

CHE 276 Organic Chemistry Lab I

Instructor: Professor Yan-Yeung Luk email: yluk@syr.edu phone: 443-7440

Office Hours: Mon & Tue 10-12 AM Room CST 3-048

Teaching Assistants: Campana, Maria [macampan@syr.edu]; Dolan, Martin [madolan@syr.edu]; Dungan, Otto [odungan@syr.edu]; Gosavi, Pallavi [pmgosavi@syr.edu]; Joshi, Bhaskar [bdjoshi@syr.edu]; Russo, Chris [crusso@syr.edu]; Saez, Christopher [cdsaez@syr.edu]; Sherwood, Craig [cmsher01@syr.edu]; Takacs, Mickey [mtakacs@syr.edu];

Graders: Blanden, Melanie [mjdecker@syr.edu]; Dunston, Tiffany [ttunsto@syr.edu]; Webb, Cody [ccwebbjr@syr.edu]; Wu, Yue [ywu89@syr.edu];

Office: 217 LSC; TAs' office hours are listed on [the last page](#).

WebPage: <https://blackboard.syr.edu/>

Lecture: M001 **Wednesday 3:45 pm - 4:40 pm** **Grant Auditorium**

Lab Sections:
at 303 LSB

M010	Thur	12:30 pm - 3:20 pm	M004	Mon	6:45 pm - 9:35 pm
M011	Thur	7:00 pm - 9:50 pm	M009	Tu	9:00 am - 11:50 am
M012	Fri	11:00 pm - 1:50 pm	M005	Tu	12:30 pm - 3:20 pm
M013	Fri	3:00 pm - 5:50 pm	M006	Tu	7:00 pm - 9:50 pm
M002	Mon	11:00 am - 1:50 pm	M007	Wed	12:45 pm - 3:35 pm
M003	Mon	3:00 pm - 5:50 pm	M008	Wed	6:45 pm - 9:35 pm

All lab sections meet in **303 Life Science Building**. Section numbers are not in exact chronological order, and are listed correctly in the above table. Laboratories will begin and end promptly at the times stated. If you arrive late you will miss important information, lose points, and compromise your ability to complete the experiment. No extra time is feasible for late arrivals.

Prerequisites: CHE 117/CHE 139 - General Chemistry Laboratory (a passing grade is required)
CHE 275 - Organic Chemistry I Lecture (may be taken concurrently).

Objectives: This course is designed to introduce some of the standard laboratory techniques and some important classes of reactions in organic chemistry. Students will learn to conduct organic chemistry experiments, and analyze and report the results in written format. The materials are designed to be self-sufficient, but knowledge from CHE275 will be helpful.

Text Books:

1. Student Lab Notebook, Hayden McNeil, (required, must include carbon copy)
2. (MHS) J. R. Mohrig, C. N. Hammond, P. F. Schatz, "Techniques in Organic Chemistry", 3rd or 4th edition (required)

Attendance: You are expected to attend all lecture and laboratory sessions. If you choose not to come to lecture, you are still responsible for the material presented. You may only attend the lab section for which you are registered. Illness or other excuse for a missed lab will only be accepted with written verification. For absences due to a religious observance, you are required to notify the instructor before the end of the second week of classes. An online notification process is available through MySlice.

Makeup Labs There is no specific dates set for makeup labs. However, with permission by Dr. Luk via email communications, students can do a makeup lab *within the same lab week* (from Thur to Wed). If makeup within the same lab week is not possible, a grade of zero will be given for the missed Lab Report; however, the lowest of 10 Lab Report grades is dropped at the time of calculation of final grades.

Scores: Final grades will be based on weighing the following scores to 100%:

9 out of 10 Lab Reports	TBD pts
Midterm.....	TBD pts
Final Exam	TBD pts
Laboratory Performance/Checkout.....	TBD pts

Weighing % Your total % = 50*(you total report scores /TPS) + 45*(you total Midterm&Final)/TPS+ 5*(your performance/TPS) TPS : Total Possible scores

Grade Scale A (>90%); A- (85-89.9%); B+ (80-84.9%); B (75-79.9%); B- (70-74.9%); C+ (65-69.9%); C (60-64.9%); C- (50-59.9%); D (35-49.9%); F (<35%)

Laboratory Performance: This portion of the grade reflects how you function in the lab. Are you prepared? Do you know what you're doing? Can you execute techniques properly? Do you work safely? Do you help keep the lab clean? Timeliness and courtesy count also.

Lab Quizzes: There will be a lab quiz before each lab sections. The quiz will be included to your lab report by your TA. The quiz materials will be discussed in the lab lecture on Wednesday.

Lab Reports: Students must hand in typed reports by filling in a template of Lab report, which will be available for download from the course webpage on blackboard. The due dates for the reports are

LAB reports 1&2 hand in together on week Oct 1-7
 LAB report 3 hand in on week Oct 8-14
 LAB reports 4&5 hand in together on week Oct 22-28
 LAB reports 6&7 hand in together on week Nov 5-11
 LAB reports 8&9 hand in together on week Nov 19-20
 LAB report 10 hand in on week Dec 3-9

Specific Due Dates for each section are listed in the table below.

	Sec 10	Sec 11	Sec 12	Sec 13	Sec 2	Sec 3	Sec 4	Sec 9	Sec 5	Sec 6	Sec 7	Sec 8
Lab 1&2	Oct. 1 st	Oct. 1 st	Oct. 2 nd	Oct. 2 nd	Oct. 5 th	Oct. 5 th	Oct. 5 th	Oct. 5 th	Oct. 6 th	Oct. 6 th	Oct. 7 th	Oct. 7 th
Lab 3	Oct. 8 th	Oct. 8 th	Oct. 9 th	Oct. 9 th	Oct. 12 th	Oct. 12 th	Oct. 12 th	Oct. 12 th	Oct. 13 th	Oct. 13 th	Oct. 14 th	Oct. 14 th
Lab 4&5	Oct. 22 nd	Oct. 22 nd	Oct. 23 rd	Oct. 23 rd	Oct. 26 th	Oct. 26 th	Oct. 26 th	Oct. 26 th	Oct. 27 th	Oct. 27 th	Oct. 28 th	Oct. 28 th
Lab 6&7	Nov. 5 th	Nov. 5 th	Nov. 6 th	Nov. 6 th	Nov. 9 th	Nov. 9 th	Nov. 9 th	Nov. 9 th	Nov. 10 th	Nov. 10 th	Nov. 11 th	Nov. 11 th
Lab 8&9	Nov. 19 th	Nov. 19 th	Nov. 20 th	Nov. 20 th	Nov. 30 th	Nov. 30 th	Nov. 30 th	Nov. 30 th	Dec. 1 st	Dec. 1 st	Dec. 2 nd	Dec. 2 nd
Lab 10	Dec. 3 rd	Dec. 3 rd	Dec. 4 th	Dec. 4 th	Dec. 7 th	Dec. 7 th	Dec. 7 th	Dec. 7 th	Dec. 8 th	Dec. 8 th	Dec. 9 th	Dec. 9 th

Graders: Blanden, Melanie [mjdecker@syr.edu]; Dunston, Tiffany [tdunsto@syr.edu]; Webb, Cody [ccwebbjr@syr.edu]; Wu, Yue [ywu89@syr.edu];

Reports must be done individually, and must reflect the work of the student.

Late reports must be submitted to Prof. Luk's mailbox in Chem Office, CST1-014 and will be downgraded at a rate of 10 points/day (or part day thereof, weekends included). Reports will not be accepted more than 3 days after the due date. **Any report submitted to Prof. Luk's mailbox must be initialed and dated by chemistry department office staff.** Lab reports are not accepted by email.

Exams: Midterm: Oct. 28 3:45-4:40 PM; Place Grant Auditorium.
Final Exam: Dec. 9; 3:45-4:40 PM; Place: TBA.

Reasonable accommodation will be made for students with disabilities. If you require such an accommodation, please let me know as soon as possible, but no later than 1 week prior to the exam. After that time, I will consider existing exam conditions to be satisfactory.

Regrades: **For reports to be regraded, students should first contact the grader within 1 week after the initial date of return.** The grader's name will be on the lab report cover page, their emails are on the first page of the syllabus. Items for regrade must be written in ink, and have the point(s) in question clearly identified on the front page. This information will be used if further inquiry is needed for Dr. Luk.

Academic Integrity: Students enrolled in the course are expected to exhibit honesty in all academic endeavors. Cheating in any form will not be tolerated. Any incidence of academic dishonesty will result in both formal notification of the College of Arts & Sciences and a failing grade (F) in the course. See <http://academicintegrity.syr.edu> for the complete Syracuse University Academic Integrity Policy. More specific guidelines on academic integrity issues as they pertain to this class can be found

on the course website and will be distributed in class. Students will be asked to confirm their understanding of and willingness to abide by these policies.

**Preparation
for Lab:**

Your success in this course will depend largely on your pre-lab preparation. Read the text, attend the lab lecture, think through each step of the experiment before you arrive. Be prepared to work safely and efficiently. A prelab write-up is required for each experiment. Your TA will verify that the prelab is complete at the beginning of each lab session. You will not be able to proceed with the experiment if your prelab is incomplete. Late prelabs will not be graded.

Safety:

You are expected to read chapters 1 and 2 in your text during the first week of the semester. Before you may begin the first experiment, you will be asked to sign a safety agreement verifying your understanding of lab safety, and your willingness to follow safe laboratory practices.

1. **Safety glasses must be worn at all times!**
2. You may not wear open-toed shoes. This includes sandals, flip flops, and any shoe with perforations.
3. Dress appropriately. Legs must be covered. Shorts, skirts and short dresses are not acceptable. Bare midriffs are not allowed. If you do not wear suitable attire, you will not be allowed to enter the lab.
4. Long hair must be tied back.
5. Students are allowed in the labs only during the assigned times and with proper supervision. Do not enter the lab if your TA, instructor or lab coordinator is not present!
6. Eating, drinking, and smoking are prohibited in the laboratory.
7. No open flames are permitted in the laboratory.
8. You may not use cell phones or other personal electronic devices in the lab. Cell phones, MP3 players, blackberries, etc. must be turned off.
9. Solvents, solids, and sharps must be disposed of properly. If you are not sure how to dispose of something, ask your TA. Nothing goes down the sink! No glass waste in the trash.
10. Many organic chemicals pose potential hazards. Though toxicity & reactivity of compounds vary tremendously, always treat every compound with respect. Wear gloves when using caustic substances.
11. Know the location of exits, fire extinguishers, fire blankets, eye wash stations, and safety showers.
12. Come to lab prepared.
13. No pranks or roughhousing allowed.
14. Wash your hands before you leave the lab each day.
15. Report any injury to your TA or instructor immediately.

Clean Up:

Students are responsible for seeing that the lab is left clean. At the end of each day, please return shared equipment to its proper location, and clean up your work area. In addition, your TA will prepare a schedule that designates students

for a general clean up at the end of every lab period. Your participation in lab clean-up is required, and is a component of your laboratory performance score.

Equipment Policy:

You are expected to maintain all glassware and equipment in good working order. At the start of the semester, you will be assigned a lab drawer and work area. It is your responsibility to see that these areas are kept clean, and that all items are cleaned and returned to your drawer at the end of each laboratory session.

TAs for the section:

Section #	Day	Time	TAs for the section.	
M010	Thur	12:30 pm - 3:20 pm	Russo, Chris	Dolan, Martin
M011	Thur	7:00 pm - 9:50 pm	Sherwood, Craig	Russo, Chris
M012	Fri	11:00 am - 1:50 pm	Saez, Christopher	Takacs, Mickey
M013	Fri	3:00 pm - 5:50 pm	Dungan, Otto	Campana, Maria
M002	Mon	11:00 am - 1:50 pm	Saez, Christopher	Campana, Maria
M003	Mon	3:00 pm - 5:50 pm	Dungan, Otto	Dolan, Martin
M004	Mon	6:45 pm - 9:35 pm	Takacs, Mickey	Joshi, Bhaskar
M009	Tues	9:00 am - 11:50 am	Saez, Christopher	Campana, Maria
M005	Tues	12:30 pm - 3:20 pm	Russo, Chris	Dolan, Martin
M006	Tues	7:00 pm - 9:50 pm	Sherwood, Craig	Joshi, Bhaskar
M007	Wed	12:45 pm - 3:35 pm	Gosavi, Pallav	Takacs, Mickey
M008	Wed	6:45 pm - 9:35 pm	Gosavi, Pallav	Joshi, Bhaskar

You are encouraged to contact your TA with questions by email.

Course Schedule

The Checkin week starts from 9-11 (Thur) to 9-17 (Wed);

The lecture is on every Wed. 3:45 pm - 4:40 pm at Grant Auditorium.

Each Lab-week is defined from Thursday to Wednesday of the next week.

<u>Lab-week</u> Thur to wed	<u>Exp #:</u>	<u>Experiment:</u>	<u>Readings</u> <u>(MHS)*</u>
Aug.27-Sept 2		<i>No labs. Lecture on Wed (9-2-15), Safety, organization</i>	Ch 1,3,28
Sept. 3-9		<i>No Labs, Lecture on 9-9-15, Scifinder and magician</i>	Ch 1,3,28
Sept. 10-16		Check-in (LSC 303), Safety, orientation, contracts signing.	Ch 1,3,28
Sept. 17-23	1	Thin layer chromatography	Ch 18
Sept. 24-30	2	Column chromatography	Ch 19, 25
Oct. 1-7	3	Recrystallization & Melting Point	Ch 14, 15
Oct. 8-14	4	Extraction I	Ch 10
Oct. 15-21	5	Extraction II	Ch 10
Oct. 22-28	6	Distillation/Sample preparation for self-assembly	Ch 12
Oct. 28		Midterm Quiz 3:45-4:40 PM	
Oct. 29-Nov.4	7	Test Unknown / Self-assembly	
Nov. 5-11	8	Dehydration & Gas Chromatography	Ch 20
Nov. 12-18	9	Alkyne Synthesis	Ch 27
Nov. 19-20 (Thur&Fri)	10	Nucleophilic Substitution /Checkout	Ch 27
Nov. 22-29		Thanksgiving week. No lab., No lecture	
Nov.30-Dec. 2 (Mon-Wed)	10	Nucleophilic Substitution /Checkout	Ch27
Dec. 9		Final Exam at (place to be announced).	
Dec. 3-9		<i>**Hand in last lab report; place to be announced. Evening lab sections can hand in the next day.</i>	

* "Laboratory Techniques in Organic Chemistry" by Mohrig, Hammond, Schatz, 4th edition.

Note: the reference book "Laboratory Techniques in Organic Chemistry" by Mohrig, Hammond, Schatz, 4th edition (3rd edition acceptable also) contains detail explanation for the experimental methods and techniques for all the LABS in this course (Org chem lab I) and in CHE326 (Org Chem Lab II).

Schedule of Experiments, Lectures and Final Exam.

September					
Thursday	Friday		Monday	Tuesday	Wednesday
			31 (Aug)	1	2 Lecture*
3 <i>No Labs</i>	4 <i>No Labs</i>		7 <i>Labor day</i>	8 <i>No Labs</i>	9 Lecture*
10 check-in	11 check-in		14 check-in	15 check-in	16 check-in
17 TLC	18 TLC		21 TLC	22 TLC	23 TLC
24 Column	25 Column		28 Column	29 Column	30 Column

October					
Thursday	Friday		Monday	Tuesday	Wednesday
1 Recry/mp	2 Recry/mp		5 Recry/mp	6 Recry/mp	7 Recry/mp
8 Extraction I	9 Extraction I		12 Extraction I	13 Extraction I	14 Extraction I
15 Extraction II	16 Extraction II		19 Extraction II	20 Extraction II	21 Extraction II
22 Distill/Sample	23 Distill/Sample		26 Distill/Sample	27 Distill/Sample	28** Distill/Sample
29 Unknown/Assembly	30 Unknown/Assembly		2 (Nov) Unknown/Assembly	3 (Nov) Unknown/Assembly	4 (Nov) Unknown/Assembly

November					
Thursday	Friday		Monday	Tuesday	Wednesday
5 Dehydration/gas Chrom	6 Dehydration/gas Chrom		9 Dehydration/gas Chrom	10 Dehydration/gas Chrom	11 Dehydration/gas Chrom
12 <i>Alkyne syn</i>	13 <i>Alkyne syn</i>		16 <i>Alkyne syn</i>	17 <i>Alkyne syn</i>	18 <i>Alkyne syn</i>
19 <i>Nuc Sub/Checkout</i>	20 <i>Nuc Sub/Checkout</i>		23 Thanksgiving	24 Thanksgiving	25 Thanksgiving
26 Thanksgiving	27 Thanksgiving		30 <i>Nuc Sub/Checkout</i>	1 (Dec) <i>Nuc Sub/Checkout</i>	2 (Dec) <i>Nuc Sub/Checkout</i>

December					
Thursday	Friday		Monday	Tuesday	Wednesday
3	4		7	8	9** Final
10	11 <i>Last day of class</i>		14	15	16
17	18		21	22	23

*Lecture on every Wednesday throughout the semester unless noted otherwise (midterm and final).

**Midterm on Oct. 28 (Wed); 3:45-4:40 PM Grant Auditorium; Final on Dec. 9th, place to be announced.

Office Hours of TAs, and Dr. Luk*

Office hours for CHE276 will begin on Thursday September 10th and continue through December. TAs will hold office hours in room 217 LSC; Dr. Luk will hold office hours in 3-048 CST.

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9-9:30	Saez, Chris		Saez, Chris			-----
9:30-10:00	Saez, Chris		Saez, Chris			
10-10:30	Dr. Luk	Dolan, Martin	Gosavi, Pallavi		Russo, Chris	
10:30-11	Dr. Luk	Dolan, Martin	Gosavi, Pallavi		Russo, Chris	
11-11:30	Dr. Luk	Dolan, Martin	Gosavi, Pallavi		Russo, Chris	Campana, Maria
11:30-12	Dr. Luk	Dolan, Martin	Gosavi, Pallavi		Russo, Chris	Campana, Maria
12-12:30						Campana, Maria
12:30-1						Campana, Maria
1-1:30						
1:30-2						
2-2:30	Takacs, Mickey	Joshi, Bhaskar			Sherwood, Craig	
2:30-3	Takacs, Mickey	Joshi, Bhaskar			Sherwood, Craig	
3-3:30	Takacs, Mickey	Dungan, Otto	Joshi, Bhaskar		Sherwood, Craig	
3:30-4	Takacs, Mickey	Dungan, Otto	Joshi, Bhaskar	Grader meeting	Sherwood, Craig	
4-4:30	Gosavi, Pallavi	Seminar	Dungan, Otto	Grader meeting	Sherwood, Craig	
4:30-5	Gosavi, Pallavi	Seminar	Dungan, Otto	TA meeting	Sherwood, Craig	
5-5:30	Gosavi, Pallavi	Dungan, Otto	Dungan, Otto	TA meeting	Sherwood, Craig	-----
5:30-6	Gosavi, Pallavi	Dungan, Otto	Dungan, Otto		Sherwood, Craig	-----

* and by appointment