Spring 2016 *Steven F. Pedersen*

Welcome to Chemistry 3AL

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.

Lectures
Monday 12-1 PM in 1 Pimentel and Wednesday 12-1 PM in 1 Pimentel. Wednesday lectures are a repeat of Monday lectures.

Week 1	Date	Title
1	1/18 and 1/20	No Lecture
2	1/25 and 1/27	Introduction to the Course and beginning of Intermolecular forces
3	2/1 and 2/3	Continuation of Intermolecular forces
4	2/8 and 2/10	Melting Points and Phase Diagrams
5	2/15 and 2/17	NO LECTURE
6	2/22 and 2/24	Boiling Points and Dipole Moments
7	2/29 and 3/2	Recrystallization
8	3/7 and 3/9	Chromatography #1
9	3/14 and 3/16	Chromatography #2
10	3/21 and 3/23	NO LECTURE
11	3/28 and 3/30	NMR #1
12	4/4 and 4/6	NMR #2
13	4/11 and 4/13	NMR #3
14	4/18 and 4/20	NO LECTURE
15	4/25 and 4/27	NO 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. Part of these lectures will not necessarily be related to any experiments being performed this semester, but will serve as a foundation to build upon in the Chemistry 3B laboratory.

Laboratory
Laboratories are 4 hours long. You should plan on being in lab for this period of time.
Most experiments in Chemistry 3A 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. Individuals will be graded on a groups data as well as their own. Therefore, it is important to evaluate everyone’s data as though it were your own. Please note that no person(s) in a group is to rush another group member(s) in order to finish early. If it is determined that this is occurring, the teaching assistant will excuse the person(s) involved from lab for that day (resulting in a 0 for the experiment).

Office Hours
Dr. Pedersen: To Be Announced
Teaching Assistants: To Be Announced (the TA office hours for Chemistry 3AL are the same as for Chemistry 3A)

Course Website
The course website is http://bcourses.berkeley.edu. If you are enrolled in the course, you will have access to this site. Announcements, along with many other items will be posted on this website. It is recommended that you check this regularly to see if there are any relevant announcements that you might have missed in class.

Required Texts
"Understanding the Principles of Organic Chemistry. A Laboratory Experience."
Steven F. Pedersen and Arlyn M. Myers. (**ISBN-13:** 978-0495829935). Organic Chemistry Laboratory Notebook. Steven F. Pedersen, Jesse H. Pedersen. Both books are available at the Cal Student Store.

Lab Attendance
There are ten graded labs. Each lab is worth 10 points. Of these ten labs, two are dry labs, where you will be required to work on an assignment during the lab period. The other eight labs are experiments. Of the eight experiments, your lowest score will be dropped (neither of the dry labs can be dropped). See the handout on lab report grading to determine what is necessary for the successful completion of a lab report. *It is your responsibility to read the information in this handout.* As you will see, there are important consequences associated with not attending lab and/or not turning in completed laboratory reports. Course ethics are also highlighted in this document.

Outside of Lab Worksheets
There will be four worksheets distributed throughout the semester. These worksheets will be assigned randomly and are due at the beginning of the next laboratory period (i.e. one week, except when there holidays). Each worksheet is worth 5 points and the lowest score will be dropped.

Laboratory Quizzes
There will be four unannounced laboratory quizzes given throughout the semester. These quizzes will focus only on material presented in the lab lectures. Each quiz is 10 minutes and worth 5 points and your lowest quiz score will be dropped.

Lab Exam
On Thursday, April 28th from 7-8 PM there will be a laboratory exam. The exam will focus on the material covered in the lab lectures and is worth 30 points. The exam consists of multiple choice and true/false questions. This exam MUST be taken AND a score of ≥10 points must be obtained in order to pass the class. That is, if you score less than 10 points on the exam, you will receive a grade of Incomplete in the class (assuming your lab scores are of passing quality) no matter how well you performed in the rest of the course. To remove the Incomplete grade, you will need to take the 3AL lab exam within two semesters (including summer) of not passing the first exam. The exam is offered at the end of each semester of 3AL. If you do not pass the exam the second time, you will receive a failing grade in the course.

Grades

The point total for this course is 150. These are broken down as follows:

- 70 points for lab attendance and lab reports for experiments
- 20 points for dry labs
- 15 points for the outside of laboratory worksheets
- 15 points for the laboratory quizzes
- 30 points for the laboratory exam

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

Grade	Includes	Points
A	A and A-	123-150
B	B+, B and B-	110-122
C	C+, C and C-	95-109
D	D	75-94
F	F	0-74