

Course Syllabus: Chemistry 3AL

Course Information

Course Name

Chemistry 3AL

Course Instructor

Steven Pedersen

Course Schedule

Please click on the **Course Schedule** link under the Modules tab for an overview of due dates and projects. Use the **Calendar**, available from the Calendar tab, to create your own class schedule and manage your coursework and assignments.

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 they must also drop Chemistry 3AL at that time.

Course Description

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.

Required Textbook

Required Text

- "Understanding the Principles of Organic Chemistry, A Laboratory Experience" by Steven F. Pedersen and Arlyn M. Myers. (ISBN: 9781111428167); "Organic Chemistry Laboratory Notebook", by Steven F. Pedersen, Jesse H. Pedersen. (ISBN: 9781111428167)
- Textbook is available from: Cal Student Store.

Communication and Support

We want to hear from you if you have any questions or concerns, and we have provided a number of ways to communicate with your instructor/GSIs and fellow students. We encourage you to use the forums for any

matters in which other students might also be interested. If the matter is more personal or specific to your situation, visit the Support page for detailed contact information and advise about whom to contact.

Office Hours

Dr. Pedersen: To be announced

Teaching assistants: To be announced

None of these office hours are online.

VERY IMPORTANT

You won't be able to access your course material until you read and make your pledge to Academic Integrity. Go to the Modules page and click on the "START HERE" link. Click on the first link, "READ THIS", to learn about what constitutes cheating, plagiarism, and false information. If you think you already know, think again! You'll be surprised by what you find out. As a UC Berkeley student, you are expected to abide by these rules. Once you've read the agreement, click "AGREE TO THIS". Once you've clicked "OK", you gain access to the course.

Assignments

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.

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.

Worksheets

There are three worksheets that will be worked on only during the assigned laboratory periods. Each is worth 5 points. None of these can be used as a dropped lab score.

In Class Lab Reports (ICLR)

There will be no formal lab reports due for each laboratory period you attend. Instead, twice during the semester there will be an In Class Lab Report (ICLR). During the ICLR lab period you will be expected to write a lab report on one of the experiments that you performed prior to the ICLR period. The experiment that you will be writing an ICLR for will be announced during the assigned lab period. Therefore, you will

need to be prepared to write a ICLR for all the experiments included in that particular ICLR cycle (see the lab schedule for details). The lab report will consist of writing a discussion that is similar to, but not necessarily exactly the same as the discussion “bullets” found at the end of each experiment. You will also be asked to answer lab report questions similar to, but not necessarily exactly the same as the questions found at the end of each experiment. You will also need to perform calculations relevant to any particular experiment. Finally you will need to include a short conclusion.

During the ICLR periods you will be allowed to use your lab textbook and you will be given a copy of your in-lab observations for the experiment you choose. No calculators will be allowed (simple calculators will be made available in the lab) and you cannot use your lab notebook.

ATTENDANCE AT THESE PARTICULAR LAB PERIODS IS MANDATORY. NEITHER ONE OF THESE LAB PERIODS CAN BE USED AS YOUR “DROPPED” 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 Final

There will be one on-campus lab exam on Wednesday, August 5th from 8-9 p.m., location TBA. 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 2015 or Spring of 2016. 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 155 points. These are broken down as follows:

- 70 points for lab attendance and lab observations

- 30 points for Class Lab Reports
- 15 points for in-lab worksheets
- 10 points for online discussions
- 30 points for the laboratory exam

Policies

Students with Disabilities

We have provided text transcripts of all of the recorded lessons at the end of each module. The TXT files are in a zipped folder for download.

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>, at the beginning of the course with their request. The DSP will review all requests on an individual basis. Please have your Disabled Student Program Specialist send the instructor a formal request prior to the course start date.

Academic Integrity

Collaboration and Independence: Reviewing lecture and reading materials and studying for exams can be enjoyable and enriching things to do with fellow students. This is recommended. However, unless otherwise instructed, homework assignments are to be completed independently and materials submitted as homework should be the result of one's own independent work.

Cheating: A good lifetime strategy is always to act in such a way that no one would ever imagine that you would even consider cheating. Anyone caught cheating on a quiz or exam in this course will receive a failing grade in the course and will also be reported to the University Center for Student Conduct. In order to guarantee that you are not suspected of cheating, please keep your eyes on your own materials and do not converse with others during the quizzes and exams.

Plagiarism: To copy text or ideas from another source without appropriate reference is plagiarism and will result in a failing grade for your assignment and usually further disciplinary action. For additional information on plagiarism and how to avoid it, see, for example:
<http://www.lib.berkeley.edu/instruct/guides/citations.html#Plagiarism>
<http://gsi.berkeley.edu/teachingguide/misconduct/prevent-plag.html>

Academic Integrity and Ethics: Cheating on exams and plagiarism are two common examples of dishonest, unethical behavior. Honesty and integrity are of great importance in all facets of life. They help to build a sense of self-confidence, and are key to building trust within relationships, whether personal or professional. There is no tolerance for dishonesty in the academic world, for it undermines what we are dedicated to doing - furthering knowledge for the benefit of humanity.