Biology 135 – Plants And Society w/Laboratory

Fall Semester 2004

Professor: Dr. M. Eloise Brown Carter
Office: Pierce Hall #105
Phone: (770)784-8343

Lecture Hours: Monday, Wednesday, Friday - 9:35 a.m. – 10:25 a.m.
Room: Pierce 101

Lab Hours: 2:00 p.m. – 5:00 p.m., Wednesday
Room: Pierce 123

Office Hours: Tuesday - 1:00 to 2:00 p.m. and Wednesday - 12:45 p.m. to 1:30 p.m. Students are encouraged to see Dr. Carter during class to make appointments for other times.

Required Text: Levetin, E. and K. McMahon. 2003. Plants and Society. 3rd ed., McGraw-Hill, New York.

Required Lab Text: Levetin, E., K. McMahon and R. Reinsvold. 2003. Laboratory Manual for Applied Biology. McGraw-Hill, New York. (Used laboratory manuals with answers and results cannot be used in lab.)

Date	Topic	Reading Assignment	Laboratory
Aug. 25	Plants in Our Lives	None	No Lab
27	Plants as Chemical Factories	Ch. 1 all	
30	Cell Structures and Functions	Ch. 2 to p. 27	
Sept. 01	Cell Membrane and Osmosis	Ch. 2 p.25	1-Cells of Crystal and Color; Start 8-Genetic Diversity Ex. C
03	Mitosis and Cloning; What's the Big Deal?	Ch. 2 to end	
06	LABOR DAY		

08	Plant Tissues and the Stem	Ch. 3 to p.36	2-Cell Division and Cloning; 3-Plant Tissues
10	Roots and Leaves	Ch. 3 to p.45	
13	What part of the plant is that??	Ch. 3 to end	
15	Plant Physiology: Transport	Ch. 4. to p.53	4-Plant Architecture Botanical Walk
17	Review and Response; Begin Energy and Enzymes	Ch. 4 to p.56	
20	**EXAM I. Ch. 1-3 and 4 to p. 53 Transport**		
22	Photosynthesis: The Energy Doorway of Life	Ch. 4 to p. 63	Field Trip = Botanical Excursion. Be on time!
24	Cellular Respiration: Plants Do It, Too!	Ch. 4 to end	
27	Movie: Sexual Encounters of the Floral Kind	Ch. 5	
29	Oh, those sexy flowers! Meiosis	Ch. 5, Ch. 6	**LAB EXAM: 1,2,3,4** 6-Flowers; 7- Fruits Tissue culture
Oct. 01	Genetics and Plant Breeding	Ch. 7	
04	Plant Breeding	Ch. 7	
06	DNA: Structure and Function	Ch. 7 to p.117	17-Bioactive Drugs in Action
08			
11	FALL BREAK		
13	From DNA to protein	Ch. 7 to end	Plants and Molecular Biology
15	Review and Response; Evolution & Systematics	Ch. 8	
18	EXAM II – Ch. 4, 5, 6, 7		
20	Healthful Living and Nutrition	Ch. 10 and Lab Topic 10	11-Leaves of Grass

22	The Origins of Agriculture	Ch. 11	
25	Grasses: Wheat and Rice	Ch. 12	
27	America's Grass: Corn	Ch. 12	**LAB EXAM:6, 7, 11** 12- Lowdown on Legumes
29	Legumes: Plant Protein and Fiber	Ch. 13	
Nov. 01	Movie: Feeding the World	Ch. 15	
03	Starches; Preview for Cultural and Botanical Excursion	Ch. 14 and bring your lab manual to class	Field Trip: Farmer's Market – 13-Food from Underground and Far Away; Appendix B Health Food Store
05	Beverages: Coffee, Tea, and More; Bring Lab Manual to Class	Ch. 16 Appendix C Lab Manual	
08	Herbs, Spices and Perfumes	Ch. 17	
10	Review and Response	Ch. 8	14-Spice of Life
12	**EXAM III** **Ch. 8,10,11, 12,13,14,15,16**		
15	Fiber, Wood, Cloth and Paper: Materials	Ch. 18	
17	Herbal Medicines	Ch. 19	Trees and Forests; Selection & Evolution: Results of Lab 8 Ex C
19	Medicinal Plants	Ch. 19	
22	Medicinal Plants Papers Due		
24	THANKSGIVING		
26	THANKSGIVING		
29	Psychoactive Drugs	Ch. 20	

Dec. 01	Poisons	Ch. 21	Botanical Feast and Presentations
03	Ecological Issues	Ch. 24	
06	Plants and Society	Review and Evaluation	
14	**FINAL EXAMINATION 9am – 12**		

Course Objectives: The first three objectives are knowledge based, the fourth is the essence of all laboratory courses, and the remainder I consider to be the "hidden objectives" for the course. They have more to do with process than content.

Students completing this course should be able to:

- Appreciate plants and their contribution to society, including the ecological, economic and aesthetic contributions;
- Identify and demonstrate basic concepts in biology using plants, including the relationship of structure and function and examples of unity and diversity;
- Recognize major plant families and representative plants and their uses;
- Understand science as a "way of knowing" by participation in scientific investigations in the laboratory;
- Use information resources and materials from many disciplines to research a topic in the study of plants and their uses in various cultures;
- Pursue topics independently based on their knowledge and interest;
- Demonstrate critical thinking skills through problem based learning;

- Communicate information in a professional manner that is interesting and thought provoking.

Examinations: The lecture exams will be a combination of multiple choice, short answer and short essay questions. Exams will cover all material covered in lecture in addition to assigned readings in the text, and other sources. The final examination is comprehensive. Students should feel free to ask for clarification about any question during the exams.

Scientific Writing and Laboratory Projects: For some laboratory projects students will submit lab reports or other written assignments. Instructions will be provided in the lab. Students will work in groups to prepare a presentation on plant use by a selected cultural group. These presentations will be part of a botanical feast during the final laboratory period. More information to follow.

Honor Code: All examinations and work for credit in this course come under the regulations of the Honor Code. Your signature on your work attests to your upholding the Honor Code.

Absences: The policy on absences is provided in a separate handout. Unexcused absences or a failure to follow the procedures outlined in that handout will result in a reduction in your grade. Any questions about absences should be asked immediately.

Evaluation.* Students are evaluated on their performance in the classroom and laboratory. The proposed assignment of points will be:

300 points	3 lecture exams
100 points	2 laboratory exams
175 points	final examination
50 points	lab projects and writing
50 points	Botanical Feast and presentation
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675 points	total

*Total points may change based on assignments and opportunities.

Final grade determination:

90 - 100%	A
80 - 89%	B
70-79%	C
60-69%	D
<60	F

Plus and minus grades are given.