

Spring 2019

CHEM 244-002-HM1: Organic Chemistry II

Pier Champagne

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Organic Chemistry II

Spring 2019 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 course is a continuation of Organic Chemistry I (CHEM 243). Students will learn about modern spectroscopic analysis technique for structure determination, recognize additional organic functional groups (ethers, aromatic compounds, ketones, aldehydes, carboxylic acids and derivatives, amines), predict the result of chemical reactions based on these functional groups, and explain the observed reactivity using mechanistic rationalizations.

Number of Credits: 3

Prerequisites: CHEM 243 with a grade of C or better.

Course and sections	CHEM 244, Organic Chemistry II Sections 002 and HM1
Lectures	Cullimore Lecture Hall 1 Monday and Thursday: 2:30-3:50 PM
Instructor	Dr. Pier Alexandre Champagne
Office	Tiernan Hall (TIER) 354
Email	pier.a.champagne@njit.edu
Office Hours	Tuesday 4-6 PM and by appointment

Required Material:

- Organic Chemistry by Wade and Simek, 9th edition (2017); Pearson, Glenview, IL.
- iClicker remote or mobile app.

University-wide Withdrawal Date: The last day to withdraw with a **W** is Monday, April 8, 2019. It will be strictly enforced.

Learning Outcomes:

Upon completion of the course you should be able to:

1. Use spectroscopic data to determine the structure of molecules.
2. Draw correct structures of products expected for a given set of reactants.
3. Explain why chemical reactions do or do not happen, based on functional group reactivity and concepts like acidity/basicity, electrophilicity/nucleophilicity or aromaticity.
4. Draw resonance structures of conjugated systems including alkenes, aromatic compounds and carbonyl compounds and relate these structures to reactivity.

5. Write mechanisms for the reactions covered, including electrophilic aromatic substitution, nucleophilic addition to carbonyls, addition-elimination reactions of carboxylic acid derivatives, reactions at the alpha carbon of carbonyls.

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:

Exam 1 - 125 points

Exam 2 - 125 points

Exam 3 - 125 points

The lowest of the three exams will be dropped.

Final Exam - 150 points

The final exam will be cumulative with an emphasis on the understanding of fundamental concepts applied to a variety of systems. Specific questions on the chapters covered after Exam 3 will be emphasized.

The final grade will be calculated from a total of 400 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: Notes will be accessible online prior to beginning each new chapter. However, they are templates and will be expanded during lectures. Therefore, only attendance will provide you with the full notes, worked problems and announcements regarding covered material. In addition, study guides and/or example exams will be provided during class.

Homework policy: A list of suggested exercises is provided at the end of every chapter of notes. Although they will not be collected or graded, you will need to stay on top of your exercises to do well in this course.

Email Policy: All email communication should be done using the "njit.edu" domain. Please state your name in every email. **No chemistry questions will be answered through email.**

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, 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.

Laptops: The use of laptops in the classroom is prohibited.

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

yles@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: <https://www.njit.edu/registrar/spring-2019-academic-calendar/>

TENTATIVE COURSE OUTLINE

Chapter 12, Infrared Spectroscopy and Mass Spectrometry.

Chapter 13, Nuclear Magnetic Resonance Spectroscopy.

Chapter 14, Ethers, Epoxides and Thioethers.

Exam 1: Thursday February 28th

Chapter 15, Conjugated Systems, Orbital Symmetry and Ultraviolet Spectroscopy.

Chapter 16, Aromatic Compounds.

Chapter 17, Reactions of Aromatic Compounds.

Exam 2: Thursday, March 28th

Chapter 18, Ketones and Aldehydes.

Chapter 19, Amines.

Chapter 20, Carboxylic Acids.

Exam 3: Thursday, April 18th

Chapter 21, Carboxylic Acid Derivatives.

Chapter 22, Condensations and Alpha-Substitution of Carbonyl Compounds.

Chapters 23-26, Selected Topics. (If time permits)

Final Exam