

Northwest Arkansas Community College
(Science and Mathematics Division)

Discipline Code

BOTY

Course Number

1614

Course Title

Plant Biology

Catalog Description

Consideration of basic flowering plant structure, growth, development, physiology, genetics, and ecology. A brief survey of different plant groups will also be presented. GIS (Geographic information Science) incorporated to facilitate student learning of course content. Three hours lecture and three hours lab weekly.

Prerequisites

None. Strongly recommended: BIOL 1544 Principles of Biology I (or its equivalent) with a grade of C or better.

Credit Hours

4 credit hours

Contact hours

45 lecture contact hours; 45 lab contact hours

Load hours

5 load hours

Semesters Offered

Fall, Spring, on demand

ACTS Equivalent

BIOL1034 Botany for Majors

Grade Mode

A-F

Learning Outcomes

Students completing this course will:

- Describe the basic morphology, anatomy, physiology, taxonomy, and ecology of plants, distinguishing between a monocot and dicot, between non-vascular and vascular plants.
- Identify common plants found in the Ozarks. Students will know the biome and different types of ecosystems of the Ozarks and how economic and cultural processes affect these systems.

- Explain the essential role plants play in harnessing energy, providing food for other species, providing oxygen for cellular respiration, providing medicine and useful plant products, as well as providing shelter, food, and habitat for other species as well.
- Recognize conservation issues and sustainable practices for maintaining the health of the biosphere.
- Use scientific thinking and process skills through laboratory activities and group interaction.
- Use traditional and electronic resources to locate information

General Education Outcomes Supported

None

Standard Practices

Topics list

- Overview of Botany
- Plant Cell and Chemistry
- Plant Morphology/Anatomy
- Water Relations
- Physiology- Photosynthesis and Respiration
- Plant Growth
- Genetics and Evolution
- Taxonomy
- Ecology

Learning activities

- Courses must, at a minimum, cover the core learning outcomes for each topic.
- Laboratory exercises should include microscopy, plant anatomy, morphology, identification, and physiology.

Assessments

- All students will be given a pre-test in botany with 25 general knowledge questions. At the end of the semester, students are given a post-test over the same material. Sharing this information with the student at the end of the semester helps to demonstrate competence.
- Evaluating general higher level thinking skills will be developed through activities such as: computer assignments and research papers include researching material using Internet sources and incorporating these ideas into a research assignment or paper; setting up experiments in lab involve evaluation of technique and procedure as well as results. One laboratory write-up is required during the semester.

Grading guidelines

- A minimum of 70% of the grade must be proctored, supervised, or otherwise verified.
- Approximately 25% of the grade must come from lab work since the lab and lecture credits for this course are combined.

Revision Date

- April 8, 2021