

Fall 2021

CHEM 243-101: Organic Chemistry I

A. Castro

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Organic Chemistry I
Fall 2021 Course Syllabus

[NJIT Academic Integrity Code](#): All Students should be aware that the Department of Chemistry & Environmental Science (CES) takes the University Code on Academic Integrity at NJIT very seriously and enforces it strictly. This means that there must not be any forms of plagiarism, i.e., copying of homework, class projects, or lab assignments, or any form of cheating in quizzes and exams. Under the University Code on Academic Integrity, students are obligated to report any such activities to the Instructor.

COURSE INFORMATION

Course Description: The preparation and properties of the various classes of organic compounds are discussed, with attention given to industrial sources such as coal and petroleum. Also covers the commercial utilization of these materials in the synthesis of useful products used in areas such as foods, cosmetics, textiles, plastics, and pharmaceuticals.

Number of Credits: 3

Prerequisites: Chem 122 or Chem 126 with a grade of C or better.

Course-Section and Instructor

Chem 243-101 Dr. A. Castro

Lecture: Tiernan Hall (TIER 111) T: 6-8:50 pm

Office: Tiernan (TIER) 110 Email: castroa@njit.edu

Office Hours: T: 2-2:30 pm and 5:30-6 pm

Required Text: (eBook included with OWLv2 access code): Organic Chemistry, 9th Edition, John McMurry, CENGAGE Learning, Boston, MA, 2015.

Chapter Homework:

<https://www.cengage.com/dashboard/#/course-confirmation/E-YQD9YM8YWTX8T/initial-course-confirmation>

Chapter Exams:

<https://www.cengage.com/dashboard/#/course-confirmation/E-YQD982JLTTZD7/initial-course-confirmation>

An inexpensive set of molecular models is highly recommended and models cannot be used during exams.

University-wide Withdrawal Date: The last day to withdraw with a **W** is Monday, November 10, 2021. It will be strictly enforced.

Learning Outcomes:

Upon completion of the course you should have a facility in accomplishing the following:

1. Understand the fundamental principles that govern organic chemistry reactions.
2. Assign IUPAC names to given structures and draw correct structures from given names.
3. Draw correct structures of products expected for a given set of reactants.
4. Apply fundamental principles to rational design of synthetic routes for organic compounds.
5. Write mechanisms for the reactions covered, including Nucleophilic Substitution and Elimination.
6. Improve logical reasoning ability, and to learn to integrate seemingly unrelated properties into patterns.

POLICIES

All CES students must familiarize themselves with, and adhere to, all official university-wide student policies. CES takes these policies very seriously and enforces them strictly.

Grading Policy: The final grade in this course will be determined as follows:

Online Homework and Exams from OWLv2 (Online Web-based Learning)

-Online Chapter Homework - 100 points

-Online Chapter Exams - 100 points

(In order to receive credit for their work, students must complete the assignments by the posted due date. Deadline extensions will only be given in case of documented medical reasons or emergency reasons approved by the Dean of Students. Extensions will not be granted because of website difficulties, internet being down, or your own computer problems)

Cumulative Final Exam - 100 points

The final exam will be cumulative with an emphasis on the understanding of fundamental concepts applied to a variety of systems.

The final grade will be calculated from a total of 300 points.

Your final letter grade in this course will be based on the following tentative curve:

A (90-100%), B+ (85-89%), B (84-80%), C+ (79-75%), C (74-70%), D (69-65%), F (below 64%)

Attendance Policy: Attendance at classes will be recorded and is **mandatory**. Each class is a learning experience that cannot be replicated through simply “getting the notes.” Students are responsible for all the material covered and announcements made in class. All email communication should be done using the “njit.edu” domain.

Make-up Exam Policy: There will normally be **NO MAKE-UP EXAMS** during the semester. In the event that a student has a legitimate reason for missing an exam due date, the student should contact the Dean of Students office and present written verifiable proof of the reason for missing the exam, e.g., a doctor’s note, police report, court notice, etc. clearly stating the date AND time of the mitigating problem. The student must also notify the CES Department Office/Instructor that the exam will be missed so that appropriate steps can be taken to make up the grade.

Cellular Phones: All cellular phones and other electronic devices must be switched off during all class periods. Such devices must be stowed in bags during exams.

ADDITIONAL RESOURCES

Chemistry Tutoring Center: Located in the Central King Building, Lower Level, Rm. G12. Hours of operation are Monday – Friday 10:00 am - 6:00 pm. For further information please click [here](#).

Accommodation of Disabilities: Office of Accessibility Resources and Services (*formerly known as Disability Support Services*) offers long term and temporary accommodations for undergraduate, graduate and visiting students at NJIT.

If you are in need of accommodations due to a disability please contact Chantonette Lyles, Associate Director at the Office of Accessibility Resources and Services at **973-596-5417** or via email at lyles@njit.edu. The office is located in Fenster Hall Room 260. A Letter of Accommodation Eligibility from the Office of Accessibility Resources Services office authorizing your accommodations will be required.

For further information regarding self-identification, the submission of medical documentation and additional support services provided please visit the Accessibility Resources and Services (OARS) website at:

<https://www.njit.edu/studentsuccess/accessibility>

Important Dates: <https://www5.njit.edu/registrar/calendars/>

Course Outline

Chapter 1: Structure and Bonding

Chapter 2: Polar Covalent Bonds; Acids and Bases

Chapter 3: Organic Compounds: Alkanes and Their Stereochemistry

Chapter 4: Organic Compounds: Cycloalkanes and Their Stereochemistry

Chapter 5: Stereochemistry at Tetrahedral Centers

Chapter 6: An Overview of Organic reactions

Chapter 7: Alkenes: Structure and Reactivity

Chapter 8: Alkenes: Reactions and Synthesis

Chapter 9: Alkynes: An Introduction to Organic Synthesis

Chapter 10: Organohalides

Chapter 11: Reactions of Alkyl Halides: Nucleophilic Substitutions and Eliminations

Chapter 17: Alcohols and Phenols