BIOL 341, Plant Physiology, Winter Term (2023)

CALENDAR DESCRIPTION

The course examines various aspects of plant cell biology, physiology, and biochemistry including carbon and nitrogen metabolism (photosynthesis, respiration, etc.), water relations, mineral nutrition, response to environmental stress, roles of plant hormones, plant biotechnology.

PREREQUISITE BIOL 205/3.0. EXCLUSION No more than 3.0 credits from BIOL 301/3.0; BIOL 341/3.0.

Professor: Dr. Wayne Snedden - sneddenw@queensu.ca
Office Hours: TBA, see onQ course site
Contact Email: **sneddenw@queensu.ca**

Lectures: Tues 12:30, Thurs 11:30, Fri 1:30. Dupuis Rm 215

Learning Objectives: The main goal of Biol341 is to help students acquire a comprehension of plant biology from the subcellular to the organismal level. The course explores various topics in plant cell biology, physiology, and biochemistry including primary and secondary metabolism, photosynthesis, respiration, water relations, mineral nutrition, response to environmental stress, roles of plant hormones, and plant biotechnology. The course objectives, broadly speaking, are to help students to: understand the relationship between structure and function as it relates to plant macromolecules, cells and tissues, understand the interaction between the environment and plant growth and development, and to gain an appreciation of the metabolic and physiological processes unique to plants

Learning Hours: The table below provides an **estimate** of hours of study for Biol341. This is for general reference purposes only and is not intended to describe the precise duration of time the course will require. The nature of assignments will vary year to year and thus the allocation of time to various activities will vary accordingly. A 3.0-unit course would normally require a total of 110 to 130 total learning hours (or hours on task) and Biol 341 will fall within that window on any given calendar year. It is prudent to keep in mind however that time commitment to some tasks will vary widely among students depending upon individual aptitude, level of background, etc.

Teaching method		*Average hours per week*	*Number of weeks*	*Total hours*
In-class hours	Lectures	3	12	36
	Seminars			
	Laboratories			
	Tutorials			
	Group learning	3	6	~18
	Individual instruction			
Other	Online activities	3	6	~18
	Private study	4	12	~48
Total learning hours				~120 (typical range 110-130)

Course Structure: The course explores a broad range of concepts in plant physiology. Online quizzes and in-class group quizzes will test all material covered up to the final exam. The final exam will test all material covered in the course. The nature of graded assignments will vary year-to-year but could include one or more of the following: making a poster (or popular press article), preparing a recorded seminar on a scientific paper, online quizzes, peer-assessment of classmates' seminars and press articles.

Textbooks/Readings: Required: *Fundamentals of Plant Physiology Taiz et al (2018, used is fine), Sinauer Oxford Press, ISBN: 1605357901, ISBN13: 9781605357904*; **Alternate Textbook**: Plant Physiology and Development, 6th edition (2015 or later), by L. Taiz et al, Sinauer Press, ISBN-10: 1605352551, ISBN-13: 978-1605352558 (used copy is fine)

Grading Scheme

Group quizzes (3 x 5%)	15%
Seminar project (oral, recorded)	13%
Pop press article (written)	20%
Peer reviews	10%
Online Quizzes (4)	12%
Final Exam	30%

Grading Method: Some components will be graded using numerical percentage marks. Other components will receive letter grades, which for purposes of calculating your course average will be translated into numerical equivalents using the Faculty of Arts and Science Letter Grade Input Scheme. When letter grades are employed, the following scale will be employed for purposes of calculating your course average:

Arts & Science Letter Grade Input Scheme

Assignment mark	**Numerical value for calculation of final mark**
A+	93
A	87
A-	82
B+	78
B	75
B-	72
C+	68
C	65
C-	62
D+	58
D	55
D-	52
F48 (F+)	48
F24 (F)	24
F0 (0)	0

Your course average will then be converted to a final letter grade according to Queen's Official Grade Conversion Scale:

Queen's Official Grade Conversion Scale

Grade	**Numerical Course Average (Range)**
A+	90-100
A	85-89
A-	80-84
B+	77-79
B	73-76
B-	70-72

C+	67-69
C	63-66
C-	60-62
D+	57-59
D	53-56
D-	50-52
F	49 and below

Accommodations: Queen's University is committed to achieving full accessibility for people with disabilities. Part of this commitment includes arranging academic accommodations for students with disabilities to ensure they have an equitable opportunity to participate in all of their academic activities. If you are a student with a disability and think you may need accommodations, you are strongly encouraged to contact the **Queen's Student Accessibility Services (QSAS)** and register as early as possible. For more information, including important deadlines, please visit the QSAS website.

Considerations: Queen's University is committed to providing academic consideration to students experiencing extenuating circumstances that are beyond their control and are interfering with their ability to complete academic requirements related to a course for a short period of time, not to exceed three months. Students receiving academic consideration must meet all essential requirements of a course. The Senate Policy on Academic Consideration for Students in Extenuating Circumstances was approved at Senate in April, 2017 (info here) Each Faculty has developed a protocol to provide a consistent and equitable approach in dealing with requests for academic consideration for students facing extenuating circumstances. Arts and Science undergraduate students can find the Faculty of Arts and Science protocol and the portal where a request can be submitted here. Students in other Faculties and Schools who are enrolled in this course should refer to the protocol for their home Faculty. If you need to request academic consideration for this course, you will be required to provide the name and email address of the instructor/coordinator: Dr. Snedden.

Grievances: It is the student's responsibility to contact Dr. Snedden within 2 weeks of receiving a grade if there are any problems.

Academic Integrity: Queen's students, faculty, administrators and staff therefore all have responsibilities for supporting and upholding the fundamental values of academic integrity. Academic integrity is constituted by the five core fundamental values of honesty, trust, fairness, respect and responsibility (see http://www.academicintegrity.org) and by the quality of courage. These values and qualities are central to the building, nurturing and sustaining of an academic community in which all members of the community will thrive. Adherence to the values expressed through academic integrity forms a foundation for the "freedom of inquiry and exchange of ideas" essential to the intellectual life of the University. Students are responsible for familiarizing themselves with and adhering to the regulations concerning academic integrity. General information on academic integrity is available at Academic Integrity @ Queen's University, along with Faculty or School specific information. Departures from academic integrity include, but are not limited to, plagiarism, use of unauthorized materials, facilitation, forgery and falsification. Actions which contravene the regulation on academic integrity carry sanctions that can range from a warning, to loss of grades on an assignment, to failure of a course, to requirement to withdraw from the university.

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