

PLANT CELLULAR AND MOLECULAR BIOLOGY 300

General Plant Biology

Autumn Quarter 2009

5 Credit Hours

Lectures: Monday, Wednesday, & Friday 2:30 to 3:18 PM, 1180 Postle Hall

Labs: Thursday, 8:30-11:18 AM, 11:30-2:18 PM, 2:30-5:18 PM

Rm. 10 Jennings Hall

Instructor: Dr. Morris G. Cline, Associate Professor, Emer., Dept. of Plant Cellular & Molecular Biology

Rm. 564 Aronoff Laboratory, 318 W. 12th Ave.

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Office Hours: By appointment

Teaching Assistants:

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Course Description

This is a one-quarter introductory course to plant biology for students with at least one course in biology. Lectures are devoted to plant structure and function; growth and development; diversity and reproduction of lower and especially flowering plants; issues in modern plant biology.

Course Objectives

To provide a basic knowledge of the morphology of representatives of different group of plants with focus on the structure and morphology of flowering plants; to introduce plant diversity for an appreciation of the environmental adaptations and requirements of plants for growth; to build an understanding of the processes and functions from the cell to the whole plant level; to promote an appreciation of plants and plant products in our everyday life and for the success of the human civilization. The laboratory section of the course is absolutely essential for the successful completion of this course.

GEC Objectives

PCMB 300 is part of the General Education Curriculum and fulfills a Natural Science requirement. Natural Science coursework fosters students' understanding of the principles, theories, and methods of modern science, the relationship between science and technology, the implications of scientific discoveries and the potential of science and technology to address problems of the contemporary world.

Required Text

Botany, an Introduction to Plant Biology, 4th edition, J. Mauseth, Jones & Bartlett. In the course syllabus, the chapters in the text that are relevant to the particular lecture topics are indicated. Read the pertinent chapters before coming to lecture.

A Photographic Atlas for the Botany Laboratory, 5th edition, VanDeGraff, Ruch & Crawly (Morton Publishing Co.) is also useful for the lab. In addition, the PCMB 300 General Plant Biology Lab Manual is required and can be purchased at the Tuttle UniPrint, 2055 Millikin Way (on the ground floor of the Tuttle Park Place Garage).

Grading

Your final letter grade will be based on the cumulative points that you get from the various examinations and assignments, as given below:

Lecture Midterm I	100 points (25%)
Lecture Midterm II	100 points (25%)
Final, non-comprehensive	100 points (25%)
Laboratory	100 points (25%)
Photoperiodism lab report	25 points
It's a Plant Eat Plant lab report	25 points
C-fern lab report	25 points
Lab attendance & participation (5 pts/lab)	25 points
Total	400 points

Other Important Considerations

This is a lecture-based course. So, your attendance at lecture is essential to your success in the course. Lecture attendance is also important because some of the lecture material will not be found in the textbook. There will be some lecture handouts for those in attendance. There also will be a set of slides posted on Carmen, many of which will be utilized in the lecture.

The lab handbook gives you a background about the exercise that you will do in the lab. **Please read the lab handout for each week before you come to lab.** This will be of considerable assistance to your successful completion of the lab exercise. Missed labs cannot be made up.

No make-up lecture exams are planned. **There will be no early final exam.** In case of emergency, please call in advance, if possible.

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Lecture and Laboratory Schedules

(Reading Assignments from the 4th Edition of Botany, an Introduction of Plant Biology for the lectures)

Week	Date	Lecture Topic	Reading Assignment	Laboratory Topic	Lab Reports
1	9/23 9/25	Course Introduction The Plant Cell	Chapters 1 and 3	Introduction to the laboratory & the plant cell	N/A
2	9/28 9/30 10/2	Cell Division and Growth	Chapters 4 and 5	The cell cycle & Photoperiodism I	N/A
3	10/5 10/7 10/9	Plant tissues Meristems and primary growth	Chapter 5	The plant vascular system & Photoperiodism II	N/A
4	10/12 10/14 10/16	“Trees”: Secondary growth and alternative growth habits MIDTERM I	Chapter 8	It’s a plant eat plant world I & Photoperiodism III	N/A
5	10/19 10/21 10/23	Leaves and photosynthesis Roots Mineral Nutrition	Chapters 6, 7, & 13	Leaves, It’s a plant eat plant world II, & Photoperiodism IV	N/A
6	10/26 10/28 10/30	Hormones	Chapter 14	C-Fern I, It’s a plant eat plant world III, & Photoperiodism V	N/A
7	11/2 11/4 11/6	Environmental control of plant growth Plant Systematics, life cycles & alternation of generations	Chapter 14 Chapter 9	Gravitropism, C-fern II, & It’s a plant eat plant world IV	Photoperiodism report due
8	11/9 11/11 11/13	MIDTERM II Holiday Angiosperm life cycle & reproduction: flowers	 Chapters 9 & 23	Algae I & C-Fern III	N/A
9	11/16 11/18 11/20	Seeds, fruits & Germination Green Algae	Chapters 9 & 23 pp. 441-449	Algae II & C-Fern IV	It’s a plant eat plant world report due
10	11/23 11/25 11/27	Bryophytes Seedless Vascular Plants & Gymnosperms Holiday	Chapters 20, 21, & 22	NO LABORATORY! THANKSGIVING!	N/A
11	11/30 12/2 12/4	Plant biotechnology & breeding Modern concerns in plant biology Review	Chapter 15	Plant diversity THIS LABORATORY WILL MEET IN THE BIOSCI GREENHOUSE ON TOP OF THE 12TH AVE. GARAGE	C-Fern report due
12	12/9	FINAL EXAM WEDNESDAY FROM 1:30-3:18 PM	N/A	N/A	N/A