

BIO 103
INTRODUCTION TO BOTANY
(4 UNITS - 3 HOURS LECTURE, 3 HOUR LAB)

This is an introduction course in the study of plants (Botany). This course deals with the structure of plants (Plant Anatomy), how plants grow and function (Plant Physiology) and types of plants (Plant Taxonomy). Plant ecology and geography will also be discussed. (CSU, UC, AVC)

(This course is not intended for science majors.)

COURSE OBJECTIVES

1. Trace the path of a molecule of water from the soil until the water is lost by the leaf. Being able to explain how and where the water gets into the plant and how water moves through the plant.
2. Compare and contrast a woody dicot, herbaceous dicot, monocot, and pinophyta (gymnosperm) type plant. Being able to distinguish the difference between leaves, stems, roots, flowers, seeds, and seed growth
3. Discuss the origin and development of primary tissues, indicate their location in the stems and briefly give their functions
4. Compare and contrast ATP, ADP, sugar, and starch in relationship to photosynthesis, respiration, growth and their movement within the plant.
5. Compare and contrast the role of hormones in the natural regulation and the artificial regulation of plant growth.
6. Compare and contrast phototropism and other plant movements as well as photoperiodism as it relates to flowering.
7. List the factors of seed germination and what treatments may be needed to help seeds germinate.
8. Compare and contrast a prokaryotic cell and an eukaryotic cell.
9. Compare and contrast viruses, the Kingdoms Monera, Protista, Fungi, and Plantae.
10. List the major biomes of North America and describe the principle living members and the physical make-up of each.

TOPIC OUTLINE

- I. Introduction
 - A. Introduction to botany
 - B. Plant names and classification
- II. Plant Anatomy
 - A. Cells
 - B. Tissue
 - C. Stems, roots, and leaves
 - D. Flowers, fruit, and seeds
 - E. Genetics
- III. Plant Physiology
 - A. Water and water in plants
 - B. Soils
 - C. Metabolism and growth
- IV. Plant Taxonomy
 - A. Kingdom Monera, Protista
 - B. Fungi, lichens, bryophytes
 - C. Introduction to Ferns
 - D. Gymnosperms
 - E. Flowering Plants
- V. Ecology