

COURSE OUTLINE
CHEM-115
Chemistry and Society Lab
1 Credit
Science Core Course

HOWARD COMMUNITY COLLEGE

Description

After successful completion of this laboratory, students will have an understanding of the metric system, basic laboratory measurements and instruments. Students will investigate methods of recycling, separation, synthesis and chemical analysis using samples of common household substances. Students will analyze labels and claims from a consumer's point of view. Pre- or Co-Requisite: CHEM-105. (3 hours lab)

Statement on General Education and Liberal Learning

A liberal education prepares students to lead ethical, productive, and creative lives and to understand how the pursuit of lifelong learning and critical thinking fosters good citizenship. General education courses form the core of a liberal education within the higher education curriculum and provide a coherent intellectual experience for all students by introducing the fundamental concepts and methods of inquiry in the areas of mathematics, the physical and natural sciences, the social sciences, the arts and the humanities, and composition. This course is part of the general education core experience at Howard Community College.

Overall Course Objectives

Upon completion of this course, the student will be able to:

1. Learn scientific procedures and attitudes from lab work.
2. Observe all safety regulations in the lab.
3. Relate chemical principles to familiar objects and substances.
4. Use laboratory instruments and tools.
5. Identify the metric units used to measure length mass and volume.
6. Discuss the importance of recycling.
7. Describe and perform a separation technology.
8. Determine water hardness.
9. Describe the term polymer and synthesize a common polymer.
10. Synthesize several well-known medicinal compounds.
11. Visualize molecular structures using molecular models.
12. Interpret labels of common household substances.
13. Describe qualitative and quantitative observations in lab.

Major Topics

- I. The Bunsen Burner
- II. Metric System Measurements
- III. Recycling Aluminum Chemically
- IV. Water Hardness
- V. Building Molecular Models
- VI. Percent Oxygen in Air
- VII. Vitamin C
- VIII. Label Reading
- IX. Chromatography of Artificial Colors
- X. Student Demonstrations
- XI. Nylon and Polymers
- XII. Aspirin and Salicylic Acid
- XIII. Glass Etching

Course Requirements

Grading/exams: Grading procedures will be determined by the individual faculty member but will include the following:

Final grades will be calculated on the basis of lab attendance and techniques, and lab reports or notebooks.

Writing: Specific writing assignments will be determined by the individual faculty member but will include lab reports or notebooks.

Other Course Information

This course, together with CHEM-105, is a Science core course. This course is a Science elective and an Arts and Sciences elective.