Chemistry 113A Organic Chemistry Laboratory (Sec 5)
Fall 2021

This section of Chem 113A will be conducted as a "Live" lab course. Unless otherwise specified by your instructor, all lab meetings will be held in the Science Building.

Contact Information

Instructor:	Stephanie Stepp, PhD
Office Location:	Science 140
Telephone:	(408) 924-4997
Email:	Stephanie.Stepp@sjsu.edu

Office Hours:	Mon & Wed 11:00am to 12:00pm All Office hours will be held live in Science 140.
Class Days/Times:	Friday, 9:00am to 2:40pm (unless otherwise specified, all lab meetings will be held in Science 139)
Prerequisites:	CHEM 112A (completed with a grade of "C" or better; "C-" not accepted); Chem 112A may not be taken concurrently with Chem 113A.

Faculty Web Page and MYSJSU Messaging

This section of Chem 113A will involve in-person lab meetings in the Science Building. Some sessions may be held remotely using Zoom - your instructor will inform you when this happens.
Additional content will be given on Canvas and other platforms used by your instructor. If you do not have access to Zoom or Canvas, visit sjsu.edu and search for instructions to access both platforms.
Information from this class will be sent to the email listed on your mySJSU profile – be sure that this is an email address you check regularly.

Course Description

Chem 113A introduces many of the basic techniques for synthesis, isolation, purification and identification of organic compounds. The emphasis is on practical skills in the laboratory and in analysis of data. Sufficient theoretical background will be developed to allow the student to understand the design of experiments and to modify established

procedures. The course will also provide practice in the formal writing of experimental procedures and findings. See the Schedule at the end of this document for important dates.

COVID-19 Safety

As you have seen just in the past few weeks, the COVID-19 situation is still very fluid and rapidly evolving. As of now, we are planning to hold labs as in-person experiences but be aware we are required to accommodate any changes from SJSU, the CSU and county/state/federal agencies, so this may change in the future.

You have been informed already that to attend in-person classes or labs at SJSU, the CSU mandates that you are fully vaccinated by September 30* and complete the vaccination certification. Detailed information and instructions can be found here:

https://www.sjsu.edu/healthadvisories/vaccination.php

** (from President Papazian in an email dated Aug 9, 2021] "As a reminder, the CSU vaccination policy states that* ***students, faculty and staff must be fully vaccinated by September 30 against COVID-19 if they are accessing campus facilities at any university location across the 23 campuses.***

To be fully vaccinated by September 30 to comply with the requirement, you must get your final dose of the Moderna or Pfizer vaccines, or the only dose of the Johnson & Johnson vaccine, by September 16. *If you choose to receive the Moderna vaccine, you must get your first dose by August 19. If you choose to receive the Pfizer vaccine, you must get your first dose by August 26."*

In addition, the SJSU College of Science mandates that all students taking courses or working in the College must follow the following:

1) You should have received an email with a link and instructions to the SJSU College of Science COVID-19 Safety Training and Adapt Plan. Before your first class meeting, you must take the training (a Powerpoint of ~12 minutes) and sign the acknowledgement form. Your instructor will be provided with a list of students who have signed the acknowledgement, and will refuse entry to anyone who has not completed the training and submitted this form.

2). Masks, as described in the Safety Training, must be worn at all times when in the Science Building (as well as other buildings on campus). This policy is for everyone's safety and will be strictly enforced. Masks must cover the nose and mouth completely - anyone who does not comply with this policy will be asked to leave the building and may be disenrolled from Chem 113A.

3) As described in the COVID Safety Training, you should not come to class if you feel ill or if you come in close contact with someone who has an active case of COVID-19. Get tested as soon as possible. If you test positive for COVID-19, you must inform your instructor immediately. Fill in and submit the form on page 9 of the COVID Adapt Plan.

If you have not received the link and information on the SJSU COS COVID-19 Safety and Adapt Plan, contact your instructor as soon as possible.

Required Texts/Readings

GREENSHEET AND SCHEDULE

This Greensheet and Schedule will be posted on Canvas for this section, and also on the Chemistry Department website (http://www.sjsu.edu/chemistry/).

REQUIRED TEXTBOOK ***(IF YOU ARE A CHEMISTRY MAJOR or MINOR, READ THE COMMENT ABOUT THE PAVIA TEXTBOOK)***

Pavia, D. L., Lampman, G. M., Kriz, G. S., Vyvyan, J. R. *Introduction to Spectroscopy,* 5th ed., **Cengage**. (read the next 2 sections carefully before you purchase Pavia)

The SJSU Bookstore sells a custom truncated version of Pavia intended for non-ChemBiochem majors. It is missing several important chapters that will be needed for Chem 113B/114, so if you plan to take these courses, the custom version is NOT appropriate for you

CHEMISTRY MAJORS or MINORS *WHO PLAN TO TAKE CHEM 113B and/or 114 IN THE FUTURE SHOULD OBTAIN THE FULL EDITION OF PAVIA - the SJSU Bookstore does not carry this edition, but it can be obtained from Amazon or other book sellers. The shortened edition mentioned above does not have important chapters you need for later courses.* DO NOT obtain the electronic (eBook) version for this class – **you may use a paper copy during quizzes and exams, but may not use an electronic version.**

Make sure you have the 5th edition; older editions will contain significant differences.

As a result of COVID-19 safety protocols, most aspects of this course will involve material provided to you using Canvas and Zoom. Therefore, you are required to have a device (such as a computer, pad, smartphone) that allows you to access the web and these platforms. You must also have access to an internet service that provides reliable connection. In addition, you are also required to have a phone camera or computer camera that can transmit a video using Zoom while you take a quiz or exam on Canvas. Details will be provided by your instructor.

Other Recommended Readings

- McMurry, John, *Organic Chemistry* (any recent edition), or an organic chemistry textbook from a one-year Ochem lecture course.
- *The ACS Style Guide: Effective Communication of Scientific Information* 3rd ed.; Coghill, A. M., Garson, L. R., Eds.; American Chemical Society: Washington DC, 2006

Other equipment / material requirements

- Scientific laboratory notebook with duplicate numbered pages
- Basic calculator (one that cannot connect to the internet, bring to every quiz/exam)
- Pencils, rulers

Library Liaison

The Chemistry Library Liaison is Yen Tran (yen.tran@sjsu.edu)

Course Prerequisites and Learning Objectives

Catalog Description *Fundamental techniques for the isolation, characterization and synthesis of organic compounds. Prerequisite: CHEM 112A (with a grade of "C" or better; "C-" not accepted). Misc/Lab: Lab 6 hours.*

You must have completed Chem 112A with a grade of "C" or better to enroll in Chem 113A. **If you are repeating Chem 112A, you may not take Chem 113A until you complete 112A with a grade of "C" or better – 112A and 113A may not be taken at the same time!** If you took an 112A-equivalent course at another institution, the instructor will ask for verification of your grade and information on the lab course you took.

The scheduled time for Section 5 is Friday, 9:00am to 2:40pm. You will attend lab one day a week in Science 135 or 139. Your instructor will assign you to a bench within one of the rooms.

Chem 113A will include six Experiments (A to F). You will prepare reports for each of these Experiments – four in written format and two in video format. These reports must be submitted electronically to Canvas assignments. In some cases, you will have to include documents which are scanned or photographed. Information on preparing and submitting Lab Reports is found in Canvas Files.

See the Schedule for due dates of each report. At the start of the period when a report is due, you will also take a lab quiz which is based on the experiment (6 quizzes total). A midterm and Final Exam are also scheduled.

Course Goals and Learning Objectives - Chem 113A

• Students will be able to demonstrate their knowledge of departmental safety rules through their laboratory practice, including the ability to dispose of waste properly (Note this applies even though you will not be working in the lab)

• Students are expected to apply basic stoichiometric algorithms (such as calculating limiting reagents, theoretical yield and mole ratios) in the context of organic chemistry.

• Students will be expected to demonstrate a command of the rules for assigning significant figures in their work, specifically in calculations and laboratory measurements and calculations.

• Understand and be able to use the basic operations of an organic chemistry laboratory including gravity & vacuum filtration, liquid-liquid extraction, distillation, reflux, recrystallization, drying of solids and solutions, and the theories behind these techniques.

•Know the significance of pKa values in experimental steps.

• Identify and assess the purity of organic compounds using analytical techniques including

melting point, thin layer chromatography (TLC), IR (*v.i.*[1]), NMR (*v.i.*), and gas chromatography (GC).

• Deduce organic structures using spectroscopic methods: especially infrared (IR) and nuclear magnetic resonance (NMR) spectroscopy.

- determine molecular formulas from structures, molecular mass (using the Rule of 13), and other sources of information.

- be able to deduce hydrogen deficiency index (HDI) from a molecular formula and use this in structure determination.

For NMR spectroscopy, students will be able to:

- understand the fundamental theory of 1-dimensional proton NMR analysis

- understand the concepts of equivalent and non-equivalent hydrogens.

- understand the effect of structure on chemical shift and coupling constants.

- demonstrate awareness of the regions of the NMR spectrum where various key protons are found.

- calculate chemical shifts for substituted alkanes and aromatics using tables.

- demonstrate how to utilize integrals for structure analysis

- construct splitting diagrams ("trees") and be able to measure coupling constants from an NMR spectrum, or predict coupling constants and trees from a structure.

- recognize and know how to test for exchangeable hydrogens in a molecule.

- identify the peaks that correspond to the solvent and to the internal reference (TMS).

-deduce unknown structures and fully assign an NMR spectrum to the structure.

For IR Spectrosopy, students will be able to:

- explain the basic principles of IR spectroscopy.

- identify and explain factors that influence the strength and frequency of an IR peak.

- assign key peaks in an IR spectrum.

- determine which peaks are most diagnostic in making an assignment of structure using IR.

- record an IR spectrum.

[1] *Latin* vide infra (see below)

- deduce unknown structures and fully assign an IR spectrum to the structure.

• Students will be able to follow a detailed experimental procedure, and construct a flow diagram to illustrate it.

• Students will be able to explain the theory behind the operations performed, including being able to explain deviations from the theoretically optimum results (which is the usual case), and suggest improvements to the procedures employed.

• Students will be able to depict and explain detailed chemical mechanisms for all laboratory reactions employed in Chem 113A, and for related reactions.

• Students are expected to keep contemporaneous notes – They will demonstrate the ability to maintain a proper lab notebook.

•Students will be able to construct a lab report that includes an analysis of the data collected, and discussion of the outcomes and answers to open questions associated with the Experiment.

Program Learning Outcomes (PLO) – SJSU Department of Chemistry

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.

II. Experimentation/Lab Practice

PLO 2.1. Students will be able to develop an experiment to address a hypothesis using literature and execute the planned experiment using standard chemistry techniques.

PLO 2.2 Students will be able to *a*cquire, record, and critically evaluate data through use of instrumentation and software, appropriate record keeping practices, figure preparation, and scrutiny of experimental results.

PLO 2.3 Students will be able to recognize and assess laboratory hazards, practice risk minimization, and conduct safe laboratory practices.

III. Community, Social, Societal Implications

PLO 3.1 Students will be able to explore, critique, and reflect on how chemistry relates to society, culture, and issues of equity and ethics that shape their scientific beliefs and identities.

PLO 3.2 Students will be able to identify as scientists within the scientific community through constructing peer reviews, engaging in collaborations, and participating in mentorship.

IV. Communication Skills

PLO 4.1 Students will be able to design and deliver engaging presentations on diverse chemistry topics in a professional manner and with clear, concise organization that demonstrates mastery of the topic.

PLO 4.2 Students will be able to integrate research findings into a concise original written report that either analyzes collected data and obtained results or reviews and reflects on published scientific work.

PLO 4.3 Students will be able to identify an audience and construct a message tailored to that audience and act as a science ambassador by conveying the importance of the research or topic of study.

PLO 4.4 Students will be able to prepare professional documents, such as résumés and cover letters, that accurately represent the students' skills and knowledge for graduate/professional school or potential future employers.

Tentative Course Calendar:

A Calendar showing the experiments, report due dates and lab quizzes appears at the end of this Greensheet. In addition, note the following EXAM dates:

Midterm Exam	October 15 (90min during lab session)
Final Exam	December 9 (7:15am to 9:30 a.m.)

The dates on the Calendar are tentative and is subject to modification (however, the Midterm, Final Exam and due date for the last experiment will not change). Any changes will only be announced during a online lab meetings only (no notice will be sent by email). It is your responsibility to keep aware of the schedule, especially due dates of reports, quizzes and exams. You must be present on all quiz and exam dates - do not plan any travel or other absences on these dates.

All exams and quizzes will be given either during the lab sessions or on Canvas – your instructor will inform you. The exams will only be available on the dates and times specified for your section. Note that on dates that Reports are due, a short quiz based on the lab will also be given.

SJSU classes are designed such that in order to be successful, it is expected that students will spend a minimum of forty-five hours for each unit of credit (normally three hours per unit per week), including preparing for class, participating in course activities, completing assignments, and so on. More details about student workload can be found in University Policy S12-3 at

http://www.sjsu.edu/senate/docs/S12-3.pdf

Attendance Policy / Lab Makeup

NOTE that University policy F69-24, "Students should attend all meetings of their classes, not only because they are responsible for material discussed therein, but because active participation is frequently essential to insure maximum benefit for all members of the class. Attendance per se shall not be used as a criterion for grading."

Your attendance is **mandatory** for ALL Chemistry 113A lab meetings. The lab schedule is very full, so if you fall behind, it will be difficult to make up missed sessions. The semester schedule is set to provide adequate time for students to complete all of the experiments.

Keeping on time with the schedule requires both your participation and preparation before each lab meeting – don't fall behind!

Grading Policy

GRADING (see below for numerical breakdown and percentages)

Laboratory Reports: Six reports will be due for Chem 113A. The format for each varies somewhat, your instructor will provide details. Information on general report format and submission is provided in Canvas Files under Reports. At the start of the sessions when reports are due, a short Lab Quiz will be given. See the Calendar for report due dates and quizzes. The written or video report must also be submitted to Canvas "Assignments" before the start of the lab period in which the report is due.

Written reports submitted to Canvas Assignments will be analyzed by turnitin.com and an analysis of your report will be provided to me. If you have issues with accessing Canvas, let me know in advance of the first due date.

Quizzes and Exams
Your instructor will inform you which exams or quizzes will be given in lab and which ones using Canvass.

If a Quiz or Exam is given online, the following are required:
-you must have Respondus Lockdown Browser installed on your device
-you will be required to have a cell phone or computer camera monitor while you take the exam (video proctoring)

Lab Quizzes: A total of 6 laboratory quizzes based on the experiments will be given at the start of every lab period when a report is due - see Schedule. These will be brief quizzes based on the experiment that was just completed.

Midterm Exam: a midterm exam based on material covered to that point will be given.

Final Exam: a comprehensive Final Exam will involve all topics covered in Chem 113A.

Note that the final 113A grade is based on a *conglomerate* of the individual graded items Thus, if you have a somewhat low grade on one item, you can make it up with a better grade of another item. The course grades are given on a "+/-" system.

All quizzes and exams are open to the printed version of the Pavia textbook ONLY- electronic versions (eBooks) are not allowed during quizzes and exams. You are **required to bring your OWN copy for the exams.** Sharing of books during tests is not allowed. Using any device which has access to the Web is prohibited during any 113A quiz or exam.

Grading Information:

The grades for this course will be assigned as "plus/minus." The points and percentages of each type of graded itemsis as follows:

6 laboratory reports (80pts ea)	480 points total[a] (48%)
6 laboratory quizzes (20pts ea)	120 points total[b] (12%)
Midterm	150 points (15%)
Final exam @ pts	250 points (25%)
Total possible for 113A	1000 points possible

The overall course grade will generally follow the following correlations:

A+ = 100-97%	A = 96-93%	A- = 92-90%
B+ = 89-87%	B = 86-83%	B- = 82-80%
C+ = 79-77%	C = 76-73%	C- = 72-70%
D+ = 69-67%	D = 66-63%	D- = 62-60%
F = ≤59% Unsatisfactory		

Late reports beyond a deadline will be assessed a penalty of up to **-2 points per day past the due date (weekend days will count as -2 points each day)** - medical absences with documentation will be considered. The report is considered fully "turned-in" when all required items are submitted. Late reports for Experiments will be accepted only up until graded reports are returned to the class (i.e. late reports will not be accepted once I return the graded reports to the rest of the class).
The report for Experiment F must be received by the due date given by your instructor. ***No reports will be accepted after the last posted due date for your section!***

All experiment reports are **mandatory**: if no report is turned in, up to 10 points will be deducted from the total points accumulated for the semester.

In order to estimate your current grade in this course and progress towards your course grade, keep track of scores for all graded assignments (quizzes, lab reports, midterm) as the semester progresses. Add the points you obtained and divide by the total points scored up until that time to determine your % of points to that date. Compare the % to the table to estimate your current grade standing.

Bear in mind that the final course grade is based on multiple components so you have different opportunities to make up a low score. Especially towards the second half of the semester, monitor your accumulated points and %, because that will indicate to what extent you will need to obtain points to attain a desired course grade. A word of advice is that you should not rely on the last report and/or the final exam to make up for a low point total!

Scores for individual reports, quizzes and exams will be posted on Canvas Grades, but for security reasons, course grades cannot be posted there. You will see your Chem 113A grade posted on your mySJSU transcript when it is determined. For security reasons, final course grades are not posted, sent by email, or given over the phone. If you would like a breakdown of your 113A scores, leave a stamped and addressed envelope with me at the final exam.

Use the 113A Calendar below to plan your time accordingly. Preparation for the lab will help you immensely to keep on schedule.

"A minimum aggregate GPA of 2.0 SJSU Studies (R, S, & V) shall be required of all students as a graduation requirement." To see full text, review University Policy S11-3 at

http://www.sjsu.edu/senate/docs/S11-3.pdf

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 3 hours per unit per week with 1 of the hours used for lecture) for instruction or preparation/studying or course related activities including but not limited to internships, labs, clinical practica. Other course structures will have equivalent workload expectations as described in the syllabus.

LABORATORY SAFETY
COVID-SPECIFIC SAFETY INFORMATION

As you are aware, the COVID-19 pandemic has led to many restrictions on our daily lives. The rules you have become familiar with extend into working situations and conduct in a laboratory, but there are other lab-specific rules that you will learn and must comply with for your own safety and for everyone else in the lab. Your instructor will go into the full list of rules in detail, but here is a summary:

-Before the first class meeting, you will receive an email instructing you to view the College of Science COVID-19 Safety Video and ADAPT Plan, and to sign the form that acknowledges you have viewed, understand, and agree to comply with all of the COVID-19 safety rules covered. You must do this before the meeting of your first lab date, or you will not be allowed into the 113A lab room.

The main rules to know are:

-a face covering is required to enter the Science Building and the 113A labs, and must be worn the entire time you are in the building (do not remove them during breaks in the hallway or bathroom

-wash your hands frequently: soap for handwashing is available in the Science labs and the bathrooms

-at the start of each lab, use the alcohol spray bottle (in a bin next to each bench) to wipe down and disinfect the work surfaces.

-all SJSU students must be fully vaccinated by Sept 30 and submitted evidence to the vaccination reporting site.

The most obvious rule of all is: if you feel ill, don't come to lab! Keep your instructor informed on your situation, and they will try their best to accommodate you in the course.

COVID safety rules specific for Chem 113A appear below – learn these and be prepared to answer questions on the safety quiz.

Science 135 and Science 139

For this section of Chem 113A, the designated rooms are Science 135 and Science 139. Lectures and demonstrations will be given in Science 139 for the entire class. When working on experiments, each student will be assigned to one of the 2 rooms for your workspace on a "bench." Each student will be assigned to a specific seating location in one of the labs, designated by an "X" – this is "your" location where you will perform your lab work. You can freely move between the two rooms by passing through the small room by the windows.

Disposable gloves (free) will be provided at the front of the room.

At the start of each lab day, before placing anything on your bench top, wear gloves and spray the entire surface with the disinfecting alcohol and use paper towels to spready across all surfaces. Also, wipe the surfaces of shared equipment (rotary evaporator, balance and melting point device) with paper towel that is wet with alcohol.

These are some of COVID-19 safety rules. Your instructor will go over additional rules as they relate to the lab rooms. The SJSU COVID-19 Safety Training and Adapt Plan provides more details.

General Safety Rules (in addition to the COVID-19 Safety Rules)

Knowing how to work safely in an organic chemistry laboratory is paramount for Chem 113A, and for anyone working in a laboratory setting. For your safety and of your classmates, you will be required to understand and follow safety policies that are described below.

Before beginning any lab work, the following items must be completed:

1) Attend the Safety Lecture
2) Read and sign the statement on Chemical Safety Rules for Chemistry Labs (go to this site – copy the URL if necessary):

https://www.sjsu.edu/chemistry/Forms/Safety%20Sheet%20for%20Teaching%20Laboratories_02262020.pdf

3) View the Chemistry Safety film on YouTube and sign the viewing voucher
4) Read and learn the additional rules for organic labs below.
5) Take the Lab Safety Quiz on Canvas and obtain a score of 80% or better; retake the quiz if score is <80%.

All of the above conditions are required.

In addition to the points covered above, the following rules are emphasized in this lab:

1. ***AS SOON AS ONE PERSON BEGINS WORK IN THE LAB, YOU MUST ALWAYS WEAR SAFETY GOGGLES, EVEN IF YOU ARE NOT DOING ANY WORK YOURSELF!!!*** (over your eyes, not on your forehead!) If you see a fellow student not wearing eye protection, you are obligated to remind them to protect their eyes.

2. Be aware that we will be using some flammable solvents, do not have **any** flames when you (or someone else in the room) are handling these

3. Similarly, treat all acids, bases, and reagents as potential hazards. Avoid skin contact with all of these, and treat any contact immediately. If you have a spill, never leave it unattended - let the instructor know.

4. Dispose of all glassware in the special bins, not in the trash cans! This includes broken glass, as well at expendable items such as pipettes and melting point capillaries.

5. Some experiments require special safety precautions - these may be found in the protocols or given by the instructor. Always enter these into your procedure/flow scheme section in your notebook (this is another reason to read ahead and to be on time at the start of each lab)

6. You are absolutely required to follow any instructions provided by the instructor related to procedures and/or safety. Failure to do so will result in your grade or result in immediate disenrollment from this class (see statement below).

7. Everyone working in the lab is expected to conduct yourself in a professional manner; no horseplay or unsafe actions are allowed.

8. Gloves are required for many experiments. These are always available from the Stockroom for a cost. You may prefer to purchase a box of disposable gloves to use during the semester.

9. Minimize contact with all liquid and solid chemicals, and DO NOT intentionally breathe in any vapors. Where practical, do experimental work in the hoods.

10. Note in the safety rules, that legs and feet must be covered - no shorts, sandals or open toed footwear allowed. You will not be allowed to work in the lab. I suggest you bring a change of clothes on lab days.

101. If you are not sure, ask!!

Failure to comply with proper procedures and prescribed safety cautions shall subject the student to disciplinary action.

1) Any student who engages in unauthorized experimentation, or who seriously disregards safety, thereby endangering self or others shall be withdrawn immediately from the class with a grade of F.

2) Any student who shows persistent disregard for safety may have his/her grade lowered, and may risk being withdrawn with a final grade of F.

Special rules of safety and conduct apply when using the Bruker Fourier 300 NMR and the GC and other instruments. These will be provided by the instructor.

With preparation and organization, it is possible to complete all of your lab work during the scheduled lab period. In general, no lab work will be permitted outside of the scheduled lab times. Usually, the only situation where this may be allowed is in cases of illness and for which you provide verification by your doctor (see makeup policy above). However, if you miss more than a few lab periods during the semester, it may be difficult to complete the course**. In any case, under NO circumstances are you to perform any laboratory work for 113A outside of the scheduled lab time without my written permission.** Any student found performing unauthorized lab work for 113A may be disenrolled from the class.

Additional Safety Policies for Chem 113A:

Visitors: No visitors are allowed in the lab at any time. Access to Science 135 and 139 are only for enrolled students who are specifically assigned to each room.

Cell Phones, music/video/game players: These may not be used in the lab. Unless you have an emergency, turn off cell phones and make your calls before or after class. DO NOT make calls when an experiment is in progress!

Computers: computers may be used during lab experiments, but this is not recommended since chemicals may spill on them and damage your device. During quizzes and exams, use of computers will be restricted using the Lockdown Browser (your instructor will provide information).

While working in the lab, distractions while working must be kept to a minimum - this includes music and videos. Headphones or earbuds may not be used - you must be able to hear instructions or emergency situations.

Notebook Preparation for Experiments ("Prelabs"):

Some Experiments will require the preparation of a "PreLab" notebook before you can begin the Experiment. The Prelab is an outline of the planned Experiment and is intended to prepare you before you begin experimental work. Your instructor will inform you of which Experiments require a prelab and on how to format your notebook.

Equipment (for in-lab sections only)

A printed copy of current Stockroom policies will be provided to you when you check-in to a locker. These policies will be rigidly enforced so read them immediately - ask the Stockroom staff if you have any questions.

You will be assigned an individual locker of equipment for your use during this course. You will be checked into your locker during the first lab period by the instructor, and sign an acknowledgement that you have all of your equipment. ***Your check in day is the only day when missing or broken/chipped items will be replaced at no charge.*** After the first day, you are responsible for maintaining all of the contents of your drawer. If you lose or break any item, you will be assessed a replacement fee at the end of the semester, so be careful with your equipment! It is possible to complete this course with a relatively small bill for expendable items: it is also possible to end up with a >$100 bill due to loss or breakage. At the end of each lab period, make sure you have collected all your locker items before leaving and lock your drawer!

When you check in, you will be given a coded check out pad from the storeroom. You may use this pad to check out additional equipment from the storeroom which may be required for a particular experiment. **Note that certain items checked out must be returned the same day to avoid a late fee.** Remember, the code on your pad is assigned ONLY to you, don't lose it, or someone else can check out items which will be charged to your account.

At the end of the semester, you must clean out your locker, replace all broken equipment or glassware, and have the instructor sign the check-out form. If this process is not completed fully, you may be charged a fee to clean and refurbish your locker. If you drop or do not complete Chem 113A, you must check out of your locker to avoid a $50 or more check out fee. All checkouts must be done by the last lab day of your lab meeting (see

schedule); no checkouts will be done after this date. An exception is if you contact COVID-19 and cannot continue the lab. Contact your instructor as soon as possible.

Chemical Safety (CHEM 120S) – All Students

CHEM 120S Chemical Safety Seminar is a required course for all chemistry majors and minors. The Safety Training (not CHEM 120S) is a requirement/prerequisite for CHEM 180/298, if working in a wet/chemical research lab.

•Emergencies and Building Evacuations

If you hear a continuously sounding alarm, or are told to evacuate the building by an Emergency Coordinator, walk quickly to the nearest exit (out the lab door and go to the nearest exit of the Science Building). Take your personal belongings as you may not be allowed to return. Follow the instructions of the Emergency Coordinators. Be quiet so you can hear instructions. Once outside, move away from the building. Do not return to the building unless the Police or the Emergency Coordinator announces that this is permissible.

Additional University Policies – All Students (SJSU Policies)

Per University Policy S16-9, university-wide policy information relevant to all courses, such as academic integrity, accommodations, etc. will be available on Office of Graduate and Undergraduate Programs' Syllabus Information web page at http://www.sjsu.edu/gup/syllabusinfo/"
Make sure to review these university policies and resources.

The topics include the following:

General Expectations, Rights and Responsibilities of the Student
Dropping and Adding
Consent for Recording of Class and Public Sharing of Instructor Material
Academic integrity
Campus Policy in Compliance with the American Disabilities Act
Student Technology Resources
SJSU Peer Connections
SJSU Writing Center
SJSU Counseling and Psychological Services

The Calendar below is subject to change. However, the midterm or final exam dates will not change

Chem 113A Organic Schedule - Fall 2021
Friday In-Lab Sections

The code in each date box indicates the activity for that day. A summary for each activity appears after the calendar. Your instructor will provide additional details for each lab date.

Semester	Monday	Tuesday	Wednesday	Thursday	Friday

Week					
1				Aug 19	Aug 20 1st Fri lab 1AB
2	Aug 23	Aug 24	Aug 25	Aug 26	Aug 27 2AB
3	Aug 30	Aug 31	Sept 1	Sept 2	Sept 3 3AB
4	Sept 6 LABOR DAY	Sept 7	Sept 8	Sept 9	Sept 10 4AB Exp A due & quiz
5	Sept 13	Sept 14	Sept 15	Sept 16	Sept 17 5AB
6	Sept 20	Sept 21	Sept 22	Sept 23	Sept 24 6AB Exp B due & quiz
7	Sept 27	Sept 28	Sept 29	Sept 30	Oct 1 7AB
8	Oct 4	Oct 5	Oct 6	Oct 7	Oct 8 8A & 9A
9	Oct 11	Oct 12	Oct 13	Oct 14	Oct 15 8B MIDTERM 9B
10	Oct 18	Oct 19	Oct 20	Oct 21	Oct 22 10AB Exp C due & quiz
11	Oct 25	Oct 26	Oct 27	Oct 28	Oct 29 11AB

12	Nov 1	Nov 2	Nov 3	Nov 4	Nov 5 12AB
13	Nov 8	Nov 9	Nov 10	Nov 11 VETERANS DAY	Nov 12 13 AB
14	Nov 15	Nov 16	Nov 17	Nov 18	Nov 19 14AB Exp D due & quiz
15	Nov 22	Nov 23	Nov 24 NO CLASSES	Nov 25 THANKS-GIVING	Nov 26 METABO-LISM DAY
16	Nov 29	Nov 30	Dec 1	Dec 2	Dec 3 **Last Fri lab – checkout** **Exp E & F due & quiz**

DEC 6
Last Day Fall Semester
No Lab

Verify the date and time of your Final Exam!

The codes in the calendar correspond to the activities in the list below:

Week	A	B
1	Check-in, Greensheet, safety quiz	A Greenhouse collection; prep extract
2	A extract evaporate; TLC, qual tests,	A Partition; re-TLC, qual tests
3	A finish A; prelab and prep B	B fractional distillation 2-component mixture
4	B GC of 2 fractions	B IR, qual tests (IR intro)
5	B finish B	C IR
6	C IR	C NMR
7	C NMR	C in-class
8	Review	MIDTERM
9	D ester prelab and prep.	D ester synthesis
10	D ester workup, distillation	D GC, qual tests. IR, prep NMR
11	D finish; prelab E	E cinchona extraction
12	E	E
13	E	E finish
14	Review, problems	Check out