

# Northwest Arkansas Community College

(Science and Mathematics Division)

**Discipline Code**

CHEM

**Course Number**

1024

**Course Title**

Basic Chemistry

**Catalog Description**

A one-semester introductory course covering general inorganic, organic and biochemical concepts. The course is relevant for non-science majors and fulfills the science with lab general education requirement. Because of the breadth of the topics, this course may be appropriate for students in technical programs where a one semester chemistry course is required.

**Prerequisites**

Intermediate Algebra (MATH 0103), higher math, or minimum placement score for College Algebra

**Credit Hours**

4 credit hours

**Contact hours**

45 lecture contact hours; 45 lab contact hours

**Load hours**

5 load hours

**Semesters Offered**

On Demand

**ACTS Equivalent**

CHEM 1004 Chemistry I for General Education

**Grade Mode**

A-F

**Learning Outcomes**

Students completing this course will:

- Use dimensional analysis and algebra to solve scientific problems.
- Formulate the quantitative composition of compounds and apply knowledge of nomenclature to chemical formulas. Balance chemical equations and calculate quantitative relations from the equations.

- Explain the periodic law and properties of atoms and describe the manner in which atoms bond to form compounds.
- Describe the properties of solutions and calculate the concentrations of given solutions.
- Distinguish the general classes of organic compounds in terms of functional groups and demonstrate knowledge of nomenclature and basic reactions of organic compounds.
- Demonstrate proper laboratory techniques while collecting experimental data and perform necessary calculations to aid in interpretation of data.

## General Education Outcomes Supported

- Not applicable

## Standard Practices

### Topics List

Scientific Method and Measurements  
 Energy and states of Matter  
 Atoms and Elements & the Periodic table  
 Compounds and their Bonds  
 Chemical Reactions and Quantities  
 Gases  
 Solutions  
 Acids and Bases  
 Introduction to Organic: Alkanes  
 Unsaturated Hydrocarbons  
 Overview of Organic Chemistry  
 Recognizing functional groups  
 Naming and drawing structures  
 Reactions  
 Carbohydrates (Biochemical)

### Optional Topics

Nuclear Radiation (Inorganic)  
 Lipids (Biochemical)  
 Amino Acids, Proteins, and Enzymes (Biochemical)

### Learning activities

- Lab safety orientation and enforcement of safety protocols is the responsibility of each faculty. A standard lab safety PowerPoint will be provided to students for training. Scoring 100% on a mandatory department-provided lab safety quiz is required before students may participate in lab.

### Assessments

- Variable methods of assessment will be used which include, but are not limited to, exams and laboratory activities.

### Grading guidelines

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

### Revision Date

April 1, 2021