



**Chem 322aL: Organic Chemistry (4.0 Units)  
Fall 2023**

**Class Meetings:** This class is offered in-person in SGM 124 MWF 9am  
Quiz: Wednesday SGM 124 3:30pm-4:50pm  
Discussion: 12-12:50pm + 1pm-1:50pm

**Instructor:** Prof. Rebecca Broyer

**Office Hours:** Wednesday Recitation style 3:30-4:30pm on non-exam weeks SGM 124  
Fridays 10:00am-11am SGM 307  
[Zoom and in person One-On-One](#)

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

**Lab Instructor:** Dr. Jennifer Moore

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

**Contact Info:** [moorej1@usc.edu](mailto:moorej1@usc.edu)

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

**Electronic Office Hours:** email for appointment

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

**Teaching Fellow:** TBA

**Office Hours:** email for appointment

**Contact Info:**

**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, 5<sup>th</sup> edition
- "Fall 2023 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, 2<sup>nd</sup> 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
Group Quizzes	9%
Midterm Exams	30%
Reflection	2%
Laboratory	33%
Homework	6%
Practice	5%
Final Exam	15%
<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%**

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.**

**Adjustments to the grade cutoffs (if necessary) will be made at the end of the course.**

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

### Course Notes

Lecture notes will be available on Blackboard. 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.

### Office Hours

You are strongly encouraged to see any TA during their office hours, not just your own.

### 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.

### Learning Assistants (LAs)

We will have a cohort of learning assistants present in class to help support you during in class work. Learning assistants are students who have completed the course and volunteer. LAs attend all lectures and facilitate recitation sessions.

### Assignment Submission Policy

All assignments must be submitted by the stated deadlines. During class, you will be required to upload your work and assignments to Gradescope. Please ensure you come to class prepared with the necessary tools to do so. You will need a method to upload and submit your work to Gradescope during the class session. There are two acceptable options for submitting your work:

**Working on paper:** You can work on paper and then convert your work to a PDF by taking a picture of it and converting it to a digital format. After converting to PDF, you can upload it to Gradescope.

**Working on a tablet:** Alternatively, you may work directly on a tablet and upload your digital work directly to Gradescope. Please ensure you have access to the required equipment and software before the class starts to facilitate a smooth learning experience. If you have any questions or concerns, feel free to ask for assistance. **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. You can view your grades at any time on the Blackboard site.

## Additional Policies

**Practice (In Class Work):** There will be several activities that count towards practice. Students will complete **work assigned during class time**, such as worksheets. Worksheets will be available to download from Blackboard. The majority of the in-class work will be graded for completion. There will be no make ups for these assignments, failure to participate will count as a zero toward your final grade. In-class worksheets will be uploaded to Gradescope by the end of class (9:50am) on the days worksheets are distributed. No Late submissions will be accepted however there will be a small grace period for upload at the end of each lecture. These assignments will be weighted equally and 20% of the assignments will be dropped for missed work due to illness or for 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 7, 2023, 8:00 a.m. – 10:00 a.m.* Although it will be comprehensive, lecture material covered after the third exam will be emphasized. This is the only time the final exam can be taken; **if you cannot take the exam at this time, do not take this course.**

**Lowest score replacement:** Your lowest exam score will be dropped and replaced with your score (out of 100) on the final if your score on the final is higher than your lowest exam.

*EXAM 1: Sept 13, 2023 3:30pm*

*EXAM 2: October 11, 2023 3:30pm*

*EXAM 3, November 15, 2023 3:30pm*

*Final Exam: Thursday, December 7, 2023, 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

Throughout the semester and after each of the 3 exams, you will be asked to reflect on your exam and upload your reflection to Gradescope. 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. Each Reflection will be worth 4 points towards your final grade.

<b>Intro Reflection</b>	Monday, September 11, 2023	12pm
<b>E1 Reflection</b>	Monday, September 18, 2023	12pm
<b>E2 Reflection</b>	Monday, October 16, 2023	12pm
<b>E3 Reflection</b>	Monday, November 20, 2023	12pm
<b>Course Reflection</b>	<b>Friday, December 1, 2023</b>	5pm

## Gradescope

Graded materials 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 four 30-min group quizzes administered during class at 9 am and an additional “make-up” group quiz offered during week 15. Groups will consist of three students. Groups will be assigned for some of the quizzes and will change each quiz. Your top three scores will count toward your final grade. The only make-up opportunity will be held during Week 15. A missed quiz for any reason will count as one of your dropped quizzes. A third missed quiz will count as a zero towards your final grade.

<b>Quiz 1</b>	Friday, Sept 8	9 am
<b>Quiz 2</b>	Friday, Sept 29	9 am
<b>Quiz 3</b>	Friday, Oct 27	9 am
<b>Quiz 4</b>	Wednesday, Nov 8	9 am
<b>Quiz 5</b>	Wednesday, November 29	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 or 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. 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 on the course blackboard page. Answers can be checked with posted answer keys, in the solutions manual, and in TA and instructor office hours.

There will also be a short weekly homework assignment posted to Blackboard on Wednesdays. The homework assignments are to be completed and submitted through Gradescope by 9 am the following Wednesday. Homework assignments will be graded. There will be a total of 13 assignments throughout the semester, your top 10 scores will count toward your grade at

the end of the semester. Late homework submissions will lose one point for each 24-hour period that they are submitted after the deadline up until Fridays. After that the key will be posted and late submissions will no longer be allowed.

## 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:** Scores are available on Gradescope & Blackboard depending (reports, prelab quizzes, etc.). Scores will be adjusted to the lecturers point value allocated to the lab portion of the course.

**Laboratory Attendance:** This is a laboratory course and requires completion of all lab experiments & assignments. Absences will be excused only for medical reasons or in the case of extreme necessity. For lab absences, email Dr. Moore ([moorej@usc.edu](mailto:moorej@usc.edu)) as soon as possible in order to arrange a make-up lab. Make-ups labs are not guaranteed. You must arrive on time and prepared for lab. Labs start at the time listed on the schedule of classes. If you arrive after the lab has started, you will not be admitted to the lab session. If you arrive after the pre-lab quiz has started, you will have the remain time to finish the pre-lab quiz. No extra time will be given for late arrivals. 50% of the points and satisfactory completion of all experiments and assignments 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, see the schedule of assignment due dates on Blackboard. ALL assignments must be submitted by November 29th. 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 assignments will be evaluated as Pass or No Pass. Please review your TA's feedback promptly. Regrades on laboratory assignments are due by the date posted on Blackboard.

**Drop Dates:** **Friday, September 8, 2023:** Last day to drop without a mark of W and receive refund.

**Friday, October 6, 2023:** Last day to drop without a mark of W.

**Friday, November 10, 2022:** 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 10, 2023 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 10, 2023. 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](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).

## AI Policy:

Since creating, analytical, and critical thinking skills are part of the learning outcomes of this course, all assignments should be prepared by the student working individually or in groups. Students may not have another person or entity complete any substantive portion of the assignment. Developing strong competencies in these areas will prepare you for a competitive

workplace. Therefore, using AI-generated tools is prohibited in this course, will be identified as plagiarism, and will be reported to the Office of Academic Integrity.

### Course evaluation

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

The instructor reserves all rights to change any of the contents within the syllabus with advanced notice if any changes become necessary during the semester.

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

	Topics	Readings	Assignments
<b>Week 1</b> 1.8/21 2.8/23 3.8/25	Course Intro; Chapter 1	See blackboard	<b>8/23 Meet and Greet</b> See blackboard
<b>Week 2</b> Aug 28- Sept 3 4.8/28 5.8/30 6.8/31	Chapter 2, Chapter 8.1-8.5	See blackboard	See Blackboard <b>8/30 HW1</b>
<b>Week 3</b> Sept 4-10 7.9/6 <b>Q19/8</b>	Chapter 3	See blackboard	<b>9/4 Labor Day Holiday</b> See Blackboard <b>9/8 GROUP QUIZ 1</b> <b>9/6 HW 2</b>
<b>Week 4</b> Sept 11-17 8.9/11 9.9/13 10.9/15	Chapter 3, Chapter 13	See blackboard	See Blackboard <b>9/11 Reflection</b> <b>9/12 Practice Exam 1</b> <b>9/13 EXAM 1</b> <b>9/13 HW 3</b>
<b>Week 5</b> Sept 18-24 11.9/18 12.9/20 13.9/22	Chapter 13, Chapter 4	See blackboard	See Blackboard <b>9/18 Exam Reflection 1</b> <b>9/20 HW 4</b>
<b>Week 6</b> Sept 25- Oct 1 14.9/25 15.9/27 <b>Q2.9/29</b>	Chapter 5, Chapter 6	See blackboard	See Blackboard <b>9/29 GROUP QUIZ 2</b> <b>9/27 HW 5</b>
<b>Week 7</b> Oct 2-Oct 8	Chapter 6	See blackboard	See Blackboard <b>10/4 HW 6</b>

16.10/2 17.10/4 18.10/6			
<b>Week 8</b> Oct 9-15 19.10/9 20.10/11	Chapter 6, Chapter 7	See blackboard	<b>Fall Break 10/13, 10/14</b> <b>10/10 Practice Exam 2</b> <b>10/11 EXAM 2</b> <b>10/11 HW 7</b>
<b>Week 9</b> Oct 16-22 21.10/16 22.10/18 23.10/20	Chapter 7, Chapter 14	See blackboard	See Blackboard <b>10/16 Exam 2 Reflection</b> <b>10/18 HW 8</b>
<b>Week 10</b> Oct 23-29 24.10/23 25.10/25 <b>Q3.10/27</b>	Chapter 14, Chapter 8	See blackboard	See Blackboard <b>10/27 GROUP QUIZ 3</b> 10/25 HW 9
<b>Week 11</b> Oct 30-Nov 5 26.10/30 27.11/1 28.11/3	Chapter 8, Chapter 9	See blackboard	See Blackboard <b>11/1 HW 10</b>
<b>Week 12</b> Nov 6-12 29.11/6 <b>Q4.11/8</b>	Chapter 9	See blackboard	See Blackboard <b>11/8 GROUP QUIZ 4</b> <b>11/7 Practice Exam 3</b> <b>11/8 HW 11</b> <b>Veteran's Day Holiday</b>
<b>Week 13</b> Nov 13-19 30.11/13 31.11/15 32.11/17	Chapter 10	See blackboard	<b>11/14 Practice Exam 3</b> <b>11/15 EXAM 3</b> <b>11/15 HW 12</b>
<b>Week 14</b> Nov 20-26 33. 11/20	Chapter 10, Chapter 11		<b>11/20 Exam Reflection 3</b> <b>Thanksgiving Holiday</b>
<b>Week 15</b> Nov 27- Dec 3 34. 11/27 35. 11/29 36. 12/1	Chapter 12/ Review		<b>11/29 MAKE UP Group Quiz 5 (3:30pm)</b> <b>12/1 Course Reflection</b> <b>11/29 HW 13</b>
<b>FINAL Exam: 8am-10am, December 7, 2023</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.symplicity.com/care\\_report](https://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](mailto: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](https://www.osas.usc.edu).

*USC Campus Support and Intervention - (213) 821-4710*  
[campussupport.usc.edu](https://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](https://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](https://dps.usc.edu), [emergency.usc.edu](https://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](https://dps.usc.edu)

Non-emergency assistance or information.