

South Plains College
Common Course Syllabus: CHEM 2423
Revised January 2024

Department: Science

Discipline: Chemistry

Course Number: CHEM 2423

Course Title: Organic Chemistry I

Instructor:

Dr. Laci Alexander

Office: S105, Science building

Phone: 716-2322

Email: lalexander@southplainscollege.edu

Office Hours: M-R: 8:30 AM – 9:30 AM; 2:00 PM – 3:00 PM

F: 8:00 AM – 12:00 PM

Office hours can also be made by appointment.

Available Formats: Conventional

Campuses: Levelland

Course Description: Fundamental principles of organic chemistry will be studied, including the structure, bonding, properties, and reactivity of organic molecules; and properties and behavior of organic compounds and their derivatives. Emphasis is placed on organic synthesis and mechanisms. Includes study of covalent and ionic bonding, nomenclature, stereochemistry, structure and reactivity, reaction mechanisms, functional groups, and synthesis of simple molecules. THIS COURSE IS INTENDED FOR STUDENTS IN SCIENCE OR PRE-PROFESSIONAL PROGRAMS. 2 A laboratory-based course accompanies CHEM 2423. Laboratory activities will reinforce fundamental principles of organic chemistry, including the structure, bonding, properties, and reactivity of organic molecules; and properties and behavior of organic compounds and their derivatives. Emphasis is placed on organic synthesis and mechanisms. Includes study of covalent and ionic bonding, nomenclature, stereochemistry, structure and reactivity, reaction mechanisms, functional groups, and synthesis of simple molecules. Methods for the purification and identification of organic compounds will be examined.

Prerequisite: A grade of "C" or better in CHEM 1412.

Credit: 4 **Lecture:** 3 **Lab:** 4

Suggested materials:

- Organic model kit (options will be posted on blackboard)
- Laboratory notebook

Supplies:

Safety Goggles – Required, obtained from bookstore

Calculator – Required, must be scientific, **CELL PHONES NOT ALLOWED**

Laboratory gloves- Required, Examination style. Nitrile is recommended and offers the best protection

Aktiv License: obtained online through blackboard. Approximately \$42.

Core Curriculum Objectives addressed:

- **Communications skills**—to include effective written, oral and visual communication
- **Critical thinking skills**—to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
- **Empirical and quantitative competency skills**—to manipulate and analyze numerical data or observable facts resulting in informed conclusions
- **Teamwork**—to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal

Student Learning Outcomes:**From Lecture:**

1. Classify organic compounds by structure, molecular orbitals, hybridization, resonance, tautomerism, polarity, chirality, conformation, and functionality.
2. Identify organic molecules using appropriate organic nomenclature.
3. Describe the principle reactions for syntheses of molecules, ions, and radicals.
4. Describe organic reactions in terms of radical and ionic mechanisms.
5. Describe the use of spectroscopic data to determine the structure of organic molecules.
6. Formulate appropriate reaction conditions for the synthesis of simple organic molecules.

From Lab

1. Perform chemical experiments, analysis procedures, and waste disposal in a safe and responsible manner.
2. Utilize scientific tools such as glassware and analytical instruments to collect and analyze data.
3. Identify and utilize appropriate separation techniques such as distillation, extraction, and chromatography to purify organic compounds.
4. Record experimental work completely and accurately in laboratory notebooks, and communicate experimental results clearly in written reports.
5. Demonstrate a basic understanding of stereochemistry.
6. Classify organic compounds by structure, molecular orbitals, hybridization, resonance, tautomerism, polarity, chirality, conformation, and functionality in laboratory reports.
7. Identify organic molecules using appropriate organic nomenclature in laboratory reports.
8. Perform organic syntheses of molecules.
9. Describe organic reactions in terms of radical and ionic mechanisms in laboratory reports.
10. Use spectroscopic data to determine the structure of organic molecules.

11. Formulate appropriate reaction conditions for the synthesis of simple organic molecules.

Student Learning Outcomes Assessment: 2-3 questions from each semester will be randomly selected from the regular exams. These will pertain to a pre-selected topic and will be used to determine the extent of improvement that the students have gained during the semester.

Course Evaluation:

- **Four Major Exams**
 - NO MAKEUPS
 - Each Exam is worth 100 points with the possibility of bonus points

- **Final Exam**
 - The final is OPTIONAL. The final exam is COMPREHENSIVE.
 - The final exam can be dropped as your lowest exam grade if you choose not to take it.
 - You will take the final exam on the day it is scheduled. Final Exams are scheduled by the college not the instructor.

- **Notecards**
 - You will be allowed to write reference notes on one side of a letter sized sheet of paper, for use on the major exams and the final. Your 'cheat sheet' must be turned in with your exam.

- **Exam Makeups:**
 - **Lecture Exams** can be made up IF I am given *advance notice*. Don't just show up to the next class and expect to take a make up. I will dictate the terms of the makeup. Once a graded exam is returned to the class, it can no longer be made up. This means your exam MUST BE MADE UP BEFORE the next class period.
 - **Final Exam:** Exam times are scheduled by the college, not the instructor. If the Final Exam is missed due to situations beyond your control (I am the judge of that), I will do my best to fit you in *during Final Exam week*. You must notify me of the reason for your absence as soon as possible. A final Exam makeup must be **COMPLETED** BY 3 pm of the Thursday of Final Exam week, or it becomes a zero.
 - ***In extreme cases that would prevent you from coming in to take the Final Exam (ie. Cases requiring hospitalization), you may be excused from taking the Final Exam and your grade would be based on the scores you do have. (Unless the college has a contingency plan for such situations.) I won't just "take your word for it" I will need written proof.***

- **Labs**
 - Proper Laboratory Dress: You must wear safety glasses and laboratory gloves for every experiment. A student will NOT be able to enter the lab without the proper attire (Closed toed shoes, long pants, shirt with sleeves, long hair pulled back, and safety glasses and gloves)

- You may not bring snacks or drinks into the lab. They should be placed on the instructor desk, or put in your bag. Do not set them on the lab bench. You may not eat your lunch in the lab, or use the microwave.
- Book bags should be placed next to your lab station, away from foot traffic, not on the lab bench. The lab bench is where experiments are done.
- **Lab Worksheets, Experiments**
 - **A student will NOT be able to enter the lab without the proper attire (closed toed shoes, long pants, shirts with sleeves, long hair pulled back, and safety goggles). A student that is not dressed appropriately for lab will not be able to perform the experiment and therefore will receive a 0 for that Lab Worksheet.**
 - You will perform a series of experiments in the lab. Your lab grade will be based on scores you receive on six lab reports.
 - Organic Lab is not an 'option'. There is an option of a lab grade being dropped (see dropped grades)
 - You will be working with a lab partner, and will be working with data gathered by your lab group. You will officially choose a lab partner at the beginning of the semester and that person will be your lab partner for the entire semester. You and your lab partner will submit jointly written lab reports.
 - You may not share laboratory data between lab groups. Each group is responsible for obtaining its own data. The standard group size will be two students. If your lab partner is absent, you will work along that day. You may not simply join up with another group. If you are both absent on the same day, the work you missed cannot be made up, and this will adversely affect your lab report grade. If your lab partner drops the class, you will work alone until I can pair you up with another group. Some shuffling of lab groups may be necessary during the semester due to drops.
 - All this is to say, you and your lab partner will need to work together as a team to succeed in the lab portion of this course. Time working together outside of the laboratory may also be necessary. Be sure your lab partner is doing his/her share of the work. And be sure to tell your lab partner if you must miss lab on a particular day. There is no excuse for not doing so, in the day of email and texting.
 - You must come to lab prepared to get to work, which includes your having read the assignment from the lab textbook. The actual time Organic Lab ends each day may vary. The bottom line is you must finish each day's tasks. I will inform you of how far you are to get each day. However, **everyone must be out of the lab by 3:00 pm**
 - Each of you is responsible for keeping the lab clean and neat. This applies to your workstation and lab locker, as well as to the common-use chemicals, equipment, and instruments.
 - Equipment breakage and Loss
 - The equipment you use in lab is specific to this class, expensive, and in limited supply. **If your group breaks or loses something, you may have to work without that piece until I can find a replacement. Don't just assume I have an on-the-spot replacement.**

- Restarting experiments
 - You must do the experiments on the days they are scheduled. A restart of an experiment (on the same day, only) is meant for something like equipment malfunction, not mistakes or poor results. **You should inform me of your intention to do a restart.** It will be your responsibility to catch back up to the rest of the class – *during lab time only*. I will not keep the lab open late for a group that is trying to catch up. An experiment ends on the same day for everyone, restart or not.
- The Organic Lab Notebook
 - Any specific spiral bound or composition notebook is fine. The notebook must be used specifically for your lab reports
- Lab reports
 - You will submit a typed lab report. This plus your chapter homework will be 30% of your grade.
 - After completing an experiment you will write a lab report to be submitted on blackboard via gradescope. Details for writing the lab report can be found in the lab manual. Late Lab reports will NOT be accepted.
- **Chapter Homework**
 - Homework is meant to prepare you for the lecture Exams. Problems will be assigned from Aktiv for each chapter. Homework will be completed on blackboard and grades will be recorded in the gradebook.
- **Research Paper**
 - A Research paper using a peer reviewed articles will be completed by the end of the semester. Each student will choose a topic first come first serve during week 6.
 - The paper must be at least 2 FULL pages NOT including the references. There will be more direction given about the layout of the paper in weeks leading up to the research paper and on blackboard.
- **Dropped Grades**
 - Lowest two Grades Dropped
 - At the end of the semester the Instructor will automatically drop the lowest Homework grade and the lowest Lab grade
 - Lowest Exam Dropped
 - At the end of the semester the Instructor will automatically drop the lowest exam grade. This CAN be the final.
- **Cell Phone and Laptop Computer Policy**
 - Cell Phones and Laptops may be taken up and kept during lecture and lab if they are a distraction to the student, the instructor or the class
 - The only exception will be due to Special Services recommendations and those will be handled on an individual student to student basis
- **Grading:**

- Exams: 50%
 - Homework: 15%
 - Lab: 15%
 - Research Paper 20%
- **Attendance Policy:**
 - 6 absences max and I drop you with an 'F'

Class attendance is very important. Make every effort to be present. If you must miss a class or must leave early, please let me know about it **BEFORE** class begins or an unexcused absence will be given. You must attend the **FULL** time of class in order to be considered present. You will be counted absent if you leave during the scheduled class time.

If you are unable to complete this course, you must initiate a withdrawal (W) through the Registrar's Office before **the drop date**. If you simply stop attending class without withdrawing, I will administratively drop you for excessive absences, and you will receive a grade of "F" at the end of the term, in accordance with policies set forth in the 2021-2022 SPC General Catalog.

You are a candidate for an excess absence drop (F) if you miss 4 class days **total**, without clearing your absences with me. Two excused absences equal one unexcused absence and will count towards the 4 excess absences.

Tardy: If you show up AFTER the attendance sheet has been passed around you WILL NOT be allowed to sign the attendance sheet, therefore will be counted absent. The attendance sheet will be passed around sometime after 30 mins into the class. *It is the student's responsibility to verify administrative drops for excessive absences through MySPC using his or her student online account. If it is determined that a student is awarded financial aid for a class or classes in which the student never attended or participated, the financial aid award will be adjusted in accordance with the classes in which the student did attend/participate and the student will owe any balance resulting from the adjustment.*

Plagiarism and Cheating: Students are expected to do their own work on all projects, quizzes, assignments, examinations, and papers. Failure to comply with this policy will result in an F for the assignment and can result in an F for the course if circumstances warrant. If a student is caught cheating on any of the Major Exams they will receive a 0 for that Exam **and** be the Final Exam will **NOT** replace the lowest Exam score (the 0 stands and cannot be replaced)

Plagiarism violations include, but are not limited to, the following:

1. Turning in a paper that has been purchased, borrowed, or downloaded from another student, an online term paper site, or a mail order term paper mill;
2. Cutting and pasting together information from books, articles, other papers, or online sites without providing proper documentation;
3. Using direct quotations (three or more words) from a source without showing them to be direct quotations and citing them; or
4. Missing in-text citations.

Cheating violations include, but are not limited to, the following:

1. Obtaining an examination by stealing or collusion;
2. Discovering the content of an examination before it is given;
3. Using an unauthorized source of information (notes, textbook, text messaging, internet, apps) during an examination, quiz, or homework assignment;
4. Entering an office or building to obtain unfair advantage;
5. Taking an examination for another;
6. Altering grade records;
7. Copying another's work during an examination or on a homework assignment;
8. Rewriting another student's work in Peer Editing so that the writing is no longer the original student's;
9. Taking pictures of a test, test answers, or someone else's paper.

Curving of Scores and Extra Credit: This class is not graded on a curve, although there will be extra credit opportunities announced in class.

E-Mail: When you have questions, problems, or comments, you can send an e-mail to lalexander@southplainscollege.edu. **Please DO NOT use Blackboard messages – they tend to get lost!! Please use SPC Email only!** I will respond to your message within 48 hours if I receive your e-mail between 8:00 AM Monday and 3:45PM Thursday (excluding holidays and school breaks). E-mails received during the time period lasting from 3:45PM Thursday to 8:00 AM Monday of the following week will receive a response within 48 hours of that Monday (excluding holidays and school breaks). Emails received during holidays or school breaks will receive a response within 48 hours from when SPC resumes normal school hours. Expectations when Corresponding: Please be polite, courteous, and respectful when using BlackBoard messages, e-mail discussion forums, and chat rooms. Do not use profanity under any circumstances. Do not write disrespectful, insulting, mean, rude, profane, insensitive, or any other hurtful messages or comments under any circumstances. Failure to abide by this policy will result in the appropriate disciplinary actions. Students are expected to maintain a pleasant learning environment for themselves as well for their classmates. Therefore, if, in the view of the instructor, a student is disrupting the class the appropriate disciplinary action will be taken.

4.0 INSTRUCTIONAL POLICIES AND RESPONSIBILITIES

For information regarding official South Plains College statements about intellectual exchange, disabilities, non-discrimination, Title IX Pregnancy Accommodations, CARE Team, and Campus Concealed Carry, please visit <https://www.southplainscollege.edu/syllabusstatements/>.