



USC University of Southern California

Chem 322aL: Organic Chemistry (4.0 Units) Fall 2021

Class Meetings: This class is offered in-person in SGM 124 MWF 9am and 1pm

Instructor: Prof. Rebecca Broyer

Office Hours: details on Blackboard

Contact Info: rebecca.broyer@usc.edu

Fellows: Colby Barret colbybar@usc.edu

Joshua Feng fengjosh@usc.edu

Office Hours: posted on Blackboard

Lab Instructor: Dr. Jennifer Moore

Office Hours: See laboratory Blackboard site for times / meeting information

Contact Info: moorej1@usc.edu

Course Coordinator: Dr. Xiaojun Zhang.

Electronic Office Hours: email for appointment

Contact Info: xiaojunz@usc.edu

Teaching Assistant contact information and office hours times/location can be found on the course Blackboard site.

Learning Objectives

It is the overall intention of this course for students to learn how to apply concepts they learn to new situations and problems by forming effective problem-solving strategies. Additionally, students who successfully complete this course should be able to:

- Draw organic structures and bonding and depict their orbital hybridization.
- Predict acid and base properties for organic molecules.
- Provide correct IUPAC names for organic compounds.
- Predict physical properties for organic compounds.
- Predict molecular structures from spectral data including: IR, $^1\text{H-NMR}$, and $^{13}\text{C-NMR}$ data
- Predict how stereochemistry will affect the product distributions in a reaction
- Design multistep syntheses using alkene, alkyne, alkyl halide, alcohol, ether, amine, aromatic, acidic, basic, organometallic, substitution, elimination, and addition type reactions.
- Draw electron pushing mechanisms for all organic reactions discussed during the semester and apply them to a variety of chemical problems
- Prepare a presentation to communicate the main ideas of a reaction mechanism presented in the course

Required Materials

"Organic Chemistry" P.Y. Bruice, 8th edition

"Study Guide and Solutions Manual," P.Y. Bruice

"Organic Chemistry as a Second Language: First Semester Topics" D. Klein, 5th edition

"Fall 2021 Chemistry 322aL Laboratory Manual" (You will receive an email from Dr. Moore on the first day of classes with instructions on how to purchase and download the laboratory manual)

Any Molecular Modeling Kit

Optional Materials

"Making the Connections 2," Anne B. Padias, 2nd edition

Description and Assessment of Assignments

Assignments in the course include quizzes, exams, laboratory reports, surveys and assignments

Grading Breakdown

Your course grade will be scaled to 1000 points. Your grade will be determined according to the following distribution:

Assignment	% of Grade
Quizzes	16%
Midterm Exams	30%
Exam Reflections	2%
Laboratory	33%
Video Quizzes, Surveys, Assignments	4%
Final Exam	15%
TOTAL	100%

To receive a passing grade, satisfactory work must be done in both lab and the lecture portions of the course. You are encouraged to check your grades on Blackboard.

Grading Scale

Course final grades will be determined using the following scale:

Grade	Points	%
A	930-1000	93-100
A-	900-929	90-92.9
B+	870-899	87-89.9
B	830-869	83-86.9
B-	800-829	80-82.9
C+	770-799	77-79.9
C	730-769	73-76.9
C-	700-729	70-72.9
D+	670-699	67-69.9
D	630-669	63-66.9
D-	600-629	60-62.9
F	Below 600	Below 60%

(A) An 'A' student not only understands the course material well but also can apply it creatively to new situations. The cutoff for an 'A-' will be no higher than 90%.

(B) A 'B' student has a good, solid understanding of the material but has trouble applying that knowledge to new situations. The cutoff for a 'B-' will be no higher than 80%

(C) A 'C' student has major gaps in understanding. The cutoff for a 'C-' will be no higher than 70%

(D or F) Still larger gaps lead to a 'D' or 'F' in the course. The cutoff for a 'D-' will be no higher than 60%

*To receive a passing grade, satisfactory work must be done in both lab and the lecture portions of the course. **Students must earn at least 50% of the lecture points and 50% of the lab points in order to earn a C- or higher.**

Point totals for the course will be available on the course Blackboard site

Course Notes

It will be imperative for you to attend class if you plan to succeed in this course. I will provide my "blank" lecture notes ahead of time via blackboard and we will work through these during lecture. I will provide opportunities during lecture for problem solving and self-assessment. Come ready to be engaged. If you are absent it will be your responsibility to get course announcements, material, and activities via blackboard. **The problems we cover during class will be very similar to the types of problems you would see on a quiz or exam.** Keep in mind that organic chemistry is a cumulative subject. If you miss something early on, it is going to be even more difficult to keep up later.

Course Notes

Lecture notes will be available on Blackboard.

Office Hours

You are strongly encouraged to see any TA during their office hours, not just your own. for all TAs will be posted on the class website.

Supplemental Instruction (SI)

The University has a Supplemental Instruction Program (<https://dornsife.usc.edu/chem322a/>) that we encourage you to use. The SI instructors hold weekly sessions going over the course material and problems. They also prepare mock exams, which you can use to test yourself before the midterms and finals. The SI leaders attend all of the lectures and are familiar with the lecture material.

Assignment Submission Policy

Quizzes, surveys and assignments must be submitted by the stated deadlines. Late assignments will not be accepted.

Grading Timeline

Graded work will be available for review on Blackboard/Gradescope within 48 hours of the due date with the exception of the final project, which will take more time. You can view your grades at any time on the Blackboard site.

Additional Policies

Video Quizzes Surveys and Assignments

Prior to some lectures you will be asked to watch a few short videos and complete a related quiz (or quizzes) on Blackboard. You may also be expected to complete reading quizzes related to each chapter covered in the textbook. These quizzes will

help you assess your understanding of the material. You will earn 1 point for answering each question correctly, with multiple attempts allowed. You will not earn points for submitting answers after the deadline. Please carefully note all due dates and times (found in Blackboard). There are no make-ups and no late submissions. Occasionally surveys will be posted to the Blackboard site. These surveys will be graded on participation only – there are no right or wrong answers. Points will be awarded (as stated at the beginning of each survey) for completion of each question. Students will complete work assigned during class time, such as small group assignments, open-notes quizzes, and polls. Credit will be given for thoughtful completion. In-class work may be assigned at any point during the class; students who miss the assignment due to arriving late or leaving early will not earn credit for these assignments. A total of 20% of the points for in class work will be dropped to account for missed work for illness or any other reason.

Exams

There will be three 60-min exams given on Wednesdays at 3:30 pm. No exams will be given on alternative dates and no makeup exams will be given. In some circumstances, a midterm missed due to severe illness, religious observance, or some (essential) USC activities may be excused. We must know ahead of time and will need documentation (see **Absences** section below). In this case, the balance of the lecture score will be scaled to compensate for the missing grade. **An unexcused missed hour exam will be counted as a zero. Students must take at least two of the three midterms, and the final.** If you cannot take at least two of the midterm exams, you will receive a score of zero for the second missed exam. The final exam will be given on *Thursday, December 9, 2021, 8:00 a.m. – 10:00 a.m.* Although it will be comprehensive, lecture material covered after the third exam will be emphasized.

EXAM 1: Sept 15, 2021 3:30pm

EXAM 2: October 13, 2021 3:30pm

EXAM 3, November 10, 2021 3:30pm

Final Exam: Thursday, December 9, 2021, 8:00 a.m. – 10:00 a.m.

Please bring your USC student ID card to all exams, your ID will be checked when you turn in your exam. All electronic devices such as cell phones are prohibited and cannot be used for any purpose during the exam, including keeping time. No one will be allowed to enter the exam room late or to leave early.

Absences

Make-up exams will not be given under any circumstances. Absences will be excused based on official University policy (verifiable illness or necessity). An excused absence from an exam will be granted only on the basis of proper documentation, for instance a certification provided by a physician or hospital. Please inform the course coordinator Dr. Xiaojun Zhang about the absence ahead of time; and present the valid excuse and proper document(s) to Dr. Zhang, **no later than 24 hours** after the missed exam. Students must take at least two of the three midterms, and the final. If you cannot take at least two of the midterm exams, you will receive a score of zero for the second missed exam.

Reflection

After each exam you will be asked to reflect on your exam using an online form. Exam reflections will be due on Mondays at noon after each exam. No late exam reflections will be accepted. **There are no exceptions.** If you have an excused absence from an exam, an alternative assignment will be provided depending on the circumstances of your excused absence.

E1 Reflection	Monday, September 20, 2021	12pm
E2 Reflection	Monday, October 18, 2021	12pm
E3 Reflection	Monday, November 15, 2021	12pm

Gradescope

Graded exams will be scanned and available for viewing/printing from Gradescope. <http://www.gradescope.com>. You will be sent an invitation from the instructor of the course. Details can be found on Blackboard

Group Quizzes

There will be six 30-min group quizzes administered on Wednesdays at 3:30 pm. Groups will consist of three students. Your top four scores will count toward your final grade. There are no make-ups for missed quizzes. A missed quiz for any reason will count as your dropped quiz. A third missed quiz will count as a zero towards your final grade.

Quiz 1	Wednesday, September 8	3:30 pm
Quiz 2	Wednesday, September 22	3:30 pm
Quiz 3	Wednesday, October 6	3:30 pm
Quiz 4	Wednesday, October 27	3:30 pm
Quiz 5	Wednesday, November 3	3:30 pm
Quiz 6	Wednesday, November 17	3:30 pm

Homework

Prior to lecture read the sections to be covered in advance. Here is where you should be spending the majority of your time outside of class, ideally 3 hours of study for each hour of lecture, or 1-2 hours a day! This is a relatively fast-paced class so working on it a little bit every day means you won't fall behind – trying to “cram” study and memorize material is NOT a successful strategy for organic chemistry! Working textbook problems is the only way you can get practical experience and be prepared for exams. A minimum of 10% of each exam will be derived directly from the textbook problems. Try the in-chapter problems as you read the chapter and then continue to work on the end-of-chapter problems (answers at the back of the book or in Solutions Manual). Working on problems means doing the problem – write down your answer and then check to see if it's right, and then try more problems. A list of “end-of Chapter” problems will be posted on the course website. Practice Exam Problems will also be provided each week on the course blackboard page. These items will not be graded, but students are expected to do them. Answers can be checked with posted answer keys, in the solutions manual, and in TA and instructor office hours.

Laboratory

Laboratory Orientation: A lab orientation video will be posted to the laboratory Blackboard site. You must complete lab orientation (videos & quizzes) in order to maintain your space in the lab and thus to remain in the course. The lab orientation will be available on the first day of classes. You will receive an email when the Blackboard page is live.

Lab Slides & Videos: Content for the labs will be posted each week to the laboratory Blackboard site.

Lab Scores: See Blackboard for lab scores (reports, prelab quizzes, etc.) and informational material.

Laboratory Attendance: This is a laboratory course and requires completion of all lab assignments. Absences will be excused only for medical reasons or in the case of extreme necessity. For lab absences, email Dr. Moore (moorejl@usc.edu) as soon as possible in order to arrange a make-up lab or a make-up lab exam. Make-ups labs are not guaranteed. You must arrive on time and prepared for lab. If you show up more than 10 minutes late, you will not be admitted to the lab session. Satisfactory completion of all labs and lab work is required to pass the class. Additional laboratory policies can be found in the lab syllabus, available on Blackboard after the first day of classes.

Late work: Unless otherwise directed by Dr. Moore, all lab reports are due one week after attending lab. ALL assignments must be submitted by November 19th. Assignments received more than 9 days late will receive a maximum score of up to 5 points for the pre-lab assignment. The rest of the report will be evaluated as Pass or No Pass. Post-lab assignments will be submitted through the Chem 322a Lab Blackboard page. Please review your TA's feedback promptly. Regrades on laboratory reports must be requested within one week of when the lab report is graded.

Drop Dates: **Friday, September 10, 2021:** Last day to drop without a mark of W and receive refund.
Friday, October 8, 2021: Last day to drop without a mark of W.
Friday, November 12, 2021: Last day to drop with a mark of W.

The mark of Incomplete (IN) may only be given to a student who is doing passing work through November 12, 2021 and is unable to complete the assigned work and/or take the final exam due to serious illness or a documented emergency occurring after November 12, 2021. If you drop the lecture, you must also drop the lab.

Academic Integrity

All work submitted in this course must be your original work. You may not use outside sources for answers to assignments (for example, pre-lab questions, lab reports, quiz questions, homework assignments, etc.). While you may collaborate with others on laboratory work and homework assignments, work must be in your own words and reflect your good-faith efforts. It is never acceptable to use outside "tutors" or others to furnish answers for you (for example, you may not consult Chegg.com, reddit, CourseHero, etc.). Please familiarize yourself with the discussion of plagiarism and other forms of academic dishonesty in SCampus in Part B, Section 11, "Behavior Violating University Standards" policy.usc.edu/scampus-part-b. See additional information in SCampus and university policies on scientific misconduct, policy.usc.edu/scientific-misconduct.

Course evaluation

Students will submit confidential course evaluations, available online during week 13. More information will be provided in lecture.

Course Schedule: A Weekly Breakdown (Tentative – changes will be announced in lecture or on Blackboard

	Topics	Readings	Assignments
Week 1 Aug 22-28	Course Intro; Chapter 1	See blackboard	See Blackboard
Week 2 Aug 29- Sept 4	Chapter 2, Chapter 8.1-8.5	See blackboard	See Blackboard PRACTICE QUIZ
Week 3 Sept 5-11	Chapter 3	See blackboard	Labor Day Holiday GROUP QUIZ 1
Week 4 Sept 12-18	Chapter 3, Chapter 13	See blackboard	See Blackboard EXAM 1
Week 5 Sept 19-25	Chapter 13, Chapter 4	See blackboard	See Blackboard GROUP QUIZ 2

Week 6 Sept 26- Oct 2	Chapter 5, Chapter 6	See blackboard	See Blackboard
Week 7 Oct 3-Oct 9	Chapter 6	See blackboard	See Blackboard GROUP QUIZ 3
Week 8 Oct 10-16	Chapter 6, Chapter 7	See blackboard	Fall Break See Blackboard EXAM 2
Week 9 Oct 17-23	Chapter 7, Chapter 14	See blackboard	See Blackboard
Week 10 Oct 24-30	Chapter 14, Chapter 8	See blackboard	See Blackboard GROUP QUIZ 4
Week 11 Oct 31-Nov 6	Chapter 8	See blackboard	See Blackboard GROUP QUIZ 5
Week 12 Nov 7-13	Chapter 9	See blackboard	See Blackboard EXAM 3
Week 13 Nov 14-20	Chapter 10	See blackboard	GROUP QUIZ 6
Week 14 Nov 21-27	Chapter 10, Chapter 11		Thanksgiving Holiday
Week 15 Nov 28- Dec 4	Chapter 12/ Review		Lab presentations
<i>FINAL Exam: 8am-10am, December 9, 2021</i>			

Statement on Academic Conduct and Support Systems

Academic Conduct:

Plagiarism – presenting someone else’s ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in SCampus in Part B, Section 11, “Behavior Violating University Standards” policy.usc.edu/scampus-part-b. Other forms of academic dishonesty are equally unacceptable. See additional information in SCampus and university policies on scientific misconduct, policy.usc.edu/scientific-misconduct.

Support Systems:

Counseling and Mental Health - (213) 740-9355 – 24/7 on call
studenthealth.usc.edu/counseling

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

National Suicide Prevention Lifeline - 1 (800) 273-8255 – 24/7 on call

suicidepreventionlifeline.org

Free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week.

Relationship and Sexual Violence Prevention and Services (RSVP) - (213) 740-9355(WELL), press "0" after hours – 24/7 on call

studenthealth.usc.edu/sexual-assault

Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

Office of Equity and Diversity (OED)- (213) 740-5086 | Title IX – (213) 821-8298

equity.usc.edu, titleix.usc.edu

Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants. The university prohibits discrimination or harassment based on the following *protected characteristics*: race, color, national origin, ancestry, religion, sex, gender, gender identity, gender expression, sexual orientation, age, physical disability, medical condition, mental disability, marital status, pregnancy, veteran status, genetic information, and any other characteristic which may be specified in applicable laws and governmental regulations. The university also prohibits sexual assault, non-consensual sexual contact, sexual misconduct, intimate partner violence, stalking, malicious dissuasion, retaliation, and violation of interim measures.

Reporting Incidents of Bias or Harassment - (213) 740-5086 or (213) 821-8298

usc-advocate.symplicity.com/care_report

Avenue to report incidents of bias, hate crimes, and microaggressions to the Office of Equity and Diversity | Title IX for appropriate investigation, supportive measures, and response.

The Office of Student Accessibility Services - (213) 740-0776

osasfrontdesk@usc.edu

USC welcomes students with disabilities into all of the University's educational programs. The Office of Student Accessibility Services (OSAS) is responsible for the determination of appropriate accommodations for students who encounter disability-related barriers. Once a student has completed the [OSAS process](#) (registration, initial appointment, and submitted documentation) and accommodations are determined to be reasonable and appropriate, a Letter of Accommodation (LOA) will be available to generate for each course. The LOA must be given to each course instructor by the student and followed up with a discussion. This should be done as early in the semester as possible as accommodations are not retroactive. More information can be found at www.osas.usc.edu.

USC Campus Support and Intervention - (213) 821-4710

campussupport.usc.edu

Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

Diversity at USC - (213) 740-2101

diversity.usc.edu

Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

USC Emergency - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call

dps.usc.edu, emergency.usc.edu

Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

USC Department of Public Safety - UPC: (213) 740-6000, HSC: (323) 442-120 – 24/7 on call

dps.usc.edu

Non-emergency assistance or information.

