

BIOL 221, Concepts of Botany, Spring 2017
Web: <http://herbarium.millersville.edu/hardy.php>

Lecture (Roddy 261): T R, 2:35-3:50

Labs (Roddy 279): A, M 1-3:50 (Hardy) B, T 9:00-11:50 (Hardy)
 C, W 1-3:50 (Hardy) D, R 9:00-11:50 (Ladd)

Lecture Instructor Dr. Christopher Hardy

Office: Roddy 271 Tel: 871-4317 Office Hrs: T 1:30-2:30, R 10-12, F 12-2

Required Text: Evert RF, SE Eichhorn. 2013. *Raven Biology of Plants*, 8th Edition. WH Freeman and Co. New York, NY, USA.

- Option 1: Printed Hardback, Bound: ISBN: 9781429219617.
- Option 2: Launchpad + Printed Looseleaf ISBN-10: 1-319-11014-2
- Option 3: Launchpad, ISBN-10: 1-319-08851-1

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

Schedule

<u>Lab Topic</u>	<u>Assignment/Quiz Due in Lab</u>
Structure & Development	
Week of Jan 23: Introduction to Botany	
Week of Jan 30: Seeds & Seedlings	
Week of Feb 06: Primary Morphology	Quiz 1
Week of Feb 13: Primary Anatomy	
Week of Feb 20: Woody Plants	Quiz 2
Physiology & Function	
Week of Feb 27: Plant Modifications & Marketplace Vegetables	
Week of Mar 06: Water Relations	Quiz 3
Week of Mar 13: Spring Break (Mar 13-Mar 19)	
Week of Mar 20: Plant Behavior	Quiz 4
Week of Mar 27: Photosynthesis	Water Relations Assignment
Week of Apr 03: Ethnobotany of 2 ^o Metabolism	Quiz 5
Diversity & Evolution	
Week of Apr 10: Gymnosperms	
Week of Apr 17: Angiosperms: Flowers	Quiz 6; Plant Behavior Assignment
Week of Apr 24: Angiosperms: Fruits	
Week of May 01: Bryophytes & Pteridophytes	Quiz 7
Week of May 08: 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 cover material since last quiz and they are administered at the start of lab on the specified date. 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.