



# USC University of Southern California

## Chem 322bL: Organic Chemistry (4.0 Units) Spring 2023

**Class Meetings:** This class is offered **in-person** in SGM 124 MWF 10am and 1pm

**Quiz:** Wednesdays 3:30-4:50pm SGM 124 and THH 201

**Discussion:** Tuesdays 12:00pm-12:50pm and 1:00pm-1:50pm in SGM 124

**Instructor:** Prof. Rebecca Broyer

**Office Hours:** Tuesdays 11am-12pm and Fridays 11am-12pm SGM 307

**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)

### Course Objectives:

This course will complete your fluency in the language of molecular structure and reactivity, culminating with a description of the molecular make-up of the cell. To get there, you will learn how to apply concepts of chemical bonding, structure, and reactivity that you have learned to new functional groups and mechanisms by reasoning with analogy and first principles. You will solidify your understanding by practicing problem solving strategies that you learn from instructors, peers, and yourself.

At the end of this experience, successful students will achieve a definitive command of essential concepts of molecular structure and bonding. These include:

- The intrinsic electrophilicity of the carbonyl group, carbonyl addition reactions, and the structure of carbonyl derivatives.
- Enolization, aldol and Claisen reactions of enolates, and the rudiments of polyketide synthesis.
- The electronic structure and reactivity of aromatic compounds.
- The richly complex nature of amines and imines.
- The structure and behavior of simple carbohydrates.
- The molecular nature of proteins.

## Prerequisite(s):

Chem 322A or Chem 325A or equivalent 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: Second Semester Topics" D. Klein, 5<sup>th</sup> edition

"Spring 2023 Chemistry 322bL Laboratory Manual"

A separate laboratory syllabus will be issued

## Optional Materials

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

## Description and Assessment of Assignments

Assignments in the course include quizzes, assignments, exams, online assignments, in-class work, a final exam and a final project

## 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	12%
Exams	30%
Laboratory	27%
Assignments and Video Quizzes (Blackboard)	3%
Weekly Reaction Sheets	3%
In-Class Work (Worksheets)	3%
In Calls Participation (Poll-Everywhere)	2%
Final Exam	20%
<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.**

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. **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/chem322b/>) that we encourage you to use. The SI instructors hold weekly sessions going over the course material and problems. They also prepare exam reviews, 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.

### Discussion Section (Tuesdays)

Weekly problem-solving session and Q + A during the Discussion sections will occur on some Tuesdays in SGM 124. See Blackboard for updates.

### Assignment Submission Policy

All 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 except for the final project, which may take more time. You can view your grades at any time on the Blackboard site.

### Additional Policies

**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. Assignments will be worth 2% of your grade. Each assignment will be weighted equally and 15% of the assignments will be dropped for missed work due to illness or for any other reason. You will earn points 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.

**Reaction Sheets:** Students will be required to upload a weekly **reaction sheet summary** to Gradescope. All **assignments and work in this category are weighted** evenly. We will be collecting reaction sheets in 13 of the 15 weeks and your top 10 will count towards your final grade. Reaction summary sheets are worth 3% of your grade in the class. Weekly Reaction Summary Sheets will be due at 11:59pm Sundays, no exceptions. If you miss the deadline, it will count as one of your dropped assignments.

Reaction sheets will be uploaded to Gradescope and graded based on accuracy, relevancy, completion and presentation.

**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 not earn points. Some in class group assignments will be graded for accuracy. There will be no make ups for these assignments, failure to participate will count as a zero toward your final grade. In class assignments will be uploaded to Gradescope. 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. **There are no make ups for any reason.**

Poll everywhere will be used for in class clicker questions. In class poll questions are graded on participation alone. In class participation is worth 2% of your grade. You will earn full credit for participation if you answer all of the questions in 75% of the sessions presented throughout the semester. For students answering less than 75% of the sessions, participation scores will be adjusted accordingly. This is to account for unexpected absences due to illness or other circumstances or technical difficulties. *Note: The percentage of dropped points has been changed from 15 to 25% to account for potential additional absences due to quarantine.* **There are no make ups for any reason.**

**Group Quizzes:** There will be five 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. An excused absence may be offered for a second missed under certain circumstances. Missed quizzes will count as zeros towards your final grade. Group quizzes will be worth 12% of your final grade.

<b>Quiz 1</b>	Wednesday, Jan 25	3:30 pm
<b>Quiz 2</b>	Wednesday, Feb 1	3:30 pm
<b>Quiz 3</b>	Wednesday, March 1	3:30 pm
<b>Quiz 4</b>	Wednesday, March 29	3:30 pm
<b>Quiz 5</b>	Wednesday, April 26	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 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 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.

**Gradescope:** You will scan and assignments to Gradescope. <http://www.gradescope.com>. Use link through course Blackboard page.

**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, May 4, 2023, 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: Feb 8, 2023 3:30pm*

*EXAM 2: March 8, 2023 3:30pm*

*EXAM 3: April 12, 2023 3:30pm*

*Final Exam: Thursday, May 4, 2023, 8:00 a.m. – 10:00 a.m.* (If you cannot take the final exam at this time you should not register for this course)

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). 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 (written + final project). If you cannot take at least two of the midterm exams, you will receive a score of zero for the second missed exam. An unexcused absence will also count as a zero towards your final grade.

## 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 Gradescope & 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](mailto:moorejl@usc.edu)) as soon as possible to arrange a make-up lab. Make-up labs are not guaranteed. You must arrive on time and prepared for lab. If you show up 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, see Blackboards Announcements for due dates. ALL assignments must be submitted by 9pm on April 28<sup>th</sup>, 2023. One point is deducted per day late on all assignments. Pre-, In- and Post-Lab assignments will be submitted through Gradescope. Please review your TA's feedback promptly. Regrades on laboratory reports must be requested within one week of when the lab report is graded.

**Lab Final:** The lab final will be administered with the lecture final on May 4, 2023.

**Drop Dates:** **Friday, Jan 27, 2023:** Last day to drop without a mark of W and receive refund.

**Friday, Feb 24 2023:** Last day to drop without a mark of W.

**Friday, Apr 7, 2023:** 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 April 7, 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 April 7, 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).

## 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> Jan 9-15	Course Intro; Chapter 15	See blackboard	See Blackboard
<b>Week 2</b> Jan16-22	Chapter 15 <b>MLK HOLIDAY</b>	See blackboard	See Blackboard
<b>Week 3</b> Jan 23-29	Chapter 15/Chapter 16	See blackboard	See Blackboard <b>GROUP QUIZ 1</b>
<b>Week 4</b> Jan 30-Feb 5	Chapter 16	See blackboard	See Blackboard <b>GROUP QUIZ 2</b>
<b>Week 5</b> Feb 6-12	Chapter 17	See blackboard	See Blackboard <b>EXAM 1-Feb 8</b>
<b>Week 6</b> Feb 13-19	Chapter 17	See blackboard	See Blackboard
<b>Week 7</b> Feb 20-26	Chapter 17/Chapter 18 <b>PRESIDENTS HOLIDAY</b>	See blackboard	See Blackboard
<b>Week 8</b> Feb 27- March 5	Chapter 18 Special Topics	See blackboard	See Blackboard <b>GROUP QUIZ 3</b>
<b>Week 9</b> Mar 6-12	Chapter 18	See blackboard	See Blackboard <b>EXAM 2-March 8</b>
<b>Spring Recess</b> March 13-19			
<b>Week 10</b> Mar 20-26	Chapter 19	See blackboard	See Blackboard
<b>Week 11</b> March 27- April 2	Chapter 19	See blackboard	See Blackboard <b>GROUP QUIZ 4</b>
<b>Week 12</b> April 3-9	Chapter 20	See blackboard	See Blackboard
<b>Week 13</b> April 10-16	Chapter 20/Chapter 21	See blackboard	See Blackboard <b>EXAM 3-April 12</b>
<b>Week 14</b> Apr 17-23	Chapter 21/Chapter 24	See blackboard	See Blackboard
<b>Week 15</b> April 24-29	Chapter 24 Review	See blackboard	<b>GROUP QUIZ 5</b>
Final Exam Thursday May 4, 2023, 8am			

## 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](http://www.osas.usc.edu).

*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.