Learning Objectives

The primary goal of the Chemistry and Biochemistry majors is to prepare students for entering careers in the Chemical and Molecular fields related to Chemistry. A large fraction of our graduates go on to advanced and postgraduate studies in Chemistry, Biology, Health Sciences, Materials, Engineering and other related fields.

Every graduate of the Chemistry Department will have completed a rigorous, challenging and integrated program which includes fundamental course work aimed at building foundational knowledge in Chemistry and related fields, as well as advanced course work aimed at exposing students to the latest advances and development in the molecular sciences.

Upon graduation, majors will have developed a set of fundamental competencies:

a. **Knowledge and Comprehension:**
   Master basic knowledge fundamental to the field of Chemistry in accordance with the expectations set forth by the American Chemical Society through course work in general, organic, inorganic, analytical, physical and biological Chemistry.

   Be able to identify and locate current, reliable and accurate sources of scientific information and data, and understand their contents in areas which are not directly covered by the degree program as basic knowledge.

b. **Application and Analysis:**
   Employ and extend knowledge content gained to analyze issues of molecular relevance.

   Apply critical thinking, using core chemical knowledge, information and data, to
identify the essential elements of a problem or a challenge. Design a rational scientific scheme to generate data and collect reliable information in order to solve this problem or challenge. Utilize the knowledge, information and data gathered to formulate a scientifically sound strategy to solve the problem or challenge.

c. **Evaluation and Judgment:**
Be able to design rational criteria and a scientifically sound strategy to evaluate the effectiveness of solutions developed.