



蘇州大學
Soochow University

CHM 235 Organic Chemistry Lab II

Winter 2024

Course Credits: 4

Contact Hours: 56 hours

Instructor: TBA

Email: TBA

COURSE OBJECTIVES

This laboratory course is designed to complement the CHM 232 lecture, emphasizing hands-on experiences to reinforce the principles, techniques, properties, and reactions introduced in the corresponding lecture. The course will progress from fundamental techniques, procedures, and scientific writing to more advanced organic operations. Students will gain practical skills in organic chemistry through a series of experiments that explore various aspects of organic synthesis, purification, and analysis.

Upon completion of this course, students will be able to:

1. Understand the bonding and structural characteristics of dienes, aromatic compounds, carbonyl compounds, carboxylic acids and their derivatives, and carbohydrates.
2. Evaluate the reactivity of different chemical systems by examining their interactions with electrophiles and nucleophiles.
3. Develop critical thinking skills to assess and solve complex problems in organic chemistry.
4. Apply prior knowledge in organic chemistry to analyze and interpret advanced topics, linking theoretical principles to practical scenarios.
5. Gain proficiency in experimental techniques through laboratory work, applying theoretical concepts to practical experiments.

PREREQUISITES

CHM 234 Organic Chemistry Lab I



CHM 232 Organic Chemistry II

GRADING

Grades will be determined by accumulating points, with 100 points being the maximum, as follows:

ITEM	POINTS
Lab Assignments	80 Points
Midterm 1	5 Points
Midterm 2	5 Points
Final Exam	10 Points
Total	100 Points

Late submissions will be graded at the end of the course. Grades will be assigned according to the following rule:

$$A \geq 90 > B \geq 80 > C \geq 70 > D \geq 60 > F.$$

We reserve the right to make adjustments to the overall grading policy.

COURSE MATERIALS

Required Texts:

1. Maitland Jones, Steven A Fleming, *Organic Chemistry*, 5th Edition, W. W. Norton & Company, 2014.
2. Mohrig et al, *Laboratory Techniques in Organic Chemistry*, 4th Edition, W. H. Freeman, 2014.

Recommended (Optional) Texts or Other Materials:

None

COURSE TOPICS

MODULE	TASKS
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Module 1	Topics: Topic 1: Check In Topic 2: Safety in the Laboratory Topic 3: Physical & Chemical Properties of Dienes Topic 4: The Allyl System Assessments: Lab Assignment#1 Lab Assignment#2
Module 2	Topics: Topic 5: Aromaticity: Hückel's Rule Topic 6: Heterocyclic and Polycyclic Aromatic Compounds Topic 7: Hydrogenation of Aromatic Compounds Topic 8: Substitution Reactions of Aromatic Compounds Assessments: Lab Assignment#3 Lab Assignment#4
Module 3	Topics: Topic 9: Introduction to Carbonyl Compounds Topic 10: Carbonyl Chemistry 1: Addition Reactions Topic 11: IR and NMR data Topic 12: Carboxylic Acids: Synthesis & Reactions Assessments: Lab Assignment#5 Lab Assignment#6 Midterm#1
Module 4	Topics: Topic 13: Derivatives of Carboxylic Acids: Acyl Compounds Topic 14: Amides, Nitriles and Ketenes Topic 15: Carbonyl Chemistry 2: Reactions at the α Position Topic 16: The Aldol Condensation Assessments: Lab Assignment#7 Lab Assignment#8 Midterm#2
Module 5	Topics: Topic 17: Carbohydrates: Nomenclature, Structure Topic 18: The Fischer Projections Topic 19: Amino Acids and Polyamino Acids (Peptides and Proteins) Topic 20: Revision Session Assessments: Lab Assignment#9 Lab Assignment#10



ATTENDANCE

1) Class attendance is required. Missing classes without permission will lead to decrease in overall grade.

Missing less than two classes: no penalty.

Missing more than two classes: 7% will be taken off from the overall grade.

If the instructor reports a student's frequent missing of class to the Soochow University Academic Administration Office, the student might get a written warning and might be prohibited from attending final exam.

2) Participants in this course are expected to arrive in class promptly and adequately prepared. The primary objective of this course is to critically engage with the readings and the subject matter. Therefore, course participants are expected to have completed the reading prior to class and prepare thoughtful reflections/commentaries to share with fellow colleagues.

LEARNING REQUIREMENTS

1) Late assignments are not acceptable and are subjected to grade deductions.

2) Assignments submitted in the wrong format will be counted as not submitted.

3) Failure to submit or fulfill any required course component results in failure of the class.

4) Make-up for midterm and final exams only with valid excuses, as defined by the University.

5) In order to earn a Certificate of Completion, participants must thoughtfully complete all assignments by stated deadlines and earn an average quiz score of 50% or greater.

TECHNOLOGY POLICY

The use of electronic devices in class is distracting, both for the user and for the rest of the class. Only non-programmable calculators can be used in the tests and exam. Any attempts to use cell phones and other electronic communication devices will be seemed as cheating. Laptops are discouraged, unless you use them for activities



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DIRECTLY related to the course (eg., note taking, reading course documents).

ACADEMIC INTEGRITY POLICY

Soochow University highly values the academic integrity and aims to promote the academic fairness, honesty and responsibility. Any academic dishonesty behaviors and any attempts to cheats and plagiarism will be reported to the university administration office. A written warning and the relevant penalties will be imposed. The record might be shown on the official university transcript.

DISABILITY ACCOMMODATION

Soochow University is committed to maintaining a barrier-free environment so that students with disabilities can fully access programs, courses, services, and activities at Soochow University. Students with disabilities who require accommodations for access to and/or participation in this course are welcome.

Note:

Please contact the University Administrative Office immediately if you have a learning disability, a medical issue, or any other type of problem that prevents professors from seeing you have learned the course material.