

INTRODUCTION TO PLANT BIOLOGY BIOLOGY 130 – FALL 2016

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| SECTIONS | 1 - 2 | DISCUSSION | M/W, 8 :00 – 9:15, SCI D101 |
| PROFESSOR | ROBERT BELL | LAB | 1: T/R, 8:00 – 9:50, TNR 153 2: T/R, 10:00 – 11:50, TNR 153 |
| OFFICE | TNR 476 | EMAIL | rbell@uwsp.edu |
| PHONE | 715-346-2074 | OFFICE HOURS | M/W 1:00 – 3:00 and by appt. |
| TEXTBOOK | <u>PLANT BIOLOGY</u> by Graham, Graham, and Wilcox, 2 nd edition (REQUIRED, BOOKSTORE RENTAL) | | |
| LAB MANUAL | <u>ESSENTIALS OF BOTANY</u> (REQUIRED, \$22.23 - PURCHASE FROM BOOKSTORE, DO NOT BUY A USED COPY). | | |
| COURSE DESCRIPTION | <u>General biological principles</u> ; emphasis on growth, reproduction, structure, and functions of plants, fungi, protists, and prokaryotes; morphological studies of typical plants. | | |
| COURSE POINTS | The course grade is based on 900 possible points. The classroom component has 450 points (4 – 100 point unit exams, 50 points from other assignments); the laboratory component has 450 points (7 – 50 point quizzes, 1 – 50 point lab report, 1 – 50 point common plant ID exam). Several bonus point opportunities may be available. | | |
| SCALE | Your grade is based on 900 possible points, the grading scale is: 900-837 (93%) A 746-720 (80%) B- 584-558 (62%) D+ 836-810 (90%) A- 719-675 (75%) C+ 557-495 (55%) D 809-783 (87%) B+ 674-630 (70%) C < 495 (<55%) F 782-747 (83%) B 629-585 (65%) C- | | |
| UNIT EXAMS | Unit examinations may consist of multiple choice, fill in the blank, labeling diagrams or short answer discussion 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 individual writing assignments, problems, chapter or outside readings, internet research, or unannounced quizzes totaling 50 points. | | |

**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, 29 September, 6:00 – 8:00pm, SCI D101

Exam #2: Thursday, 27 October, 6:00 – 8:00pm, SCI D101

Exam #3: Thursday, 17 November, 6:00 – 8:00pm, SCI D101

Exam #4: Tuesday, 20 December, 8:00 - 10:00am, SCI D101

**LABORATORY
QUIZZES AND
EXAMS**

There are 9 laboratory quizzes (see schedule). Each lab quiz, except two, covers the previous three labs. The quizzes consist of lab material images and questions related to the lab exercises. Each quiz is worth 50 points. Quiz 1 and Quiz 8 cover two labs plus additional work items. I will count your 7 highest scores. This means you can miss/drop 2 of these 9 exercises. There are no quiz make-ups.

There is an end-of-semester lab experiment report, worth 50 points. This experiment covers many weeks and will be discussed often, report guidelines are also distributed. Due near end of semester.

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 my 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>).

TENTATIVE LECTURE CALENDAR

| <u>DATE</u> | <u>TOPICS</u> | <u>CHAPTERS</u> |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------|--------------------|
| 09/07 | Intro/Review (Syllabus, atoms, bonds, molecules) | 1, 2 |
| 09/12 | Intro/Review (DNA) | 6, 7 |
| 09/14 | Plant Organization (diversity, life cycles) | 13, 17, 8 |
| 09/19 | Plant Organization (meristems and tissues) | 8 |
| 09/21 | Plant Organization (stems) | 10 |
| 09/26 | Plant Organization (stems) | 10 |
| <u>UNIT #1</u> | REVIEW: WEDNESDAY, 28 SEPTEMBER, 6:00 – 8:00pm, SCI D101 EXAM: THURSDAY, 29 SEPTEMBER, 6:00 – 8:00pm, SCI D101 | |
| 09/28 | Plant Organization (leaves, water potential) | 11, 9 |
| 10/03 | Plant Metabolism (water movement, food movement) | 9 |
| 10/05 | Plant Metabolism (general metabolism) | 5 |
| 10/10 | Plant Metabolism (respiration) | 5 |
| 10/12 | Plant Metabolism (photosynthesis) | 5 |
| 10/17 | Plant Metabolism (photosynthesis) | 5 |
| 10/19 | Plant Metabolism (photosynthesis) | 5 |
| 10/24 | Diversity (genetics) | 14, 15 |
| <u>UNIT #2</u> | REVIEW: WEDNESDAY, 26 OCTOBER, 6:00 – 8:00pm, SCI D101 EXAM: THURSDAY, 27 OCTOBER, 6:00 – 8:00pm, SCI D101 | |
| 10/26 | Diversity (genetics, viruses) | Essay 17.1, 14, 15 |
| 10/31 | Diversity (prokaryotes) | 18 |
| 11/02 | Diversity (fungi) | 20 |
| 11/07 | Diversity (fungi) | 20 |
| 11/09 | Diversity (fungi, protists) | 20, 19 |
| 11/14 | Diversity (protists) | 19 |
| 11/16 | Diversity (protists) | 19 |
| <u>UNIT #3</u> | REVIEW: WEDNESDAY, 16 NOVEMBER, 6:00 – 8:00pm, SCI D101 EXAM: THURSDAY, 17 NOVEMBER, 6:00 – 8:00pm, SCI D101 | |

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|-------|-------------------------------------------------------------|--------|
| 11/21 | Plant Kingdom (introduction, bryophytes) | 21 |
| 11/23 | Plant Kingdom (bryophytes, vascular introduction) | 21, 22 |
| 11/28 | Plant Kingdom (seedless vasculars) | 22 |
| 11/30 | Plant Kingdom (seedless vasculars, seed plant introduction) | 22, 23 |
| 12/05 | Plant Kingdom (gymnosperms, flowers) | 23, 24 |
| 12/07 | Plant Kingdom (flowers, double fertilization) | 24 |
| 12/12 | Plant Kingdom (seeds, fruits, germination) | 24 |
| 12/14 | TBA | |

UNIT #4 **REVIEW: TBA**
EXAM: TUESDAY, 20 DECEMBER, 8:00 - 10:00AM, SCI D101

TENTATIVE LABORATORY CALENDAR

| <u>DATE</u> | <u>LAB#</u> | <u>TOPIC</u> |
|-------------|-------------|---------------------------------------------------------------------------|
| 09/06 | -- | <u>Lecture in Lab - definition, levels, themes</u> |
| 09/08 | -- | <u>Lecture in Lab - molecules</u> , Begin Plant Breeding Experiment |
| 09/13 | 1 | <u>Lecture in Lab - mitosis, meiosis</u> , Introduction to the Botany Lab |
| 09/15 | 2 | <u>Lecture in Lab - meristems and tissues</u> , Microscopes |
| 09/20 | 3 | QUIZ #1 (syllabus, 1, 2), Plant Cells |
| 09/22 | 4 | Mitosis and Reproduction |
| 09/27 | 5 | Meristems, Cell Types, Herb. Stems (count trichomes) |
| 09/29 | 6 | Twigs and Woody Stems |
| 10/04 | 7 | QUIZ #2 (3, 4, 5), Modified Stems, Root Anatomy, Modified Roots |
| 10/06 | 8 | Leaf Anatomy, Modified Leaves |
| 10/11 | 9 | QUIZ #3 (6, 7, 8), Water Relations |
| 10/13 | 10 | Enzymes and Digestion, Respiration |
| 10/18 | 11 | Light and Photosynthesis |
| 10/20 | 12 | Control of Plant Growth - 1 |
| 10/25 | 13 | QUIZ #4 (9, 10, 11), Gas and Photosynthesis |
| 10/27 | 12 | Control of Plant Growth - 2 (harvest, replant) |

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| 11/01 | 14 | Molecular Plant Genetics (count trichomes) |
| 11/03 | 15 | QUIZ #5 (12, 13, 14), Plant Genetics |
| 11/08 | 16 | Bacteria |
| 11/10 | 17 | Fungi |
| 11/15 | 18 | QUIZ #6 , (15, 16, 17), More Fungi |
| 11/17 | 19 | Cyanobacteria and algal diversity |
| 11/22 | 20 | Green algal diversity, lichens |
| 11/24 | -- | No Classes, Thanksgiving Break |
| 11/29 | 21 | QUIZ #7 (18, 19, 20), Bryophytes |
| 12/01 | 22 | Fern Allies, Ferns |
| 12/06 | 23 | QUIZ #8 (21, 22, draft lab table and figures), Gymnosperms |
| 12/08 | 24 | Angiosperms and Flowers, |
| 12/13 | 25 | COMMON PLANT EXAM #1 , Seeds, Seed Germination, Fruits |
| 12/15 | -- | QUIZ #9 (23, 24, 25) COMMON PLANT EXAM #2, ALL PAPERS 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/>