

BIOL2080 Economic Botany

Course Outline: Winter 2022

Instructor: Dr. Julie Smit
Email: through Course Blackboard Website

Lectures: 11:30 am – 12:50 pm Tuesdays and Thursdays
Synchronous lectures on Blackboard Collaborate (**Virtual Classroom**),
moving to in-person Feb 1 (Erie Hall room 2123)

Office Hours: Mondays (**email**) and Wednesdays (**virtual classroom**) 1:00 – 2:00
or by Appointment

Graduate Teaching Assistants:
Carly Demers
Paige Desloges Baril
Email: through Blackboard Website (*Lead Teaching Assistants*)

Course Website: Blackboard

Materials:

Recommended text:

Levetin, E. and K. McMahon. 2020. *Plants and Society*. 8th Edition.
New York, NY: McGraw Hill Education.

Textbook is available at the bookstore in two formats:

1) an electronic textbook:

Plants And Society- Ise 180 Day Ebook Download Ed: 8 at a cost of \$75.55

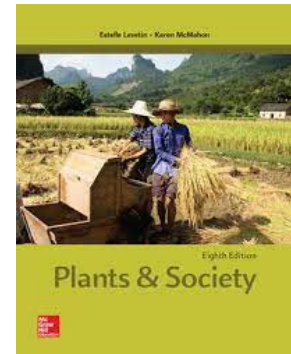
2) a paperback (presently on order):

Plants and Society Ed: 8 at a cost of \$142.40

Note: 1. *Earlier versions (6th or 7th editions) are other options.*
2. *Although textbook is not required, course material aligns with it, so it is highly recommended.*

Course Description:

Earth's biosphere is the product of plant activity and animal life and is ultimately dependent on plants. This course provides basic plant biology as a background to a discussion of the relationship between humans and plants, particularly economically important plants and their products. Plants used for food, flavours, drugs, stimulants, fuel and/or industrial raw materials will be explored. (Prerequisite: BIOL-1111 and BIOL-1101 or permission of the instructor.) (3 lecture hours.)



Course Learning Outcomes:

When you have completed this course, you should be able to:

1. Define plant terms, including “plant” (relating them to the fundamental properties of life and its position among all living organisms and “economic botany”).
2. Describe and differentiate between the four major plant groups, including a comparison of the life cycles for a representative within each group.
3. Compare two types of angiosperms, monocots and eudicots.
4. Differentiate between two types of plant classification, delving into the relevance to the evolution of plants by natural selection.
5. Categorize and describe plant structures at all levels of organization, relating them to their functions.
6. Discuss the two types of growth found in seed-producing plants and the cellular physiological processes that provide the energy (via photosynthesis and cellular respiration) and mechanisms (molecular transport) required for plant growth.
7. Discuss the history of agricultural development and domestication of plants.
8. Describe various economically-important crop species, including grass crop species, legume crops, starch plants in terms of the growth and/or development of these plants, their use by humans, and how humans have affected crop production through mechanization and technological manipulation (positive and negative aspects).
9. Discuss different types of reproduction, delving into angiosperm sexual reproduction (flower and fruit production) and its life cycle.
10. Describe basic plant Mendelian genetics to calculate the probability of a particular outcome.
11. Describe importance of plant components in growth and/or development in terms of human use of other food-related plants: caffeine-containing plants and herbs and spices.
12. Differentiate between different macronutrients and micronutrients and discuss their importance in terms of diet.
13. Discuss the various industrial uses of (primarily) non-edible plants in industry.
14. Compare the use of plants for medicinal versus psychoactive drugs.
15. Explain other types of important plants and their interactions with other plants and non-plant organisms in producing products of interest to society.

Grading:

Activities

- includes assignments, in-class activities, etc.

Midterm I

February 8

Midterm II

March 10

Posters (or other activity)

Group + Topic* February 3

Abstract March 3

Submission: March 30

Presentation April 5

Session: April 7

tentative

Final Exam

TBA

14% of mark

20% of mark

23% of mark

23% of mark

20% of mark

*watch for link to Poster Group + Topic google site

Academic Expectations:

1. Online lectures will be provided during scheduled times using the Virtual Classroom on Blackboard. Students are expected to attend lectures and participate in both in-class and out-of-class activities.
2. Recordings of lectures will be made available to provide some flexibility.
3. Midterms and exam will be based on material covered in chapters indicated in the schedule, with a focus on material presented during lecture.
4. Scheduling conflicts for midterms must be brought to the instructor's attention as soon as possible, at least 2 weeks prior to the conflict time, so that alternative arrangements can be made. There should be no conflicts with the exam time.
5. If you are unable to complete an assessment due to illness, the University has an official policy for how to report illness during the Winter 2021 semester: Go to http://ask.uwindsor.ca/app/answers/detail/a_id/577 to complete and submit a "Report an Illness". No documentation is required but please note that it is an academic offense to report a sickness if you are not, in fact, sick. If you miss a midterm or exam, you must make arrangements with the course instructor for an alternate assessment (or student will receive an Incomplete grade). Any make-up midterms or exam may be composed of different question types (short answer versus multiple-choice) than the scheduled tests.
6. All posted final grades are unofficial and non-negotiable.

Tentative Timetable: (chapters identified for Levetin & McMahon textbooks)

Dates	Topic*	Chapter
January	Introduction to Economic Botany (plants and their uses)	1 (pp. 2, 6-8)
	Plant Diversity and Systematics (including discussion of Linnaeus's & Darwin's contributions)	9, 8
February	Plant Components and Growth (cells - organism, cell division)	1 (pp. 2-4), 2, & 3
	Physiological Processes: (energy production and movement of water and sugars)	4
March	Agriculture (Food): Including history, crops (grasses, legumes, starches), improving crop production (green revolution & biotechnology)	11-15
	Reproduction in Angiosperms (sexual & asexual processes)	5 & 6
	Plant Genetics and conserving Genetic Diversity	7 & 15 (pp. 247-251)
	Drinks: Stimulants/Alcoholic	16, 24
	Spices and herbs	17
	Nutrition	1 (pp. 8-13), 10
April	Drugs	19 - 20
	Industrial Materials	18
	Other Plant Interactions (if time)	

*Note: Various topics may overlap and/or be discussed out of sequence.

Plagiarism and Academic Dishonesty:

Students are expected to conduct themselves with integrity (see Senate Bylaw 31: Student Affairs and Integrity). This includes expectations that all students will follow the Windsor Student Code of Conduct:

Code: *“Students of the University of Windsor pursue all endeavours with honour and integrity, and will not tolerate or engage in academic or personal dishonesty”*

Pledge: *“As a student of the University of Windsor, I pledge to pursue all endeavours with honour and integrity, and will not tolerate or engage in academic or personal dishonesty”*

Description: As defined in the Windsor Student Code of Conduct and Senate Bylaw 31 on Academic Integrity, this pledge covers but is not limited to cheating, plagiarizing or misrepresenting the ideas of someone else, unauthorized assistance/collaboration, and falsifying data.

Therefore, plagiarism and other forms of Academic Dishonesty will not be tolerated, and all instances will be reported to the Associate Dean of Science for disciplinary action (see Senate Bylaw 31, sections relating to Misconduct). Since tests/exams in this course are protected by copyright, reproduction or dissemination of their contents or format is strictly prohibited. Students who violate this rule or engage in any other form of academic dishonesty will be subject to disciplinary action. Further information is available through the Office of Academic Integrity (uwindsor.ca/aio).

All assessments, including grading, for this course will abide to the University of Windsor Academic Evaluation Procedures (Senate Bylaw 51). Other information relating to this bylaw, such as the Student Code of Conduct and the Conduct of Exams and Tests policies, can be found online at

http://www.uwindsor.ca/secretariat/sites/uwindsor.ca.secretariat/files/student_code_of_conduct_march_13_2015.pdf

and

http://www.uwindsor.ca/registrar/sites/uwindsor.ca.registrar/files/summer-exam-slots_0.pdf respectively.

Student Evaluation of Teaching:

The Student Evaluation of Teaching (SET) will be administered at the end of the semester.