NJIT New Jersey Institute of Technology

THE COLLEGE OF SCIENCE AND LIBERAL ARTS

THE DEPARTMENT OF CHEMISTRY AND ENVIRONMENTAL SCIENCE

# Chemistry 243 Organic Chemistry I
## *Spring 2025 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.

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## COURSE INFORMATION

**Course Description**: This is part I of a two semester course in Organic Chemistry for chemistry or non chemistry majors. Outcomes of the course are given below

**Number of Credits**: 3

**Prerequisites**: Undergraduate level chemistry 126, minimum grade C.

**Course-Section and Instructors**

| Course-Section | Instructor |
|---|---|
| Chem 243 - 002 | Dr. Tamara Gund |
| | |

**Office Hours for All Chemistry & Environmental Science Instructors**: Monday 12 - 1 PM and Thursday12-1pm

EMAIL: gund@njit.edu
PHONE: 973-596-3669

**Required Textbook**:

| | |
|---|---|
| **Title** | Organic Chemistry |
| **Author** | Wade |
| **Edition** | 9th |
| **Publisher** | Pierson |
| **ISBN #** | |

**University-wide Withdrawal Date**: The last day to withdraw with a **W** is Monday, November 11, 2024. It will be strictly enforced.

## 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:

| | |
|---|---|
| **Quizzes (3)** | 100 points |
| **Exam I** | 100points |
| **Exam II** | 100 points |
| **Exam III** | 100 points |
| **Final Exam** | 100 points |

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

| | | | |
|---|---|---|---|
| **A** | 87% | **C** | 60 |
| **B+** | 82 | **D** | 50 |
| **B** | 75 | **F** | Below 50 |
| **C+** | 68 | | |

**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."

**Homework Policy**: Homework is an expectation of the course. It is difficult to well if you don't do the homework.

**Makeup Exam Policy**: There will normally be **NO MAKE-UP QUIZZES OR EXAMS** during the semester. In the event that a student has a legitimate reason for missing a quiz or exam, 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. A makeup if granted should be taken during specified makeup days.

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

## 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:

- http://www5.njit.edu/studentsuccess/disability-support-services/

**Important Dates** (See: Spring 2025 Acamic Calend, Registrar) **Academic Calendars**

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## Spring 2025 Academic Calendar

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|---|---|---|---|
| January | 20 | Monday | Martin Luther King, Jr. Day |
| January | 21 | Tuesday | First Day of Classes |
| January | 25 | Saturday | Saturday Classes Begin |
| January | 27 | Monday | Last Day to Add/Drop a Class |
| January | 27 | Monday | Last Day for 100% Refund, Full or Partial Withdrawal |
| January | 28 | Tuesday | W Grades Posted for Course Withdrawals |
| February | 3 | Monday | Last Day for 90% Refund, Full or Partial Withdrawal, No Refund for Partial Withdrawal after this date |
| February | 17 | Monday | Last Day for 50% Refund, Full Withdrawal |
| March | 10 | Monday | Last Day for 25% Refund, Full Withdrawal |
| March | 16 | Sunday | Spring Recess Begins - No Classes Scheduled - Univ Open |
| March | 22 | Saturday | Spring Recess Ends |
| April | 3 | Thursday | Wellness Day - No Classes Scheduled - University Open |
| April | 7 | Monday | Last Day to Withdraw |
| April | 18 | Friday | Good Friday - No Classes Scheduled - University Closed |

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|---|---|---|---|
| April | 20 | Sunday | Easter Sunday - No Classes Scheduled - University Closed |
| May | 6 | Tuesday | Thursday Classes Meet |
| May | 7 | Wednesday | Friday Classes Meet |
| May | 7 | Wednesday | Last Day of Classes |
| May | 8 | Thursday | Reading Day 1 |
| May | 9 | Friday | Reading Day 2 |
| May | 10 | Saturday | Final Exams Begin |
| May | 16 | Friday | Final Exams End |
| May | 18 | Sunday | Final Grades Due |
| May | 19 | Monday | Master's and PhD Candidate Commencement - Bloom Wellness and Events Center |
| May | 21 | Wednesday | Undergraduate Candidate Commencement - Prudential Center |

## Materials To Be Covered and Exam Schedule

Chapter 1: Structure and Bonding

Chapter 2: Acids and Bases: Functional Groups

Chapter 3: Structure and Stereochemistry of Alkanes

**Exam 1: February19, 2025**

Chapter 4: The Study of Chemical Reactions

Chapter 5: Stereochemistry

Chapter 6: Alkyl Halide, Nucleophilic Substitution

**Exam 2: March 12, 2025**

Chapter 7: Structure and Synthesis of Alkenes: Elimination

Chapter 8: Reactions of Alkenes

Chapter 12: Infrared Spectroscopy and Mass spectrometry (If time permits)

**Exam 3: April 30, 2025**

Chapter 13: NMR Spectroscopy

**Final Exam: TBA**

Chapter 9: Alkynes In Chem 244

Chapter 10: Structure and Synthesis of Alcohols : In Chem 244 :

Chapter 11: Reactions of Alcohols : In Chem 244

The final exam will be cumulative. Before each Exam there will be a Quiz which covers one or two chapters. Take the Quizzes seriously as they add up to one Exam grade. There may be a fourth quiz depending on time. If there is a fourth quiz one quiz will be dropped.

Problems in the body of the chapter are assigned and selected problems at the end of the chapter. These will be collected. To do well in the course it is important to do these problems.
The grade will be determined from a total of 400 points.. 100 points will be dropped from the total of 500 points.. Either the quizzes (100 points) or the lowest of the three exams will be dropped. Makeup exams are not encouraged and will be given if you have an excuse from the dean of students or a doctor's note. If you must miss an exam contact me before the exam or immediately after. Makeups will be given at specified times. The final exam will not be dropped

Attendance is required and will be taken into consideration when grades are computed.

## Outcomes

Upon completing organic chemistry I, the student should have an understanding in the following areas:

1. Lewis structures, condensed structures and structural formulas of organic compounds

2. Understand the geometry resulting from atomic orbital hybridization

3. Know how electronegativity and resonance causes charge distribution on molecules

4. Understand how intermolecular forces affect the boiling points and melting points

5. Interpret 3D representations of molecular structures

6. Know reaction intermediates and their relative stabilities

7. Understand how kinetics, thermodynamics and statistical mechanics describe chemical reactions

8. Draw the structures of the products given specific reactants

9. Write the mechanisms of reactions

10. Understand how physical conditions influence rate and path of reactions

11. Know SN1, SN2, E1 and E2 reactions, their stereo and regional-selectivity

12. Know the nomenclature of alkane, alkene, alkyne and alcohols

13. Understand oxidation and reduction in organic chemistry

14. Know organometallic reagents for alcohol synthesis

15. Learn Spectroscopy: IR, Mass Spectroscopy, NMR

**Academic misconduct**: The NJIT Honor Code will be upheld. Any student that participates in any form of academic dishonesty or cheating will receive a zero for the exam. If a person is caught a second time, a final grade of "F" will be given for the course. Any violations will be brought to the immediate attention of the Dean of Students, who may impose further penalties