

Chemistry 267 • Fall 2019

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After reading this in its entirety, go to the general handouts page of the course website. Read through the technique prelab example. When you have finished with that, go to the schedule of experiments and navigate to the ChemDraw Activity.

This course utilizes an electronic lab notebook (ELN). It is simply Microsoft Word, which is available free of charge to all students enrolled in a UMass course. For a free Office365 download, see page 2 of this syllabus.

What do I have to do before coming to lab? Prepare a Prelab Outline (described in more detail below) for the appropriate lab that week (melting point is our first lab) and do the pre-lab OWL assignments for that lab. Good preparation is essential to safe and effective lab work. Before you begin work, you must present to your TA your Prelab Outline for that experiment. The TA will check to see that the outline is acceptable. If the TA deems that you are insufficiently prepared, you will be asked to leave and credit will be lost.

Before Coming to Lab Checklist:

1. Download and read the experiment handout from our Chemistry 267 website.
2. Do the prelab OWLs (log in to Moodle, click the OWL link to be added to the OWL course).
 - 2a) Failure to complete the safety and course policy OWLs prior to your first meeting will require you being sent home.
3. Prepare a Prelab Outline in your ELN (see below for more information).

Come to lab properly dressed (see 'Safety Dress Code and Consequences' handout) and bring with you copies of handouts, your safety goggles, and your laboratory notebook, in which you will write the Prelab Outline. The required laboratory notebook is one in which a carbon copy of each page can be made and torn out. Before you may begin work, a carbon copy of the completed Prelab Outline, a copy of the

experiment handout and any other prelab material for that experiment must be presented to your TA. If you fail to have an acceptable Prelab Outline, you will not be allowed to work in the lab and will consequently lose credit.

Carefully read the information on this page as well as the information on **Safety and Waste Disposal** on the Chemistry 267 web page. These documents contain a great deal of important information. You are responsible for knowing the material and following the procedures provided in them. Review and refer to these documents throughout the semester. You must wear approved eye protection at all times while you are in the lab. Failure to do so will result in the loss of credit. Repeated failure to do so will result in expulsion from the course.

Tardiness: your TA will be start their prelab talk five minutes after the scheduled lab start time. If you arrive after this, it will be up to the discretion of your TA on if you are allowed to stay. A make-up lab will not be permitted (no excuses). Your TA spends a lot of time preparing for their talk and it is disrespectful to interrupt and they should not be expected to give it again.

Email. This is the best way to get ahold of me or your TA. I will respond within 24 hours of your message. If you do not receive a reply, check the subject line (see instructions at the top of this page). Communications via email are essential. Be sure that your email address in OWL is correct, is one that you use regularly, and is one that you keep maintained. Manju and myself are not responsible for any missed electronic communication by the student.

Required Electronic Lab Notebook (ELN). Your notebook provides a permanent record of your laboratory work. We will be making use of electronic lab notebooks (ELN) in this lab. We will be using Microsoft Word (available free of charge with your UMass credentials). To download Microsoft Office 365 Education (includes Word and other programs), see: <https://www.umass.edu/it/software/microsoft-office-365-education>. On the Course Website are posted templates for non-formal and formal reports.

Gradescope: Grading and Submitting Reports. We will grade lab reports online using a program called Gradescope (rostering is automatic). You will convert your report to a pdf and upload directly to their site. You will be automatically added to the roster in Gradescope and notified when this takes place. To submit your reports, navigate to Gradescope.com, click on the chem-267 course, click on assignments, then click on the appropriate report and upload a pdf of your post-lab. Follow the Gradescope prompts on selecting the pages on which the sections are located. The rubrics for both non-formal and formal reports are posted on the website. You are strongly encouraged to have this at your side while preparing your post-lab report.

To preserve the formatting of your MS Word document, you must print as a pdf, not save as a pdf. Chemical structures do not translate to a pdf when it is simply “saved as” that file type.

For more information on Gradescope, see the ChemDraw Activity, after you read this syllabus!

Notes on the Prelab Outline. Before coming to lab, you must carefully read the weekly handout and prepare an outline of the procedure **in your ELN (simply MS Word)**. See the prelab example on the general handouts page of the course website. You will follow this procedure in the lab. Information gained from the handout and OWL assignments should be incorporated into the outline. The outline should be written in your own words, in outline form, and in *enough detail so that you could do the experiment by following the outline only*. You may be required to follow only your outline at a random point in the semester. The outline should be short, but complete, and in a form that is easy to follow as you work. A well-prepared outline will allow you to carry out the lab work efficiently and effectively. The outline must also include a summary of safety considerations and waste disposal procedures for chemicals used in that experiment. A test of a good outline is to read it over and see if you could actually carry out the experiment using only the outline. If the TA deems that the outline is poorly prepared, you will lose credit (points lost is up to the TA) and will be required to leave the lab, returning only after you have rewritten the outline in a way that is acceptable to your TA. In such a case the remaining lab time will likely be insufficient to complete the experiment, resulting in the loss of additional credit. A poorly prepared lab worker is a danger to everyone in the lab and will not be allowed to work in the lab.

An example of a prelab outline is shown on the chem-267 website>General Handouts>Prelab Example. Print out your prelab and your TA will grade it on the spot and determine your score for it at the beginning of every lab. **Copy and paste your prelab text (see example on course website) into your post-lab report pre-lab section.**

In-Lab Observations. On the same regular paper as your pre-lab, enter what you do differently in the lab from the actual procedure as the work is being done. **Feel free to bring your computer and enter observations directly into the report template, but keep in mind we cannot be held liable for any damage while in the lab.** Procedures actually carried out (this may differ somewhat from procedures in the Prelab Outline), detailed observations, data obtained, and calculations. Items such as detailed procedures, physical data of compounds isolated (e.g., melting points (MPs) and boiling points (BPs)), and

weights/volumes of reagents are entered at this time. **Before you leave the lab you must check with your TA or you will lose all points for in-lab technique.**

On your post-lab report in your ELN, you must record these observations there (see template on course website).

BEFORE THE NEXT LAB PERIOD. A summary of results, an analysis of data, a brief discussion, and answers to assigned questions will be entered into your ELN. This post-lab material will normally be limited to about two pages. Late submissions will result in the loss of 1 point per day (including weekends), unless you have a valid excuse and special arrangements have been made with the course instructor (not your TA).

LAB REPORT HELP

First and foremost, use the grading rubric posted on the course website. If you are having trouble you may ask the TA on duty for help during limited use hours. They will not read an entire lab report and give feedback. They will be available to simply answer questions and point you in the right direction.

LAB REPORT GRADING SCHEME for non-Formal Reports:

| Possible Points | Portion of Lab |
|--------------------|--|
| 5 | Heading |
| 10 | Prelab Outline |
| 5 | In Lab Observations and Recordings |
| 5 | Lab Technique (subjective evaluation by your TA) |
| 20 | Results and Discussion (10 points each) |
| 5 | Answers to assigned questions |
| Total of 50 Points | |

LAB REPORT GRADING SCHEME for Formal Reports

| Possible Points | Portion of Lab |
|---------------------|--|
| 5 | Heading |
| 10 | Prelab Outline |
| 5 | In Lab Observations and Recordings |
| 10 | Lab Technique (subjective evaluation by your TA) |
| 5 | Purpose |
| 5 | Reaction Scheme |
| 25 | Experimental Procedure |
| 10 | Results |
| 20 | Discussion |
| 5 | Post-Lab questions |
| Total of 100 Points | |

OWL Assignments (Post- and pre-lab): To be added to OWL for 267, click the link in Moodle. This will automatically roster you into the course. After this, you can log in to OWL directly.

OWL Pre-lab: To help you prepare for each experiment, a required assignment using OWL will be assigned. The deadlines for completing the assignments are given in OWL it is your responsibility to know these dates. It is highly recommended that you complete the assignment before preparing your Prelab Outline, as this will help you to better understand the material. Extensions are rarely granted.

OWL postlab: Assignments will be available for many experiments. It is your responsibility to pay close attention to all deadlines. No partial credit. **ADVICE:** in case of computer or other last minute problems do not wait until the last hour to do the OWL assignments. Collectively, OWL assignments will count as 15% of the final grade. OWL dates are not extended for a make-up lab experiment. Each assignment is open for at least one week.

Post-Lab Report: You are required to include your TA's name and section day/time on the report. We will have two types of reports, non-formal and formal. Templates of both can be found on the course website. The first five experiments are technique labs and no real reactions are performed. There is also a chemical drawing lab (see first page of this syllabus). These reports are worth 50 points and the outline of them is given on the course website. Beginning with the cyclohexene synthesis, we will be doing synthetic experiments. These are formal reports and differ somewhat in their write-up from the non-formal reports

and are worth 100 points. See the handout on the formal report on the website for guidelines and helpful anecdotes in writing these experimental stories.

Exam: At the end of the semester, an exam will be given that will cover experiments from the entire semester. This exam will count for 15% of the final grade.

Final letter grades. The final grade will consist of the following: Lab reports (70%), Exam (15%), OWL (15%).

Experiment Handouts. You are required to download copies of handouts for each lab that needs supplemental lab-text information. These handouts are found on our Chemistry 267 website. These handouts cover some more information, and changes to the text. OWL assignments are based on these handouts and the lab text. Email communications may also be used to provide information to be included in the Prelab Outline. For some experiments, besides the "Experiment Handout" and the text, the web site will provide additional information, such as photos of apparatus set-ups and procedures. Downloading handouts well in advance will lessen the likelihood of running into last minute computer problems. Make sure to use the handouts from the current semester.

Post-Lab Due Dates. After an experiment is finished, submit your postlab via Gradescope (described previously) before the due date. The due dates are posted on Gradescope and you must be aware of them. Late Gradescope submissions result in the loss of 1 point per day (including weekend days).

Occasionally, a sample needs time to dry. You should take advantage of limited use lab hours for weights and melting points when this information is required. If you cannot attend limited use lab hours due to class/university conflict, weights and melting points (MP) may be taken during the next lab period. In the latter case, you would be given until the *next day* at 12:00 PM to submit the report Gradescope. Friday's section is given until 12:00 PM Monday.

Make-up Labs: We do not grant make-ups for travel (exceptions can be made for delays and documentation is necessary). Medical issues must have an accompanying, medical-professional-signed note stating you were excused from class the day of your lab. Any makeup work must be requested through the Google Makeup form on the course website, general handouts page.

Make-up Work Post-Lab Due Dates. Your post-lab report is due in your section immediately following your make-up lab date. In the event your lab section is the day of your make-up lab, your report is due in

your section the following week. For example, if your make-up a lab on Tuesday, and your section is normally on a Monday, your make up post-lab would be due Monday of the next week.

Students Registered with Disability Services - The University of Massachusetts Amherst is dedicated to providing equal opportunity/accommodations and access for every student. If you would like to request such accommodations because of a physical, mental, or learning disability, please contact the Office of Disability Services, DS, (161 Whitmore Administration Building) within the first two weeks of class. Their phone number is 413.545.0892. "Any student with a disability who needs a classroom accommodation, access to technology or other academic assistance in this course should contact Disability Services (ds@educ.umass.edu) and/or the instructor. DS serves students with a wide range of disabilities including, but not limited to, physical disabilities, sensory impairments, learning disabilities, attention deficit disorder, depression, and anxiety." You will have extended deadlines on all due dates for lab reports and OWL assignments, with one exception. You must complete the Course Policies and Safety OWLs BEFORE the first lab experiment begins. This is a legal issue and extensions cannot be granted for these 2 assignments. You also cannot have time extensions on a lab experiment. We have neither the space nor resources or capability for a student to stay after the lab period ends. DS-registered students can turn in their reports at any time without penalty, up through the generic date of the last day of classes.