

BIOL 104

Introductory Botany

4 Credits: 3 hours lecture and 3 hours lab

Community College of Baltimore County
Common Course Outline

Description

BIOL 104 – Introductory Botany: explores plant science with emphasis on the seed plants, particularly the flowering plants. Topics include plant cell biology, structure/chemistry, tissues, stems, roots/leaves, respiration/photosynthesis, reproduction/life cycles, genetics, physiology, reproduction and development, evolution, and ecology.

Co-requisites: (ESOL 052 and ESOL 100) and Math for Success or a satisfactory score on the MATH placement test

Overall Course Objectives

Upon completion of this course, students will be able to:

1. apply the scientific method to solve problems involving plants;
2. use laboratory equipment to investigate plant morphology and physiology;
3. explain plant evolution and plant classification from a scientific perspective;
4. find, evaluate, use, and cite appropriate academic resources to investigate plant evolution, physiology, or behavior;
5. use a plant key to identify specimens;
6. analyze the organization of plants from molecules to organelles to cells to tissues to organs to whole plants;
7. identify the kinds of plant tissues and their functions;
8. diagram plant lifecycles and reproductive strategies;
9. analyze the process of photosynthesis with respect to its usefulness to plants and to humans;
10. discuss how different societies deal with bioconservation, introduced and invasive species in regards to their cultural and political norms;
11. develop effective skills to communicate scientific data to a variety of audiences;
12. analyze similarities and differences of diverse cultures and how the cultural, social, and economic practices relate to the production and consumption of food (Foodways); and
13. examine concepts of environmental justice with respect to where and how humans interact with plants.

Major Topics

- I. Scientific Method
- II. Plant Diversity and Evolution

The Common Course Outline (CCO) determines the essential nature of each course.
For more information, see your professor's syllabus.

- III. Threatened and Endangered Species/Habit Protection and Restoration
 - a. Local and Global Issues
- IV. Invasive Species
- V. The Five Kingdoms of Life and Plant Classification
- VI. The Plant Cell
 - a. Organelles
 - b. Organs
- VII. Plant Parts and Their Function
 - a. Roots, Shoots, Leaves
 - b. Flowers, Fruit, Seeds
 - c. Plant Circulation
 - d. Respiration
 - e. Photosynthesis

Course Requirements

Grading will be determined by the individual faculty member, but shall include the following, at minimum:

- two lecture exams which include short response questions
- a final exam
- an in-class research presentation
- two laboratory practical exams
- ten laboratory exercises at least two of which will be completed in groups
- a formal written laboratory report that will account for a minimum of 10% of the course grade. The assignment will allow students to demonstrate General Education Program outcomes.

Written assignments and research projects: Students are required to use appropriate academic resources in their research and cite sources according to the style selected by their professor.

Other Course Information

This course is an approved 4-credit General Education course in the Biological and Physical Sciences category that fulfills the laboratory requirement. Please refer to the current CCBC Catalog for General Education course criteria and outcomes.

Date Revised: 12/16/2025

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