

## **Chemistry Program Goals & Student Learning Outcomes**

**Goal 1.** To achieve scientific competency in chemistry, across all of its subdivisions, through an ACS-approved curriculum.

### **Student Learning Outcome 1.1**

Demonstrate understanding of chemistry concepts.

**Goal 2.** To understand and apply the scientific method through an inquiry-based laboratory curriculum, culminating in independent research guided by faculty with active research programs.

### **Student Learning Outcome 2.1**

Apply the scientific method in laboratory situations, including competency in observation skills, hypothesis formation, experimental design, & use of proper controls.

**Goal 3.** To develop critical thinking skills & problem-solving techniques in course work, laboratories, and undergraduate research.

### **Student Learning Outcome 3.1**

Demonstrate competence in data analysis, including the preparation & interpretation of graphs & tables.

### **Student Learning Outcome 3.2**

Demonstrate competence in the analysis of various chemical spectra.

**Goal 4.** To evaluate and communicate chemical information.

### **Student Learning Outcome 4.1**

Effectively use information-gathering techniques in scientific inquiry.

### **Student Learning Outcome 4.2**

Communicate experimental findings or data interpretations both orally & in writing, including: Proper use of chemical nomenclature and language; Use of American Chemical Society Style Guide for style and citation formatting

**Goal 5.** To understand modern chemical laboratory techniques.

### **Student Learning Outcome 5.1**

Demonstrate general competence in chemistry laboratory.

### **Student Learning Outcome 5.2**

Demonstrate competence in the use of modern chemical instrumentation.

**Student Learning Outcome 5.3**

Demonstrate competence in application of laboratory techniques in advanced topics and research.