

**Organic Chemistry Lab CHE 310-011
Spring 2004**

Monday 2:00-5:00 p.m., SC 465

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Office hours: MWF 10-11:00 a.m. and R12:30 p.m.- 1:30p.m.

Prerequisite: CHE 121 and CHE121L Co-requisite: CHE 310

Text: "Experiments in Organic Chemistry", J.S. Nimitz

"Organic Chemistry I Laboratory Supplement"

Equipment: Safety glasses and Laboratory research notebook

Preparation: Students are to come to lab with a thorough understanding of the principles involved in the experiment and a completed protocol in the laboratory notebook, as shown on page 6 of the supplement. One addition is that a purpose should be given after the reaction or reagents. This protocol is to be initialed by the instructor prior to beginning the experiment. No text book or supplement will be used during the laboratory period.

Laboratory Schedule

Date	Experiment	Text	Due date
1/12	Check-in / Melting point	1	1/26
1/19	Martin Luther King Jr.	NO LAB	
1/26	Recrystallization	1.1	2/2
2/2	Unknown Purification and ID	1.3	2/9
2/9	Fractional Distillation	2.1	2/23
2/16	President's Day	NO LAB	
2/23	Acid / Base Extraction	3.1	3/1
3/1	Thin Layer Chromatography	4.1	3/15
3/8	SPRING BREAK		
3/15	Midterm Exam (melting pt. thru TLC)		
3/22	Column Chromatography	supplement	3/29
3/29	Molecular Modeling	supplement	4/5
4/5	Nucleophilic Substitution	11.1	4/12
4/12	Bromination Stereochemistry	8.1	4/19
4/19	Dehydrohalogenation	supplement	4/26
4/26	Carbocation Rearrangement	23.2	5/3
5/3	Final Exam- check-out		

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./Molec. modeling	25 pts.
All other experiments	50 pts. each
4 pre-lab quizzes	24 pts. each
Midterm exam	100 pts.
Final exam	<u>125 pts.</u>
Total Points	871

According to the point system above, reports represent 63% of your grade. The four unannounced quizzes will be 11% of your grade. The exams will be worth 26% of your final grade.

Grading Scale

90 - 100 %	A
80 - 89 %	B
70 - 79 %	C
60 - 69 %	D
0 - 59 %	F

Break-Down of Experiment Grading

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

These values will vary some with each experiment

The above sections will be graded on neatness, content, readability, and spelling. 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 data and observations must be signed by the student and the instructor when the experiment is completed. Before leaving the lab, your top copy notebook pages containing the protocol through data and observations should be turned in to the instructor. 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.

Each section of the notebook should be labelled and in the following order: Title, purpose, reaction (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. 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.

*Calculations, with all the work (formulas used) shown as well as the conclusion section should be done in the lab notebook also. 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 1 point 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 only option for a make-up day is Thursday from 9:25a.m.-12:25 p.m. and the make-up lab must be done within one week of the missed experiment.

*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.