

Abilene Christian University – Agricultural and Environmental Sciences

Course Title: ENVR 112 – Plant Science

Semester/Year: Spring 2013

Location/Time: ZL202 , Lecture MW 1:00-1:50; ZL 107 or at ACU Rhoden Farm, Lab W 2:00 – 4:50

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ACU Mission: To educate students for Christian service and leadership throughout the world.

A & E Mission: To educate students for Christian stewardship for sustainable food, fiber, environmental and natural resource systems in God's creation.

Primary Audience: This course is designed for undergraduate students in A&E but would also be relevant to students in related majors such as biology or chemistry.

Course Description: Fundamentals factors of plant-soil-climate relations are introduced. Biological processes in plant germination and growth are explored. Plant physiology and mineral nutrition are considered. Soil conserving practices are included.

Course Goal: To convey to students the importance of plants to every aspect of life in America and to provide them the basic information necessary to understand the science behind modern plant production.

Student Learning Outcomes: Students will (1) gain knowledge and understanding of the concepts of plant nutrition, propagation, and response to environmental conditions, (2) develop skills necessary to analyze graphical data from plant studies presented in lecture or generated as part of the lab experience, (3) develop hypotheses, test them by conducting experiments in lab, interpret and draw conclusions from the data that may shed light on scientific explanations for phenomena, (4) explore current agro-ecological practices in comparison to historical practices and non-traditional practices.

Class Format: This course is composed of two 50 minute class sessions and one 170 minute lab session per week. Classroom instruction will primarily be in a traditional lecture format.

Attendance: Class attendance is important and roll will be checked at the beginning of most class periods. Any student who misses greater than 20% of the course is subject to dismissal. In this case 20% is equal to 6 class meetings or 3 labs. Absences for illness are "excused" if accompanied by a letter of explanation from a health care professional (physician, nurse etc...). Missing class for extra-curricular activities will be counted as an "excused" absence (athletes and others should not get 6 "skips" in addition to missing for meets, games etc...). If dismissed from the course, students should expect to receive a final grade of "F". Tardiness is unacceptable. Two tardies will be counted as an "unexcused" absence. At the 4rd "unexcused" absence or 2nd

unexcused lab absence, the student's grade will be dropped one letter. Both excused and unexcused absences count toward the total absences for the course.

Academic Integrity: Each member of the ACU community is expected to uphold and maintain the integrity of scholarship on this campus. Violations of the academic integrity policy (intentions to deceive, mislead, or misrepresent) are unbecoming a Christian and will be met with severe censure, including but not limited to a grade of zero on exams and/or out of class assignments, dismissal from the course, or possibly a final course grade of "F". The full policy is available for review at the campus life web site and at the following offices: provost, college deans, dean of campus life, director of student affairs, director of residential life education and academic departments.

Classroom Behavior: Students are expected to behave and be engaged in the material covered in the class. Students should not talk when others are talking to the class, whether they are teachers, teaching assistants, or other students. Mobile and other electronic devices should only be used as part of a class activity and should otherwise be put away. Use of an electronic device other than for a class activity will cause that student to be marked "tardy" for that day. Lap-top computers may be used for taking notes, but not for purposes unrelated to the class session. Students who disrupt the class may be asked to leave and will be counted as "tardy" for that day.

Assignments and Grading:

Exams – There will be four exams this term, three unit exams and one final. The final will be non-comprehensive. All exams will be worth 100 points each.

Laboratory – Each student will be expected to participate fully in lab. Laboratory in this class is a team effort. Teams of 3-4 students will complete lab exercises together and turn in lab reports together. Students will also be given a grade for participation. Laboratory is worth 200 points.

Course Grade:

Exams	400 points (66.7%)
<u>Laboratory</u>	<u>200 points (33.3%)</u>
Total	600 points

Your grade will be calculated on an accumulated point total basis. Therefore any student that accumulates 90% (540) of the total points will receive an "A" for the course, 80% (480) a "B", 70% (420) a "C", 60% (360) a "D", < 60% an "F".

Text: Gliessman, S.R. 2006. *Agroecology: The Ecology of Sustainable Food Systems*. 2nd Edition. CRC Press. Boca Raton, FL. ISBN: 0849328454.
Additional readings from the internet will be provided for sections not covered in the text.

Additional Course Policies:

1. Late work will not be accepted! Assignments are due at the beginning of class!
2. All out of class assignments are to be “word-processed” in “*Times New Roman*” font and at a font size of 12, with one inch margins top-bottom-sides. These are to be submitted in the DropBox in the Files system for the class.
3. Students are expected to adhere to the university dress code outlined in the student guide. The guide is available on-line and may also be found in the campus life office on the main floor of McKinzie Hall.

Class Schedule:

Week	Lecture Topics	Laboratory	Readings
1/14	Why Study Plants Plant Anatomy Photosynthesis Respiration	No Lab	Chapter 3, 18
1/21		Roots and Stems	
1/28		Plant Propagation	
2/4		Leaves and Transpiration	
2/11 – Exam One			
2/11	Plant Nutrition Ecology Light Temperature	Garden Project 1	Chapters 2, 13, 4, 5
2/18		Flowers and Fruits	
2/25		Plant Ecology	
3/4		Plant Propagation II	
3/4 – Exam Two			
3/11 SPRING BREAK			
3/18	Air Wind Fire	Garden Project 2	Chapters 7, 10
3/25		Garden Project 3	
4/1		Photosynthesis	
4/8		Plant nutrient deficiencies	
4/8 – Exam Three			
4/15	Biotic Factors Water Soil	Plant diseases and pests	Chapters 11, 12, 9, 6, 8
4/22		Soil properties	
4/29		TBA	
5/7 (8-10am) – Final Exam (ZL 202)			