

Chemistry Laboratory 2125 Fall 2018

INSTRUCTOR: Dr. Hemant Sharma; Office: PSCI 411D, hsharma@utep.edu
Office Hours: M, W 9:00 –10:00 and by appointment (747-7565)
LABORATORY: M 11:30-2:20 (**12018**) CCSB 1.0506; M 11:30-2:20 (**13172**)
CCSB 1.0508; T 9:00-11:50 (**17622**) CCSB 1.0506; T 9:00- 11:50
PM (**17699**) CCSB 1.0508.
TEXT: Experimental Organic Chemistry, (A Small -Scale Approach) By
Charles F. Wilcox and Mary F. Wilcox
(Tip: this book is often available used)

The basic safety rule in this course is that **SAFETY GOGGLES MUST BE WORN IN THE LAB AT ALL TIMES**

If you do not have Goggles, or refuse to wear them, then you will not be allowed to participate in the course activities, or remain in the lab.

Course Objectives: The Objectives of this course are that you:

- Become familiar with basic organic chemistry methods, reactions and techniques
- Learn how to comply with laboratory safety polices
- Maintain a proper laboratory notebook
- Learn how to follow proper chemical waste disposal procedures

Your semester grading will be done as follows

Your grade will consist of:

1. 1/3 attendance. You must participate fully in the lab, and not come and go as you please!
2. 1/3 laboratory Quizzes. Quizzes will open the day before your lab day (one day).
3. 1/3 laboratory Reports. Reports will open the day after your lab day and will close the day before your next lab day (six days).

A > 89.5 %, B > 79.5 %, C > 69.5 %, D > 59.5

Weekly quizzes and lab reports are on-line in the moodle!

Students can access their course moodle through <http://organic.utep.edu/moodle>. Students must enter the moodle the first time with complete UTEP email (including @miners.utep.edu) and student ID as password. Once you enter the moodle, you must change your password.

Pre-lab quizzes will be available to each section one day before their respective lab and will close at midnight before your lab. Lab report links will open the night of each corresponding lab and close the following week. For example, the labs on Tuesday,

September 10, will have access to their first pre-lab quizzes on Monday, September 9, only, etc. No grades will show until all labs have complete the week's quizzes. Failure to submit quizzes and reports at the allotted time will result in the loss of grade for that specific lab experiment.

Required materials (You will be turned away and earn a zero in attendance for missing safety attire!):

1. The book
2. Goggles (not safety glasses) A seal should form around your eyes.
3. Pants (not shorts) Your legs must be covered.
4. Shoes (not sandals) Your feet must be completely covered.
5. A lab coat

All students are expected to have read the information about each lab in the Wilcox/Wilcox text book in advance, so that they are fully prepared for the weekly quiz, and for the laboratory activity of that day, see detailed curriculum below. Students should also know the structures of the chemicals they are working with. The structures may be found in the students' organic chemistry text book, in chemical catalogs, or on the internet (Google, Wikipedia, etc.)

Students will form groups of two to conduct the lab experiments. Each group will maintain a laboratory notebook in which each lab will be described.

Note that hoods and benches are labeled, and your group of two will always work in the same hood/bench. ALL chemical activities are done in the hood. The bench is for maintaining your notebook and supplies for your activity. Please make sure that labeled equipment remains in the hood or on the bench that matches that labeling.

If your class needs to keep chemical intermediates from one week to the next, each section has been provided with a locker for storage:

If you have a morning lab, the locker will be labeled with your day (e. g.: "Monday") and "AM". If you have the early afternoon lab, you will be in the "PM1" locker, and if you have the later afternoon lab, you will be in the "PM2" locker.

Attendance to the pre-laboratory lecture is mandatory. If you skip more than two labs, you will not get the passing grade.

GOGGLES MUST BE WORN IN THE LAB AT ALL TIMES.

You are required to follow all the safety rules and procedures in the laboratory.

Safety: Since Safety is so important, it will be among the lead topics of your syllabus:

- 1) Goggles: You are required to follow all the safety rules and procedures in the laboratory. **GOGGLES MUST BE WORN IN THE LAB AT ALL TIMES**. As soon as you enter the lab, you should have your safety goggles on, regardless of whether any laboratory activity is underway. You cannot remove your safety goggles until you leave the lab. Students who refuse to comply with safety goggle rules will be asked to leave the lab, and in the event they refuse to leave, will be escorted out by University police.
- 2) Wear long pants (no skirts or shorts)
- 3) No hats
- 4) No food/drink items are allowed in a chemistry laboratory
- 5) Keep your work space clean!!!!
- 6) If there is a chemical spill, inform the TA immediately.
- 7) If you are injured (a cut, inhalation of toxic gases, acid burn on skin, etc.) inform your TA immediately. We are required to file reports of all injuries, no matter how minor, and also to offer you the option to seek medical aid.

- 8) Hot Glassware: Hot glassware looks the same as cold glassware. Use care when working with a reaction apparatus that is being heated or with the glassware that may be attached to or removed from the apparatus as hot glass cannot be distinguished from cold glass
- 9) Broken glassware. If glassware breaks in the lab, use extreme care in handling it. If you need assistance, ask your TA. Broken glassware should be placed in the broken glassware container.

Some important waste information:

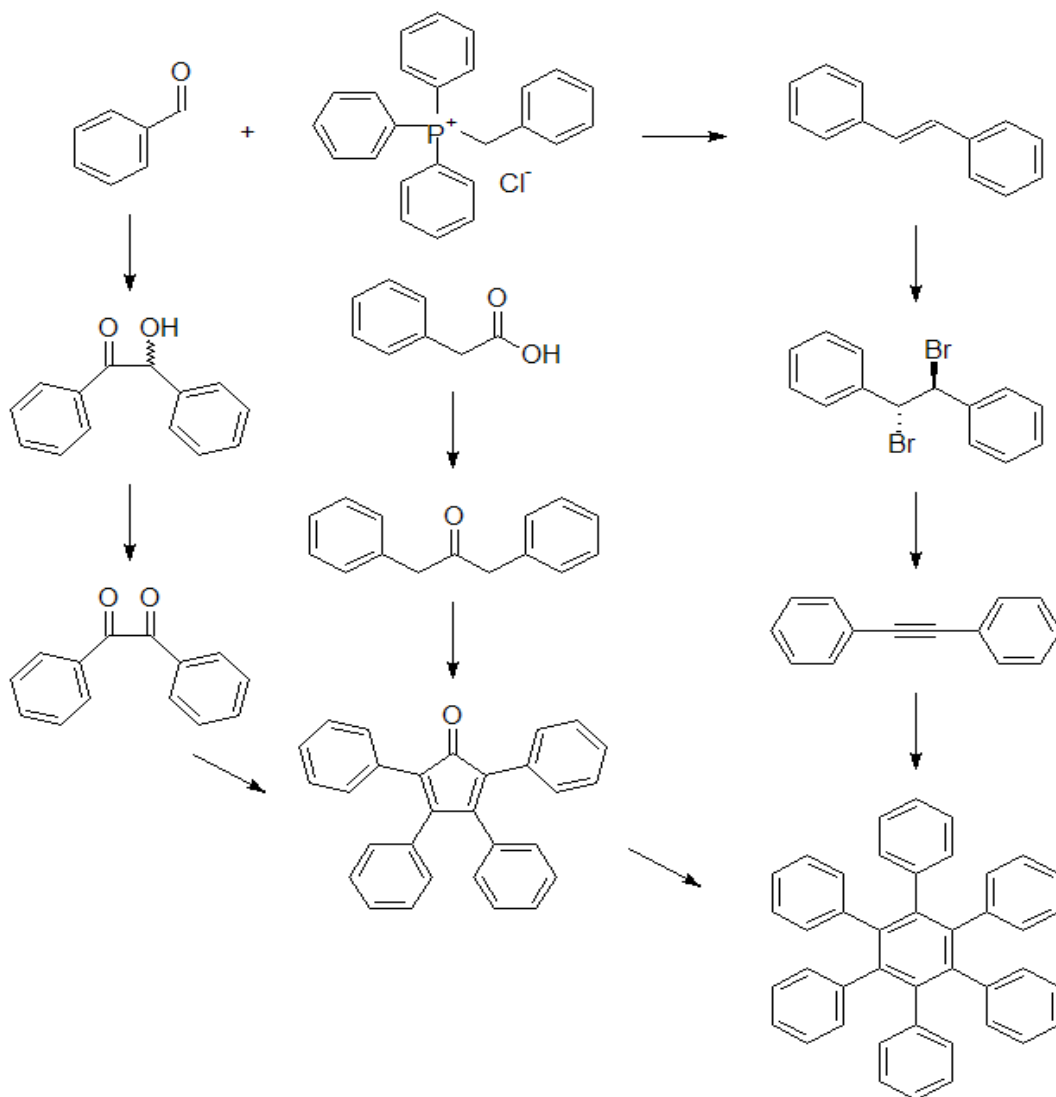
- None of the waste can go down the drain.
- Organic solvent waste, aqueous waste, solid waste, and glass waste is collected separately and placed into designated waste containers.
- You are not permitted to leave the lab for the day without properly disposing of chemical waste.

10) Injuries: All injuries must be reported to your TA.

The Material Safety Data Sheets (MSDS) for all of these substances are available on line on [Environmental Health & Safety web page](#) of the UTEP.

Dropping Policy: The last date to drop with automatic “W” is November 2, 2018. It is the student’s responsibility to officially withdraw from a course.

We shall work on multi-step organic synthesis. Convergent synthesis of hexaphenylbenzene, Chapter 41. This semester long exercise is meant to simulate a typical synthetic laboratory experience.



Week	Date (Note that our week begins on Tuesdays except for the last week!)	Activity
1	August 28-September 3	No TAs-No Labs
2	September 4-10	Laboratory Safety
3	September 11-17	Benzaldehyde page 75
4	September 18-24	Stilbene page 369
5	September 25-October 1	Stilbene continued
6	October 2-8	Stilbene Dibromide page 370

7	October 9-15	Diphenylacetylene page 370
8	October 16-22	Benzoin page 481-IR Review
9	October 23-29	Benzoin continued-NMR Review
10	October 30-November 5	Benzil page 482
11	November 6-12	Dibenzyl Ketone- Davis, R; Schultz, H.P. Journal Organic Chemistry 1962, volume 27, page 854
12	November 13-19	Tetraphenylcyclopentadienone page 400
13	November 20-25	Holiday-No Labs
14	November 26-December 1	Hexaphenylbenzene page 438
15	December 3-8	Holiday-No Labs