

**Faculty of Science Course Syllabus
Department of Biology/ Earth and Environmental Sciences**

Economic Botany: Plants & Civilization (BIOL 3226/ENVS 3226), Fall 2026

Dalhousie University operates in the unceded territories of the Mi'kmaw, Wolastoqey, and Peskotomuhkati Peoples. These sovereign nations hold inherent rights as the original peoples of these lands, and we each carry collective obligations under the Peace and Friendship Treaties. Section 35 of the Constitution Act, 1982, recognizes and affirms Aboriginal and Treaty rights in Canada.

We recognize that African Nova Scotians are a distinct people whose histories, legacies, and contributions have enriched the part of Mi'kma'ki known as Nova Scotia for over 400 years.

Instructor: Rajesh Rajaselvam Email: Rajesh.Rajaselvam@Dal.Ca Office: LSC 7130

Office Hours: Wednesday 16:00 – 17:00 hrs, Friday by appointment only

Lectures: Monday & Wednesday 14:35 - 15:55 hrs (at LSC C 240)

Tutorials: Thursday 17:35 - 18:55 hrs: 6 tutorial sessions (at LSC C 338)

****Delivery of lectures and tutorials: In person (Attendance at both lectures and tutorials is essential).***

*****Lectures and tutorials are subject to change due to administrative or weather-related disruptions.***

Course Description

This course explains the importance of plants and their role in human biological and cultural development. Students will explore the impact of plants on society, including their use as a major food source, in medicine, and in industrial and recreational contexts. The course also addresses the role of plants in ecosystem conservation and sustainability. Students will engage in hands-on field activities and seminars to investigate the uses and interactions of plants.

Course Prerequisites

A grade of B- or higher in BIOL 1010.03 or (BIOL 1020.03 or BIOA 1002.03 or BIOL 1030.03) and BIOL 1011.03 or (BIOL 1021.03, BIOA 1003.03, or BIOL 1031.03); or SCIE 1505.18 or instructor's permission.

Course Textbook

Levetin, E. and McMahon, K. Plants & Society, 9th (2023) Edition. NY: McGraw-Hill.

Learning Objectives

- Evaluate the importance of plants and their different roles.
- Explain how humans use different plant parts.
- Explain the botanical aspects and origins of important food, medicinal, and economically important plants.

- Discuss the Green and gene Revolutions.
- Describe mechanisms involved in the preparation of stimulating beverages.
- Know medicinal plants used in different cultural backgrounds and their economic importance.
- Understand food security and challenges.
- Know current research in plants related to economic botany.
- Identify different plants and analyze the plant structures with hands-on field and greenhouse activities.
- Demonstrate a deeper knowledge of chosen medicinal plants through formal group oral presentation and report writing.

Course Assessment

Assignment, Exam, or Presentation	Marks %	Date
Quiz 1	10	Oct 07
Mid-Term Exam	25	Nov 02
Oral Presentation (group presentation)	10	Nov 23, 25 & 26
Quiz 2	10	Dec 08
Lab/Seminar Report Submission	15	Oct 15, Nov 12 & 19
Final Exam	30	Scheduled by Registrar
Total	100	

Oral Presentation

Students are expected to do a twelve-minute PowerPoint presentation (Group) on their chosen Medicinal Plant.

<i>*Evaluation rubric</i>	MARKS				
<i>Evaluate the presentation by checking the grade the student achieved in the following categories:</i>					
The presentation was well organized.	5	4	3	2	1
The chosen 'Medicinal Plant' was clearly and understandably covered.	5	4	3	2	1
The presentation was very well-timed.	5	4	3	2	1
Credible resources were incorporated and cited.	5	4	3	2	1
The student/group responded effectively to questions posed by the audience.	5	4	3	2	1
The main points were effectively summarized, and a take-home message was delivered at the end of the presentation.	5	4	3	2	1
Overall grade: Total (out of 30) is reduced to out of 10					

Grading Scale

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)		

Course Policies***General Policies:***

Class participation is considered vital.

Attendance at all tutorial and seminar sessions is mandatory. Regular attendance at lectures is highly recommended because it contributes meaningfully to your overall performance. Tutorial submissions are allowed within a three-week window.

Meeting deadlines is mandatory. No late submission without a valid reason is accepted for marking.

Brightspace (course web tool) is used for regular updates and announcements. TAs are the first point of contact (unless for major issues). Copying the instructor on messages is highly recommended.

Specific Policies:

The policies will only be implemented when a student's absence is due to physical or mental health conditions; involvement in an accident; immediate family illness, injury, or death; or other extenuating circumstances as described in Dalhousie University's Academic Calendar Regulation: Missed or Late Academic Requirements due to Student Absence (SDA)⁽¹⁾. The student must notify the instructor or teaching assistant *prior* to the academic requirement deadline and must submit a completed Student Declaration of Absence form⁽²⁾. No more than **two (2)** separate Student Declaration of Absence (SDA) forms may be used per course during a single term. SDA forms are valid only for tutorials, mandatory lectures/presentations, and quizzes (NOT for assignment submission deadlines and exams).

Quizzes

- If quiz #1 is missed for a valid and credible reason, those marks will be re-distributed to quiz #2
- If quiz #2 is missed for a valid and credible reason, those marks will be re-distributed to the final exam
- If both quizzes are missed, only one will be re-distributed

Midterm Exam and Final Exam

- One makeup exam can be scheduled for any student, provided the original examination was missed for a valid and credible reason (documentation may be required). The instructor or teaching assistant must be notified before the examination start time.
- The makeup exam will be different from the exam administered during the regularly scheduled examination time.
- If the missed exam is a final examination in the Fall term, the makeup exam will be scheduled for January of the following year.

Tutorials

- Missing a tutorial is only acceptable in those cases where the student has notified the teaching assistant before the start time of the tutorial with a valid and credible reason.

Altogether, **no more than three (3) evaluations** (tutorials, quizzes, and exams combined) may be missed, as there will not be enough material to evaluate the student adequately.

⁽¹⁾Academic Calendar Regulation: Missed or Late Academic Requirements due to Student Absence:

<https://www.dal.ca/content/dam/www/about/leadership-and-governance/university-policies/student-absence-regulation.pdf>

⁽²⁾Student Declaration of Absence Form: <https://www.dal.ca/content/dam/www/about/mission-vision-and-values/edia/student-declaration-absence-form.pdf>

Course Content

Schedule (Tentative)

A. Lectures (Detailed lecture slides will be posted on Brightspace)

Week 1

Sep 09 - Introduction & Plants in our lives (Chap 01)

Week 2

Sep 14 - Diversity of plant life I (Chap 9)

Sep 16 - Diversity of plant life II (Chap 9) & **Pre-tutorial 01**

Week 3

Sep 21 - Human nutrition (Chap 10)

Sep 23 - Origin of agriculture I (Chap 11)

Week 4

Sep 28 - Grasses I (Chap 12)

Sep 30 - University closed/ National Day of Truth and Reconciliation

Week 5

Oct 05 - Grasses II (Chap 12) & Sample questions

***Oct 07 - Quiz 1 ... 10 marks**

Week 6

Oct 12 - University closed/ Thanksgiving Day

Oct 14 - Starchy staples (Chap 14)

Week 7

Oct 19 - Legumes I (Chap 13)

Oct 21 - Feeding a hungry world (Chap 15)

Week 8

Oct 26 - Genetically Modified (GM) plants I

Oct 28 - Genetically Modified (GM) plants II & Midterm Review

Week 9

***Nov 02 - Midterm Exam (14:35 - 15:35 hrs, at LSC 240) ... 25 marks**

Nov 04 – Introduction to ‘Student Oral Presentation’ & Time for the Greenhouse visit

Week 10

Nov 09 - 13 - Fall Study Break

Week 11

Nov 16 - Medicinal plants I & Guest Lecture (Chap 19)

Nov 18 - Medicinal plants II (Chap 19/Recent Journal Articles)

Week 12

Nov 23, 25 & 26 – Students’ presentation ... 10 marks

Week 13

Nov 30 - Stimulating beverages I (Chap 16)

Dec 02 - Stimulating beverages II (Chap 16)

Week 14

Dec 07 - Psychoactive plants (Chap 20)/ **Discussion session**

Dec 08 - Quiz 02 & Final Revision...10 marks

Dec 09 - In-class office time for questions

Final Exam (Scheduled by the registrar’s office) ... 30 marks

B. Seminar/Tutorial sessions (Detailed tutorial/lab slides will be posted on Brightspace)

Attendance Mandatory, (3 x 5) = 15 marks

Sep 24: Tutorial 1: Field/Wild Plant identification (**Field report required: Lab 01/ Submission deadline: 15 Oct 2026**)

Oct 01: Tutorial 2: Follow-up questions/Discussions on Field/Wild Plant Identification

Oct 22: Tutorial 3: Economically important tropical plants: Greenhouse lab (**Report required: Lab 02/ Submission deadline: 12 Nov 2026**)

Oct 29: Tutorial 4: Genetically Modified (GM) plants (**Report required: Lab 03/ Submission deadline: 19 Nov 2026**)

Nov 05: Tutorial 5: Oral presentation introduction & grouping

Nov 19: Tutorial 6: Oral presentation preparation (own preparation/ no official tutorial)

Nov 23, 25 & 26: Lecture and tutorial sessions for Students’ Oral Presentations

** You are given three weeks to complete and submit the assignments/reports. Meeting the submission deadline is very important.*

Academic Integrity and Generative AI

At Dalhousie University, we are guided in all our work by the values of academic integrity: honesty, trust, fairness, responsibility, and respect. As a student, you are required to demonstrate these values in all 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. Additional academic integrity information can be found at: https://www.dal.ca/dept/university_secretariat/academic-integrity.html

BIOL3226 strictly prohibits the use of generative AI. Your own critical thinking, based on the lectures and the reliable sources presented in the course material, is considered vital. Submitting any work that uses Gen-AI–produced content is an academic offense and will be escalated to the Academic Integrity Office.

Accessibility

The following links to the Student Accommodation Policy explains how Dalhousie instructors and staff work collaboratively with students to create and maintain an accessible educational environment.

<https://www.dal.ca/content/dam/www/about/leadership-and-governance/university-policies/student-accom-policy.pdf>

You are eligible for accommodations based on protected characteristics such as religion. If you have religious, cultural, or community-significant observances that conflict with course requirements, please reach out to me so we can collaboratively identify appropriate alternatives for completing the course requirements.

<https://humanrights.novascotia.ca/know-your-rights/individuals>

<https://multifaithcalendar.org/cal/index.php>

To begin the process of requesting a formal academic accommodation, contact the Student Accessibility Centre at access@dal.ca

Student Use of Course Materials

Course materials are designed for use as part of this course at Dalhousie University and are the property of the instructor unless otherwise stated. Third-party copyrighted materials (such as books, journal articles, music, videos, etc.) have either been licensed for use in this course or fall under an exception or limitation in Canadian Copyright law. Copying this course material for distribution (e.g., uploading to a commercial third-party website) may lead to a violation of Copyright law.

Syllabus Appendix

Student Supports and University Statements, Policies, and Guidelines can be accessed through the link provided below.

<https://dalu.sharepoint.com/sites/learn-teach/SitePages/syllabus-appendix.aspx>

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