

Organic Chemistry Lab CHE 310-011
Spring 2006

Thursday 9:25 a.m.-12:25 p.m. SC 461

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Prerequisite: CHE 121 and CHE121L

Co-requisite: CHE 310 ****If a student withdraws from the 310 lecture at any time, he / she must also withdraw from the lab****

Text: "Techniques in Organic Chemistry", Jerry R. Mohrig
Organic Chemistry I Laboratory Experiments, (online Organic Chemistry Course site)

Equipment: Safety glasses , Laboratory research notebook and nonprogrammable calculator.

Preparation: Students are to come to lab with a thorough understanding of the principles involved in the experiment, the goals of the experiment, and the procedures to be followed. The laboratory notebook must contain a completed protocol for each experiment, as specified in the lab supplement, prior to entering the lab. This protocol is to be initialed by the instructor prior to beginning the experiment. No text book or supplement will be used or present in the lab hood during the laboratory period.

Laboratory Schedule

Date	Experiment	Due Date
1/12	Check-in / Melting point	1/19
1/19	Recrystallization	1/26
1/26	Unknown Purification and ID	2/2
2/2	Fractional Distillation	2/9
2/9	Acid / Base Extraction	2/16
2/16	Thin Layer Chromatography	2/23
2/23	Column Chromatography	3/2
3/2	Midterm exam (M.P. thru TLC)	
3/9	Spring Break	
3/16	Molecular Modeling	3/23
3/23	Nucleophilic Substitution	3/30
3/30	Bromination	4/6
4/6	Dehydrohalogenation	4/13
4/13	Carbocation Rearrangement	4/20
4/20	Finish rearrangement	4/27
4/27	Final exam	

LAB REPORTS ARE DUE AT THE VERY BEGINNING OF THE NEXT LAB PERIOD.

If you need help with the lab report, I am happy to assist you if you come to me prior to the lab class in which the report is due. Do not wait until the last minute to do your lab report. I will not give any assistance if you ask on the day that the report is due as that would be unfair to the students who have turned in their report on time.

Tentative Grading Scheme

Melting Pt .	15 pts.
Molec. modeling	25 pts.
All other experiments	50 pts. each
4 pre-lab quizzes	24 pts. each
Midterm exam	125 pts.
Final exam	<u>125 pts.</u>
Total Points	886 pts.

According to the point system above, reports represent 61% of your grade. The four unannounced quizzes will be 11% of your grade. The exams will be worth 28% of your final grade.

Grading Scale	Total Points Needed
90 - 100 % A	793-886
80 - 89 % B	704-792
70 - 79 % C	616-703
60 - 69 % D	527-615
0 - 59 % F	≤ 526

Break-Down of Experiment Grading

Notebook (protocol, data, and observations)	15 pts.
Supplement data and questions	20 pts.
Additional write-up(calcs. and conclusion)	15 pts.

These values will vary some with each experiment

Everything that you do MUST be done in your lab notebook. You don't need to print out the data sheets that go with each lab as I do NOT require that you turn them in.

However, there are post-lab questions on the data sheets that must be answered in the notebook, so don't forget to look at them.

The above sections will be graded on neatness, content, readability, and spelling. Each section of the notebook should be labeled and in the following order: Title, purpose, chemical reaction equation (with physical data listed under each chemical), protocol (written in the left side column), data and observations(written in the right side column), calculations, conclusions

Data and observations should consist of the ACTUAL amounts reagents that are used by the student, as well as anything that you see, hear, or smell (that is related to your experiment) while doing the lab. The color and physical states of reagents, intermediates and products should also be noted. The data section should contain the actual amounts of reagents / products used or obtained in the experiment. It is not sufficient to list the theoretical amounts of reagents needed in the protocol section and to assume that this was in fact the exact amount of a reagent that you actually used. If, for example, the protocol says to use 1.0g and you did in fact weigh out exactly 1.0g, then write 1.0g in the data section as well. The data and observations must be signed by the student and the instructor when the experiment is completed. The original top notebook pages

should be turned in to the instructor with the rest of the report the following week. All work should be recorded in pen and any mistakes written in the notebook should be crossed out with a single line, not a big scribble cloud.

*Calculations: All work, including the formula and data values used, should be shown. Answers must be in the correct number of significant figures. If any instrumental analysis is done a data table of results should be included in the notebook.

* The conclusion section should be done in paragraph form and should contain the following information. State the purpose of the experiment and whether or not it was achieved; a general statement of the techniques and/or type of reaction done; names of starting materials and product(s); list any important results or findings, such as % recovery or the proof of identity and purity of an unknown. Give an interpretation of the results including any instrumental analysis information. Lastly, discuss any meaningful sources of error and how they influenced your results.

*Late assignments will be reduced 2 points per school day.

*Lab quizzes will be unannounced and will be given in the first 15 minutes of the lab period. Anyone who is late for lab can take the quiz until the 15 minutes is up or until the last prompt student is finished with their quiz whichever comes first. If a quiz is missed for any reason it CANNOT BE MADE-UP.

*Make-up labs are discouraged. In case of emergency, a student may have ONE make-up lab for the semester with the following criteria. A 5 point deduction will be taken from the report. The options for a make-up are Thursday from 1:40-4:40 p.m. or Monday from 2:00-5:00 p.m. and the make-up lab must be done within one week of the missed experiment. If an experiment is missed, **you must speak directly to the instructor by 4:40 p.m.** on the day of the missed lab. Try to contact me by phone. If I'm not in my office, leave a message and a phone number where you can be reached. If you do not hear from me by 5 p.m. on the day you missed, assume that I didn't get your message and call again or e-mail me again including a phone number where you can be reached. Do Not show up in lab the next week and assume that you can do a make-up if you have not spoken to the instructor. Your make-up will be denied and a zero will be given for the missed experiment. If you completely skip more than 1 experiment, you will receive an F for the class.

*Additional safety rule. There will be no shorts or other clothing in which the legs are bare. Open toe shoes are also forbidden. Anyone who arrives in the forbidden garb will not be allowed to enter lab, will have to use their make-up lab, and if it is already used, will take a zero.

This syllabus is subject to change