

Plant Science Lab, Spring 2012

Biol 200L Sec 007

Wed 4:30-6:30 Brad 203

Instructor: Mr. Bob Bundy

Office: 201A Bradley (Between 201 and 202) Enter from 201 if micro lab is going on.

Office Hours: Mon. 2:30-5:00, Wed. 8:00-10:00, Th 9:00-10:00, F 8:00-10:00

During office hours, I may be prepping one of the labs (202, 203 or 208). If you don't find me in my office just look in one of the labs. Also, we can schedule some time if you need it.

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Phone: 803-313-7453

Course Description:

Plant science lab is designed to introduce students to the world of botany in the context of plants that are native to our local environment. The course will cover the basics of plant structure and then progress into distinct differences among plant species. This information will be used to identify and classify species both in the classroom and in the field. From this information, students will be able to draw conclusions linking the type of plant, structures, and growth habit with the geographical context in which the plant is found.

The course begins with work primarily in the lab observing plant matter on a microscopic scale. Then, the scope is broadened to observe plants in an organismic and an ecological context. We will also be working on specific metabolic processes found in plants. There will be several field experiences off campus that will take place during this course.

Class meeting time: W 4:30-6:30 Bradley 203

Learning Outcomes:

1. Students will be able to identify the various plant tissues with respect to their cell types and their function.
2. Students will be able to use the following characteristics in plant differentiation and identification:
 - a. Root structures
 - b. Stem structures
 - c. Leaves
 - d. Flowers
 - e. Fruits
 - f. Seeds
3. Students will identify mechanisms in plants that allow their adaptation to specific locations.

- Students will be able to distinguish between the different plant classifications from byrophytes through spermatophytes.

Text:

You will need a notebook for this class. The text will consist of lab handouts as well as a field guide to plants on the USCL campus.

Course Structure:

The course will involve work in the lab and in the field. We will begin with several sessions in the lab to become oriented to the world of plants and then begin working out in the field doing some observing and classifying. When we start heading out into the field make sure that you come prepared for whatever weather we are to encounter.

Your grades will come from lab exercises submitted at the end of lab sessions. There will be five of these and they will count 10 pts each and make up 50% of your grade. Additionally, you will be required to have a collection of 50 plants pressed and properly labeled. This will count as 25% of your grade. There will be a field practical that will count as 25% of your grade.

Grades:

90-100	A
87-89	B+
80-86	B
77-79	C+
70-76	C
67-69	D+
60-66	D

In Lab Exercises	80pts
Two field write-ups	20pts
Total	100 pts

Field Write-ups:

During the course, we will be traveling to 40 Acre Rock and to Lands Ford Canal State Park. On each of these trips, I would like for you to keep a species list of the plants that we see as well as write a few pages on the environment, the specific abiotic conditions of the area, and the adaptations that make the plant-life suited for that environment.

Class conduct:

During class, this class should be the focus of your attention. Turn OFF all cell phones and such. If you want to text folks or answer the phone, then look for another class. In addition, don't talk while instruction is going on. If you disrupt the learning of others, you will be asked to leave the class. This behavior does not suit this class.

I don't know if you have noticed but the students who do best usually sit in the front and both ask and answer questions. Being attentive allows you to learn better, stay focused and be less distracted.

I want you to be successful in this class and to learn material that will allow you to truly appreciate and understand more of the world around you. Use your opportunity and learn as much as you can.

I shouldn't have to talk about cheating but it will not be tolerated. I usually make out several tests and hand them out. This makes it close to impossible to look on someone else's paper or such. If you should have the answers to the other test on your paper, then you will receive a zero, be recommended to the academic dean for disciplinary action. Look at the honor code (www.sc.edu/academicintegrity/honorcode.html). As has already been expressed, texting or such is forbidden and if you should happen to be caught doing such during a testing situation, you will receive a zero and be recommended to the academic dean for disciplinary action.

Attendance is mandatory. If you are not here, then you don't get the benefit of the interchange between the instructor, your class mates and you. You really miss out. You will not receive any grade reduction for absences unless you miss over 3 classes. The 4th class will result in a reduction of your grade by one point and an additional point for each following absence up to 5. The key is, don't miss.

Schedule for class:

This is a general outline and schedule for our class meetings. I am sure that there will be some adjustment as time goes on.

Jan 11: Introduction to lab. Microscopes and microscopy.
Jan 18: The Chemistry of Life – identifying carbohydrate, lipids, and proteins.
Jan 25: Cells and cell parts (types of plant cells)
Feb 1: Tissues in roots and stems
Feb 8: Photosynthesis lab on pigments and absorbance.
Feb 15: Soil analysis
Feb 27: Last day to drop a course without a WF.
Feb 29: Field lab – bryophytes, lycophytes and polypodiophyta (pteridophytes)
Mar 7: NO CLASS Spring break – observe plants as you go out during your spring break. Bring back photos of 10 different plants and we are going to use these in our discussion of the different members of the plant kingdom.
Mar 14: Field lab – angiosperms, ginkgophyta, inophyta, magnoliophyta. Identification of plants by branching, leaf types, flowers, and flower types.
Mar 21: Osmosis diffusion lab.
Mar 28: Field lab/ – Identification of major plant families.
Apr 4: Field lab – 40 Acre Rock and surrounding areas. Plant adaptations for severe environments.
Apr 11: Cellular respiration.
Apr 18: Field lab - Landsford Canal State Park. Plant insect interactions.
April 25: Plant growth and hormones.