

**Faculty of Science Course Syllabus**  
**Department of Psychology and Neuroscience****Topics in Behavioural Biology (NESC / PSYO 4160, & PSYO 6160)**  
**Fall 2024 edition**

- Dalhousie University is located in Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq. We are all Treaty people.
- Dalhousie University also acknowledges the histories, contributions, and legacies of African Nova Scotians, who have been here for over 400 years.
- Dr. Gadbois acknowledges the histories, contributions, and legacies of Acadians, who have been here since 1604 and deported en masse from 1755 to 1763.
- All students are required to comply with health and safety requirements on campus, and should be considerate of others' health concerns. Non-compliance may be reported under the Code of Student Conduct.
- Please note that, as far as Dr. Gadbois is concerned, this class is a safe space. We can all contribute to a tolerant and discrimination-free atmosphere (for race, ethnicity, gender, sexual preference, language, religion, age, disability, etc.).
- Dalhousie is a scent-free working space.

Instructor:	Simon Gadbois ( <a href="mailto:sgadbois@dal.ca">sgadbois@dal.ca</a> ); 902-494-8848  Please call me by my first name, "Simon" (pronounced the French way, i.e., silent n, or "see-moh"), no "Dr.", "Prof", etc., needed.
Emails:	When sending an email to Simon Gadbois, please add "4160" or "6160" to the subject line.
Office hours:	Monday and Wednesday, 3:00 to 4:00 in LSC Psychology, Room 3326 but preferably by appointment at other times.
Lectures:	Thursdays, 9:30 to 11:30 @ LSC 5208
Laboratories:	N/A
Tutorials:	N/A
Course delivery:	In-person only.
Course Description (official, calendar)	<b>For undergraduate students:</b>  PSYO/NESC 4160: Topics in Behavioural Biology CREDIT HOURS: 3 SIGNATURE REQUIRED CROSS-LISTED: NESC 4160.03 and PSYO 4160.03 FORMATS: Seminar  For graduate students: PSYO 6160: Comparative psychology CREDIT HOURS: 3 FORMAT: Seminar
Course Prerequisites	By permission
Animal Behaviour Certificate	<a href="https://www.dal.ca/faculty/science/psychology_neuroscience/programs/certificate-programs/animal_behaviour.html">This course (4160 only, not 6160) is one of the Animal Behaviour Certificate available courses:</a> <a href="https://www.dal.ca/faculty/science/psychology_neuroscience/programs/certificate-programs/animal_behaviour.html">https://www.dal.ca/faculty/science/psychology_neuroscience/programs/certificate-programs/animal_behaviour.html</a>

### Learning Objectives

The course integrates both comparative (animal) psychology perspectives and biological perspectives (from ethology/neuroethology, behavioural ecology). The seminar will focus on topics and research in fundamental and applied animal behaviour relating mostly (but not exclusively) to conceptual breakthroughs and new trends in both behavioural biology (sensory ecology, cognitive ecology/ethology, neuroecology/neuroethology, socioecology, etc.) and comparative psychology (animal psychophysics, animal cognition, etc., **with the exception of animal learning – to avoid duplication with 4140 and 6240**). For students (most likely undergraduate students) that took "Advanced Animal Behaviour" (PSYO/NESC 3162) with Dr. Gadbois, you can consider this class a natural follow-up to that course, but it also goes beyond the focus of 3162 (social behaviour and communication).

The topics will be flexible and adapted to the interests of the class. Topics will be chosen by the students from the following list:

1. The science of animal domestication: Physiological, behavioural and psychological changes.
2. Biological clocks: Circannual patterns and/or Zeitgebers
3. Eusociality (in mammals, insects, etc.)
4. Comparative sensory systems
5. Brain evolution
6. Spatial orientation, navigation, and cognitive maps
7. Echolocation: Bats, cetaceans, shrews, birds (oilbirds, swiftlets), tenrec, hedgehogs
8. Predator odours (preys as receivers)
9. Clutch size and life history phenomena: Evolutionary and ecological significance
10. Hormonal control of behaviour
11. Game theory
12. Information theory
13. Coolidge effect
14. Psychophysical laws and principles in animal sensory processing
15. Inclusive fitness and altruism
16. Harlow's monkeys: Social isolation
17. Tool use; Primates, corvids, etc
18. Territorial behaviour
19. Sperm competition
20. Reciprocal altruism
21. Selfish herds and flocks and public information, and the "Many eyes hypothesis"
22. Red Queen Models, evolutionary arm races, predator-prey (or parasite/host) co-evolution
23. New models on animal conflicts
24. Ethograms, time budgets and sampling methods
25. Parent-offspring conflict
26. Group selection
27. The handicap principle
28. Self-medication/zoopharmacognosy
29. Polyandry
30. Monogamy
31. Family-based social systems (e.g., Emlen et al.)

32. Dispersal
33. Semantic communication (in primates and non-primates; zoosemiotic theory)
34. Risk-sensitive foraging and the Risk Paradigm
35. Prisoner's dilemma
36. Producers and scroungers
37. Hamilton-Zuk hypothesis
38. Cooperative breeding and reproductive skew (or other phenomena)
39. Brood parasitism
40. The Challenge Hypothesis (Wingfield et al., 1990)
41. Receiver psychology (Guilford and Dawkins, 1991)
42. Ecosystem engineers and/or niche construction (Jones et al., 1994 and Laland)
43. Self-organization of social systems
44. Gaze following
45. Affective neuroscience and ethology: Fear (e.g., Ledoux; Brown et al., 1999), pair bonding, etc.
46. Behavioural syndromes
47. Maternal epigenetics
48. Public vs. Private information
49. Keystone individuals
50. Role theory of social organization

Any other topic discussed with, and approved by Dr. Gadbois

### **Course Materials**

- None

### **Course Assessments**

### **Grades**

The letter grade equivalents of numerical grades are shown below (from the Dalhousie Common Grade Scale). For 6160, please see the graduate calendar. Grades are not negotiable.

Conversion of numerical grades to Final Letter Grades follows the [Dalhousie Common Grade Scale](#)

F	D	C-	C	C+	B-	B	B+	A-	A	A+
<50	50-54	55-59	60-64	65-69	70-72	73-76	77-79	80-84	85-89	90-100

The model below is based on a 3-presentation model. This may change after the first meeting with the group when we have a better idea of the enrolment numbers.

Assessment	Value	Dates
Presentation 1*	30%	see schedule below
Presentation 2*	30%	see schedule below
Presentation 3*	30%	see schedule below
Participation, leading discussions, etc.	10%	
Attendance	Mandatory attendance	
Slide decks	Mandatory submission of slide decks via Brightspace	Last day of class: November 28th

All three presentations have equal value. Each presentation is evaluated by peers and the instructor.

\* See the section "Schedule" below for the length of the presentations.

Rubric used to assess the presentations by Dr. Gadbois and your peers:

	19-20	17-18	15-16	13-14	11-12	< 10	Points
	Exceptional	Excellent	Good	Adequate	Poor	Very poor	
Organization, structure, flow, clarity, consistency in formatting, and spelling.							/20
Topic mastery, comprehension, ability to answer questions.							/20
Analysis and critical assessment / discussion of issues and implications.							/20
Synthesis and integration of the themes and topics.							/20
Creativity and originality in content and presentation.							/20
Presentation skills, engagement, autonomy from (presenter) notes.							/20

## Course Policies

### ***Plagiarism:***

All the information you need is at <http://academicintegrity.dal.ca/> and below. It is your responsibility to read, understand and respect the guidelines presented there. Make sure you understand the concept of “self-plagiarism”: you are not allowed to recycle other projects submitted in other courses, partially or in full.

### ***Missing lectures and presentations from others:***

All lectures are mandatory and absences will be noted and will influence your “Participation, leading discussions, etc.” noted above. The percentage of missed classes will be reflected in deductions from that component of the course.

### ***Missing your own presentation:***

Students who miss their own presentation day due to debilitating distress or illness, must print, complete, and sign the STUDENT DECLARATION OF ABSENCE then send it (by email) to Dr Gadbois within 3 days of the absence (including weekends and holidays).

This form may only be used a maximum of one time throughout the term and may only cover three (3) consecutive days of absence, in other words, this form may NOT be used for absences lasting more than three (3) consecutive days.

For long-term or chronic absences please speak with either:

- An advisor at the Student Advising and Access Services if you have accommodations.
- The Assistant Dean of Student Affairs (at the Faculty of Science): Patricia Laws, [scieasst@dal.ca](mailto:scieasst@dal.ca).

## Course requirements:

In order to pass this course you need to:

- Obtain a final grade of 50% or more (minimum D)
- Present all required presentations.
- Submit the slide decks for all required presentations on the last day of class.
- Note: Any unfulfilled requirements that are not resolved according to course policy will result in an INC final grade for the course. An INC that is not addressed within a month of the end of a class will result in an F for the course.

\* Academic Calendar regulation 16.1 “In order to complete a course satisfactorily, a student must fulfill all the requirements as set down in the course outline [Syllabus].”

## Other course requirements

*Attendance is mandatory.*

**Schedule**

The schedule of presentations will follow the schedule below (to be filled/updated with names). Following the 3-presentation model: Each student will have 45 minutes, including questions. I suggest a presentation of 30 mins.

*List of presenters: This section will be updated in the first two weeks of class. Numbers to be replaced by names (see the list below).*

DATES	
September 5	Organizational meeting
September 12	Lecture by Gadbois
September 19	-
September 26	1, 2, 3
October 3	4, 5, 6
October 10	7, 8
October 17	1, 2, 3
October 24	4, 5, 6
October 31	7, 8
November 7	1, 2, 3
Fall break	
November 21	4, 5, 6
November 28	7, 8

As of September 2nd: 8 students

**4160 students**

1. Atwell, Isabel
2. Chidiac, Mya R.
3. Collings, Katherine H.
4. Fraser, Kaitlyn S.
5. Glenen, Noah A.
6. Oxner, Alexander E.

**6160 students**

7. Olsen, Asta Marie
8. Hansen, Anne Vaupell

### University Policies and Statements

**This course is governed by the academic rules and regulations set forth in the University Calendar and by Senate**

#### **Academic Integrity**

At Dalhousie University, we are guided in all of our work by the values of academic integrity: honesty, trust, fairness, responsibility and respect (The Center for Academic Integrity, Duke University, 1999). As a student, you are required to demonstrate these values in all of the work you do. The University provides policies and procedures that every member of the university community is required to follow to ensure academic integrity.

**Information:** [https://www.dal.ca/dept/university\\_secretariat/academic-integrity.html](https://www.dal.ca/dept/university_secretariat/academic-integrity.html)

#### **Accessibility**

The Advising and Access Services Centre is Dalhousie's centre of expertise for student accessibility and accommodation. The advising team works with students who request accommodation as a result of a disability, religious obligation, or any barrier related to any other characteristic protected under Human Rights legislation (Canada and Nova Scotia).

**Information:** [https://www.dal.ca/campus\\_life/academic-support/accessibility.html](https://www.dal.ca/campus_life/academic-support/accessibility.html)

#### **Student Code of Conduct**

Everyone at Dalhousie is expected to treat others with dignity and respect. The Code of Student Conduct allows Dalhousie to take disciplinary action if students don't follow this community expectation. When appropriate, violations of the code can be resolved in a reasonable and informal manner—perhaps through a restorative justice process. If an informal resolution can't be reached, or would be inappropriate, procedures exist for formal dispute resolution.

**Code:** [https://www.dal.ca/dept/university\\_secretariat/policies/student-life/code-of-student-conduct.html](https://www.dal.ca/dept/university_secretariat/policies/student-life/code-of-student-conduct.html)

#### **Diversity and Inclusion – Culture of Respect**

Every person at Dalhousie has a right to be respected and safe. We believe inclusiveness is fundamental to education. We stand for equality. Dalhousie is strengthened in our diversity. We are a respectful and inclusive community. We are committed to being a place where everyone feels welcome and supported, which is why our Strategic Direction prioritizes fostering a culture of diversity and inclusiveness

**Statement:** <http://www.dal.ca/cultureofrespect.html>

#### **Recognition of Mi'kmaq Territory**

Dalhousie University would like to acknowledge that the University is on Traditional Mi'kmaq Territory. The Elders in Residence program provides students with access to First Nations elders for guidance, counsel and support. Visit or e-mail the Indigenous Student Centre (1321 Edward St) ([elders@dal.ca](mailto:elders@dal.ca)).

**Information:** [https://www.dal.ca/campus\\_life/communities/indigenous.html](https://www.dal.ca/campus_life/communities/indigenous.html)

#### **Important Dates in the Academic Year (including add/drop dates)**

[https://www.dal.ca/academics/important\\_dates.html](https://www.dal.ca/academics/important_dates.html)

#### **University Grading Practices**

[https://www.dal.ca/dept/university\\_secretariat/policies/academic/grading-practices-policy.html](https://www.dal.ca/dept/university_secretariat/policies/academic/grading-practices-policy.html)