

EEB 162 Plant Physiology Summer 2009

Course website: www.lsic.ucla.edu/classes/summer09/

Lectures: M W F 1:00-3:20 PM
Room: Botany 325
Text: Plant Physiology, Taiz & Zeiger, 4th Ed.
Web Site: <http://4e.plantphys.net/>

Instructor: Brian R. Zutta
Office Hours: Mon 4-5 PM, Warren Hall 23-148
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Teaching Assistant: Travis Brooks
Labs: R 1:00-4:20 PM
T 9:00 AM-12:20 PM
Room: Young 2337

Course Objectives

This course focuses on whole plant physiology, from biochemical processes to larger plant functions. We will discuss dynamic processes, such as photosynthesis, growth, development and reproduction. We will also discuss plant physiology in the context of ecology and evolution. The lecture and laboratory are co-requisites. In the laboratory, students will apply physiological techniques to answer questions on plant function.

Date		Lecture	Reading
3	1	Overview of basic botany, plant diversity, morphology, and plant cells	1
5	2	Photosynthesis: Chloroplast structure, organization and pigment characteristics, light reactions, energy transduction	7
7	3	Photosynthesis: Dark reactions, rubisco, photorespiration	8
10	4	Photosynthesis: Environmental factors and adaptations, C3, C4 and CAM metabolism	9
12	5	Metabolic regulation: sucrose and starch synthesis Respiration and bioenergetics: glycolysis, plant mitochondrial function	8, 11
14	6	Mineral nutrition, Ion transport	5, 6
17	7	Nitrogen metabolism: uptake, enzymes, plant microbe interactions	12
19		Nitrogen metabolism cont. / Review	—

Date		Lecture	Reading
August			
21		Midterm	—
24	8	Cellular water relations, plant cell structure and growth	3
26	9	Water transport, xylum structure and function	4
28	10	Phloem translocation. Source-sink relationships	10
31	11	Auxin: synthesis and degradation, physiological effects and mode of action. Cell expansion	19
September			
2	12	Gibberellins: seed germination and dwarfism. Cytokinins and cell division	20, 21
4	13	Ethylene and abscisic acid: senescence, fruit ripening and growth inhibition	22
7	14	Phytochrome: development and circadian rhythms	17
9	15	Plant physiology and climate change / Review	—
11		Final	—

Point Distribution:	Course midterm	200 pts
	Laboratory	200 pts
	<u>Final</u>	<u>400 pts</u>
	Total	800 pts

Notes:

- No makeup tests will be given for either the midterm or final.
- Labs are mandatory. Please arrange with your TA if you need to miss a lab session for medical reasons. If you cannot attend your scheduled lab time, you must make arrangements with another TA to attend his/her class.
- Plagiarism is a serious academic offense. All cases of suspected plagiarism will be reported directly to the Dean of Students' office for investigation. All graded assignments must be original work and completed individually.