Biology 135 – Plants And Society w/Laboratory

Fall Semester 2005

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. Join Dr. C. for "Walk and Talk" on the Quad during nice weather each Wed. Students are encouraged to see Dr. Carter during class to make appointments for other times.

Required Text: Levetin, E. and K. McMahon. 2006. *Plants and Society*. 4rd 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. 31	Plants in Our Lives	None	No Lab
Sept.02	Plants as Chemical Factories	Ch. 1 all	
05	LABOR DAY		
07	More Biological Molecules; Cell Structure and Functions	Ch. 2 to p. 27	1-Cells of Crystal and Color; Start 8-Genetic Diversity Ex. C; (plant dyes)
09	More Cell Structures; Cell Membrane	Ch. 2 p.25	

12	Mitosis and Cloning; What's the Big Deal?	Ch. 2 to end	
14	Plant Tissues	Ch. 3 to p.36	2-Cell Division and Cloning; 3-Plant Tissues (papermaking)
16	What Part of the Plant Is That?? Bring your favorite fruit or vegetable to class!!		
19	Stems, Roots and Leaves	Ch. 3 to end	
21	Materials: Wood, Cloth, Fiber, and Paper	Ch. 18	4-Plant Architecture Botanical Walk (dress appropriately)
23	**EXAM I. Ch. 1-3; selected topics Ch. 18**		
26	Begin Energy and Enzymes	Ch. 4 to p.56	
28	Photosynthesis: The Energy Doorway of Life	Ch. 4 to p. 63	5-Plants Do It All; Check on tissue cultures and selection experiment
30	Cellular Respiration: Plants Do It, Too!	Ch. 4 to end	
Oct. 03	Plant Reproduction: Oh, those sexy flowers and delicious fruits!!	Ch. 5	
05	Meiosis: formation of gametes	Ch. 5, Ch. 6	**LAB EXAM: 1,2,3,4** 6-Flowers; 7- Fruits Check tissue cultures and selection
07	Genetics and Plant Breeding	Ch. 7	
10	FALL BREAK		
12	Plant Breeding: Where did all those mustards (peppers, etc.) come from?	Ch. 7	Field Trip: Organic Farming in Newton County

14	World Food Day: International Teleconference 12-3pm		
17	Review DNA structure; from DNA to protein	Ch. 7	
19	Review and Response; Evolution & Systematics	Ch. 8	11-Leaves of Grass (Bread making) Selection Results (8)
21	EXAM II – Ch. 4, 5, 6, 7		
24	MyPyramid: Healthful Living and Nutrition	Ch. 10	
26	The Origins of Agriculture	Ch. 11	12- Lowdown on Legumes (Good Eats!)
28	Grasses: Wheat, Rice, Corn and more	Ch. 12	
31	My Pyramid Report and Discussion		
Nov. 02	Legumes: Plant Protein and Fiber	Ch. 13	**LAB EXAM:6, 7, 11** 14-Spice of Life
04	Movie: History's Harvest I	Ch. 15	
07	History's Harvest II and III		
09	Preview for Cultural and Botanical Field Trip	Ch. 14, 16 Lab Topic 13 Food From Underground and Far Away	Field Trip: Farmer's Market –Appendix B Health Food Store and Handout
11	Herbs, Spices and Perfumes	Ch. 17	
14	Review and Response	Ch. 8	
16	**EXAM III Ch.8,10,11, 12,13,14,15,16**		17-Bioactive Drugs in Action
18	Herbal Medicines: Case Study	Ch. 19	
21	Herbal Medicines	Ch. 19	

23-25	THANKSGIVING		
28	Medicinal Plants	Ch. 19	
30	Medicinal Plants; *Papers Due*	25	Sustainability: Invasive Plants
Dec. 02	Psychoactive Drugs	Ch. 20	
05	Poisons	Ch. 21	
07	Ecological Issues	Ch. 24	Botanical Feast and Presentations
09	Sustainable Living with Plants		
12	Plants and Society	Review and Evaluation	
	FINAL EXAMINATION		

It's humbling to think that all animals, including humans, are parasites of the plant world.

Isaac Asimov

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.