

CHM 1111: General Chemistry I Laboratory

Laboratory Period: M 4:00-6:15 pm

Classroom: CC Winn High School—001

Instructor: Dr. Audrey Whiting

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Office: TBA

Office Hours: TBA | *or* by appointment

Course Description:

This course is a corequisite to CHM 1311 and fulfills 1 credit hour in the Life and Physical Sciences core curriculum. It is primarily designed for students pursuing professional medical fields. The class will consist of basic laboratory experiments such as recrystallization, crystal growing, redox reactions, salt metathesis reactions, basic organic chemistry, chromatography, and titrations. These experiments are designed to complement the material presented in CHM 1311. This course also introduces students to the scientific method, experimental design, data collection, analysis, and the preparation of laboratory reports.

Student Learning Outcomes for Core Courses:

- **Critical Thinking:** Students will develop critical thinking skills to include creative thinking, innovation, inquiry, and analysis, evaluation, and synthesis of information.
- **Communication:** Students will develop communication skills to include effective development, interpretation and expression of ideas through written, oral, and visual communication.
- **Personal Responsibility:** Students will develop principles of personal responsibility for living in a diverse world; to include intercultural competency, knowledge of civic responsibility, and the ability to engage effectively in regional, national, and global communities.
- **Social Responsibility:** Students will develop principles of social responsibility for living in a diverse world, to include the ability to connect choices, actions, and consequences to ethical decision-making.
- **Empirical and Quantitative:** Students will develop empirical and quantitative skills to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions.
- **Teamwork:** Students will develop teamwork skills to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal.

Learning Objectives for General Chemistry I Laboratory:

Upon completion of this course, students should demonstrate proficiency in:

1. Fundamental concepts and terms in general chemistry, including the metric system, the mole, matter, energy changes in chemical processes, the law of conservation of mass, chemical formulas, ions, and molecules.
2. Electronic structures of atoms and trends in the periodic table
3. Concepts of chemical bonding, including covalent and ionic bonds
4. Chemical reactions in aqueous solutions, including recognizing evidence of a reaction and balancing chemical equations
5. Applications of the ideal gas equation, including the relationships among volume, pressure, and amount (moles) of gas

Required Course Materials:

- **Laboratory Manual:** The laboratory manual is uploaded to Blackboard. It is the student's responsibility to print out or download the corresponding experiment before the class period.
- **Online Access to Blackboard:** Announcements or additional resources may be posted on Blackboard throughout the semester.
- **Scientific Calculator:** Students must have access to a calculator able to perform exponential and logarithmic functions.

Attendance:

Lab attendance is mandatory. Students must arrive on time and sign in at the start of each lab period, and should plan to remain for the full session. Points may be deducted for late arrivals or early departures. Missing three or more labs will result in an automatic F.

Grading scheme and components:

The following table illustrates the grading margins in this course. *Grades will not be curved nor rounded up at the end of the course.* Remember: you are earning your grade as you accumulate points through every assignment!

Letter Grade	Percentage
A	90.00-100
B	80.00-89.99
C	70.00-79.99
D	60.00-69.99
F	<60.00

Breakdown of Course Points:

- **Laboratory Assignments:** 85%
- **Final Exam:** 15%

Laboratory Expectations and Safety Policies:

• Preparation

1. Read through the assigned experiment ahead of your scheduled lab time
2. Come equipped with all necessary assignments completed and all required materials

• Dress Code & Personal Conduct

1. Appropriate attire is required at all times: pants of ankle length, tops of t-shirt coverage, and close toed shoes
2. There are no exceptions to the dress code. Students who arrive without proper clothing will be dismissed from the lab without a makeup opportunity.
3. Eating and Drinking is strictly prohibited in the laboratory. If necessary, students will be allowed to leave the room for a brief food and drink break

• Protective Equipment:

1. Safety glasses (or prescription glasses) must be worn at all times during experiments. Students who lack proper eye protection will be dismissed from the lab without a makeup opportunity.
2. Lab coats are highly recommended.

• Health & Safety

1. Students who are pregnant or become pregnant during the semester should notify Dr. Whiting immediately.

• Technology & Electronics

1. All students must bring a scientific calculator to all labs and exams
2. The use of cell phones is prohibited during labs and exams

Laboratory Assignments:

• Pre-Lab Assignments: Submitted in blackboard before the start of the lab period

1. Pre-Lab Exercises: written in the laboratory manual
2. Pre-Lab Write Up: written electronically (MS Word or equivalent)

• In-Lab Assignments: Submitted in blackboard before the end of the lab period

1. If necessary, your instructor will collect experimental data sheets, otherwise these will be submitted with the post-lab report

• Post-Lab Assignments: Must be submitted in blackboard before the start of the next lab period

1. Post-Lab Questions: written in the laboratory manual
2. Lab Reports: written electronically following the guidelines on the next page

Laboratory Assignments and Grading:

Each experiment is worth **30 points**:

- Pre-lab Assignments: **5 points**
- Attendance: **5 points** (to be included in the laboratory report grade)
- Post-lab Questions: **5 points**
- Experimental data sheets or written lab report: **15 points**

Note: If an experiment does not include a pre-lab or post-lab assignment, those points will be reallocated to the experimental data sheets or written lab report, so that each experiment is worth a total of 30 points.

Late or illegible submissions will result in point deductions:

- Missing a deadline will result in an automatic 10% penalty
- Additionally, assignments submitted after the due date will incur a 10% grade deduction for each day they are late.

Pre-Lab Report Guidelines: each section is to be written in the student's own words

- Aim: States the goal of the experiment
- Reagents: A list of all chemicals used, including quantities (e.g. mass, volume, concentration)
- Apparatus: A list of all equipment required
- Method: An outline of experimental steps

Lab Report Guidelines:

- Aim: States the goal of the experiment
- Reagents: A list of all chemicals used, including *actual* quantities
- Apparatus: A list of all equipment required
- Method: An outline of experimental steps
- Data & Results: A record of observations and numerical findings (e.g. percent yield)
- Discussion: An analysis of results, answers to assigned questions, and explanation of experimental significance. Discuss whether the results aligned with expectations or different from them and explain the reasoning behind it. Why?
- Conclusion: A summary of results—highlights the successes and limitations of the experiment

Course Calendar and Tentative Schedule:**Course Dates:** August 24th to December 2nd **Final Exam:** November 16th**Important Dates:** Last day to drop: September 9th Last day to drop with a W: October 2nd

The tentative course schedule can be found below. This schedule is meant to serve as a general guideline for materials covered over the course of the semester. I reserve the right to change any due dates that would be of advantage to the class as a whole. If this is to happen, an announcement will be made during class. Experiments are subject to change depending on the equipment available in the laboratory.

Date	Week	Experiment #	Content
August 24 th	1		Review Syllabus & Course Organization
August 31 st	2	1	Safety, Procedures, and Introduction to Laboratory Equipment
September 7 th	No Class—Labor Day Holiday		
September 14 th	4	2	Chemical Calculations and Symbols
September 21 st	5	3	Naming of Chemical Compounds
September 28 th	6	4	Balancing Chemical Equations
October 5 th	7	5	Mole Calculations
October 12 th	8	6	Mole Calculations
October 19 th	9	7	Salt Metathesis Reactions
October 26 th	10	8	Synthesis of Aspirin
November 2 nd	11	9	Percentage of Water in a Hydrate
November 9 th	12	10	Redox Reactions and Limiting Reagents
November 16 th	Final Exam		

ADA Statement:

SRSU Accessibility Services. Sul Ross State University (SRSU) is committed to equal access in compliance with the Americans with Disabilities Act of 1973. It is SRSU policy to provide reasonable accommodations to students with documented disabilities. It is the student's responsibility to initiate a request each semester for each class. To help protect confidentiality, students seeking accessibility/accommodation(s) services must submit the [Accommodation Request Form](#) located on our [website](#). Students are welcome to call the Office of Accessibility Services at 432-837-8203 or stop by Ferguson Hall Room 112 if they have any additional questions regarding the process. Our mailing address is PO Box C-122; Alpine, TX; 79832.

Statement Regarding Generative Artificial Intelligence (AI):

The University does not recommend or endorse any specific AI tools or resources. Students should be aware that many generative AI tools (e.g., ChatGPT, Google Gemini, Microsoft Copilot) store user input and may use this data to train future models. For this reason, students should never upload or share personal, confidential, or identifiable information—such as names, ID numbers, health data, or assignment submissions containing such details—into any generative AI platform. When using AI tools, students should verify whether the tool complies with student privacy standards as indicated by the University. Faculty may recommend specific tools that better align with institutional data privacy policies, but ultimate responsibility for data protection rests with users. Students are encouraged to use faculty-recommended platforms when engaging in coursework involving generative AI. The University is not liable for any adverse experience or impact when students interact with these tools.

Student Responsibilities:

All full-time and part-time students are responsible for familiarizing themselves with the [Student Handbook](#) and the [Undergraduate & Graduate Catalog](#) and for abiding by the [University rules and regulations](#). Additionally, students are responsible for checking their Sul Ross email as an official form of communication from the university. Every student is expected to obey all federal, state and local laws and is expected to familiarize him/herself with the requirements of such laws.

SRSU Distance Education Statement:

Students enrolled in distance education courses have equal access to the university's academic support services, such as library resources, online databases, and instructional technology support. For more information about accessing these resources, visit the SRSU website.

Students should correspond using Sul Ross email accounts and submit online assignments through Blackboard, which requires a secure login. Students enrolled in distance education courses at Sul Ross are expected to adhere to all policies pertaining to academic honesty and appropriate student conduct, as described in the student handbook. Students in web-based courses must maintain appropriate equipment and software, according to the needs and requirements of the course, as outlined on the SRSU website. Directions for filing a student complaint are located in the student handbook.

Counseling:

Sul Ross has partnered with TimelyCare where all SR students will have access to nine free counseling sessions. You can learn more about this 24/7/365 support by visiting [TimelyCare](#). The SR Counseling and Accessibility Services office will continue to offer in-person counseling in Ferguson Hall room 112 (Alpine campus), and telehealth Zoom sessions for remote students and RGC students.

Libraries:

The Bryan Wildenthal Memorial Library and Archives of the Big Bend in Alpine offer FREE resources and services to the entire SRSU community. Access and borrow books, articles, and more by visiting the [library's website](#). Off-campus access requires logging in with your LoboID and password. Librarians are a tremendous resource for your coursework and can be reached in person, by email (srsulibrary@sulross.edu), or by phone (432-837-8123).

No matter where you are based, public libraries and many academic and special libraries welcome the general public into their spaces for study. SRSU TexShare Cardholders can access additional services and resources at various libraries across Texas. Learn more about the TexShare program by visiting library.sulross.edu/find-and-borrow/texshare/ or ask a librarian by emailing srsulibrary@sulross.edu.

Mike Fernandez, SRSU Librarian, is based in Eagle Pass (Building D-129) to offer specialized library services to students, faculty, and staff. Utilize free services such as InterLibrary Loan (ILL), ScanIt, and Direct Mail to get materials delivered to you at home or via email.

Academic Integrity:

Students in this class are expected to demonstrate scholarly behavior and academic honesty in the use of intellectual property. Students should submit work that is their own and avoid the temptation to engage in behaviors that violate academic integrity, such as turning in work as original that was used in whole or part for another course and/or professor; turning in another person's work as one's own; copying from professional works or internet sites without citation; collaborating on a course assignment, examination, or quiz when collaboration is forbidden. Students should also avoid using open AI sources *unless permission is expressly given* for an assignment or course. Violations of academic integrity can result in failing assignments, failing a class, and/or more serious university consequences. These behaviors also erode the value of college degrees and higher education overall.

Classroom Climate of Respect:

Importantly, this class will foster free expression, critical investigation, and the open discussion of ideas. This means that all of us must help create and sustain an atmosphere of tolerance, civility, and respect for the viewpoints of others. Similarly, we must all learn how to probe, oppose and disagree without resorting to tactics of intimidation, harassment, or personal attack. No one is entitled to harass, belittle, or discriminate against another on the basis of race, religion, ethnicity, age, gender, national origin, or sexual preference. Still, we will not be silenced by the difficulty of fruitfully discussing politically sensitive issues.

Privacy:

Course materials (videos, assignments, problem sets, etc.) are for use in this course only. You may not upload them to external sites, share with students outside of this course, or post them for public commentary without my written permission.