

Degree Learning Goals for the B.S. in Chemistry (with certificate from the American Chemical Society)

DLG 1: Establish a Foundation and Depth of Knowledge Pertaining to Fundamental Chemical Principles with an emphasis on those involved in organic and inorganic chemical processes.

SLO 1.1: Recognize, describe, draw, and name, important classes of atoms, functional groups, and molecules.

SLO 1.2: Describe the atomic and subatomic structure and properties of matter.

SLO 1.3: Describe the origin and properties of chemical bonding and the influence on structure and properties of the molecules.

SLO 1.4: Describe how the macromolecular properties of matter are determined by the molecular characteristics.

SLO 1.5: Predict the outcome of, and describe the mechanisms for, various chemical reactions.

DLG 2: Demonstrate Competency in Problem Solving and Quantitative Reasoning

SLO 2.1: Demonstrate the ability to quantify and interpret the reliability of measured physical and chemical properties of molecules and mixtures employing dimensional and appropriate statistical analysis.

SLO 2.2: Demonstrated knowledge of the important techniques employed to synthesize, separate, purify, identify, and quantitate chemical compounds.

SLO 2.3: Develop knowledge of how to apply the scientific method in exploring chemical phenomena.

DLG 3: Develop Skills used in Professional Chemical Settings

SLO 3.1: Develop proficiency with modern instrumentation and techniques used in analytical, physical, organic and inorganic chemistry laboratories.

SLO 3.2: Demonstrate the ability to read and comprehend a Standard Operating Procedure.

SLO 3.3: Maintain clear and legible record of laboratory work.

SLO 3.4: Develop knowledge of proper and safe chemical use, storage, and disposal.

SLO 3.5: Exhibit effective oral and written communication skills.

SLO 3.6: Develop the skills to effectively collaborate on complex projects.

SLO 3.7: Exhibit knowledge of scientific ethics relating to treatment of data, proper citation of others' work, plagiarism, and publication of scientific results.

DLG 4: Effectively Employ Chemical Literature and Information Management Systems.

SLO 4.1: Retrieve information efficiently and effectively by searching the chemical literature.

SLO 4.2: Develop the capability to evaluate technical articles critically.

SLO 4.3: Develop and maintain a personal database of relevant chemical literature.