

BIOL 221, Concepts of Botany, Spring 2018

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)
C, W 1:00-3:50 (Hardy)

B, T 9:00-11:50 (Hardy)
D, R 9:00-11:50 (Stieha)

Lecture Instructor Dr. Christopher Hardy

Office: Roddy 271 Tel: 871-4317 Office Hrs: T 4-5, R 10-12, F 12-2

Required Text: Hoefnagels M. 2018. *Biology: Concepts and Investigations*, 4th edition. McGraw Hill Education New York, USA.

Option 1: Custom Looseleaf Edition available on campus (ISBN13: 9781307185621)

Option 2: The entire bound-book, hardcover (ISBN13: 9780078024207)

Option 3: The entire ebook (ISBN13: 9781259869587, 6-month access).

- Other Materials:**
1. Required Lab Manual: Hardy CR, RL Wagner (eds). 2018. *Guide to Lab Exercises in Concepts of Botany*, 6th edition. Millersville, Pennsylvania, USA.
 2. Recommended: Rushforth et al. 2017. *A Photographic Atlas for the Botany Laboratory*, 7th edition.
 3. Recommended: 3-ring binder with tabs.
 4. Optional 3-hole looseleaf paper for notes in lab.
 5. Optional Colored pencils (at least red, blue, green) for lab drawings.
 6. Required Scientific calculator.

Schedule

<u>Lab Topic</u>	<u>Assignment/Quiz Due in Lab</u>
Structure & Development	
Week of Jan 22: Introduction to Botany	
Week of Jan 29: Seeds & Seedlings	
Week of Feb 05: Morphology of the Primary Body	Quiz 1
Week of Feb 12: Anatomy of the Primary Body	
Week of Feb 19: Woody Plants & Secondary Growth	Quiz 2
Physiology & Function	
Week of Feb 26: Plant Modifications in Nature & The Marketplace	
Week of Mar 05: Water in Plants	Quiz 3
Week of Mar 12: Spring Break (Mar 12-Mar 18)	
Week of Mar 19: Plant Behavior	Quiz 4
Week of Mar 26: Photosynthesis	Water Relations Assignment
Week of Apr 02: Ethnobotany of 2° Metabolism	Quiz 5
Diversity & Evolution	
Week of Apr 09: Gymnosperms	
Week of Apr 16: Angiosperms: Flowers	Quiz 6; Plant Behavior Assignment
Week of Apr 23: Angiosperms: Fruits	
Week of Apr 30: Bryophytes & Pteridophytes	Quiz 7
Week of May 07: No lab (finals week)	

Grading: 160 lab points total.

1. Lab Quizzes (120 pts. total). Seven quizzes each of 20 points, lowest score dropped. Quizzes administered at the start of lab. Quizzes can be made up for excused absences.
2. Assignments (40 pts total). Two assignments as announced in the schedule, and others may be announced throughout the semester to add up to a total of 40 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.

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.