

COURSE SYLLABUS

COURSE TITLE: BIOL 222 The Living Plant

COURSE CODE: 60815

TERM: Spring and Summer 2015

COURSE CREDITS: 3.0

DELIVERY: Lecture & Practicum (Lab)

CLASS SECTION: 01

START DATE: June 25th, 2015

CLASS LOCATION: GEOL 265

LAB LOCATION: Room 213 Biology Building

CLASSTIME: 8.30 to 10.50 pm (M-F) LAB TIME: 1:30-4:20pm

WEBSITE: via Blackboard. Lecture notes will be posted on the BLACKBOARD homepage.

Course Description:

This course examines the organization of the plant body and how cells, tissues and organs function and contribute to growth, development and reproductive success. The course will deal broadly with plant biology, emphasizing flowering plants, and provides a foundation for senior courses on plants.

Prerequisite(s): BIOL 120.3. Note: BIOL 121.3 is strongly recommended. Students with credit for BIOL 202.3 or BIOL 205.3 may not take this course for credit.

Anticipated Learning Outcomes:

By the completion of this course, students will be expected to:

1. Understand both basic and advanced functions of plants, spanning the mechanisms and strategies of their development, growth, physiology, reproduction, and interactions with their environment.
2. Show proficiency in their ability to handle and examine plant parts (e.g., stems, roots), including application of stains (dyes) that help distinguish cell types and tissues such that students can appreciate the differentiation in plant organs that translates to the functional role of these structural aspects.
3. Learn how to correctly operate microscopes (compound, dissecting) plus utilize an image-capture system that facilitates the production of images (e.g., stained stem in cross-section) that can then be labeled to correctly identify the section's various tissues and cell types.
4. Have a basic understanding that plants are diverse (e.g., not all plants reproduce in the same way - seeds versus non-seed plants), although by necessity the lectures and labs will emphasize flowering plants (angiosperms), which are the most dominant plant group that students will encounter.
5. Apply programs like Excel Graphics to prepare simple graphs of plant-science data.
6. Learn to work efficiently both as individuals and within group settings in the lab.

Note: The University of Saskatchewan Learning Charter is intended to define aspirations about the learning experience that the University aims to provide, and the roles to be played in realizing these aspirations by students, instructors and the institution. A copy of the Learning Charter can be found at:
http://www.usask.ca/university_secretary/LearningCharter.pdf

INSTRUCTOR CONTACT INFORMATION

Dr. Doug Smith Biology RM 150 Biology 966-4415
Lecturer dh.smith@usask.ca

Marlene Mahoney Biology Building RM 150 966-4415
Lab Coordinator marlene.mahoney@usask.ca

INSTRUCTIONAL RESOURCES: TEXTBOOK AND LAB MANUAL

Text Book: **Recommended:** **Plant Biology** (2nd edition), Rost, Barbour, Stocking & Murphy
Biology, Russell et al., 2013 recommended as an additional resource.

Lab Manual: **Biology 222 Lab Manuals (2014)** are available through the bookstore. Previous manuals are out of date; purchase a new lab manual.

Evaluation of Student Performance

Midterm exam: Wednesday July 8 th 8:30 am	20%
Laboratory component: Begins on July 26 th , 2015	40%
Final Lecture exam: July 17 th or 20 th , 2015	<u>40%</u>
	100%

Laboratory Assignments:

Value: 20% of the final course grade.

Date: Deadline dates vary, because these items are assigned throughout the term.

Format: Assignments, Quizzes, Lab Reports.

Description: Each student will work independently (unless specified otherwise) to prepare these items that relate to the laboratory (practical) portion of the course.

Lecture Midterm Exam:

Value: 20% of the final course grade.

Date: During the lecture slot on Wednesday, July 8, 2015.

Duration: 50 minutes.

Format: Combination of multiple choice, short answers, diagrams, paragraph-style answers.

Description: Coverage will include lecture material from June 25 – July 6, 2015. Note that no phones, laptops, tablets or other electronic or written materials are allowed. Please bring your valid U of S student card plus an HB pencil and eraser.

Laboratory Exam:

Value: 20% of the final course grade.

Date/Time: Within your regular lab period, on July 13th, 2015.

Format: Combination of spot test identifications plus practical exercises such as dissections, hand-sectioning, staining, drawing and labeling.

Description: This exam is comprehensive; its coverage includes the weekly laboratory exercises and demonstration materials presented during Labs 1-8.

Students are strongly encouraged to take advantage of the Review Lab on July 11, 2015, to help prepare for this exam.

Lecture Final Exam Value:

Value: 40% of the final course grade.

Date: Either on July 17th or 20th, 2015. Date arranged by the Registrar.

Students must avoid making prior travel, employment, or other commitments for this period. Students are encouraged to review all University examination policies and procedures: <http://www.usask.ca/calendar/exams&grades/examregs/>

Duration: Three hours

Format: Combination of multiple-choice, short answers, diagrams, and paragraph-style answers.

Description: This exam is comprehensive and will cover all lecture material.

However, material delivered since the Lecture Midterm Exam will be emphasized.

Please bring your valid U of S student card plus an HB pencil and eraser.

Criteria That Must Be Met to Pass

The Lecture Midterm Exam, Laboratory Exam and Lecture Final Exam are **required** elements of the course and, therefore, must be completed in order for a student to be eligible to pass this course.

Deferred Exam Policy

Students absent for the **midterm exam** must advise Dr. Smith in person or by telephone (966-4415) within **two(2)** working days of the missed midterm (July 8th) and will need to present documentation explaining their absence. Otherwise, a grade of zero will be assigned.

Application for a **deferred final exam** must be made within **three(3)** working days of the missed final, but requests are made to the Dean's Office of the College in which the student is enrolled.

Academic Dishonesty

Academic dishonesty is a serious and increasing offence on this campus. Academic dishonesty is what the university calls cheating. The Student Academic Dishonesty Rules of the University of Saskatchewan Council are provided on the following website:

<http://www.usask.ca/secretariat/student-conduct-appeals/academic-misconduct.php>

Students should access this web site and read very carefully the list of criteria provided.

Penalties for cheating vary depending on the seriousness of the offense e.g. a grade of zero in the exam or assignment to dismissal from this university (and all other universities in North America) for a period of time e.g. one year, three years or permanently. All students

should familiarize themselves with the many forms of dishonesty that may be dealt with at the Department, College or University level.

There is an onus on every student to become informed as to what does or does not constitute academic dishonesty at this university. Ignorance of applicable standards for academic dishonesty **will not be considered to be an acceptable excuse** in situations where the university decides that academic honesty has been breached by a student.

In particular, notice that providing false or misleading information with the intent **to avoid or delay writing an examination or fulfilling any other academic requirement** is also considered academic dishonesty. We have provided you with information well in advance of the exam times and we expect you to be prepared to write on the dates indicated.

STUDENTS WITH A DISABILITY

Students who have disabilities (learning, medical, physical, or mental health) are strongly encouraged to register with Disability Services for Students (DSS) if they have not already done so.

Students who suspect they may have disabilities should contact DSS for advice and referrals. In order to access DSS programs and supports, students must follow DSS policy and procedures.

For more information, check <http://students.usask.ca/disability/>, or contact DSS at 966-7273 or dss@usask.ca. Students registered with DSS may request alternative arrangements for mid-term and final examinations. Students must arrange such accommodations through DSS by the stated deadlines. Instructors shall provide the examinations for students who are being accommodated by the deadlines established by DSS.

Students requiring an elevator for access to the second floor in the Biology Building (teaching labs and some faculty offices) may use the elevator in the Museum of Natural Sciences. Alternatively, or if offices on the 3rd floor of the Biology Building need to be accessed, there is an elevator located at the north end of the research wing, opposite Room 130.

Lecture Topics and Tentative Schedule

Introduction to Plant Origins and Plant Growth
Organization of the plant body

June 25 – July 3

Meristems, Growth and Differentiation

Plant Form and Function

July 6 – July 10 (Midterm July 8)

Stems, Leaves and Photosynthesis

Roots and Nutrient Uptake

Nutrition and Transport in Plants

Plant Responses to the Environment

Plant Reproduction and Development

July 13 – July 16

Sexual and Asexual Plant Reproduction

Structure and Function of Seeds and Fruits

Hormones and Plant Development

Dates to note:

June 25 th	University classes begin for Q3
July 1 st	Canada Day- No class
July 8 th	Biology 222 Midterm examination
July 16 th	Last day of classes for Q3
July 17 or 20	Biology 222 Final examination

Laboratory Schedule

Dates

Lab #

Topic

June 25 (Thur.)		NO LAB
June 26 (Fri.)	Lab 1	Introduction to Plants and Lab Skills
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June 29 Mon.	Lab 2	Plant Tissue Systems and Stems
June 30 (Tues.)	Lab 3	Meristems, Primary and Secondary Growth
July 1 (Wed.)		Canada Day – NO LAB
July 2 (Thur.)	Lab 4	Leaves and Photosynthesis
July 3 (Fri.)	Lab 5	Roots
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July 6 (Mon.)	Lab 6	Transport
July 7 (Tues.)		NO LAB
July 8 (Wed.)	Lab 7	Sexual Reproduction, Flowers and Fruit
July 9 (Thur.)	Lab 8	Mechanisms of Reproduction: Embryos, Seeds, and Vegetative Reproduction
July 10 (Fri.)		Review
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July 13 (Mon.)		Final Lab Exam

Lab Coordinator - Marlene – Office Room 150 (306-966-4415) – Lab Room 213 (306-966-4423)