

Chemistry 36 : Laboratory in Organic Chemistry
Spring 2003
Dr. Carey S. Reed
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General Information

Text required:

- Macroscale and Microscale Organic Experiments, 4/e, Kenneth Williamson, ISBN: 0618197028 ©2003
- Laboratory Notebook with permanently numbered pages and duplicate carbon pages.

Supplementary Books: Your Chem 39 text.

Safety: Goggles will be worn at all times. Gloves will be worn when advised to.

Prerequisite or Concurrent: Chem 39.

Attendance: University regulations state that a student should attend **every** scheduled class (Policies and Rules for Students section 42-27). Frequent absence from class is unacceptable. If you miss a class it is **your** responsibility to determine what material, announcements, handouts, graded papers, etc., were missed due to your absence. You should arrange for one of your classmates to hold returned papers in the event you are absent when papers are returned. I do not assume responsibility for holding papers if you are not there to pick them up, or have not made arrangements for someone else to pick them up. I will, of course, **try** to hold unclaimed papers for a few days.

Make-ups: At my convenience before the end of the semester. If you cannot make up the lab before the semester ends you will be given a 0 for the lab.

Lab Report due dates: Usually one week from the completion of the experimental work.

Lab Data: All original data measurements must be promptly and properly recorded directly into the lab notebook. Data recorded elsewhere is subject to confiscation and discarded.

Lab Reports: All laboratory reports are to include the following:

- **Cover page** – Download from webpage
- **PreLab** – this is to be **COMPLETED BEFORE** you come into the lab. If it is not completed, you will not be permitted to do the experiment till it is completed which may result in insufficient time for the experiment.
 - **Summary of Experiment** – This is a thorough but BRIEF summary of what you plan to do. This is NOT a summary of the procedure, which should simply be referenced. State what you plan to do making sure to include named reactions, special procedures, and special apparatus utilized. Do NOT give experimental details. Think of this as what could be a verbal summary you would give if someone asked what you were doing.
 - **Learning/Experimental Goals** – Provide at least 3 that would be specific to the experiment.
 - **Reaction Equations and/or Diagrams of Special Apparatus**
 - **Chemical Data Table** – Blank data tables are downloadable from the class webpage.
 - **Chromatographic Behavior Comparison of Starting Material and Product**
 - **Spectral-Feature Comparison of Starting Material and Product**
 - **Explanation of Product Isolation and Purification or “Work-Up”**
 - **PreLab Exercises** – Only for those experiments that provide them.

- **InLab** – This consists of the your **observations and data** that you collected during the experiment in your lab notebook. The first thing that you should do is reference the source of the procedure. Since you have referenced the procedure you do not write down every detail of the experiment, but what you do write must be clear and concise and in complete sentences. You must include all measurements and observations for everything that you do as you do it, even if it does not work. The idea is that based upon what you have written in your lab notebook, it should be possible for someone to read it and understand exactly what you did during the experiment and be able to repeat it.
- **PostLab**
 - **Results and Discussion** – See the Cover Page for requested material.
 - **PostLab Exercises** – Answer all questions at the end of the experiment.

Quizzes: Written quizzes may be given at the beginning of any laboratory period. They will not be announced. They will cover the laboratory and reading material assigned or announced for that day including any questions within.

Grading:

<u>Material</u>	<u>Points</u>
5 Technique experiments:	
Recrystallization/Melting Points	200
Distillation/Boiling Points	200
Liquid/Liquid Extraction	200
Thin-Layer Chromatography	200
Column Chromatography	200
5 Synthetic Experiments (200 pts each)	1000
3 Quizzes (100 pts each)	300
<u>Spectral Unknown</u>	<u>100</u>
Total maximum possible points	2400

Computing the Course Grade:

<u>Percentage</u>	<u>Grade</u>
95 or more	A
92 or more	A-
88 or more	B+
85 or more	B
82 or more	B-
75 or more	C+
70 or more	C
60 or more	D
Less than 60	F

Dropping the Course: Contact the Office of the Registrar in room 109 Smith. No course can be dropped after the end of the drop period. This date, and your final exam time and date, as well as other useful information is always appended to the copy of course offerings for any semester. **Caution!** in dropping courses is advised because of a maximum (during your entire PSU tenure) allowed number of credits you may drop between the end of the "free" drop period until the end of the allowed drop period (when you have to pay to drop).

The Assignment Schedule for the course is attached. The Schedule is approximate.

Campus Statement on Academic Integrity, adopted by the Altoona Campus Faculty Senate on March 19, 1985.

"Academic integrity is the pursuit of scholarly activity free from fraud and deception and is an educational objective of this institution. Academic dishonesty includes, but is not limited to cheating, plagiarism, fabrication of information or citation, facilitating acts of academic dishonesty by others, unauthorized prior possession of examinations, submitting work of another person or work previously used without informing the instructor, or tampering with the academic work of other students." (Policies and Rules for Students, Section 49-20)

Consequences of Academic Dishonesty:

"The penalty for academic dishonesty in less serious cases consists of a failing grade for the work or test where this misconduct occurred. *This decision is made by the instructor.* For more serious cases of dishonesty, the penalties are more severe, (including automatic failure for the course, probation, suspension or expulsion from the University), and formal due process procedures are available for the student and faculty involved. Section 49-20 of the Policies and Rules for Students provides the details on these procedures."

Scheduled Classes Not Met:

In **Extraordinary** circumstances (which have occurred from time to time in the past, and which will occur from time to time in the future), when classes are missed due to reasons other than instructor illness, power failures, weather, and the like, in which the missed classes are not made up), missed classes will be rescheduled if possible, in conjunction with the Office of the Registrar. Any such rearranging and rescheduling would be announced in class so that appropriate arrangement could be made by all.

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Tentative Weekly Assignment Schedule For 2003 Semester

<u>Meeting</u>	<u>Date</u>	<u>Topic</u>	<u>Assignments</u>
1	Jan. 14	Administrative details desk assignments.	
2	Jan. 16	Lab Safety, FTIR, UV, Refractive Indices Lecture	25-38, 193-214, 234-240, 78-79
3	Jan. 21	Calibration of thermometers Melting Point Determination	87, 91 66-73
4-5	Jan. 23-28	Recrystallization	39-65
6-7	Jan. 30-Feb. 4	Distillation and Boiling Points	82-98
8	Feb. 6	Liquid/Liquid Extractions (extraction of caffeine from tea – micro) Sublimation	127-155 122-126
9	Feb. 11	Extraction	
10	Feb. 13	Make-up Day	
11	Feb. 18	Thin-Layer Chromatography	156-170
12	Feb. 20	Column Chromatography	171-182
13	Feb. 25	Lab Lecture	
14	Feb. 27	Nitration of Methyl Benzoate – micro	355-359
15	March 4	Grignard Synthesis - macro	447-463
16	March 6	Make-up Day	
		SPRING BREAK MARCH 10-14	
17	March 18	Individual Synthetic Experiments	
18	March 20	Individual Synthetic Experiments	
19	March 25	Individual Synthetic Experiments	
20	March 27	Individual Synthetic Experiments	
21	April 1	FIELD TRIP TO UP	

22	April 3	Individual Synthetic Experiments
23	April 8	Individual Synthetic Experiments
24	April 10	Individual Synthetic Experiments
25	April 15	Individual Synthetic Experiments
26	April 17	Individual Synthetic Experiments
27	April 22	Individual Synthetic Experiments
28	April 24	Individual Synthetic Experiments
29	April 30	Locker Check-out
30	May 1	NO CLASS!!!!
