

Northwest Arkansas Community College

(Science and Mathematics Division)

Discipline Code

BIOL

Course Number

1544H

Course Title

Principles of Biology I, Honors

Catalog Description

This EAST/EMPACTS course covers the same course content as BIOL1544. Students will work collaboratively to analyze a problem related to science and society. The course is open to motivated students who wish to gain a better understanding of the richness and complexity of the scientific processes. Three hours lecture and three hours laboratory weekly. This is an honors course. Please refer to the NWACC Honors Program section in the current catalog for more information.

Prerequisites

None

Credit Hours

4 credit hours

Contact hours

45 lecture contact hours; 45 lab contact hours

Load hours

5 load hours

Semesters Offered

Fall

ACTS Equivalent

BIOL1014 Biology for Majors

Grade Mode

A-F

Learning Outcomes

Students completing this course will:

- Demonstrate college-level knowledge of cell structure and function, and the chemistry of life.
- Demonstrate college-level knowledge of the inheritance of genetic traits, the relationship between genetics and evolution, and genetic technology.

- Describe the interdependence of organisms and their environment.
- Describe connections between course content and personal, community and global issues.
- Develop a hypothesis, gather and analyze data, draw conclusions, and present findings in a written form.

Honors Outcomes

Honors classes (and the Honors Program) promote the following core values:

- **Community** *students will demonstrate civic engagement through Service Learning and exploration of local, national, and global communities.*
- **Curiosity** *students will cultivate personal and intellectual curiosity through investigation, discussion, and scholarship.*
- **Diversity** *students will explore multiple perspectives through interdisciplinary learning.*

General Education Outcomes Supported

- Students develop higher order thinking skills.

Standard Practices

Topics list

- Scope & Science of Biology
- Chemistry of Life
- Cell Structure & Function
- Metabolism: Photosynthesis & Cellular Respiration
- Reproduction & Genetics
- DNA & Gene Activity
- Basics of Evolution
- Principles of Ecology

Learning activities

- Courses must, at a minimum, cover the core learning outcomes for each topic.
- Lab safety orientation and enforcement of safety protocols is the responsibility of each faculty. Scoring 100% on a mandatory department-provided lab safety quiz is required before students may participate in lab.
- Laboratory exercises should include cellular building block and nutrients, microscopy and the cell, diffusion, osmosis, tonicity, functional proteins (enzymes), photosynthesis, mitosis, mendelian and human genetics, DNA isolation and fingerprinting, and population genetics and natural selection.
- Individual projects/presentations
- Group projects/presentations
- Field Trips/events
- Guest Speakers
- Service Learning and/or
- Conference Poster

Assessments

- Student writing should be an element of student learning. Lab reports should be used as part of grading.
- Midsemester evaluation of scientific method proficiency.

- Course material proficiency assessment given at the conclusion of the semester.

Grading guidelines

- Lab activities/exams should comprise approximately 25% of the overall grade.

Revision Date

April 29, 2021