CHEM2323: FUNDAMENTALS OF ORGANIC CHEMISTRY I

Fall 2021 (August 23rd–December 8th 2021)

Instructor: Prof. Ognjen Š. Miljanić*

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CHEM2323 is an undergraduate introductory organic chemistry course. The course will cover three broad topics. We will first talk about the general concepts of organic chemistry: structure, stereochemistry, polarity, thermodynamics, and chemical kinetics. Central part of the course will deal with some important classes of organic compounds—alkyl halides, alkenes, alkynes, and alcohols—and their reactivity. In the final portion of the course, we will see how spectroscopic techniques—nuclear magnetic resonance, infrared spectroscopy, and mass spectrometry—are used to determine the structures of organic molecules.

Prerequisites	CHEM1331 + CHEM1332: FUNDAMENTALS OF CHEMISTRY
Class Meetings	Lectures[†] 1:00p–2:30p Mon/Wed, 160 Fleming. No class on 09/06 and 11/24. Office Hours Only virtually over Zoom, by appointment—weekend and evenings OK too!
Exams and Grading	Midterms count for 60% of the grade, lowest score dropped. Friday, September 24th 2021, 7:00p–8:30p, 100 SEC (room may change) Friday, October 22th 2021, 7:00p–8:30p, 100 SEC (room may change) Friday, November 19th 2021, 7:00p–8:30p, 100 SEC (room may change) Final Exam counts for 40% of the grade. Wednesday, December 8th 2021, 8:00a–11:00a, 100 SEC (room may change) **Last day to drop the course without grade—Wednesday, September 8th** Last day to drop the course—Thursday, November 4th
Recommended Books and Resources	Leroy G. Wade: *Organic Chemistry* Course websites, lecture notes, and molecular models are very useful!
Students with Disabilities	Students with disabilities are entitled to additional time and/or alternative accommodations under the *Americans with Disabilities Act*. If you are one of them, please contact Dr. Miljanić as soon as possible to discuss arrangements.
UH CAPS Statement	**Counseling and Psychological Services (CAPS)** can help students who are having difficulties managing stress, adjusting to college, or feeling sad and hopeless. You can reach CAPS (www.uh.edu/caps) by calling 713-743-5454 during and after business hours for routine appointments or if you or someone you know is in crisis. No appointment is necessary for the "Let's Talk" program, a drop-in consultation service at convenient locations and hours around campus. http://www.uh.edu/caps/outreach/lets_talk.html

* Prof. Miljanić's name is phonetically pronounced as: *Ogg – nyen Meel – yan – ich*.

† Students are responsible for being aware of the announcements that may be made during class or posted on class website.

Topics and Timeline —tentative—	**Date**	**Topic**	**Sections**
	Mon 08/23	Syllabus discussion. Introduction	1.1–1.6
	Wed 08/25	Concepts: resonance, structure, acidity	1.7–1.14
	Mon 08/30	Structures of organic molecules	2.1–2.8
	Wed 09/01	Polarity. Classes of organic compounds	2.9–2.14
	Mon 09/06	Labor Day—No Class!	
	Wed 09/08	Hydrocarbons. Alkanes—introduction	3.1–3.6
	Mon 09/13	Alkanes—conformational analysis	3.7–3.9
	Wed 09/15	Cycloalkanes	3.10–3.15
	Mon 09/20	Alkanes—thermodynamics of chlorination	4.1–4.7
	Wed 09/22	Alkanes—kinetics of chlorination	4.8–4.16
	Fri 09/24	**First midterm (7:00p–8:30p)**	**Chapters 1–4**
	Mon 09/27	Stereochemistry—introduction	5.1–5.5
	Wed 09/29	Stereochemistry, continued	5.6–5.10
	Mon 10/04	Molecules with multiple stereocenters	5.11–5.16
	Wed 10/06	Alkyl halides—introduction, S_N2 reaction	6.1–6.9
	Mon 10/11	Alkyl halides—S_N2 continued, S_N1 reaction	6.10–6.16
	Wed 10/13	Alkyl halides—elimination reactions	6.17–6.21
	Mon 10/18	Alkenes—intro, nomenclature, properties	7.1–7.8
	Wed 10/20	Alkenes—synthesis	7.9–7.11
	Fri 10/22	**Second midterm (7:00p–8:30p)**	**Chapters 5–7**
	Mon 10/25	Reactions of alkenes	8.1–8.9
	Wed 10/27	Reactions of alkenes, continued	8.10–8.17
	Mon 11/01	Alkynes—intro, properties, synthesis	9.1–9.8
	Wed 11/03	Reactions of alkynes. Multistep synthesis	9.9–9.10
	Mon 11/08	Alcohols—intro, properties, synthesis	10.1–10.7
	Wed 11/10	Alcohols—synthesis, continued	10.8–10.12
	Mon 11/15	Reactions of alcohols	11.1–11.7
	Wed 11/17	Reactions of alcohols, continued	11.8–11.14
	Fri 11/19	**Third midterm (7:00p–8:30p)**	**Chapters 8–11**
	Mon 11/22	Infrared spectroscopy. Mass spectrometry	12.1–12.15
	Wed 11/24	Thanksgiving Wednesday—No Class	
	Mon 11/29	Nuclear magnetic resonance	13.1–13.9
	Wed 12/01	^{13}C NMR. Class conclusion	13.12–13.14
	Wed 12/08	**Final exam (8:00a–11:00a)**	**Comprehensive**

COVID-19 Policies

Face Covering Policy

To reduce the spread of COVID-19, the University strongly encourages everyone (vaccinated or not) to wear face coverings indoors on campus including classrooms for both faculty and students.

Presence in Class

Your presence in class each session means that you:

—Are NOT exhibiting any Coronavirus Symptoms that makes you think that you may have COVID-19

—Have NOT tested positive or been diagnosed for COVID-19

—Have NOT knowingly been exposed to someone with COVID-19 or suspected/presumed COVID-19

If you are experiencing any COVID-19 symptoms that are not clearly related to a pre-existing medical condition, do not come to class. Please see Student Protocols for what to do if you experience symptoms and Potential Exposure to Coronavirus for what to do if you have potentially been exposed to COVID-19. Consult the Undergraduate Excused Absence Policy for information regarding excused absences due to medical reasons.

Students are encouraged to visit the University's COVID-19 website for important information including on-campus testing, vaccines, diagnosis and symptom protocols, campus cleaning and safety practices, report forms, and positive cases on campus. Please check the website throughout the semester for updates.

Vaccinations

Data suggests that vaccination remains the best intervention for reliable protection against COVID-19. Students are asked to familiarize themselves with pertinent vaccine information, consult with their health care provider. The University strongly encourages all students, faculty and staff to be vaccinated.

Reasonable Academic Adjustments/Auxiliary Aids

The University of Houston complies with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, pertaining to the provision of reasonable academic adjustments/auxiliary aids for disabled students. In accordance with Section 504 and ADA guidelines, UH strives to provide reasonable academic adjustments/auxiliary aids to students who request and require them. If you believe that you have a disability requiring an academic adjustments/auxiliary aid, please contact the Justin Dart Jr. Student Accessibility Center (formerly the Justin Dart, Jr. Center for Students with DisABILITIES).

Excused Absence Policy

Regular class attendance, participation, and engagement in coursework are important contributors to student success. Absences may be excused as provided in the University of Houston Undergraduate Excused Absence Policy and Graduate Excused Absence Policy for reasons including: medical illness of student or close relative, death of a close family member, legal or government proceeding that a student is obligated to attend, recognized professional and educational activities where the student is presenting, and University-sponsored activity or athletic competition. Under these policies, students with excused absences will be provided

with an opportunity to make up any quiz, exam or other work that contributes to the course grade or a satisfactory alternative. Please read the full policy for details regarding reasons for excused absences, the approval process, and extended absences. Additional policies address absences related to military service, religious holy days, pregnancy and related conditions, and disability.

Recording of Class

Students may not record all or part of class, livestream all or part of class, or make/distribute screen captures, without advanced written consent of the instructor. Prof. Miljanić hereby consents to such recordings, provided that they do not disturb the flow of the lecture in any way he perceives as disturbing.

Syllabus Changes

Due to the changing nature of the COVID-19 pandemic, please note that the instructor may need to make modifications to the course syllabus and may do so at any time. Notice of such changes will be announced as quickly as possible through over email and in class.