



DEPARTMENT OF BIOLOGICAL SCIENCES
COURSE OUTLINE

1. Course: PLANT BIOLOGY 645 – DYNAMIC ASPECTS OF PLANT ULTRASTRUCTURE

Lecture Sections: L01 MWF 8:00-8:50am BI 301 FALL 2014
Instructor(s): Dr. E.C. Yeung BI 391 220-7186 yeung@ucalgary.ca

Desire 2 Learn (D2L) course name: TBA

Biological Sciences Department BI 186; (403) 220-3140; biosci@ucalgary.ca

2. Prerequisites: N/A See section 3.5.C in the Faculty of Science section of the online Calendar (<http://www.ucalgary.ca/pubs/calendar/current/sc-3-5.html>)

3. Grading: The University policy on grading and related matters is described sections F.1 and F.2 of the online University Calendar. In determining the overall grade in the course the following weights will be used:

Presentations	40%
Laboratory projects	40%
Final Term Paper	20%

There will be no final examination scheduled by the Registrar.

Grading scale: 90% A+, 86% A, 82% A-, 78 B+, 74% B, 70% B-, 66% C+, 62% C, 58% C-, 54% D+, 50% D, >50% F.

4. Missed Components of Term Work: The regulations of the Faculty of Science pertaining to this matter are found in the Faculty of Science area of the Calendar in [Section 3.6](#). It is the student's responsibility to familiarize himself/herself with these regulations. See also [Section E.6](#) of the University Calendar

5. Scheduled out-of-class activities: Dates and times of approved class activities held outside of class hours. NIL

REGULARLY SCHEDULED CLASSES HAVE PRECEDENCE OVER ANY OUT-OF-CLASS-TIME-ACTIVITY. If you have a clash with this out-of-class-time-activity, please inform your instructor as soon as possible so that alternative arrangements may be made for you.

6. Course Materials:

7. Examination Policy: Students should also read the Calendar, [Section G](#), on Examinations.

8. Writing across the curriculum statement: e.g. "In this course, the quality of the student's writing in laboratory reports will be a factor in the evaluation of those reports. See also [Section E.2](#) of the University Calendar.

9. Human studies statement: If you consent, your course work may be used for research purposes once the course is over. Your responses will remain anonymous and confidential. Grouped data (no individual responses) may be used in academic presentations and publications. Participation in such research is voluntary and will not influence grades in this course. Students' signed consent forms will be withheld from instructors until after final grades are submitted. More information will be provided at the time student participation is requested. See also [Section E.5](#) of the University Calendar.

ETHICS IN THE BIOLOGICAL SCIENCES

Studies in the Biological Sciences involve the use of living and dead organisms. Students taking laboratory- and field-based courses in these disciplines can expect involvement with and experimentation on such materials. Students perform dissections on dead or preserved organisms in some courses. In particular courses, students experiment on living organisms, their tissues, cells, or molecules. Sometimes field work requires students to collect a variety of living materials by many methods, including humane trapping.

All work on humans and other animals conforms to the Helsinki Declaration and to the regulations of the Canadian Council on Animal Care. The Department strives for the highest ethical standards consistent with stewardship of the environment for organisms whose use is not governed by statutory authority. Individuals contemplating taking courses or majoring in one of the fields of study offered by the Department of Biological Sciences should ensure that they have fully considered these issues before enrolling. Students are advised to discuss any concern they might have with the Undergraduate Program Director of the Department.

10. OTHER IMPORTANT INFORMATION FOR STUDENTS:

- (a) **Academic Misconduct:** (cheating, plagiarism, or any other form) is a very serious offence that will be dealt with rigorously in all cases. A single offence may lead to disciplinary probation or suspension or expulsion. The Faculty of Science follows a zero tolerance policy regarding dishonesty. Please read the sections of the University Calendar under [Section K](#). Student Misconduct to inform yourself of definitions, processes and penalties.
- (b) **Assembly Points:** In case of emergency during class time, be sure to FAMILIARIZE YOURSELF with the information on [assembly points](#).
- (c) **Academic Accommodation Policy:** Students with documentable disabilities are referred to the following links: [Calendar entry on students with disabilities](#) and [Student Accessibility Services](#).
- (d) **Safewalk:** Campus Security will escort individuals day or night (<http://www.ucalgary.ca/security/safewalk/>). Call 220-5333 for assistance. Use any campus phone, emergency phone or the yellow phones located at most parking lot pay booths.
- (e) **Freedom of Information and Privacy:** This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPP). As one consequence, students should identify themselves on all written work by placing their name on the front page and their ID number on each subsequent page. For more information see also <http://www.ucalgary.ca/secretariat/privacy>.
- (f) **Student Union Information:** VP Academic Phone: 220-3911 Email: suvpaca@ucalgary.ca.
SU Faculty Rep. Phone: 220-3913 Email: sciencerep@su.ucalgary.ca; [Student Ombudsman](#)
- (g) **Internet and Electronic Device Information:** You can assume that in all classes that you attend, your cell phone should be turned off unless instructed otherwise. Also, communication with other individuals, via laptop computers, Blackberries or other devices connectable to the Internet is not allowed in class time unless specifically permitted by the instructor. If you violate this policy you may be asked to leave the classroom. Repeated abuse may result in a charge of misconduct.
- (h) At the University of Calgary, feedback provided by students through the Universal Student Ratings of Instruction (USRI) survey provides valuable information to help with evaluating instruction, enhancing learning and teaching, and selecting courses (www.ucalgary.ca/usri). Your responses make a difference - please participate in USRI Surveys.

Department Approval _____ ORIGINAL SIGNED _____ Date _____

Department Approval
For NO Final Exam _____ ORIGINAL SIGNED _____ Date _____

PLANT BIOLOGY 645 – DYNAMIC ASPECTS OF PLANT ULTRASTRUCTURE

Topics

Week 1	Introduction
Week 1-3	Tissue preparation techniques for light and electron microscopy. Work on lab project.
Week 4-8	Special techniques: General histochemistry. Enzyme histochemistry. Fluorescence microscopy. Immunocytochemistry. Work on lab project.
Week 9	Work on lab project.
Week 10	Artifacts; the art and science of interpretation. Work on lab project.
Week 11	Seminar presentation techniques. Writing to learn biology. Work on lab project.
Week 12-13	Seminars and discussion on selected topics. Work on lab project.
Week 14	Conclusion. Work on lab project.