CHEM 8L – Organic Chemistry Lab I, Fall 2025
University of California, Santa Cruz

Instructor: Caitlin Binder, Ph.D.
Email: cambinde@ucsc.edu

Lab Lecture: Fridays 1:20-2:25pm, Kresge Lecture Hall
Office Hours: Mondays 12:30-1:30 (THIM 313), Fridays 4-5 (Zoom)

Teaching Team – Canvas Intro Module > **TA Lab Sections & Office Hours**

Kai Chun Chou, kachou@ucsc.edu	Tianchen Cui, tcui7@ucsc.edu	Alexander Engstrom, amengstr@ucsc.com
Darsha Naidu, Danaidu@ucsc.edu	Julia Penick, jrpenick@ucsc.edu	Qiu Ren, qren6@ucsc.edu
Xingjian Song, xsong35@ucsc.edu	Jameson Spence, jpspence@ucsc.edu	Cassidy Tran, ctran53@ucsc.edu
Janet Tran, jtran138@ucsc.edu	David Zeitz, dczeitz@ucsc.edu	Heng Zhang, hzhan290@ucsc.edu

Course Description: CHEM 8L (2 units, formerly 108L) is an introduction to common methods in synthetic organic chemistry, as it applies to pharmaceutical and research industries. You'll learn basic techniques for isolation and purification of organic chemicals, as well as qualitative and quantitative analysis. These fundamental skills will be applied to organic reactions. You'll learn to perform lab work in a safe and efficient manner. Students are assessed on data collection (lab notebook pages) and analysis (lab reports). **Prerequisites:** CHEM 1C and 1N and previous or concurrent enrollment in 8A.

Materials – Weekly Modules in **Canvas**: canvas.ucsc.edu – Notifications > **Announcements** > Notify Immediately

- Designated **lab notebook** is required – any bound notebook is great; we advise against spiral-bound
- **Lab Manual** – all class note templates, lab PDFs (background, procedure, etc.), and lab notebook templates
  - Download for free (Intro Module) or *option* to purchase printed copies via order form on Canvas
- **GradeScope**: upload lab notebook pages & lab reports and view grading feedback (embedded in Canvas)
- **Slugs@Home Lab Previews**: https://sites.google.com/ucsc.edu/slugshome/home
- Safety equipment provided in lab: goggles, lab coat, and disposable gloves

Attendance Policies

- **Lab lectures** – attendance required starting **Friday October 3rd**
  - "Join" each lecture withthe **iClicker Student** app - https://join.iclicker.com/IGKZ
    - Students can **miss one lab lecture** without penalty; 0 score auto-dropped on Canvas
  - **Lectures are recorded** & posted on YuJa/Canvas, usually by 5pm on Fridays
- Required in-person labs start **Tuesday, October 7th** for mandatory safety & orientation
  - Attend your enrolled lab only!
  - **Check** SAFETY RULES for what's OK and NOT OK to wear – no shorts, sandals, tank tops, or leggings
  - **Week 1 only: absent students (>15 min late) will be dropped, next student from waitlist added**
- **Lab Attendance** – see Canvas > Week 0 Module > "Makeups & Missed Labs" page
  - Please **arrive early, if not on-time;** students that are **5+ minutes late to lab** may not be permitted to participate that day, at the instructor's discretion. (See "Makeup & Missed Labs" in Canvas Intro Module)
  - Everyone gets **1 excused lab day, no questions asked**; drop lowest quiz & report scores (NOT Exp 6)
  - You must complete the experiment to get credit for a lab report. DO NOT COPY DATA from another student.
  - **In person lab attendance** is required. Sorry, but we cannot offer extended remote accommodations.
- *"What if I have to miss lab?"* Read policies & details in Canvas Intro Module > **"Makeup & Missed Labs"**
  - Do not come to lab if you are **sick**!
  - Email your TA (cc Caitlin) with as much notice if you cannot attend a lab so we can arrange a makeup lab.
  - **Contact us within 24 hours** of a missed lab to be eligible for (partial) credit.
  - Each student is permitted to perform **ONE experiment remotely** to make up for a missed lab.
    - You must **attend TA office hours within 1 week of missed lab** for lab notebook & report credit.

Have you ever wondered why roses are red and violets are blue?

Why are plastics such a danger to our planet? What happens to your food as it digests?

Organic chemistry has the answers (and unfortunately creates its own problems). Trillions upon trillions of super tiny molecules are make up the colors that we see, the containers we eat and drink from, and the food we eat. Most of these life-sustaining molecules are organic (have a carbon backbone). Start your ochem journey and learn the behind-the-scenes magic that make life possible!

Disability Accommodation – Equitable Access

UC Santa Cruz is committed to creating an academic environment that supports its diverse student body. On a personal note, Caitlin has utilized DRC accommodations both as a student and as an instructor. I encourage you to **advocate for yourself** through the DRC so we can help you in a confidential manner. We encourage all students who may benefit from learning more about DRC services to contact DRC by phone at 831-459-2089 or by email at drc@ucsc.edu.

Once you receive your DRC accommodations letter, it is also sent to the instructor (Caitlin Binder). Extra time accommodations for Canvas quizzes will be added by the time of the Exp 1 quiz. Feel free to reach out via email for help with tech issues, to clarify your accommodations, or if you'd like to meet to further discuss how to ensure your full participation in the course.

Please check your exam schedule for other classes early in the quarter, in case we need to **schedule a make-up lab** due to time conflicts with an exam.

Title IX prohibits gender discrimination, including sexual harassment, domestic and dating violence, sexual assault, and stalking. If you have experienced sexual harassment or sexual violence, you can receive confidential support and advocacy at the Campus Advocacy Resources & Education (CARE) Office by calling (831) 502-2273. In addition, Counseling & Psychological Services (CAPS) can provide confidential, counseling support, (831) 459-2628. You can also report gender discrimination directly to the University's Title IX Office, (831) 459-2462. Reports to law enforcement can be made to UCPD, (831) 459-2231 ext. 1. For emergencies call 911.

Faculty and Teaching Assistants are required under the UC Policy on Sexual Violence and Sexual Harassment to inform the Title IX Office should they become aware that you or any other student has experienced sexual violence or sexual harassment.

Land Acknowledgement

"The land on which we gather is the unceded territory of the Awaswas-speaking Uypi Tribe. The Amah Mutsun Tribal Band, comprised of the descendants of indigenous people taken to missions Santa Cruz and San Juan Bautista during Spanish colonization of the Central Coast, is today working hard to restore traditional stewardship practices on these lands and heal from historical trauma."

Assignment and Grade Breakdown

Assignment Group (quantity)	**Description**	**Due Date(s) 11:59pm**	**Assignment Policy** **Specific due dates in schedule** LATE submissions, - 5% per day, 7+ days after deadline, no credit	**Grade Weight** out of 1000pts
Intro assignments (4)	**- Academic Integrity Quiz** **- Student Survey** **- TWO GradeScope Test Assignments** – one for variable-length (style of lab notebook uploads) and one for templated assignment (like lab reports)	**Sunday 10/5**	Accepted until Fri 10/10 All required, not dropped Intro assignments are non-chemistry-related; assess understanding of course policies and to learn to use basic features of GradeScope	100 pts (10%)
Friday lecture attendance (8)	Join each lecture from Kresge lecture hall with QR code or this link: https://join.iclicker.com/IGKZ Attendance assignment created in Canvas after each lecture, 10pts each	**Fridays** starting 10/3	1 excused absence, 0 score auto-dropped on Canvas No lecture 9/26 or 11/29	80 pts (8%)
Pre-lab quizzes (6)	**Pre-lab questions provided** in each lab PDF, after the procedure. Material is discussed in Friday lab lectures! **Multiple choice and numeric** response questions, auto-graded in Canvas. **Prepare responses before** taking the timed quiz!	**Mondays**, starting 10/13 No quiz 11/10 or 11/25	**Late quiz:** point penalty (-5% per day) applied; each quiz closes on **Thursday at 11:59pm** – final chance! 20 minute time limit 2 attempts, highest score kept	150 pts (15%)
Lab Notebook (6)	Copy the provided **template** for each experiment into your lab notebook. Refer to the lab PDF to prepare your notebook according to the template: **purpose, reagent table, full procedure** (short phrases, diagrams), and **data tables** or blanks before lab.	**Enrolled lab day TuWTh**, starting 10/14 No lab weeks 7 or 9.	Lab notebook must be prepared with **full procedure before enrolled lab start time**, or student is not permitted to perform the lab (sent home). Upload completed notebook pages to GS on the **same day** of lab. **24-hour grace period** before point penalty applied (-5% after grace period).	250 pts (25%)
Lab Reports (6)	**Typed responses** to questions and prompts in each lab PDF, using a provided **template**. Insert images of **hand-written diagrams and calculations**, or use a tablet with annotating app. **Attend Friday lectures** to do well on lab reports! Download the LAB REPORT TEMPLATE (.doc or .pdf). Add **typed responses** on the SAME PART of the SAME PAGE as the template. Insert images of **hand-written calculations or diagrams** if needed.	**Fridays**, starting 10/24 No report due 11/21 **Exp 6 report due Monday 10/15**	**Reports submitted on-time get +1 extra credit point ☺** **48-hour grace period;** lab reports due on Friday are accepted until Sunday without penalty. **Late lab reports**, after grace period, **5 points** will be deducted per day late. Reports NOT accepted for credit **7+ days after deadline** in the syllabus. **2+ missing lab reports** = cannot pass the class :/	420 pts (42%)

Assignment Policies that didn't fit on previous page

If you do not turn in 2 reports or miss 2 lab days without communicating with us, you cannot pass the course.

- **Due dates** are in the schedule and on Canvas – consider when to DO the assignment before the DUE date!
- *We're here to help!* Email your TA if you need an **extension** on an assignment (1-2 days).
  - If it's within the grace period (GradeScope assignment is open), no special permission is required to submit.
  - Note: Canvas may automatically enter a '0' on some assignments until they're graded.
  - Point penalties are applied for **late assignments (-5% per day late)**
- The lowest **quiz and lab report** scores for Exp 1-5 are automatically dropped on Canvas 😊
  - Lab notebook pages for all six experiments are required (not dropped)
  - Note: Experiment 6 scores are NOT dropped – quiz, notebook pages, & lab report ALL required
- Email your TA (cc Caitlin) ASAP if you have **any issues** with attendance, submitting assignments, etc.
  - Ex. *Technical or other issues with the pre-lab quiz?* Email your TA for an extra quiz attempt.
  - We're open to new policies and **accommodations** but we need to know what's going on!
- Incorporate **feedback** from graded reports into future assignments.
  - Instructions for reviewing feedback on assignments: Canvas Intro Module > **GradeScope Guides** for Students.
  - Your TA is happy to *discuss* any grading questions or concerns in a kind & compassionate manner.
  - Submit brief **regrade requests** directly in GradeScope if you think we made a grading mistake

Weekly Task Overview

Before Lab

- Read the **lab PDF** in the Lab Manual or on Canvas – background, procedure, pre-lab questions
- Attend **lecture** and bring **class note templates** for easier note-taking
- [Option to preview the experiment on Slugs@home]
- Prepare for the pre-lab quiz: complete the **pre-lab questions**, covered in lab lecture ☺
- View the **notebook template to **prepare notebook pages**** (approx.. 2 hrs prep time; more info on next page)
- Take the **pre-lab quiz Monday before lab**

During Lab

- Arrive ~5 minutes early, show prepared lab notebook pages to your TA
- Check-ins, Pre-lab talk, Q&A
- Perform the **lab** with ONE partner as you enter data & observations in your notebook
- Take pictures of completed **notebook pages** and upload as soon as you can after lab

After lab

- Submit the **lab report** on GradeScope, due the following week, typically Fridays (see schedule)

Friday lab lectures, 1:20-2:25pm

- Bring **class note templates** (Lab Manual or individual files on Canvas)
- Open the **iClicker Student app** or scan QR code to "Join" each class; **location services must be ON!**
  - *iClicker not working?* Take a picture in class with your ID and Caitlin in the background. Email to me after class, cambinde@ucsc.edu. Or catch me after class, time permitting.

BEFORE: Lab Preparation

Lecture, Videos, & Slugs@home – Caitlin goes over procedures and principles in **Friday lectures** to set you up for success on assignments! Each **Canvas experiment overview page** includes brief, animated concept videos. Feel free to use the **Slugs@home** platform for a safe preview of each experiment and to guide your notebook preparation.

PRE-LAB QUIZ – Lab PDFs contain pre-lab questions that are incorporated into a Canvas quiz, due the Monday before lab.

- **Be prepared with your responses to the pre-lab questions *before* starting the quiz.**
- There is a 20-minute time limit on the quiz and you get two attempts.
    - Make sure you have enough time to complete the quiz - you can't save and come back later.
    - If you choose to re-take the quiz, your grade will be the highest of the two attempts.
- **Though we generally encourage collaboration, the pre-lab quiz is an individual assignment.**
    - The responses should be a product of your original work to assess *your* understanding of the material.
    - Sharing your quiz or the correct responses in any format (screenshots, email, CHEGG, social media, text, carrier pigeon, etc.) is in violation of the UCSC academic integrity policy (more details later in syllabus).

Lab Notebook Preparation – **must be complete before starting lab** – refer to provided **templates** for each lab

- **Purpose:** one-sentence summary of the main lab goals plus the scheme with structures (see class notes & lab PDF)
- **Reagent Table** – add chemical properties and safety info; Wikipedia is a reliable source for chemical info!
- **Procedure with Diagrams** – hand-written; no copy/pasted work
    - Friday **class notes** include diagrams for most of each experiment that you may reproduce by hand.
    - Use the **procedure in lab PDF** to create your hand-drawn experimental instructions
        - Simple sketches & labels for all **equipment, chemical names** with **amounts**, & **transfers**
    - Format: Break it up with flow charts, bullet-points, comic strip, and/or whatever works for you!
        - **Use short phrases**; Avoid copying the procedure word-for-word; **Complete sentences not required**.
        - Make it easy for anyone to follow your procedure without referring to this document.
    - **Slugs@home** - pictures & videos of the entire experiment for your reference
- **Data & Observations** – copy data tables from the template, leaving space for notes & calculations
- **Safety** – copy the safety/cleaning table from the lab PDF

DURING: Lab Conduct…*Safety first!*

The complete SAFETY RULES are posted on Canvas and will be reviewed on the first day of lab ☺
Highlights…

- No food or drink in the lab; Wear proper attire and arrive to lab a few minutes early
- **Goggles, gloves, and lab coats** are to be properly worn when anyone is using chemicals in the lab or instrument room – points deducted for not wearing personal protective equipment (PPE)
- Pay attention to **waste procedures and chemical hazards** – table given in each experiment
- Take care of chemical spills immediately; ask your TA for support
- Notify your TA of all chemical exposures; **rinse minor exposure areas with water for 15 min**
- **NO GLASS IN THE TRASHCANS – use the solid waste or glass waste bins**
- Label all glassware before adding chemicals to it, including water!
- **Clean the balance and reagent areas immediately** after obtaining chemicals
- Keep your work station clean; follow instructions on washing glassware - remove gloves to wash
- **Check your results and workstation with your TA at the end of each lab**
- Foster a sense of community – ask your TA for a community cleanup task before you leave

Lab Reports

Reports are to be **typed** and completed **individually (Exp 1-3)**. You and your lab partner will use the **same data** collected in lab to write **separate lab reports** and submit individually. You're encouraged to discuss material and results with your partner (see **Academic Integrity** section of the syllabus). Each student uploads their report as a PDF to GradeScope (GS) using the LAB REPORT TEMPLATE at the end of each lab PDF and separately in Canvas.

Partner reports (Exp 4-6): You have the *option* to complete Exp 4-6 reports with a partner. It is OK to do these reports individually if your schedules don't work. If you and your partner agree to complete any report together, include the **Partner Agreement** in your notebook pages – discuss this on the day of lab to determine how you'll share responsibilities. Meet to exchange and proofread each other's work before the due date. The idea is to incentivize collaboration and hold each other accountable. **One student submits** the full report to GS using the LAB REPORT TEMPLATE, then "**Add Group Members**" so both students get that same grade – TWO STUDENTS PER REPORT MAX.

Start working on lab reports early, ideally during lab, to leave time to ask for help!

LAB REPORT TEMPLATE - LAST PAGES OF EACH LAB PDF

- Please put your response to each question on the SAME PART of the SAME PAGE as the LAB REPORT TEMPLATE
- **Type** the responses to questions and prompts in **complete sentences.**
- Calculations, structures, and mechanisms should be **hand-written**. "Insert image" into the report template and resize.
    - Check the PDF before submitting for readability: **well-lit (not too dark), clear (not fuzzy) image**
    - OK to write using a **tablet and stylus**. **Do not copy/paste** from other sources!
- In the event of a missed lab, DO NOT COPY DATA from another student. Contact instructors for guidance.
- **Makeup remote labs**, limit ONE per student; must **contact us within 24 hours of missed lab** for credit.
    - See Canvas Intro Module > **Makeups and Missed Labs** for details on what to include in email to TA
    - We'll send you a **remote lab guide** to "perform" the experiment via **Slugs@home** and **collect data** to the best of your ability, then **meet with any lab TA** during their office hours (Canvas Intro Module)
    - Be sure to note that your **"data was obtained via Slugs@home"** in your report.
- **Options for using lab report template**, choose what's best for you…
    - Download .doc and edit in **MS Word**
    - **Recreate the template** in a new word processing document – responses on same part of same page.
    - **Tablet users:** Download .pdf, import into GoodNotes or similar app. Must use **typed text!**

Communicate with us! Assume we want to help.

If you do not turn in 2 reports or miss 2 lab days without communicating with us, you cannot pass the course.

Strict Grade Distribution

A+ 98.00 – 100%	A 93.00 – 97.99%	A- 90.00 – 92.99%
B+ 88.00 – 89.99%	B 83.00 – 87.99%	B- 80.00 – 82.99%
C+ 78.00 – 79.99%	C 70.00 – 77.99%	
D 55.0 – 69.99%	F < 55.0%	

Academic Integrity - https://www.ue.ucsc.edu/academic_integrity

Complete the **Academic Integrity Quiz** on Canvas

Students are encouraged to discuss the experiments. Below is an overview of assignments that should be completed individually vs. those that are turned in with a partner. If you and your partner agree to complete any report together, include the **Partner Agreement** in your notebook pages – discuss this on the day of lab to determine how you'll share responsibilities.

- **Individual:** Intro assignments; all quizzes and lab notebook pages; Exp 1-3 reports, option for Exp 4-6 reports
- **Pairs:** Option for Exp 4-6 Lab reports

We want our expectations of you to be clear to set you up for success! Please feel free to **reach out** to instructors to talk through this process and **ask questions** whenever you feel unsure. I put together the guidelines below after reflecting on **discussions with students**.

Collaboration is great, but each partnership should submit original work. *If we suspect that work is copied from another group or source,* ***zero points*** *will be assigned, pending a meeting with instructors. Duplicate lab reports or sections of lab reports will be assigned zero points as well.* We'll reach out to set up a meeting to discuss, then assess whether it qualifies as Academic Misconduct (submit report to UCSC Academic Misconduct office).

HOW TO HAVE GREAT ACADEMIC 'TEGRITY:

- Start assignments early to leave time to ask questions.
- **Everyone is expected to submit assignments that reflect their and/or their partner's understanding of the material** based on the reading, lecture, discussion with instructors and peers, and personal lab experience.
- The experiment PDFs online contain most of the information you need to successfully complete assignments, with elaboration and clarification in lab and lecture. It may be necessary to look up new terms or general concepts, but otherwise *avoid searching for answers to pre- and in-lab questions online.*
- **Prevent the temptation to cheat** by working on assignments **well in advance of the due date**.
  - Ask instructors for help during lab and office hours.
  - Feel free to reach out *via* email if you need an extra day or two extension.
- *Both students in a lab pair should contribute to the remote lab, including recording observations and writing the lab report*.
  - Each student submits a **Partner Agreement** & **Data / Observations** at the end of each lab period.
  - TAs will confirm that work is done collaboratively and help reduce miscommunication between partners.
- Perform calculations and analysis *individually before discussing* with another student.
- Talk through the question with lab mates and instructors.
- Ask for help on ***how*** **to solve a problem** rather than asking for an answer.
- **Type all of your own work instead of copy/pasting from other sources.**
- Lab partners are encouraged to **proofread** each other's work after a draft has been completed.

WHAT TO AVOID:

- Avoid searching for answers to pre- and in-lab questions online. This knowledge is provided in the experiment PDFs, lab lectures, and remote labs. Online sources can be problematic and often wrong!
- Reading and posting lab reports or any other course materials on sites like CHEGG and Course Hero *violates UCSC academic integrity policy.* The same applies to using paper or electronic copies of **old lab reports**. *If someone offers you their old reports, don't accept them or give them back!* The questions and criteria change each term, making these instances relatively easy to catch.
- **Reading another group's report then rewording it is considered cheating**, as this is not reflecting your own ideas or understanding.
- Do not copy/paste from other unauthorized sources, then alter it to make it look different.
- **Do not email reports to anyone outside of your group.**

CHEM 8L Fall '25 Schedule

Friday Lab Lectures, Fridays 1:20-2:25pm, Kresge **Tu-Th Labs,** THIM 249 – 275

***Lab notebook pages must prepared before lab for entry; upload to GradeScope after lab, same day.**

Week	Date	**Topic** – follow in Canvas modules	**Due – Canvas 11:59pm**
0	9/26 Fri	*No lecture*	
1	Sept 30 – Oct 2	*No 'secondary lab' meetings*	
	10/3 Fri Lecture	Course Intro, Safety, & Exp 1: Recrystallization	Academic Integrity Quiz & GradeScope Practice
2	**Oct 7-9 Tu-Th LAB**	**** Required in-lab meeting **** **Safety Scavenger Hunt & Lab Basics**	**Lab Orientation Worksheet**
	10/10 Fri Lecture	Exp 1: Recrystallization Analysis	-
3	10/13 Monday	-	Exp 1 Quiz
	Oct 14-16 Tu-Th LAB	**Experiment 1 – Acetanilide Recrystallization**	Exp 1 Notebook*
	10/17 Fri Lecture	Exp 2 – Distillation and Gas Chromatography (GC) Analysis of Citrus Oils	***Deadline to request citrus peels***
4	10/20 Monday	-	Exp 2 Quiz
	Oct 21-23 Tu-Th LAB	**Exp 2 - Citrus Oil Distillation & GC Analysis** *** Bring prepared citrus peels ***	Exp 2 Notebook*
	10/24 Fri Lecture	Exp 3 – Spinach Pigment Extraction and Thin-Layer Chromatography (TLC) Analysis	**Exp 1 report**
5	10/27 Monday	-	Exp 3 quiz
	Oct 28-30 TuWTh LAB	**Exp 3 – Spinach Pigment Extraction & TLC** Spinach provided in lab	Exp 3 Notebook*
	10/31 Fri Lecture	Exp 4 - Infrared (IR) Spectroscopy	**Exp 2 report**
6	11/3 Monday	-	Exp 4 quiz
	11/4 – 11/6. **TuWTh LAB**	**Exp 4 – Infrared (IR) Spectroscopy**	Exp 4 Notebook*
	11/7 Fri, Lecture	Exp 5 - Dehydration Reactions	**Exp 3 report**
7	11/11 – 11/14 **TuWTh LAB**	*No lab meetings – Veteran's Day*	**-**
	11/15 Fri, Lecture	Exp 5: Dehydration Reactions & Analysis	**Exp 4 report**
8	11/18 Monday	-	Exp 5 quiz
	Nov 19-21 TuWTh LAB	**Exp 5 - Dehydration of Methylcyclohexanols**	Exp 5 notebook*
	11/22 Fri, Lecture	Exp 6: Substitution Reactions	-
9	Nov 25-29	*No lab meetings or lecture – break*	**Exp 5 report, 11/29**
10	12/2 Monday	-	Exp 6 quiz
	Dec 3-5 Tu-Th LAB	**Exp 6 – Synthesis of t-Pentyl Chloride** *** Required – Lab Report NOT dropped ***	Exp 6 notebook
	Fri 12/6 Lecture	Exp 6: Substitution Reactions & Analysis	-
11	Mon 12/5	*No final exam or class meetings*	**Exp 6 report due 12/5**