

## COURSE SYLLABUS

COURSE TITLE:	BIOL 331 Plant Physiology	TERM:	T1 2016-17
COURSE CODE:	82699	DELIVERY:	Lecture & Practicum (Lab)
COURSE CREDITS:	3.0	START DATE:	September 7 <sup>th</sup> 2016
CLASS SECTION:	01	LAB LOCATION:	Thorvaldson G74B
CLASS LOCATION:	Biology 125	LAB TIME:	Thursdays 1:30 to 5:20 pm
CLASS TIME:	12:30 to 1:20 pm (M,W,F)		Fridays 1:30 to 5:20 pm
WEBSITE:	via Blackboard		

### Course Description

Three sections which deal respectively with plant cell physiology, the physiology of the whole plant and the physiology of plant growth and morphogenesis.

Prerequisite(s): Biology 222

### Learning Outcomes

By the completion of this course, students will be expected to:

1. have a detailed understanding of, and be able to communicate, the physiological principles (concepts) that govern plant function, growth and development.
2. demonstrate and convey these principles in a style appropriate for the field.
3. conduct basic physiological experiments in a laboratory setting, interpret and communicate the results.
4. integrate and correctly attribute ideas from published scientific sources in their work.
5. apply physiological principles and critical thinking to explain both challenges and solutions that plants face to living in their physical environment.

**Note:** The University of Saskatchewan Learning Charter is intended to define aspirations about the learning experience that the University aims to provide, and the roles to be played in realizing these aspirations by students, instructors and the institution. A copy of the Learning Charter can be found at:

[http://www.usask.ca/university\\_secretary/LearningCharter.pdf](http://www.usask.ca/university_secretary/LearningCharter.pdf)

More information on the Academic Courses Policy on course delivery, examinations and assessment of student learning can be found at: [http://www.usask.ca/university\\_secretary/council/academiccourses.php](http://www.usask.ca/university_secretary/council/academiccourses.php)

### Course Overview

The course is offered as three class periods, three times per week and a weekly lab period. Some of the labs will be completed over several weeks. The course provides an introduction to plant physiology: aspects of plant metabolism, nutrient assimilation and hormone signalling. Emphasis is made on how plants respond to their environment by altering gene expression, protein complement, cellular metabolism and overall plant structure.

## **Suggested order of topics**

This the suggested order of topics for the course. Each will comprise several lectures. The section on hormones and signaling will be delivered via student presentations in class and/or in the scheduled lab periods. The classes are ordered to correspond with topics in the lab. However, because the lab exercises are based on live plant growth, the instructors reserve the option to change the order of topics in the lecture or lab as deemed necessary to achieve better integration between the lab and lecture sections.

**Topic 1: Water Balance and Solute Transport**

**Topic 2: Plant Nutrition**

**Topic 3: Nutrient Assimilation**

**Topic 4: Photosynthesis and respiration**

**Topic 5: *Hormones and signalling - student presentations***

**Topic 6: Ecophysiology and Stress Physiology (time permitting)**

**Last day to withdraw from course without academic penalty is November 15<sup>th</sup> 2015.**

### **Laboratory class information:**

A laboratory schedule and lab manual will be posted to the course Blackboard site.

## **Instructors**

### **Contact Information:**

Dr. Christopher Todd  
Instructor

Room 143 Biology Building

966-4497  
chris.todd@usask.ca

## **Resource Material**

**Textbook:** Plant Physiology and Development, 6<sup>th</sup> edition by Taiz, Zeiger, Møller and Murphy. Sinauer Publishing

## Downloads

These will be available as appropriate through the course Blackboard site. The only document that you are required to download and read is the course syllabus. **Please note that instructor's PowerPoint slides or lecture notes may be provided to you as a courtesy.** You are not required to download or print these slides/notes. While the instructor will endeavor to have the lecture PowerPoint slides/notes posted sometime in advance of the lecture, **this is not a guarantee.**

## Grading Scheme

Midterm exam	20
Final exam	35
Lab Reports	25
Group presentation	20
Total	100%

## Evaluation Components

### Midterm Exam:

**Value:** 20% of final course grade  
**Date:** Tentative Date: Wednesday Oct 19 - **to be confirmed**  
**Length:** 50 minutes  
**Format:** short and long answer written questions  
**Description:** Based on all lecture material prior to the exam date unless otherwise indicated

### Final Exam:

**Value:** 35% of final course grade  
**Date:** Consult Final Exam Schedule  
**Length:** 3 hours  
**Format:** short and long answer written questions  
**Description:** The exam is comprehensive in that it will cover all lecture material *including the background and material for the student oral presentations*. However, material delivered after the midterm exam will be emphasized. Calculators and all other electronic devices are not allowed.

### Laboratory reports

**Value:** 25% of final course grade  
**Date:** see Laboratory Schedule  
**Format:** written lab reports  
**Description:** The desired format and expectation for the lab reports will be presented in the lab period.

### Group presentations:

**Value:** 20% of final course grade  
**Date:** Scheduled by group after the midterm exam during class or lab periods  
**Length:** 35-40 minutes in class  
**Format:** Group oral presentations  
**Description:** Small group presentations covering a plant signaling molecule, its role in a physiological process and current research into its function.

## University of Saskatchewan Grading System

Students in BIOL 331 are reminded that the University has established a grading system to be used in all of its courses. Information on literal descriptors for grading at the University of Saskatchewan (reproduced below) can be found at: <http://students.usask.ca/current/academics/grades/grading-system.php>

## Scheduling of Exams

Students must bring their current University of Saskatchewan student card to all exams and be prepared to present it for verification purposes. Entry into certain campus buildings where exams may be held, also requires a valid student card.

It is forbidden for students to utilize in any way during an exam, any electronic device (e.g., cell phone, dictionary, palm pilot, translator, etc.). This includes calculators because these are not required for any exam.

Midterm and final examinations, and the lab exam, must be written on the date scheduled. Final examinations may be scheduled at any time during the examination period in December 2013; students should therefore avoid making prior travel, employment, or other commitments for this period.

In the event that a student is absent from the **midterm exam** through no fault of his/her own due to a medical emergency, death in the family, or other valid reasons, documentation must be provided explaining the absence, to assist in the determination of whether permission will be granted for the student to write a deferred mid-term exam. Students absent for the Mid-Term Lecture Exam **must advise their instructor in person or by telephone (not by email) and initiate arrangements for writing a Deferred Mid-Term Exam, within 3 working days of the missed exam**, in order to avoid being assigned a grade of zero for the exam.

If a student is absent from the **final exam** through no fault of his or her own for medical or any other valid reason, **he/she must apply to the Dean's Office of the College in which he/she is registered for an opportunity to write a Deferred Final Exam, within 3 working days of the missed exam**. Documentation must also be provided to explain the absence from the final exam. Deferred exams may utilize a different format than the regular exam, at the sole discretion of the instructors.

Students are encouraged to review all examination policies and procedures:

<http://www.usask.ca/calendar/exams&grades/examregs/>

## Student Feedback

Lab report feedback will usually be available within one week. Midterm and final exam grades will be communicated via the course Blackboard site and exams will be available for student review by appointment. Grades for oral reports will be generated through a combination of instructor and peer evaluation of performance

## Attendance Expectations for Laboratory Classes

Students are expected to attend all scheduled lab periods and complete all lab exercises during the scheduled lab times. No make-up labs will be scheduled. **Failure to turn in a lab report on time without a valid excuse will result in a grade of zero.**

### **Integrity Defined (from the Office of the University Secretary)**

The University of Saskatchewan is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the Student Conduct & Appeals section of the University Secretary Website and avoid any behavior that could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University.

All students should read and be familiar with the Regulations on Academic Student Misconduct ([http://www.usask.ca/university\\_secretary/honesty/StudentAcademicMisconduct.pdf](http://www.usask.ca/university_secretary/honesty/StudentAcademicMisconduct.pdf)) as well as the Standard of Student Conduct in Non-Academic Matters and Procedures for Resolution of Complaints and Appeals ([http://www.usask.ca/university\\_secretary/honesty/StudentNon-AcademicMisconduct2012.pdf](http://www.usask.ca/university_secretary/honesty/StudentNon-AcademicMisconduct2012.pdf))

For more information on what academic integrity means for students see the Student Conduct & Appeals section of the University Secretary Website at: [http://www.usask.ca/university\\_secretary/pdf/dishonesty\\_info\\_sheet.pdf](http://www.usask.ca/university_secretary/pdf/dishonesty_info_sheet.pdf)

### **Examinations with Disability Services for Students (DSS)**

Students who have disabilities (learning, medical, physical, or mental health) are strongly encouraged to register with Disability Services for Students (DSS) if they have not already done so. Students who suspect they may have disabilities should contact DSS for advice and referrals. In order to access DSS programs and supports, students must follow DSS policy and procedures. For more information, contact DSS at 966-7273 or [dss@usask.ca](mailto:dss@usask.ca).

Students registered with DSS may request alternative arrangements for mid-term and final examinations. Students must arrange such accommodations through DSS by the stated deadlines. Instructors shall provide the examinations for students who are being accommodated by the deadlines established by DSS.

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Prepared (August 2016) by Christopher Todd