CHEM262L: Organic Chemistry Laboratory
Spring 2015  All sections
Chapman 211 classroom and Morehead Labs 300, 301, 303, 400/401

**Instructor:** Laura Benton  **Office:** Kenan Labs C142
**email:** labenton@email.unc.edu  **Office Hours:** Mondays from 2 – 6 PM.

**Lab Supervisor:** Mark Koza  **Office:** Morehead Labs 205
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**COURSE DESCRIPTION:** CHEM262L affords the opportunity to perform some reactions that you have learned in organic chemistry lecture courses. In the organic chemistry lab you will acquire hands-on experience with many different techniques associated with manipulating organic compounds. You will see how Green Chemistry can be incorporated into organic syntheses, and you will utilize NMR, GC, UV-Vis, and/or melting points to evaluate your products.

**PREREQUISITES:** In order to be enrolled in CHEM262L, you must have completed, with a passing grade, CHEM261/261H, and have passed or be currently enrolled in CHEM262. You must have completed, with a passing grade, CHEM241L. If you were first enrolled prior to Fall 2009, please see the instructor. *It is an honor code violation to be enrolled in a class without the proper pre-requisites.*

**ENROLLMENT:** You must attend the first meeting of your lab section in Chapman 211 **during the week of January 12**th. If you miss this meeting, you will be dropped from your lab section and replaced with a student from the waiting list.

**SAFETY:** In order to avoid personal injuries and injuries to fellow students while performing experiments in your chemistry laboratory courses, you are required to follow the safety rules given below. Any questions about safety rules should be directed to your TA, instructor, Laboratory Supervisor, or Laboratory Director. Violations will result in grade penalties at the discretion of the instructor. Repeated failure to observe safety rules will result in removal from the lab.

1. **PERSONAL PROTECTIVE EQUIPMENT (PPE)**

**EYE PROTECTION**
Approved safety goggles must be worn continuously while you are in the laboratory. Your regular glasses or contact lenses can be worn in the lab, but you MUST wear safety goggles over them. All students will be issued a pair of safety goggles in the first lab course they take at UNC. If a student loses or breaks these safety goggles at any time during his/her tenure at UNC, the student must buy a new pair of safety goggles from the chemistry storeroom. If a student purchases safety goggles from an outside vendor, the Laboratory Supervisor must approve the safety goggles for use in the lab.

**SKIN PROTECTION**
Students, teaching assistants, and other staff members are to be appropriately clothed in the laboratory at all times, including check-in and checkout. Appropriate attire includes:

- **A chemistry department approved lab coat.** All students will be issued a lab coat during check in.
- **Clothing that protects the individual's body from the neck to the ankles.** Sleeveless shirts, tank tops, or other clothing that do not cover the shoulders, back, or abdominal area are not acceptable clothing to be worn in
the teaching laboratory. Pants or skirts that do not cover the individual's ankles are not acceptable clothing to be worn in the teaching laboratory. Leggings and tights are not considered pants and are therefore not allowed in lab. Absolutely no shorts are permitted in the lab.

- **Footwear that covers the entire foot must be worn in the lab.** Open-toed, open-heeled, and/or high heeled shoes, including sandals, flip flops, mules, clogs, pumps, moccasins, ballerina slippers, etc, are not acceptable footwear to be worn in the teaching laboratory.

- **Gloves must be worn at all times while handling glassware and/or chemicals.** Gloves must be removed before leaving the lab. If gloves become damaged, obtain a new pair. If gloves are heavily contaminated, remove, place in the hazardous waste, and obtain a new pair. Do not reuse gloves.

- Long hair must be tied back and loose clothing must be securely constrained under the lab coat when working in the laboratory.

### II. WASTE DISPOSAL

- A paragraph at the end of each experimental section outlines “WASTE DISPOSAL” for the materials used in each lab procedure: READ AND FOLLOW THESE PROCEDURES CAREFULLY. Check with your TA if you have any questions.
- Chemical waste must be disposed of properly. Because of toxicity and flammability hazards, do not dispose of solvents by pouring them into the sink. Municipal sewage treatment plants are not equipped to remove these materials from sewage. Furthermore, with volatile and flammable materials, a spark or an open flame can cause an explosion in the sink or further down the drain. Solvents and some other liquids are disposed of in the hazardous waste plastic bottles.
- Never return unused reagents to stock bottles. Use the **minimum** amount of reagents to avoid waste disposal issues.
- Place solids in the plastic waste buckets.
- Keep all waste containers closed.

### III. CONDUCT

- **You are not permitted to enter the lab without TA supervision.** And under no conditions are unauthorized or unsupervised experiments to be performed.
- Working alone in the lab is not permitted. You may work in the labs during specified hours and with proper supervision. You may not work in undergraduate labs without an instructor or teaching assistant present.
- Report any accidents, injuries, or hazardous spills, no matter how minor, to your TA or instructor at once. Incident report forms are inside the First Aid kits (by the main sink).
- Eating and drinking are prohibited in all lab spaces (this includes instrument rooms).
- Cell phones and all other electronic devices must be turned off and stored in your book bag.
- At the beginning of each experiment is a short list of known hazards associated with the chemicals you will use. For additional information, consult the Safety Data Sheet (SDS). These can be accessed online, including [http://www.sigmaaldrich.com/united-states.html](http://www.sigmaaldrich.com/united-states.html).
- Always use hood ventilation when handling chemicals.
- Always transport chemicals in closed containers. Use secondary containment when leaving your lab room and going to an instrument room.
- **Always Add Acids to water; never water to acids.**
- Never aim the opening of a test tube, separatory funnel, or flask at yourself or at anyone else.
- Never leave anything unattended while it is being heated or is reacting rapidly.
- Always lubricate glass tubing and thermometers before inserting them into a stopper. Always wrap toweling around them while inserting. Hold tubing and thermometers close to the point of insertion.
- No open flames in the lab.
- **Never** pipet by mouth--use a pipet bulb.
HONOR CODE and ACADEMIC INTEGRITY

The Department of Chemistry faculty adopted the following policy on September 9, 1977.

“Since all graded work (including homework to be collected, quizzes, papers, mid-term examinations, final examination, research proposals laboratory results and reports) may be used in the determination of academic progress, no collaboration on this work is permitted unless the instructor explicitly indicates that some specific degree of collaboration is allowed. This statement is not intended to discourage students from studying together or working together on assignments which are not to be collected.”

Behavior in this course is governed by the University of North Carolina’s Honor System and the codes contained therein. The entire code, and information pertaining to the code, can be found at:
http://studentconduct.unc.edu/

The guiding principle of academic integrity is that the work submitted by a student must be that student’s own work. In this course students will sometimes be required to work in pairs or groups to collect experimental data. This can lead to misunderstandings regarding academic integrity. In those cases when you work with other students, you must clearly indicate on your Title Page who your partner or partners were.

When writing up your lab report there is no collaborative work. You must write your own report, answer your own questions, and work up your own data. If you are having difficulties or have questions you need to see your TA for help. Collaboration on lab reports is a violation of the University Honor Code and will be treated as such.

A second area where misunderstandings of academic integrity arise is with regards to when you should reference external sources in your lab report. The submission of any material that is substantially the same as some other written document or source (i.e., a journal article, a textbook, a lab manual, a book) that is not properly referenced constitutes a violation of academic integrity. Using someone else’s words or ideas without giving credit for their work is called plagiarism. Furthermore, simply rearranging the words from a source to make them seem like your own words is also plagiarism.

The following situations below will be treated as honor code violations.

• Unauthorized collaboration. NOTE: Unauthorized collaboration is defined differently for each lab course. Please read carefully. All lab reports must be written independently.
• Plagiarism. The ideas presented in your report must be your own. If you present someone else’s ideas or work (from books, old lab reports, the Web, the lab manual) as your own, this is plagiarism. You can present facts from an outside source, as long as you properly reference the source.
• Allowing students to use your work as their own. Do not allow your partner or other students to have access to your lab reports. You may share data if you collected the data together, but everything else (calculations, graphs, tables) must be done alone.
• Using old lab reports, even if you just want to glance over them, is an honor code violation.
• Do not rearrange a paragraph or some other piece of work that is not yours in the hope of disguising the work as your own.
• Using an old lab manual from a previous semester.

Established by the Undergraduate Labs Committee, April 2014

CLASS WEBPAGE: The website for this class is located at https://www.unc.edu/sakai/. You will need to check this site regularly for class announcements. This site will be used to post a variety of course information and material: syllabus, schedules, assignments, quizzes, useful resources, sample lab reports and lab notebooks, grades, etc. You must become familiar with this site since you are responsible for knowing how to utilize this site to take quizzes, submit assignments, follow schedules, etc. Please see your TA if you need any assistance.

REQUIRED COURSE MATERIALS: (* required for lab check in)
1) * Approved safety goggles and clothing appropriate for the lab
2) * CHEM262L Lab Manual Course Pack for Spring 2015 available only from UNC Student Stores
3) Making the Connections by Anne B. Padias; Hayden McNeil Publishing; first or second edition
4) Lab notebook – must meet the following criteria: bound, consecutively numbered pages, and carbonless duplicate pages. Can be purchased from Alpha Chi Sigma (AXE) chemistry fraternity in Morehead Labs during check-in or from the UNC Student Stores

ATTENDANCE: Attendance in lab is mandatory. If you are more than 30 minutes late to lab, it will be treated as an absence. You will not permitted to begin experimentation if you are more than 30 minutes late to lab. Only Prof. Benton can excuse absences for CHEM262L. Lab absences are not automatically excused. Each absence is evaluated on a case by case basis; therefore, do not assume your absence will be excused.

If you have a UNC sanctioned event (concert, varsity sports competition, performance, etc.) that conflicts with your regularly scheduled lab section, email Prof. Benton at the beginning of the semester and provide the event, date and time, and instructor/coach contact information.

In case of serious illness, accident, or family emergency that causes you to miss your regularly scheduled lab section, email Prof. Benton as soon as you are able. If a Dean or Advisor is assisting you with a serious situation, they may email your instructors about your absence.

Typically, only one lab absence is excused during a semester. Missing more than two lab experiments, excused or unexcused, will result in an automatic F for the course. If you have an absence that has been excused by Prof. Benton, you will be given the opportunity to make up the lab on the Friday of the following week from 1 pm to 3:45 pm for the experiment you missed.

If you choose to drop the lab, you are required to complete a lab check-out. Please email Prof. Benton and your TA if this becomes necessary.

ASSIGNMENTS: Quizzes, lab reports, and NMR assignments are due as posted on Sakai. You can visit office hours for any CHEM262L TA to request assistance with your lab reports and NMR assignments. The office hour schedule is posted on Sakai. Any assignment not submitted within 48 hours of the initial deadline will not be accepted. Mandatory penalties apply to late lab reports and NMR assignments, regardless of the cause for tardy submission.

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<td>More than 48 hours</td>
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GRADING:
Quizzes (11) 5%
Pre-lab notebook (8) 5%
Post lab notebook (6) 5%
NMR assignments (3) 10%
Daily TA evaluations (9) 10%
Lab reports (6) 50%
Final exam (cumulative) 15%
100%

The letter grades for the course will be determined based on the percentage of points you earned.

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