

CHEM 272L – Organic Chemistry I Laboratory

Syllabus, Spring 2021

Professor: Prof. P. Williams
Email: philipwi@hawaii.edu
Phone: 956-5720
Lab TAs:

Section	Day	Time		TA	Email
5	M	1230	BILA 202	Sugai, Cody	csugai7@hawaii.edu
11	T	900	BILA 202	Liu, Chaolun	cliu9@hawaii.edu
15	T	1330	BILA 202	Liu, Chaolun	cliu9@hawaii.edu
16	T	1330	ONLINE TBA	McCullough, Brennen	brennenj@hawaii.edu
25	W	1330	BILA 202	Sugai, Cody	csugai7@hawaii.edu
31	R	900	BILA 202	Napier, Patrick	pnapier@hawaii.edu
45	F	1230	ONLINE TBA	McCullough, Brennen	brennenj@hawaii.edu
46	F	130	BILA 202	Napier, Patrick	pnapier@hawaii.edu

Prerequisite: Chem 162L (C not C-) and Chem 272 (or concurrent)

Text: Chemistry 272 Organic Laboratory Procedures

Errors in the lab manual? Let me know using the link below for possible extra credit if you are the first.

<https://forms.gle/UhYVrgyXa45PsPCN6>

Notebooks: Three bound notebooks (no loose-leaf or spiral books)

Safety: ***Safety goggles or glasses with side shields are required. Closed-toed shoes, long pants covering your knees and shirts covering your shoulders must be worn at all times in the lab. All students must comply with UH COVID guidelines including wearing an appropriate mask/face covering.*** No student will be allowed in the lab without proper safety equipment. Students who fail to use the safety equipment properly will be forced to leave the lab and assigned a zero for that portion.

Semester grade: Each lab will be graded separately, and appropriate curves determined at the end of the semester. The following **tentative** scale will be used:
A+ 90-100; A 85-89; A- 80-84; B+ 75-79; B 70-74; B- 65-69; C+ 60-64; C 55-59; C- 50-54; D+ 45-49; D 40-44; D- 30-39; F 29-0

Lab Notebook		50%
Quizzes	(Pre-lab)	40%
TA Evaluation	(Organization, preparation, technique)	10%

Policies:

Quizzes will be given at the beginning of the lab period. **Students who are late for the quiz will not receive time extensions or be able to make up quizzes.** Any missed quiz will be considered a zero.

Students who arrive after the pre-lab lecture has begun and miss important safety information may not be allowed to participate in the lab at the TA/instructor's discretion due to safety concerns. In this case, it will count as a zero.

Students must have completed the appropriate prelab details (see lab manual's lab report section for details) to participate in the lab due to safety concerns. Failure to do so will count as a zero. Students present at the start of the lab for the quiz, but without the prelab complete, will have their quiz result counted in this case.

Lab reports are due at the start of each lab period. Late reports will be accepted for up to 3 BUSINESS days, at a penalty of 33% per BUSINESS day (M-F, excluding holidays). Reports not submitted at the start of the lab period will be considered late.

Missed labs; Each student can miss one lab session this semester, and they will be automatically be allowed to complete the experiment asynchronously with the lab report due at the same time as their regular section. Student must inform the TA no later than 24h after the missed lab to exercise this option.

All students are expected to conduct himself/herself with honesty and consideration of fellow students.

Any student caught cheating will automatically receive an F in the course and have their case referred to the appropriate review board for further disciplinary action

Any student who feels s/he may need an accommodation based on the impact of a disability is invited to contact me privately. I would be happy to work with you, and the KOKUA Program (Office for Students with Disabilities) to ensure reasonable accommodations in my course. KOKUA can be reached at (808) 956-7511 or (808) 956-7612 (voice/text) in room 013 of the Queen Lili'uokalani Center for Student Services

TAs will conduct themselves as professional educators. This includes making all reasonable effort to return properly graded lab reports and quizzes to students by the end of the next lab period, responding to student emails within 2 business days (M-F excluding holidays), provide reasonably updated class grades to students upon request (as a percent or raw scores, not as a letter grade) within that time frame, and keep reasonably scheduled office hours (1h per assigned section per week) during the business week. Contact hours outside of these office hour(s) shall be at the TAs' discretion based on availability as part-time employees.

Acceptable Resources: Students may use any note provided during the lecture or lab, any organic chemistry textbook (need to cite), or any primary literature sources (need to cite), such as journal articles and peer-reviewed books. Use of or providing other students with any non-approved resource is considered a violation of the student of conduct.

COVID disclaimer: The syllabus and course policies may be modified in the event of any unforeseen shutdowns or health and safety issues related to COVID that impact the class. These modifications include but are not limited to changing due dates, grade distribution, assigning new on-line assignments, converting in-person sections to on-line offerings, etc. Specific modifications may differ across sections as needed. Students shall be notified in writing and as far in advance of any such changes as is practical.

First Lab Meeting: In-person Labs will commence during the SECOND week of classes. All students must watch a video on lab safety and lab polices that will be posted to the Laulima prior to the start of the first in-person lab. That video will be posted during the first week of classes

Laboratory Schedule for CHEM 272L for Spring 2021

Please refer to the next page for details as to which part of the experiments will be conducted.

Week	Dates		M		T		W		R		F	
			A	B	A	B	A	B	A	B	A	B
1	11-Jan	15-Jan	Safety and Policies (online asynchronous) All students must watch a video on lab safety and lab polices that will be posted to the Laulima prior to the start of the first in-person lab. That video will be posted during the first week of classes when labs do not meet.									
2	18-Jan	22-Jan	HOLIDAY		MP/Cryst	No lab	MP/Cryst	No lab	MP/Cryst	No lab	MP/Cryst	No lab
3	25-Jan	29-Jan	MP/Cryst	No lab	No lab	MP/Cryst	No lab	MP/Cryst	No Lab	MP/Cryst	No Lab	MP/Cryst
4	1-Feb	5-Feb	No lab	MP/Cryst	Distillation	No lab	Distillation	No lab	Distillation	No Lab	Distillation	No lab
5	8-Feb	12-Feb	Distillation	No lab	No Lab	Distillation	No lab	Distillation	No lab	Distillation	No lab	Distillation
6	15-Feb	19-Feb	HOLIDAY		Chrom/TLC	No Lab	Chrom/TLC	No Lab	Chrom/TLC	No Lab	Chrom/TLC	No Lab
7	22-Feb	26-Feb	No Lab	Distillation	No lab	Chrom/TLC	No lab	Chrom/TLC	No lab	Chrom/TLC	No lab	Chrom/TLC
8	29-Feb	5-Mar	Chrom/TLC	No Lab	Extraction	No Lab	Extraction	No Lab	Extraction	No Lab	Extraction	No Lab
9	8-Mar	12-Mar	No lab	Chrom/TLC	No lab	Extraction	No lab	Extraction	No lab	Extraction	No lab	Extraction
10	15-Mar	19-Mar	No labs	No labs	No labs	No labs	No labs	No labs	No labs	No labs	No labs	No labs
11	22-Mar	26-Mar	Extraction	No Lab	Oxidation	No Lab	Oxidation	No Lab	Oxidation	No Lab	HOLIDAY	
12	29-Mar	2-Apr	No lab	Extraction	No lab	Oxidation	No lab	Oxidation	No lab	Oxidation	HOLIDAY	
13	5-Apr	9-Apr	Oxidation	No Lab	Brom/Elimin ation	No Lab	Brom/Elimin ation	No Lab	Brom/Elimin ation	No Lab	Oxidation	No Lab
14	12-Apr	16-Apr	No lab	Oxidation	No lab	Brom/Elimin ation	No lab	Brom/Elimin ation	No lab	Brom/Elimin ation	No lab	Oxidation
15	19-Apr	23-Apr	Brom/Elimin ation	No Lab							Brom/Elimin ation	No Lab
16	26-Apr	30-Apr	No lab	Brom/Elimin ation							No lab	Brom/Elimin ation
17	3-May	7-May										

* = Non-instructional Days

Note: Order of labs in this schedule does not necessarily match the order in which the labs are printed in the manual.

The Safety Lecture will be an on-line video, supplemented with in-person instruction during the first in-person experiment. Reading: i..xxxiii in lab manual

MP/Cryst lab: Students will:

- Read laboratories 1 and 3, watch the experimental videos posted online.
- Perform from experiment 1 the “**MELTING POINTS OF PURE UREA**” (but not pure cinnamic acid and the “**MELTING POINTS OF MIXTURES OF UREA AND CINNAMIC ACID**”,
- Perform from experiment 3 the “**SMALL-SCALE RECRYSTALLIZATIONS OF *p*-METHOXYBENZOIC ACID**” (but not ANTHRACENE) and the fluorenone/sulanilamide mixture “**PURIFICATION BY RECRYSTALLIZATION OF A SLIGHTLY CONTAMINATED SAMPLE**” in that order.
- Skip the melting point of pure cinnamic acid (start bottom of pg 5), the melting point of the unknown (bottom of pg 6), and” **RECRYSTALLIZATION OF ANTHRACENE**” (pg 32) and the “purification and identification of an unknown solid.” Read experiments 1 and 3.
- Submit a single lab report per student describing the combined experiments.

Distillation lab: Students will:

- Read laboratory 2, watch the experimental videos posted online.
- Perform from experiment 2 the “**SIMPLE DISTILLATION**” and the “**FRACTIONAL DISTILLATION**”
- Skip the “**UNKNOWN DISTILLATION**” (PG 22).
- Submit a single lab report per student

TLC/Chromatography lab: Students will:

- Read laboratories 4 and 7, watch the experimental videos posted online.
- Perform from experiment 4 all of the “**EXPERIMENT 1: ANALGESICS**” including the “**UNKNOWN ANALGESIC IDENTIFICATION**”
- Skip from experiment 4 all of “**EXPERIMENT 2: PLANT PIGMENTS**” (pg 48-50)
- Perform all of experiment 7 to separate ferrocene from acetylferrocene. (we will not provide fluorene/fluorenone)
- Collect IR and melting points of the separated compounds
- Submit a single lab report per student describing the combined experiment.

Extractions: Students will:

- Read laboratories 6, and watch the experimental videos posted online.
- Perform from experiment 6 “**PART 1: SEPARATION OF TWO ORGANIC COMPOUNDS**”
- Skip from experiment 6 “**PART 2: EXTRACTION OF CAFFEINE FROM COLA SYRUP**” (pg 78-79)
- Submit a single lab report per student

Oxidations: Students will perform these experiments as written. Read laboratory 9.

Electrophilic Additions& E2 Eliminations: Students will perform these experiments as written. Read laboratory 10.

Skip: We will not perform the Laboratory 8 (SN2) or 11 (hydrogenation)