

CHEM-344L Organic Chemistry II Laboratory - Spring 2012

Section	Day	Recitation	Lab	Instructor
CHEM-344L-001	Monday	12:20-1:10 PM, room 481	1:10-4:10 PM	Dr. Steve Waratuke
CHEM-344L-002	Tuesday	12:30-1:20 PM, room 481	1:20-4:20 PM	Dr. Charles Wohlers
CHEM-344L-003	Wednesday	12:20-1:10 PM, room 481	1:10-4:10 PM	Dr. Charles Wohlers
CHEM-344L-004	Thursday	12:30-1:20 PM, room 481	1:20-4:20 PM	Mrs. Iana Mandravel-Hutchins
CHEM-344L-005	Wednesday	(evening lab section) 481	7:25-10:25 PM	Dr. Steve Waratuke
CHEM-344L-006	Tuesday	12:30-1:20 PM, room 477	1:20-4:20 PM	Mrs. Iana Mandravel-Hutchins

Required Text: None

Required Supplies:

- Laboratory goggles (meeting ANSI and CSA standards) may be purchased from the Chemistry Department. **No one will be admitted into lab without goggles!**
- Permanently bound lab notebook (no binders, spiral notebooks, or writing tablets).

If you are pregnant, or have a medical condition that might render you sensitive to chemicals, you must see your instructor before going into the laboratory.

Purpose of this Course. The purpose of the organic laboratory course is (1) to build problem solving capabilities in a laboratory setting; (2) to become familiar with the techniques and instrumentation needed to perform research in organic chemistry; (3) to help us better understand the principles learned in the lecture.

Recitation and laboratory attendance are mandatory! You must show up prepared and on time for your recitation; you will be marked as absent and receive a zero lab grade if you are more than 10 minutes late.

Missed Labs. If you miss a lab for any reason you will receive a zero grade. There are no make-up labs, but your lowest lab grade will be dropped. **HOWEVER, if you miss three or more labs for any reason, you will receive a zero overall lab grade, and an F in the course. There will be no warnings!**

Grading Policy. Your overall lab average will be worth 20% of your final course grade (your lowest lab grade will be dropped). A set of guidelines for each experiment consisting of reading assignments, notebook preparation, and post-lab questions can be found at: <http://webhost.bridgew.edu/ebrush/CH343%20Lab.htm>.

All laboratory work must be written in ink. Each lab will be graded on a 100-point basis. Lab Reports are due 1 week after completing the laboratory experiment when you walk into the laboratory. There are penalties for late submission of the Lab Reports. Even though you work with a lab partner and share data collection, answers to the report questions cannot be directly copied from your partner or another classmate.

Lab Notebooks. Your laboratory notebook will contain a summary of your procedure and a complete and concise record of all work done prior to, during, and after each experiment. Refer to the attached "Laboratory Notebook Guidelines" for the recommended format. A complete lab notebook record will include: an updated Table of Contents, numbered pages, a pre-lab write up, summary of experimental procedures, observations, results (data), calculations, discussion and conclusions. Additional guidelines will be part of each lab packet available either through blackboard or website. Your instructor will evaluate your lab notebook at the beginning of each lab session on a 15-point basis in five, 3-point segments. Incomplete sections will receive a zero; no partial credit. Your average notebook score will count as one lab grade and cannot be dropped.

Recitation. A pre-lab recitation will be held for the first 50 minutes of each lab session on which you will review the theory and experimental procedure for the lab. You must be present for this part of the laboratory course.

Lab Partners. You will be assigned to work in pairs with a different lab partner each week (no groups of three). You and your lab partner are encouraged to work together as a “team” in carrying out the lab experiment, and completing the post-lab work. However, blatant plagiarism of any laboratory work will result in a zero grade to all parties involved.

CHEM-344L - ORGANIC CHEMISTRY LABORATORY SCHEDULE-Spring 2012

Lab#	Experiment	Title of Experiment
Lab#1 (100 Points)	Handout	Check-in; Oxidation of Borneol
Lab#2 (100 Points)	Handout	Grignard Reaction (2 weeks)
Lab#3 (100 Points)	Handout	Friedel-Crafts acylation lab or Outreach Project (2 weeks)
Lab#4 (100 Points)	Handout	Green chemistry synthesis of a commodity chemical, adipic acid
Lab#5 (100 Points)	Handout	Introduction to High Field NMR Spectroscopy
Lab#6 (100 Points)	Handout	What reaction am I? (Aldol condensation)
Lab#7 (100 Points)	Handout	Esterification of acetic acid (2 weeks); Check-out
Lab Notebook (100 Points)		

Total: 800 Points

Grading Total: 700 Points (after dropping lowest lab grade)

**CHEM-344L - ORGANIC CHEMISTRY II LABORATORY SCHEDULE
SPRING 2012**

Monday	Tuesday	Wednesday	Thursday
January 23 Lab#1	January 24 Lab#1	January 25 Lab#1	January 26 Lab#1
January 30 Lab#2	January 31 Lab#2	February 1 Lab#2	February 2 Lab#2
February 6 Lab#2 (continued)	February 7 Lab#2 (continued)	February 8 Lab#2 (continued)	February 9 Lab#2 (continued)
February 13 Lab#3	February 14 Lab#3	February 15 Lab#3	February 16 Lab#3
February 20 Holiday – no lab	February 21 no lab	February 22 no lab	February 23 no lab
February 27 Lab#3(continued)	February 28 Lab#3(continued)	February 29 Lab#3(continued)	March 1 Lab#3(continued)
March 5 Spring Break!	March 6 Spring Break!	March 7 Spring Break!	March 8 Spring Break!
March 12 Lab#4	March 13 Lab#4	March 14 Lab#4	March 15 Lab#4
March 19 Lab#5	March 20 Lab#5	March 21 Lab#5	March 22 Lab#5
March 26 Alt lab day is April 23	March 27 Lab#6	March 28 Lab#6	March 29 Lab#6
April 2 Lab#7 – Part I	April 3 Lab#7 – Part I	April 4 Lab#7 – Part I	April 5 Lab#7 – Part I
April 9 Lab#7 – Part II	April 10 Lab#7 – Part II	April 11 Lab#7 – Part II	April 12 Lab#7 – Part II
April 16 Holiday-no lab	April 17 no lab	April 18 no lab	April 19 no lab
April 23 Lab#6			

GUIDELINES FOR THE ORGANIC CHEMISTRY LABORATORY NOTEBOOK

Your laboratory notebook will contain a record of all work done prior to, during, and after each experiment. Although everyone has her/his own style for keeping laboratory notebooks, your style should allow another chemist to repeat your experiment, and obtain the same results. Your lab instructor may choose to check and initial your lab notebook before you begin the experiment. Your notebook will be collected and graded at the end of the semester, and will be equivalent to one lab grade.

Your notebook should follow the following format:

Notebook pages are permanently bound

Each section must be numbered and labeled with the headings given below

Each page (front and back) of your notebook should be numbered consecutively

Table of Contents (see below)

Written in ink

Proper spelling, grammar, sentence structure, and neatness

Table of Contents. The Table of Contents always starts on page one of your notebook. You will need to update the Table of Contents for each new lab with the date and brief title of each experiment, and the notebook page number on which the lab begins.

Advance Notebook Preparation (5 points each lab)

(These elements must be written in your lab notebook before you may enter the lab):

I. Title of the Experiment and Date.

II. Purpose of the experiment. One sentence describing what you are going to do and why.

III. Equations (if required). Chemical equations and mechanisms for all reactions, including side products.

IV. Table of Reagents. For each synthesis experiment you must make a table of all reagents, including the name, molecular weight, molecular structure, all physical properties (melting point, boiling point, density).

V. An outline, summary, or flow chart of the experimental procedure.

VI. Health, Environmental, and Waste disposal precautions.

Laboratory Records: (10 points each lab)

VII. Data and Observations. Record a rough transcript of your experimental method in your lab notebook, indicating what you actually did and what you actually observed. Do not prepare this section in advance. This section should be written in a paragraph format and include: experimental procedure, all reagent mass and volume measurements, observations, crude and pure product mass or volume, % yield calculations, and product analysis by melting point, chromatography analysis, or instrument analysis. You will be judged on the depth of your observations and technical success (yields, purity, etc.).

VIII. Discussion and Conclusions. A brief, but critical evaluation of your results, and the success of your experiment. Address the experiments goals and purpose!

