

## BIO 322/122L – Structure, Physiology and Reproduction of Seed Plants Fall 2009

Welcome to Plant Biology. Most of you are either juniors or seniors, and most are pre-meds with several years of background in biology. Our approach will be to avoid covering material you have probably learned already (cell structure, mitosis, aerobic respiration) and instead emphasize ways in which plant biology differs from that of animals. Using humans as model animals, we will discuss alternative types of structure and metabolism that occur in plants, and we will analyze the consequences of the various alternative biologies that animals and plants employ. One goal of this course is to consider many of the fundamental aspects of biology that you have studied in the last several years, and relate them to each other, integrating the knowledge you already have.

This course presents material in both a lecture and a laboratory format, so each of you should be registered for a lecture section (BIO 322) and for one laboratory section (BIO 122L). Laboratory material is closely integrated with the lecture sequence, and should help you understand lecture material more thoroughly. Please attend the same laboratory throughout the term so that your lab grades can be recorded accurately. (If you find that a different lab section would be better for you on a permanent basis, just ask the TA of the section you want to attend whether space is available – if so, simply attend the new section without going through official Drops/Add; we will keep track of where you are.) Prerequisites for the course are BIO 325 Genetics, six semester hours of chemistry & concurrent enrollment in BIO 122L.

**Professors:** First half: Dr. James D. Mauseth  
Second half: Dr. John W. La Claire

**Textbook:** *Mauseth, J. D. Botany, An Introduction to Plant Biology. 4<sup>th</sup> Edition. The 4<sup>th</sup> edition differs from the other editions in important ways: many boxes have been changed to more closely follow our lecture material, many topics that had been covered in the back part of the book (plant diversity) have been moved up into the chapters that we cover in this course, and there are now many more Review Questions at the ends of the chapters. These questions were written as study guides to walk students through important concepts. Some of these questions may be used verbatim on the examinations.*

**Required iClicker** Each student is required to have an iClicker in order to participate in the in-class exercises throughout the semester. An image of this type of iClicker appears in the right-hand margin. You should bring your iClicker to class every day - otherwise you may not receive credit for any question(s) that day. Be sure to keep an eye on your iClicker's battery level, since loss of power will not be a legitimate excuse. Use of more than one iClicker in class is considered scholastic dishonesty.



**Grading:** Because material in lecture and laboratory are so closely integrated, and because examinations cover material from both the lectures and the laboratory, the same letter grade will be assigned for BIO 322 and BIO 122L.

The letter grade will be based on a total of 500 points. There will be four 1-hour examinations (covering lecture and laboratory material), each counting 90 points. Twenty iClicker questions (1 point for answering, and 1 point for answering correctly, totaling 40 points) will be posed periodically. The laboratory will be graded on quizzes and lab reports, totaling 100 points. There will be no comprehensive final examination. Final grades will be the A-B-C-D-F system, without plus or minus grades.

**Missed examinations.** Please make every effort to attend each examination. If you miss an examination without an acceptable reason, you will receive a zero for that exam. Acceptable reasons include your own severe illness, the severe illness of a close family member or domestic partner, or to attend the funeral of a close family member or domestic partner. You must document your reason for missing an exam with:

1. A written (by you) description of the situation, and
2. A dated medical or funeral document.

Types of illness that will NOT qualify as a valid excuse for missing an exam are stomach distress, fever, nausea, dizziness, general aches and pains (a quick trip to the student health center with vague symptoms will not qualify). Basically, you must be so ill that you would miss an interview for medical school or graduate school.

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## Fall 2009

### The first half of the course

**Professor:** Dr. James Mauseth

**Contact information:** Bio 327 and 326; 471-3189; j.mauseth@mail.utexas.edu

**Office hours:** Feel free to just drop in at any time; I should always be in my office by 8AM before class. Feel free to call or email me for an appointment if another time is better for you. I work in one of several greenhouses, so I am often not in my office.

**Exams:** Short essay and listing. For the short essay questions, you will be given a set of about 20 questions several days before the exam; several of those questions may be used on the exam, taken verbatim from that set. You may use your textbook or any other material to prepare answers for the questions and you may work together with other students in preparing answers. **During the exam, however, you alone must write your answers from memory, you cannot bring pre-written answers into the examination room or work with others.** Several questions of the take-home set may appear on the test, not verbatim, but instead as the topic of several fill-in-the-blank or listing questions: If you have prepared a good, complete short essay, then you will be able to answer the fill-in-the-blank or listing questions easily.

In addition to the topics covered in the take-home questions, all other topics covered in the lecture or assigned readings might appear on the tests as fill-in-the-blank or listing questions, but not as essay questions. Scientific words must be spelled correctly. Poor grammar and use of sentence fragments are not acceptable.

All readings are required and you will be tested on material in the Assigned Readings, even if it is not covered in lecture.

**Schedule and reading assignments** in the text "Botany, An Introduction to Plant Biology" 4<sup>th</sup> Edition:

	<b>Topic</b>	<b>Chapter</b>
Week 1	Introduction	Chapter 1
Week 2	Cells and tissues	Chapter 3 and 4
Week 3	Stems	Chapter 5
Week 4	Leaves	Chapter 6
Week 5	Roots	Chapter 7
Week 6	Woody plants	Chapter 8
Week 7	Reproduction	Chapter 9
Week 8	Reproduction, continued.	

(For "Woody plants," the material in Chapter 22 is good background material, and for "Reproduction," you might want to read "Life cycles of green algae" in Chapter 19.)

**Examination schedule** for the first half of the course:

Exam 1            Friday September 25  
Exam 2            Wednesday October 14

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## Fall 2009

### The second half of the course

**Professor:** Dr. John W. La Claire

**Contact information:** Office: BIO 325; 471-35771; [laclaire@uts.cc.utexas.edu](mailto:laclaire@uts.cc.utexas.edu)

**Office Hours:** MWF 1:00-2:00 p.m. or by appointment (for any other time that is mutually convenient). It is best to set up these meetings in my office or by telephone, so that I can put you on my calendar.

**Exams:** Exams will be objective in nature, consisting of multiple choice, fill-in, true/false, matching and short-answer type questions. Information presented in lectures, labs and assigned readings are all subject to examination in lecture exams.

**Website:** The website URL for this portion of the course is: <http://www.sbs.utexas.edu/bio322/>. Here, you can find laboratory handouts, slides from lectures, lecture handouts, previous exams, etc. **Please read the introduction and print out each of the four laboratory exercises for the second half of the course before coming to lab.** Most of your score for this portion of the lab grade will be based on the 4 reports that you turn in for these exercises, along with any quizzes.

All readings are required and you will be tested on material in the Assigned Readings, even if it is not covered in lecture. You will also be responsible for understanding concepts and examples that are covered in lecture, but are not in the text. Therefore, attendance of lectures and having a good set of notes are essential in order to perform well in this course.

### Tentative Lecture/Lab Schedule and Reading Assignments:

Date	Topic	Chapter(s)
Oct. 16	Introduction; Mineral Nutrition	13
19	Mineral Nutrition	13
21	Mineral Nutrition	13
23	Growth & Development <u>Laboratory I</u> : Tissue Culture & Hormones	14
26	Growth & Development	14
28	Growth & Development	14
30	Growth & Development <u>Laboratory II</u> : Kinetin & Senescence	14
Nov. 2	Growth & Development	14
4	Water & Solute Transport	12
6	Water & Solute Transport <u>Laboratory III</u> : Water & Ion Relations	12
9	<b>EXAM III</b> (Covering Mineral Nutrition and Growth & Development)	
11	Water & Solute Transport	12
13	Water & Solute Transport Completion of <u>Laboratory II</u>	12
16	Photosynthesis	10
18	Photosynthesis	10
20	Photosynthesis Completion of <u>Laboratory I</u>	10 (continued)

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Date	Topic	Chapter(s)
Nov. 23	Photosynthesis	10
25	Photosynthesis	10
27	<b>NO CLASS</b> (Thanksgiving Holiday) <u>Laboratory IV</u> : Hill Reaction: Herbicide & Protease Effects	
30	Photosynthesis	10
Dec. 2	Catch-up Lecture & Course Evaluations	
4	<b>EXAM IV</b> (Covering Water & Solute Transport and Photosynthesis) (No Laboratory this week)	

**Examination schedule** for the second half of the course:

Exam 3	Monday, November 9
Exam 4	Friday, December 4

**Please note that there are no makeup examinations in this portion of the course.**

### General Course Information

**Policy statement on scholastic dishonesty.** Scholastic dishonesty undermines the fundamental integrity of grading and lowers the overall quality of undergraduate education and the value of the undergraduate degree. It will not be tolerated in this course, and should it be discovered, the professors will aggressively take whatever steps are necessary to punish the guilty person(s), ranging from assigning a failing grade on the assignment, assigning a failing grade for the entire course, or even recommending expulsion from the University, depending on the severity of the infraction. Included under the heading of scholastic dishonesty are: plagiarism, collusion, cheating on exams or assignments, copying another student's exam or homework, talking or leaving the examination room during the exam period without permission, providing false or misleading information in an effort to obtain special consideration for an exam, transferring information about examinations or assignments to members of other laboratory sections of the class, falsifying exams prior to requests for regrading, and so on. These and other infractions are described in greater detail in Appendix C of the General Information Catalog. Since undetected dishonesty adversely affects the grade of every student in the class, anyone witnessing any form of scholastic dishonesty is strongly encouraged to inform the professor, anonymously if so preferred.

**Course Drop Information.** If you consider dropping this course, DO NOT WAIT until the end of the semester. The University establishes drop deadlines and the College of Natural Sciences adheres to those published deadlines. If you drop either lecture or lab, be sure to drop the other also. To process a drop, withdrawal, or change grade to or from pass/fail, go to your Dean's Office (W.C. Hogg 1.106 for majors in the College of Natural Sciences).

Drop Deadlines:

- Aug. 31 – last day of official add/drop period
- Sept. 11 – last day to drop a course for a possible refund
- Sept. 23 – last day to drop a course without a possible academic penalty
- Oct. 21 – last day an undergraduate may (with Dean's approval) drop a course except for urgent and substantiated, nonacademic reasons. If you have nonacademic problems occurring, see a counselor in your Dean's Office immediately.

**Students with disabilities.** The University of Texas at Austin provides upon request appropriate academic accommodations for qualified students with disabilities. For more information, contact the Office of the Dean of Students at 471-6259, 471-4641 TTY.