



Alabama Community College System

CHM 104 Introduction to Chemistry I

I. CHM 104 Introduction to Chemistry I—4 semester hours

II. Course Description

This is a survey course of general chemistry for students who do not intend to major in science or engineering, and the course may not be substituted for CHM 111. Lecture will emphasize the facts, principles, and theories of general chemistry including math operations, matter and energy, atomic structure, symbols and formulas, nomenclature, the periodic table, bonding concepts, equations, reactions, stoichiometry, gas laws, phases of matter, solutions, and acids and bases. Laboratory is required.

III. Prerequisite

A minimum of MTH 098 or equivalent placement score

IV. Textbook

Due to the varied selection of quality college-level textbooks, each college will select the textbook needed to meet the requirements of this course.

V. Course Learning Outcomes

By the end of the course, students will be able to:

1. demonstrate proper lab techniques and safety in the performance of common experiments in chemistry;
2. apply scientific reasoning to interpret experimental data;
3. describe the fundamental concepts of atomic structure, chemical periodicity, chemical bonding, properties of the states of matter, solutions, acids and bases, and nuclear chemistry;
4. describe the behavior of gases using the fundamental concepts of kinetic molecular theory;
5. write the correct chemical formula from a name and vice versa;
6. describe the basic principles of thermochemistry; and
7. solve problems related to measurement, stoichiometry, thermochemistry, gases, solutions, and acids and bases, using dimensional analysis and appropriate equations.

VI. Course Outline of Topics

Lecture Topics:

1. Introduction to inorganic chemistry
2. Measurements, units, and calculations
3. Atoms, molecules, and ions
4. Electronic structure of atoms and periodicity
5. Nomenclature
6. Chemical bonding
7. Chemical reactions
8. Stoichiometry
9. Gases
10. Thermochemistry
11. Solutions
12. Liquids, solids, and changes of state
13. Acids and bases
14. Nuclear chemistry

Lab Topics:

1. Lab safety
2. Graphical analysis of data
3. Measurements
4. Chemical and physical changes
5. Chemical reactions
6. Calorimetry
7. Titration
8. Gas laws
9. Acids and bases

VII. Evaluation and Assessment

Grades will be given based upon A = 90 – 100%, B = 80 – 89%, C = 70 – 79%, D = 60 – 69%, and F = below 60%.

VIII. Attendance

Students are expected to attend all classes for which they are registered. Students who are unable to attend class regularly, regardless of the reason or circumstance, should withdraw from that class before poor attendance interferes with the student's ability to achieve the objectives required in the course. Withdrawal from class can affect eligibility for federal financial aid.

IX. Statement on Discrimination/Harassment

It is the official policy of the Alabama Community College System and entities under its control, including all Colleges, that no person shall be discriminated against on the basis of any impermissible criterion or characteristic, including, without limitation, race, color, national origin, religion, marital status, disability, sex, age, or any other protected class as defined by federal and state law. (ACCS Policies 601.02 and 800.00)

X. Americans with Disabilities

The Rehabilitation Act of 1973 (Section 504) and the Americans with Disabilities Act of 1990 state that qualified students with disabilities who meet the essential functions and academic requirements are entitled to reasonable accommodations. It is the student's responsibility to provide appropriate disability documentation to the College.