

**lectureFaculty of Science Course Syllabus  
Department of Biology/ Environmental Science**

Economic Botany: Plants & Civilization (ENVS 3226/BIOL 3226)  
Fall 2021

**Instructor:** Rajesh Rajaselvam      Email: [Rajesh.Rajaselvam@Dal.Ca](mailto:Rajesh.Rajaselvam@Dal.Ca)      Office: LSC 3082  
Office Hours: Monday/Wednesday 13:00 – 14:30 pm, Thursday by appointments

**Lectures:** Tuesday & Thursday 11:35 – 12:55 hrs

**Tutorials:** Wednesday 14:35 – 15:55 hrs (6 tutorials)

*\*Delivery of lectures & tutorials: In-person (if lockdown occurs; synchronous via Collaborate Ultra on Brightspace) and will NOT be recorded; therefore, it is very important that you attend lectures & tutorials.*

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### Course Description

This course explains the importance of plants and their role in human biological and cultural development. It gives an opportunity for students to learn the impact of plants on society for their use as a major food source, as medicine, and in the industrial and recreational world. Additionally, it explains the role of plants in ecosystem conservation and sustainability. Students will involve in hands-on field activities and seminars to investigate plants on the aspect of their uses and interactions.

### 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. (2020). Plants & Society, 8th Edition. NY: McGraw-Hill.

### Learning Objectives

- Evaluate the importance of plants and their different roles.
- Explain how humans use different plant parts.
- Understand plant life cycle.
- Explain the botanical aspects and origins of important food, medicinal and economically important plants.
- Discuss Green Revolution.
- Describe mechanisms involved in 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	08	Oct 05
Mid-Term Exam	24	Oct 21
Oral Presentation (group presentation)	10	Nov 16, 17 & 18
Quiz 2	08	Nov 30
Lab/Seminar Report Submission	20	Sep 29, Oct 27 & Nov 03 <i>(two)</i>
Final Exam	30	Scheduled by Registrar
<b>Total</b>	<b>100</b>	

### Oral Presentation

Students are expected to do a twelve-minute power point presentation (Group) on their chosen Medicinal Plant. If lockdown occurs, a virtual platform (Collaborate ultra on Brightspace) will be set to facilitate group presentations. Online common rooms will be created to facilitate group discussion throughout the course.

<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 covered in a clear and understandable fashion.	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
Main points were effectively summarized and a take-home message 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.

Tutorial/Seminar sessions are compulsory. Complete attendance of all lectures is highly recommended since it helps to improve your grade significantly.

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) and 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)<sup>(1)</sup>. 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<sup>(2)</sup>. 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 & quizzes.

#### 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(s) provided the examination was missed for a valid and credible reason (document/s may be required), the instructor or teaching assistant was notified prior to the examination start time.
- The makeup exam will be a different exam than the one given 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 prior to the start time of the tutorial with a valid and credible reason

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

<sup>(1)</sup>Academic Calendar Regulation: Missed or Late Academic Requirements due to Student Absence:  
[https://cdn.dal.ca/content/dam/dalhousie/pdf/dept/university\\_secretariat/Student%20Absence%20Regulation%20\(May%202018\).pdf](https://cdn.dal.ca/content/dam/dalhousie/pdf/dept/university_secretariat/Student%20Absence%20Regulation%20(May%202018).pdf)

<sup>(2)</sup>Student Declaration of Absence Form:  
<https://cdn.dal.ca/content/dam/dalhousie/pdf/campuslife/Health%20and%20wellness/FINAL%20Student%20Declaration%20of%20Absence%20Form.pdf>

## **Course Content**

### Schedule (Tentative)

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

##### Week 1

Sep 07 - Introduction

Sep 09 - 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)

##### Week 3

Sep 21 - Human nutrition (Chap 10)

Sep 23 - Origin of agriculture I (Chap 11)

##### Week 4

Sep 28 - Grasses (Chap 12)

Sep 30 - University closed

##### Week 5

**\*Oct 05 - Quiz 1 ... 8 marks**

Oct 07- Starchy staples (Chap 14)

##### Week 6

Oct 12 - Legumes (Chap 13)

Oct 14 - Feeding a hungry world (Chap 15)

##### Week 7

Oct 19 - Genetically Modified (GM) plants & Midterm Review

**\*Oct 21 - Midterm Exam (11:35 - 12:55 hrs)... 24 marks**

##### Week 8

Oct 26 - Medicinal Plants I (Chap 19)

Oct 28 - Medicinal Plants II (Chap 19/Recent Journal Articles)

##### Week 9

Nov 02 - Stimulating beverages I (Chap 16)

Nov 04 - Stimulating beverages II (Chap 16)

Week 10

Nov 08 - 12 - Fall Study Break

Week 11

**Nov 16 & 18 – Students’ presentation...10 marks**

Week 12

Nov 23 - Herbs and spices/ TA Discussion session (Chap 17)

Nov 25 - Psychoactive plants (Chap 20)/ **Discussion session**

Week 13

**Nov 30 - Quiz 02...8 marks**

**Dec 02 - Final Revision**

**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, (4 x 5) = 20 marks*

**Sep 15:** Tutorial 1: Field/Wild Plant identification (**Field report required: Lab 01/ Submission deadline: 29 Sep 2021**)

**Sep 29:** Tutorial 2: Importance of Plants/Plant cell & life cycles (Chap 2, 5 & 6 + Short video)

**Oct 13:** Tutorial 3: Economically important tropical plants: Greenhouse lab (**Report required: Lab 02/ Submission deadline: 27 Oct 2021**)

**Oct 20:** Tutorial 4: Genetically Modified plants (**Report required: Lab 03/ Submission deadline: 03 Nov 2021**)

**Oct 27:** Tutorial 5: Oral presentation introduction/preparation

**Nov 03:** Tutorial 6: Plants and the Environment (**Report required: Lab 04/ Submission: in class, at the end of the tutorial**)

**Nov 16, 17 & 18:** Students’ oral presentations

*\*Two weeks given to complete and submit the assignments/reports*

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## 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>

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