Things to Note About Lab:
Before coming to lab, download the experiment handout and any other necessary handouts from the Chemistry 269 course website and read that material. Go the Chemistry 269 OWL course and complete the appropriate prelab assignment by the due date. Based on all of this information, prepare a Prelab Outline. Downloads are found at our Chemistry 269 website:

Before being allowed to work in the lab, you must:
1. obtain a lab coat from the USTORE ONLY.
2. successfully complete the safety and course policy OWL assignments. If you fail to do so, you will not be allowed to work in the lab and will consequently lose credit.

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. Some references given below are to McMurry, which refers to the lecture text: Organic Chemistry Hybrid, 8th Ed, by McMurry. These references provide background information for some experiments.

Carefully read the information on this page as well as the information on Safety and Waste Disposal on the Chemistry 269 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 start time. If you arrive after this, it will be up to your TAs discretion 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.

**Make-up Policy.** Requests to make up a missed experiment must be timely (within 2 days of being absent, including weekends); they will be considered on an individual basis. **Follow the link to the Google Form on the course website home page.** A TA signature (it may not be yours that day) is required on all work including make-up work. See the top of page six for make-up work due dates. OWL dates are not extended for a make-up. Each assignment is open for at least one week.

**Email.** This is the best way to get ahold of me. 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.

**Notebook and Grading Policies.**

**REQUIRED NOTEBOOK.** One in which every other page is perforated so that a carbon copy of each page can be torn out and submitted to your Teaching Assistant (TA). One example of this type of notebook is the Hayden-McNeil Student Lab Notebook, which is available at the Textbook Annex. Others of that type are acceptable and are available at the University Store. A normal spiral-bound notebook is NOT acceptable. Loose sheets are not acceptable.

Your notebook provides a permanent record of your laboratory work. Keeping detailed notes makes it easier to analyze results, write a discussion, and understand why a problem may have occurred. The carbon copy of all notebook entries (pre-, during-, and post-lab entries) will serve as the SOLE REPORT that you will submit for each technique experiment (first 5). A separate, typed, formal report will be used for the synthesis experiments (see course website for more details). If kept properly, the notebook also provides documentation to show that you have done the work. All entries must be written directly into the notebook in ink. Do not write information on scraps of paper with the intent of transcribing it later on. By doing so, information may become garbled or lost. Do not tear out pages. If a mistake is made, simply cross off the
mistaken material. Copies of ALL written work must be submitted to your TA. More detailed instructions, along with an example, are given on the CHEM-269 website in the file “How to keep your notebook.”

**Report Feedback.** For the first non-formal and formal reports, your TA will have ready for you your graded report to improve on the reports that follow within 48 hours of being turned in. Your heavily commented reports, without numerical grades written on them to be FERPA compliant, will be available for pick-up in folders marked with your TA and section day/time. You can find the lab report pick-up just inside the orange entrance.

**BEFORE COMING TO LAB.** Enter into your notebook the title of the experiment, reactions (if any), and structures and names of chemicals involved, showing correct stoichiometry, if applicable, a table of relevant physical constants, and the Prelab Outline (described in more detail below). Good preparation is essential to safe and effective lab work. **Therefore, before you may begin work, you must present to your TA your Prelab Outline and your copy of the Experimental Procedure for that experiment.** The TA will check to see that the outline is acceptable and that you have a copy of the procedure. If the TA deems that you are insufficiently prepared, you will be asked to leave and credit will be lost. Physical constants which cannot be found in the lab text may be obtained from the Table of Physical Constants of Organic Compounds in the CRC Handbook of Chemistry and Physics (reference section of the Science and Engineering Library, on Library website, and in the Org Lab). If you have difficulty finding a compound by name, use the molecular formula index at the end of the Table. Chemfinder.com may also prove useful.

**DURING THE LAB SESSION.** Enter directly into the notebook, as the work is being done, procedures actually carried out (this will differ somewhat from procedures in the Prelab Outline), detailed observations, data obtained, and calculations. Items such as detailed procedures, sketches of apparatus, physical data of compounds isolated (e.g., melting points (MPs) and boiling points (BPs)), and weights of reagents and products are entered at this time. Before you leave the lab, to document your work, you must have your instructor sign your notebook after the last entry. **Unsigned work will not be given credit.**

**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 notebook. This post-lab material will normally be limited to about two pages. The carbon copy of the complete write-up must be submitted to your instructor at the beginning of your next lab period. Late submissions will result in the loss of 2 points per day, unless you have a valid excuse and special arrangements have been made with your TA or course instructor.
LAB REPORT HELP
First and foremost, use the grading rubric posted online to make sure you are using the style for which the TA will be looking. If you are having trouble, you may ask the TA on duty during limited use hours general content questions. 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 (non-formal\(^1\) reports only):

<table>
<thead>
<tr>
<th>Possible Points</th>
<th>Portion of Lab</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Prelab Outline</td>
</tr>
<tr>
<td>10</td>
<td>Notebook Entries</td>
</tr>
<tr>
<td>5</td>
<td>Lab Technique (subjective evaluation by your TA)</td>
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<tr>
<td>20</td>
<td>Results and Discussion</td>
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<tr>
<td>10</td>
<td>Answers to assigned questions</td>
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<td>Total of 50 Points</td>
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OWL Assignments (Post- and pre-lab): To be added to OWL for 269, 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. OWL prelab due dates vary. Check often and be thorough. 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. OWL postlab due dates vary. Check often and be thorough.

Post-Lab Report: The first five labs are technique experiments and their post-lab reports are to be written in your notebook and turned in to your TA on the dates published on the website. You are required to write your TA’s name and section day/time on the report. Beginning with the cyclohexene synthesis, we will be doing synthetic experiments. These post-labs are typed formal reports with computer generated chemical

\(^1\) See formal report guidelines handout for the breakdown of points for the formal report.
structures using the program ChemDraw (see handout on website for download instructions and a usage tutorial). 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 electronic exam will be given that will cover experiments from the entire semester. This exam is administered in the general chemistry labs and 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%). It is impossible, even with a very detailed rubric, to have TAs grade with 100% consistency. The individual TA averages on lab reports will be examined and compared to the class lab report average. If a TA average is off (+/- 3%) from the course average, their scores will be adjusted accordingly. This means that if a TA average is too high, scores can be decreased accordingly to the course average.

Experiment Handouts. You are required to download copies of experimental procedures for each lab. These handouts are found on our Chemistry 269 website. These handouts cover background information and give the procedures that will be followed in the lab. The handout is the primary source from which the Prelab Outline will be prepared. OWL assignments are based on these handouts. Email communications may also be used to provide information to be included in the Prelab Outline. For most experiments, besides the "Experiment Handout," 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.

Notes on the Prelab Outline. Before coming to lab, you must carefully read the weekly handout and prepare an outline of the procedure that you will follow in the lab. Information gained from OWL assignments, email communications, and photos posted on the website should also 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 (1 point out of 5) 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. Note that working directly from the downloaded experiment handout is not acceptable. An example of an outline is shown in the Chemistry 269 course website file: “How to keep your notebook.”

Post-Lab Due Dates. After an experiment is finished, submit all completed material to your TA at the beginning of the lab period on the date given in the Schedule of Experiments section of our website. Generally, this date is the lab period following the experiment. Late submissions result in the loss of 1 point per day (excluding weekends).

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 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 to the black dropbox just inside the orange entrance. Friday's section is given until 12:00 PM Monday.

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 you 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 your instructor or 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.