



Oregon State University

Ecampus

Course Name: Plant Physiology

Course Number: BOT 331

Credits: 4 Credits

Course Description

Survey of physiological processes in plants, including photosynthesis and plant metabolism, mineral nutrition and ion uptake processes, plant cell/water relations and transpiration, and regulation of plant growth and development. Lecture/recitation. **Prerequisites:** BI 213 or BI 213H and CH 123 or CH 223.

Communication

Please post all course-related questions in the General Discussion Forum so that the whole class may benefit from our conversation. Please email your instructor for matters of a personal nature. The instructor will reply to course-related questions and email within 24-48 hours. I will strive to return your assignments and grades for course activities to you within five days of the due date.

Course Credits

6-8 hours/week spent on lecture content: listening to lectures, taking notes (study questions provide guide), reading, and posting to the weekly discussion forum. 10 hours/term spent on 4 recitation assignments, and 10 hours/term spent on practice exams and taking the scored exams.

Technical Assistance

If you experience computer difficulties, need help downloading a browser or plug-in, assistance logging into the course, or if you experience any errors or problems while in your online course, contact the OSU Help Desk for assistance. You can call (541) 737-3474, email osuhelpdesk@oregonstate.edu or visit the [OSU Computer Helpdesk](#) online.

Learning Resources

The textbook is highly recommended:

Plant Physiology and Development, 6th ed., Taiz, Zeiger, Moller and Murphy. ISBN: 9781605352558

Narrated lectures, study questions and practice exams are provided on the course's Canvas site.

Note to prospective students: Please check with the OSU Bookstore for up-to-date information for the term you enroll ([OSU Bookstore Website](#) or 800-595-0357). If you purchase course materials from other sources, be very careful to obtain the correct ISBN.

Canvas

This course will be delivered via Canvas where you will interact with your classmates and with your instructor. Within the course Canvas site you will access the learning materials, such as the syllabus, class discussions, assignments, and exams. To preview how an online course works, visit the [Ecampus Course Demo](#). For technical assistance, please visit [Ecampus Technical Help](#).

Measurable Student Learning Outcomes

At the end of this course, students will be able to:

1. **Describe** the organization of a plant body and a plant cell.
2. **Explain** how cell behaviors account for plant morphology, anatomy and behaviors.
3. **Predict** the change in cell behavior for a change in a specific protein.
4. **Explain** the processes that direct flow of water in a plant.
5. **Identify** the mechanisms that direct flow of energy and materials in plant cells.
6. **Evaluate** how plants use the energy of photons to fix carbon.
7. **Identify** the mechanisms that direct the flow of information in a plant cell.
8. **Illustrate** the events of the stages of a plant life cycle.
9. **Describe** how events in meristems connect to a plant's morphology and anatomy.
10. **Evaluate** how a plant mitigates biotic and abiotic stress.

Evaluation of Student Performance

Lecture: There are 3-**60 point** exams and 2-**30 point** exams and a final exam worth **125 points**. Exams will comprise true/false (explain why), short answer questions and multiple-choice. Practice exams are available prior to exams.

There is also a weekly discussion forum worth **7.5 points** (Total = **75 points**).

Recitation: There are four assignments (essay with figures) that involve connecting events at the cellular level to observable plant behaviors. Essays are posted within a forum and students post comments to other student essays. Each assignment is worth **20 points** (Total = **80 points**).

The total points possible are **520**. A grading scale will be posted before the final exam.

Course Schedule

Week	Topic	Reading Assignments	Learning Activities
1	Overview of plant physiology Fundamentals of cells	Chapter 1, p 1-49.	Online discussion Start Assignment 1

Week	Topic	Reading Assignments	Learning Activities
2	Cell walls and water relations Transpiration stream Regulating stomata	Chapter 14, p 379-401 Chapter 3, p83-98 Chapter 4, p99-116 Chapter 10, p269-276	Online discussion Post Assignment 1 Comment on student's post Exam1
3	Mineral nutrition Flow of nutrients	Chapter 5, p 119-142 Chapter 6, p143-163 Chapter 13, p353-367	Online discussion Start Assignment 2 Exam2
4	Photosynthesis Photorespiration	Chapter 7, p171-195 Chapter 8, p203-230	Online discussion Post Assignment 2 Comment on student's post
5	Photosynthesis ecology Phloem loading Cellular respiration	Chapter 9, p245-262 Chapter 11, p285-308 Chapter 12, p317-339	Online discussion Exam3
6	Signal transduction Hormones Signals from the sun	Chapter 15, p407-445 Chapter 16, p447-473	Online discussion Start Assignment 3 Exam4
7	Embryogenesis Root system Shoot system	Chapter 17, p477-508 Chapter 18, p513-526, p545-549 Chapter 19, p572-582	Online discussion Post Assignment 3 Comment on student's post
8	Tropisms Leaf development Floral development	Chapter 18, p528-542 Chapter 19, p553-565 Chapter 20, p591-621	Online discussion Start Assignment 4 Exam5
9	Gametogenesis Pollination Fruit ripening	Chapter 21, p625-663	Online discussion Post Assignment 4 Comment on student's post
10	Biotic interactions Abiotic stress	Chapter 23, p693-726 Chapter 24, p731-760	Online discussion
Finals			Final Exam

Course Policies

Discussion Participation

Students are expected to participate in all graded discussions. While there is great flexibility in online courses, this is not a self-paced course. You will need to participate in our discussions by posting three times each week. The first post is due no later than Thursday, and your second and third posts are due no later than Saturday.

Makeup Exams

Makeup exams will be given only for missed exams excused in advance by the instructor. Excused absences will not be given for airline reservations, routine illness (colds, flu, stomach aches), or other common ailments. Excused absences will generally not be given after the absence has occurred, except under very unusual circumstances.

Exam Time Limits

Exams in this class have a time limit. Once you start an exam, the exam must be completed before the time expires. Questions answered after the expired time will not be counted.

Incompletes

Incomplete (I) grades will be granted only in emergency cases (usually only for a death in the family, major illness or injury, or birth of your child), and if the student has turned in 80% of the points possible (in other words, usually everything but the final paper). If you are having any difficulty that might prevent you completing the coursework, please don't wait until the end of the term; let me know right away.

Guidelines for a Productive and Effective Online Classroom

Students are expected to conduct themselves in the course (e.g., on discussion boards, email) in compliance with the university's regulations regarding civility.

Civility is an essential ingredient for academic discourse. All communications for this course should be conducted constructively, civilly, and respectfully. Differences in beliefs, opinions, and approaches are to be expected. In all you say and do for this course, be professional. Please bring any communications you believe to be in violation of this class policy to the attention of your instructor.

Active interaction with peers and your instructor is essential to success in this online course, paying particular attention to the following:

- Unless indicated otherwise, please complete the readings and view other instructional materials for each week before participating in the discussion board.
- Read your posts carefully before submitting them.
- Be respectful of others and their opinions, valuing diversity in backgrounds, abilities, and experiences.
- Challenging the ideas held by others is an integral aspect of critical thinking and the academic process. Please word your responses carefully, and recognize that others are expected to challenge your ideas. A positive atmosphere of healthy debate is encouraged.

Statement Regarding Students with Disabilities

Accommodations for students with disabilities are determined and approved by Disability Access Services (DAS). If you, as a student, believe you are eligible for accommodations but have not obtained approval please contact DAS immediately at 541-737-4098 or at <http://ds.oregonstate.edu>. DAS notifies students and faculty members of approved academic accommodations and coordinates implementation of those accommodations. While not required, students and faculty members are encouraged to discuss details of the implementation of individual accommodations.

Accessibility of Course Materials

All materials used in this course are accessible. If you require accommodations please contact [Disability Access Services \(DAS\)](#). Additionally, Canvas, the learning management system through which this course is offered, provides a [vendor statement](#) certifying how the platform is accessible to students with disabilities.

Expectations for Student Conduct

Student conduct is governed by the university's policies, as explained in the [Student Conduct Code](#).

Academic Integrity

Students are expected to comply with all regulations pertaining to academic honesty. For further information, visit [Student Conduct and Community Standards](#), or contact the office of Student Conduct and Mediation at 541-737-3656.

OAR 576-015-0020 (2) Academic or Scholarly Dishonesty:

- a) Academic or Scholarly Dishonesty is defined as an act of deception in which a Student seeks to claim credit for the work or effort of another person, or uses unauthorized materials or fabricated information in any academic work or research, either through the Student's own efforts or the efforts of another.
- b) It includes:
 - i) CHEATING - use or attempted use of unauthorized materials, information or study aids, or an act of deceit by which a Student attempts to misrepresent mastery of academic effort or information. This includes but is not limited to unauthorized copying or collaboration on a test or assignment, using prohibited materials and texts, any misuse of an electronic device, or using any deceptive means to gain academic credit.
 - ii) FABRICATION - falsification or invention of any information including but not limited to falsifying research, inventing or exaggerating data, or listing incorrect or fictitious references.
 - iii) ASSISTING - helping another commit an act of academic dishonesty. This includes but is not limited to paying or bribing someone to acquire a test or assignment, changing someone's grades or academic records, taking a test/doing an assignment for someone else by any means, including misuse of an electronic device. It is a violation of Oregon state law to create and offer to sell part or all of an educational assignment to another person (ORS 165.114).
 - iv) TAMPERING - altering or interfering with evaluation instruments or documents.
 - v) PLAGIARISM - representing the words or ideas of another person or presenting someone else's words, ideas, artistry or data as one's own, or using one's own previously submitted work. Plagiarism includes but is not limited to copying another person's work (including unpublished material) without appropriate referencing, presenting someone else's opinions and theories as one's own, or working jointly on a project and then submitting it as one's own.
- c) Academic Dishonesty cases are handled initially by the academic units, following the process outlined in the University's Academic Dishonesty Report Form, and will also be referred to SCCS for action under these rules.

Conduct in this Online Classroom

Students are expected to conduct themselves in the course (e.g., on discussion boards, email postings) in compliance with the [university's regulations regarding civility](#).

Tutoring

[NetTutor](#) is a leading provider of online tutoring and learner support services fully staffed by experienced, trained and monitored tutors. Students connect to live tutors from any computer that has Internet access. NetTutor provides a virtual whiteboard that allows tutors and students to work on problems in a real time environment. They also have an online writing lab where tutors critique and return essays within 24 to 48 hours. Access NetTutor from within your Canvas class by clicking on the Tools button in your course menu.

OSU Student Evaluation of Teaching

Course evaluation results are extremely important and are used to help me improve this course and the learning experience of future students. Results from the 19 multiple choice questions are tabulated anonymously and go directly to instructors and department heads. Student comments on the open-ended

questions are compiled and confidentially forwarded to each instructor, per OSU procedures. The online Student Evaluation of Teaching form will be available toward the end of each term, and you will be sent instructions via ONID by the Office of Academic Programs, Assessment, and Accreditation. You will log in to "Student Online Services" to respond to the online questionnaire. The results on the form are anonymous and are not tabulated until after grades are posted.