BIOL A183L: BOTANY LAB

Item	Value
Curriculum Committee Approval Date	03/20/2024
Top Code	040200 - Botany, General
Units	1 Total Units
Hours	54 Total Hours (Lab Hours 54)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	No
Basic Skills	Not Basic Skills (N)
Repeatable	No
Open Entry/Open Exit	No
Grading Policy	Standard Letter (S)
Associate Arts Local General Education (GE)	• Area 5 Physical and Biological Sciences, Scientific Inquiry, Life Science (OB)
Associate Science Local General Education (GE)	• Area 5 Physical and Biological Sciences, Scientific Inquiry, Life (OSB)
California General Education Transfer Curriculum (Cal-GETC)	• Cal-GETC 5C Laboratory Activity (5C)
Intersegmental General Education Transfer Curriculum (IGETC)	• IGETC 5C Laboratory Activity (5C)
California State University General Education Breadth (CSU GE-Breadth)	• CSU B3 Laboratory Activity (B3)

Course Description

A course in the dynamics of plants and their processes with particular emphasis on the structure and function of living things. Field Trip Required. PREREQUISITE: BIOL A183 or concurrent enrollment; Successful completion of a course at the level of elementary algebra or Appropriate OCC math placement. Transfer Credit: CSU; UC.

Course Level Student Learning Outcome(s)

1. Identify the characteristics (form and function) of the major plant groups.
2. Describe plant asexual and sexual reproduction and the general life cycle of all plants.
3. Conduct experiments on plants relating to growth and health.

Course Objectives

- 1. Demonstrate biological laboratory techniques.
- 2. Set up and collect data for short term and long term plant experiments.
- 3. Become proficient in the use of the microscope to be able to examine and comprehend slides.
- 4. Conduct library research to answer questions in the various lab assignments.
- 5. Generate graphs based upon data collected in experiments.
- 6. Identify slides of plant parts and be able to label photographs of those slides in the lab packages.
- 7. Identify key characteristics of major groups of plants and provide evidence for evolution among plant taxa and non-plant photosynthetic organisms.
- 8. Describe the function of various plant parts, including transpiration, photosynthetic pathways, and energy and nutrient acquisition.
- 9. Diagram the life cycle of a plant.

Lecture Content

This is a lab course only and must be taken either concurrently or after completing botany lecture, Biology A183.

Lab Content

1. Microscope: use, measurements, making temporary slides2. Plant classification and evolution among plants and non-plant photosynthetic organisms3. Plant cells and tissues4. Primary stems5. Secondary stems6. Leaves7. Roots: including soil quality and interactions with symbiotic N-fixing organisms in the soil8. The flower9. Plant identification10. Fruits and seeds11. Water and the plant12. Light and the plant13. Plant growth: plant hormones and growth retardants14. Ecological principals: including population models, community relationships, biomes, and energy and nutrient cycling

Method(s) of Instruction

- Lab (04)

Instructional Techniques

Instructor demonstrations of equipment to be used Instructor to discuss slides to be later viewed by students Instructor to work with students individually during laboratory sessions

Reading Assignments

Students will read from assigned lab manual.

Writing Assignments

A scientific paper based on research and experimentation conducted during the course.

Out-of-class Assignments

Not applicable; lab course.

Demonstration of Critical Thinking

Weekly lab assignments; practical laboratory exam

Required Writing, Problem Solving, Skills Demonstration

Lab assignments demand a proficiency in writing skills. A scientific paper based on research and experimentation conducted during the course.

Eligible Disciplines

Biological sciences: Master's degree in any biological science OR bachelor's degree in any biological science AND master's degree in biochemistry, biophysics, or marine science OR the equivalent. Master's degree required.

Other Resources

1. An ancillary material package in full color for each lab. An in-lab library of botany books.