



Chem 322bL: Organic Chemistry (4.0 Units) Spring 2024

Class Meetings: This class is offered **in-person** in SGM 123 MWF 10am

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

Quiz: Wednesdays 3:30-4:50pm SGM 124

Instructor: Prof. Rebecca Broyer

Office Hours: Wednesdays Recitation Style: 3:30-4:30pm SGM 124 and Fridays 12:30pm-2pm SGM 307

Contact Info: rebecca.broyer@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

Course Coordinator: Dr. Xiaojun Zhang

Electronic Office Hours: email for appointment

Contact Info: xiaojunz@usc.edu

Lecture TA: Antonio Vasquez + Yijie Xu

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, 8th edition

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

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

"Spring 2023 Chemistry 322bL Laboratory Manual"

A separate laboratory syllabus will be issued

Optional Materials

"Making the Connections 2," Anne B. Padias, 2nd 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	33%
Homework	5%
In-Class Work and other Practice	5%
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	900-1000	90-100
A-	880-900	88-89.9
B+	850-879	85-87.9
B	800-849	80-84.9
B-	780-799	78-79.9
C+	750-779	75-77.9
C	700-749	70-74.9
C-	680-699	68-69.9
D+	650-679	65-67.9
D	600-649	60-64.9
D-	580-599	58-59.9
F	Below 580	Below 58%

(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 **88%**.

(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 **78%**

(C) A 'C' student has major gaps in understanding. The cutoff for a 'C-' will be no higher than 68%

(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 58%

*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

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.

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.

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. 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 (10:50am) 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.

Group Quizzes: There will be five 30-min group quizzes. Some will be during class and others will be during the quiz period. Groups will consist of three students. Your top four scores will count toward your final grade. There will be one make up group quiz. A missed quiz for any reason will count as your dropped quiz. Missed quizzes will count as zeros towards your final grade. Group quizzes will be worth 12% of your final grade. An inquires related to grading of Group Quizzes should be directed directly to Prof. Broyer by 12pm on the Friday of the quiz week for Wednesday quizzes and Monday 12pm for Friday quizzes. After this grading inquires will not be considered.

Quiz 1	Wednesday, Jan 24	3:30 pm
Quiz 2	Friday, Feb 2	10 am
Quiz 3	Friday, March 1	10 am
Quiz 4	Wednesday, March 27	3:30 pm
Quiz 5	Wednesday April 17	3:30pm
Make Up	Wed. or Fri, April 24 or 26	10am

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 10 am the following Wednesday. Homework assignments will be graded. There will be a total of 12 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.

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 2, 2024, 8:00 a.m. – 10:00 a.m.* Although it will be comprehensive, lecture material covered after the third exam will be emphasized.

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: Feb 7, 2024 3:30pm

EXAM 2: March 6, 2024 3:30pm

EXAM 3: April 10, 2024 3:30pm

Final Exam: Thursday, May 2, 2024, 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). 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) 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 25th, 2024. 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.

Drop Dates: **Friday, Jan 26, 2024:** Last day to drop without a mark of W and receive refund.

Friday, Feb 23, 2024: Last day to drop without a mark of W.

Friday, Apr 5, 2024: 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 5, 2024 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 5, 2024. 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.

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
Week 1 1. 1/8 2. 1/10 3. 1/12	Course Intro; Chapter 15	See blackboard	See Blackboard Meet and Greet Discussion
Week 2 4. 1/17 5. 1/19	Chapter 15 MLK HOLIDAY	See blackboard	See Blackboard HW 1
Week 3 6. 1/22 7. 1/24 8. 1/26	Chapter 16	See blackboard	See Blackboard GROUP QUIZ 1 1/24 3:30pm Discussion
Week 4 9. 1/29 10. 1/31 11. 2/2	Chapter 16	See blackboard	See Blackboard GROUP QUIZ 2 2/2 10am HW 2
Week 5 12. 2/5 13. 2/7 14. 2/9	Chapter 17	See blackboard	See Blackboard Practice Exam 1 2/6 EXAM 1-Feb 7 HW 3 Discussion
Week 6 15. 2/12 16. 2/14 17. 2/16	Chapter 17	See blackboard	See Blackboard HW 4
Week 7 18. 2/21 19. 2/23	Chapter 17/Chapter 18 PRESIDENTS HOLIDAY	See blackboard	See Blackboard HW 5 Discussion
Week 8 20. 2/26 21. 2/28 22. 3/1	Chapter 18 Special Topics	See blackboard	See Blackboard GROUP QUIZ 3/1 10am Data Task Extra Credit
Week 9 23. 3/4 24. 3/6 25. 3/9	Chapter 18	See blackboard	See Blackboard Practice Exam 2 3/5 EXAM 2-March 6 HW 6 Discussion
Spring Recess March 11-15			
Week 10 26. 3/18 27. 3/20	Chapter 19	See blackboard	See Blackboard HW 7

28. 3/22			
Week 11 29. 3/25 30. 3/27 31. 3/29	Chapter 19	See blackboard	See Blackboard GROUP QUIZ 4 Wed 3/27 3:30pm HW 8 Discussion
Week 12 32. 4/1 33. 4/3 34. 4/5	Chapter 20	See blackboard	See Blackboard HW 9
Week 13 35. 4/8 36. 4/10 37. 4/12	Chapter 20/Chapter 21	See blackboard	See Blackboard HW 10 EXAM 3-April 10 Discussion
Week 14 38. 4/15 39. 4/17 40. 4/19	Chapter 21/Chapter 22	See blackboard	See Blackboard HW 11 Group Quiz 5Wed 3:30pm 4/17
Week 15 41. 4/22 42. 4/24 43. 4/26	Chapter 22 Review	See blackboard	Make Up Group Quiz Wed or Friday in Class TBA 4/24 or 4/26 HW 12 Discussion
Final Exam Thursday May 2, 2024, 8am-10am			

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.