

Chemistry, Part 1 (CHEM-041-301-006)

Syllabus

Course Description

This introductory chemistry course includes topics such as matter and energy, the atomic theory, electron clouds and probability, the periodic table, chemical bonding, chemical formulas, and balancing equations. This course has few mathematical computations and includes several virtual lab demonstrations. This is the first half of a two-part General Chemistry series (CHEM 041 and CHEM 043).

The chemistry knowledge for this course is based on these main topics.

- The structure and properties of atoms
- The structure and properties of molecules
- Stability and change in chemical systems

Prerequisites

Successful completion of Algebra 1, Part 2 (ALG 053) or equivalent.

Course Materials

All the materials you need are included in the course. You do not have to buy any additional textbooks.

Technology Requirements

Our course requires the use of Google Chrome or Mozilla Firefox, which can be downloaded for free. If your computer system is able to run the latest versions of these browsers, we strongly encourage you to upgrade your preferred browser before continuing with the course.

Our course will work best with an internet download speed of 25 mbps or higher.

Students will need access to word processing, spreadsheet, and presentation applications. Microsoft has these products for students, Apple and Google include these as well in their services.

Course Outcomes

As students complete the course assignments, they will increase their knowledge, improve a 21st-century skill, and develop an attribute.

Knowledge: Chemistry, Part 1

In this course, *knowledge* refers to the subject matter and content students will learn while completing the readings, practices, quizzes, and assignments.

On successful completion of this course, students will be able to do the following:

- Organize the elements that make up our earth and our atmosphere.
- Solve, in a common-sense fashion, chemical problems dealing with results from an experiment and/or reaction.
- Discuss atoms—their makeup, what they do, and how they do it.

21st-Century Skill: Creativity: Openness and Courage to Explore

As students complete this course's assignments, they will gain skills in *Openness and Courage to Explore*. This skill is part of *Creativity*.

Attribute: Humility

This course focuses on developing the attribute of humility in the context of Chemistry.

Grading and Assignments

The letter grade in this course will be based on these assignments and exams.

Assignments and Exams

| Assignment or Exam | Grading | Percent of Total Grade |
|-----------------------------|-----------------|------------------------|
| 4 Homework | Computer-Graded | 5% |
| 9 Assignments & Discussions | Teacher-Graded | 60% |
| 6 Unit Quizzes | Computer-Graded | 15% |
| 1 Proctored Final Exam* | Computer-Graded | 20% |

*Students must pass the final exam with a 60% or higher to earn credit for the course. They may retake the final exam once for a fee.

Assignments and Content Guides

You will complete these assignments during the course.

Self-Checks

Self-checks are ungraded, self-scored activities that provide practice with the course content. These help you see what concepts you understand and where to focus energy when studying.

Module Notes

Module notes will help you identify the most important parts of each lesson and are an effective study guide for quizzes and the final exam. These notes will be submitted with the module assignments.

Module Assignments

The module assignments will include module notes and a variety of other learning activities, including planning and carrying out two lab experiences. The lab experiences may be done in a home kitchen or using an online simulation. These assignments are teacher graded.

Discussions

The discussions provide an opportunity to write about chemistry topics and respond to other students.

Simulations

The lab simulations allow you to explore the concepts you are learning in an interactive setting. These must be completed using a desktop or laptop computer. You may retake simulations as many times as you want.

Homework

The homework activities are computer-graded, self-scoring activities that show mastery of important concepts. You may retake homework assignments as many times as you want.

Unit Quizzes

Unit quizzes allow you to show what you have learned in the unit. They are multiple-choice, computer-graded assessments.

Final Exam

Students must pass the final exam to earn credit for the course; they may retake it once, for a fee, upon request.

Course Grade

The letter grade will be calculated according to these percentages.

| | |
|-----------------|---------|
| A | 100-93% |
| A- | 92-90% |
| B+ | 89-87% |
| B | 86-83% |
| B- | 82-80% |
| C+ | 79-77% |
| C | 76-73% |
| C- | 72-70% |
| D+ | 69-67% |
| D | 66-63% |
| D- | 62-60% |
| F (fail) | 59%-0 |