

GENERAL INFORMATION: Chemistry 3A represents the first semester of a two-semester survey of organic chemistry. The prerequisites for taking this course are a grade of C– or better in Chemistry 1A, or a score of 4 or 5 on the Chemistry AP test. Students must take Chemistry 3A either concurrently 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 (posted on bCourses). Note: An early drop deadline (midnight on Friday of the second week of instruction) applies.

INSTRUCTORS: Professor Peter Vollhardt (635 Latimer Hall) will lecture twice on Tuesdays and Thursdays in 1 Pimentel Hall, first at 8:00–9:30 a.m. and then at 2–3:30 pm (webcast on bCourses). 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). 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. New slides will be posted on bCourses (<https://bcourses.berkeley.edu/>) ahead of individual lectures. Professor Michelle Chang (125 Lewis Hall, 642-8545, mcchang@berkeley.edu) is in charge of Chemistry 3AL laboratory, for those of you who are enrolled in it. A head graduate student instructor, Claire Harmange, claireismyGSI@gmail.com, will give regular review sessions Wednesdays 8–10 p.m. in VLSB 2040, beginning on January 24.

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, **come to lecture regularly**, replay the webcast, keep up with your reading, and work problems. Exam scores have shown that, the availability of the webcast notwithstanding, **attending the live lecture is important and correlates with the students' performance in the course.**

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 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 office hours has been posted on the course website. Do not try to see your TA or one of the instructors *outside* the allotted time slots, *unless* you have made a specific appointment. Under *no* circumstances should you visit your TA in her/his laboratory. Apart from the safety hazard, 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

Claire Harmange	Friday	12:00 p.m.–2:00 p.m.
Bixby Commons (see map below)		
Professor Peter Vollhardt	Wednesday	11:00 a.m.–12:00 a.m.
Chemistry Library Room 100E (beginning Friday, 1/19/2018)	Friday	10:00 a.m.–11:00 a.m.
Teaching Assistants	Schedule posted on bCourses	

**BIXBY COMMONS
(PLAZA LEVEL)**



DROP-IN COUNSELING: Dr. Yu Bi, a psychologist with the University Health Services, is available for drop-in counseling in B-52 Hildebrand Hall (just off the breezeway):

Tuesdays 2:00 p.m.–4:00 p.m.

Fridays 10:00 a.m.–12:00 p.m.

No appointment is needed. If you want to make such, call her at 510-664-7723.

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 or see your TA or Lucia Briggs. If you have chemistry questions, come to office hours. Any emergencies relating to exams should be directed to Claire Harmange, claireismyGSI@gmail.com.

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. Extensive Web resources are available through your Sapling enrollment.

You should enroll in Sapling Learning (instructions to be posted). **Please enter your "berkeley.edu" e-mail address and no other.** Bundled packages are offered at a substantially discounted price at the UC Berkeley bookstore:

Package 1:

Organic Chemistry 8e & Sapling Plus for Organic Chemistry (Twelve-Month Access) & Study Guide/Solutions Manual for Organic Chemistry & Organic Chemistry Basic Set & Student Flyer University of California-Berkeley
Package ISBN: 9781319206802

Package 2:

Loose-leaf Version for Organic Chemistry 8e & Sapling Plus for Organic Chemistry (Twelve Month Access) & Study Guide/Solutions Manual for Organic Chemistry & Organic Chemistry Basic Set & Student Flyer University of California-Berkeley
Package ISBN: 9781319206826

Voluntary: BACON: *B*iology and *C*hemistry *O*nline *N*otes and *T*utorials

'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\$2018**

The cost for BACON is only \$5 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, see 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*, see 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. Print the ppt slides and bring them to class for note taking.
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.

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, 1.25. ("how to use Sapling" activity), 2.1., 2.8., 2.15., 3.1., 3.8., 3.15., 3.22., 4.5., 4.12., 4.19., and 4.26. 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.

Midterm examinations are scheduled for:

Thursday, February 22	7:00–8:30 p.m.
Tuesday, April 10	8:00–9:30 p.m.

Note: **90 min** exams.

Comprehensive final examination (Exam Group 9) will take place on:

Wednesday, May 9	8:00 a.m.–11:00 a.m.
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GRADING: The course grade is based on your ranking in the class by *adding up all your scores* in the exams and quizzes. There are no assigned grades for midterms, but you will be able to see your standing in the class from the exam histogram. 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* 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 2019. 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 3B during the summer 2018 or fall 2018 sessions.

CHEATING AND PLAGIARISM: Any cheating in examinations and any other unethical conduct will result in an automatic grade of F, a report to the committee on student conduct, and procedures designed to alert past and future professors about any such incidence. **Don't do it!** *If you have a problem of any sort that impinges on your performance*, see Professor Vollhardt, rather than resorting to ill informed and poorly conceived measures.

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