Chemistry N3AL

Two (2) semester credits.

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.

Prerequisites

A grade of C- or higher in Chemistry 1AL. 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 N3AL and drops Chemistry 3A before Tuesday, July 12th, they must also drop Chemistry N3AL at that time.

Course Schedule

Please review the Course Schedule for an overview of lab experiments, due dates and projects. For an at-a-glance view of due dates and projects, refer to the course Calendar.

Instructor Information, Communication, Contact & Office Hours

Course Instructor

Dr. Steve Pedersen

Teaching Assistants (TAs)

While the instructor will interact with the whole class and will oversee all activities and grading, as well as being available to resolve any issues that may arise, the TAs will be your main point of contact. Your TAs are responsible for assisting you directly with your questions about assignments and course requirements, as outlined in the Assignments and Calendar. The TAs will also facilitate ongoing discussion and interaction with you on major topics in each module.

- Christopher Anderson

- Jessica Chan
- Janice Chua
- Brent M Humeston
- Victor Kong
- Christine Liu
- Sepand Nistanaki
- John B Park
- Jefferson Pruyne
- Jeanne Quirit
- Alexander Tong
- Jaewon Yoon

Communication

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/TAs 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.

Course Mail

Make sure to check the Course Mail for messages from the instructor. You can access course email within the Learning Management System by clicking on the Inbox link on the Corner Help toolbar (see also Canvas Overview Video) or choose to have your course mail forwarded to your personal email account or your cell phone.

Question & Answer Forum

Please use this forum to post questions about the course material, assignments, the learning management system or online homework. **The instructor/TAs will monitor this forum**, but you should also feel free to post answers to help other students. This helps to create a general FAQ so that all students in the course may benefit from the exchange.

Office Hours

Dr. Pedersen: To be announced
Teaching Assistants: To be announced
None of these office hours will be held online.

Required Textbooks and Technical Requirements

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)

The textbook and notebook are available at the Cal Student Store.

Technical Requirements

This course is built on a Learning Management system (LMS) called Canvas and you will need to meet these computer specifications to participate within this online platform.

Optional

Canvas allows you to record audio or video files of yourself and upload them in the course. Although doing so is not required for any of the activities, using these features will enhance your engagement in the course. If you would like to use these features, you will need to have a webcam and a microphone installed on your computer.

Technical Support

If you are having technical difficulties please alert one of the TAs immediately. However, understand that neither the TAs, nor the professor can assist you with technical problems. You must call or email tech support and make sure you resolve any issues immediately. Be sure to document (save emails and transaction numbers) for all interactions with tech support. **Extensions and late submissions will not be accepted due to "technical difficulties".**

For Tech Help Support: Click on the "Help" button on the bottom left of the global navigation menu in the course.

Learning Activities and Assignments

VERY IMPORTANT
You won't be able to access your course material until you read and make your pledge to Academic Integrity. Click the button below to navigate to and complete the Academic Integrity pledge.

ACADEMIC INTEGRITY Pledge

You are expected to fully participate in all the course activities described here.

1. Read the assigned textbook pages
2. Watch and listen to the lecture presentations
3. Read web-based announcements and postings assigned during the course
4. Complete online Pre-Lab Quizzes
5. Complete the Out of Lab Worksheets
6. Complete online discussions
7. Complete laboratory exam

Sections

For grading purposes, each of you has been assigned to one of the course TAs and placed within his/her section. Your particular TA will grade all of your work, as well as that of your section-mates, and engage with you in the course discussions. You can see whose section you've been placed in by exploring the "Section" column within the "People" page or by examining your discussion group's title, which includes your lab section.

Modules

A module is a grouping of topics related to one area of study, typically with readings, lectures and various kinds of assignments. Each module contains a list of Learning Outcomes for the module. Your assignments reflect the learning activities to perform to reach those outcomes. For an at-a-glance view of due dates and projects, refer to the course Calendar.

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 you will lose a total of 10 points.
- If you receive three zero's you will receive a failing grade in the course.

Regrade Policy

Regrade Policy for Lab Reports, In-Lab Worksheets and Out of Lab Worksheets

Any regrade request must be turned into your TA by the lab period following the period you received the graded document.* Regrade requests turned in later than this time period will not be accepted (no exceptions).

Therefore, every time you receive a graded document from your TA, you should:

1. Check to make sure the score on your returned notebook pages, and/or worksheets is the same as what is found in the bCourses database.
2. Add up the points within your notebook pages to make sure they are equal to the total on the front page.
3. Look at any comments the TA has written on any of your graded work and ask questions if there appears to be a mistake.

*This does not apply to the NMR dry lab. For this dry lab, any regrade request needs to be submitted to your TA by 5 PM, Thursday August 4th .

In Lab Worksheets

There are two In Lab Worksheets (one near the beginning of the semester and one near the end). As their name depicts, these worksheets will only be worked on in your laboratory period and will be due at the end of that laboratory period. Each is worth 10 points. Neither of these can be used as a dropped lab score.

Out of Lab Worksheets

There will be three Out of Lab Worksheets distributed throughout the semester. These worksheets will be assigned randomly and are due at the beginning of the next laboratory period. Each worksheet is worth 5 points and the lowest score will be dropped.

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 Wednesday, August 3rd from 7-8 p.m. PDT, 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 by taking the lab exam offered in Chemistry 3AL in the Fall of 2016. A score of ≥ 10 points on this exam 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.

Reminder: Your Course End Date

Your course will end on August 12th, 2016 at 11:59pm PDT. As you work through the course, please keep the end date in mind, and if you want to save any commentary or assignments for future reference, please make sure to print or copy/paste those materials before your access ends.

Grading

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

- 70 points for lab attendance and lab observations
- 20 points for In Lab Worksheets
- 10 points for Out of Lab Worksheets
- 10 points for online discussions
- 30 points for the laboratory exam

A score of ≥ 10 points must be obtained on the Laboratory Exam 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.

Final grades are assigned according to the following points:

Letter Grade to Points

Letter Grade	A (includes A and A-)	B (includes B+, B and B-)	C (includes C+, C and C-)	D	F
Points	115-140	98-114	84-97	77-83	0-76

It is important to note that not all components are graded online and included in the online course grade book. Because of this, the online course grade book will not display your overall course grade at any given time or your final grade. It should simply be used to assess your performance on the components that are included within it. Your final letter grade will be mailed to you by the registrar's office.

Course Policies

Honor Code

The student community at UC Berkeley has adopted the following Honor Code: "As a member of the UC Berkeley community, I act with honesty, integrity, and respect for others." The expectation is that you will adhere to this code.

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 and the online exam 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. Exams are to be completed without the assistance of other people, and without reference to texts, notes, and other materials. The expectation is that you will be honest in the taking of 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, explore the resources linked below:

UC Berkeley Library Citation Page, Plagiarism Section
GSI Guide for Preventing Plagiarism

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.

Incomplete Course Grade

Students who have substantially completed the course (greater than 50% of the coursework completed with a grade of C- or higher) but for serious extenuating circumstances, are unable to complete the final exam, may request an Incomplete grade. This request must be submitted in writing or by email to the course instructor. You must provide verifiable documentation for the seriousness of the extenuating circumstances. The Incomplete grade must be made up during the fall semester of 2016.

Students with Disabilities

Any students requiring course accommodations due to a physical, emotional, or learning disability must contact the Disabled Students' Program (DSP). They will review all requests on an individual basis.

- Request your Disabled Student Program Specialist to send the instructor a formal request before the official course start date by email
- In addition, notify the instructor and your Online Learning Support Specialist, which accommodations you would like to use.
  - Your Online Learning Support Specialist is Tracie Allen and her email is summer_online_support@berkeley.edu

End of Course Evaluation

Before your course end date, please take a few minutes to participate in our Course Evaluation to share your opinions about this course. You will be receiving the Course Evaluation via email. The evaluation does not request any personal information, and your responses will remain strictly confidential. You may only take the evaluation once. It will close August 2nd, 2016 PDT.