

**SUL ROSS STATE UNIVERSITY**  
**Syllabus for Organic Chemistry I Laboratory: CRN 11515**  
**CHEM 2423: L01 Fall 2024**

LAB: Organic Chemistry I LAB  
Room: WSB 305  
Time: Wednesday 3:00-6:00 pm  
Section: L01

TA: Hong Young Chang  
Office: WSB 219  
Email: hong.young.chang@sulross.edu  
Office Hours: TBD

**Required Laboratory Manual:** “Techniques and Experiments for Organic Chemistry”, 6<sup>th</sup> Edition by A. Ault, **1998**, University Science Books (available from the SRSU Bookstore).

**Safety glasses** are required for Organic Chemistry laboratories, which can be purchased from the SRSU Bookstore. You will NOT be allowed to participate in Organic Chemistry laboratories without safety glasses! Note: prescription glasses count as safety glasses.

Laboratory coats are recommended for Organic Chemistry laboratories, which can be purchased from the SRSU Bookstore.

- **Calculator:** A scientific calculator is required for this course.
- **Cell phones ARE NOT** permitted for use in exams and should be turned off during laboratory time.
- ***Please inform Dr. Chang and the Organic Chemistry TA if you are pregnant or get pregnant during this semester as chemicals used in the chemistry laboratory could have harmful effects on an unborn child and extra safety precautions and due diligence need to be taken into consideration during laboratory periods.***

### ***Expectations:***

- Read over the experiment before lab
- Follow all safety procedures:
- Shorts, flip-flops, chewing gum and open-toed shoes are **NOT** allowed in the lab. If you come to class without appropriate clothing, you will be asked to leave. **NO EXCEPTIONS!**

### ***Attendance:***

Coming to the lab is mandatory. Be on time and SIGN IN at the beginning of the lab period. Plan to spend the entire period in lab. The TA may deduct points for students who arrive late or leave early.

If you **miss 3 labs** or more you will receive an automatic **F** for this course (i.e., this means you will **fail the entire Organic I course** including the lecture component, not just the lab section).

### ***Assignments:***

- Pre-Lab: Due at the beginning of the lab that the experiment will be performed.
- Lab Report: Due the lab period after the lab is done

### ***Lab Grading:***

- Each experiment is worth 30 points
- These points will come from:
  - o The pre-lab (5)

- o The lab report (25)
- **Assignments must be completed and turned in on time**
  - o Assignments must be typed
  - o Assignments and reports will be due the following week unless told otherwise
  - o 10% of the grade will be deducted for assignments not turned in at the beginning of lab. An additional 10% will be deducted for each day that the assignment is late

### **Outline for Written Pre-lab Reports**

- **Aim:** Here you will state the goal of the experiment (in your own words).
- **Reagents:** You will make a list of all the chemicals used in the experiment along with relevant data (grams, volume, molarity etc. that is indicated in your experiment).
- **Apparatus:** You will list all the equipment that you will use.
- **Method:** This is where you will outline the steps in the experiment. The steps will be put in your own words.

### **Outline for Written Lab Reports (Use MS Word or related program)**

- **Aim:** Here you will state the goal of the experiment (in your own words).
- **Reagents:** You will make a list of all the chemicals used in the experiment along with relevant data (grams, volume, molarity etc.). This is how much **YOU** used, not how much the manual asks for.
- **Apparatus:** You will list all the equipment that you used.
- **Method:** This is where you will outline the steps in the experiment. Be sure to note any difference between what you did and what the manual said to do.

- **Data & Results:** Note the observations that you made during the experiment. What are your findings? (Percent yield, melting point, etc.)
- **Discussion:** Discuss your results and answer the questions that were asked in the **Data & Results** section of the experiment. Talk about the significance of your results. Were your results expected or unexpected? Why or why not?
- **Conclusion(s):** Summarize the key points and findings of the experiment. Was the experiment successful or unsuccessful?

***Electronic Tool to draw chemical structures:***

You can download “ACD/Sketch” (software used to draw organic structures) onto your own personal computer (PC or Mac) to make your laboratory reports more professional:

[ChemSketch Download for Academic and Personal Use | ACD/Labs \(acdlabs.com\)](https://www.acdlabs.com/)

Make sure you follow the requirements for the password and use your SRSU email address to register.

**Scholastic Dishonesty:** *Students who violate the University rules on scholastic dishonesty are subject to penalties, including the possibility of an **F** in the course and/or dismissal from the University. **All laboratory reports need to be individually completed and not copied from another student's work.***

## Organic Chemistry 2423 Lab Schedule

\* This course calendar could be changed. Before one week, your professor will let you know the changes.

Date	Experiments	Report
Aug. 28	No Laboratory Experiment	
Sep. 4	Safety Video, Lab Tour, Equipment Checkout & introduction of ACD ChemSketch for Chemical Drawing	Download the program and install it
Sep. 11	Introduction and demonstration of glassware/tools/equipment commonly used in organic chemistry for conducting reactions and purifications (from p.16 to p.23) Secondary sources for physical properties of organic compounds (from p. 32 to p. 34) Set up glassware for conducting Reflux and Solvent Distillation	Only Pre-Lab after reading the pages from p.16 to p.23.
Sep. 18	Introduction of Chromatography (p. 109) & Demonstration of TLC	Only Pre-Lab
Sep. 25	Distillation of Methanol/Water Mixture (p. 62)	Pre-Lab & Lab-Report for the former experiment
Oct. 2	Recrystallization of Acetanilide (p. 48) & Measurement of Melting Point (M.P.)	Pre-Lab & Lab-Report for the former experiment
Oct. 9	Introduction of Spectroscopies (IR, NMR, or MS) (hand out)	
Oct. 16	Cyclohexyl Bromide from Cyclohexanol (p. 384)	Pre-Lab & Lab-Report for the former experiment
Oct. 23	Cyclohexene from Cyclohexanol (p. 376)	Pre-Lab & Lab-Report for the former experiment
Oct. 30	Dehydration of 2-Methylcyclohexanol (p. 381)	Pre-Lab & Lab-Report for the former experiment
Nov. 6	Vanillyl Alcohol from Vanillin (p. 493)	Pre-Lab & Lab-Report for the former experiment

Nov. 13	Lab Clean Up	Lab-Report for the former experiment
Nov. 20	Online Final Exam (in Blackboard)	

## OBJECTIVES:

### *Student Learning Outcomes (SLO):*

A student graduating with a **chemistry major** is expected to demonstrate that (s)he can do the following:

1. Organic Chemistry—Students will be able to draw organic molecular structures and explain organic reactions, stereochemistry, structural analysis and reactions in biological systems.
2. Inorganic Chemistry—The student will be able to demonstrate understanding of coordination chemistry, valence theory, elementary actions and advanced molecular theory.
3. Analytical Chemistry—The student will be able to demonstrate an understanding of theory of analytical chemistry and conduct analytical analysis, including data analysis and calibration, equilibrium chemistry, gravimetric analysis, titrimetric analysis, spectroscopic analysis, and electrochemical analysis.
4. Physical Chemistry—The student will be able to demonstrate an understanding of the application and theory of physical chemistry, including topics such as atomic structure, electrochemistry, surface chemistry, solid-state chemistry, and thermodynamics.
5. Research—The student will collect and analyze published chemical literature and undertake a chemistry research project.

### ***BSc in Chemistry Marketable Skills***

1. Students will become good at punctuality and time management.
2. Students will analyze &/or synthesize molecules and perform spectroscopic characterization and interpret their results scientifically.
3. Students will become proficient at writing scientific papers and identify appropriate references for their paper.
4. Students will become proficient at orally presenting scientific topics including the use of visual aids.

### **SRSU Disability Services: ADA (Americans with Disabilities Act):**

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. Students seeking accessibility/accommodations services must contact Mrs. Mary Schwartze Grisham, LPC, SRSU's Accessibility Services Director at 432-837-8203 or email [mschwartze@sulross.edu](mailto:mschwartze@sulross.edu). Our office is located on the first floor of Ferguson Hall, room 112, and our mailing address is P.O. Box C122, Sul Ross State University, Alpine, Texas, 79832.

### **Libraries:**

The Bryan Wildenthal Memorial Library in Alpine offers FREE resources and services to the entire SRSU community. Access and borrow books, articles, and more by visiting the library's website, [library.sulross.edu/](http://library.sulross.edu/). Off-campus access requires logging in with your LobID and password. Librarians are a tremendous resource for your coursework and can be reached in person, by email ([srsulibrary@sulross.edu](mailto: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 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/](http://library.sulross.edu/find-and-borrow/texshare/) or ask a librarian by emailing [srsulibrary@sulross.edu](mailto:srsulibrary@sulross.edu).

New for Fall 2023: 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) and Scant 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.

### **Counselling:**

Sul Ross has partnered with TimelyCare where all SR students will have access to nine free counseling sessions. You can learn more about this 24/7/356 support by visiting [Timelycare/SRSU](http://Timelycare/SRSU). 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.

**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 based on 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.

**Distance Education:**

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 in the student handbook.