activatenonstudent.html, 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. 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 Web site:

http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf

        Plagiarism is a serious Scholastic Offence. 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. Note that failing to cite a reference from which information was obtained is also a form of plagiarism.
        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 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 (http://www.turnitin.com).

Professionalism & Privacy:

Western students are expected to follow the Student Code of Conduct. Additionally, the following expectations and professional conduct apply to this course:

☒ Students are expected to follow online etiquette expectations provided on OWL

☒ All course materials created by the instructor(s) are copyrighted and cannot be sold/shared

☒ Recordings are not permitted (audio or video) without explicit permission

☒ Permitted recordings are not to be distributed

☒ Students may be expected to take an academic integrity pledge before some assessments

☒ All recorded sessions will remain within the course site or unlisted if streamed

Support Services

Please visit the Science & Basic Medical Sciences Academic Counselling webpage for information on adding/dropping courses, academic considerations for absences, appeals, exam conflicts, and many other academic related matters: https://www.uwo.ca/sci/counselling/ .

Students who are in emotional/mental distress should refer to Mental Health@Western (https://uwo.ca/health/) for a complete list of options about how to obtain help.

Western is committed to reducing incidents of gender-based and sexual violence and providing compassionate support to anyone who has gone through these traumatic events. If you have experienced sexual or gender-based violence (either recently or in the past), you will find information about support services for survivors, including emergency contacts at

https://www.uwo.ca/health/student_support/survivor_support/get-help.html

To connect with a case manager or set up an appointment, please contact support@uwo.ca

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 Accessible Education at http://academicsupport.uwo.ca/accessible_education/index.html if you have any questions regarding accommodations.

Learning-skills counsellors at the Student Development Centre (https://learning.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.

Western University is committed to a thriving campus as we deliver our courses in the mixed model of both virtual and face-to-face formats. We encourage you to check out the Digital Student Experience website to manage your academics and well-being: https://www.uwo.ca/se/digital/

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

Table 1. Schedule of Dates for Biology 4970F, 2024.

Classes begin: 5 September
Fall Reading Week: 12 – 20 October 2024 [NOTE: this can be an important time to make progress in the lab]
Classes end: 6 December [Thesis due the same day; completing your thesis should NOT interfere with studying for final exams]

Date	Task
By 13 Sept. or earlier	Meet with Supervisor to organize project, arrange Advisor (and co-supervisor if needed), and start working on research proposal, complete and submit Project Registration form on OWL if not done yet (at bottom of Course Content page)
By 27 Sept.	Meeting should be arranged with supervisor and advisor to briefly discuss project. Complete Project Approval form available on OWL and upload in your DropBox on OWL
By 1 Oct.	Written research proposals are due for evaluation by the Advisor – also need to be provided to supervisor and submitted on owl. Guidelines for a Preparing Biology 4970F/G Research Proposals are available on OWL. [No-penalty-deadline of 4 Oct] Grade by Advisor due by 18 Oct.
By 15 Nov. (the earlier the better!)	Experimental or research work completed
Week of 2 Dec.	Oral presentation, TBA
6 Dec.	THESIS DUE. Submit on OWL and provide to advisor and supervisor. Guidelines for preparing a Biology 4970F/G Thesis are available on OWL. [No-penalty-deadline of 8 Dec] Grade by advisor and supervisor due 20 Dec.