NJIT New Jersey Institute of Technology

THE COLLEGE OF SCIENCE AND LIBERAL ARTS

THE DEPARTMENT OF CHEMISTRY AND ENVIRONMENTAL SCIENCE

Organic Chemistry II:
Spring 2024 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: This intermediate organic chemistry course focuses on advanced principles of organic reaction mechanisms, and methods used for the synthesis of organic compounds.

Number of Credits: 3

Prerequisites: General Chemistry and Organic Chemistry I

Course-Section and Instructors

Course-Section	Instructor
CHEM 244 – HM2	Yuanwei Zhang
CHEM 244 - 002	Yuanwei Zhang

Class Schedule: Mondays, Thursdays 2:30 – 03:50 PM
Face-to-Face
KUPF 210

Office Hours: Thursdays, 10:00 – 11:00 am, Tiernan 353

Required Textbook:

Title	Organic Chemistry
Author	L. G. Wade Jr.
Edition	9th edition
Publisher	Prentice Hall
ISBN #	032197137X

Title	Organic Chemistry: A Tenth Edition
Author	John McMurry
Edition	10th edition
Publisher	Openstax
ISBN #	978-1-951693-98-5

Learning Outcomes:

1. Know the nomenclature of alkyne, ethers, conjugated and aromatic systems, ketones, aldehydes and derivatives thereof, amines, carboxylic acids and derivatives,

2. Construct molecular orbital pictures for conjugated and aromatic systems and explain the reactivity patterns of conjugated and aromatic systems,

3. Use Hückel's rule to determine if compounds are aromatic or anti-aromatic,

4. Predict the products of reactions involving or forming alkyne, ethers, conjugated systems, aromatic compounds, ketones and aldehydes, amines, and carboxylic acids and derivatives,

5. Devise synthesis of complex molecules from simpler reactants by using retrosynthetic analysis,

6. Propose plausible mechanisms for complex multi-step reactions involving cationic or anionic intermediates,

7. Explain the relative acidity and basicity of organic molecules, and rank functional groups in order of their acidity/basicity,

8. Understand how the concept of resonance explains reactivity, acidity, basicity, stability, structure, and hybridization of organic molecules.

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 exam will be cumulative. Before each Exam there will be a Quiz, which covers three or four chapters. Take the Quizzes seriously as they add up to 60 points. Problems in the body of the chapter are assigned and selected problems at the end of the chapter. These will not be collected. To do well in the course it is important to do these problems. The final grade in this course will be determined as follows:

The grade will be determined from a total of 400 points. 60 points of quizzes, 100 points for each of the midterm exam, and 140 points of the final exam. Makeup exams are not encouraged. If you must miss an exam contact the coordinator before the exam or immediately after. Makeup should be taken within the first week of the exam and before exams are given back. You must have a valid excuse and a doctor note. The final grade in this course will be determined as follows:

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

Quizzes	60
Midterm Exam I	100
Midterm Exam II	100
Final Exam	140
Total Points	400

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

A	90 – 100	**C**	70 – 74.9

B+	85 – 89.9	**D**	60 - 70
B	80 – 84.9	**F**	< 60
C+	75 – 79.9		

Attendance Policy: Each class is a learning experience that cannot be replicated through simply "getting the notes."

Homework Policy: Homework is an expectation of the course.

Exams: There will be two midterm exams held in class during the semester and one comprehensive final exam. The following exam periods are tentative and therefore possibly subject to change:

Midterm Exam I	February 19
Midterm Exam II	April 01
Final Exam Period	May 03-09

The final exam will test your knowledge of all the course material taught in the entire course.

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.

ADDITIONAL RESOURCES

Chemistry Tutoring Center: Located in the Central King Building, Lower Level, Rm. G12.

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/

Course Outline

Lecture	Chapters	Topic	Assignment
1-2	9	Alkynes	
3-4	10	Structure and Synthesis of Alcohols	
5-6	11	Reactions of Alcohols	
7-8	14	Ethers, Epoxides and Thioethers	
9-10	15	Conjugated Systems, Orbital Symmetry and UltraViolet	
11-12	16	Aromatic Compounds	
13-14	17	Reactions of Aromatic Compounds	
15-16	18	Ketones and Aldehydes	
17-18	19	Amines	
19-20	20	Carboxylic Acids	
21-22	21	Carboxylic Acid Derivatives	
23-24	22	Condensations and Alpha-Substitution of Carbonyl	