Chemistry 2315
Organic I Chemistry Lab
Fall 2017

Instructor: Dr. Don Davies
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Location: TY 375
Time: Tues. 1:30- 4:20 p.m.
Office hours: MTWF 10:00 - 11:00 a.m.

Materials:

Chemistry 2315 lab Manual, Lloyd/Beishline (required)
Safety goggles (required)

Outcomes:

At the conclusion of this course you should have a basic understanding of the following:

- Determination of chemical hazards.
- Reaction set up, procedure, and yield calculations.
- Purification methods (recrystallization, distillation and extraction)
- Introduction to instrumentation (refractometer, polarimetry, GC, & IR spectroscopy.

Laboratory Description

Pre-Lab	55 points (5 points/each)
Data & Post Lab	220 points (20 points/each)
Lab final	50 points
Total	325 points

Pre-Lab

Each experiment has a pre-lab exercise designed to familiarize students with procedure details, theoretical background and safety information. To maximize the meaningfulness of each experiment, the pre-lab must be completed before the beginning of each lab. Therefore, pre-labs are due at the beginning of each lab period and are **not accepted late**. If you choose to work in groups in completing the pre-lab, each student in the group must have complete ownership of any answer they record and all answers should be in their own words. Never show your lab report to another student. In completing the toxicity and chemical description portion of the pre-lab I would highly recommend using www.acros.com .

Data and Post-Lab

The Data Sheet will contain all data collected along with necessary calculations. It should appear professional, void of any scribble. Show all of your work by **clearly performing unit conversions**. The post-lab contains additional inquiry into your overall comprehension of the lab performed.

Shown below is a schedule of experiments to be conducted this semester. **Notice the order of experiments does not always coincide with the order they are listed in the manual**. Each data and post-lab report is due at the end of the lab period of the day listed in the schedule below. **Late work will be subject to a 3-point deduction for each lab period after the due date.** If you must miss a lab, notify me as soon as possible. If the reason is acceptable and backed with evidence, you may make up the lab within one week of the scheduled lab.

Regular Schedule

Date	Experiment & Description	Due
9/5	Check in and introduction Begin Exp. 1: Crystallization and Melting Points	9/19
9/12	Finish Exp. 1	
9/19	Exp. 2: Identification of an Unknown Alkane / Alkene	9/26
9/26	Exp. 3: Free Radical Chlorination	10/3
10/3	Exp. 4: Optical Activity	10/10
10/10	Exp. 5: Prep. of Phenacetin via Williamson Ether Synthesis	10/24
10/17	Exp. 30: Separation of a Binary Mixture by Fractional Distillation	10/24
10/24	Exp. 6: Synthesis of 3,3-dimethylbutan-2-ol	10/31
10/31	Exp. 7: Dehydration of 3,3-dimethylbutan-2-ol	11/7
11/7	Exp. 8: ID of an unknown using IR spectroscopy	11/14
11/14	Exp. 10: Oxidation of Cyclohexanol	11/28
11/21	**No Lab –Thanksgiving Break**	
11/28	Exp. 9: Steam Distillation of Orange Oil / Check out	12/5
12/4-12/8	Lab Final in TY Testing Center	

Alternate Schedule

Date	Experiment & Description	Due
9/5	Check in and introduction Begin Exp. 1: Crystallization and Melting Points	9/19
9/12	Finish Exp. 1	
9/19	Exp. 2: Identification of an Unknown Alkane / Alkene	9/26
9/26	Exp. 4: Optical Activity	10/3
10/3	Exp. 3: Free Radical Chlorination	10/10
10/10	Exp. 5: Prep. of Phenacetin via Williamson Ether Synthesis	10/24
10/17	Exp. 30: Separation of a Binary Mixture by Fractional Distillation	10/24
10/24	Exp. 6: Synthesis of 3,3-dimethylbutan-2-ol	10/31
10/31	Exp. 7: Dehydration of 3,3-dimethylbutan-2-ol	11/7
11/7	Exp. 8: ID of an unknown using IR spectroscopy	11/14
11/14	Exp. 10: Oxidation of Cyclohexanol	11/28
11/21	**No Lab –Thanksgiving Break**	
11/28	Exp. 9: Steam Distillation of Orange Oil / Check out	12/5
12/4-12/8	Lab Final in TY Testing Center	

Lab Final

A written final exam will be administered at the end of the semester, week prior to finals week, in the Tracy Hall testing center. Review of pre-labs, post-labs, and any notes taken during experimentation would be valuable resources in preparing for this exam. Students will have 2 hours to complete this exam and may bring in a calculator but no notes will be allowed for use during the exam.

Minimum letter grade assignments are as follows:

A: 92 - 100%	B: 80 - 83.9%	C: 68 - 71.9%	D: 56 - 59.9%
A-: 88 - 91.9%	B-: 76 - 79.9%	C-: 64 - 67.9%	D-: 52 - 55.9%
B+: 84 - 87.9%	C+: 72 - 75.9%	D+: 60 - 63.9%	E: 0 - 51.9%

Safety

Preparedness

Come to lab properly dressed with safety goggles, closed shoes, long hair pulled back, no loose clothing. Long pants are encouraged. Nylon and polyester clothing is not advised since organic solvents tend to dissolve these materials. Come to lab knowing safety hazards associated with each chemical used (pre-lab). Having a basic understanding of each experiment beforehand will enhance the meaning of the lab for you and also will help you complete each lab in a timely manner, and acquire the necessary data.

Awareness

Be alert at all times. You may listen to music but any form of headphone or ear bud will not be allowed. Turn off your cell phones and keep them in your backpacks so they will not be a distraction.

Cleanliness

Cleanliness is essential to laboratory safety. Correctly clean up any spills immediately, especially in public work areas such as the reagent bench, sinks and hoods. Never sit on lab bench tops. Failure to clean work area before leaving will also result in a 5point deduction from lab score. Thoroughly wash hands before leaving lab.

General Information

Fees for this course are used to defray the cost of chemicals and other expendable laboratory materials, as well as for the purchase, maintenance and repair of laboratory equipment.

To help minimize lab fees, students should (are expected to) exercise careful use of chemicals, glassware, and laboratory equipment.