

Biology 4440: Plant Physiology
Spring 2012

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Objectives: The purpose of this course is to introduce students to the subject of plant physiology through lectures and readings. By the end of the course, the diligent student will understand basic plant physiological concepts and will be familiar with many topics and methods in plant physiology.

Format: Two 80 minute lecture/discussion sessions each week (MW 8:35-9:55).

Text: L. Taiz and E Zeiger. **Plant Physiology** (5th edition).

Attendance: Lecture attendance is strongly encouraged. Essential concepts will be reviewed and explained, and student questions regarding assigned material will be addressed. Note, however, that you are responsible for all material presented in readings as well as covered in lecture sessions.

Honor Code: All students are expected to abide by the Academic Honor Code, which can be viewed online at <http://www.registrar.gatech.edu/rules/18.php>.

Grading: Assignments, student presentations, attendance and student participation (15%)
Three midterms (20% each)
Final exam (25%). The final exam will cover all course material.

Final grades will be assigned using the usual scale:

A	90% and greater
B	80-89%
C	70-79%
D	60-69%
F	Less than 60%

The final grading scale may be scaled as appropriate to reflect a benchmark established by the upper 5% of the class.

Tentative Schedule of Classes

Lecturers: Gerald Pullman

Date	Lecture Topic	Textbook Chapter(s)	Plant of the Week, Chapters for Student Question/Answer Presentations
Jan 9	Introduction to course, Review of Plant Cells	Chapter 1, Web Topic 1.1	
Jan 11	Review of genome organization and gene expression, Water	Chapter 2, 3	
Jan 16	Holiday		
Jan 18	Water, Water movement	Chapter 4, Essay 4.2	Plant of the Week
Jan 23	Mineral nutrition / Solute transport	Chapters 5, 6, Web Topic 5.1	Plant of the Week
Jan 25	Solute transport		
Jan 30	Phloem transport, Photosynthesis-Light	Chapter, 10, 7	Plant of the Week
Feb 1	Student Questions		Chapters 3, 4, 5, 6, 10
Feb 6	Exam 1 (Chapters 1-6, 10)		
Feb 8	Photosynthesis-Carbon, Ecology	Chapter 8, 9,	Plant of the Week
Feb 13	Nitrogen assimilation	Chapter 12	Plant of the Week
Feb 15	Cell walls, Signal transduction	Chapters 15, 14	
Feb 20	Secondary metabolism & plant defense,	Chapter 13	Plant of the Week
To be arranged	Possible field trip on Tuesday or Thursday, Atlanta Botanical Gardens, UGA or?	Supplemental readings	
Feb 22	Secondary metabolism & plant defense, Biofuels,		
Feb 27	Student Questions		Plant of the Week Chapters 7, 8, 9, 12, 13, 15
Feb 29	Exam 2 (7-9, 12-15, FT)		
Mar 5	Plant Genetic Engineering Case Study	Assigned readings	Plant of the Week
Mar 7	Plant GE Case Study, Growth & Development	Chapter 16	
Mar 12	Phytochrome, Blue light responses	Chapter 17, 18	Plant of the Week
Mar 14	Auxin	Chapter 19	
Mar 19-23	Spring Break		
Mar 26	Auxin, Gibberellins	Chapter 20, Web topic 20.2	Plant of the Week
Mar 28	Gibberellins		

April 2	Student Questions		Plant of the Week,
April 4	Exam 3 (Biofuels, Plant GE, Chapters 16-20)		Biofuels, Chapters 16, 17, 19, 20
April 9	Cytokinins	Chapter 21	Plant of the Week
April 11	Ethylene, Absciscic acid	Chapters 22, 23	
April 16	Brassinolide / Flowering	Chapter 24	Plant of the Week
April 28	Flowering	Chapter 25	
April 23	Stress physiology	Chapter 26	Plant of the Week
April 25	Stress physiology / Student Questions		Chapters 21, 22, 23, 24, 25, 26
April 30 (Monday)	Final Exam – All Chapters and Assigned Topics and Essays	8:00 – 10:50 AM	