

Organic Chemistry Lab II CHE 311-013
Spring 2007

Thursday 9:25a.m.-12:25p.m., SC 465

Instructor: Gwen Fields office: SC 442 Phone: 572-6681

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Prerequisite: CHE 310 and 310 lab Co-requisite: CHE 311

Text: Mohrig *et al.* "Techniques in Organic Chemistry", 2nd ed.

The procedures for each experiment must be downloaded from the dept's website, www.nku.edu/~chemistry/che3111.htm

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 online introduction. 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	Due date
1/11	Check-in / Luminol(partners)	1/18
1/18	Ether synthesis	1/25
1/25	Aldehydes and Ketones	2/8
2/1	Aldehydes continued	
2/8	Hydrolysis of Benzonitrile	2/15
2/15	Acetylation of Benzoin	2/22
2/22	Aldol Condensation	3/1
3/1	Wittig Synthesis	3/15
3/8	SPRING BREAK	
3/15	Midterm Exam (luminol thru benzoin)	
3/22	Separation and Spectroscopy(partners)	4/5
3/29	Spectroscopy cont.	
4/5	Multistep synthesis	4/19
4/12	Multistep cont.	
4/19	Multistep cont.	
4/26	Final Exam- check-out	

LAB REPORTS ARE DUE AT THE VERY BEGINNING OF THE NEXT LAB PERIOD UNLESS OTHERWISE INDICATED. If you need help with any part of a report, you must get assistance BEFORE the day that the report is due. Do not come to lab on the day the report is due and expect me to be able to answer questions that you didn't understand. It is unfair to the other students who came prepared.

Tentative Grading Scheme

Aldehydes, Spectroscopy, and Multistep Syn. 100 pts. each	300
All other experiments(6) 50 pts. each	300
Midterm exam 125 pts.	125
Final exam 125 pts.	<u>125</u>
Total Points	850

According to the point system above, reports represent 71% of your grade. The exams will be worth 29% of your final grade.

<u>Grading Scale</u>	<u>Necessary total points</u>
90 - 100 % A	761-850
80 - 89 % B	676-760
70 - 79 % C	591-675
60 - 69 % D	506-590
0 - 59 % F	≤ 505

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****

All work will be done in the lab notebook.

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 labeled 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 (NMR, IR, GC etc.) a data table of results should be included in the notebook. Theoretical yields should be calculated with the actual amount of

starting material used, not the amount listed in the supplement. Significant figure rules apply for all calculations.

* 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 for 50 point labs and 2 points per day for 100 point labs.

*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 50 point lab reports, or 10 points from a 100 point lab report. Since many of these experiments require more than one week, you must take the make-up lab BEFORE your next lab period. You need to get in direct contact with me within 24 hours after the start of the lab period missed. If you send an E-mail, be sure to include a phone number where you can be reached. If I don't answer my phone, leave a message and your phone number. If you don't hear back from me by Friday at 11:30 a.m. assume I did not get your message and call back. Arrangements for the make-up should be made by the Friday immediately following a missed Thursday lab. More than 2 missed labs will result in an F for the semester.

*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.

“Students with disabilities who require accommodations (Academic adjustments, auxiliary aids or services) for this course must register with the Disability Services Office. Please contact the Disability Service Office immediately in the University Center, Suite 320 or call 859/572/6373 for more information. Verification of your disability is required in the Disability Services Office for you to receive reasonable academic accommodations.”

This syllabus is subject to change