Animal Behaviour
BIOL 3143/3140L

Instructor: Dr. Laura Ferguson
Office: MAH 335
Office hours:
Mon 9:30-11:30 am or by appt
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Lecture: M/W/F 8:30-9:20 am, BAC 236

Lab instructor: Jen Kershaw
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Lab: BIO 240 & outside
FA01 M 1-3:50 pm
FA02 T 1-3:50 pm

We're here to help and facilitate your learning! If you have questions or concerns, please drop by our offices during office hours or by making an appointment. To make an appointment please send an email with days and times you are available and briefly what you would like to discuss. You can also email questions.

Emergency communication plans: if there is a class/lab cancellation or classes/labs need to move on-line, we will send an email to all students via Moodle at least 2 hours before the start of the class/lab with a Teams link for an on-line class/lab.

Evaluation	Percentage	Date
Midterm	25%	Wed, Oct 28
Final Exam	30%	TBD (during the exam period)
Lab	35%	Independent project (10%): proposal due Sept 25, presentation in lab Nov 30 or Dec 1 Lab activities hand-ins and textbook readings questions due at the end of each lab week (25%)
Friday Fiver (oral presentation)	10%	Throughout term (sign-up sheet)

No classes/ labs	Sept 30, 2026 (National Day for Truth and Reconciliation) Oct 12, 2026 (Thanksgiving) Oct 13-16, 2026 (Fall Study Break) Nov 11, 2026 (Remembrance Day)

Part 1: Course Information

Course Description

Why do animals travel, eat, mate, play, fight, and flee in the ways that they do? What are the physiological and neural mechanisms driving these behaviours and the selective pressures that shape them? What are the ecological consequences of behaviour? This course will explore the ecological and evolutionary context of animal behaviours. As we move through our

topics, we will also focus on themes and context such as the value of understanding animal behaviour, climate change, methodologies in animal behaviour studies, the history and development of the field, and the respect and ethical treatment of animals.

Prerequisite(s): BIOL 1113/1123, BIOL 2073, 2013.

Course Materials & Requirements

Textbook: *Observing Animal Behaviour: Design and Analysis of Quantitative Control* by Marian Stamp Dawkins can be bought online in a digital or print format; there will also be two digital copies and two physical copies put on course reserve at the Vaughan Memorial Library on Campus (part of the BAC).

We also require R and RStudio – please download the most recent version before the data visualization lab.

iNaturalist and/or Merlin may be helpful apps to have for your independent studies.

If you are really keen on texts and this discipline, we also draw from *Principles of Animal Behaviour 4th Edition Dugatkin and Animal Behavior 11th Edition Rubenstein and Alcock* as well as primary literature [though these are not available at the bookstore, you can often access online copies for cheaper or just come and borrow a text from my office or the library].

This may go without saying, but you will also require a **laptop or a device for notetaking** in classes. We encourage handwritten notes if they work for you, but we may use laptops in class from time to time for additional activities so please bring your laptop to class and labs. We will sometimes use chalkboard or whiteboard to draw – at these times it will be particularly helpful to have a **pencil and paper** available if you wish to draw along! We will work with R software in labs; it helps if you have R and RStudio already on your computer.)

Our library course guide can be found at: https://libguides.acadiau.ca/biol3143

Course Structure

The 50 min slots M/W/F 8:30-9:30 will be used for lectures and class discussions. I will post PowerPoint slides to MOODLE prior to lecture that you can use for notetaking; however, the slides do not contain all of the information we cover in class, so I strongly suggest attending in person. We will also discuss studies relevant to the concepts we have covered recently, which allows us to explore how we study animal behaviour and become increasingly comfortable with reading and interpreting primary literature.

Labs start Sep 14 and weekly for the most part (see dates in Part 2). Labs are mandatory and complement the lectures by providing opportunities for experiential learning. You must pass the lab to pass the course.

Student Learning Outcomes

1. Understand the proximate and ultimate mechanisms underlying animal behaviour.
2. Explain *why* certain behaviours occur and predict changes in behaviour in relation to environment and other animals, based on theory.

3. Become more comfortable reading and interpreting primary literature.
4. Develop skills in designing behavioural studies.

How to Meet the Learning Outcomes

1. Attend lectures, labs, and use your independent study time wisely.
2. Participate in class discussions. It is okay if you are not comfortable speaking in front of your peers; you also have the opportunity to post questions to me or in a MOODLE forum prior to class and in preparation for journal discussions. However, I highly encourage you to offer your questions and insights in discussions and listen to your peers!
3. Use a calendar to organize yourself around due dates and plan ahead.
4. Put effort into your research project! Don't put it off – commit to using your time each week.
5. Check your email and MOODLE regularly. I use these to communicate with you about deadlines, updates to classes and labs, etc.
6. Communicate with us in advance or as close to a missed deadline as possible. We are flexible, but meet us halfway.

Part 2: Course Plan

The instructor reserves the right to amend the course plan with reasonable notice, and in consultation with the class. The pace of lectures and materials covered is also subject to change based on level of class participation.

Week	Dates	Topics	Labs	Notable things due
1	Sep 9-11	Welcome/Foundations	**No lab**	- Read chapters 1-4 of textbook *Observing Animal Behaviour* by Marian Stamp Dawkins
2	Sep 14-18	Designing studies; Natural selection and evolution of behaviour	Lab 1: Introduction to independent study project, practice activity	- Read chapters 5-7 - In-lab activity due at the at the end of week
3	Sep 21-25	Neural and physiological bases of behaviour	Lab 2: Study design, taxis and kinesis in the common shiny woodlouse	- Read chapters 8-10 - In-lab activity due at the at the end of week - **Project proposal due Friday Sept 25**
4	Sep 28-Oct 2	Development and learning **No class Sep 30 Day for Truth and Reconciliation**	Lab 3: Behaviour priming in jumping spiders	- In-lab activity due at the at the end of week
5	Oct 5-9	Sexual selection	Lab 4: The mating game	- In-lab activity due at the at the end of week

6	**Oct 12-16**	**NO CLASSES: Thanksgiving and study week**	**No lab**	
7	Oct 19-23	Mating systems; parental care	Lab 5: Parental care case-studies activity	- In-lab activity due at the at the end of week
8	Oct 26-30	Aggression and antagonism; antipredator **MIDTERM Oct 28**	Lab 6: Hermit crab aggression and defence	- In-lab activity due at the at the end of week
9	Nov 2-6	Habitat selection and territoriality; ecology of fear	Lab 7: Territorial behaviour in crickets	- In-lab activity due at the at the end of week
10	Nov 9-13	Kinship, cooperation and social behaviour **No class Nov 11**	Lab 8: R workshop analyzing and visualizing your project data	Project observations should be close to complete at this point
11	Nov 16-20	Foraging	Lab 9: Foraging strategies in jumping spiders	- In-lab activity due at the at the end of week
12	Nov 23-27	Play; urbanization	Lab 10: In lab work period for trouble shooting	
13	Nov 30-Dec 4	Extreme weather/climate change	Lab 11: Research project celebration day!	**Presentation of research project in lab** (alternate arrangements possible)
14	Dec 7-9	Parasite manipulation and sickness behaviours	**No lab**	

Labs

Labs are weekly unless otherwise noted in the course plan. Most labs will involve opportunities to observe the aspect of animal behaviour you are learning in lecture that week; some will be simulation games or a case study. Labs will have a hand-in component that will generally be due at the end of the lab day.

In addition, one of the opportunities in this course is the ability to carry out a term-long, independent, observational research project in animal behaviour as a group (or solo). The goals of this project are to 1) create space for you to take initiative, 2) develop time management skills and independence, 3) practice research methods in the observation of wild animals, and 4) develop skills in data presentation and science communication. You will present your findings on the last day of lab. Alternate arrangements are possible for the presentation.

Part 3: Assessment and Grading

You are required to pass the lab to pass the course. (For Biology courses with labs.)

You can refer to the table above for a quick breakdown of the grading scheme. More details here:

Weekly lab activities (25%) (described above in the lab section).

Observation research project (10%) (described above in the lab section).

Friday fiver (5%): on Fridays, in pairs, you will present a 5 min breakdown of a scientific paper related to animal behaviour – whatever interests you the most! You can use slides, draw on the chalkboard, even record a video interpretation or whatever creative feeling strikes you! But beware – when the timer goes, you're off the stage!

Midterm (25%) and final (30%): Here we use tests as a) brain exercise and b) a way of assessing your individual comprehension. We'll use a combination of short and long answer questions. Tests may involve some recall of specific terms, simply because knowing the language of a discipline is important, but more weight is placed on comprehension related to concepts that we cover in class.

Part 4: Course Policies

While your primary objective is to be in class and learning, we certainly all recognize that life happens outside of school, and you may encounter a variety of challenges throughout the term. We can work together to accommodate illness, etc. You are not obligated to share any personal details, but certainly do contact me if you are experiencing challenges that are affecting your ability to attend class or complete the work! We'll figure out solutions to help you through. Generally, our class policy is to be respectful of everyone in our class and put effort into your participation and projects!

Students are expected to submit work that reflects their own ideas and engagement with the readings as well as their writing ability. Engaging with the work of others is an important part of academic writing. All ideas and quotations borrowed from other sources must be carefully cited and we use the citation style from the journal Animal Behaviour or another approved citation style.
Use of artificial intelligence tools by students to assist with their learning is allowed only if:

- prior permission has been given by the course professor/instructor, and
- the student properly credits/cites how the AI technology was used in their work.

AI must be used in an ethical and responsible manner as a positive learning tool. AI may not be used in ways that violate Acadia's Academic Integrity Policy. Students are reminded that plagiarism, or other forms of cheating, are both types of academic dishonesty.

Part 5: University Policies

University policies are available in the Acadia University Academic Calendar or through the Registrar's website: https://registrar.acadiau.ca/welcometotheregistrarsoffice.html

Equity, Diversity and Inclusion

Acadia University is committed to becoming a culturally safe and anti-oppressive community. This can only be achieved where there are simultaneous efforts to eliminate all forms of discrimination and harassment from our campus community, including the elimination of all discrimination, harassment and violence based on one's identity, including but not limited to, gender, race, class, ethnicity, sexual orientation, disability, gender identity, gender expression, and Indigeneity. The policy against harassment and discrimination, and resources for students who believe they may have experienced, or witnessed, discrimination or harassment, are available here: https://www2.acadiau.ca/student-life/equity-judicial/equity.html

Last Drop Day

Last day to drop a course and receive a "W". Please check the Acadia University calendar dates, which are available here: https://registrar.acadiau.ca/AcademicCalendars.html

Inform Your Instructor of Accommodations

Acadia University is dedicated to improving access to campus life for all students with disabilities. While we attempt to ensure that all courses are accessible, we recognize that there are barriers that need to be addressed on an individual basis. Students who require accommodations to complete coursework or otherwise fully participate in class should contact Accessible Learning Services directly as soon as possible. https://www2.acadiau.ca/student-life/accessiblelearning.html

The Use of Animals in Teaching and Research

The use of animals in teaching and research at Acadia University is done in accordance with guidelines on the care and use of animals published by the Canadian Council on Animal Care (CCAC). For more information on the CCAC, please visit their website at http://www.ccac.ca

Commitment to Integrity

It is standard practice in Biology to check exams and assignments for cheating and plagiarism. Cheating in the class and/or lab, including plagiarism, will not be tolerated. Please read the appropriate sections of the current Acadia University Academic Calendar: https://registrar.acadiau.ca/AcademicCalendars.html

Information on copy-write and course content from Acadia University is available through the Vaughan Memorial Library: http://libguides.acadiau.ca/c.php?g=433650&p=5027078

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. The instructor's consent shall not be unreasonably withheld.

Use of artificial intelligence tools by students to assist with their learning is allowed only if: prior permission has been given by the course professor/instructor, and the student properly credits/cites how the AI technology was used in their work. AI must be used in an ethical and responsible manner as a positive learning tool. AI may not be used in ways that violate Acadia's Academic Integrity Policy. Students are reminded that plagiarism, or other forms of cheating, are both types of academic dishonesty.

Share the Air Policy

In consideration of the difficulties that exposure to scented products causes individuals with sensitivities and allergies, all students, faculty, staff, employees of any companies working on university property, visitors, and guests of Acadia University, or of members of the University community are asked to refrain from wearing scented personal care products such as perfumes / aftershave, lotions, hair spray and deodorant. In addition, users of tobacco and cannabis are asked to be aware that odours associated with product use may impact individuals with sensitivities and allergies. Acadia University in consultation with its contracted cleaning staff, have agreed to use products that do not leave residual odors that may cause difficulties for individuals with sensitivities and allergies.
https://hr.acadiau.ca/employment/university-policies.html

Part 6: Program Learning Outcomes

Foundations of knowledge	**Explanation**	**Course specific examples**	**Proficiency** 1-Introduction 2-Reinforcement 3-Proficient
Scientific method, inquiry and hypothesis testing	Find, understand and apply information from the literature; understand how to use the scientific method to examine problems from different perspectives	Process of discovering the role of green light in photosynthesis, interpretation & discussion of data figures from literature	2
Historical concepts and contributions by important figures	Explain foundational concepts in biology, Two-eyed Seeing, and ethical implications of scientific discoveries	Key discoveries in botany, who has (and who has not) won Nobel prize awards	2
Biodiversity and ecology	Understand the genetic, taxonomic and ecosystem levels of biodiversity; focus on SW Nova including the Acadian Forest and Bay of Fundy ecosystems	Investigate the diverse modifications of plant tissues & organs, & their adaptive function in	2

		different environments	
Genetics and evolution	Understand the chemical basis of heredity, genetics and genomics; integrate concepts across disciplines to understand evolution	Roles of vertical & horizontal gene transfer in plant evolution	2
Human and environmental health	Understand form and function in health and disease within a One Health framework, integrating human and environmental health	Plant roles in ecosystem function, primary production, CO2 fixation, impact of changing climate on plant processes	1
Lab and field skills	**Explanation**	**Course specific examples**	**Proficiency** 1-Introduction 2-Reinforcement 3-Proficient
Experimental design	Gain experience in applying the scientific method	Controls, conducting an experiment, data collection	2
Safety	Work safely and productively in lab and field settings	Basic lab safety protocols	2
Lab skills	Gain experience with basic and advanced lab techniques and understand their application in research, health science and industry	Use of compound and dissecting scopes, slide preparation, examination of live material and prepared slides, plant dissection	2
Field skills	Gain experience in basic and advanced field skills and understand their application in ecology, conservation biology and environmental change	Field identification of patterns & terms learned in class and lab; data collection with iNaturalist	2
Data acquisition, analysis and interpretations	Collect data, present results both qualitatively and quantitatively, and interpret outcomes in light of the literature	Analysis of figures	2
Statistical analysis	Use R and or other programs to analyze biological data		

Professional skills	**Explanation**	**Course specific examples**	**Proficiency** 1-Introduction 2-Reinforcement 3-Proficient
Ethical practices	Demonstrate ethical conduct, apply principles of academic integrity, and understand the principles of EDI in science	Respectful participation in class & lab, proper citation, professional email & other communication	2
Collaboration and group work	Work effectively in groups within and across disciplines	Group collaboration in class & lab activities such as small group discussions, case studies, lab partners & review work	2
Critical thinking	Analyze and evaluate information to make science-based decisions	Question response, discussions, experiment reflection questions, lab observation reflection questions	2
Computer proficiency	Use common and discipline-specific software		
Scientific communication	Communicate science effectively to both scientific and general audiences	Discussions, written hand-ins, written responses to prompts in-class	2