Overview

Chemistry with Lab for undergraduates provides students seeking initial teacher licensure in middle school science, physics, biology, or the geosciences with an introduction to the field of chemistry, the branch of science that studies the composition, structure, properties, and behavior of matter. Designed for those not majoring in chemistry education, this course highlights how the topics covered can be applied within various branches of science. This course provides students with opportunities to examine the electronic structure of atoms, study periodic trends, name chemical compounds, write chemical formulas, determine the structure of molecules, balance chemical reactions, and discover the changing states of matter. Laboratory experiences facilitate the study of matter and the application of laboratory safety and maintenance procedures. Concepts in Science for undergraduates is a prerequisite for this course.

Competencies

- **The Central Role of Chemistry**
  The graduate explains how chemistry is applied within other sciences to understand its relevance within the physical and natural world.

- **Laboratory Safety and Procedures**
  The graduate conducts safe and effective investigations to test hypotheses and draw conclusions.

- **Electronic Structure and Periodic Properties**
  The graduate determines the electronic structure of atoms and periodic trends to compare the properties of various substances.

- **Chemical Naming**
  The graduate names basic compounds, using the periodic table and IUPAC rules, to identify their composition.

- **Molecular Structure and Bonding**
  The graduate explains how chemical bonds and electron orientation impact the structures and behavior of molecules to understand the composition of matter.
Thermochemistry

The graduate balances chemical equations to follow the Law of Conservation of Matter.

States of Matter

The graduate determines quantities of heat released or absorbed during chemical reactions to examine relationships between heat and other forms of energy.

Learning

Getting Started

Welcome to Chemistry! You should begin by locating your Chemistry LabPaq materials, which you ordered upon enrolling in Concepts in Science. After locating your LabPaq materials, view the “Get Started” section of the course, which demonstrates how to use the competency diagnostic tool at the beginning of each unit to identify areas in which you are not yet competent so you can plan your study time accordingly. Each course unit aligns to a single course competency and includes readings, videos, knowledge checks, discussions, labs, and simulations that will help you build and apply your chemistry knowledge and skills. At the end of each unit, complete the competency check to gauge your progress after completing the recommended lessons. If you find that your performance on the competency check has not improved as a result of completing the recommended lessons, reach out to a course mentor for support. Competency will be demonstrated by the successful completion of both an objective and performance assessment. Note: You can view this course in any browser except Internet Explorer 11.)

Assessments

Pre-Assessment: Chemistry with Lab

STATUS: Not Attempted
# OF ITEMS: 55
TIME ALLOTED: 150 minutes
CODE: PWYC
Objective Assessment: Chemistry with Lab

STATUS: Not Attempted
# OF ITEMS: 55
TIME ALLOTED: 150 minutes
CODE: WYC1

Performance Assessment: Application of Chemistry with Lab

Status: Not Attempted
Code: WYT1

PREVIEW

A score of Competent or Exemplary is required to pass all assessments. Passing a preassessment does not guarantee you will pass the high stakes assessment.

On objective assessments, you will be charged a retake fee for the third attempt and every attempt thereafter. For more information click here.