

ENVS 3226.03/BIOL 3226.03: Economic Botany, Plants and Civilization

Dalhousie University, Halifax, NS

Instructor: Rajesh Rajaselvam (Rajesh.Rajaselvam@Dal.Ca)

Lecture: M, W & F (3 X 50 min per week)

Tutorial/Seminar: W (1hr and 20 min/every other week)

Office Hours: M 11:00 – 12:00 noon, W 14:30 – 15:30 pm, Thu by appointments

Telephone: 494-2831

Textbook: Levetin, E. and McMahon, K. (2012). *Plants & Society*, 6th Edition. NY: McGraw-Hill.

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. Students will involve in hands-on field activities and seminars to investigate plants on the aspect of their uses and interactions.

Learning Objectives

- Explain plant biology and how humans use different plant structures.
- Understand the botanical aspects and origins of important food, medicinal and economically important plants
- Evaluate the importance of plants and their different roles
- Analyze the plant structures and interactions with hands on field experiments

Schedule (*Tentative*)

Week 1: Introduction to Plant Life: The Botanical Connections to Our Lives

- Introduction
- Plants in our lives (Chap1)
- Diversity of plant life I (Chap 9)
- Diversity of plant life II (Chap 9)

Week 2: Introduction to Plant Life: Botanical Principles

- Plant cell/mitosis (Chap 2)
- Plant life cycles and meiosis (Chap 5 & 6)
- Human Nutrition (Chap 10)

Week 3: Plants as a Source of Food I

- Origin of Agriculture I (Chap 11)
- Origin of Agriculture II (Chap 11)
- Quiz 1 (Open-book)... **5 marks**

Week 4: Plants as a Source of Food II

- Grasses (Chap 12)
- Legumes (Chap 13)
- Starchy staples (Chap 14)

Week 5: Plants as a Source of Food III

- Feeding a hungry world I (Chap15)
- Feeding a hungry world II (Chap15)
- Midterm revision

Week 6: Mid-Term Exam

- Midterm exam (1:00 -2:30 pm)... *25 marks*
- Economically valuable plants: visiting lecture

Week 7: Economically Valuable Plants

- Stimulating beverages (Chap 16)
- Herbs and spices (Chap 17)
- Current research in plants

Week 8: Plants and Human Health

- Commercial products (Chap 18)
- Medicinal plants (Chap 19)
- Psychoactive plants (Chap 20)

Week 9: Students' Presentation (Monograph)..... *10 Marks*

Week 10: Plants and the Environment

- Various topics on current issues
- Plant Ecology (Chap 26)

Week 11: Optional/Open for Other Related Topics

- The impact of algae and fungi on human affairs I (Chap 22-25)
- The impact of algae and fungi on human affairs II (Chap 22-25)
- Quiz 2 *5 Marks*

Week 12: End-Term Related

- End-Term revision
- Sample questions/Practice exam

Week 13: End-Term Exam...*40 marks*

Labs as seminars/discussion sessions...(5 x 3)...*15 marks*

Tutorial/Lab 1: Field/Wild Plant identification (Field report required)

Tutorial/Lab 2: Plant life cycles/ Monograph introduction/Preparation for students' presentation (Monograph/Plant profile report required)

Tutorial/Lab 3: Mid-term Exam/MCQ only

Tutorial/ Lab 4: Importance of legumes/Commercial plant products

Tutorial/ Lab 5: Seminar: Food and Beverages: Haskap berry of LaHave Forest (Report required)

Tutorial/ Lab 6: Students' presentations

Tutorial/ Lab 7: Biofuel (seminar)

Evaluation of Student Performance

Assignment, Exam, or Presentation	Marks %	Date
Quiz 1	05	xxx
Mid-Term Exam	25	xxx
Oral Presentation (group presentation)	10	xxx
Quiz 2	05	xxx
Lab/Seminar Reports	15	xxx
End-Term Exam	40	xxx
Total	100	

Term Project: Plant Species Profile/Monograph

A three page monograph (description, distribution and uses) on a Plant/Tree Species should be submitted at the end of the course. Students are expected to do a 10 minute power point presentation (Group) on their chosen Plant/Tree species.

<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 topic was covered in a clear and understandable fashion.	5	4	3	2	1
The presentation was very well timed.	5	4	3	2	1
Audio-visual resources were incorporated and used effectively.	5	4	3	2	1
The student responded effectively to questions posed by the audience.	5	4	3	2	1
Main points were effectively summarized 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: The grading scale is the same as used in the Biology core classes at Dalhousie:

90-100 **A+**
85-89 **A**
80-84 **A-**
75-79 **B+**
70-74 **B**
65-69 **B-**
60-64 **C+**
56-59 **C**
53-55 **C-**
50-52 **D**
<50 **F**

Academic Integrity

Zero tolerance to plagiarism is maintained according to Dalhousie's rules and regulations. Academic honesty/submitting your own work is considered as very important in this course.

Attendance

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

BBL (course web-tool) will be used for regular updates and announcements

Questions?

Email: Rajesh.Rajaselvam@dal.ca