

Faculty of Science Course Syllabus (Section A)
Department of Biology
BIOL 3061 Communities and Ecosystems
Fall 2022

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

Instructor: Patricia Lane; E-mail: patricia.lane@dal.ca

Office hours by appointment on Microsoft Teams

Lectures: asynchronous, lectures and slides posted on Brightspace

Course Description Part 1 includes ecosystem definitions, history, and theory, species interactions, modelling, complex systems theory, systems ecology, quantitative approaches such as computer simulation and qualitative approaches such as loop analysis. Part 2 discusses food webs, ecological networks, trophic cascades, ecological complexity and stability, regime shifts, and ecosystem-based management.

Course Prerequisites BIOL 2060.03 (or BIOA 3001.03) or INTD 2001.03 or INTD 2002.03 or OCEA 2000X/Y.06

Learning Objectives At the end of this class, students will be able to:

1. Read scientific literature critically, evaluate the logic flow from assumptions to conclusions, and identify any shortcomings.
2. Write insightful and well-organized scientific reports.
3. Understand systems and why ecosystems are systems in more than name only.
4. Compare qualitative versus quantitative approaches and models for ecosystems.
5. Analyse the main types of two-species biological interactions and their role in community structure.
6. Understand different types of food web models and evaluate their usefulness.
7. Be able to perform loop analysis calculations.
8. Understand trophic cascades and escalades, and their effects in food webs and ecological networks.
9. Distinguish ecological complexity and ecological complication.
10. Understand the concept of ecological stability by contrasting different types of change in ecosystems and their alternative steady states.
11. Explain if ecosystems are chimeras, what does this mean for ecosystem evolution?
12. Translate what you have learned about ecosystem theory to issues in ecosystem-based management.

Course Materials and Communications

This course relies on the scientific literature and the use of the class website on Brightspace. Each week, beginning on Sunday, there is an on-line study module with a lecture, readings, websites & videos, activities, and study questions that expand the lectures.

- Required textbook(s): none
- Course Brightspace page with captioned Panopto (video lectures).
- e-journal articles involving research literature available online from the Dalhousie Library

- Online platform outside Brightspace-Microsoft Teams – Office 365 for one-on-one meetings.
- Email-class messages, reminders, and announcements will be sent to all students via Brightspace. A student should post only to the discussion board to ask a question about class content or procedures. Questions will not be answered via Dr. Lane’s personal email.
- A student should request a virtual meeting by contacting Dr. Lane at Patricia.Lane@Dal.Ca
- A student should contact Dr. Lane about lateness and missed work at Patricia.Lane@Dal.Ca
- A student should email the Marker directly to ask a question about the marking of a quiz or assignment.

Online Course Delivery and Other Requirements:

1. You will need a computer to access website and course materials and also a camera and microphone for online meetings There are no synchronous components and no ungraded components. No course components require on-campus attendance.
2. Students connecting to online resources from outside Canada are responsible for ensuring awareness and compliance with any applicable laws in the country from which they are connecting.
3. Assignments 1 and 2 as well as quizzes 1-10 will be typed and submitted online for originality checking by 11:59 pm on the date dues listed below on Brightspace. Points will be deducted for lateness.
4. One multiple choice test will be conducted online on Brightspace.

Course Assessment

Component	Weight (% of final grade)	Date Due (all at 11:59 pm AST)
10 Quizzes on Modules Quizzes 1-8 @ 6 pts each Quiz 9 @ 7 pts Quiz 10 @ 5 pts	60%	Sept 11, 18, 25 Oct 2, 9, 16, 23, 30 Nov 6, 20
Assignment 1-Critique of a Scientific Paper	10%	Oct 14 (Friday)
Assignment 2-Critique of an Ecosystem-Based Management Plan	10%	Dec 4
Test	20%	Nov 16
Total	100%	

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

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

BIOL 3061 2022 CLASS CONTENT & SCHEDULE Module quizzes due each week at 11:59 pm Atlantic Standard (AST) on first Sunday after end of week as listed below except Assignment 1 is due on a Friday. Assignment/test due dates are as indicated in red below.

Module /Week #	Assignments Due	Module Topic and Question (Q.)
1 Sept 6-10		Q1: What Is a System and Are Ecosystems Systems or Random Assemblages of Species?
2 Sept 11-17	Quiz Module 1 due Sept 11	Q2: What Is a Model & Why Do We Use Them in Ecology? (Comparing a Conceptual Model & a Math Model).
3 Sept 18-24	Quiz Module 2 due Sept 18	Q3: Why are Two-Species Interactions Often Misleading and Inadequate at the Community Level?
4 Sept 25-Oct 1	Quiz Module 3 due Sept 25 (Sept 30 is National Day for Truth and Reconciliation-University Holiday)	Q4: How Are Food Webs and Ecological Networks Useful for Characterizing Ecosystems?
5 Oct 2-8	Quiz Module 4 due Oct 2	Q5: ABC's of Loop Analysis Submit Assignment 1
6 Oct 9-15	Quiz Module 5 due Oct 9 (Oct 10-Thanksgiving Day) Assignment 1 Due by 11:59 AST on Oct 14 (Friday)	Q6: Do Trophic Cascades or Trophic Escalades Act as Controllers in Food Webs?
7 Oct 16-22	Quiz Module 6 due Oct 16	Q7: Are Food Webs Controlled Internally or Externally and What Does This Mean for Ecosystem Stability?
8 Oct 23-29	Quiz Module 7 due Oct 23	Q8: Are Ecosystems Complex or Merely Complicated?
9 Oct 30-Nov 5	Quiz Module 8 due Oct 30 Quiz Module 9 due Nov 6	Q9. Do Ecosystems Function as Chimeras and How Do They Evolve at the Ecosystem Level?
Nov 7-11	STUDY BREAK (Nov 11 is Remembrance Day)	STUDY BREAK
10 Nov 13-19	Test-online Brightspace-Nov 16 (On Modules 1-9 only)	Q10: Can Ecosystems be Managed and What Is 'Ecosystem-Based Management'?
11 Nov 20-26	Quiz Module 10 due Nov 20	Work on Assignment 2.
12 Nov 27-Dec 7	Assignment 2 due by 11:59 AST on Dec 4 Dec 7-last day of classes	Submit Assignment 2

Course Policies (See also university policies and websites on last pages of this syllabus.)

Grading and Marking

You will not receive a letter grade lower than what is indicated for your final point value listed above, although the professor reserves the right to give you a higher grade. Because the scale is generous for A's and B's (30 points) as compared to C's and D's (20 points), individual marks will only be rounded up if the student has more than 0.50 above the maximum value for a particular letter grade. For example, if you received 79.51 points, you would receive an A- in the class and not a B+. If you received 79.49 points, you would receive a B+ and not an A-. The final grade that you receive in a class is the sum of the work that you did and the knowledge that you gained. A grade is something that you earn. If you require a final grade at a particular level for an honours degree, job, graduate or professional school, or other purpose, you should ensure that you put the time and effort in during the term to earn that grade. The Professor is willing to give you extra help and study assignments if you believe that you are not achieving a satisfactory level of proficiency in the class. Please do not come at the end of the term requesting a higher grade because you need it to fulfil a requirement, enter graduate school, you worked hard, or because you paid your tuition. These are not satisfactory reasons. It is unfair to the other students in the class who have done the work, and to the university, which needs to maintain fair and high standards of academic achievement. Although assignments will have a detailed point distribution for marking, the Marker has discretionary power to deduct additional points (up to 10%) for overall sloppy writing, poor grammar and spelling, messy format, inadequate referencing, and overall inferior quality of the assignment. All assignments are to be typed and spell & grammar-checked before submission.

Individual Work and Plagiarism

All work (quizzes, assignments, and tests) in this class is to be done individually and submitted on our Brightspace website for originality checking. There is a special widget for this. Submissions that have not been checked online will not be graded. **DO NOT SHOW ANYONE YOUR WORK** or you too can be charged with plagiarism. All instances of suspected plagiarism will be reported promptly to the Academic Integrity Officer of the Faculty of Science.

Absences, Lateness, and Missed Work

Use the Student Declaration of Absence form for missed academic requirements in this course if you are ill for more than 3 consecutive days (not 3 class days) as per university policy. A submission site for your declaration is given on the class website on Brightspace. Two submissions are permitted per term. The possibility of making up late work is at the discretion of the professor. "Students experiencing recurring long-term absences are strongly encouraged to meet with a Faculty or Declared Major Advisor, or Faculty Program Coordinator and refer to the University's Student Accommodation Policy." Any material submitted for evaluation after the designated deadline will have marks deducted at the rate of 10% per day late including weekends. Extensions without the mark penalty will be given only with a valid Student Declaration of Absence or other excuse as approved by the professor. If you file a Student Declaration for a short-term absence from class, you need to follow-up immediately with Dr. Lane (preferably before the due date is missed) on when the missed work is due. We do not have the possibility of offering alternative assignments or changes in weighting of points for requirements.

Fall/Winter 2022-23

BIOL 3061 Communities and Ecosystems

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

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

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

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).

Information: https://www.dal.ca/campus_life/communities/indigenous.html

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

<https://academiccalendar.dal.ca/Catalog/ViewCatalog.aspx?pageid=viewcatalog&catalogid=117&chapterid=-1&topicgroupid=31821&loaduseredits=False>

University Grading Practices

https://www.dal.ca/dept/university_secretariat/policies/academic/grading-practices-policy.html

Faculty of Science Course Syllabus (Section C) (revised April-2022)

Fall/Winter 2022-23

**BIOL 3061 Communities and Ecosystems
Student Resources and Support**

Advising

General Advising https://www.dal.ca/campus_life/academic-support/advising.html

Science Program Advisors: <https://www.dal.ca/faculty/science/current-students/undergrad-students/degree-planning.html>

Indigenous Student Centre: https://www.dal.ca/campus_life/communities/indigenous.html

Black Students Advising Centre: https://www.dal.ca/campus_life/communities/black-student-advising.html

International Centre: 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

Studying for Success: 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.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

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>

