Common Course Outline
CHEM 147
Introduction to Organic and Biochemistry Laboratory
1 Semester Hour

The Community College of Baltimore County

Description

CHEM 147--1 Credit--Introduction to Organic and Biochemistry Laboratory

introduces techniques of separation, purification & syntheses, and identification of biomolecules & organic compounds.

3 hours of laboratory per week

Prerequisite: Minimum grade of C or concurrent enrollment in CHEM 146.

Overall Course Objectives

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

1. Determine selected physical properties of organic substances such as boiling point, melting point, refractive index, infrared and uv-visible spectra;
2. interpret IR spectra and identify the functional groups of unknown compounds;
3. purify a liquid by the process of fractional or simple distillation;
4. apply chromatographic techniques to separate mixtures and identify constituents;
5. synthesize selected organic compounds to illustrate the interconversion of functional group;
6. determine the optical rotation of a chiral compound;
7. record and interpret observations and write reports based on the data; and
8. qualitative and quantitatively analyze organic compounds using the following techniques: spectroscopy, chromatography, titration.

Major Topics

Molecular Geometry
Melting Point, Boiling Points, Refractive Index
Thin Layer Chromatography
Introduction to Infrared Spectroscopy and Gas Liquid Chromatography
Synthesis of selected organic compounds
Quantitative and Qualitative Analysis of Carbohydrates, Lipids, Amino Acids, and/or Proteins

Course Requirements

Grading/exams: Grading procedures will be determined by the individual faculty member but will involve assessment of the following: technique, yields, purity of compounds prepared, correct identification of unknowns, reproducibility of results, quality of written reports and notebooks.

Writing: Written laboratory reports may be required on a more or less weekly basis.

Other Course Information

When taken with CHEM 146 provides 4 credits of organic & biochemistry.

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

Date Revised: 2/23/07