

CHM 150 - GENERAL CHEMISTRY I

Course Description

First semester of a two-semester course covering matter and chemical measurement, basic laws, chemical symbols and formulas, stoichiometry and chemical calculations, gases and the gas laws, thermochemistry, atomic structure, electron configurations and the periodic table, elements, chemical bonding and molecular structure, intermolecular forces, liquids and solids. The laboratory includes descriptive and quantitative experiments illustrating the above topics. The recitation includes problem solving, quizzes, and laboratory preparation to accompany lectures. Group 1 lab course. Group 1 course.

Credit Hours

4

Contact Hours

5

Lecture Hours

3

Required Prerequisites

MTH 111 with a grade of 2.0 or better.

Corequisites

CHM 150L, CHM 150R

Recommended Prerequisites or Skills

Competencies

MTH 121 and ENG 111 with a grade of 2.0 or better

General Education Outcomes supported by this course

Quantitative Reasoning

Course Learning Outcomes

Knowledge:

- Describe fundamental scientific and mathematical concepts.
- The basic composition and structure of matter.
- The basic principles involved in matters interactions.
- Mathematical strategies and conventions utilized in chemistry and other sciences.
- Basic patterns and organization as it pertains to chemical reactivity.
- Common methods of representing chemical information and phenomena.

Application:

- Apply appropriate problem solving strategies.
- Analyze problems determine what relevant information is needed to solve.
- Formulate strategies to achieve problem solving goals.
- Evaluate scenarios to determine which scientific and mathematical principles apply.
- Use standard laboratory equipment, modern instrumentation, and classical techniques to carry out experiments.

Integration:

- Make the connection that chemistry is involved in all aspects of their everyday lives.

Human Dimension:

- Interact formally in lab settings and informally during group work to achieve a goal.

Caring - Civic Learning:

- Relate everyday observations and events in their lives to chemistry.
- Explain observed phenomena in terms of the chemical and mathematical principles involved.
- Develop logical approach to problem solving.
- Observe chemistry in context of their lives.

Learning How to Learn:

- Create cognitive schema to recognize patterns.
- Summarize complicated conceptual ideas.
- Employ problem solving skills and strategies.