



This course supports the assessments for Chemistry: Content Knowledge. The course covers 23 competencies and represents 7 competency units.

Introduction

Overview

This course covers the following main topics:

- Math skills review
- Matter and energy
- Nomenclature
- Chemical reactions
- Solutions
- Nature of science
- Laboratory procedures

Getting Started

Welcome to Chemistry: Content Knowledge! This course covers the chemistry knowledge you will need as a chemistry teacher and prepares you for success on the Praxis Subject Assessment. Many of the concepts covered in this course will be familiar to you from prior coursework. Review the material, focus on building your skills in weaker areas, and practice recalling your knowledge in the problems and exercises. Practicing with these questions will be vital to your success in the assessment for this course, the Chemistry: Content Knowledge (5245) Praxis Subject Assessment.

Competencies

This course provides guidance to help you demonstrate the following 23 competencies:

- **Competency 208.1.14 Molecular Structure**
The graduate uses drawings and models to communicate and predict the structure and shape of organic molecules.
- **Competency 208.1.15 Acid-base Reactions**
The graduate applies concepts of acid-base chemistry to determine the relative acidities of organic acids and the position of equilibrium in an acid-base reaction.
- **Competency 208.1.16 Nomenclature**
The graduate applies the IUPAC nomenclature to name simple organic molecules.
- **Competency 208.1.17 Stereochemistry**
The graduate applies concepts of stereoisomers to understand and predict the product of reactions.
- **Competency 208.1.18 Organic Reactions**
The graduate applies reaction mechanisms to analyze organic reactions and synthesis problems.
- **Competency 208.1.19 Organic Compounds**



The graduate analyzes properties and reactions of important organic compounds, including aromatic compounds.

- **Competency 208.1.20 Organic Lab Techniques**

The graduate applies instrumental methods of analysis to determine the structure of organic compounds.

- **Competency 208.2.1: First Law of Thermodynamics**

The graduate applies the first law of thermodynamics to analyze heat transfers associated with chemical processes and changes in state.

- **Competency 208.2.2: The Second Law of Thermodynamics**

The graduate applies concepts of the second law of thermodynamics and free energy to predict the spontaneity of a process and analyze chemical equilibrium.

- **Competency 208.2.4: Real Gases**

The graduate applies models and equations of state to analyze properties of real gases.

- **Competency 208.2.7: Electrochemistry**

The graduate applies the concepts of thermodynamics and electrochemistry to analyze the interchange of chemical and electrical energy.

- **Competency 208.2.8: Chemical Kinetics**

The graduate calculates reaction rates and examines how they are affected by variables such as reactant concentrations and temperature; and determines how chemists use rate data to propose a mechanism, or pathway, by which a reaction takes place.

- **Competency 208.3.1: Atomic Structure**

The graduate analyzes atomic structure and can demonstrate major principles and rules of atomic structure.

- **Competency 208.3.2: Periodic Trends**

The graduate demonstrates that groups of elements possess similar physical and chemical properties and can determine trends using the periodic chart.

- **Competency 208.3.3: Bonding Models**

The graduate demonstrates how atoms or ions in minerals are glued together by electrical bonds that are ionic or covalent, and computes the bond order in a molecule.

- **Competency 208.4.1: Organic Contaminants in Ground Water**

The graduate applies basic principles of geochemistry to identify the sources and mechanisms of contamination of groundwater and completes original research in chemistry.

- **Competency 208.4.2: Geochemistry of the Atmosphere and Atmospheric Precipitation**

The graduate applies principles of geochemistry to demonstrate the chemical cause and process of acid rain and solves problems involving ozone depletion.

- **Competency 208.4.3: Global Carbon Cycle and Climate Change**

The graduate demonstrates the cause and effect of atmospheric carbon dioxide and other greenhouse gases on climate change.

- **Competency 208.5.1: DNA, RNA**

The graduate demonstrates how nucleic acid polymers can transform cells and transmit information within the cell.

- **Competency 208.5.2: Amino Acids and Peptide Bonds, Protein Structure**

The graduate can construct models of the structure and function of amino acids and peptide bonds, predict ionization of an amino acid, and demonstrate peptide bond



breaking; and demonstrate how protein structure affects susceptibility or resistance to disease.

- **Competency 208.5.5: Carbohydrate Metabolism, Adenosine Triphosphate (ATP)**

The graduate constructs models of carbohydrates and demonstrates metabolism of carbohydrates; and demonstrates how adenosine triphosphate (ATP) is essential to energy transfer in the cell and how irregularities in ATP synthesis in the cell can cause cytopathologies.

- **Competency 208.5.6: Lipids**

The graduate constructs models of fatty acids and demonstrates why lipids are essential to the functioning of cells.

- **Competency 602.6.1: Teaching Methods - Science (Secondary)**

The graduate understands and provides safe, effective, research-based instruction in science.

Teaching Dispositions Statement

Please review the [Statement of Teaching Dispositions](#).

Course Instructor Assistance

As you prepare to demonstrate competency in this subject, remember that course instructors stand ready to help you reach your educational goals. As subject matter experts, mentors enjoy and take pride in helping students become reflective learners, problem solvers, and critical thinkers. Course instructors are excited to hear from you and eager to work with you.

Successful students report that working with a course instructor is the key to their success. Course instructors are able to share tips on approaches, tools, and skills that can help you apply the content you're studying. They also provide guidance in assessment preparation strategies and troubleshoot areas of deficiency. Even if things don't work out on your first try, course instructors act as a support system to guide you through the revision process. You should expect to work with course instructors for the duration of your coursework, so you are welcome to contact them as soon as you begin. Course instructors are fully committed to your success!

You may contact the chemistry course instructor team at chemistry@wgu.edu.

Preparing for Success

The information in this section is provided to detail the resources available for you to use as you complete this course.

Learning Resources

The learning resources listed in this section are required to complete the activities in this course. Please follow the instructions below to access each resource.

Chemistry: Content Knowledge in OWL

This web-based resource provides access to Thinkwell videos, Mastery questions, End of Chapter (EOC) questions, and the following e-text:



- Zumdahl, S., & Zumdahl, S. (2010). *Chemistry* (9th ed.). Belmont, CA: Brooks/Cole.

ISBN: 1-133-61109-5

Please follow these registration steps carefully in order to access your resource.

- Go to <http://login.cengagebrain.com/course/E-24YE3Q87N3UZ8>.
- Under New Students enter your WGU e-mail address using the @my.wgu.edu extension

and click Create a New Account.

- Enter the required information to create an account: First Name, Last Name, Password creation, Security Question and Answer, and check the box to agree to the terms of the

site.

- You will be logged in under your new account. Click the Open button next to your

Chemistry 9th Edition resource listing.

- Please make note of the login credentials you created for this site.



- We recommend adding <https://login.cengagebrain.com/cb/login.htm> to your browser

After logging in, click the Assignments button. Complete the four "Intro" assignments to be sure your computer is compatible with this resource and you understand how to make use of this resource. The following 7.5 minute recording will help you navigate around OWL:

Using OWL v2

ETS Practice Exam

The [ETS Practice Exam](#) is a full-length practice test that allows you to work through a set of test questions to simulate what you will experience on the actual day of the PRAXIS exam. After a completed attempt, you can view your score and review explanations for the correct answers. You will have unlimited attempts regardless of any notice to the contrary on the ETS website. This practice test includes one set of test questions. Retaking it will not provide different sets of questions or change the order in which they are delivered.

Pacing Guide

Create a customized study plan based on your results from *The Official Practice Test*. Review sections 4 ("Determine Your Strategy for Success") and 5 ("Develop Your Study Plan") of the [Study Companion \(PDF\)](#) to help customize your study plan. The following is a recommended strategy:

Week 1:

- Look through the "Topics Covered" list in the Study Companion (PDF). For each item, assess your knowledge to help you gauge how much time should be spent on each item. Continue to revisit this list to make sure you are covering all potential exam topics.
- Math Skills Review
 - Math Skills Review

Week 2:

- Meet with your course instructor to discuss your study plan and review the topics covered in the Study Companion (PDF).
- Basic Principles of Science
 - Scientific Processes



- The Basics of Chemistry
 - Atomic Models

Week 3:

- Stoichiometry and Reactions
 - Stoichiometry
 - Types of Chemical Reactions

Week 4:

- Thermochemistry
 - Gases
 - Energy

Week 5

- Atomic Structure and Bonding
 - The Structure of Atoms
 - Bonding of Atoms
 - Intermolecular Interactions

Week 6

- Reaction Rates
 - Solutions and Solubility
 - Reaction Mechanisms

Week 7

- Complete the ETS practice test available in the Learning Resources section of this course of study.
- Meet with your course instructor to discuss your progress so far, the results of your practice test, your plans for continuing study, and scheduling for your assessment.
- Reaction Rates (continued)
 - Acid-Base Chemistry and Equilibrium

Week 8

- Reaction Rates (continued)
 - Keeping Track of Energy

Week 9

- Biochemistry
 - Organic Molecules



Week 10

- Retake the ETS practice test available in the Learning Resources section of this course of study.
- Meet with your course instructor to discuss your readiness for the assessment.

Week 11

- Continue working through practice problems until you take the exam.

Math Skills Review

In this section, you will review necessary math skills for success on the Praxis Subject Assessment. Because there are no calculators allowed on the exam, it is very important that you review and practice important math skills without the use of a calculator. It is suggested that you review the math rules for each section, and then use the practice exercises to check your understanding and skills.

Math Skills Review

You will review and practice math skills in a variety of topics needed for success on the Praxis Subject Assessment.

Powers of 10 and Scientific Notation

Review the following web pages:

- [Powers of 10: Measurements and Scales](#)
- [Scientific Notation](#)

For practice with powers of 10 and scientific notation, please take the practice exams at the following web pages:

- [Problems on Powers of 10](#)
- [Problems on Scientific Notation](#)

Units

Review the following web page:

- [Units: Definitions and How to Convert Between Units](#)

For practice in these math skills, please take the practice exams at the following web page:

- [Problems on Units Analysis](#)

Powers and Roots

Review the following web pages:

- [Algebra Powers](#) Numbers, Variables, and Rules



- Algebra: More Powers [Square Roots and More](#)

For practice in these math skills, please take the practice exams at the following web page:

- [Problems on Powers](#)

Graphing Functions

Review the following web page:

- [Graphing Basic Graphs, Lines, and More...](#)

For practice in these math skills, please take the practice exams at the following web page:

- [Problems on Graphing](#)

Logarithms

Review the following web pages:

- [Logarithms Definition and the Basic Logarithms](#)
- [Logarithms Algebraic Rules and Graphing](#)

For practice in these math skills, please take the practice exam at the following web page:

- [Problems on Logarithms](#)

Basic Principles of Science

This section covers science knowledge spanning all the science disciplines: life, earth, and physical science. Science is about gathering data and determining the most probable explanation based on the data received. The explanations can change over time as new data is collected. Scientists use tools to collect data and follow safety procedures while using those tools.

Scientific Processes

This section explores the processes involved in scientific inquiry, experimental design, measurement, and safety. Within all the disciplines, scientists make observations and ask questions, then test their ideas to learn more. It is a continual process.

As scientists work on experiments, their data is only as good as their measurement tools. As technology improves, scientists can make more accurate measurements. Scientists create graphs and charts to share their findings with others.

Providing a safe learning environment is essential in the classroom. Teachers need to be aware of proper laboratory procedures to ensure a safe experience for the students. Performing experiments helps with the learning process and should be a part of the science curriculum.

Processes Involved in Scientific Inquiry



Read through the following flowchart which represents the process of scientific inquiry:

- [How science works: The flowchart](#)

This flowchart covers the following topics:

- Processes involved in scientific inquiry
- Problem-solving methods
- Experimental design
- Nature of scientific knowledge
- Major historical developments in chemistry and the contributions of major historical figures

Experimental Design and Measurement

Read the following chapter in Chemistry:

- Chapter 1 ("Chemical Foundations")

Watch the following videos from Flinn Scientific

- [Common High School Laboratory Accidents \(4 min\)](#)
- [Properly Storing Chemicals \(7 min\)](#)
- [Properly Disposing of Chemicals \(15 min\)](#)
- [Material Safety Data Sheets \(14 min\)](#)
- [Safety Showers \(3 min\)](#)
- [Eyewash Use \(8 min\)](#)
- [Personal Protective Equipment \(9 min\)](#)
- [Emergency Procedures \(3 min\)](#)
- [How to Conduct a Safe Laboratory Activity \(11 min\)](#)

To check your understanding, complete Chapter 1 Praxis Practice Problems within the OWL resource. Also, complete this [Lab Safety quiz](#).

If your score is less than 75%, review chapter 1 and work through Chapter 1: Mastery problems.

This activity covers the following concepts:

- Organization of matter
- Particulate structure of matter
- Differences between chemical and physical properties and chemical and physical changes
- Mathematics, measurement, and data management
- Appropriate preparation, use, storage, and disposal of materials in the laboratory
- Appropriate use, maintenance, and calibration of laboratory equipment
- Safety procedures and precautions for the high school chemistry laboratory



The Basics of Chemistry

It is essential to have a solid understanding of atomic structure to understand the more complicated content within chemistry. The properties of an atom determine how it reacts with other atoms.

This section reviews basic chemistry concepts.

Atomic Models

You will review the connection between atoms and molecules. Once different atoms bond to form compounds, there are universal names used for convenience of communication. You need to become familiar with all of the common nomenclature in order to progress in chemistry. This is similar to memorizing the alphabet before you try to read.

Atoms, Molecules, and Ions

Complete Chapter 2 Praxis Practice Problems within the OWL resource to check your understanding of the following concepts:

- Current model of atomic structure
- Systematic names and chemical formulas of simple inorganic compounds.

If your score is less than 75%, review chapter 2 within the *Chemistry* e-text and work through Chapter 2: Mastery problems.

Stoichiometry and Reactions

Stoichiometry is the study of the quantities of substances that take part in a chemical reaction. During chemical reactions, the amount of each substance and the total electrical charge is always conserved.

You will review how to use fundamental laws of chemistry to balance chemical equations.

Stoichiometry

You will review the mole concept, as well as how it applies to chemical composition. You will review how to convert between moles, molecules, grams, and elements.

The Mole Concept

Complete the Chapter 3 Praxis Practice Problems within the OWL resource to check your understanding of the following concepts:

- mole concept and how it applies to chemical composition
- balancing chemical equations
- stoichiometric calculations

If your score is less than 75%, review chapter 3 in the Chemistry e-text and work through Chapter 3: Mastery problems.

Types of Chemical Reactions



This section covers various types of reactions, including precipitation, acid-base, and oxidation-reduction reactions.

Chemical Reactions

Complete Chapter 4 Praxis Practice Problems within the OWL resource to check your understanding of the following concepts:

- identify, write, and predict products of simple reaction types
- electrolytes, nonelectrolytes, and electrical conductivity
- concepts and calculations involving acid-base titrations
- applications of chemistry in daily life by understanding the mechanisms of contamination of groundwater

If your score is less than 75%, review chapter 4 in the *Chemistry* e-text and work through Chapter 4: Mastery problems.

Thermochemistry

Thermochemistry is the branch of chemistry that studies the amount of heat energy gained or lost during a chemical reaction. An interesting and important relationship is present between energy, work, and heat. But be careful, this relationship and an understanding of the definition of heat are often misunderstood. It is usually best to think of heat as energy transferred because of a difference in temperature.

Gases

Earth's atmosphere is made up of life-supporting gases; chemical reactions occur in the atmosphere.

You will study the properties of gases.

Ideal Gases and the Kinetic Molecular Theory

Complete the Chapter 5 Praxis Practice Problems within the OWL resource to check your understanding of the following concepts:

- kinetic molecular theory and ideal gas laws
- the impact of chemistry, such as acid rain

If your score is less than 75%, review chapter 5 in the *Chemistry* e-text and complete Chapter 5: Mastery problems in OWL.

Energy

The food people eat provides them with energy. The fuel in a car provides the energy for it to move. The sun provides energy for a plant during photosynthesis. Chemical reactions must account for the energy within the reaction.

You will review various forms of energy in this section.

Forms of Energy



Complete the Chapter 6 Praxis Practice Problems within the OWL resource to check your understanding of the following concepts:

- conservation of energy and the conservation of matter in chemical processes
- different forms of energy
- temperature, thermal energy, and heat capacity, including temperature scales, units of energy, and calculations involving these concepts
- energetics of chemical reactions
- heat capacity and specific heat
- applications of chemistry in daily life by understanding greenhouse gases

If your score is less than 75%, review chapter 6 in the *Chemistry* e-text and complete Chapter 6: Mastery problems in OWL.

Atomic Structure and Bonding

This section covers atomic structure and the physical properties of matter. Atoms bond to create molecules.

The Structure of Atoms

The periodic table may be the greatest tool ever used by chemists. It was originally used to describe patterns observed in properties of elements before it eventually became apparent that it could also be used to predict patterns in elements.

This section covers atomic structure and periodic trends.

Periodic Trends

Complete the Chapter 7 Praxis Practice Problems within the OWL resource to check your understanding of the following concepts:

- electron configuration of the elements based on the periodic table
- how the electronic absorption and emission spectra of elements are related to electron energy levels
- basis of the periodic table and general layout
- periodic trends in physical and chemical properties of the elements

If your score is less than 75%, review chapter 7 in the *Chemistry* e-text and complete Chapter 7: Mastery problems in OWL.

Bonding of Atoms

You will review general bonding concepts. A chemical bond is the energy that holds atoms together. The three types of bonding are ionic bonding, covalent bonding, and polar covalent bonding.

Bonding and Structure

Complete the Chapter 8 Praxis Practice Problems within the OWL resource to check your understanding of the following concepts:



- common properties of bonds
- bond types
- structural formulas and molecular geometry (shape)
- identify polar and nonpolar molecules

If your score is less than 75%, review chapter 8 in the *Chemistry* e-text and complete Chapter 8: Mastery problems in OWL.

Intermolecular Interactions

You will study both intramolecular bonding and intermolecular forces. As the names imply, intramolecular bonding is the chemical bonding that takes place within a molecule to hold the atoms together, and intermolecular bonding takes place between molecules to hold them together into liquids and solids.

Liquids and Solids

Complete the Chapter 10 Praxis Practice Problems within the OWL resource to check your understanding of the following concepts:

- concepts and calculations involving phase transitions between the various states of matter
- intermolecular interactions
- how bonding and structure correlate with physical properties
- phase diagrams
- heat of vaporization, fusion, and sublimation

If your score is less than 75%, review chapter 10 in the *Chemistry* e-text and complete Chapter 10: Mastery problems in OWL.

Reaction Rates

This section reviews the properties of solutions and chemical reactions; there are many factors that determine the rate of a reaction.

Solutions and Solubility

You will review the properties of solutions. To give the proper definition of a solution, a number of other terms need to be defined first. It is easiest to start at the beginning. An element is a substance that contains only one type of atom, such as hydrogen (H). A compound is a substance that contains more than one type of element, such as water (H₂O). A mixture is a substance that contains two or more substances, such as sugar dissolved in water, which contains both water molecules and sucrose.

Properties of Solutions

Complete the Chapter 11 Praxis Practice Problems within the OWL resource to check your understanding of the following concepts:

- solution terminology and calculations
- factors affecting solubility and dissolution rate
- solution phenomena based on colligative properties



If your score is less than 75%, review chapter 11 in the *Chemistry* e-text and complete Chapter 11: Mastery problems in OWL.

Reaction Mechanisms

Chemical kinetics is the study of the factors that determine the rate of reaction. Chemical reactions are the application of chemistry. In order to fully understand these reactions, it is important to understand some of the underlying concepts that drive chemical reactions, such as chemical kinetics and chemical equilibrium.

Chemical Kinetics

Complete the Chapter 12 Praxis Practice Problems within the OWL resource to check your understanding of the following concepts:

- chemical kinetics
- impact of chemistry on ozone layer depletion

If your score is less than 75%, review chapter 12 in the *Chemistry* e-text and complete Chapter 12: Mastery problems in OWL.

Chemical Equilibrium

Complete the Chapter 13 Praxis Practice Problems within the OWL resource to check your understanding of the following concept:

- chemical reaction equilibrium

If your score is less than 75%, review chapter 13 in the *Chemistry* e-text and complete Chapter 13: Mastery problems in OWL.

Acid-Base Chemistry and Equilibrium

You will review the properties of acids and bases. Acid-base reactions are important in organic chemistry. Many of the reactions that take place in organisms involve acid-base reactions. The rate at which you breathe is influenced by the acidity of your blood. Carbonic anhydrase, an organic enzyme, regulates the acidity of your blood. Acid-base reactions also allow you to discuss the importance of solutions and molecular structure in chemical reactions.

Acids and Bases

Complete the Chapter 14 Praxis Practice Problems within the OWL resource to check your understanding of the following concepts:

- define and identify acids and bases and know their properties
- the pH scale and calculations involving pH and pOH

If your score is less than 75%, review chapter 14 in the *Chemistry* e-text and complete Chapter 14: Mastery problems in OWL.

Acids-Base Equilibria

Complete the Chapter 15 Praxis Practice Problems within the OWL resource to check your



understanding of the following concept:

- equilibrium relationships in acid-base chemistry

If your score is less than 75%, review chapter 15 in the *Chemistry* e-text and complete Chapter 15: Mastery problems in OWL.

Solubility and Complex Ion Equilibria

Complete the Chapter 16 Praxis Practice Problems within the OWL resource to check your understanding of the following concept:

- common applications of equilibrium in ionic solutions

If your score is less than 75%, review chapter 16 in the *Chemistry* e-text and complete Chapter 16: Mastery problems in OWL.

Keeping Track of Energy

The laws of thermodynamics, electrochemistry, and radioactivity are reviewed. As the name implies, electrochemistry is the study of the interchange of chemical and electrical energy. Electrochemistry is an important example of the applications of chemistry. For example, a battery is designed specifically to convert chemical energy into electrical energy.

Spontaneity, Entropy, and Free Energy

Complete the Chapter 17 Praxis Practice Problems within the OWL resource to check your understanding of the following concept:

- how the laws of thermodynamics relate to chemical reactions and phase changes

If your score is less than 75%, review chapter 17 in the *Chemistry* e-text and work through Chapter 17: Mastery problems in OWL.

Electrochemistry

Complete the Chapter 18 Praxis Practice Problems within the OWL resource to check your understanding of the following concept:

- oxidation-reduction reactions and how to determine oxidation states
- applications of chemistry in fuel cells

If your score is less than 75%, review chapter 18 in the *Chemistry* e-text and complete Chapter 18: Mastery problems in OWL.

- chapter 18 ("Electrochemistry")

Radioactivity

Complete the Chapter 19 Praxis Practice Problems within the OWL resource to check your understanding of the following concept:



- radioactivity
- nuclear energy

If your score is less than 75%, review chapter 19 in the *Chemistry* e-text and complete Chapter 19: Mastery problems in OWL.

Biochemistry

This section covers organic molecules. Biochemistry covers the structure and function of the four major polymers produced by living organisms: nucleic acids, proteins, carbohydrates, and lipids.

Organic Molecules

Organic chemistry is the study of carbon compounds. Carbon compounds are central to life. They are important in DNA and the proteins that catalyze the reactions in the human body.

You will review background information essential to a successful study of organic chemistry.

Organic and Biological Molecules

Complete the Chapter 22 Praxis Practice Problems within the OWL resource to check your understanding of the following concepts:

- names of common organic compounds based on their functional groups
- important biochemical compounds
- common organic compounds (e.g., identify functional groups)
- names and structures (e.g., alkanes, alkenes, alcohols, ethers, aldehydes, ketones, carboxylic acids)

If your score is less than 75%, review chapter 22 in the *Chemistry* e-text and work through Chapter 22: Mastery problems in OWL.

You can use the following website to review lipids:

- [Biomolecules—The Lipids](#)

Understanding the Assessment

Congratulations on completing the activities in this course! This course has prepared you to complete the assessments associated with this course. If you have not already been directed to complete the assessments, schedule and complete your assessments now.

The ETS Chemistry Content Knowledge Exam

Visit the following website where ETS lists their available preparation materials. Their free materials are very informative. You will learn how the exam is administered, the tools available during the exam, and the general format of questions.

- [ETS Preparation Materials](#)

Study Companion



Study Companion

ETS created a Study Companion (PDF) to help you prepare for this challenging exam. You can access the Study Companion here: <https://www.ets.org/s/praxis/pdf/5245.pdf>

Navigate to the "Topics Covered" section (pp. 6–10) to view the list of topics covered by the exam.

Read the following sections of this helpful document:

1. Learn About Your Test
2. Familiarize Yourself with Test Questions
3. Practice with Sample Test Questions
4. Review Smart Tips for Success
5. Understand Your Scores

ETS Practice Exam

The [ETS Practice Exam](#) is a full-length practice test that allows you to work through a set of test questions to simulate what you will experience on the actual day of the PRAXIS exam. After a completed attempt, you can view your score and review explanations for the correct answers. You will have unlimited attempts regardless of any notice to the contrary on the ETS website. This practice test includes one set of test questions. Retaking it will not provide different sets of questions or change the order in which they are delivered.

Outside Vendor Assessment

You will complete the Praxis Subject Assessment, Chemistry: Content Knowledge (5245) exam. This is a third-party exam offered through ETS. WGU requires you to pass this exam as a program requirement regardless of the state in which you hold or are seeking certification.

- WGU will pay for your first two attempts of the Praxis exam. You will be responsible for paying third and subsequent attempts.
 - Visit [Test Centers and Dates](#) to see where and when tests are available.
- In order to receive a pass on your Degree Plan, you must pass the exam based upon the WGU cut score. Additionally, if the state in which you seek licensure also requires the Praxis exam, you must pass the exam based on that state's cut score. Please note that it is possible to pass the exam based on either the WGU cut score or your state's cut score and still need to take it again in order to satisfy the other cut score.

You will need to submit your scores to WGU after completing this exam. Once you have submitted your passing score, you will receive a "pass" on your Degree Plan for the assessment.

Complete the Praxis Subject Assessment, Chemistry: Content Knowledge (5245) exam.

The procedure for registering for Praxis exams is different from the registration procedure for



other WGU objective exams. Please follow the following directions very carefully:

- [How to Schedule a Praxis Exam](#)

Follow the [ETS guidelines](#) on what to bring on exam day by accessing the following web page:

- [What to Bring](#)

Be sure to watch this simulation of the exam to know what the exam will look like. Pay particular attention to the location of the periodic table during the exam.

- [Computer-Delivered Testing Demonstration](#)

Note: You must schedule your Praxis exam through WGU in order to have WGU pay for the exam.

Submitting Outside Vendor Assessment Scores

After completing an external assessment, follow the directions for submitting a score report on the "[Following Outside Vendor Assessments](#)" page.