

COURSE SYLLABUS

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|-----------------|--------------------------------------|---------------|------------------------------|
| COURSE TITLE: | BIOL 420 Molecular Biology of Plants | | |
| COURSE CODE: | 31275 | TERM: | T2 2014-15 |
| COURSE CREDITS: | 3.0 | DELIVERY: | Lecture & Practicum (Lab) |
| CLASS SECTION: | 01 | START DATE: | January 5 th 2014 |
| CLASS LOCATION: | Biology 124 | LAB LOCATION: | Biology 227 |
| CLASS TIME: | 11:30 am to 12:20 pm M,W,F | LAB TIME: | Mondays 1:30 to 5:20 pm |
| WEBSITE: | via Blackboard | | |

Course Description

A study of the molecular biology of plants: nuclear and plastid genomes, coordination of expression between nuclear and plastid genomes, transposable elements, abiotic stress and hormonal effects on gene expression and plant transformation.

Prerequisite(s): BIOL 121, 222 (formerly 202 or 205) and one of BIOL 226 (formerly BIOL 211) or BIOC 300; and 3 additional credit units of senior BIOL courses; or permission of the instructor.

Learning Outcomes

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

1. have an understanding of, and be able to communicate, molecular mechanisms and principles (concepts) that govern plant function at the molecular level.
2. demonstrate and convey these principles using oral and written styles appropriate for the field.
3. have conducted molecular biology experiments in a laboratory setting, interpret and communicate the results.
4. integrate and correctly attribute ideas from published scientific sources in their work.
5. apply physiological principles and critical thinking to explain both challenges and solutions that plants face to living in their physical environment.

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

More information on the Academic Courses Policy on course delivery, examinations and assessment of student learning can be found at: http://www.usask.ca/university_secretary/council/academiccourses.php

Course Overview

The course is offered as three class periods, three times per week and a weekly lab period. Some of the labs will be completed over several weeks and the lab periods will be split between laboratory work and individual or group presentations or research projects. The course provides the opportunity for students to explore several aspects of plant molecular biology using a variety of approaches. Students will work individually and in teams to accomplish the learning objectives. Spe

Topics to cover

There is no specified order of topics for this course. Lecture and discussion periods will be interspersed with student presentations in between. Students will be responsible for researching potential topics of interest and presenting material to the group individually and in teams. In the first week of the term the class will come up with and decide on a list of topics to be explored in detail throughout the term.

Last day to withdraw from course without academic penalty is March 15th 2015.

Laboratory class information:

A laboratory schedule and lab manual will be posted to the course Blackboard site. Lab exercises will focus on the demonstration of current molecular biology techniques as applied to plant biology. Lab topics may or may not coincide with the order of topics presented in the lecture time slot.

Instructors

Contact Information:

Dr. Christopher Todd
Instructor

Rom 143 Biology Building

966-4497
chris.todd@usask.ca

Resource Material and Downloadable Documents

There is no textbook for this course. Students will be responsible for accessing the primary literature through the U of S library system. Some course materials may be distributed through the Biology 420 Blackboard course website. The only document you are required to read is the course syllabus, however most course activities will not be able to be completed without first completing prior reading.

Please note that instructor's Powerpoint slides or lecture notes may or may not be provided to you as a **courtesy.** You are not required to download or print these slides/notes. While the instructor will endeavor to have the lecture Powerpoint slides/notes posted sometime in advance of the lecture, ***this is not a guarantee.***

Grading Scheme

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|-----------------------------------|------|
| One Page Summaries | 15 |
| Laboratory | 20 |
| Group Presentation | 15 |
| Journal Club Presentation & Paper | 30 |
| Final Exam | 20 |
| Total | 100% |

Evaluation Components

One page summaries:

Value: 15% of final course grade

Date: Variable

Description: Three individual one page summaries of a topic presented in class, submitted within one week of the topic being presented. One will be on a topic delivered by the instructor and the other two will be on topics presented by classmates.

Format: A detailed format and rubric for evaluation will be presented in class and made available through the course website.

Laboratory:

Value: 20% of final course grade

Date: Variable

Description: Weekly lab summaries (10%) and end of term lab report (10%)

Format: Weekly summaries of lab activities which will be returned to students. A final comprehensive report based on a synthesis of the weekly summaries will be submitted at the end of term.

Group presentations:

Value: 15% of final course grade

Date: Scheduled by group during class or lab periods

Description: Group oral presentations

Format: Small group presentations presenting an agreed upon topic of interest relevant to the course subject.

Journal article presentation and review paper:

Value: 30% of final course grade

Date: Scheduled during class or lab periods

Description: Individual oral presentation and written review paper.

Format: Individual oral presentations presenting and interpreting the results of a recent primary research article relevant to the course subject. A written review of the same topic will be due after all oral presentations have been completed. A detailed format and rubric for evaluation will be presented in class and made available through the course website.

Final Exam:

Value: 20% of final course grade

Date: To Be Determined

Description: Written Take-home Final Exam

Format: A take-home final exam to be completed during the student's own time based on course material. Instructions will include the desired format as well as a guide for grading.

University of Saskatchewan Grading System

Students in BIOL 420 are reminded that the University has established a grading system to be used in all of its courses. Information on literal descriptors for grading at the University of Saskatchewan (reproduced below) can be found at: <http://students.usask.ca/current/academics/grades/grading-system.php>

Scheduling of Exams

Students must bring their current University of Saskatchewan student card to all exams and be prepared to present it for verification purposes. Entry into certain campus buildings where exams may be held, also requires a valid student card.

It is forbidden for students to utilize in any way during an exam, any electronic device (e.g., cell phone, dictionary, palm pilot, translator, etc.). This includes calculators because these are not required for any exam.

Midterm and final examinations, and the lab exam, must be written on the date scheduled. Final examinations may be scheduled at any time during the examination period in December 2013; students should therefore avoid making prior travel, employment, or other commitments for this period.

In the event that a student is absent from the **midterm exam** through no fault of his/her own due to a medical emergency, death in the family, or other valid reasons, documentation must be provided explaining the absence, to assist in the determination of whether permission will be granted for the student to write a deferred mid-term exam. Students absent for the Mid-Term Lecture Exam **must advise their instructor in person or by telephone (not by email) and initiate arrangements for writing a Deferred Mid-Term Exam, within 3 working days of the missed exam**, in order to avoid being assigned a grade of zero for the exam.

If a student is absent from the **final exam** through no fault of his or her own for medical or any other valid reason, **he/she must apply to the Dean's Office of the College in which he/she is registered for an opportunity to write a Deferred Final Exam, within 3 working days of the missed exam**. Documentation must also be provided to explain the absence from the final exam. Deferred exams may utilize a different format than the regular exam, at the sole discretion of the instructors.

Students are encouraged to review all examination policies and procedures:

<http://www.usask.ca/calendar/exams&grades/examregs/>

Student Feedback

Lab report feedback will usually be available within one week. Midterm and final exam grades will be communicated via the course Blackboard site and exams will be available for student review by appointment. Grades for oral reports will be generated through a combination of instructor and peer evaluation of performance

Attendance Expectations for Laboratory Classes

Students are expected to attend all scheduled lab periods and complete all lab exercises during the scheduled lab times. No make-up labs will be scheduled. Failure to turn in a lab report on time without a valid excuse will result in a grade of zero.

Integrity Defined (from the Office of the University Secretary)

The University of Saskatchewan is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the Student Conduct & Appeals section of the University Secretary Website and avoid any behavior that could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University.

All students should read and be familiar with the Regulations on Academic Student Misconduct (http://www.usask.ca/university_secretary/honesty/StudentAcademicMisconduct.pdf) as well as the Standard of Student Conduct in Non-Academic Matters and Procedures for Resolution of Complaints and Appeals (http://www.usask.ca/university_secretary/honesty/StudentNon-AcademicMisconduct2012.pdf)

For more information on what academic integrity means for students see the Student Conduct & Appeals section of the University Secretary Website at: http://www.usask.ca/university_secretary/pdf/dishonesty_info_sheet.pdf

Examinations with Disability Services for Students (DSS)

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://www.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.

Prepared (December 2014) by Christopher Todd