INTRODUCTION TO PLANT BIOLOGY (BIOL 130)
SECTION 3
FALL 2017

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Office hours: W from 3 to 5

Lectures: M/T/R 4:00-4:50 in SCI D 101

Laboratories: All sections meet in TNR 157
Section 1: M/W 11:00 to 12:50
Section 2: M/W 13:00 to 14:50
Section 3: T/R 11:00 to 12:50
Section 4: T/R 13:00 to 14:50

Textbook: Biology of Plants by P. H. Raven, R. F. Evert and S. E. Eichhorn, 8th 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, heterotrophic protistans, 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 should attend lectures and laboratories. Exams/quizzes are based only on material covered in class/laboratory. There is no substitute for taking your own notes, listening closely and asking questions.

Important announcements will happen during lecture/lab time. Makeup lecture exams will be given only in the case of excused absence. Valid reasons are **documented** health or family emergencies, or UWSP sponsored events. **Sleeping late is not a valid reason!!** Please inform me **before** the scheduled exam time**.**

Conduct: **An environment of respect is expected in the classroom**. Comments about class 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 phone**. **No 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's score.

Exams: There will be 3 non-comprehensive lecture exams and a comprehensive final exam. All exams are multiple choice. **Students with a 93% average (92.4% will not do!) at the end of the course (including lecture and lab. grades) are exonerated from the final exam and will get an A. Study hard from the beginning!!**

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. To help you study for the quizzes, there is a bank of lab. images at: http://www4.uwsp.edu/biology/courses/botlab

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.

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: from *Marchantia polymorpha* (Common liverwort) to *Crataegus* spp. (Hawthorn). Test II from *Rhamnus cathartica, Frangula alnus* (Buckthorns) to *Lonicera* spp. (Honeysuckle).

Points:	Lecture exams (1-3 = 100 points each)	300 points
	Final exam	150 points
	Laboratory quizzes/assignments	250 points
	Common plant ID exam I and II (50 points each)	100 points
	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
09/05	Syllabus, general information	
09/07	Introduction	1
09/11	The cell	(2)*, 3
09/12	The cell	(2)*, 3
09/14	The cell	(2)*, 3
09/18	Cell cycle, mitosis	(2)*, 3
09/19	Primary growth, meristems, plant cells and tissues	3, 23
09/21	Primary tissues of the plant	23
09/25	Primary tissues of the plant	23
09/26	The shoot, stems primary and secondary growth	25, 26
09/28	Secondary growth in stems, wood	26
10/02	Wood	26
10/03	The root, structure and development	24
10/05	The shoot, primary structure and development (leaves)	25
10/09	**Lecture exam I**	
10/10	Movement of water/solutes in plants, soil, plant nutrition	29, 30
10/12	Movement of water/solutes in plants, soil, plant nutrition	29, 30
10/16	The flow of energy, respiration	(5)*, 6
10/17	The flow of energy, respiration	(5)*, 6
10/19	Respiration	(5)*, 6
10/23	Photosynthesis, light and life	7
10/24	Photosynthesis, light and life	7
10/26	Photosynthesis, light and life	7
10/30	Regulating Growth and Development, external factors	27, 28
10/31	DNA, Genetics and heredity	8, 9
11/02	DNA, Genetics and heredity	8, 9
11/06	DNA, Genetics and heredity, gene expression	8, 9, 10
11/07	**Lecture exam II**	
11/09	Systematics, Prokaryotes, Cyanobacteria	12, 13
11/13	Prokaryotes, Cyanobacteria	12, 13
11/14	Fungi: zygote, sac, club and imperfect fungi.	14
11/16	Fungi: zygote, sac, club and imperfect fungi.	14
11/20	Protists: slime molds, egg fungi, etc.	15
11/21	Protists: algae.	15
11/23	Thanksgiving	
11/27	Algae	15
11/28	Algae, Lichens	15
11/30	Introduction to plants	16
12/04	Bryophytes	16
12/05	Seedless vascular plants	17
12/07	Seedless vascular plants	17

12/11	Gymnosperms	18
12/12	Angiosperms	19, 20
12/14	**Lecture exam III**	
12/19	**Final exam in SCI D 101 from 5 to 7 pm.**	

* Chapters for background information.

LABORATORY SCHEDULE

DATE		**TOPIC**
SEC 1,2	**SEC 3,4**	
09/06	09/07	Introduction to the microscope.
09/11	09/12	Microscopic measurements
09/13	09/14	The plant cell
09/18	09/19	Mitosis and reproduction
09/20	09/21	**Quiz #1.** Meristems, cell types, herbaceous stems
09/25	09/26	Woody stems and wood anatomy
09/27	09/28	Modified stems, root anatomy, modified roots
10/02	10/03	Leaf anatomy, modified leaves
10/04	10/05	**Quiz #2.** Plant water relations
10/09	10/10	Enzymes and digestion, respiration
10/11	10/12	Light and photosynthesis
10/16	10/17	**Common plant ID exam part I.** Control of plant growth preparation
10/18	10/19	Gas exchange and photosynthesis
10/23	10/24	**Quiz #3.** Control of plant growth
10/25	10/26	Molecular plant genetics
10/30	10/31	Plant genetics, propagation and breeding
11/01	11/02	Bacteria
11/06	11/07	**Quiz # 4.** Chytrids, zygote fungi, sac fungi
11/08	11/09	Club fungi, deuteromycetes, fungi like organisms
11/13	11/14	Cyanobacteria, algal diversity
11/15	11/16	Green algae, lichens
11/20	11/21	**Quiz #5.** Bryophytes
11/22	11/23	No lab. Thanksgiving.
11/27	11/28	Fern allies and ferns
11/29	11/30	Gymnosperms
12/04	12/05	Angiosperms and the flower
12/06	12/07	**Common Plant ID exam part II.** Seeds, seed germination, fruits
12/11	12/12	**Quiz # 6**
12/13	12/14	TBA