

BIOL 221, Concepts of Botany, Spring 2020
Web: <http://herbarium.millersville.edu/hardy.php>

Lecture Roddy 261: T R, 2:35-3:50
Labs Roddy 279: A, M 1:00-3:50 (Hardy) B, T 9:00-11:50 (Hardy)
 C, W 1:00-3:50 (Hardy)
Botany Open Lab Roddy 279 R 4-6

Instructor Dr. Christopher Hardy
 Office: Roddy 271 Tel: 871-4317 Office Hrs: M & W 9:30-10:30, R 10-1

- Lab Materials:**
1. Required Lab Manual: Hardy CR, RL Wagner (eds). 2020. *Guide to Lab Exercises in Concepts of Botany*, 8th (Spring 2020) edition. Millersville, Pennsylvania, USA.
 2. Required: Scientific calculator.
 3. Optional: Rushforth et al. 2017. *A Photographic Atlas for the Botany Laboratory*, 7th edition. Morton Publishing.
 4. Optional: 3-hole looseleaf paper for notes in lab.
 5. Optional: Colored pencils (at least red, blue, green) for lab drawings.

Schedule

<u>Lab Topic</u>	<u>Assignment/Quiz Due in Lab</u>
Structure & Development	
Week of Jan 20: Introduction to Botany	
Week of Jan 27: Seeds & Seedlings	Quiz 0
Week of Feb 03: Morphology of the Primary Body	Quiz 1
Week of Feb 10: Anatomy of the Primary Body	Quiz 2
Week of Feb 17: Woody Plants & Secondary Growth	Quiz 3
Physiology & Function	
Week of Feb 24: Plant Modifications & Marketplace Vegetables	Quiz 4
Week of Mar 02: Water in Plants	Marketplace Vegetables Assignment Due in Class
Week of Mar 09: Plant Behavior	Quiz 5
Week of Mar 16: Spring Break	
Week of Mar 23: Photosynthesis	Plant Behavior Assignment Due in Class
Week of Mar 30: Ethnobotany of 2 ^o Metabolism	Quiz 6
Diversity & Evolution	
Week of Apr 06: Gymnosperms	Quiz 7
Week of Apr 13: Angiosperms: Flowers	Quiz 8
Week of Apr 20: Angiosperms: Fruits	Quiz 9
Week of Apr 27: Bryophytes & Pteridophytes	Marketplace Fruit Assignment Due In Class
Week of May 04: Monday lab only; finals week begins on Tuesday	Quiz 10

Grading: 150 lab points total.

1. Lab Quizzes (100 pts. total). Ten quizzes each of 10 points. Quizzes administered at the start of lab. Quizzes can be made up for excused absences.
2. Assignments (50 pts total). Three assignments as announced in the schedule, and others may be announced throughout the semester to add up to a total of 50 pts worth of assignments. All assignments will be due at the beginning of lab on the due date. There is a 10% deduction of points for every 24-hour late period.
3. Participation/Attendance Penalties. You will lose upwards of 5 points per lab period for unexcused absences, late arrivals or early departures, failure to work diligently for the entire lab, failure to clean-up thoroughly after lab, failure to treat equipment and other persons in the lab with due courtesy, or recreational use of phones during lab.

Grade Calculation Table

Week of	Graded item	Points earned	Points possible	Cumulative % earned [100 x (cumulative pts earned / culmulative pts possible)]
Jan 27	Quiz 0		10	
Feb 03	Quiz 1		10	
Feb 10	Quiz 2		10	
Feb 17	Quiz 3		10	
Feb 24	Quiz 4		10	
	Exam 1		50	
Mar 02	Vegetable Assignment		20	
Mar 09	Quiz 5		10	
Mar 16	Spring Break	--	--	--
Mar 23	Behavior Assignment		10	
Mar 30	Quiz 6		10	
Apr 06	Quiz 7		10	
	Exam 2		50	
Apr 13	Quiz 8		10	
Apr 20	Quiz 9		10	
Apr 27	Fruit Assignment		20	
May 04	Quiz 10		10	
	Final Exam (Exam 3)		75	

Objectives: Following completion of the lab, a student should 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 and animals.
3. Relate plant anatomy, physiology and diversity to economic value/uses.
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 biological systems.
7. Effectively use statistics and graphing techniques to draw logical conclusions from experiments.
8. Use dissecting and compound microscopes effectively.

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 lab section. Whenever possible, plan in advance. See the Millersville University attendance policy for qualifying excused absences.

Special Needs, Honesty & Title IX: See lecture syllabus.

Guide To Reading Primary Literature: See lecture syllabus.