

Northwest Arkansas Community College
(Science and Mathematics Division)

Discipline Code

BIOL

Course Number

0112

Course Title

Introduction to Life Science

Catalog Description

Basic concepts in chemistry and cellular structure and function are presented. This course benefits any student who wishes to refresh their basic understanding of life science. Successful completion of this course demonstrates prerequisite knowledge of biological concepts necessary for success in Human Anatomy and Physiology (BIOL 2214 & 2224). This class is not financial aid eligible.

Prerequisites

none

Credit Hours

2 credit hours

Contact hours

30 lecture contact hours

Load hours

2 load hours

Semesters Offered

On Demand

ACTS Equivalent

None

Grade Mode

A-F

Learning Outcomes

Students completing this course will:

- Use basic chemical concepts to describe cellular metabolism and human physiology.
- Describe the basic structure and function of the cell.
- Define and use basic biological and chemical terminology.

General Education Outcomes Supported

- None

Standard Practices

Topics list

- Organization of Matter
 - Chemical elements
 - Structure of atoms
 - Radiation and the atom
- Chemical Bonding
 - Ionic
 - Covalent
 - Hydrogen
 - Hydrophobic interactions
- Chemical Reactions
 - Synthesis
 - Decomposition
 - Exchange
 - Oxidation and Reduction
 - Equilibrium
 - Energy
 - Catalysts
- Solutions
 - Properties of Water
 - Properties of Solutions
 - Electrolytes
 - Acids, Bases, Salts
 - pH and Buffers
- Biological Molecules
 - Carbohydrates
 - Proteins
 - Lipids
 - Nucleic Acids
 - Enzyme function
- Cell Membrane
 - Structure
 - Movements across
 - Tonicity
- Cellular Organelles
- Cell Respiration & Photosynthesis
- Protein Synthesis
 - Transcription

- Translation
- Mutation

- Cell Cycle & Basic Genetics
 - DNA Replication
 - Mitosis
 - Meiosis
 - Inheritance

- The Metric System

Learning activities

- Courses must, at a minimum, cover the core learning outcomes for each topic. Faculty may add to these outcomes but may not omit any of them.

Assessments

Grading guidelines

- At least 50% of the class points need to be proctored either in person or using a video-monitoring system, where the student responds without referring to others or external resources.

Revision date

March 31, 2021