

Organic Chemistry
Chemistry 335, Section 01
Spring 2024

Lecture: Monday and Wednesday 4:00 – 5:20 PM, Room 220 Smith

Recitation: Tuesday 1:00 – 2:20 PM, Room 220 Smith (Prof. Ram Dharanipragada)

Instructor: Prof. Stacey Brenner-Moyer
e-mail: seb244@newark.rutgers.edu
website: www.brennermoyer.com

Office Hours: Wednesdays 2:30 PM – 3:50 PM in 201E Life Sciences Center 1. Please note that I cannot answer “chemistry questions” (i.e., What is the mechanism of the aldol reaction?) over e-mail, and thus will not reply to such e-mails.

Course Description:

Organic chemistry is a required class for so many related fields of study because it requires a student to: 1) think about structures in 3-dimensions, and 2) analyze data using their understanding of basic principles to solve a problem. The skills you use to propose a structure for an unknown compound from a set of ^1H NMR peaks are the same skills you will use to diagnose a patient with an unknown illness from a set of symptoms.

This course, in conjunction with Chemistry 336, will provide students with an introduction to organic chemistry concepts. Specifically, this course will cover organic reactions, mechanisms and principles that are relevant to many other sciences and that provide us with a greater understanding of how the natural world works.

Course Objectives:

Upon completion of the course, students should be able to:

- Explain and/or apply selected fundamental principles of organic chemistry
- Provide reactants, reaction conditions or reaction products for certain key reactions
- Illustrate the mechanism of certain key reactions

Required Texts and Materials:

1. Brown, William H., Brent L. Iverson, Eric V. Anslyn, and Christopher S. Foote. Organic Chemistry. 8th ed. Boston, MA: Cengage Learning, 2016. For e-text rentals or hard copy purchases see: <https://www.cengage.com/c/organic-chemistry-8e-brown/9781305580350/?searchISBN=9781305580350>

Recommended Texts and Materials:

1. Molecular model kit, such as: Molecular Model Set for Organic Chemistry, Prentice Hall or Molecularity

Course Evaluation:

There will be 3 lecture exams and 1 final exam. Your lowest numerical exam grade will be dropped in your course letter grade determination. The remaining three exams will be weighted equally in the determination of your overall course grade.

Lecture Exams and Final Exam: Exam questions will be derived from lecture notes, assigned textbook readings, homework problems and problems covered in recitation.

Bonus Points: Your attendance in lectures and performance on recitation quizzes can earn you *up to 10 bonus points on each exam*.

- **Attendance:** Starting Mon. Jan. 29, there will be assigned seating for the lecture. Attendance will be taken at random, on unannounced days. If you miss ≤ 1 lecture prior to exam 1, between exams 1 and 2, between exams 2 and 3, or between exam 3 and the final exam, you will earn 5 bonus points each on exam 1, on exam 2, on exam 3, and on the final exam, respectively. If you are not physically in your assigned seat, you will be counted as absent. Please note that attendance points will not be awarded for excused absences.
- **Recitation quizzes:** If you earn a ≥ 60 combined average on 3 recitation quizzes taken prior to exam 1, and between exams 1 and 2, you will earn 5 bonus points each on exam 1, and on exam 2, respectively. If you earn a ≥ 60 combined average on 2 recitation quizzes between exams 2 and 3, and between exam 3 and the final exam, you will earn 5 bonus points each on exam 3, and on the final exam, respectively.

Assigning Letter Grades for Exams and for the Course: Exam letter grades will correspond to numerical grades as follows: A (85-100), B+ (80-84), B (70-79), C+ (65-69), C (55-64), D (50-54), F (0-49).

Suggestions for Success: The lecture notes will follow your textbook very closely, and both will provide the foundation for answering the homework problems and exam questions. It is recommended that you attend lecture and read the textbook while the lecture is still fresh in your mind. Alternatively, you may choose to read the textbook before attending the corresponding lecture. Either way, if you do this, you will see the course material twice; the first time will be an introduction to new material, the second time will serve to reinforce what was seen the first time. Additionally, each exam will contain one question taken directly from the lecture notes, so it is to your benefit to attend every lecture!

Recitation: Whereas lecture is guided by the professor, recitation is guided by students. The focus of recitation section will be on problem solving, and recitation is a time to have your questions answered.

Policy for Re-grades: Re-grades will be allowed only for exams completed entirely in pen. Re-grade requests must be submitted within 1 week of the date on which exams are handed back in class. Please be advised that I will re-grade the entire exam, and a higher or lower score may result. Scores will be changed only if they differ from the original score by 3 percentage points.

Policy for Absence from Exams or Illness During Exams: The final exam, which is cumulative, will serve as the make-up exam for any student who is absent from a lecture examination with a valid excuse, or who becomes ill during a lecture exam and is unable

to complete it.

Issues of Courtesy: Lecture and recitation will start as scheduled, at 4:00PM and 1:00PM, respectively. Please try to arrive on time, with your electronic devices turned off. If you must arrive late to lecture, please enter quietly and do not sit in the front row.

Suggested Problems:

Ch. 1: 1-19, 20, 21, 23, 25-29, 32, 37, 38, 51, 52, 55, 57, 60

Ch. 2: 1-10, 12-15, 16, 20, 21, 26, 27, 28, 32, 34, 42, 48, 58, 60

Ch. 3: 1-8, 13, 14, 16-19, 22, 23, 26, 27, 30, 31, 37

Ch. 4: 1-6, 8, 9, 10, 12, 15-17, 20, 22, 26, 32, 34

Ch. 5: 3-11, 13, 14, 16, 18, 29, 35

Ch. 6: 2-10, 12, 13, 15-19, 23, 24, 30, 34, 37, 39, 40, 42, 45, 46

Ch. 7: 1-8, 10-14, 16, 17, 20, 23

Ch. 8: 1, 2, 5-15, 29, 30, 32

Ch. 9: 1-13, 15, 17, 18, 20, 22, 25, 26, 28, 30, 34, 37, 38, 43-45, 47, 51, 56, 58

Ch. 10: 1-16, 18-21, 23, 26, 28-33, 34, 35, 38, 40, 45, 54, 55

Ch. 11: 1-12, 15-17, 21, 23, 27, 31, 33, 34, 44

Ch. 12: 1-8, 9, 11

Tentative Schedule of Course Topics and Exams:

<u>Week</u>	<u>Date</u>	<u>Topic</u>
1	Wed. Jan. 17	Chapter 1: Covalent Bonding and Shapes of Molecules
2	Mon. Jan. 22	Chapter 1: Covalent Bonding and Shapes of Molecules
2	Wed. Jan. 24	Chapter 2: Alkanes and Cycloalkanes
3	Mon. Jan. 29	Chapter 2: Alkanes and Cycloalkanes
3	Wed. Jan. 31	Chapter 3: Stereoisomerism and Chirality
4	Mon. Feb. 5	Chapter 3: Stereoisomerism and Chirality
4	Wed. Feb. 7	Chapter 4: Acids and Bases
5	Mon. Feb. 12	Chapter 4: Acids and Bases
5	Wed. Feb. 14	Chapter 5: Alkenes: Bonding, Nomenclature, and Properties
6	Mon. Feb. 19	EXAM #1 CHAPTERS 1-4
6	Wed. Feb. 21	Chapter 6: Reactions of Alkenes
7	Mon. Feb. 26	Chapter 6: Reactions of Alkenes
7	Wed. Feb. 28	Chapter 6: Reactions of Alkenes
8	Mon. Mar. 4	Chapter 7: Alkynes
8	Wed. Mar. 6	Chapter 7: Alkynes
	Mon. Mar. 11	Spring Break
	Wed. Mar. 13	Spring Break
9	Mon. Mar. 18	Chapter 8: Haloalkanes, Halogenation, and Radical Reactions
9	Wed. Mar. 20	Chapter 8: Haloalkanes, Halogenation, and Radical Reactions
10	Mon. Mar. 25	EXAM #2 CHAPTERS 5-8
10	Wed. Mar. 27	Chapter 9: Nucleophilic Substitution and β -Elimination
11	Mon. Apr. 1	Chapter 9: Nucleophilic Substitution and β -Elimination
11	Wed. Apr. 3	Chapter 10: Alcohols
12	Mon. Apr. 8	Chapter 10: Alcohols
12	Wed. Apr. 10	Chapter 10: Alcohols
13	Mon. Apr. 15	EXAM #3 CHAPTERS 9-10
13	Wed. Apr. 17	Chapter 11: Ethers, Epoxides, and Sulfides
14	Mon. Apr. 22	Chapter 11: Ethers, Epoxides, and Sulfides
14	Wed. Apr. 24	Chapter 12: Infrared Spectroscopy
15	Mon. Apr. 29	Review
	Wed. May. 8	FINAL EXAM CHAPTERS 1-12 (11:45-2:45 pm)

Important Dates:

Th. Jan. 25, Last day to drop a course without a "W" grade

Th. Jan. 25, Last day to add a course

Mon. Mar. 18, Last day to drop course with a "W" grade

Academic Integrity: As an academic community dedicated to the creation, dissemination, and application of knowledge, Rutgers University is committed to fostering an intellectual and ethical environment based on the principles of academic integrity. Academic integrity is essential to the success of the University's educational and research missions, and violations of academic integrity constitute serious offenses against the entire academic community. The entire Academic Integrity Policy can be found here: <http://academicintegrity.rutgers.edu/academic-integrity-policy/Links to an external site.>

Accommodations and Support: Rutgers University Newark (RU-N) is committed to the creation of an inclusive and safe learning environment for all students. RU-N has identified the following resources to further the mission of access and support:

- **Students with Disabilities:** Rutgers University welcomes students with disabilities into all of the University's educational programs. The Office of Disability Services (ODS) is responsible for the determination of appropriate accommodations for students who encounter barriers due to disability. In order to receive consideration for reasonable accommodations, a student with a disability must contact ODS, register, have an initial appointment, and provide documentation. Once a student has completed the ODS process (registration, initial appointment, and documentation submitted) and reasonable accommodations are determined to be necessary and appropriate, a Letter of Accommodation (LOA) will be provided to the student. The student must give the LOA to each course instructor, followed by a discussion with the instructor. This should be completed as early in the semester as possible as accommodations are not retroactive. More information can be found at rutgers.edu/Links to an external site. Contact ODS: (973) 353-5375 or ods@newark.rutgers.edu.
- **Religious Holiday Policy and Accommodations:** Students are advised to provide timely notification to instructors about necessary absences for religious observances and are responsible for making up the work or exams according to an agreed-upon schedule. The Division of Student Affairs is available to verify absences for religious observance, as needed: (973) 353-5063 or DeanofStudents@newark.rutgers.edu.
- **Counseling Services:** Counseling Center Room 101, Blumenthal Hall, (973) 353-5805 or <http://counseling.newark.rutgers.edu/Links to an external site.>
- **Students with Temporary Conditions/Injuries:** Students experiencing a temporary condition or injury that is adversely affecting their ability to fully participate in their courses should submit a request for assistance at: <https://temporaryconditions.rutgers.edu/Links to an external site.>
- **Students Who are Pregnant:** The Office of Title IX and ADA Compliance is available to assist students with any concerns or potential accommodations related to pregnancy: (973) 353-1906 or TitleIX@newark.rutgers.edu.
- **Gender or Sex-Based Discrimination or Harassment:** Students experiencing any form of gender or sex-based discrimination or harassment, including sexual assault, sexual harassment, relationship violence, or stalking, should know that help and support are available. To report an incident, contact the Office of Title IX and ADA Compliance: (973) 353-1906 or TitleIX@newark.rutgers.edu. To submit an incident report: com/RUNReportingForm. To speak with a staff member who is confidential and does **NOT** have a reporting responsibility, contact the Office for Violence Prevention and Victim Assistance: (973) 353-1918 or run.vpva@rutgers.edu.