

# General Education Course Objectives and Learning Outcomes

Course

Name: Survey of Chemistry

Course Number: CHEM 1113

Department: Physical  
Science

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## COMMON COURSE OBJECTIVES AND STUDENT LEARNING OUTCOMES THAT ARE OR WILL BE LISTED ON THE SYLLABUS OF EVERY SECTION OF THIS COURSE:

|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
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| <i>Course objectives:</i>         | Survey of Chemistry is a brief introduction to fundamental concepts in chemistry.                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <i>Student learning outcomes:</i> | <p>Upon successful completion of CHEM 1113: Survey of Chemistry, students will be able to:</p> <ul style="list-style-type: none"> <li>• Discuss the impact of chemistry on society and the environment.</li> <li>• Perform basic calculations, using the appropriate units, to characterize chemical systems.</li> <li>• Identify the composition, structure, and properties of matter at a fundamental level.</li> <li>• Use chemical equations to describe the characteristics of chemical reactions.</li> </ul> |

## ADHE ACTS INFORMATION FOR THIS COURSE (IF APPROPRIATE)

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| <i>ACTS Course number:</i>                                    | CHEM 1214 (taken with CHEM 1111)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <i>Copy the ACTS course objectives and learning outcomes:</i> | <p>General Description:</p> <p>Algebra-based chemistry course specifically designed for majors in health-related professions and is not appropriate for chemistry or other science majors or pre-professional students. Course content provides a foundation for work in health related areas. Course includes nomenclature, atomic and molecular structure, bonding, and reactions. Lab required. This is an algebra-based chemistry course and it is strongly recommended that the student should have completed Intermediate Algebra with a "C" or better.</p> <p>Expected Student Learning Outcomes:</p> <p>The student will explain, describe, discuss, recognize, and apply knowledge of the following:</p> <ul style="list-style-type: none"> <li>• Measurements and unit conversions</li> <li>• Structure and composition of the atom</li> <li>• Periodic table</li> <li>• Ionic and covalent bonding</li> <li>• Inorganic nomenclature</li> <li>• Chemical reactions</li> <li>• Basic Stoichiometry</li> <li>• Gas laws</li> <li>• Solutions</li> <li>• Energy of reactions</li> <li>• Acid/base reactions and equilibria</li> </ul> |

- Identifying Oxidation-Reduction Reactions
- Nuclear Chemistry

**WHICH ATU GENERAL EDUCATION GOALS DOES THIS COURSE FULFILL? (NO MORE THAN TWO)**

Communicate effectively  
     Written communication  
     Oral communication  
 Think critically  
 Develop ethical perspectives  
     Diversity  
     Empathy  
     Leadership

**X Apply scientific and quantitative reasoning**

Scientific reasoning

**X Quantitative reasoning**

Apply the value of the arts and humanities  
 Practice civic engagement

**DESCRIPTION OF HOW THIS COURSE MEETS THE GENERAL EDUCATION GOALS CHOSEN ABOVE  
 (TO BE INCLUDED ON THE SYLLABUS OF EVERY SECTION OF THIS COURSE)**

- Perform basic calculations, using the appropriate units, to characterize chemical systems. (Aligns with the General Education Goal: Apply Scientific and Quantitative Reasoning.)