



General Chemistry I Lab (CHEM 1111)

Credit: 1 semester credit hour (2 hours lab)

Prerequisite: MATH 1332 or MATH 1314

Co-requisite: CHEM 1311 General Chemistry I

Course Description

Basic laboratory experiments supporting theoretical principles presented in CHEM 1311; introduction of the scientific method, experimental design, data collection and analysis, and preparation of laboratory reports.

Required Textbook and Materials

- *Laboratory Experiments for Chemistry, The Central Science*, 12th Edition, by Brown, Nelson, Kemp, and Stoltzfus, ISBN13: 9780321705020
- Safety Glasses or Goggles
- 2-pocketed folder

Objectives

Course Objectives

Upon completion of this course, the student will be able to:

1. Use basic apparatus and apply experimental methodologies used in the chemistry laboratory.
2. Demonstrate safe and proper handling of laboratory equipment and chemicals.
3. Conduct basic laboratory experiments with proper laboratory techniques.
4. Make careful and accurate experimental observations.
5. Relate physical observations and measurements to theoretical principles.
6. Interpret laboratory results and experimental data, and reach logical conclusions.
7. Record experimental work completely and accurately in laboratory notebooks and communicate experimental results clearly in written reports.
8. Design fundamental experiments involving principles of chemistry.
9. Identify appropriate sources of information for conducting laboratory experiments involving principles of chemistry.

Core Objectives

1. **Critical Thinking Skills:** To include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
2. **Communication Skills:** To include effective development, interpretation and expression of ideas through written, oral, and visual communication
3. **Empirical & Quantitative Skills:** To include the manipulation and analysis of numerical data or observable facts resulting in informed conclusion
4. **Teamwork:** To include the ability to connect choices, actions, and consequences to ethical decision-making

Course Outline

- A. Basic Laboratory Techniques
- B. Identification of Substances by Physical Properties
- C. Separation of the Components of a Mixture
- D. Chemical Reactions
- E. Chemical Formulas
- F. Chemical Reactions of Copper and Percent Yield
- G. Chemical in Everyday Life: What Are They and How Do We Know?
- H. Gravimetric Analysis of a Chloride Salt
- I. Gravimetric Determination of Phosphorus in Plant Food
- J. Paper Chromatography: Separation of Cations and Dyes

Grade Scale

90 – 100	A
80 – 89	B
70 – 79	C
60 – 69	D
0 – 59	F

Course Evaluation

Final grades will be calculated according to the following criteria:

- | | |
|---------------------------|-----|
| 1. Pre-lab Assignments | 10% |
| 2. Lab Reports | 70% |
| 3. Quizzes and Final exam | 20% |

Course Requirements

1. Written pre-lab and lab reports.
2. Construct a scale model.

Course Policies

1. No food, drinks, or use of tobacco products in lab.
2. Beepers, telephones, headphones, and any other electronic devices must be turned off while in lab.
3. Do not bring children to lab.
4. Pre-labs are due at the beginning of lab. Lab Reports are due before starting the next lab. No late assignments will be accepted.
5. Students that miss a test must make up the test the day they return to class. It is the student's responsibility to make arrangements to make up test.
6. Attendance Policy. Two absences are allowed. If a student is tardy to class or departs early three (3) times, it will be equal to one (1) absence. Each absence beyond two absences will result in a 5 point deduction from your final grade.

7. The student is responsible for initiating and completing the drop process. A student who stops coming to class and fails to drop the course, will earn an 'F' in the course.
8. Clean up the work station and the glassware used during the experiment. Points will be deducted for poor working habits and leaving dirty glassware and dirty work area behind.
9. **SAFETY GLASSES OR GOGGLES MUST BE WORN AT ALL TIMES IN THE LAB, NO EXCEPTIONS.**
10. Additional class policies as defined by the individual course instructor.

Disabilities Statement

The Americans with Disabilities Act of 1992 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. Among other things, these statutes require that all students with documented disabilities be guaranteed a learning environment that provides for reasonable accommodations for their disabilities. If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator at (409) 880-1737 or visit the office in Student Services, Cecil Beeson Building.

Course Schedule

Week	Topic
One	Course introduction and policies Basic Laboratory Techniques
Two	Identification of Substances by Physical Properties
Three	Separation of the Components of a Mixture
Four	Chemical Reactions
Five	Chemical Formulas
Six	Continued
Seven	Chemical Reactions of Copper and Percent Yield
Eight	Continued
Nine	Chemical in Everyday Life: What Are They and How Do We Know Them
Ten	Continued
Eleven	Gravimetric Analysis of a Chloride Salt
Twelve	Continued
Thirteen	Gravimetric Determination of Phosphorus in Plant Food

Fourteen	Continued
Fifteen	Paper Chromatography: Separation of Cations and Dyes
Sixteen	Review
Final Exam	<i>Given on the date and time specified by the official exam schedule.</i>

Contact information varies per instructor.