I. COURSE: Plant Ecology 4 semester hours. (3:3)
Class TR 11-12-15 BH 113
Laboratory R 1-4 CS 240

II. FACULTY: Dr. Roy L. Lehman
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Office Hours: MW 9-10; 11-12
Additional Hours Available by Appointment

III. COURSE DESCRIPTION:

The study of the functional relationships and productivity of plant communities as they are affected by their physical, chemical and biotic environment. Laboratories emphasize the quantitative analysis of field data, evaluation of environmental factors effecting plant survival and distribution and community concepts and attributes of plant ecological units.

IV. TEXTBOOKS:

Required:


Recommended:

V. STUDENT LEARNING OUTCOMES:

The student will:
* summarize the characteristics of plant ecosystems including major vegetation types of North America.
* describe the environmental characteristics which effect the distribution and abundance of plants within an ecosystem including Light, temperature, fire, soil type, and plant water relations.
* describe the chemical factors which effect population dynamics and resource allocation within the ecological unit including, including organic and inorganic compounds (i.e. oxygen, carbon dioxide, nitrogen, phosphorus and other nutrients.).

* discuss food-chain dynamics of plant ecosystems including parasitism, herbivory, resource limitations, and energy and nutrients transformation through successive trophic levels.

* explain methods of managing plant systems including the development of solutions to environmental problems.

VI. COURSE REQUIREMENTS AND GRADING CRITERIA:

Evaluation is ongoing to enhance experimental learning, providing the student with feedback about performance in meeting the course objectives. Conferences with the faculty provide opportunities to discuss progress toward the course objectives. Grading is a process of measuring the outcome of learning against standards and assigning a symbol to the level of performance achieved.

All students are expected to conform to college-level standards of ethics, academic integrity, grammar and spelling. In particular, you should review pages 24-41 of the 2009-2010 A&M-CC catalog. Except in cases where prior arrangements have been made with the instructor, there is no provision for making up late work and/or missed quizzes or exams. All excuses MUST be recorded with the professor by e-mailing information including the student’s name, class, date, time and reason for the absence. Two or more absences from class/field activities may result in an unsatisfactory grade for the class.

Disability and Veterans' Services: Texas A&M University-Corpus Christi is committed to providing persons with disabilities an equal opportunity to access campus facilities, resources and programs. The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. Support and accommodations are also available for returning veterans who experience cognitive and/or physical access issues in the classroom or on campus. Our Office of Disability Services arranges such support and academic accommodations. To make a request, or for more information, call (361) 825-5816 or visit Driftwood 101. It is important to contact the Office of Disability Services in a timely fashion as it will take time for them to review requests and prepare accommodations and accommodation letters.

Grade Appeals: As stated in the Texas A&M University-Corpus Christi University Rules and Procedures (Section B [Academic Program], Part 13 [Students]: 13.02.99.C2 [Student Grade Appeals] and 13.02.99C2.01 [Student Grade Appeal Procedures]), a student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is on the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is encouraged to first discuss the matter with the instructor. For complete details, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, consult the University Rules and Procedures specified above (accessible through the University Rules and Procedures website at http://www.tamucc.edu/provost/university_rules/index.html). For assistance and/or guidance in the grade appeal process, students may contact the Office of Student Affairs.
Dropping a Class. I hope that you never find it necessary to drop this or any other class. However, events can sometimes occur that make dropping a course necessary or wise. Please consult with me before you decide to drop to be sure it is the best thing to do. Should dropping the course be the best course of action, you must initiate the process to drop the course by going to the Student Services Center and filling out a course drop form. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. November 5, 2010 is the last day to drop a class with an automatic grade of “W” this term.

VII. COMPONENTS OF COURSE GRADE:

LABORATORY REQUIREMENTS

VALUE

1. Students will complete an ecological plant-sampling project with report... 300
   (Due 12/1/2011)
2. Oral Presentation (100 points) (12/1 or 12/6) ........................................ 100
   TOTAL: 400

COURSE REQUIREMENTS

1. Lecture Examinations (3) (includes the final) 150 450
   10/6, 11/10, & 12/8 (11-1:30)
2. Projects (2) (See Laboratory Requirements above) 400
   TOTAL: 850

FINAL GRADE: Total Number of points ÷ 850 = FG (%)

VIII. LECTURE TOPIC OUTLINE

A. THE SCIENCE OF PLANT ECOLOGY week 1
   1. Introduction to Plant Ecology
   2. Brief History of Plant Ecology

B. THE SPECIES AS AN ECOLOGICAL UNIT week 2
   1. The Species in the Environmental Complex.
   2. Species Types and Descriptions

C. EVOLUTION AND POPULATION BIOLOGY week 3
   1. Arrangement of Individuals in Space and Time.
   2. The Behavior of Individuals: Resource Allocation Patterns
D. SPECIES INTERACTIONS
1. Competition, Amensalism, Commensalism  week 4
2. Mutualism  week 5
3. Protocooporation  week 5
4. Herbivory  week 5

E. THE COMMUNITY AS AN ECOLOGICAL UNIT
1. Community Concepts and Attributes  week 6
2. Methods of Sampling the Plant Community  week 7
3. Methods of describing the Plant Community  week 7
4. Succession  week 8
5. Productivity  week 9
6. Mineral Cycles  week 10

F. ENVIRONMENTAL FACTORS
1. Light and Photosynthesis  week 11
2. Temperature  week 12
3. Fire  week 13
4. Soil  week 13
5. Water  week 14
6. Plant Water Relationships  week 14

G. MAJOR VEGETATION TYPES OF NORTH AMERICA  week 15

X. LABORATORY/FIELD TRIP TOPIC OUTLINE: “TENTATIVE”

9/1  Lab # 1  Introduction
9/8  Lab # 2  Laboratory & Field Techniques
9/15  Lab # 3  Biotic Sampling Methods
9/22  Lab # 4  Field trials/lab work
9/29  Lab # 5  Soil Analysis
10/6  Lab # 6  Field Project Analysis Work Day
10/13  Lab # 7  Research Work Day
10/20  Lab # 8  Research Work Day
10/27  Lab # 11  Field Project Prep/Work Day
10/27 – 10/29 Required Field Trip to Ben Bolt; TAMU Ranch
(*A $20 fee for meals is required.)

11/3  Lab # 10  Field Trip Research Data Follow-up
11/10  Lab # 11  Professional Writing Skills & Techniques
11/17  Lab # 12  Research Work Day
12/1  Lab # 14  Laboratory Projects Discussions

LABORATORY SAFETY: Mandatory Laboratory Safety Courses are scheduled outside of the regularly scheduled laboratory time. You must successfully complete the ON-LINE Laboratory Safety Course and submit proof of completion to your Laboratory instructor to be admitted into your lab.