

Chemistry Laboratory 2125 Spring 2020

INSTRUCTOR: Dr. Hemant Sharma; Office: PSCI 411D, hsharma@utep.edu

Office Hours: M, W 9:00 –10:00 and by appointment (747-7565)

LABORATORY: T 9:00-11:50 (**22021**) CCSB 1.0506; T 9:00-11:50 (**22060**) CCSB 1.0508; W 11:30-2:20 (**22458**) CCSB 1.0506; W 11:30-2:20 (**26694**) CCSB 1.0508; R 9:00-11:50 (**23049**) CCSB 1.0506; F 8:30- 11:20 PM (**26695**) CCSB 1.0506; F 8:30- 11:20 PM (**25507**) CCSB 1.0508

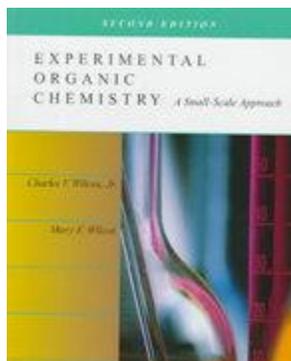
TEXT: Experimental Organic Chemistry, (A Small -Scale Approach) By Charles F. Wilcox and Mary F. Wilcox

(Tip: this book is often available used)

Organic Chemistry II Laboratory

Spring 2020

Text: Experimental Organic Chemistry A Small-Scale Approach, 2nd Edition, Wilcox & Wilcox.



Please note that the scale of each experiment may be changed.

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.

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, January 28, will have access to their first pre-lab quizzes on Monday, January 27, only, etc. No grades will show until all labs have completed 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.

Week	Date (Note that our week begins on Tuesdays and ends on Mondays!)	Activity
1	January 21-27	Laboratory Safety
2	January 28-February 3	Benzaldehyde page 75
3	February 4-10	Stilbene page 369
4	February 11-17	Stilbene continued
5	February 18-24	Stilbene Dibromide page 370
6	February 25-March 2	Diphenylacetylene page 370
7	March 3-9	Benzoin page 481-IR Review
8	March 10-23 (The Monday labs are meeting March 23!)	Benzoin continued-NMR Review
9	March 16-20	Your lab reports are due but no labs during Spring Break!
10	March 24-30	No labs because of the Friday holiday!
11	March 31- April 6	Benzil page 482
12	April 7-13	Your lab reports are due but no labs because of the Friday holiday!
13	April 14-20	Dibenzyl Ketone- Davis, R; Schultz, H.P. Journal Organic Chemistry 1962, volume 27, page 854
14	April 21-27	Tetraphenylcyclopentadienone page 400

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

What you should be learning:

1. Know the dangers of each laboratory including how to mitigate your risk.
2. Read and understand all the chapter and not just the experimental procedure.
3. Make sure that you can draw all structures and mechanisms for each lab.
4. Be able to apply a given mechanism to other reagents because we are not just cooks!
5. Understand which fundamental mechanism you are applying (Addition, Elimination or Substitution) including the stereochemical consequences.
6. Understand whether a reaction is an oxidation, reduction or not a net redox reaction.
7. Be able to calculate the yield of a reaction.
 1. structure to formula conversion,
 2. formula to molecular weight conversion,
 3. ml to grams via density and vice-versa,
 4. grams to moles,
 5. what is the limiting reagents,
 6. what is the stoichiometry of the reaction.
8. Understand why a particular procedure was followed.

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 %

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.

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.

Dropping Policy: **The last date to drop with automatic “W” is April 3, 2020.** It is the student’s responsibility to officially withdraw from a course.

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