

Chem 202/252 Lab Program - Spring 2008

Lab Manual: *Multiscale Operational Organic Chemistry*, by John W. Lehman, Prentice Hall Publishing, (2002). Either the full version or *any* printing of our special version is acceptable.

Also required: Mono-goggle type safety glasses, bound notebook, and key or combination lock. An apron and plastic gloves are highly recommended.

<u>Week of:</u>	<u>Experiment</u>
Jan 14	No recitation or lab for all of this week
Jan 21	No recitation or lab for all of this week
Jan 28	Check-In & Lab Safety Quiz (read "Introduction" pp 1-18 before recitation!)
Feb 4	Exp 30: Identification of Conjugated Diene (Diels-Alder)
Feb 11	OP 36: Infrared Spectroscopy
Feb 18	Exp 5: Preparation of Synthetic Banana Oil (work in pairs)
Feb 25	Exp 29: Synthesis of Triphenylmethanol
Mar 3	Minilab 30: Nitration of Naphthalene
Mar 10	Spring Recess
Mar 17	Exp 38: Wittig Synthesis of 1,4-Diphenyl-1,3-butadiene (work in pairs)
Mar 24	Minilab 34: Preparation of Aldol Condensation Reactions
Mar 31	Exp 45: Preparation of Para Red and Related Azo Dyes
April 7	Exp 43: Preparation of N,N-Diethyl- <i>meta</i> -toluamide (work in pairs)
April 14	Minilab 43: Rxns of Monosaccharides with Phenols & Take IR of DEET
April 21	Check-out (plus Lab Final on <u>Wednesday</u>)
April 28	Monday = Last Day of Class

Please Note: All laboratories begin in the scheduled recitation room for pre-lab instructions and then students go immediately to lab.

Advance preparation for each experiment: Read the entire experiment in the lab manual as well as all techniques and essays listed in the **REQUIRED READINGS** section. Also pay particular attention to the **SPECIAL INSTRUCTIONS** section. A flow chart is to be handed in at the beginning of each recitation (see Lab Grading Policy).

Missed labs: Students who unavoidably miss a lab experiment must, in order to avoid any penalty, fill out a form that can be obtained at the Copy Center, 361 NSM Complex. Be prepared to document the absence if requested to do so. **Labs missed because of a valid absence cannot be made up in your own or any other lab section but will be pro-rated on the basis of other work done.**

Lab Safety: Personal lab safety is the most important consideration when working in a chemical lab. Safety regulations require that approved safety glasses be worn at all times in the lab. Contact lenses, shorts, halter tops, high heeled shoes, open toed sandals, or bare feet are not permitted. It is imperative that you observe all safety precautions described in a lab text or by your instructor. Failure to abide by these guidelines may seriously endanger you and your fellow students, and will not be tolerated. Deductions from your lab grade will be made for any behavior on your part which is inappropriate in a lab, or for failing to clean up your lab space before you leave the lab.

MSDS Sheets: Material Safety Data Sheets for all chemicals used in the lab program are available through the Occupational and Environmental Safety Services office (301 Michael Hall, South Campus) and on various web sites.

Lab Breakage & Check-Out: Students are responsible for the condition of all equipment in their lab drawer. All students (**INCLUDING THOSE WHO DROP THE COURSE**) must check out of their lab drawer no later than the last day of check-out (Friday, April 25, 2008). **Those who do not are subject to a \$100.00 check-out FINE / PENALTY plus charges for broken and/or missing equipment as well as having their lock cut off.** Students who are ill and absent from check-out at the end of the semester must complete a waiver form, available at the Copy Center (361 NSM Complex), to have this \$100.00 fee waived. This form requires written documentation verifying the reason for your absence. Students who incur charges for broken or missing equipment during the semester will be billed at the end of the semester by the Office of Student Accounts. These charges will appear on the next tuition bill.

Grading Policy The laboratory component of this course comprises 25% of the final course grade and will be determined as a percentage of the points received for each of the following items:

Lab Experiments	180 possible pts
<u>Lab Final Exam</u>	<u>70 possible pts</u>
Overall	250 possible pts

Each of the ten experiments will be worth 18 points each. Frequent checks by the faculty will be made to ensure that grading is relatively consistent among individual teaching assistants. Since we do realize that grading will not be 100% consistent, final lab grades will be normalized at the end of the semester so that the average grade for lab experiments for each lab section is the same. This will mean that the averages in some sections will be raised or lowered. Problems regarding the grading policy should be directed toward the faculty or Dr. Koehn, not to the teaching assistants.

The emphasis on grading will be based not only on the number of points taken off for items missing but points given for work above the expected minimum requirement. Points will be taken off for sloppy notebooks and reports, failure to wear safety goggles in lab, failure to observe other safety precautions and failure to clean your work area before leaving lab. More details, as well as a sample report, will be given later in recitation.

Notebook: The ability to make careful observations and to record the details of an experiment is the hallmark of a well trained scientist. Notebook entries and reports should be clear and easy to understand. Someone unfamiliar with the experiment should be able to duplicate your results by following your notes. Each student is to keep a lab notebook for recording data and writing down observations during each lab experiment. More details will be given in recitation.

Lab Report: Reports should indicate that you clearly understand the chemistry involved in the experiment. The discussion of your results should be well organized and flowing and also reflect an understanding of the limitations of the procedures and equipment being utilized. A lab report is to be handed in to your TA within one week of completing each experiment.

Products: The products for each experiment will be graded by a TA on the basis of purity and other factors.. When instructed to do so, products should be placed in labeled vials (your name, experiment number, chemical structure, or name of the compound, its mass and percent yield) and given to your TA when handing in your lab report.

Deadlines: Please observe the due dates your TA gives you, otherwise you will be penalized. No products, notebooks, reports, excused absence forms, etc will be accepted after the day of check-out for your lab section.

Chem 202/252 Lab Final: The lab final (multiple choice) will be given on WEDNESDAY, April 23, 2008, from 8:00-8:50 PM in rooms to be announced. Make-up exams will be given on Thursday and Friday, April 24 and 25, 2008, from 5:00-5:50 PM or by appointment. The exam will cover material discussed in recitation, the assigned readings, and the procedures as actually done in lab. Anyone with a conflict should contact Dr. Koehn at wpkoehn@buffalo.edu