

CHEM 2463 Organic Chemistry Laboratory
Syllabus for Fall Quarter 2014

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

Objectives. You will perform a series of well-planned experiments to reinforce your understanding of some concepts from CHEM 2453 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 M, T, W or 6:00 – 9:30 PM on T and W. 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 attached. Read the assigned pages, complete the BYB (Before You Begin) assignment, and prepare your lab notebook **BEFORE** coming to the lab. Your TA must confirm that you are prepared before you can start lab work. With this advance preparation and good time management, you will be able to complete the lab work in the allotted time. As part of your good time management, clean your glassware each week 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 \$3.99. **The instructions for setting up and maintaining the notebook are available on Blackboard.**

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

We will use a slightly modified version of the report described in the lab text. The report for each experiment must be typewritten and all structures must be done using a structure drawing program such as ChemSketch. The report should include: Title of the Experiment, Your Name and Date, Introduction (statement of the problem, balanced 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 should not exceed one page. Address all the key talking points and be concise.

Lab reports are due at the beginning of the next lab after completion of the experiment. Report due dates are provided in the schedule on page 3 of this syllabus. Submit 1) a paper copy to your TA at the start of the lab and 2) an electronic copy on Blackboard SafeAssign by 10 PM the same day. **Even if you turn in the paper copy to your TA on time, your report is considered not submitted if the SafeAssign copy is not on Blackboard the same day.**

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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.

Science and Engineering Learning Center: Need extra help? The Science and Engineering Learning Center is a collaborative space staffed by undergraduate and graduate TAs trained to assist students with first and second year chemistry, physics, and engineering lecture and laboratory courses. Our goal is to help students grow as problem solvers by assisting with homework sets, lab reports, and preparing for exams. The Science and Engineering Learning Center is **not** a one-on-one tutoring center, but is rather a support system where students can get guidance from TAs as well as their peers. This center is open to all DU students. All services are free. The Science and Engineering Learning Center is located in the north-west corner of the first floor of the Anderson Academic Commons (west of the writing center).

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

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.

Grading. Your grade is based on a total of 1015 points, distributed as follows:

| Task | Point Value | Points |
|------------------------------|-------------|--------|
| Before You Begin assignments | 10 per exp | 90 |
| Mechanisms | 10 per exp | 70 |
| Lab reports | 75 per exp | 675 |
| Products | 10 per exp | 80 |
| Lab notebook | 100 | 100 |

Honor Code of the University of Denver. To review your rights and responsibilities with respect to the Honor Code of the University of Denver, visit the website for the Office of Student Conduct at: www.du.edu/honorcode

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 | Manual pp. | Special Instructions | Exercise included in report | Product turned in | Report due week |
|-----|-------|------------|---|-----------------------------|-------------------|-----------------|
| 1 | 9/8 | | Check in. Experiment 1 on Blackboard BYB 1, 2 Mechanism | 1, 2 | yes | 9/15 |
| 2 | 9/15 | | Experiment 2 on Blackboard BYB 1, 2, 3 | 1, 2 | yes | 9/29 |
| 3 | 9/22 | 123-131 | BYB TA must review procedure before you can start. Mechanism | 1,3 | yes | 9/29 |
| 4 | 9/29 | 169-176 | BYB 1, 2 Mechanism Do part B only. | 3, 5 | yes | 10/6 |
| 5 | 10/6 | 177-186 | BYB 1, 2 Mechanism Analyze pdt by GC and IR. | 2, 6 | yes | 10/20 |
| 6 | 10/13 | | Experiment 6 on Blackboard BYB 1, 2, 3 Mechanism | 1, 2, 3, 4 | yes | 10/20 |
| 7 | 10/20 | | Experiment 7 on Blackboard BYB 1, 2, 3 Mechanism | 1, 2, 3 | yes | 10/27 |
| 8 | 10/27 | | Experiment 8 on Blackboard BYB 1, 2, 3 Mechanism | 1, 2, 3 | yes | 11/3 |
| 9 | 11/3 | | Experiment 9 on Blackboard BYB 1, 2, 3 Bring your laptop to lab! | none | no | 11/10 |
| | 11/10 | | Clean equipment, confirm the drawer combination with TA, and check out. Turn in your notebook for grading by noon on Friday 11/14. | | | |