CHEM 2462 Organic Chemistry Laboratory
Syllabus for Spring Quarter 2015

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Text: Organic Chemistry Lab, CHEM 2461, 2462, 2463 by Joseph Hornback

Objectives. You will perform a series of well-planned experiments to practice important organic chemistry laboratory techniques and to gain an appreciation for the rewards and challenges associated with hands-on experimental work.

General. Lab is scheduled 2:00 – 5:50 PM on MTWR or 6:00 – 9:30 PM on MT. Each lab session begins with an introduction to the experiment to be done that day so be on time. Attendance will be taken.

The schedule of experiments is on the last page of this syllabus. Read the assigned pages in the lab manual or online, complete the BYB (Before You Begin) assignments, and prepare your lab notebook before coming to the lab. With this advance preparation and good time management, you will be able to complete the lab work in the allotted time. Clean your glassware before leaving the lab.

Lab Notebook. You are required to have a bound, 10 1/8 x 7 7/8, quadrille-ruled lab notebook. This is available in the bookstore (item # 000193799) for $4. **The instructions for setting up and maintaining the notebook are available on Canvas.**

BYB Assignments. The BYB assignments are specified in the schedule. These assignments must be completed in the laboratory notebook. Your TA will verify that the BYB assignment is completed and correct before you can begin work in the lab each week.
For experiments with procedures posted on Canvas, you must bring your laptop or a hard copy of the procedure to the lab. Students who do not have the procedure will lose BYB points (10).

Reports. Read **Appendix III, pp. 383 – 387** in the lab text.

We will use a slightly modified version of the description in the lab text. The report for each experiment must be typewritten and all structures must be drawn using a structure drawing programs ChemSketch or MarvinSketch. The report should include: Title of the Experiment, Your Name and Date, Introduction (statement of the problem and any applicable chemical equations), Observations, Data, Calculations, Results, Discussion, Conclusions, and Exercises (the answers to Exercises assigned in the syllabus). Excluding the data, calculations, and graphs, the report should be a maximum of two pages. The Discussion section can be considerably briefer than the sample one in the lab text.

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Report due dates are provided in the schedule on page 3 of this syllabus. Submit an electronic copy of the report on Canvas before coming to lab on the report due date. Then submit a paper copy of the report to your TA at your lab start time (2 PM or 6 PM) on the due date. The affirmation below, your signature, and the date should appear on the top of page 1 of every report.

I have submitted a copy of this report on Canvas. _____
Signature Date

Late reports are penalized 30%.
Reports more than two periods late will not be accepted.
Reports which have been plagiarized will receive a grade of zero.

Products. The product should be turned in for the experiments specified in the schedule. Your TA will specify the product check procedure.

Grading. Your grade is based on a total of 1070 points, distributed as follows:

Task	**Point Value**	**Points**
Before You Begin assignments	10 per exp	80
Products	10 per sample	70
Mechanisms	10 per exp	70
Lab reports	75 per exp	750
Lab notebook	100	100

Graded Document Retention. All graded materials will be returned. Graded materials that are still in the TA's possession on the last day off classes of Fall Quarter 2015 will be recycled.

Housekeeping. The labs are routinely inspected. Points (10) will be deducted from all students in the section for each instance where the lab housekeeping is unacceptable or bottles are left uncapped.

Cell phones and Laptops. Cell phones can be used in the lab 1) for calculations and 2) to take pictures used in lab reports. All texting/conversations on cell phones should be done in the hallway. Laptops can be used in the lab 1) to prepare a lab report and 2) to communicate with TA's on lab or lecture questions. If use of a cell phone or laptop creates a distraction, it is the TA's responsibility to address and correct the problem.

Safety. Read **pp. 11-20** in the lab text.
Accidents can happen in any laboratory, even in laboratories staffed with highly experienced scientists. The potential for an accident in our laboratory is minimized by 1) advance planning, 2) careful attention to the details of your own work, and 3) an awareness of what other students are doing around you. If you have any questions, ask. That is what we are here for!

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Lab Safety Rules (in effect at all times):

1. No students are allowed in the lab unless the TA is present.
2. Only students assigned to that lab section are allowed in the lab.
3. After the TA prelab lecture, safety glasses must be worn at all times.
4. Protect your skin with proper attire. Wear 1) the gloves provided, 2) a sleeved shirt to protect your arms, and 3) long pants and closed-toed shoes.
   You will not be allowed in the lab wearing shorts or open-toed shoes.
5. Coats should be stored on coat hooks or in packs. Packs should be stored where they will not be a trip hazard.
6. Absolutely no food or drink is permitted. Store water bottles out of sight in your pack.
7. No open flames
8. Read and reread the label on a chemical container before using a chemical.
9. Never put chemicals back in the stock bottle.
10. Close all chemical containers immediately after use.
11. Clean up all chemical spills (bench, balance table, hoods) immediately.
12. Avoid contact of chemicals with your clothing.
13. Avoid breathing chemical fumes by working in the hoods provided.
14. Use the chemical disposal procedures specified by your TA.
15. No chemicals, glassware, or equipment are to be removed from the lab.
16. No unauthorized experiments.
17. When you are finished in the lab for the day, thoroughly wash hands with soap and warm water in the Olin washroom before leaving the building.

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Schedule of Experiments

Exp	Week	Reading pp.	Special Instructions	Exercise	Product turned in	Report due week
1	3/23	97-103	Check in. BYB 1,2 Mechanism Do part A only.	1,3b,4	yes	3/30
2	3/30	113-121	BYB 1,2 Mechanism Analysis by GC	1,2,5	yes	4/6
3	4/6		**Experiment 3** **Instructions on Canvas** BYB 1-4 Mechanism Work with a partner. Analysis by GC	1,2,3	yes	4/13
4	4/13	87-96	BYB 1,2 Mechanism Analyze one of your two fractions (assigned by TA) by GC and turn in that fraction. Get a copy of another student's GC for the other fraction.	2,3,4	yes	4/20
5	4/20	61-66	BYB 1-3 Mechanism	1,4,5	yes	4/27
6	4/27	73-79	BYB 1,2 Work in team of 4. Run IR of one compound. Analyze IR of all four compounds. acetophenone cyclohexanone isopentyl acetate N,N-dimethylformamide	2b,2c,4	no	5/4
7 8	5/4 5/4	Loudon Chap 12 Chap 13	**Experiment 7** **Instructions on Canvas** no BYB **Experiment 8** **Instructions on Canvas** no BYB		no no	5/11 5/11
9	5/11		**Experiment 9** **Instructions on Canvas** BYB 1,2 Mechanism	1,2,3	yes	5/18
10	5/18	153-160	BYB 1,2 Mechanism Work with a partner.	1,3,6	yes	5/25
11	5/26 5/26		Clean equipment, confirm the drawer combination with TA, and check out. Turn in notebook for grading.			