

## **Biology 1308 Plant Biology**

**Instructor:** Professor John E. Ubelaker

**Office hours:** by appointment;

Email: [Ubelaker@mail.smu.edu](mailto:Ubelaker@mail.smu.edu)

**Required Resources:** Textbook: A Plant Biology workbook. It will be available to purchase for \$30.00 upon arrival.

### **Mission Statement:**

This is a course that introduces the student to the life cycles, taxonomy and the economic, social, and industrial aspects of plant substances and materials in an evolutionary context.

**Objective:** The objective of the course is to provide students with a basic understanding of life cycles and plant diversity in relation to biotic and abiotic factors in a scientific format. It includes the equivalent of one laboratory session each week and meets 3 hours of the curricular requirements of non-science students.

**Learning outcomes:** Students will demonstrate basic facility with the methods and approaches of scientific inquiry and problem solving. Students will explain how the concepts and findings of science in general, and the study of plants, shape our world.

This course meets the science requirement for non-science students

### **Learning Objectives**

1. To recognize the major botanical groups of plants
2. To understand the major advances of each group of plants
3. To understand restrictions experiences by each group of plants
4. To develop an appreciation for the genetic inheritance of major plant structures.
5. To understand the major role of evolution in selection of plant adaptations
6. To examine the structure of plant reproduction
7. To come to know intimately the role of pollen transferring organisms
8. To differentiate between organism pollinated vs wind pollinated plant evolution
9. To apply the knowledge of the plants to understanding modern research harvesting the environment.
10. To examine a specific ecosystem and run an experiment influencing the evolution of a group of plants.

### **Measurable outcomes**

1. Students will learn to recognize characteristics that distinguish major plant families in the southwest.
2. Students will be able to explain the major structural advances made by each major group of plants.
3. Students will learn to distinguish features in structures present in each plant group that restricts their evolution
4. Students will learn the basic genetic mechanisms of inheritance
5. Students will understand the steps in the evolution process that allows the inheritance of characteristics
6. Students will deepen their understanding of the role of producing abundant offspring by reproductive processes

7. Students will gain an in depth understanding of the role of animals in transferring pollen from flower to flower.
8. Students will learn to distinguish between wind pollinated and animal pollinated plants
9. Students will learn various plant husbandry techniques in crop production.
10. Students will learn to independently study a group of plants, analyze and run an experiment to restore a group of plants back to their role in a biome.

### **Grading and Policy**

Your course grade will be based on Professionalism and the Examinations as follows:

Professionalism	10 points
Midterm Examinations	100 points
Daily quizzes	40 points
Final Examination	100 points

Professionalism points + Midterm Examination + Quizzes + Final exam /250 total points  
= Final grade

Letter grades will be assigned according to the following scale: percentages

93-100 A	83-87 B	73-77 C	0-59 Don't
90-92 A-	80-82 B-	70-72 C-	
88-89 B+	78-79 C+	60-69 D	

**Study Skills:** As students you have the right to make a decision to work as little or as much as you like on each course. The following suggestions are made to guide your decision process.

1. I recommend that you spend at least two hours outside of the classroom for each hour of lecture. Before each lecture read the material from the text book and be prepared to ask questions that can be answered in class. After each class review your lecture notes for an hour and reread the text.
2. Be on time for lecture and laboratory sessions. Take good notes and listen to the lecture. Some material on the exams will come from both the text and the lecture material. The quizzes will be given at the beginning of each class.

### **Professionalism:**

Professionalism will be measured by the professor's subjective assessment of your approach to the class and class work, industry and preparation before class, meaningful oral participation during class, and punctual attendance. Extra credit is not available in this course.

### **Examinations:**

Examinations may not be re-scheduled, distributed early, made up or turned in late.

The midterm Examinations will be distributed in class at the date and time designated for distribution and must be completed within the class period. The final examination is not cumulative. Questions may involve short answers.

### **Policy**

Students requesting reasonable accommodation on any course component for learning differences or bonafide religious observance must contact the professor as detailed below. Only requests accompanied by the letter of documentation from the appropriate person in authority will be considered.

**Disability Accommodations:** Students needing academic accommodations for a disability must first register with Disability Accommodations & Success Strategies (DASS) to verify the disability and to establish eligibility for accommodations. You may call 214-768-1470 or visit <http://www.smu.edu/alac/dass> to begin the process. Once registered you should then schedule an appointment with Dr. Ubelaker to make the appropriate arrangements.

**Religious Observations:** Religiously observant students wishing to be absent of holidays that require missing class should notify Dr. Ubelaker in writing at the beginning of the term, and should discuss with him, in advance, acceptable ways of making up any work missed because of the absence.

**The University Honor Code shall be strictly followed.** The Honor Code for SMU policies as described in the student handbook will be followed in this course. You will be required to sign and present to me an Honor Code statement and pledge prior to each exam and homework assignment. Any allegation of violation of academic integrity in the lecture or laboratory portions of this course will be reviewed in the Department and/or referred to the Honor Council.

### **Calendar and Reading Assignments**

The calendar and assignments are subject to change at the Professor's discretion. Particular topics and assignments may be added to or deleted from those listed below, and dates for class and topic discussion may be altered. A lecture and reading assignment will be provided on the first day of class. The lecture, laboratory and reading assignments will follow the textbook closely.

This is an intense experience in which you are in class (lecture and laboratory) most of the day. Lectures begin at 8:30 and last until 9:30. Laboratories begin at 9:30 and last until 10:30 each day. On Thursday/Friday we will have a field trip to a different location. In these locations the lecture material will be designed to help the student understand the geology, archaeology and human uses of the land. On these field trips we will leave after breakfast at 8 or 8:30, travel to the site in a van and spend the rest of the day hiking and lecturing. You will need to bring a notebook to take notes on these hikes.

I welcome you to this course; please attend the lectures and laboratories since material is discussed there that is not in the textbook. I ask that each of you make an appointment with me sometime during the term even if you are doing acceptable work. I enjoy getting to know each of the students in my classes. If you have difficulty with any part of the class please schedule an appointment with me early in the semester. Have a good semester and enjoy the wonderful environment of SMU in Taos.

<b>Schedule</b>	
<b>Date</b>	<b>Activity</b>
<b>July</b>	
31	Arrival and orientation at 6:30; meet after orientation to obtain workbook and assignments
<b>August</b>	
1	8:30 lecture at tables outside cafeteria. 10:00-lab in classroom From Aristotle and Plato; scientific method; Discorides Laboratory on the origin of eukaryotic life – Algae
2	Field trip to Bandelier leave at 8:30
3	Field trip to Ghost Ranch leave at 8:
4-5	Free days
6	Lecture 8:30, Quiz 1 Ray and Linneaus and plant variation; Laboratory on Fungi, Lichens,
7	8:30 lecture Quiz 2 Cuvier, Buffon and Lamarck mosses horsetails and ferns
8	8:30 lecture, Quiz 3. The Darwins; lab on conifers
9	Field trip to Italionalis leave at 8:30
10	Field trip to Gorge
11-12	Free days
13	Mid term exam
14.	8:30 lecture, Angiosperms
15	Field trip to Gorge; review before dinner
16	Final exam
17	Departure by 10:00

Students are expected to be on time to class, having read and critically considered the reading assignments. Tardiness and absence significantly affect your participation grade.