

**Faculty of Science Course Syllabus**  
**Department of Biology**  
**BIOL/MARI 4323**  
*Biologging & Biotelemetry*  
*Winter 2022*

***Dalhousie University is located in Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq. We are all Treaty people.***

**Instructor:** Dr. Glenn Crossin ([Glenn.Crossin@dal.ca](mailto:Glenn.Crossin@dal.ca)), LSC Room 6060  
**Lectures:** On-line, Synchronously, via Zoom: Tues and Thurs, 10:05 – 11:25 AM (AST).  
Return to in-person when the university permits: McCain Building, Room 2017

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### **Course Description**

*This course explores the fundamentals and applications of biologging and biotelemetry: the use of electronic tags to study the ecology of free-ranging animals in their environments. Students are introduced to the wide range of tags and their diverse application.*

### **Course Prerequisites**

BIOL 2060.03 (Introductory Ecology), or BIOA 3001.03 (Ecology), or PSYO/NESC 2160.03 (Animal Behaviour), or permission from the Instructor.

### **Course Objectives/Learning Outcomes**

- Understand the use and limitations of biologging in fundamental and applied science applications
- Develop practical appreciation for the use of the technology for animal telemetry
- Critical analysis skills for the evaluation of scientific reports
- Effective written and oral communication of scientific materials

### **Course Materials**

- There is no textbook for the course

- Course materials will be provided through the Brightspace website, and email announcements.
- Students are expected to check the site daily for course updates, and to carefully and promptly read all course materials

**Course Assessment**

Attendance	10 %
Midterm written exam (take-home)	40 %
Research paper presentation and assessment	30 %
<u>Data workshop report</u>	<u>20 %</u>
<b>= 100 %</b>	

**Conversion of numerical grades to Final Letter Grades follows the Dalhousie Common Grade Scale**

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

**Course Policies**

If you are unable to attend the class, inform the Instructor **IN ADVANCE**. Attendance is expected at all class meetings, especially now that online learning has been reinstituted. Unexcused absences will result in loss of marks from your Attendance score (1 percentage point per class to a maximum of 10 percentage points). Furthermore, students are expected to have read all assigned readings, and to actively engage with class presenters and guest lecturers.

The mid-term exam is a take-home, written exam, and you have 2 weeks to complete it. As such, late submissions will be penalized 10%.

**Course content**

The approximate schedule for the course is outlined below. Changes may occur to accommodate the guest speakers who have agreed to participate in the course.

**Course Policies**

Late assignments will be penalized at a rate of 10%/day. Missed presentations, assessments or exams will be scored as a zero unless precipitated by a medical cause or other emergency. Medical causes will require a doctor's note. Should weather force the cancellation of a student presentation, the presentations will be rescheduled at the earliest possible date. Written documents must be submitted in your own words. Plagiarism will be dealt with through university policy.

## Class schedule

Date	Event	Topic
6 Jan - THURS	General Intro	Hellos and logistics - online realities, syllabus. Brief meeting
11 Jan - TUES	Organization	Course logistics, student presentation overview and signup
13 Jan - THURS	Lecture 1 - INTRO	History of Biotelemetry & Biologging. Some case examples.
18 Jan - TUES	Lecture 2	Device types, costs, size, and power/memory limitations, 2% rule
20 Jan - THURS	Lecture 3	Movement ecology – theoretical
25 Jan - TUES	Lecture 4	Physiological aspects
27 Jan - THURS	Lecture 5	Terrestrial movement studies
1 Feb - TUES	Lecture 6	Ariel movement studies
3 Feb - THURS	Written take-home Exam	Brief class meeting - overview
8 Feb - TUES	Lecture 7	Aquatic movement studies
10 Feb - THURS	Guest Lecture 1	Atlantic salmon tracking – Dr. Fred Whoriskey
15 Feb - TUES	Guest Lecture 2	Elasmobranch and/or other migratory fish movements – Dr. Charles Bangley
17 Feb - THURS	Guest Lecture 3 Written take-home Exam due	Conservation physiology & telemetry – Dr. Robert Lennox
1 Mar - TUES	Data workshop	Case study - experimental design and basic handling of acoustic telemetry data.
3 Mar - THURS	Data workshop	Working with the data
8 Mar - TUES	Guest Lecture 4	Ethics & Animal Care considerations - Dr. Chris Harvey-Clark
10 Mar - THURS	Guest Lecture 5	Presentation by OTN data team - how they manage acoustic telemetry data (to be confirmed).
15 Mar - TUES	Take-home data report DUE	--
17 Mar - THURS	Presentations & Assessments	3 presentations per day (each presentation given by a two-student team)
22 Mar - TUES	Presentations & Assessments	3 presentations per day (each presentation given by a two-student team)
24 Mar - THURS	Presentations & Assessments	3 presentations per day (each presentation given by a two-student team)
29 Mar - TUES	Presentations & Assessments	3 presentations per day (each presentation given by a two-student team)
31 Mar - THURS	Presentations & Assessments	3 presentations per day (each presentation given by a two-student team)
5 Apr - TUES	TBD	TBD

## **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)

## **Student Resources and Support**

### **Advising**

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

**Science Program Advisors:** <https://www.dal.ca/faculty/science/current-students/academic-advising.html>

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

**Black Students Advising Centre:** [https://www.dal.ca/campus\\_life/communities/black-student-advising.html](https://www.dal.ca/campus_life/communities/black-student-advising.html)

**International Centre:** [https://www.dal.ca/campus\\_life/international-centre/current-students.html](https://www.dal.ca/campus_life/international-centre/current-students.html)

### **Academic supports**

**Library:** <https://libraries.dal.ca/>

**Writing Centre:** [https://www.dal.ca/campus\\_life/academic-support/writing-and-study-skills.html](https://www.dal.ca/campus_life/academic-support/writing-and-study-skills.html)

**Studying for Success:** [https://www.dal.ca/campus\\_life/academic-support/study-skills-and-tutoring.html](https://www.dal.ca/campus_life/academic-support/study-skills-and-tutoring.html)

**Copyright Office:** <https://libraries.dal.ca/services/copyright-office.html>

**Fair Dealing Guidelines** <https://libraries.dal.ca/services/copyright-office/fair-dealing.html>

### **Other supports and services**

**Student Health & Wellness Centre:** [https://www.dal.ca/campus\\_life/health-and-wellness/services-support/student-health-and-wellness.html](https://www.dal.ca/campus_life/health-and-wellness/services-support/student-health-and-wellness.html)

**Student Advocacy:** <https://dsu.ca/dsas>

**Ombudsperson:** [https://www.dal.ca/campus\\_life/safety-respect/student-rights-and-responsibilities/where-to-get-help/ombudsperson.html](https://www.dal.ca/campus_life/safety-respect/student-rights-and-responsibilities/where-to-get-help/ombudsperson.html)

### **Safety**

**Biosafety:** <https://www.dal.ca/dept/safety/programs-services/biosafety.html>

**Chemical Safety:** <https://www.dal.ca/dept/safety/programs-services/chemical-safety.html>

**Radiation Safety:** <https://www.dal.ca/dept/safety/programs-services/radiation-safety.html>

**Scent-Free Program:** <https://www.dal.ca/dept/safety/programs-services/occupational-safety/scent-free.html>

**Dalhousie COVID-19 information and updates:** <https://www.dal.ca/covid-19-information-and-updates.html>