



Alabama Community College System

CHM 105 Introduction to Chemistry II

I. CHM 105 Introduction to Chemistry II—4 semester hours

II. Description

This is a survey course of organic chemistry and biochemistry for students who do not intend to major in science or engineering, and this course will not substitute for CHM 112. Topics include basic nomenclature, classification of organic compounds, typical organic reactions, reactions involved in life processes, and the function of biomolecules. Laboratory is required.

III. Prerequisite

Grade of “C” or better in CHM 104 or CHM 111

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 organic chemistry;
2. apply scientific reasoning to interpret experimental data;
3. write the chemical formula for organic compounds from a name (and vice versa) and identify functional groups;
4. identify isomers, molecular shape, and resonant structures of organic compounds;
5. discuss physical and chemical properties of selected organic compounds;
6. identify representative reactions of organic compounds;
7. explain stereochemistry, chirality, and optical activity; and
8. describe the basic structure and function of carbohydrates, lipids, amino acids, proteins, and nucleic acids.

VI. Course Outline of Topics

Lecture Topics:

1. Classification of organic compounds and functional groups
2. Formal charge and resonance
3. Structural formulas and isomerism
4. Alkanes
5. Unsaturated hydrocarbons
6. Alcohols and ethers
7. Aldehydes and ketones
8. Carboxylic acids and esters
9. Amines and amides
10. Aromatic compounds
11. Polymers
12. Carbohydrates
13. Lipids
14. Proteins and enzymes
15. Nucleic acids

Lab Topics:

1. Safety procedures
2. Molecular models
3. Simple distillation
4. Crystallization
5. Isolation
6. Melting points
7. Reactions of carboxyl groups
8. Preparation of an organic compound
9. Synthesis of a polymer
10. Carbohydrates
11. Lipids
12. Proteins

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.