

**INTRODUCTION TO PLANT BIOLOGY (BIOL 130)  
FALL 2014**

**Instructor:** PhD. Virginia Freire  
**Office:** TNR 302  
**Phone:** 715 346-4252  
**e-mail:** [vfreire@uwsp.edu](mailto:vfreire@uwsp.edu)

**Office hours:** M and W from 15:30 to 17:00  
Different meeting times can be arranged upon request.

**Lectures:** SCI A 208  
M, W 14:00 to 15:15

**Laboratories:** TNR 153  
Section 11: T/R from 12:00 to 13:50  
Section 12: T/R from 14:00 to 15:50

**Textbook:** Biology of Plants by P. H. Raven, R. F. Evert and S. E. Eichhorn, 8<sup>th</sup> Edition (required, rental from bookstore).

**Lab Manual:** Essentials of Botany (required, purchase from bookstore).

**Course goal:** To introduce basic principles of structure, growth, reproduction, function, evolution and adaptation of plants and a broad survey of diversity that includes bacteria, fungi like organisms, fungi, algae and plants. The course will have an emphasis on sustainability, the relationship between plants and people and current environmental issues.

**Outcomes:** At the end of this semester you should be able to:

1. Explain the biological principles that govern the cellular basis of life, including energy flow, inheritance, reproduction and evolution.
2. Explain the relationship between form and function in plant cells, tissues and organs.
3. Differentiate among the major groups of plants, fungi, protists and bacteria with an understanding of their evolutionary and ecological relationships, and relevance to humans.
4. Think analytically and apply the scientific method to answer science based questions of interest.

**Attendance:** To succeed in this course you will need to attend lectures and laboratories. Exams/quizzes are based only on material covered in class or laboratory. There is no substitute for taking your own notes, listening closely and asking questions. Important announcements may happen during lecture/lab time.

Makeup lecture exams will be given at the instructor's discretion and only in the case of excused absence. Valid reasons for excused absence are **documented** health emergencies; death of immediate family members or UWSP sponsored events. **Sleeping late is not a valid reason!!** Please inform me before the exam you will be missing when possible. **There are absolutely no makeup quizzes.**

**Conduct:** **An environment of respect is expected in the classroom.** Comments about lecture/lab material are encouraged but **disruptive behavior will not be tolerated.** Be considerate to your classmates and step outside the classroom if you want to have a conversation. Please turn off or mute your cell phone. No cell phone conversations or texting are allowed during meeting times. Plagiarism on any assignment will not be tolerated. For any questions on your rights and responsibilities refer to:  
<http://www.uwsp.edu/stuaffairs/Pages/rightsandresponsibilities.aspx>

**Grading:** Grades will be posted in D2L. Check them any time at:  
<http://www.uwsp.edu/d2l/Pages/default.aspx>  
There is no correction factor but the points needed for the highest grade in the class to be a perfect score will be added to everybody.  
**Students with a 93% average (92.4% will not do!) at the end of the course are exonerated from the final exam and will get an A. Study hard from the beginning!!**

**Exams:** There will be 3 non-comprehensive lecture exams and a comprehensive final exam. All exams are multiple choice.

**Quizzes:** There will be 6 laboratory quizzes as scheduled. The quiz with the lowest grade will be dropped. **There will not be makeup quizzes.** Each quiz will evaluate the material from the previous four laboratories. The quizzes cover only laboratory contents and are mainly multiple choice. Some of them will be group activities or take home assignments.

**Open labs:** There are open labs from 6 to 8 p.m. on Mondays and Thursdays in rooms CNR 153 and CNR 157. Feel free to come at those times to review the material covered during lab. To help you study for the quizzes, there is a bank of images from the material covered in each laboratory at:  
<http://www4.uwsp.edu/biology/courses/botlab>

**Plant ID test:** There will be 2 plant identification tests to familiarize you with common plants in the Stevens Point area. To prepare for this test, review the web page:  
<http://www4.uwsp.edu/biology/courses/plantID/index.htm>. **Test I includes from *Marchantia polymorpha* (Common liverwort) to *Crataegus* spp. (Hawthorn). Test II includes from *Rhamnus cathartica*, *Frangula alnus* (Buckthorns) to *Lonicera* spp. (Honeysuckle).**

**Extra credit:** There will be an opportunity to obtain bonus points to be added to your final grade! The extra credit assignment(s) will be announced early in the semester.

<b>Points:</b>	Lecture exams (1-3 = 100 points each)	300 points
	Final exam	150 points
	Laboratory quizzes (50 points each)	250 points
	Common plant ID exam I and II (50 points each)	<u>100 points</u>
	Total	800 points

**Scale:** Your grade is based on a total of 800 points. The grading scale for the course is:

800 – 744	(93%)	A
743 – 720	(90%)	A-
719 – 696	(87%)	B+
695 – 664	(83%)	B
663 – 640	(80%)	B-
639 – 600	(75%)	C+
599 – 560	(70%)	C
559 – 520	(65%)	C-
519 – 496	(62%)	D+
495 – 440	(55%)	D
< 440		F

## TENTATIVE LECTURE SCHEDULE

DATE	TOPIC	BOOK CHAPTER
09/03	Syllabus, general information. Introduction.	1
09/08	The cell.	(2)*, 3
09/10	Cell cycle, mitosis, meristems	3, 23
09/15	Cells and tissues of the plant	23
09/17	Cells and tissues of the plant	23
09/22	The shoot, primary structure and development (stems)	25
09/24	Secondary growth in stems, wood.	26
09/29	The root, structure and development	24
10/01	The shoot, primary structure and development (leaves)	25
10/06	<b>Lecture exam I</b>	
10/08	Movement of water and solutes in plants	30
	Soil, plant nutrition	29
10/13	The flow of energy, respiration	(5)*, 6
10/15	Photosynthesis, light and life	7
10/20	Photosynthesis, light and life	7
10/22	Regulating Growth and Development	27
	External factors and plant growth	28
10/27	DNA, Genetics and heredity	8, 9
10/29	DNA, Genetics and heredity	8
11/03	Gene expression	9
	Recombinant DNA technology	10
11/05	<b>Lecture exam II</b>	
11/10	Systematics, Prokaryotes, Cyanobacteria	12, 13
11/12	Fungi: zygote, sac, club and imperfect fungi.	14
11/17	Fungi: zygote, sac, club and imperfect fungi.	14
11/19	Protists: slime mold, egg fungi, euglenoids, diatoms, etc.	15
11/24	Green, Brown and red algae	15
11/26	Green, Brown and red algae	15
	Lichens, Introduction to plants	15, 16
12/01	Bryophytes	16
12/03	Seedless vascular plants	17
12/08	Gymnosperms	18
12/10	Angiosperms	19, 20
12/11	<b>Lecture exam III (during lab time, TNR 153)</b>	
12/15	<b>Final exam (14:45 to 16:45)</b>	

\* indicates chapters for background information.

## LABORATORY SCHEDULE

DATE	TOPIC
09/04	Introduction to the Botany lab and microscopy
09/09	Microscopic measurements
09/11	The plant cell
09/16	Mitosis and reproduction
09/18	<b>Quiz #1.</b> Meristems, cell types, herbaceous stems
09/23	Woody stems and wood anatomy
09/25	Modified stems, root anatomy, modified roots
09/30	Leaf anatomy, modified leaves
10/02	<b>Quiz #2.</b> Plant water relations
10/07	Enzymes and digestion, respiration
10/09	Light and photosynthesis
10/14	<b>Common plant ID exam part I.</b> Control of plant growth (preparation)
10/16	Gas exchange and photosynthesis
10/21	<b>Quiz #3.</b> Control of plant growth
10/23	Molecular plant genetics
10/28	<b>Common Plant ID exam part II.</b> Plant genetics, propagation and breeding
10/30	Bacteria
11/04	<b>Quiz # 4.</b> Chytrids, zygote fungi, sac fungi
11/06	Club fungi, deuteromycetes, fungus like organisms
11/11	Cyanobacteria, algal diversity
11/13	Green algae, lichens
11/18	<b>Quiz #5.</b> Bryophytes
11/20	Fern allies and ferns
11/25	Gymnosperms
12/02	Angiosperms and the flower
12/04	Seeds, seed germination, fruits
12/09	<b>Quiz # 6 (Lecture material may be covered)</b>