

San José State University
Chemistry Department, College of Science
Chem 08, Organic Chemistry, Fall 2022

Course and Contact Information

Instructor:	Laura Kapitzky, PhD
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Office Hours:	Tuesdays 11:00 AM – 12:30 PM and by appointment on Zoom.
Class Days/Time:	Mondays and Wednesdays 9:00 AM - 10:15 AM
Classroom:	Science Building Room 164
Prerequisites:	CHEM 001B (with a grade of "C" or better; "C-" not accepted). Notes: CHEM 008 is not a satisfactory prerequisite for CHEM 112B. No credit toward Chemistry major or minor.

Course Format

- Chem 8 will be conducted as a hybrid course.
 - **Video lectures, reading assignments, homework assignments, quizzes,** and all other learning materials will be available on Canvas. These will be completed outside of class time.
 - **Live Monday/Wednesday class meetings** will be a combination of lecture and working of practice problems relevant to that week's module. You are expected to have access to an electronic device with internet connectivity to access Canvas during class (a phone will suffice but a larger screen will make it easier to view documents). You are strongly encouraged to view the specified video lectures before each class meeting.
- There will be weekly assignments to make sure you keep up with the material. These assignments will include a homework assignment and a short Canvas quiz on the week's material. These items may be completed at any time during the week as long as they are submitted before the designated due date and time. The due dates follow a consistent pattern throughout the semester so you can plan them into your weekly schedule.
- There will be three midterm exams and a final exam, all to be taken in person. Please put these dates on your calendar. Note that all midterms are held during our scheduled class time, and the final will take place during the scheduled final exam timeslot for our course. These exams will take place on:
 - **Midterm 1: Wednesday, September 21st 9am - 10:15am in person**
 - **Midterm 2: Wednesday, October 19th 9am - 10:15am in person**
 - **Midterm 3: Monday, November 21st 9am - 10:15am in person**
 - **Final: Tuesday, December 13th from 7:15am – 9:30am in person**

Canvas and MYSJSU Messaging

Course materials such as syllabus, handouts, notes, assignment instructions, etc. can be found on [Canvas Learning Management System course login website](http://sjsu.instructure.com) at <http://sjsu.instructure.com>. You are responsible for regularly checking the messaging service on Canvas to learn of any updates. I will frequently post announcements to our course website on Canvas – be sure to adjust your Canvas notification settings so that you receive announcements directly in your email or Canvas Inbox as you prefer.

Course Description

Introduction to the chemistry of carbon compounds for allied health majors and others requiring only 3 units of organic chemistry lecture. Prerequisite: CHEM 001B (with a grade of "C" or better; "C-" not accepted).

Notes: CHEM 008 is not a satisfactory prerequisite for CHEM 112B. No credit toward Chemistry major or minor.

Chemistry 8 is designed to introduce you to organic chemistry in a one-semester course format. This course intends to familiarize you with the basic concepts and properties of molecules based on carbon.

Course Goals and Course Learning Outcomes (CLO)

[CHEM 8](#)

- Appreciation for the nature and scope of organic chemistry.
- Application of key concepts from general chemistry including electronegativity, bonding (ionic and covalent), hybridization of atomic orbitals, and molecular orbital theory to organic systems.
- Draw valence bond and Lewis dot structure for organic species, including formal charges.
- Draw skeletal structures for organic compounds.
- Apply acid-base concepts to organic systems; predict ordering of acid or base strength.
- Name alkanes, alkenes, polyenes, alkynes, alkyl halides, aromatic compounds, carbonyl compounds, amines, and their various derivatives using systematic (IUPAC) nomenclature.
- Learn common names for some key chemicals.
- Draw reaction mechanisms for some key reactions.
- Recognize stereochemistry and be able to apply the Cahn-Ingold-Prelog system to the designation of stereochemistry (E/Z or R/S).
- Learn many of the reactions of alkanes, alkenes, polyenes, alkynes, aromatic, carbonyl, and amine compounds, and closely related species. Be able to predict reactions involving these functional groups.
- Be able to solve problems employing spectroscopic methods including mass spectrometry, infrared and NMR spectroscopy
- Understand the basic chemical and structural features of biomolecules, including lipids, carbohydrates, amino acids and proteins, and nucleic acids.

Program Learning Objectives

I. Core Chemistry Ideas (Fundamentals)

PLO 1.1 - Students will be able to identify, formulate, and solve a range of chemistry problems (fundamental to complex) through application of mathematical, scientific, and chemical principles.

PLO 1.2 - Students will be able to recognize, relate, and/or apply chemistry terms and concepts to propose and solve interdisciplinary and multidisciplinary real world problems.

Required Texts/Readings

Textbook

- Our textbook for the course is '**Organic Chemistry with a Biological Emphasis**' by **Tim Soderberg**. This is a free open-access eBook available for download online and from the SJSU Library. We will be picking and choosing topics from the two volumes of this book, so I suggest you download the PDF files for both Volumes 1 and 2:
 - [Volume 1](https://digitalcommons.morris.umn.edu/chem_facpubs/1/) (https://digitalcommons.morris.umn.edu/chem_facpubs/1/)
 - [Volume 2](https://digitalcommons.morris.umn.edu/chem_facpubs/2/) (https://digitalcommons.morris.umn.edu/chem_facpubs/2/)
 - [Solutions to in-chapter problems](https://digitalcommons.morris.umn.edu/chem_facpubs/3/) (https://digitalcommons.morris.umn.edu/chem_facpubs/3/)
 - [Solutions to end-of-chapter problems](https://digitalcommons.morris.umn.edu/chem_facpubs/4/) (https://digitalcommons.morris.umn.edu/chem_facpubs/4/)
- If you prefer a print copy of the book, you can order them at the links below (\$15 each volume, probably some shipping charges on top of that)
 - [Order volume 1 print copy](#)
 - [Order Volume 2 print copy](#)

Other technology requirements / equipment / material

- You will need access to a web-enabled cell phone or tablet with a working camera
- Additionally, you will need a computer or tablet capable of running one of the common web browsers (Firefox, Chrome, Explorer)
- An optional but useful item is a **molecular modeling kit**. There are many different types available for purchase online starting at \$20 new – search for “Organic Chemistry Modeling Kit” and you should find many options.

Fall 2022 Paragraph for Syllabi on COVID-19 and Monkeypox

Students registered for a College of Science (CoS) class with an in-person component should view the [CoS COVID-19 and Monkeypox Training](#) slides for updated CoS, SJSU, county, state and federal information and guidelines, and more information can be found on the [SJSU Health Advisories](#) website. By working together to follow these safety practices, we can keep our college safer. Failure to follow safety practice(s) outlined in the training, the SJSU Health Advisories website, or instructions from instructors, TAs or CoS Safety Staff may result in dismissal from CoS buildings, facilities or field sites. Updates will be implemented as changes occur (and posted to the same links).

Course Requirements and Assignments

Success in this course is based on the expectation that students will spend, for each unit of credit, a minimum of 45 hours over the length of the course (normally three hours per unit per week) for instruction, preparation/studying, or course-related activities, including but not limited to internships, labs, and clinical practica. Other course structures will have equivalent workload expectations as described in the syllabus. Please review the information contained in the following links:

- [University Syllabus Policy S16-9](http://www.sjsu.edu/senate/docs/S16-9.pdf) at <http://www.sjsu.edu/senate/docs/S16-9.pdf>.
- Office of Graduate and Undergraduate Programs' [Syllabus Information web page](http://www.sjsu.edu/gup/syllabusinfo/) at <http://www.sjsu.edu/gup/syllabusinfo/>

Attendance

Attendance at our Monday/Wednesday class meetings is expected.

Gradescope

Exams will be collected during the exam period, scanned into Gradescope, and graded using the Gradescope software. Your graded exam will then be released to you via Gradescope – you will be notified via email when your assignment is available to view. The original copy of your submitted exam will be held by your instructor until the end of the semester.

Readings

There will be weekly suggested reading in the Soderberg textbook. The readings are a bit lengthy. I recommend you sit down to read with a list of the week's learning objectives to hand, and focus on the parts of the reading related to those objectives. This will help you focus on the important points.

Video Lectures

Each week there will be several video lectures to watch. Some will have the accompanying slides available for download. Treat these video lectures as you would a traditional face-to-face lecture – take notes as you go, review your notes after watching. Consider watching the videos before our face-to-face class meetings for the week.

Practice Problems

For many modules there are sets of practice problems with provided solutions available. Working these practice problems is **highly recommended** but not required. The practice problems are not submitted for a grade. We will work many of them during our Monday/Wednesday class periods.

Homework

There will be weekly homework assignments to ensure you are practicing working with the material. The assignments come from the **in-chapter exercises** for the week's reading assignment. The homework does not come from the end-of-chapter problems, except where explicitly stated as such.

Quizzes

At the end of each week, there will be a brief online quiz due that covers the material from the week. The quizzes can be taken repeatedly until the quiz due date and the **average** score earned will be the one recorded. So while the quizzes are graded activities, they also provide a good opportunity to practice key skills in preparation for the exams.

Exams

There will be 3 midterm exams and a final exam. You are required to take all three midterm exams. If your midterm exam average is A- or higher ($\geq 90\%$) going into the final exam, you are excused from the final exam. If your midterm exam average is B+ ($< 90\%$) or lower, you are required to complete the final exam.

Grading Information

Your final letter grade in the class will be based on your weighted average score on all graded assignments. The assignments will be weighted according to the following percentages:

3 Midterm Exams	45%
1 Final Exam (cumulative)	20%
Homework	15%
Quizzes	20%

A tentative breakdown of the assignment of letter grades to percentages is as follows:

Grade	Percentage
A plus	96 to 100%
A	93 to 95%
A minus	90 to 92%
B plus	86 to 89 %
B	83 to 85%
B minus	80 to 82%
C plus	76 to 79%
C	73 to 75%
C minus	70 to 72%
D plus	66 to 69%
D	63 to 65%
D minus	60 to 62%
F	Below 60%

Make-up, Late, and Missed Work Policy

This guideline supersedes all of the policies that follow:

If you know you are going to miss an assignment in advance, **contact me ahead of time** and we will make reasonable accommodations for your situation. There is a lot going on in the world right now and I am more than happy to offer you grace to help you through tough times. The exception to this is the midterm exams. Please make every effort to take the midterms as scheduled.

Homework. Homework submitted after the due date and time for the assignment may lose one point for every day it is submitted late. No homework will be accepted more than 1 week past its due date. Note: it is still worth doing your homework even if you will not receive full (or any) credit for it. The lowest homework score will be dropped from your final grade.

Quizzes. There are no make-up quizzes. If you miss a quiz due date for any reason, your score will be recorded as zero and you cannot make it up. The lowest quiz score will be dropped from your grade.

Midterm exams. If you miss a midterm exam for a valid, documented reason, your missed exam score will be replaced with the average of the other two midterms. Missing an exam without a documented reason will result in a zero score for the midterm.

Academic Integrity

I expect you to conduct yourself with the highest degree of academic integrity. Any violations of the University Policy on Academic Integrity will be pursued. The definitions of Academic Dishonesty are described below. Please follow the link to find the repercussions of academic dishonesty at San José State University.

DEFINITIONS OF ACADEMIC DISHONESTY from [University Policy F15-7 Academic Integrity](#)

- CHEATING
 - San José State University defines cheating as the act of obtaining credit, attempting to obtain credit, or assisting others to obtain credit for academic work through the use of any dishonest, deceptive, or fraudulent means. Cheating includes:
 - copying, in part or as a whole, from another's test or other evaluation
 - instrument, including homework assignments, worksheets, lab reports, essays, summaries, and quizzes;
 - submitting work previously graded in another course without prior approval by the course instructor or by departmental policy.
 - submitting work simultaneously presented in two or more courses without prior approval of all course instructors or by the departmental policies of all departments;
 - using or consulting sources, tools, or materials prohibited by the instructor prior to or during an examination;
 - altering or interfering with the grading process;
 - sitting for an examination by a surrogate or as a surrogate;
 - any other act committed by a student in the course of his or her academic work that defrauds or misrepresents, including aiding others in any of the actions defined above.

- PLAGIARISM

- San José State University defines plagiarism as the act of representing the work of another as one's own without giving appropriate credit, regardless of how that work was obtained, and submitting it to fulfill academic requirements. Plagiarism includes:
 - knowingly or unknowingly incorporating the ideas, words, sentences, paragraphs, parts of sentences or paragraphs, or the specific substance of another's work without giving appropriate credit, and representing the product as one's own work;
 - representing another's artistic or scholarly works, such as computer programs, instrument printouts, inventions, musical compositions, photographs, paintings, drawings, sculptures, novels, short stories, poems, screenplays, or television scripts, as one's own.

University Policies

Per [University Policy S16-9](http://www.sjsu.edu/senate/docs/S16-9.pdf) (<http://www.sjsu.edu/senate/docs/S16-9.pdf>), relevant information to all courses, such as academic integrity, accommodations, dropping and adding, consent for the recording of class, etc. is available on Office of Graduate and Undergraduate Programs' [Syllabus Information web page](http://www.sjsu.edu/gup/syllabusinfo/) at <http://www.sjsu.edu/gup/syllabusinfo/>.

Safe and Respectful Community

We hope that the classroom and laboratory will serve as an environment that will promote learning and the development of new ideas, as well as be a safe and respectful community. Behavior that interferes with the normal academic function in a classroom or lab is unacceptable. Students exhibiting this behavior will be asked to leave the class. Examples of such behavior include

- a) Persistent interruptions or using disrespectful adjectives in response to the comments of others.
- b) The use of obscene or profane language.
- c) Yelling at classmates and/or faculty.
- d) Persistent and disruptive late arrival to or early departure from class without permission.
- e) Physical threats, harassing/bullying behavior, or personal insults (even when stated in a joking manner).
- f) Use of personal electronic devices such as pagers, cell phones, PDAs in class, unless it is part of the instructional activity.

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Course Schedule

The following is a tentative schedule for the course. Dates are subject to change with notice.

Date	Day	Special Days	Week/Module	Assignments Due
8/22	Mon		Module 1	
8/24	Weds			
8/29	Mon		Module 2	Module 1 HW and Quiz Due
8/31	Weds			
9/5	Mon	Labor Day - no class	Module 3	Module 2 HW and Quiz Due
9/7	Weds			
9/12	Mon		Module 4	Module 3 HW and Quiz Due
9/14	Weds			
9/19	Mon		Module 5	Module 4 HW and Quiz Due
9/21	Weds	Midterm 1 (1-4)		
9/26	Mon		Module 6	Module 5 HW and Quiz Due
9/28	Weds			
10/3	Mon		Module 7	Module 6 HW and Quiz Due
10/5	Weds			
10/10	Mon		Module 8	Module 7 HW and Quiz Due
10/12	Weds			
10/17	Mon		Module 9	Module 8 HW and Quiz Due
10/19	Weds	Midterm 2 (5 - 8)		
10/24	Mon		Module 10	Module 9 HW and Quiz Due
10/26	Weds			
10/31	Mon	Halloween	Module 11	Module 10 HW and Quiz Due
11/2	Weds			
11/7	Mon		Module 12	Module 11 HW and Quiz Due
11/9	Weds			
11/14	Mon		Module 13	Module 12 HW and Quiz Due
11/16	Weds			
11/21	Mon	Midterm 3 (9 - 13)	Fall Break + Midterm 3	
11/23	Weds	Fall Break - no class		
11/28	Mon		Module 14	
11/30	Weds			
12/5	Mon	TBD		Module 13 + 14 HW and Quiz Due

Final Exam: Tuesday, December 13th 7:15am – 9:30am