

Northwest Arkansas Community College
(Science and Mathematics Division)

Discipline Code

CHEM

Course Number

1054

Course Title

Chemistry and the Modern World

Catalog Description

A one-semester introductory course covering general inorganic, organic and biochemical concepts. This course is designed especially for non-science majors focusing on the economic, social, health and ecological impact of chemicals in modern society. This course provides understanding of basic chemical concepts through investigating various topics such as environment, ecology, nutrition and health. GIS (Geographic Information Science) activities and/or demonstrations utilize to reinforce curriculum elements. Three hours lecture and 3 hours laboratory weekly.

Prerequisites

None, though some basic math/algebra will be used in the course

Credit Hours

4 credit hours

Contact hours

45 lecture contact hours; 45 lab contact hours

Load hours

5 load hours

Semesters Offered

Fall, Spring, Summer

ACTS Equivalent

CHEM 1004 Chemistry I for General Education

Grade Mode

A-F

Learning Outcomes

Students completing this course will:

- Identify various categories of elements on the Periodic Table.

- Predict ion charges for specific elements on the Periodic Table and ionic formulas for given ion combinations.
- Determine if a description is a chemical or physical change.
- Predict coefficients needed to balance a chemical equation.
- Determine the pH of a solution from a concentration, or predict if a solution is acidic, neutral, or basic.

General Education Outcomes Supported

- Not applicable

Standard Practices

Topics List

Scientific Method

States of Matter

Periodic Table

Chemical Reactions

Solutions

Molecular Structure and Shape

Nuclear Radiation

Organic Chemistry

Basic Measurement

Atomic Structure

Chemical Bonding

Acids and Bases

Formulas and names

Quantitative Concepts

Energy

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.
- GIS Great Basin Well Chemistry Lab is used to meet requirement for GIS activity.

Assessments

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

Grading guidelines

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

Revision Date

April 1, 2021