Common Course Outline
CHEM 122
General Chemistry I Laboratory
1 Semester Hour

The Community College of Baltimore County

Description

CHEM 122--1 Credit--General Chemistry II Laboratory serves as a lab course to accompany CHEM 121; develops knowledge of chemical concepts, experimentation and of laboratory instruments and techniques introduced in CHEM 121. 3 hours of laboratory per week.

Prerequisite: Minimum grade of C or concurrent enrollment in CHEM 121.

Overall Course Objectives

Upon completion of this course, the student will be able to:
1. work safely, use chemicals safely and dispose of wastes in a proper manner with particular emphasis on avoidance of environmental pollution;
2. keep records of observations and write formal lab reports;
3. make proper measurements using measuring devices such as electronic balances, volumetric wares, and spectrophotometers;
4. setup and use laboratory equipment appropriately;
5. determine selected physical constants such as molar volume of a gas experimentally;
6. use physical methods such as chromatography to analyze and separate components of a mixture;
7. synthesize and determine physical properties of an inorganic compound;
8. collect and graph data manually;
9. apply quantitative techniques to analyze selected substances (volumetric, gravimetric and instrumental);
10. apply qualitative techniques to identify substances;
12. measure the enthalpy changes associated with a chemical or physical process; and
13. use molecular models to deduce molecular geometry.

Major Topics

I. Safety in the Chemistry Laboratory
II. Density of Liquids and Solids
III. Separation and Identification of Compounds using Chromatographic or Other Physical Methods
IV. Synthesis and Percent Yield Determination
V. Double Replacement Reactions

VI. Titration
VII. Thermochemistry
VIII. Spectroscopy
IX. Molecular Geometry

Course Requirements

Grading/exams: Grading procedures will be determined by the individual faculty member but will involve assessment of the following: techniques, experimental results, reproducibility of results, correct identification of unknowns, pre-lab or post-lab questions and quality of written reports.

Writing: Written laboratory reports may be required.

Other Course Information

This course, with CHEM 121, may be used to fulfill 4 credits of the General Education requirement in Physical and Biological Sciences.

While it is expected that the above topics will be covered, faculty members may include additional topics consistent with department practices:

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