TEXAS A&M UNIVERSITY-CORPUS CHRISTI
COLLEGE OF SCIENCE AND TECHNOLOGY
Spring 2010

SYLLABUS

I. COURSE:  BIOL 5422 - Plant Biosystematics  4 semester hours (3:3)
MWF 11-11:50  Room CS 115
Laboratory:  W 1:30-4:30  Room CS 240

II. FACULTY:  Dr. Roy L. Lehman  CS 247
Phone:  825-5819  Email:  roy.lehman@tamucc.edu
Office Hours: MWF 10-11  Additional Hours by Appointment.
            MW 8-9

III. COURSE DESCRIPTION:

Experimental and analytical approaches to plant variation and evolution, breeding systems, cyto- and molecular genetics, hybridization and phylogeny. The course will present a foundational approach to the methods, research and terminology of plant systematics and summarize information on the most recent knowledge of evolutionary relationships as well as practical information vital to field work. Perquisites: none.

IV. TEXTBOOK:

Required:

Recommended:

COLLECTION SUPPLIES:
Field Book & Pen  Magnifying Glass
Gloves – thorn proof  Small Metric Ruler
Collection Bags/Polythene and/or cloth  Pocket Knife
Small Shovel/trowel  Waxed Paper
Plant Press with newspaper & cardboard  Pruning Shears
V. STUDENT LEARNING OUTCOMES:
The student will:

- identify the basic activities of systematic botany including Cataloging, Identification, Classification, Data gathering and Analysis.
- become proficient in the correct pronunciation of scientific names.
- differentiate between common and scientific names of plants.
- evaluate and describe the botanical nomenclature of scientific names of plants and discuss and explain the rules of the International Code of Botanical Nomenclature.
- identify structures and terminology used in the identification of plants.
- properly construct and use keys for the identification of plants.
- collect and preserve plants for study.
- complete a survey of vascular plants
- describe the different approaches to the classification of plants
- explain how character variation and experimental plant systematics have combined to form a modern technology for the interpretation of characters and the classification of plants.

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 19-29 of the 2009-2010 A&M-CC graduate 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.
VII. COMPONENTS OF COURSE GRADE:

LABORATORY REQUIREMENTS

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<tr>
<th>REQUIREMENT</th>
<th>VALUE</th>
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<tr>
<td>1. Students will collect, identify, press and dry 100 herbarium specimens from selected families and herbarium mount five specimens (Due 4/21)</td>
<td>500</td>
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<tr>
<td>2. Students will complete two laboratory exams (100 points each) (3/3 AND 4/28)</td>
<td>200</td>
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<tr>
<td>3. Students will complete 2 quizzes (announced or unannounced!) (50 points each)</td>
<td>100</td>
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<tr>
<td>4. Students will complete a field or laboratory research project</td>
<td>200</td>
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<tr>
<td>TOTAL:</td>
<td>1,000</td>
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CLASS GRADE REQUIREMENTS

<table>
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<tr>
<th>VALUE</th>
<th>TOTAL</th>
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<tr>
<td>1. Lecture Examinations (3) (includes the final) (2/15, 4/7 &amp; 5/7)*</td>
<td>200</td>
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<tr>
<td>2. Laboratory Exams (2) (100 pts each) &amp; 2 Quizzes (@50 pts*</td>
<td>100</td>
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<tr>
<td>3. Term Research &amp; Paper (Due 4/7 - 150 points); Oral Presentation (Beginning 4/7 - 100 points)</td>
<td>250</td>
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<td>4. Laboratory Projects</td>
<td>700</td>
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<td>TOTAL:</td>
<td>1,850</td>
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FINAL GRADE: Total Number of points ÷ 1,850 = FG (%)  *Dates are tentative!
90-100 = A; 80 – 90 = B; 70 – 80 = C; 60 – 70 = D; 59 below = F

VIII. LECTURE TOPIC OUTLINE

A. PLANT SYSTEMATICS: AN OVERVIEW                                          week 1
   1. Introduction to Plant Biosystematics                                   
   2. Phylogenetic systematic                                               

B. BOTANICAL NOMENCLATURE AND CLASSIFICATION                                week 2
   1. Plant identification and naming                                        
   2. Evolution and Diversity of Plants                                     
   3. International Code of Botanical Nomenclature                           

C. PLANT STRUCTURE AND MORPHOLOGY                                           week 3
   1. Plant Life histories and Systematics                                   
   2. Plant Habits and Community Relationships                              
   3. Plant Morphology and Reproductive Biology                             

D. PLANT HERBARIUM TECHNIQUES                                               week 5
   1. Plant Identification Techniques                                        
   2. Floras, manuals and botanical descriptions                            
   3. Collecting and preserving plants for study                            

3
E. SYSTEMATIC STUDY OF THE PLANT FAMILIES
1. Organization of the survey week 6
2. Ferns and fern allies week 6
3. Gymnosperms week 6
4. Introduction to flowering plants week 7
5. Magnoliidae week 7
6. Rosidae I week 8
7. Rosidae II week 8
8. Asteridae I week 9
9. Asteridae II week 9
10. Dilleniiidae week 10
11. Caryophyllidae week 10
12. Hamamelidae week 11
13. Monocots I week 11
14. Monocots II week 12

F. MODERN APPROACHES TO CLASSIFICATION
1. Artificial and Phenetic Systems of Classification week 13
2. Cladistic Classification Systems week 14
3. Evolution and Diversity of Plants week 14

G. GATHERING AND ANALYSIS DATA IN PLANT SYSTEMATICS
1. Character Variation week 14
2. Experimental Plant Systematics week 15

IX. LABORATORY/FIELD TRIP TOPIC OUTLINE:

January
1/20 Lab # 1 Introduction, Classification/Exercise 1
1/27 Lab # 2 Vegetative Terminology/Exercise 3

February
2/3 Lab # 3 Flowering Plants/Exercise 10
2/10 Lab # 4 Survey of Vascular Plants/Exercise 7
2/17 Lab # 5 Survey of Vascular Plants
2/24 Lab # 6 First Laboratory Examination (Plant Morphology)

March
3/3 Lab # 7 Sandia/Mathis Field Trip
3/10 Lab # 8 Open Lab for Herbarium work.
3/15-3/19 Spring Break
3/24 Lab # 9 Survey of Vascular Plants/Field Trip Prep.
3/26-3/27 Field Trip to Ben Bolt Mesquite/Acacia Habitat (*A $15 fee for meals is required.)

April
4/7 Term Research Paper due & begin Oral Presentations
4/7 Lab # 11 Survey of Vascular Plants
4/14 Lab # 12 Survey of Vascular Plants
4/21 Lab # 13 Survey of Vascular Plants; ALL PLANT COLLECTIONS DUE!
4/28 Lab # 14 Final Laboratory Examination (Plant Keying)