



Acadia Biology Department

# Biology Honours Thesis

**BIOL4996 2021-22**

---

## Part 1: Course Information

### *Instructor Information*

**Coordinator:** Russell Easy  
**Office:** BIO432  
**Phone:** 902-585-1156  
**E-mail:** russell.easy@acadiau.ca

### *Course Description*

Research-based, two-semester course that requires students to undertake a research project under a supervisor's mentorship, obtain and analyze data, and present their research in a thesis format. You can work with an external supervisor, but you also need an internal supervisor who is in the Biology Department. Contact the Honours Coordinator for details on external supervisions and a copy of the *Guidelines for External Supervisors* before you start your research.

The Honours Coordinator will assign you a thesis committee consisting of three members, including your supervisor(s). The role of the thesis committee is to help guide your research during two meetings: a Committee Meeting, which is essentially a discussion of your research progress and the broader implications of your thesis, and a Thesis Defence.

### *Program Requirements*

Students must complete a minimum of 60 credit hours in the Honours program as follows: the Biology Core, BIOL 4023, both BIOL 4993 and BIOL 4996 (co-requisites), and 18h additional BIOL courses at the 3000-4000 level, each completed with a minimum grade of B-; MATH 2233, MATH 2243, CHEM 1013 and CHEM 1023, each completed with a minimum grade of C-.

## Course Structure

It takes longer to write a thesis than you might expect. The following are guidelines for completing thesis milestones. Some deadlines are course requirements, while others will be provided by your supervisor. Requirements and instructions for undergraduate theses are available through the [Research and Graduate Studies](#) website.

Item	Date(s)	Required	Recommended
Identify a supervisor	3rd Year <sup>1</sup>		✓
Apply for scholarships	Acadia HSRA <sup>2</sup> and NSERC USRA applications are due the 1 <sup>st</sup> week of February, and both require time to complete. Start early.		✓
Initiate research	Generally in May <sup>3</sup> , but can be anytime in the summer or even the fall		✓
Seminars	Attend eight throughout the year	✓	
Committee Meeting	Last two weeks of September to the first week of October	✓	
Research workshops	Will be provided	✓	
Introduction/Literature review	October		✓
Methods	End of November		✓
Results	End of January		✓
Complete draft of thesis to supervisor	Third week of February	✓	
Thesis defence	First three weeks of March <sup>4</sup>	✓	
Impact (research symposium)	Last full week of classes	✓	
Thesis due to Research and Graduate Studies	Date varies - see <a href="#">Research and Graduate Studies</a> website	✓	

<sup>1</sup> Try to do this in the fall, if possible- it may help you and your supervisor apply for funding.

<sup>2</sup> You must enroll in the BSCh program with the Registrar's Office before you can apply for an HSRA. Please ask your supervisor to email the Biology Administrative Assistant about this before the HSRA application is submitted.

<sup>3</sup> The date of initiation of research will be decided in consultation with your supervisor.

<sup>4</sup> The thesis defence committee must have a copy of the thesis 5 working days before the defence.

### ***Student Learning Outcomes***

- Identify a research question and develop a research plan with your supervisor.
- Conduct research including collecting, analyzing and interpreting data.
- Explain your research in written (thesis) and oral presentations.
- Develop professional skills such as teamwork, oral and written scientific communication, analytical skills and ethical scientific practices.

## **Part 4: Grading Policy**

### ***Graded Course Activities***

Item	Grade Mechanism	% Grade
Research effort	Determined by supervisor (internal)	45
Research workshops	Required but ungraded	--
Committee meeting	Pass/ Conditional Pass*	10
Seminars	Signup sheet	5
Thesis quality	Determined by Thesis Committee	30
Thesis defence	Determined by Thesis Committee	10
Impact	Required but ungraded	--
Total		100

\* If you receive a conditional pass, the 10% of the grade will be given after the follow-up work has been completed to the satisfaction of the supervisor.

### **Research Effort**

The grade for research effort will be determined by the supervisor based on your performance throughout the Honours program. For students who are working with an external supervisor, the internal supervisor is responsible for this part of the grade with input from the external supervisor. Students are encouraged to talk with their internal supervisor early in their research to identify shared goals.

### **Research workshops**

Workshops, delivered periodically throughout the program, are designed to help you develop research skills. Topics may include: scientific writing, library resources and literature referencing, data collection (Excel), data analysis (R and others), and using communication tools.

### **Committee Meeting**

The major focus of this meeting is a comprehensive discussion on how your thesis fits into the broader scientific landscape. You will start the meeting with a brief overview of your research, including progress to date and plans for completion of the thesis (~ 10 min). The following discussion is meant to provide you with an opportunity to discuss your thesis including how your research fits into biology overall, connections with other areas of biology that you have studied, and directions for future discovery.

The discussion is graded Pass/Conditional Pass. Conditional Pass means that follow-up work will be required by your thesis committee.

**Rubric for Feedback on Committee Meeting\***

	<b>A Exemplary</b>	<b>B Competent</b>	<b>C Developing</b>	<b>D Conditional Pass</b>
<b>Overall Understanding</b>	Shows a deep/robust understanding of the material with a fully developed argument per the categories below.	Shows a limited understanding of the material, not quite a fully developed argument per the categories below.	Shows a superficial understanding of the material, argument not developed enough per the categories below.	Shows no understanding of the material and no argument per the categories below.
<b>Argument</b>	Clearly articulates a position or argument.	Articulates a position or argument that is incomplete or limited in scope.	Articulates a position or argument that is disjointed or ambiguous.	Ideas are disjointed and/or do not flow logically.
<b>Evidence</b>	Presents sufficient, relevant and accurate evidence to support argument.	Presents evidence that is mostly relevant and/or mostly accurate.	Presents evidence that is somewhat inaccurate and/or irrelevant, but corrects when prompted.	Doesn't present enough evidence to support argument, even when prompted repeatedly.
<b>Prompting</b>	Did not have to prompt with probing questions.	Prompted minimally (one or two probing questions).	Prompted a lot (a series of probing questions).	

\* Modified from *Grading Rubric for Oral Exams* by Susan Ambrose, Carnegie Mellon University

**Seminars**

Honours students are required to attend eight biology seminars throughout the academic year. Students are responsible for making sure their name is recorded in the attendance book. Other academic

presentations may qualify such as attending seminars in other departments, conferences, Blomidon Naturalists Society presentations, panel discussions, etc., if approved by your supervisor. You may be asked to comment on these seminars in general terms at your defence.

### **Impact**

Impact is a celebration of undergraduate research in the Faculty of Pure and Applied Science. Here, you will present your research findings as an oral presentation as part of this symposium.

### **Thesis Defence**

A thesis defence is a wonderful opportunity for you to discuss your research. First, you will be asked to present your research (~ 10 min) to your thesis committee. Keep in mind that committee members will have read your thesis beforehand. Next, you will be asked to discuss and defend your research approach, analysis, interpretation and how it fits into the broader scientific landscape. Edits and corrections will likely be required, as a typical part of the scientific process, so give yourself time to make these revisions after the defence.

## **Part 5: Course Policies**

Students are required to have WHMIS (Workplace Hazardous Materials Information System) training. CCAC (Canadian Council on Animal Care) training and/ or approval of the Acadia University Research Ethics Board may be required, depending on your research.

Students must discuss the Department of Biology's policies on research travel, and depending on the individual project, boating safety and expectations for external supervisors with their internal supervisor and make sure all appropriate documents are completed.

For both lab and field-based research, students may be required to take first aid training through St. John's Ambulance. Periodically, Acadia offers 1 day courses in Emergency First Aid + CPR Level A & AED and 2 day courses in Standard First Aid + CPR Level C & AED. Consult with your thesis advisor regarding this requirement.

Note that training and/ or approval are required before the research can start.

## Grade Conversion

Alpha grade	GPA value	Percentage range*	Rating
A+	4.3	90 – 100	
A	4	85 – 89	Excellent
A-	3.67	80 – 84	
B+	3.33	77 – 79	
B	3	73 – 76	Good
B-	2.67	70 – 72	
C+	2.33	67 – 69	
C	2	63 – 66	Average
C-	1.67	60 – 62	
D+	1.33	57 – 59	
D	1	53 – 56	Pass
D-	0.67	50 – 52	
F	0	0 – 49	Failure
W			Withdrew
S		awaiting grade from special exam/incomplete	

## Part 6: University Policies

University policies are available in the Acadia University Academic Calendar or through the [Registrar's website](#).

### ***Last Drop Day***

Last day to drop a course and receive a “W”. Please check the Acadia University [calendar dates](#).

### ***Inform Your Instructor of Accommodations***

If you are a student with documentation for accommodations or if you anticipate needing supports or accommodations, please contact Ian Ford, Accessibility Resource Facilitator at 902-585-1520, [disability.access@acadiu.ca](mailto:disability.access@acadiu.ca) or Marissa McIsaac, Manager, [disability.access@acadiu.ca](mailto:disability.access@acadiu.ca). Accessible Learning Services is located in Rhodes Hall, rooms 111-115.

### ***Commitment to Integrity***

Cheating in the lecture and/or lab, including plagiarism, will not be tolerated. Please read the appropriate sections of the current Acadia University [Academic Calendar](#).

Penalties for cheating are levied in relation to the degree of the relevant infraction. They range from requiring the student to re-do the piece of work, through failure on that piece of work, to failure in the course, and to dismissal from the university. In all cases, violations are to be recorded in the Registrar's Registry of Previous Infractions.

Information on copy-write and course content from Acadia University is available through the Vaughan Memorial Library.

The spoken and written course content (including the syllabus, handouts, lectures, presentations, labs, assignments, quizzes, tests, and exams) are the intellectual property of the instructor and may only be copied for personal use. Sharing these materials or uploading them where they may be accessed by others is a violation of copyright. If you wish to make audio, video, or photographic recordings in class, you must first obtain the consent of the instructor and of any other persons (e.g. guest speakers, other students) who may be captured in such recordings. In the case of personal use by students with disabilities, the instructor's consent shall not be unreasonably withheld. Students with disabilities who wish to request accommodation should contact Accessible Learning.