

## CHEM 1215L-GENERAL CHEMISTRY I FOR STEM MAJORS LAB CREDITS

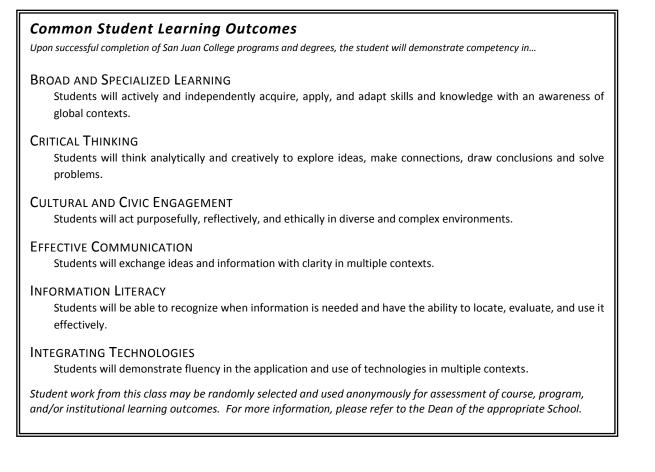
## **SYLLABUS**

## CATALOG DESCRIPTION

General Chemistry I Laboratory for Science Majors is the first semester laboratory course designed to complement the theory and concepts presented in General Chemistry I lecture. The laboratory component will introduce students to techniques for obtaining and analyzing experimental observations pertaining to chemistry using diverse methods and equipment.

Corequisites: CHEM-1215

Semester Offered: Fall, Spring



## **Course Learning Outcomes**

Upon successful completion of the course, the student will be able to...

1. Demonstrate and apply concepts associated with laboratory safety, including the possible consequences of not adhering to appropriate safety guidelines.

2. Demonstrate the computational skills needed to perform appropriate laboratory related calculations to include, but not be limited to determining the number of significant figures in numerical value with the correct units, solving problems using values represented in exponential notation, solving dimensional analysis problems, and manipulating mathematical formulas as needed to determine the value of a variable.

3. Perform laboratory observations (both qualitative and quantitative) using sensory experience and appropriate measurement instrumentation (both analog and digital).

4. Prepare solutions with an acceptable accuracy to a known concentration using appropriate glassware.

5. Master basic laboratory techniques including, but not limited to weighing samples (liquid and solid), determining sample volumes, measuring the temperature of samples, heating and cooling a sample or reaction mixture, decantation, filtration, and titration.

6. Demonstrate mastery in experimental techniques, such as pressure measurements, calorimetric measurements, and spectrophotometric measurements

7. Draw conclusions based on data and analyses from laboratory experiments.

8. Present experimental results in laboratory reports of appropriate length, style and depth, or through other modes as required.

9. Relate laboratory experimental observations, operations, calculations, and findings to theoretical concepts presented in the complementary lecture course.

10. Design experimental procedures to study chemical phenomena.