Plant Taxonomy BIOL 5422  
Department of Life Sciences  
Spring 2019

A. COURSE INFORMATION

Course number/section: Biology 5422.001  
Class meeting time: Lecture: Tuesday & Thursday 9:30-10:45  
Laboratory: Thursday 2-4:50  
Class location: Lecture: ECMS 207  
Laboratory: CS 240

B. INSTRUCTOR INFORMATION

Instructor: Dr. Roy Lehman  
Office location: TBA  
Office hours: Tuesday & Thursday 11-12:30, Wednesday 2-3  
Telephone: 361-877-9032  
e-mail: roy.lehman@tamucc.edu  
Appointments: Additional hours by appointment, please call or email.

C. COURSE DESCRIPTION

Basic principles, concepts, and practice in the systematics and classification of flowering plants. Includes procedures of identification, family recognition, terminology, nomenclature, herbarium techniques, systems of classification and the taxonomic literature.

D. PREREQUISITES AND COREQUISITES

Prerequisites  
BIOL 1407

Corequisites  
SMTE 0091

E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES

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

**F. STUDENT LEARNING OUTCOMES AND ASSESSMENT**

Assessment is a process used by instructors to help improve learning. Assessment is essential for effective learning because it provides feedback to both students and instructors. A critical step in this process is making clear the course’s student learning outcomes that describe what students are expected to learn to be successful in the course. The student learning outcomes for this course are listed below. By collecting data and sharing it with students on how well they are accomplishing these learning outcomes students can more efficiently and effectively focus their learning efforts. This information can also help instructors identify challenging areas for students and adjust their teaching approach to facilitate learning.

By the end of this course, students should be able to:

1. identify the basic activities of systematic botany including Cataloging, Identification, Classification, Data Gathering and Analysis.
2. become proficient in the correct pronunciation of scientific names.
3. differentiate between common names and scientific names of plants.
4. evaluate and describe the botanical nomenclature of scientific names of plants and discuss and explain the rules of the International Code of Botanical Nomenclature.
5. identify structures and terminology used in the identification of plants.
6. properly construct and use keys for the identification of plants.
7. collect and preserve plants for study.
8. complete a survey of vascular plants
9. describe the different approaches to the classification of plants.
10. 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.
G. **INSTRUCTIONAL METHODS AND ACTIVITIES**

The class will be primarily lecture with support of activities in the laboratory and field. A collection and identification (project) of plants as pressed specimens will provide the student with the materials and activities to identify and learn the plants of Texas.

H. **MAJOR COURSE REQUIREMENTS AND GRADING**

1. Students will collect, identify, press and dry 100 herbarium specimens from selected families and herbarium mount five specimens (Due 4/26) ........................................... 500

2. Students will complete two laboratory exams (100 points each) (2/21 AND 4/25) .............................................................. 200

3. Students will complete 2 quizzes (announced or unannounced!) (50 points each) ............... 100

4. Students will complete a field or laboratory research project................................................. 200

**TOTAL** :........................................................................................................................................................................ 1,000

*Additional Requirements of Graduate Students (2X specimens and additional project)*

**CLASS GRADE REQUIREMENTS**

<table>
<thead>
<tr>
<th>VALUE</th>
<th>TOTAL</th>
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<tbody>
<tr>
<td>Lecture Examinations (3) (includes the final) (2/21, 4/4 &amp; 5/?)*</td>
<td>200 ea</td>
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<tr>
<td>Laboratory Exams (2) (2/21 &amp; 4/25-100 pts each) &amp; 2 Quizzes (@50 pts*</td>
<td>300</td>
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<tr>
<td>Term Research &amp; Paper (Due 4/9 - 150 points); Oral Presentation (Beginning 4/9 - 100 points)</td>
<td>250</td>
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<tr>
<td>Laboratory Projects</td>
<td>700</td>
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**TOTAL:** 1,850

**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

I. **COURSE CONTENT/SCHEDULE**

A. **BASICS OF INTRODUCTORY TAXONOMY** week 1

1. Introduction to Plant Taxonomy
2. Basic activities of systematic botany

B. **BOTANICAL NOMENCLATURE** week 2

1. Common names vs. Scientific names
2. Pronouncing Scientific Names
3. International Code of Botanical Nomenclature
C. **VEGETATIVE TERMINOLOGY**
   1. Plant Life histories
   2. Plant Habits
   3. Plant Organs
   4. Root Types
   5. Stem Types
   6. Leaf Structure
   7. Special Features
   8. Surface Features

D. **COLLECTING, PRESERVING AND IDENTIFYING PLANTS**
   1. Determining the correct names for plants
   2. Floras, manuals and botanical descriptions
   3. Collecting and preserving plants for study

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

F. **APPROACHES TO CLASSIFICATION**
   1. Artificial and Phenetic Systems of Classification
   2. Cladistic Classification Systems

G. **GATHERING AND ANALYSIS DATA**
   1. Character Variation
   2. Experimental Plant Systematics

Note: Changes in this course schedule may be necessary and will be announced to the class by the Instructor. The assignments and exams are directly related to the Student Learning Outcomes described in Section F.
IX. LABORATORY/FIELD TRIP TOPIC OUTLINE: “TENTATIVE”

January

1/24  Lab # 1  Introduction, Vegetative Terminology/Exercise 3
1/31  Lab # 2  Flowering Plants/Exercise 10

February

2/7   Lab # 3  Survey of Vascular Plants/Exercise 7
2/14  Lab # 4  Lab at Herbarium NRC
2/21  Lab # 5  First Laboratory Examination (Plant Morphology)
2/28  Lab # 6  Sandia/Mathis Field Trip

March

3/7   Lab #7  Survey of Vascular Plants
3/11 - 3/15 Spring Break
3/21  Lab # 8  Survey of Vascular Plants/Field Trip Prep.
3/28  Lab # 9  Survey of Vascular Plants

April

4/4   Lab # 10 Survey of Vascular Plants
4/6-4/7 Field Trip to Ben Bolt Mesquite/Acacia Habitat (*A $15 fee for meals is required.)
4/11  Lab # 11 Labeling and collection final preps
4/18  Lab # 12 Survey of Vascular Plants ALL PLANT COLLECTIONS DUE!
4/25  Lab #13 Final Laboratory Examination (Plant Keying)

J. COURSE POLICIES

Follow College and University Policies.

K. COLLEGE AND UNIVERSITY POLICIES

• Academic Integrity (University)
  It is expected that university students will demonstrate a high level of maturity, self-direction, and ability to manage their own affairs. Students are viewed as individuals who possess the qualities of worth, dignity, and the capacity for self-direction in personal behavior.
  See Full University Policy at http://catalog.tamucc.edu/content.php?catoid=10&navoid=313#Academic_Integrity

• Classroom/Professional Behavior
  Texas A&M University-Corpus Christi, as an academic community, requires that each individual respect the needs of others to study and learn in a peaceful atmosphere. Under Article III of the Student Code of Conduct, classroom behavior that interferes with either (a) the instructor’s ability to conduct the class or (b) the ability of other students to profit from the instructional program may be considered a breach of the peace and is subject to disciplinary sanction outlined in article VII of the Student Code of Conduct. Students engaging in unacceptable behavior may be instructed to leave the classroom. This prohibition applies to all instructional forums, including
classrooms, electronic classrooms, labs, discussion groups, field trips, etc.

- **Deadline for Dropping a Course with a Grade of W (University)**
  The grade of W will be assigned to any student officially dropping a course. Please consult with the instructor before you decide to drop to be sure it is the best thing to do. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. Should dropping the course be the best course of action, visit the Office of the University Registrar for the Course Drop Form that must be submitted. No student is eligible to receive a W without completing the official drop process by this deadline. Please consult the Academic Calendar (http://www.tamucc.edu/academics/calendar/) for the last day to drop a course.

- **Grade Appeals (College of Science and Engineering)**
  As stated in University Procedure 13.02.99.C2.01, 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 upon 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, see University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible through the University Rules website at http://www.tamucc.edu/provost/university_rules/index.html, and the College of Science and Engineering Grade Appeals webpage at http://sci.tamucc.edu/students/GradeAppeal.html. For assistance and/or guidance in the grade appeal process, students may contact the chair or director of the appropriate department or school, the Office of the College of Science and Engineering Dean, or the Office of the Provost.

- **Disability Services**
  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. If you believe you have a disability requiring an accommodation, please call (361) 825-5816 or visit Disability Services in Corpus Christi Hall 116. If you are a returning veteran and are experiencing cognitive and/or physical access issues in the classroom or on campus, please contact the Disability Services office for assistance at (361) 825-5816. http://disabilityservices.tamucc.edu/

**GENERAL DISCLAIMER**
I reserve the right to modify the information, schedule, assignments, deadlines, and course policies in this syllabus if and when necessary. I will announce such changes in a timely manner during regularly scheduled lecture periods.