

BIOLOGY 130: INTRODUCTION TO PLANT BIOLOGY LAB - Spring 2017

LAB SECTION 10 Monday/Wednesday 4:00-5:50pm TNR 157

LAB INSTRUCTOR John Hardy

EMAIL jhardy@uwsp.edu

OFFICE TNR 155a

PHONE 715-346-3487

OFFICE HOURS T/R 10:30-11:30am. Other times by appointment or by chance.

LAB MANUAL: Essentials of Botany, Seventh ed., Fall 2016, edited by Hardy and Hillier (REQUIRED, PURCHASE FROM BOOKSTORE).

TEXT: Raven Biology of Plants, 8th edition, Evert and Eichhorn (rental)

GOAL: To support and reinforce concepts introduced in lecture through hands-on activities, observation, and experimentation.

OUTCOMES: By the end of this semester you should be able to:

1. Use compound and dissecting microscopes proficiently.
2. Effectively prepare slides from fresh material for microscopic observation.
3. Use and understand basic biological study techniques.
4. Understand and explain basic plant structure, and the relationship between form and function in plant cells, tissues, and organs.
5. Recognize and distinguish between representative taxa of cyanobacteria, fungi, fungus-like protists, algae, and plants.
6. Recognize many of the most common plants in the Wisconsin flora.
7. More effectively analyze experimental data and apply the scientific method to answer biological questions.

CONDUCT: Respect and cooperation is expected in the laboratory. Comments, questions, and discussion about the lab material is encouraged, but disruptive behavior will not be tolerated. The use of cell phones and similar devices is never allowed in the lab. These must be **powered off** (not just silenced) while in the lab, and those who do not comply will be required to leave.

ACADEMIC INTEGRITY: Academic dishonesty in any form will not be tolerated! It is your responsibility to be aware of your rights and responsibilities as a UWSP student. Please take the time to read and understand the information found here (and let me know of any questions):

<http://www.uwsp.edu/stuaffairs/Documents/RightsRespos/SRR-2010/rightsChap14.pdf>.

Cheating or plagiarism related to any of the course assessments will result in a score of zero for that assessment.

SPECIAL NEEDS: I will be happy to help you if you need special accommodations to succeed in this course. Please visit the UWSP Student Disability and Assistive Technology Center (located in LRC 609) to document your needs and contact me so that appropriate arrangements can be made. More information: <http://www.uwsp.edu/disability/Pages/default.aspx>

GRADING: Your overall course grade will be based on performance in both lecture and lab. The lab component will comprise approximately 50% of your grade for the course. There will be 365 points available in lab, and a similar number of points available in lecture. Dr. Barringer will combine these to calculate your course grade.

LABORATORY POINTS: Thirteen laboratory quizzes will be offered. Each of the first 12 quizzes will cover 2 labs and be worth up to 20 points. Most quizzes will be given at the beginning of the lab period and generally consist of projected images of material from the labs and questions related to the lab exercises. Some quizzes may also include an in-class or take-home component. There will also be an optional, comprehensive lab quiz offered at the end of the semester. This optional quiz will be worth up to 60 points, and the score can be used to replace your 3 lowest 20-point quiz scores.

THERE WILL BE NO MAKEUP QUIZZES FOR ANY REASON WHATSOEVER!

Common plant identification: The Appendix in your lab manual describes some of the most common plants in our flora for you to learn. The accompanying web site (see below) has photos of these plants. This exercise is worth up to 50 points, and there are two options for earning these points. 1) Immediately following quizzes 2, 3, 4, 5, and 7 you will be asked to identify 5 plants from a specified portion of the list. These 5 exercises will be worth 10 points each, or 50 points in total. 2) A comprehensive, 50-point Plant ID exam will be offered later in the semester. The option with the highest score will be recorded.

Lab report: At various times this semester you will work on a plant breeding experiment designed to illustrate the effects of artificial selection. You will also work with a small group to analyze a related scientific journal article and deliver an oral presentation. You will then produce and submit a lab report. This exercise will be worth up to 75 points.

ADDITIONAL RESOURCES:

Open Labs Monday and Thursday evenings, 6:00-8:00 pm. Quiet study and review.

Lab review images: <http://www4.uwsp.edu/biology/courses/botlab/default.htm>

Common Plants of Wisconsin: <http://www4.uwsp.edu/biology/courses/plantID/index.htm>

Tutoring: <http://www.uwsp.edu/tlc/Pages/CA-tutoring.aspx>

HOW TO DO WELL IN THIS COURSE:

- ⇒ Attend every lab (and every lecture). Quizzes are drawn entirely from lab materials, and studying the material first-hand in the lab is by far the most effective way to learn it.
- ⇒ Read the relevant parts of the lab manual and the text BEFORE coming to lab. If you come to lab knowing what will be covered and what you need to do, you will be able to use your time more efficiently and effectively.
- ⇒ Don't forget that lecture and lab are complimentary parts of the same course. Make every effort to integrate the information presented in lecture, in lab, and in the text.
- ⇒ Use the lab period wisely. Really study the material and make sure you understand it. If you don't understand something, ask questions. Make sketches and drawings. Answer the questions at the end of the chapter. If you finish the lab exercises before the end of the period use the remaining time to review for the next quiz or read the next lab.
- ⇒ Study frequently and actively. Spend time every day studying for this course. Be sure to find a time and place that is free from distractions so that you can really concentrate and analyze the material.
- ⇒ Meet regularly with a partner or small study group. Quiz each other. Answer each other's questions. One of the best ways to really learn the material (or to discover that you don't understand it after all...) is to explain it to someone else.
- ⇒ Please take advantage of my office hours. Come in as soon as you have any questions or difficulties with the material. If you wait until you have a bunch of low quiz scores it may be too late.

LABORATORY CALENDAR:

DATE	QUIZ	LAB#	TOPIC
1/25		1	Introduction to the Botany Lab, Microscopes
1/30		2	Microscopic Measurements
2/1		3	The Plant Cell
2/6	QUIZ #1	4	Mitosis, Asexual Reproduction
2/8		5	Meristems, Cell types, Herbaceous Stems
2/13	QUIZ #2, CP 1-27	6	Woody Stems and Wood Anatomy
2/15		7	Modified Stems, Root Anatomy, Modified Roots
2/20	QUIZ #3, CP 28-54	8	Leaf Anatomy, Modified Leaves
2/22		9	Plant Water Relations
2/27	QUIZ #4, CP 55-88	10	Enzymes and Digestion, Respiration
3/1		11	Light and Photosynthesis
3/6	QUIZ #5, CP 89-115	12	Control of Plant Growth, part 1
3/8		13	Gas Exchange and Photosynthesis
3/13		12	Control of Plant Growth, part 2
3/15	QUIZ #6	14	Molecular Plant Genetics
~~ Spring Break ~~			
3/27		15	Plant Genetics, Complete Breeding Experiment
3/29	QUIZ #7, CP 116-149	16	Bacteria
4/3		17	Chytrids, Zygote Fungi, Sac Fungi, Deuteromycetes
4/5	QUIZ #8	18	Club Fungi, Other Fungus-like Organisms
4/10	Presentations, PLANT ID #2		
4/12		19	Cyanobacteria, Eukaryotic Algal Diversity
4/17	QUIZ #9	20	Green Algae and Lichens
4/19	LAB REPORT DUE	21	Bryophytes
4/24	QUIZ #10	22	Fern Allies, Ferns
4/26		23	Gymnosperms
5/1	QUIZ #11	24	Angiosperms and the Flower
5/3		25	Seeds, Seed Germination, Fruits
5/8	QUIZ #12		
5/10	Comprehensive Quiz		

QUIZ COVERAGE:

<u>DATE</u>		<u>COVERS</u>	<u>YOUR SCORE</u>
2/6	QUIZ #1	Labs 1-3	____/20
2/13	QUIZ #2	Labs 4-5 CP 1-27	____/20 ____/10
2/20	QUIZ #3	Labs 6-7 CP 28-54	____/20 ____/10
2/27	QUIZ #4	Labs 8-9 CP 55-88	____/20 ____/10
3/6	QUIZ #5	Labs 10-11 CP 89-115	____/20 ____/10
3/15	QUIZ #6	Labs 12-13	____/20
3/29	QUIZ #7	Labs 14-15 CP 116-149	____/20 ____/10
4/5	QUIZ #8	Labs 16-17	____/20
4/10	PLANT ID #2		____/50
4/17	QUIZ #9	Labs 18-19	____/20
4/19	LAB REPORT DUE		____/75
4/24	QUIZ #10	Labs 20-21	____/20
5/1	QUIZ #11	Labs 22-23	____/20
5/8	QUIZ #12	Labs 24-25	____/20
5/10	COMPREHENSIVE QUIZ		____/60

Total of quiz scores, or 9 best
quizzes plus comprehensive: ____/240

Common Plant ID score: ____/50

Lab Report score: ____/75

Final Lab score: ____/365