

BIOL 221 – Concepts of Botany
Laboratory Syllabus – Spring 2009 – Section 1B (Wed 1-4 pm)

Instructor: Dr. Christopher Hardy

Office: Roddy 271

Web: <http://herbarium.millersville.edu/class-web/221.htm>

Phone: 871-2371

Office Hours: Mo & Tu 1-3 pm, We 10-11 am

Lab Text (Optional): *Photographic Atlas for Botany Laboratory*. 2004. DeGraaff, Rushforth, & Crawley

Equipment: Lab notebook for drawings and other notes. Cross-reference these to your laboratory exercise printouts and the Photographic Atlas.

Objectives: Upon successful completion of this course, students are expected to be able to:

1. distinguish between and confidently identify members of larger groups such as algae, liverworts, mosses, horsetails, ferns, seed plants, gymnosperms, and angiosperms
2. compare and contrast the life cycles of plants to animals
3. chronicle the phases of gametogenesis, embryogenesis, and development of the primary and secondary plant bodies of sporophytes
4. identify plant cell structures, plant tissues, and plant organs by sight
5. relate structure to function via physiological experiments examining photosynthesis, hormones, and water relations
6. generate testable hypotheses about the functioning of plant organs and tissue systems
7. effectively use statistics and graphing techniques to draw logical conclusions from experiments
8. use dissecting and compound microscopes effectively

Laboratory Schedule

Week of	Lab Topics	Quizzes	
Jan. 12	Cells and Tissues		
Jan. 19	Roots		(Yuan)
Jan. 26	Shoots	#1	(Yuan)
Feb 2	Embryos and Seeds		(Yuan)
Feb 9	Wood & Cork	#2	(Yuan)
Feb 16	Plant Modifications & Marketplace		(Ryan)
Feb 23	Water Relations	#3	(Ryan)
Mar 2	Spring Break		
Mar 9	Tropisms	#4	(Ryan)
Mar 16	Photosynthesis		(Ryan)
Mar. 23	Cyanobacteria & Algae	#5	
Mar 30	Ferns		
Apr 6	Gymnosperms	#6	
Apr 13	Angiosperms		
Apr 20	TBA	#7	(Instructor)

Other Lab Instructor Contact Information for Alternative Lab Sections:

<i>Dr. Yuan Zhong:</i>	<i>Roddy163</i>	<i>871-5112</i>	Section 1C: <i>Thu 1-4 pm.</i>
<i>Dr. Ryan Wagner:</i>	<i>Roddy 274</i>	<i>872-3789</i>	Section 1A: <i>Monday 6-9 pm.</i>

Attendance: *Attendance to all labs is mandatory.* No make-up quizzes will be given for unexcused absences. You are responsible for all material covered in the labs regardless of your presence. Excused absences must request permission prior to class and will be expected to arrange to complete the lab in another instructor's lab section. Due to the school calendar, be aware that lab schedules can vary between instructors. Whenever possible, plan in advance. See the Millersville University attendance policy for qualifying excused absences.

Special Needs: If you have special needs that may affect classroom performance please inform me immediately so that appropriate accommodations can be arranged to the best of my ability.

Honesty: Cheating, plagiarism, falsification, etc. will not be tolerated. Refer to the Millersville University Academic Honesty and Dishonesty brochure for specific details.

Grading: 120 lab points total. All final lab totals will be scaled to 100 course points, regardless of how many points are given by your lab instructor (e.g., If you get 180/200 points in Dr. Wagner's lab, hypothetically, this will be scaled by Dr. Hardy to 90/100 in the final course grade calculation).

1. Lab Quizzes (70 pts. total). Seven quizzes at 10 pts. Quizzes cover material since last quiz. Any excused missed quizzes can only be made up in another lab section that same week.
2. Assignments (announced in class; 20 points total). Drawings, graphs, questions, and simple statistics from lab exercises. Due-dates to-be-announced.
3. Physiology Report (30 pts.).
One lab will be chosen by the instructor from the Physiology section and will be prepared by the student in the format used by the journal *Plant Physiology*. Sections detailing an abstract, introduction, materials and methods, results, and discussion/conclusions will be included. Standard deduction of 10% per day late will be assessed.
Due **week of Apr 6** at the beginning of your lab.

Consideration: Please leave the lab as clean as you found it. Turn off all cell phones, pagers, and any other electronic devices before class.