INTRODUCTION TO PLANT BIOLOGY
BIOLOGY 130 – FALL 2018

SECTIONS	0101, 0102	**DISCUSSION**	M/W, 8 :00 – 9:15, CBB 135
PROFESSOR	ROBERT BELL	**LAB**	1: T/R, 8:00-9:50, CBB 176 2: T/R, 10:00-11:50, CBB 176
OFFICE	CBB 349	**EMAIL**	rbell@uwsp.edu
PHONE	715-346-2074	**OFFICE HOURS**	M/W, 11:00-1:00 T/R. 12:00-1:00

TEXTBOOK **PLANT BIOLOGY** by Graham, Graham, and Wilcox, 2nd edition (Required, rent from bookstore)

LAB MANUAL **ESSENTIALS OF BOTANY** (Required, purchase new from bookstore).

COURSE DESCRIPTION General biological principles; growth, reproduction, structure, and functions of plants, fungi, protists, and prokaryotes; morphological studies of typical plants.

COURSE POINTS The course grade is based on 700 possible points. The classroom unit has **400 points (4-100 point unit exams)**; the laboratory component has **300 points (6-35 point quizzes, 1-40 point lab report, 1-50 point plant ID exam)**. Several bonus point opportunities will also be available.

SCALE Your grade is based on 700 possible points, the grading scale is:

700-651 (93%) A	580-560 (80%) B-	454-420 (60%) D+
650-630 (90%) A-	559-525 (75%) C+	419-385 (55%) D
629-609 (87%) B+	524-490 (70%) C	< 385 (<55%) F
608-581 (83%) B	489-455 (65%) C-	

CLASSROOM POINTS Unit examinations will consist of multiple choice questions. All unit exams are scheduled outside of the regular class periods (see below). **There are no make-up exams without good reason (one that is satisfactory to the instructor) AND contacting the instructor BEFORE the exam**. There will be one 10-point writing assignment based on a textbook chapter.

UNIT EXAM PREPARATION Prior to each unit exam a review sheet will be distributed. There will also be optional review sessions (see lecture schedule).

UNIT EXAM DATES

Exam #1: Thursday, 27 September, 6:00-8:00PM, CBB 101
Exam #2: Thursday, 25 October, 6:00-8:00PM, CBB 101
Exam #3: Thursday, 15 November, 6:00-8:00PM, CBB 101
Exam #4: Wednesday, 19 December, 8:00-10:00AM, CBB 135

LABORATORY QUIZZES, REPORT, AND EXAM

There are 8 laboratory quizzes (see below). Each lab quiz, except Quiz 1, covers the previous three labs. The quizzes consist of images of lab material and questions related to the lab exercises. Each quiz is worth 35 points. Of these 8-35 point quizzes I will count your 6 highest scores. This means you can miss/drop 2 of these 8 exercises. **There are no quiz make-ups**.

There is a 40-point, end-of-semester lab report. This experiment covers many weeks, will be discussed often, and report guidelines will be distributed.

A common plant identification exam will be given twice during the semester (see schedule below). It consists of images of fifty plants selected from the list provided and each exam is different. The common plant exam is worth 50 points. You may take the exam twice and I will count your high score.

ADVICE FROM DR. BELL

Tip #1: The best strategy you can use to do well in this course is to be in your seat every period. My exams are drawn entirely from class materials. Getting the material from my perspective is more effective than copying someone's notes or reading the book. I will add material not in the book and will not cover all that's in the book.

Tip #2: Take advantage of my office time. You can't wear out your welcome. Please come in as soon as you have any questions with material, don't wait until after the first exam.

Tip #3: Please turn off your phone every time you enter class and please do all you can to resist the urge to visit it during class.

DISHONESTY

Academic dishonesty will not be tolerated and students involved will be identified to the administration for possible punitive actions. The following link takes you to the UWSP Community Rights and Responsibilities document that delineates your rights and responsibilities as part of this academic community (http://www.uwsp.edu/admin/stuaffairs/rights/rightsChap14.pdf).

LEARNING OBJECTIVES

Students will be able to-

1. Recognize the multiple levels of complexity at which biological systems operate, from molecules to ecosystems and the biosphere, and explain the emergent properties and processes characteristic of each level.

2. Describe mechanisms for the continuity of life, including the processes of inheritance, development, and evolution.

3. Demonstrate proficiency in the methods and philosophy of science, including articulation and application of the Scientific Method, collection and analysis of biological data, and application of professional ethics.

4. Critically evaluate and synthesize biological information from multiple sources, including the primary scientific literature, and communicate biological knowledge to both professional and non-professional audiences.

5. Articulate the application of biological science to meeting the needs of society, including basic research, stewardship of biodiversity, human health, and entrepreneurial innovation.

TENTATIVE LECTURE CALENDAR

DATE	TOPICS	CHAPTERS
09/05	Intro/Review (Syllabus, Atoms, Bonds, and Molecules)	1, 2, 6, 7
09/10	Plant Organization (DNA, mitosis, meiosis)	13, 17, 8
09/12	Plant Organization (meristems, cell types, primary stems)	9
09/17	Plant Organization (secondary stems)	9
09/19	Plant Organization (roots)	10
09/24	Plant Organization (leaves)	11
UNIT #1	**REVIEW: WEDNESDAY, 26 SEPTEMBER, 6:00-8:00pm, TBA**	
	EXAM: THURSDAY, 27 SEPTEMBER, 6:00-8:00pm, SCI D101	
09/26	Plant Metabolism (water potential, water movement)	9
10/01	Plant Metabolism (food movement, general metabolism)	9, 5
10/03	Plant Metabolism (respiration)	5
10/08	Plant Metabolism (respiration)	5
10/10	Plant Metabolism (photosynthesis)	5
10/15	Plant Metabolism (photosynthesis)	5
10/17	Plant Metabolism (photosynthesis)	5
10/22	Plant Metabolism (photosynthesis)	5
UNIT #2	**REVIEW: WEDNESDAY, 24 OCTOBER, 6:00-8:00PM, TBA**	
	EXAM: THURSDAY, 25 OCTOBER, 6:00-8:00PM, TBA	

10/24	Diversity (genetics)	
10/29	Diversity (prokaryotes)	18
10/31	Diversity (prokaryotes)	18
11/05	Diversity (fungi)	20
11/07	Diversity (fungi)	20
11/12	Diversity (protists)	19
11/14	Diversity (protists)	19

UNIT #3 **REVIEW: WEDNESDAY, 14 NOVEMBER, 6:00-8:00PM, TBA**
EXAM: THURSDAY, 15 NOVEMBER, 6:00-8:00PM, TBA

11/19	Plant Kingdom (introduction, bryophytes)	21
11/21	Plant Kingdom (vascular introduction, seedless vasculars)	21, 22
11/26	Plant Kingdom (seedless vasculars, seed plant introduction)	22, 23
11/28	Plant Kingdom (gymnosperms)	23
12/03	Plant Kingdom (flowers)	24
12/05	Plant Kingdom (fertilization, seeds, fruits, germination)	24
12/10	TBA	
12/12	Review 4	

UNIT #4 **REVIEW: TBA**
EXAM: MONDAY, 19 DECEMBER, 8:00-10:00AM, CBB 135

TENTATIVE LABORATORY CALENDAR

DATE	LAB#	TOPIC
09/04	---	*Lecture in Lab – Definition, Levels, and Themes of Life,* Begin Breeding Expt
09/06	1	*Lecture in Lab – Molecules, DNA*, Introduction to Botany Lab
09/11	2	*Lecture in Lab – Life Cycles and Diversity*, Microscopes
09/13	3	Plant Cells
09/18	4	Mitosis and Reproduction
09/20	5	**QUIZ #1 (1, 2, 3, 4)**, Meristems, Cell Types, Herb. Stems (count trichomes)
09/25	6	Twigs and Woody Stems
09/27	7	Modified Stems, Root Anatomy, Modified Roots
10/02	8	**QUIZ #2 (5, 6, 7)**, Leaf Anatomy, Modified Leaves
10/04	9	Water Relations
10/09	10	Enzymes and Digestion, Respiration
10/11	11	**QUIZ #3 (8, 9, 10)**, Light and Photosynthesis
10/16	12	Control of Plant Growth - 1
10/18	13	Gas and Photosynthesis
10/23	12	Control of Plant Growth - 2 (harvest, replant)
10/25	14	**QUIZ #4 (11, 12, 13)**, Molecular Plant Genetics (count trichomes)
10/30	15	Plant Genetics
11/01	16	Bacteria
11/06	17	**QUIZ #5 (14, 15, 16)**, Fungi
11/08	18	More Fungi
11/13	19	Cyanobacteria and algal diversity
11/15	20	**QUIZ #6 (17, 18, 19)**, Green algal diversity, lichens
11/20	21	Bryophytes
11/22	---	THANKSGIVING BREAK
11/27	22	Fern Allies, Ferns
11/29	23	**QUIZ #7 (20, 21, 22)**, Gymnosperms
12/04	24	Angiosperms and Flowers
12/06	25	Seeds, Seed Germination, Fruits
12/11	---	**QUIZ #8 (23, 24, 25), COMMON PLANT #1**
12/13	---	**COMMON PLANT #2, ALL ASSIGNMENTS DUE**

THESE SITES CONTAIN VALUABLE INFORMATION FOR QUIZZES AND PLANT ID.

This site contains images from the labs http://www.uwsp.edu/biology/courses/botlab/
This site contains common plant images http://www.uwsp.edu/biology/courses/plantid/