

THE COLLEGE AT
O L D W E S T B U R Y
STATE UNIVERSITY OF NEW YORK

CP3302: ORGANIC CHEMISTRY-II Lecture, Summer 2023

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Course Description: This is the second semester of a traditional two-semester course. The course involves systematic study of organic compounds, nomenclature, methods of preparation, physical and chemical properties, stereochemistry, and reaction mechanisms. In some cases, the organic chemistry is immediately applied to the appropriate class of biological molecules; topics such as carbohydrates, carboxylic acids and lipids, etc. will be discussed.

Teaching Objectives:

To introduce the student to the fundamental concepts of Organic Chemistry; and to present an underlying mechanistic rationale that unifies the discipline.

Students are expected to: name common organic compounds, draw structures, relate functional groups with their chemical and physical behaviors, propose reasonable methods for synthesizing different organic compounds, predict reaction mechanisms, understand chemical processes in biological systems.

After completing this course, students should be able to:

- Unsaturated conjugated systems.
- Orbital conjugation and molecular orbital diagrams.
- The Diels Alder reaction mechanistically and strategically.
- Aromatic chemistry: including MO of benzene, Huckel's rule, nomenclature, and associated physical properties.
- The reactions of benzene and other aromatic systems.
- The synthesis and reactions of aldehydes, ketones, imines, and amides.
- The properties and reactions of amines.
- The synthesis and chemical properties of carboxylic acids and their derivatives.
- Enolate chemistry and its use in organic synthesis.
- The classification, structure, and reactions of carbohydrates.
- The structures, properties, and reactions of amino acids, and how amino acids are used to synthesize peptides.
- Devise a plan for retrosynthetic analysis to solve multistep synthesis problems.
- Knowledge of fundamental reactions, reaction types and reaction mechanisms as related to the major functional groups of organic compounds.
- Understanding of basic spectroscopic methods employed in organic chemistry and their application to structural identification.

Lectures: Monday-Thursday 1:00 – 4:30 PM

Textbook: Organic Chemistry, 11th Edition, with MHConnect, by F.A. Carey, R.M. Giuliano, N.T. Allison and S.L. Bane. McGraw Hill. (Available as E-book, loose-leaf and hard copy.)

Student Solutions Manual for Organic Chemistry, 11th Edition, by N.T. Allison, F.A. Carey, R.M. Giuliano, S.L. Bane and R.C. Atkins.

Molecular models: You can buy any set you like. I have found this set particularly useful:
http://www.amazon.com/Prentice-Molecular-Model-Organic-Chemistry/dp/0205081363/ref=sr_1_1?ie=UTF8&qid=1438102210&sr=8-1&keywords=molecular+model+set+organic+chemistry

Attendance Policy: Attendance at all sessions is essential for proper understanding and mastery of the course material.

Podcasts: Some of the lectures will be podcasted before the class meets. For these lectures, the class time will be used for Q-A sessions and problem solving.

Make-up Policy: There will be no make-up exams or quizzes. A student who misses an exam should consult the instructor on the matter. The student should either contact the instructor before the exam (if there is a legitimate, extenuating reason available in advance) or no later than 48 hrs after the exam.

Quizzes: A total of 5 quizzes will be given via BrightSpace. These will contribute 10% towards your final grade. Each quiz will be about 10-15 min long. You may attempt each quiz twice.

Homework: Five Homework Assignments will be answered on BrightSpace. These Homework Assignments will count 5% of your final grade. You may attempt each HW 3 times.

Exams: Three exams based on class lectures will be given for a total value of 60% of your final grade. Each lecture exam contributes a maximum of 20% towards your final grade. There will also be a comprehensive final exam, which will contribute 25% towards your final grade. Exams may be multiple choices, long form, or a combination. Please see your tentative lecture schedule for dates. **There will be NO extra work of any kind to improve your grade.** If you would rather have an F instead of a D, D+, or C-, you must make the decision before you take the final exam and may decide not to take it. Once you take the final exam your grade will be reported as such whatever that happens to be, and cannot be changed just because it is lower than your expectation/need.

Office Hours: Mon & Wed immediately after class, all other times by appointment only.

Integrity: The highest ethical behavior is expected. This course recognizes and endorses the Student Code of Honor. As a faculty we share your commitment to creating an environment that fosters professionalism in our educational community.

Decorum: Please try to arrive 5 min before your scheduled time. Please have your cell phones on mute. If you are late, please come in quietly and try not to disturb the class.

Evaluation: Student performance will be evaluated as follows:

Home works	5%	Grades:					
Quizzes	10%	90 >	A	77-79	B-	60-64	D+
Exams 3	60%	87-89	A-	74-76	C+	55-59	D
Exam Final	25%	84-86	B+	70-73	C	< 54	F
		80-83	B	65-69	C-		

Tentative Lecture/Exam Schedule

Date	Chapter - Topic
Wed, July 5 th Thu, July 6 th	Chapter 11: Conjugated Systems Chapter 12: Arenes and Aromaticity
Mon, July 10 th Tue, July 11 th	Chapters 13: Electrophilic and Nucleophilic Substitution
Wed, July 12 th Thu, July 13 th Mon, July 17 th	Chapter 14: Spectroscopy Chapter 15: Organometallic Compounds
Tue, July 18 th	Chapters 16: Alcohols, Diols and Thiols
Wed, July 19 th	Chapters 17: Ethers, Epoxides and Sulfides
Thu, July 20 th Mon, July 24 th	Chapters 18: Aldehydes and Ketones
Tues, July 25 th	Chapters 19: Carboxylic Acids
Wed, July 26 th	Chapters 20: Derivatives of Carboxylic Acids
Thu, July 27 th	Chapter 21: Enols and Enolates
Mon, July 31 st	Chapter 22: Amines
Tues, Aug 1 st	Chapter 23: Carbohydrates - Selected Topics
Wed, Aug 2 nd	Chapters 24 & 25: Lipids, Amino acids, Proteins – Selected Topics

Exams will be on the dates indicated below. Exams 1-3 will be 1.5-2 hours long and will be administered in the second half of the lecture period. Please do not ask, "can we have the exam first". Comprehensive Final Exam will be on the last day of the class, Thursday August 3rd.

Exam 1: Chapters 11-13, Thursday 13th July.

Exam 2: Chapters 14-17, Monday 24th July.

Exam 3: Chapters 18-21, Tuesday 1st August.

Final: Chapters 11-25 (Comprehensive), Thursday August 3rd.