

**Chemistry 3B**  
**CHEMICAL STRUCTURE AND REACTIVITY**  
**Spring 2016**

**General Information:**

Chemistry 3B is the second semester of a two-semester survey of organic chemistry.

**Course Instructor**

Dr. MaryAnn Robak, 327 Latimer Hall, [mrobak@berkeley.edu](mailto:mrobak@berkeley.edu)

Please use e-mail to ask simple questions about the course or to make an appointment to see me. Do not expect detailed answers to chemical questions because organic chemistry is a very visual science and structures are usually required to explain concepts. Take advantage of office hours to get your chemistry questions answered.

**Lectures:**

You may attend either section, regardless of your registration.

Section 1: Tuesdays and Thursdays 8:00 - 9:30 am, 105 Stanley Hall

Section 2: Tuesdays and Thursdays 3:30 - 5:00 pm, 105 Stanley Hall

**Review Sessions:**

Fridays, 4 - 6 pm, 105 Stanley Hall, starting the first week of classes.

Weekly review sessions will be taught by the head GSI, Steven Boggess.

([sboggess@berkeley.edu](mailto:sboggess@berkeley.edu))

**Office Hours:**

- Dr. Robak:
  - Tuesdays 10:00 – 11:30 am and Thursdays 1:30 – 3:00 pm
  - **Bixby Commons North** (110 Latimer) (if you are outside facing the North entrance to the main Latimer lobby, with Pimentel behind you, the entrance to Bixby North is on your right side).
- Steven Boggess (Head GSI)
  - Fridays 2:00 – 4:00 pm
  - **Chemistry Library Room F** (Hildebrand Hall)
- All other GSI office hours are held in **106 Latimer Hall** (between Latimer and Tan Halls)

A complete Google Calendar (including lectures, exams, Dr. Robak's office hours and GSI office hours) is posted on the course website (<https://bcourses.berkeley.edu/>). You will notice that office hours are almost continuously available! Any student in Chem 3B or 3BL (lab) is welcome to attend the office hours of any GSI.

Office hours are walk-in and very informal. You are highly encouraged to bring questions on a regular basis. In addition, office hours are a great place to review your notes, work on practice problems, and meet other students to study with even if you do not have specific questions before coming.

## Textbook/Materials

- **Organic Chemistry: Structure and Function** (seventh edition), by Peter Vollhardt and Neil Schore. W.H. Freeman, New York. Older editions of the textbook (e.g. 6<sup>th</sup> edition) are also acceptable.
- **iClicker** (any version: iClicker, iClicker+, iClicker2)
- Two or more different color writing implements (pen/pencil/marker) in each lecture, so that you can correct your worksheet in a different color than your original work.

## Additional Recommended Resources

- Study Guide to accompany the textbook (N. E. Schore, Freeman, New York.)
- Molecular Structure Models (HGS Maruzen)
- “Virtual Textbook of Organic Chemistry” (free online textbook)  
<http://www.cem.msu.edu/~reusch/vtxtindex.htm>

## Online Q&A - Piazza

The course website (bcourses.berkeley.edu) contains an online Q&A message board using the Piazza platform. Students can post questions and answer each other's questions in a wiki-style (collaborative editing) format. Instructors (Dr. Robak and GSIs) will also periodically answer questions here.

## Problem Sets

Problem sets (and answer keys) will be posted on the course website. These problem sets will not be collected or graded. Many of these practice problems will be in the same format and at the same level of difficulty as exam problems. You are responsible for all content covered in these problem sets.

The single factor that gives students the most trouble in this course is **falling behind**. This is because it is very difficult to learn all the material in the few days before an exam. To avoid this, we strongly recommend that you come to the lecture, keep up with the reading, and above all **work on the problems as soon as they are assigned**.

## Grading:

The course will be graded on the basis of 1000 points, distributed as follows:

- 2 x 250 points (Midterm exams)
- 375 points (Final exam)
- 125 points Participation Credit (see description below)

Final letter grades in this course will be based on the total points in the course. The following point cutoffs may be lowered slightly but will not be raised when letter grades are assigned.

A+/A/A-	850-1000 points
B+/B/B-	700-849 points
C+/C/C-	500-699 points
D	400-499 points
F	0-399 points

## **Exams:**

You are responsible for checking the exam dates and times at the start of the semester to make sure that you do not schedule any conflicts. There will be no makeup exams. Students with a documented medical emergency should contact Dr. Robak as soon as possible to discuss course completion.

- Midterm Exam #1 will be held on Monday, Feb 29 from 7:00 – 9:00 PM.
- Midterm Exam #2 will be held on Monday, April 11 from 7:00 – 9:00 PM.
- The Final Exam will be held on Thursday, May 12 from 11:30 – 2:30 PM.

## **Class Participation Credit**

The first 125 points of participation credit earned will be counted toward your course grade. There will be opportunities to earn at least 150 points of participation credit throughout the semester, but there will be no makeups for specific missed participation opportunities (for example, absences or technical difficulty with iClickers.)

- **iClicker**
  - iClicker questions will be posed several times during each lecture, so that you can practice applying the concepts as they are discussed.
  - Most iClicker questions will be scored for participation, and selected questions will be scored for correct answers.
  - There will be 3 points for iClicker during each lecture. Credit may only be earned in one lecture per day.
  - Each person must have and use their own iClicker. Responding for another student will be treated as cheating. Any student caught with multiple iClickers in hand responding for another student will lose iClicker credit for the course, the iClickers will be confiscated, and the case will be referred to the Office of Student Conduct.
  - Register your iClicker on bCourses.
- **Lecture Worksheets**
  - Most lectures will include a worksheet with problems to be solved at designated times during class. These questions will be complementary to the iClicker questions, providing an opportunity to practice drawing structures and mechanisms and writing explanations. Answers will be provided, and you will be responsible for correcting your work.
  - Each worksheet will be graded for 3 points of credit: 2 points for completing the questions, and 1 point for correcting your answers in a different color ink.
- **Other Opportunities**
  - Occasionally, other opportunities to earn participation credit will be announced, including periodic polls/surveys on the course website, participation in certain review sessions, and participation on the Piazza Q&A site.

## Students with Disabilities

If you need disability-related accommodations in this class, please contact the Disabled Students Program (<http://dsp.berkeley.edu>) to request services. If you already have an accommodation letter from DSP, please check to make sure that the letter is submitted to me through the DSP system (there is no need to email a separate copy). Students with exam accommodations will receive an email with details approximately one week prior to each exam. If you would like to set up an individual meeting with me to discuss your accommodations, please email me ([mrobak@berkeley.edu](mailto:mrobak@berkeley.edu)).

## Course Content:

An outline of course content and recommended reading assignments will be posted on the course website and may be periodically updated.

### Brief Outline:

Chapter 14: Delocalized Pi Systems (2 weeks)

Chapters 15, 16, 22, and 25: Benzene and Aromaticity (3-4 weeks)

Chapters 17, 18, and 24: Aldehydes, Ketones, and Carbohydrates (4-5 weeks)

Chapters 19, 20, and 23: Carboxylic Acids and their Derivatives (2-3 weeks)

Chapters 21 and 26: Amines, Amino Acids, Proteins, and Nucleic Acids (2-3 weeks)

Organic chemistry is a concentrated and fast-moving subject. An important aspect of the subject is that it is very **cumulative**, with each new topic building upon and using concepts developed in the previous one. Because of this close interrelationship of topics, this is not a course in which it is possible to learn some topics but ignore others. The content covered in **Chem 3A** provides a foundation upon which many Chem 3B topics are built.

All exams in this course will be based on the material covered in lecture. The textbook should be used as a supplement to the lectures. There may be many topics covered in lectures that are not in the text, and you will be responsible for knowing this material.