Welcome to Chemistry 3AL

Course Information

The goal of this laboratory course is to introduce you to the theory and techniques of experimental organic chemistry. Furthermore, through a combination of lecture and laboratory you will be exposed to a variety of processes and practices that are actually relevant to many aspects of your everyday life. An equally important goal of this course is to teach you how to navigate through the laboratory in a safe and efficient manner. Awareness of the health and safety aspects of laboratory science is fundamental to anyone interested in pursuing a career in the sciences.

Prerequisites

A grade of C- or higher in Chemistry 3A or concurrent enrollment in Chemistry 3A. If a student is concurrently enrolled in Chemistry 3A and 3AL and drops Chemistry 3A on or before Tuesday, July 20, they must also drop Chemistry N3AL at that time.

Required Texts


Online Lectures (40-45 minutes per lecture)

At the beginning of the semester, the purpose of the laboratory lectures is to introduce you to the principles behind the experiments you will be performing in the laboratory. The lectures will NOT serve as a "walk-through" of the actual experiment, but rather will focus on the theory and practical aspects of what you will be discovering in the lab. In the later part of the semester, after you have established a foundation of techniques used in the organic chemistry laboratory, the lectures will turn to topics related to structure determination.

Online Experimental Overview (2-3 minutes per presentation)

These are short presentations that highlight the goals of the given laboratory experiment.

Online Laboratory Set-up and Safety Demonstrations (2-3 minutes per presentation)

If a given laboratory requires that you use instruments and/or equipment for the first time, these presentations will allow you to see first hand how to operate the instrument or set-up the equipment in an efficient and safe manner.

The Laboratory
Laboratories are 4 hours long. You should plan on being in lab for this period of time. Most experiments in Chemistry N3AL are designed to have you investigate a subject(s) and then solve a problem or reach a conclusion. Many of the experiments require that you work in groups of 2-4 students so that several pieces of data can be collected and then analyzed. Group work requires cooperation and sometimes, patience. It is important to check each other’s data and discuss with each other whether or not that data is consistent with what was expected. If not, then the experiment should be redone.

**Lab Attendance and Lab Reports**

There are eight graded experiments. Each experiment is worth 10 points. Your lowest lab score will be dropped.

In order to receive points for any given lab, the following conditions must be met:

- Prior to attending any given laboratory period you must have completed all of the reading assignments and viewed the online lecture(s) and any videos associated with that experiment or lab period. You must also have completed the online prelab quiz no later than 4 hours before a lab period begins. If you have not met these requirements, you will not be allowed to attend lab for that day.
- You must arrive to lab on time, which means no later than 1:10 PM for afternoon labs and 6:10 PM for evening labs. In general, the first 10-15 minutes of every laboratory period are dedicated to a safety discussion, which is an important part of the experiment. Therefore, if you show up late you will not be allowed to participate in lab for that day.
- You must have prepared a prelab. Your prelab must include, as a minimum, what is asked for in the laboratory manual at the beginning of the experiment. If you have not prepared a prelab, you will not be allowed to perform the experiment.
- You must attend lab.
- You must wear protective clothing and eyewear during the laboratory period. Your TA can ask you to leave the lab for the day if you are not wearing such clothing or eyewear.
- You must record detailed observations about the experiment. Do not just make a checklist of what you are supposed to do and then check off the procedures as you carry them out without making observations as to what actually happened. All observations must be written in your lab notebook during, not after, the laboratory period.
- You must record all expected data during, not after, the laboratory period. This includes melting points, TLC plates, yields, etc.
- Before leaving lab, you must meet with your TA who will ask you to confirm that certain data is present in your notebook. Upon confirmation, the TA will initial the notebook. At this point, you are to provide them with the white pages of your notebook that were used in lab that day.
- You must write up a short discussion of the experiment that addresses your results along with any specific topics asked for in the lab manual. The discussion section is limited to 2 pages. These can be handwritten or typed. If typed, the material must be double spaced using a font of 12 or larger. Any figures or equations can be placed on a separate page(s). However, this extra page cannot be used for further discussion.
- You must include a brief conclusion (2-4 sentences) pertaining to what was learned from this experiment. The conclusion can be on a separate page.
- You must make a reasonable attempt to answer ALL of the questions found at the end
of an experiment. If one or more of these questions is not answered, you will receive a 0 for the entire lab. These questions may also be placed on an extra page(s).

- You must turn in the lab report at the beginning of the lab period it is due. The lab reports will be collected as your TA checks prelabs. Late lab reports will not be accepted. Lab reports cannot be submitted to the TA using any type of electronic format.

If you do not complete all of these conditions for any given lab, you will receive a 0 for that experiment. The consequences of a 0 are as follows:

- You will not receive any points for that experiment. This will be your dropped lab score.
- If you receive two zero's during the semester, you not only will lose a total of 10 points, but your course grade will also be dropped by one third of a grade. For example, if you earn enough points to get a B+ in the class, but you have two zero's, you will receive a B.
- If you receive three zero's you will receive a failing grade in the course.

Office Hours
Dr. Pedersen: To Be Announced.

Teaching assistants: To Be Announced.

None of these office hours are online.

Worksheets
There are three worksheets that will be worked on only during the assigned laboratory periods. Each is worth 10 points. None of these can be used as a dropped lab score.

Online Prelab Quizzes
Prior to each laboratory experiment, all students must pass a prelab quiz relevant to the given experiment. If you have prepared a prelab in your laboratory notebook, passing these quizzes will be simple. Each quiz will consist of four questions. A passing score is 100%. You will be given 5 minutes for each quiz attempt. Each quiz you attempt will consist of different questions. You may take these quizzes up until 4 hours before the beginning of your lab period. At this time, you can no longer take a quiz. If you have not taken a quiz or have not passed a quiz prior to this time limit, you will not be allowed to participate in that particular experiment. There are no points associated with prelab quizzes.

Online Discussions
There are two online discussion periods during the semester. During these times you will be asked to participate in an online discussion relating to a subject posed to your laboratory section by the course instructor. These discussions will be related to both the online lectures and what you have been working on in the laboratory. There is a participation grade for these discussion periods. Depending on the level of your meaningful participation you will receive between 1 and 5 points. If you choose not to participate, you will receive 0 points.

Lab Exam
There will be one on-campus lab exam on Tuesday, August 10 from 8-9 PM. This exam will focus on the information discussed in the online lectures and the material covered in the three
worksheets. The exam is worth 30 points. This exam MUST be taken AND a score of ≥ 10 points must be obtained in order to complete the class. That is, if you score less than 10 points on the exam, you will receive an incomplete in the class regardless of how many total points you have accumulated. The incomplete will need to be satisfied within two semesters by taking the lab exam offered in Chemistry 3AL in either Fall of 2010 or Spring of 2011. A score of ≥ 10 points will warrant completion of the course. Until the incomplete grade is satisfied, you will not be allowed to take Chemistry 3BL. Note: If you already have three zero's in the course at the time of the lab exam, you do not need to take the lab exam as you have already failed the course.

**Grades**

The point total for this course is 140. These are broken down as follows:

- 70 points for lab attendance and lab reports
- 30 points for online worksheets
- 10 points for online discussions
- 30 points for the laboratory exam

Grades at the end of the semester will be assigned as follows:

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<thead>
<tr>
<th>Letter Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A (includes A and A-)</td>
<td>112-140</td>
</tr>
<tr>
<td>B (includes B+, B and B-)</td>
<td>98-111</td>
</tr>
<tr>
<td>C (includes C+, C and C-)</td>
<td>84-97</td>
</tr>
<tr>
<td>D</td>
<td>70-83</td>
</tr>
<tr>
<td>F</td>
<td>0-69</td>
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**Policies**

**Students with Disabilities**

Any students requiring course accommodations due to a physical, emotional, or learning disability must contact the Disabled Students' Program (DSP), [http://dsp.berkeley.edu/services.html](http://dsp.berkeley.edu/services.html), at the beginning of the course with their request. The DSP will review all requests on an individual basis.

**Ethics in Chemistry 3AL**

It is assumed that all work you do for this laboratory class is original. This includes the prelab, results and observations, discussion, conclusion, all lab report questions, online prelab
quizzes and online discussions.

You are encouraged to discuss your results with other students to help formulate your discussion sections. However, once these discussions with your peers are over, everyone must write their own discussion sections. The same is true for lab report questions.

All of this falls under a behavioral category I refer to as Ethical Common Sense. Unethical behavior in this class will result in an F in the course and you will be reported to the Office of Student Conduct.