

Organic Chemistry
Chemistry 336, Section 01
Spring 2023

Instructor: Prof. Stacey Brenner-Moyer (www.brennermoyer.com)
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Lecture: Monday and Wednesday 4:00-5:20 PM, Room 100 Conklin

Recitation: Tuesday 1:00-2:20 PM, Room 220 Smith (Liotta and Wang)

Office Hours: Wednesdays 2:30-3:50 PM, Room 201E Life Sciences Center 1.

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 his/her understanding of basic principles to solve a problem. Think about it: 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 335, 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: Brown, William H., Brent L. Iverson, Eric V. Anslyn, Christopher S. Foote. *Organic Chemistry*. 8th ed. Boston, MA: Cengage Learning, 2016.

Recommended Texts and Materials: Molecular model kit, such as: Molecular Model Set for Organic Chemistry, Prentice Hall or Molecularity

Course Evaluation: There will be 2 lecture exams and 1 final exam. Your lowest numerical exam grade will be dropped in your course letter grade determination. The remaining two 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, performance on recitation quizzes, and completion of homework can earn you **up to 10 bonus points on each exam**.

- Attendance: Starting Mon. Jan. 30, there will be assigned seating for the lecture. Attendance will be taken at random, on unannounced days. If you are not physically in your assigned seat, you will be counted as absent. If you miss ≤ 1 lecture prior to exam 1, or between exam 1 and exam 2, you will earn 5 bonus points on exam 1 and on exam 2, respectively. If you miss ≤ 1 lecture between exam 2 and the final exam, you will earn 2 bonus points on the final exam. 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, between exam 1 and exam 2, and between exam 2 and the final exam, you will earn 5 bonus points on exam 1, on exam 2, and on the final exam, respectively.
- Homework: Completion of homework problems throughout the semester, which will be collected and graded by recitation instructors, will earn you 3 bonus points on the final exam.

Exam	# of Bonus Points Possible	Breakdown
Exam #1	10	5 attendance + 5 recitation quizzes
Exam #2	10	5 attendance + 5 recitation quizzes
Final Exam	10	2 attendance + 5 recitation quizzes + 3 homework

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 or more 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 exam with a valid excuse, or who becomes ill during a lecture exam and is unable to complete it.

Issues of Courtesy: Lecture will start as scheduled, at 4:00 PM. Please try to arrive on time, with your electronic devices turned off. If you must arrive late to lecture, please enter quietly.

Homework Problems:

Ch. 13: 5, 6, 8, 9, 12, 15, 16, 20, 21

Ch. 14: 2, 3, 14, 16, 17, 25, 27, 29, 30, 34, 36

Ch. 15: 1, 8, 11, 12, 16, 17, 20, 21, 23, 26

Ch. 16: 8, 19, 20, 25, 26, 32, 37, 40, 41, 43, 47, 50, 54, 58, 60, 61, 64, 73, 75

Ch. 17: 4, 20, 22, 23, 24, 26, 29, 32, 38, 39, 40, 46, 49, 50

Ch. 18: 5, 21, 32, 37, 38, 43, 48, 51, 56, 63, 64, 71

Ch. 19: 20, 21, 24, 27, 33, 36, 41, 45, 46, 49, 53, 61, 62, 70, 71, 73, 74, 75, 77

Ch. 20: 6, 7, 9, 11, 14, 22, 23, 28, 31, 33, 35, 41, 46, 53, 56

Ch. 21: 1, 3, 6, 13, 14, 15, 16, 30, 32, 35, 38, 46, 50, 56, 64

Ch. 22: 2, 4, 9, 16, 18, 19, 22, 26, 28, 31, 32, 34, 45, 55, 62

Ch. 23: 6, 14, 20, 24, 25, 30, 33, 38, 41, 44, 47, 50, 55, 69

Ch. 24: 7, 8, 11, 14, 18, 23, 25, 32, 38a,b,d,e, 40

Tentative Schedule of Course Topics, Exams and Reading Assignments:

<u>Week</u>	<u>Date</u>	<u>Topic</u>	<u>Reading</u>
1	Wed. Jan. 18	An Introduction to Organometallic Compounds	15.1-15.3
2	Mon. Jan. 23	Aldehydes and Ketones	16.1-16.3
2	Wed. Jan. 25	Aldehydes and Ketones	16.4-16.8
3	Mon. Jan. 30	Aldehydes and Ketones	16.9-16.12
3	Wed. Feb. 1	Carboxylic Acids	17.1-17.4
4	Mon. Feb. 6	Carboxylic Acids	17.5-17.9
4	Wed. Feb. 8	Derivatives of Carboxylic Acids	18.1-18.5
5	Mon. Feb. 13	Derivatives of Carboxylic Acids	18.6-18.10
5	Wed. Feb. 15	Nuclear Magnetic Resonance Spectroscopy	13.1-13.5
6	Mon. Feb. 20	Review	
6	Wed. Feb. 22	EXAM #1 CHAPTERS 15-18	
7	Mon. Feb. 27	NO CLASS	
7*	*Tues. Feb. 28*	Nuclear Magnetic Resonance Spectroscopy	13.6-13.12
7	Wed. Mar. 1	Mass Spectrometry	14.1-14.4
8	Mon. Mar. 6	Enolate Anions and Enamines	19.1-19.4
8	Wed. Mar. 8	Enolate Anions and Enamines	19.5-19.7
9	Mon. Mar. 13	SPRING BREAK	
9	Wed. Mar. 15	SPRING BREAK	
10	Mon. Mar. 20	Enolate Anions and Enamines and Conjugated Systems	19.8-19.9 20.1-20.3
10	Wed. Mar. 22	Conjugated Systems	20.4-20.6
11	Mon. Mar. 27	Benzene and Aromaticity	21.1-21.3
11	Wed. Mar. 29	Benzene and Aromaticity	21.4-21.5
12	Mon. Apr. 3	Reactions of Aromatic Compounds	22.1-22.2
12	Wed. Apr. 5	Reactions of Aromatic Compounds	22.2-22.3
13	Mon. Apr. 10	Review	
13	Wed. Apr. 12	EXAM #2 CHAPTERS 13-14, 19-22	
14	Mon. Apr. 17	Amines	23.1-23.5
14	Wed. Apr. 19	Amines	23.6-23.10
15	Mon. Apr. 24	C-C Bond Formation and Synthesis	24.1-24.3
15	Wed. Apr. 26	C-C Bond Formation and Synthesis	24.4-24.6
16	Mon. May. 1	Review	
	Wed. May 10 (11:45am - 2:45pm)	FINAL EXAM CHAPTERS 13-24	

Important Dates:

Th. Jan. 26, Last day to add a course, or drop a course without a "W" grade

*Tues. Feb. 28, Prof. Brenner-Moyer will lecture during the regularly scheduled recitation. This lecture will be held during the time and at the location normally reserved for recitation.

Mon. Mar. 10, 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/>

Your health and well-being matter, and Rutgers has put in place a number of resources that are intended to help students through the challenges that might emerge during these times. Information on many of these resources appears below. Please let me know immediately if you are experiencing circumstances that are negatively impacting your academic performance. I also strongly encourage you to contact your academic advisor.

☐ Accommodation and Support Statement:

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:

- **Absences:** All students are responsible for timely notification of their instructor regarding any expected absences. The Division of Student Affairs can provide assistance for absences related to religious observance, emergency or unavoidable conflict (illness, personal or family emergency, etc.) Students should refer to the University's Course Attendance policy (10.2.7), for complete expectations and responsibilities. The office can be contacted at: (973) 353-5063 or deanofstudents@newark.rutgers.edu.
- **Disabilities:** The Office of Disability Services (ODS) works with students with medical, physical, and/or mental conditions who encounter disabling barriers in order to determine reasonable and appropriate accommodations for access. Students who have completed the process with ODS and have approved accommodations are provided a Letter of Accommodation (LOA) specific to each course. To initiate accommodations for their course students must both provide the LOA to and have a conversation with the course instructor about the accommodations. More information can be found at ods.rutgers.edu. Contact ODS: (973) 353-5375 or ods@newark.rutgers.edu.
- **Temporary Conditions/Injuries:** The Division of Student Affairs can assist students who are experiencing a temporary condition or injury (broken or sprained limbs, concussions, or recovery from surgery). Students experiencing a temporary condition or injury should submit a request for assistance at: <https://temporaryconditions.rutgers.edu>.
- **Pregnancy:** The Office of Title IX and ADA Compliance is available to assist students with any concerns or potential accommodations related to pregnancy. Students may contact the office at (973) 353-1906 or TitleIX@newark.rutgers.edu.

- **Gender or Sex-Based Discrimination or Harassment:** The Office of Title IX and ADA Compliance can assist students experiencing any form of gender or sex-based discrimination or harassment, including sexual assault, sexual harassment, relationship violence, or stalking. Students can report an incident to the office at: (973) 353-1906 or TitleIX@newark.rutgers.edu. Incidents may also be reported by using: tinyurl.com/RUNReportingForm. For more information, students should refer to the University's Title IX Policy and Grievance Procedures located at <https://uec.rutgers.edu/wp-content/uploads/60-1-33-current-1.pdf>.
- **Interpersonal Violence:** The Office for Violence Prevention and Victim Assistance (VPVA) can provide any student with confidential support. The office does **not** have a reporting obligation to Title IX. Students can contact the office by calling (973) 353-1918 or emailing run.vpva@rutgers.edu. There is also a confidential text-based helpline available to students; students can text (973) 339-0734 for support. Students do not need to be a victim/survivor of violence; any student can receive services, information and support.
- **Crisis and Concerns:** The Campus Awareness Response and Education (CARE) Team works with students in crisis to develop a plan of support plan and address personal situations that might impact their academic performance. Connect with the CARE Team by using the following link: tinyurl.com/RUNCARE or emailing careteam@rutgers.edu.
- **Stress, Worry, or Concerns about Well-Being:** The Counseling Center has confidential therapists available to support students. Students should reach out to the Counseling Center to schedule an appointment: counseling@newark.rutgers.edu or (973) 353-5805. If students are not quite ready to make an appointment with a therapist but are interested in self-help, check out *Sanvello* for an easy, web-based approach to self-care and support. Visit <https://my.rutgers.edu/>, click on Sanvello: Wellness @ RUN, and log in with your netid to begin your journey toward wellness.
- **Emergencies:** Call 911 or contact Rutgers University Police Department (RUPD) at (973) 353-5111.

□ Learning Resources:

- Rutgers Learning Center (tutoring services):
Tutoring available in a variety of math, science, technology, and business courses. Contact the Learning Center to determine whether tutoring is available for a specific course.
Room 140, Bradley Hall (973) 353-5608
<https://rlc.rutgers.edu/contact-us>
<https://sasn.rutgers.edu/student-support/tutoring-academic-support/learning-center>
- Writing Center (tutoring and writing workshops)
(973) 353-5847
nwc@rutgers.edu
<https://sasn.rutgers.edu/student-support/tutoring-academic-support/writing-center>

☐ Technology/Internet Resources for Students:

- <https://myrun.newark.rutgers.edu/covid-technology-resources>
- <https://mytech.newark.rutgers.edu/tlp>