

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

**Economic Botany: Plants & Civilization (ENVS 3226/BIOL 3226)
Fall 2019**

Instructor: Rajesh Rajaselvam Email: Rajesh.Rajaselvam@Dal.Ca Office: LSC 3082
Office Hours: Tuesday/Friday 14:30 – 15:30 pm, Thursday by appointments

Lectures: Monday & Wednesday 13:05 – 14:25 hrs (LSC/C244)

Tutorials: 6 tutorials (80 min/tutorial)
Friday 13:05 – 14:25 pm (LSC/C244, Biology Greenhouse)

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. (2016). Plants & Society, 7th 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 02
Mid-Term Exam	24	Oct 21
Oral Presentation (group presentation)	10	Nov 25, 27 & 29
Quiz 2	08	Dec 02
Lab/Seminar Reports	20	TBA/See Brightspace
Final Exam	30	Scheduled by Registrar
Total	100	

Oral Presentation

Students are expected to do a 12 minute power point 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 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

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.

Course Content

Schedule (Tentative)

A. Lectures

Week 1

Sep 04 - Introduction & Plants in our lives (Chap1)

Week 2

Sep 09 - Diversity of plant life I (Chap 9)

Sep 11 - Diversity of plant life II (Chap 9)

Week 3

Sep 16 - Plant cell & Life cycles (Chap 2, 5 & 6)

Sep 18 - Human nutrition (Chap 10)

Week 4

Sep 23 - Origin of agriculture I (Chap 11)

Sep 25 – Grasses I (Chap 12)

Week 5

Sep 30 - Grasses II (Chap 12)

Oct 02- Quiz 1 ... 8 marks

Week 6

Oct 07 - Legumes & Starchy staples (Chap 13 & 14)

Oct 10 - Feeding a hungry world (Chap 15)

Week 7

Oct 16 – Genetically Modified (GM) plants & Midterm Review

Week 8

***Oct 21 - Midterm Exam (13:00 - 14:30 hrs)... 24 marks**

Oct 23 - Current research in plants I (*Guest lecture: Dr. Arunika Gunawardena*)

Week 9

Oct 28 - Stimulating beverages I (Chap 16)

Oct 30 - Stimulating beverages II (Chap 16)

Week 10

Nov 04 - Herbs and spices/ **TA Discussion session** (Chap 17)

Nov 06 - Medicinal Plants I (Chap 19)

Week 11

Nov 11 - 15 – Fall Study Break

Week 12

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

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

Week 13

Nov 25, 27 & 29 – Students’ presentation...10 marks

Week 14

Dec 02 - Final Revision & Quiz 02...8 marks

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

B. Seminar/Tutorial sessions

Attendance Mandatory, (4 x 5) = 20 marks

Sep 20: Tutorial 1: Field/Wild Plant identification (**Field report required: Lab 01**)

Sep 27: Tutorial 2: Importance of Plants/Plant life cycles (Short video)

Oct 11: Tutorial 3: Economically important tropical plants: Greenhouse lab (**Report required: Lab 02**)

Oct 18: Tutorial 4: Oral presentation introduction/preparation

Oct 25: Tutorial 5: Current research in plants/Lab visit (**Report required: Lab 03**)

Nov 08: Tutorial 6: Plants and the Environment (**Report required: Lab 04**)

Nov 25, 27 & 29: Students’ oral presentations

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://www.dal.ca/academics/important_dates.html

University Grading Practices

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

Missed or Late Academic Requirements due to Student Absence (policy)

https://www.dal.ca/dept/university_secretariat/policies/academic/missed-or-late-academic-requirements-due-to-student-absence.html

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/academic-advising.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/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

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>

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