

CEM 161 – Chemistry Laboratory I

Description: Experiments in general chemistry, stoichiometry, calorimetry, electrochemistry, molecular geometry, gas laws, kinetics, acids and bases, and inorganic chemistry.

Credit: 1 credit (no lectures, 3 hours of lab)

Prerequisites: CEM 141 or concurrently or CEM 151 or concurrently. Not open to students with credit in LBS 171L or CEM 185H.

Contents are:

1. Introduction, Safety and Laboratory Apparatus Instruction.
2. Determination of the mass and density of a metal sample
3. Stoichiometry: The reaction of baking soda and vinegar
4. Chemical Reactions and Chemical Equations
5. Calorimetry: The heat capacities of metals
6. The Heat of Vaporization of Liquid Nitrogen
7. The Separation of Recyclable Plastics by Density
8. The Esters of Salicylic Acid
9. The shapes of Molecules and Ions
10. The Molar Mass of Carbon Dioxide Gas
11. The Determination of the Molar Mass of Aluminum
12. Red Cabbage: An indicator for Acids and Bases
13. The Concentration of Acetic Acid in Vinegar
14. Inorganic Chemistry: A Cycle of Copper Reactions