

GENERAL INFORMATION: Chemistry 3A represents the first semester of a two-semester survey of organic chemistry. Students must take Chemistry 3A either concurrently with or prior to Chemistry 3AL. If taken concurrently, students may not drop Chemistry 3A and remain in Chemistry 3AL. If taken separately, students may not take Chemistry 3AL before passing Chemistry 3A with a grade of C– or better. If you are not taking Chemistry 3AL, you are nevertheless entitled to visit (any) TA office hour (to be posted). Note: An early drop deadline applies, midnight on Friday of the second week of instruction: January 29. Spring 2021 and summer 2021 incomplete grades will lapse to an “F” after Tuesday, January 18, 2022.

INSTRUCTORS: Professor Peter Vollhardt will provide a link for each lecture on bCourses (<https://bcourses.berkeley.edu/>). These are based on the Spring 2019 Chem 3A webcast and convey best the classroom experience. A collection of ppt slides for Chem 3 is found on Professor Vollhardt’s website <http://www.cchem.berkeley.edu/kpvgrp/research.html> (under teaching). Slides will also be posted on bCourses ahead of individual lectures. Many of the animations shown in class are available at http://media.saplinglearning.com/priv/he/vollhardt/Animated_Mechanisms/css/Vollhardt_Animated_Mechanism_Index.html. For those of you who are enrolled in Chemistry 3AL laboratory, Dr. Peter (Pete) Marsden is in charge: petermarsden@berkeley.edu. A head graduate student instructor, Danny Huang, danny.huang@berkeley.edu, will give regular review sessions Wednesdays 5–7 p.m., beginning on January 27.

ADMINISTRATION: The administrative coordinator for the course is Ms. Lucia Briggs (332 Latimer Hall, 643-9939, luciab@berkeley.edu), and questions about prerequisites, add/drops, enrollment, section switches, wait lists, etc. should be directed to her.

LECTURE ATTENDANCE AND OFFICE HOURS:

“YOU JUST NEED TO BE WILLING TO BE CONFUSED FOR A WHILE, TO SIT DOWN AND THINK VERY HARD, AND UNCONFUSE YOURSELF.”

*VIJAY BALASUBRAMANIAN
PROFESSOR OF PHYSICS
UNIVERSITY OF PENNSYLVANIA, 2005*

Organic chemistry is a concentrated and fast-moving subject. There is nothing inherently difficult about it, but you will probably find it different from anything you have studied previously. There is a rigid hierarchy, with each new topic building upon the previous one. *Therefore, the single factor that gives students the most trouble is falling behind.* To avoid this problem, **watch and replay the webcast**, keep up with your studying the textbook, and work problems.

Seeking help and advice from the instructors during their office hours can make a great difference. In our experience, too few students take advantage of this opportunity. Do not hesitate to do so regularly. You are entitled to visit any of the laboratory TAs during their Zoom office hours, *even if you are not enrolled in the laboratory*. The TAs and professors *specifically set aside* this time to be at your service; therefore, you are *not* imposing on them when using some of it. When you encounter something you do not understand, first attempt to figure it out for yourself. If you cannot, *never* assume that it is just a trivial or unimportant point and leave it at that. Ask for an explanation from one of us. Try to have specific questions or problems in mind, but please do not attempt to preview topics not yet covered. A schedule of TA Zoom office hours will be posted on the

course website. Do not try to meet with your TA or one of the instructors *outside* the allotted time slots, *unless* you have made a specific appointment. Your TA is a *full-time* researcher when he/she is not teaching and cannot be at your disposal at all times.

In addition, the Student Learning Center <http://slc.berkeley.edu/chemistry-3a-3al> is providing you with the option of joining a study group led by trained tutorial staff. Those interested should sign up during the first week of classes.

OFFICE HOURS AND LOCATIONS

Danny Huang	Monday 5:00 p.m.–7:00 p.m. https://berkeley.zoom.us/j/8716114511
Professor Peter Vollhardt (beginning Wed, 1/27/2021)	Wednesday 11:00 a.m.–12:00 noon Friday 10:00 a.m.–11:00 a.m. https://berkeley.zoom.us/j/4265267676
Teaching Assistants	Schedule to be posted on bCourses

VIRTUAL COUNSELING: Free and confidential, and can be related to any personal, professional, or academic concerns. To sign up for a non-urgent virtual Let's Talk consultation, go here: <https://uhs.berkeley.edu/coronavirus/mental-health-resources/virtual-lets-talk-drop-consultations>. For urgent concerns between **10am-4pm** students should call **(510) 642-9494** to speak with a counselor as a first step. For **after-hours support**, please call the 24/7 line at **(855) 817-5667**.

E-MAILING: This course has a large enrollment and it is **impossible** for Professor Vollhardt to deal with routine e-mails. If you have procedural and other questions, e-mail your TA or Lucia Briggs. **Chemistry questions** require discussion and a board: **Come to Zoom office hours**. Any **emergencies** relating to exams should be directed to Danny Huang, danny.huang@berkeley.edu. Note: *We will not be answering queries through bCourses.*

TEXTBOOK, STUDY AIDS, AND QUIZZES: The required lecture texts are K. P. C. Vollhardt, N. Schore, *Organic Chemistry*, 8th Edition, W. H. Freeman, New York, 2018, and N. E. Schore, *Study Guide*, W. H. Freeman, New York, 2018. Do not use prior editions of the text, as they are outdated. Extensive Web resources are available through your Sapling enrollment.

You should enroll in Sapling Learning (<https://macmillan.force.com/macmillanlearning/s/article/Sapling-Learning-Registering-for-courses>; included in the packages below). **Please enter your "berkeley.edu" e-mail address and no other.** Similarly, for ID#, enter your Berkeley ID.

Bundled book packages are offered at a substantially discounted price (37% reduction) at the UC Berkeley bookstore:

Option 1: (for University of California at Berkeley only)

Organic Chemistry 8e textbook & SaplingPlus for Organic Chemistry (Single-Term Access) & Study Guide/Solutions Manual for Organic Chemistry & Organic Chemistry Basic Molecular Model Set

ISBN: 9781319431853

Option 2:

Loose-leaf Version for Organic Chemistry 8e textbook & SaplingPlus for Organic Chemistry (Single-Term Access) & Study Guide/Solutions Manual for Organic Chemistry & Organic Chemistry Basic Molecular Model Set

ISBN: 9781319429102

Option 3:

SaplingPlus for Organic Chemistry 8e (includes e-book, single term access, no print text).

Available at the bookstore or through Macmillan's student store:

<https://store.macmillanlearning.com/us/search/?text=9781319220488>

ISBN: 9781319220488

Voluntary: BACON: Biology and Chemistry Online Notes and Tutorials

'BACON', a handy resource created at UCLA, is a series of online tutorials designed to help connect the wonders of organic chemistry to medicine, other aspects of real life, and even pop culture.

You have 16 BACON tutorials available. Each tutorial begins with a 'refresher' of key concepts you should master. At the end of the tutorial, there is a short multiple-choice quiz, which you can use to assess what you have learned.

Sign up by:

1. Visiting <https://learnbacon.com/> and click 'Sign Up' to create your account.
2. Follow the instructions and then register for the appropriate course. The course pin number you need is **PV3A\$2021**.

The cost for BACON is only \$6 per student for all 16 tutorials, so I encourage you to take advantage of this UC resource!

If you encounter any problems related to BACON during the term, please email support@learnbacon.com for help.

PROBLEMS: A list of suggested end of chapter problems has been posted on bCourses, but you are advised to work as many exercises as possible in the course text and online. If you do not understand a problem and/or its solution, consult with your TA or one of the instructors. Equally importantly, if you *do* understand a problem and its solution, but *could not work it without looking up the answer*, consult with your TA or one of the instructors to learn about the logic of problem solving.

SUGGESTIONS ON HOW TO STUDY:

1. Organize your life, all 7 days of the week, including your "time off".
2. Read the book ahead of lecture.
3. Annotate the ppt slides while watching the webcast.

4. "Work up" the lecture **by studying (not just reading) the book** in conjunction with your notes and the webcast. If you do not understand any of the material, come to office hours.
5. Do problems immediately as they come up. For help, come to office hours.
6. Do not cram, especially before an exam. Instead, keep at it daily; ~1 hour should do.
7. I encourage you to organize minimeetings among yourselves on Zoom, gather.town, or a similar platform to network, discuss chemistry, or simply socialize in small groups. It helps in the understanding of the material and to counter the feeling of isolation during this period of virtual communications.

EXAMINATIONS: It is your responsibility to check that you have no conflict with the scheduled midterm and final exam times. There will be no accommodations for such conflicts. If you enroll in a course that features exam times coinciding with those of Chem 3A, make arrangements with the corresponding instructor during the first week of classes.

There will be **no make-up midterm examinations**, should you be absent during one of them. If you present Prof. Vollhardt with a *documented* medical excuse, he may elect to assess your final grade based solely on your performance in the remainder of the course. Failure to attend the final exam will result in a grade of F, unless there is a legitimate excuse **and your standing in the course is at a passing level**. When these conditions are met, you may receive an I-grade (see also "**GRADING**" below).

A collection of previous exams is posted on bCourses. Note: Ignore the spectroscopy questions in these exams, as this topic is covered in the laboratory part of the course.

EXAMINATIONS:

Weekly Sapling quizzes are tentatively scheduled for, 1.21. ("how to use Sapling" activity), 1.28., 2.4., 2.11., 2.18., 3.4., 3.11., 3.18., 4.1., 4.8., 4.15., and 4.22. They will be released via Sapling on these dates (all Thursdays) at 6 p.m., to be completed before 6 p.m. on the following Mondays.

Virtual midterm examinations (open book, but no collaboration) are scheduled for:

Saturday,	February 27	8:00–10:00 a.m.
Saturday,	April 10	8:00–10:00 a.m.

Note: Exams start at 8 a.m. **sharp** and last **1.5 hours**, with an additional 30 min for dealing with merging files and uploading the exam to Gradescope.

The **virtual comprehensive final examination** (Exam Group 9) will take place on:

Wednesday,	May 12	8:00 a.m.–11:30 a.m.
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The exam will start at 8 a.m. **sharp** and last **3 hours**, with an additional 30 min for dealing with merging files and uploading the exam to Gradescope.

Specific instructions for each exam will be communicated well before these dates, but here is a general heads-up: 1. You will need a smart phone to scan some pages of the exams. 2. Those of you who have not done so, you will need to download AcrobatPro (free from UCB [Software Central](#)) and *practice*

the required functions. 3. Although *not required*, if you like the extra flexibility, you can secure access to an electronic writing pad, printer, and scanner.

GRADING: Your course grades will not be based “the curve”, but rather on your ranking in the class by adding up all your scores in the exams and quizzes, in addition to an independent assessment of the quality of your work. Therefore, you are not competing with your fellow students, but rather strive to meet the standards of your instructors. There are no assigned grades for midterms, but you will be able to see your standing in the class from the exam histograms. The total of 1180 points is divided up as follows:

Sapling Quizzes (best 9 out of 12)	180
Midterm exams (2 x 250)	500
Final exam	500
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Total	1180

Incomplete grades (I-grades) will be given only when the student has *satisfactorily completed* (i.e., “*Passing*”) almost all of the required work, but is unable to complete the course because of circumstances beyond his or her control. In practice, the latter is usually illness at the time of the final exam. Students who receive a grade of incomplete have to make up the missing work by the first day of instruction of the spring semester of 2022: Tuesday, January 18, 2022. It should be emphasized that make-up exams are not offered. Thus, when a final examination is missed, resulting in an I-grade, this grade can be removed only by taking this examination in connection with Chemistry 3A during the summer 2021 or fall 2021 sessions.

CHEATING AND PLAGIARISM: The vast majority of the class adheres to the Berkeley honor code. To assure you of our vigilance to protect your integrity, you should know that any cheating in examinations and any other unethical conduct will result in an automatic grade of F and a report to the committee on student conduct, which may result in dismissal from the university. **Don't do it!** *If you have a problem of any sort that impinges on your performance*, contact Professor Vollhardt, rather than resorting to ill informed and poorly conceived measures. You will be told more about our efforts in the chemistry department in this respect in the instructions to the exams.

LETTERS OF RECOMMENDATION: These will be written by your TAs and, if required or possible, co-signed by your professor. **Make sure that you arrange with your TA for a letter towards the end of the semester**, as many of your lab instructors will graduate in due course and leave.

COURSE OUTLINE: Lectures will follow the order of topics below (approximately two lectures each), as in your textbook. The only deviation from the content will be spectroscopy, which is covered in the laboratory part of the course. Therefore, there will be no testing for it in exams and quizzes.

1. Structure and Bonding in Organic Molecules
2. Structure and Reactivity
3. Reactions of Alkanes
4. Cyclic Alkanes
5. Stereoisomers

6. Properties and Reactions of Haloalkanes
7. Further Reactions of Haloalkanes
8. Hydroxy Functional Group
9. Further Reactions of Alcohols and the Chemistry of Ethers
10. Introduction to Alkenes
11. Reactions of Alkenes
12. Alkynes

For What It's Worth–

“You are not engaged so much in acquiring knowledge as in making mental efforts under criticism. A certain amount of knowledge you can indeed with average faculties acquire so as to retain; nor need you regret the hours spent on much that is forgotten, for the shadow of lost knowledge at least protects you from many illusions. But you, go to school not for knowledge as much as for arts and habits; for the habit of attention, for the art of expression, for the art of assuming at a moment's notice a new intellectual posture, for the art of entering quickly into a person's thoughts, for the habit of submitting to censure and refutation, for the art of indicating assent or dissent in graduated terms, for the habit of regarding minute points of accuracy, for the habit of what is possible in a given time, for taste, for discrimination, for mental courage and mental soberness. Above all, you go to school for self-knowledge.”

William Cory – Master at Eton College – 1861