CHEM-1290: ESSENTIAL SKILLS FOR GENERAL CHEMISTRY

Cuyahoga Community College

Viewing: CHEM-1290 : Essential Skills for General Chemistry

Board of Trustees:
March 2026

Academic Term:
Fall 2026

Subject Code
CHEM - Chemistry

Course Number:
1290

Title:
Essential Skills for General Chemistry

Catalog Description:
Course supports the learning outcomes of CHEM 1300 (General Chemistry I) as a co-requisite course. Students develop foundational knowledge and problem-solving skills to support the scientific concepts in CHEM 1300. Productive study habits and effective test-taking strategies are also covered. Course must be taken concurrently with CHEM-1300.

Credit Hour(s):
1

Lecture Hour(s):
1

Requisites

Prerequisite and Corequisite
Sufficient score on the chemistry placement exam, or CHEM 1010 Introduction to Inorganic Chemistry, or departmental approval; and concurrent enrollment in CHEM-1300 General Chemistry I is required.

Outcomes

Course Outcome(s):
Utilize productive study habits and effective test-taking strategies to succeed in General Chemistry courses.

Essential Learning Outcome Mapping:
Not Applicable: No Essential Learning Outcomes mapped. This course does not require application-level assignments that demonstrate mastery in any of the Essential Learning Outcomes.

Objective(s):
1. Interpret written directions accurately.
2. Demonstrate effective time management.
3. Define study skills and motivational strategies (i.e. manage time, take notes, ask questions, self-test, etc.).
4. Compare study skills and motivational strategies and create a study skills and motivational strategy plan to use throughout the course.
5. Assess techniques to make study sessions more effective and efficient.

Course Outcome(s):
Use and practice the foundational and theoretical skills in chemistry that are required describe and interpret data.

Essential Learning Outcome Mapping:
Not Applicable: No Essential Learning Outcomes mapped. This course does not require application-level assignments that demonstrate mastery in any of the Essential Learning Outcomes.

Objective(s):

1. Review how to study for a comprehensive final exam.
2. Relate the problem type with the required formula.
3. Review algebraic skills needed for general chemistry.

Course Outcome(s):

Apply the concepts of dimensional analysis to investigate and describe quantitative relationships and solve problems in a variety of contexts.

Objective(s):

1. Review how to study for a comprehensive final exam.
2. Relate the problem type with the required formula.
3. Review algebraic skills needed for general chemistry.

Methods of Evaluation:

1. Worksheets
2. Class Participation
3. Assignments
4. Projects
5. In-class collaborative work

Course Content Outline:

1. Dimensional Analysis
   a. Definition
   b. Applications
   c. Conversion Factors
2. Significant Figures
3. Algebraic Skills
   a. Solving for a variable
   b. Scientific notation
4. Problem-solving Approaches
   a. Interpreting directions or question
   b. Interpreting questions
      i. Information given
      ii. Information needed
      iii. Information to be calculated
   c. Apply methods to new problems
5. Study skills
   a. Time management
   b. Note-taking skills
   c. Annotating
6. Test-taking strategies
7. Utilization of college student services
   a. Tutoring Center
   b. Counseling
   c. Learning Commons
   d. Instructor Office Hours

Religious Accommodation

Before reviewing the course schedule, students should carefully review the following religious accommodation policy and other required instructional policies:

Religious Accommodation:

Students seeking an accommodation for absences permitted under Ohio's Testing Your Faith Act must provide the instructor with written notice of the specific dates for which the student requires an accommodation and must do so not later than fourteen (14) days after the first day of instruction. Please submit requests for accommodations at this link: https://portal2.tri-c.edu/ReligiousAccommodation/ Religious Accommodation Form. Students with questions about their religious accommodations under Ohio's Testing Your Faith Act may contact the College's Office of General Counsel and Legal Services by phone at 216.987.4856 or via email at legal@tri-c.edu.

Other Required Instructional Policies:

https://www.tri-c.edu/student-resources/curriculum/documents/syllabus-part-b.pdf

Weekly Schedule

	Topics
Week 1	Introduce study skills, time management, and strategies for success
Week 2	Create Study Plan Review math skills and problem-solving techniques, including dimensional analysis and conversion factors
Week 3	Review math skills and problem-solving techniques, including significant figures and scientific notation
Week 4	Review student services at college Review math skills and problem-solving techniques, including interpreting directions and questions
Week 5	Assess study skills to prepare for exams and review test-taking strategies
Week 6	Perform practice exam
Week 7	Review math skills and problem-solving techniques, including interpreting directions and questions
Week 8	Review math skills and problem-solving techniques Review study skills, time management, and strategies for success
Week 9	Review math skills and problem-solving techniques, including interpreting directions and questions
Week 10	Review math skills and problem-solving techniques, including interpreting directions and questions
Week 11	Review math skills and problem-solving techniques, including interpreting directions and questions
Week 12	Review math skills and problem-solving techniques, including interpreting directions and questions
Week 13	Review math skills and problem-solving techniques, including interpreting directions and questions
Week 14	Review math skills and problem-solving techniques, including interpreting directions and questions
Week 15	Study Skills for Final Exam
Week 16	Study Skills for Final Exam

The Course Schedule is subject to change due to pedagogical needs, instructor discretion, parts of term, and unexpected events.

Required/Recommended Readings

Readings will be selected from the below textbooks:

1. Eubanks, Lucy and Dwaine Eubanks. *Preparing for your ACS Examination in General Chemistry*.
2. Chang, Raymond and Kenneth Goldby. *Chemistry*.
3. Silberberg, Martin; Amateis, Patricia. *Chemistry: The Molecular Nature of Matter*.
4. Burdge, Julia. *Chemistry*.
5. Burdge, Julia and Overby, Jason. *Chemistry: Atoms First*.
6. OpenStax. *Chemistry*.
7. Sapling Learning. *General Chemistry II Access.*
8. Zumdahl, Steven; Zumdahl, Susan; DeCoste, Donald. *Chemistry.*

Resources for the Instructor

Silberberg, Martin; Amateis, Patricia. (2021) *Chemistry: The Molecular Nature of Matter*, New York: McGraw-Hill Companies Inc.

Burdge, Julia and Overby, Jason. (2023) *Chemistry: Atoms First*, New York: McGraw-Hill Companies, Inc.

Senior Contributing Authors: Paul Flowers, Klaus Theopold, Richard Langley, and William Robinson. (Published 2019. Web Version Last Updated Jul 09, 2025.) *Chemistry.* , Houston, Open Stax.

Zumdahl, Steven; Zumdahl, Susan; DeCoste, Donald. . (2023) *Chemistry* , Boston: Cengage.

Burdge, Julia. Chemistry. . (2022) New York: McGraw-Hill Companies, Inc.

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