



# USC University of Southern California

## Chem 322aL: Organic Chemistry (4.0 Units) Fall 2020

**Class Meetings:** This class is offered online. Asynchronous videos will be posted on the course Blackboard site. Synchronous class meetings will be held via Zoom on MWF from 1-1:50pm.

**Instructor:** Prof. Rebecca Broyer

**Office Hours:** announced weekly on Blackboard

**Contact Info:** [rbroyer@usc.edu](mailto:rbroyer@usc.edu) (preferred contact method)

**Lab Instructor:** Dr. Jennifer Moore

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

**Contact Info:** [moorej@usc.edu](mailto:moorej@usc.edu)

**Course Coordinator:** Dr. Xiaojun Zhang.

**Electronic Office Hours:** email for appointment

**Contact Info:** [xiaojunz@usc.edu](mailto: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, 8<sup>th</sup> edition

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

"Organic Chemistry as a Second Language: First Semester Topics" D. Klein, 4<sup>th</sup> edition

"Fall 2020 Chemistry 322aL Laboratory Manual"

## Optional Materials

"Making the Connections 2," Anne B. Padias, 2<sup>nd</sup> edition

Any Molecular Modeling Kit

## Description and Assessment of Assignments

Assignments in the course include quizzes, exams, laboratory reports, and homework.

## Facebook Group

You are encouraged to join our class Facebook group and help create a community for our class outside of the virtual classroom. Here you will be able to form study groups, ask questions, and communicate however you see fit (just keep it clean and respectful!). Please be reminded that this is a public forum and personal matters should be directed to instructors in office hours or by email. *Note: only members of the class will have access to the group, and being a member of the group does not mean you have to become facebook "friends" with the group members.*

## 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, Surveys & Polling	15%
Homework	10%
Midterm Exams	30%
Laboratory	20%
Written Final Exam	15%
Final Project	10%
<b>TOTAL</b>	<b>100%</b>

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%

## Course Notes

Lecture notes will be available Blackboard.

## Office Hours

You are strongly encouraged to see any TA during their office hours, not just your own. Office hours (via Zoom) 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, Homework assignment and exams 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

### Quizzes and Surveys

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.

### In Class Work

Students will complete work assigned during class time, such as small group assignments, open-notes quizzes, and polls that count towards their in-class work grade. 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 have to complete the alternative assignment. The lowest four scores for in-class work will be dropped.

Alternative assignments will be provided for students who do not participate in synchronous instruction. Homework assignment and exams must be submitted by the stated deadlines. Late assignments will not be accepted.

## Exams

There will be three open book take-home midterm exams (see below). All exams will be written as one-hour exams, but you will have 24 hours to complete each exam. Exams must be uploaded to Gradescope. **None of the exam scores can be dropped.** No make-up 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 midterm 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 submitted on *Thursday, November 19, 2020 at 6pm.*

*EXAM 1: Opens Wednesday September 9, closes Thursday September 10, 2020 3:30pm*

*EXAM 2: Opens Wednesday October 7, closes Thursday October 8, 2020 3:30pm*

*Exam 3: Opens Wednesday October 28, closes Thursday October 29, 2020 3:30pm*

*Final Exam: due on Thursday November 19, 2020 6pm*

## Gradescope

You must scan and upload your exams to gradescope. <http://www.gradescope.com>. You will be sent an invitation from the instructor of the course.

## Homework

Practice Exams: Each week you will be required to turn in electronic copies of your problem sets. Only by working problems will you be able to test your knowledge of the material and your skill in applying it. If you have difficulties with some of the problems, it usually means that your knowledge or ability to apply this knowledge is insufficient. In this case, restudy the material in your notes and your text. If that does not help, seek assistance from your instructor or TAs. These will be graded on completion and count for 10% of your course grade. Problem Sets will be due on Fridays at 11:59pm PST, and submissions will be via Blackboard.

It is recommended that students spend a total of 9 hours per week outside of class on Chem 322a-related work. Recommended end-of-chapter problems and additional practice problems will be posted on the course website. 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 watch the lab orientation in order to maintain your space in the lab and thus to remain in the course.

**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.

**Lab Exam:** At the end of the semester there will be a lab final covering material from lab throughout the semester. Questions typically cover the procedure, safety issues, relevant chemical formulas and chemical equations, observations, calculations, and data analysis.

**Laboratory Attendance:** *This is a laboratory course and attendance to all virtual lab periods is mandatory. No make-up labs can be given in this course.* Absences will be excused only for medical reasons or in the case of extreme necessity. For lab absences, email Dr. Moore ([moorej1@usc.edu](mailto:moorej1@usc.edu)) as soon as possible in order to arrange a make-up lab or a make-up lab exam. 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. Before leaving lab, you must turn in your exit ticket. Satisfactory completion of all labs and lab work is required to pass the class. Additional laboratory policies can be found in the lab syllabus.

**Late work:** Unless otherwise directed by Dr. Moore, all lab reports are due at the beginning of the following week's lab. The lab calendar on the 322a lab page shows due dates for all assignments. ALL assignments must be submitted by November 13. 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.

## Final Project

At the end of the semester you will be asked to prepare a short video explaining one of the reaction mechanisms learned in the course. Your video should clearly define and explain the reaction and reaction mechanism you are covering, each step should be carefully shown. It may also be of interest to include any relevant history and why the reaction is important to the world outside of the chemistry class. Your presentation will be graded on accuracy, relevancy, presentation, focus, organization, references, and style. This presentation is worth 10% of your overall grade in the course, with 2% of this based on peer evaluation and 2% based on your evaluation of your peers. Final videos are due for peer evaluation by 5pm on Sunday, November 8. Your peer evaluations are due by 5pm on Friday, November 13.

## 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](http://policy.usc.edu/scampus-part-b). See additional information in SCampus and university policies on scientific misconduct, [policy.usc.edu/scientific-misconduct](http://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
<b>Week 1</b> Aug 17-23	Course Intro; Chapter 1	See blackboard	Quizzes Week 1 Practice Exam
<b>Week 2</b> Aug 24-30	Chapter 2, Chapter 8.1-8.5, Chapter 3	See blackboard	Quizzes Week 2 Practice Exam
<b>Week 3</b> Aug 31- Sept 6	Chapter 3	See blackboard	Quizzes Week 3 Problem Exam
<b>Week 4</b> Sept 7-13	Chapter 13, Chapter 4	See blackboard	Quizzes Week 4 Practice Exam <b>EXAM 1</b>
<b>Week 5</b> Sept 14-20	Chapter 4	See blackboard	Quizzes Week 5 Practice Exam
<b>Week 6</b> Sept 21-27	Chapter 5, Chapter 6	See blackboard	Quizzes Week 6 Practice Exam
<b>Week 7</b> Sept 28- Oct 4	Chapter 6	See blackboard	Quizzes Week 7 Practice Exam
<b>Week 8</b> Oct 5-11	Chapter 6, Chapter 7, Chapter 14	See blackboard	Quizzes Week 8 Practice Exam <b>EXAM 2</b>
<b>Week 9</b> Oct 12-18	Chapter 14, Chapter 8	See blackboard	Quizzes Week 9 Practice Exam
<b>Week 10</b> Oct 19-25	Chapter 9	See blackboard	Quizzes Week 10 Practice Exam
<b>Week 11</b> Oct 26-Nov 1	Chapter 9, Chapter 10	See blackboard	Quizzes Week 11 Practice Exam <b>EXAM 3</b>
<b>Week 12</b> Nov 2-8	Chapter 10	See blackboard	Quizzes Week 12 Practice Exam <b>Final Project – Due Nov. 8, 5pm</b>
<b>Week 13</b> Nov 9-15	Chapter 12	See blackboard	Quizzes <b>Peer Evaluations – Due Nov. 13, 5pm</b>
<b>FINAL Exam: Due by 6pm on Thursday, Nov. 19</b>			

## 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](https://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](https://policy.usc.edu/scientific-misconduct).

### Support Systems:

*Counseling and Mental Health - (213) 740-9355 – 24/7 on call*

[studenthealth.usc.edu/counseling](https://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](https://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](https://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](https://equity.usc.edu), [titleix.usc.edu](https://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.symphlicity.com/care\\_report](https://usc-advocate.symphlicity.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 Disability Services and Programs - (213) 740-0776*

[dsp.usc.edu](https://dsp.usc.edu)

Support and accommodations for students with disabilities. Services include assistance in providing readers/notetakers/interpreters, special accommodations for test taking needs, assistance with architectural barriers, assistive technology, and support for individual needs.

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

[campussupport.usc.edu](http://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](http://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](http://dps.usc.edu), [emergency.usc.edu](http://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](http://dps.usc.edu)

Non-emergency assistance or information.