Carleton University
Faculty of Science | Department of Chemistry
CHEM 2204 and 2208
Organic Chemistry II
Summer 2025
Syllabus

I. General Information

1. Instructor: David Sabatino, Ph.D.
Office: Steacie Building, Room 207F
Lab: Steacie Building, Room 329
e-mail: david.sabatino@carleton.ca
phone: 613-520-2600 ext. 4229
Office Hours: T, R: 11:30 AM-1 PM, and by appointment

2. Teaching Assistant: TBD

II. Course Meetings:

- Tuesdays (T) and Thursdays (R) 8:35 am – 11:25 am, location: Please check Carleton Central.

III. Course Description, Credits and Requisites:

- Discussion of chemical bonding in organic compounds, nomenclature, stereochemistry, and a systematic coverage of the chemical reactions of organic functional groups. Laboratory experience in organic chemical reactions, use of infrared spectroscopy and other techniques to determine the structure of unknown organic compounds.
- Pre-requisites: CHEM 2203 or CHEM 2207 (Organic Chemistry I)
  Precludes additional credit for CHEM 2204 and CHEM 2208
- 0.5 credit
- Lectures three hours per session
- Laboratory three hours per week (for CHEM 2204)

IV. Course Materials: Students are not required to purchase textbooks or other learning materials for this course

➢ Textbook (Optional)

1. John McMurry, Organic Chemistry 9th ed. Cengage Learning, Inc. ISBN: 978-1-305-08048-5
   Hard copy $235.95 or eTextbook $77.95

2. David Klein and Laurie Starkey, Organic Chemistry 5th ed. Wiley, ISBN: 978-1-394-35080-3
   E-Book $121.95 or E-Book Rental $51

➢ Molecular Model Kit (Optional)

1. Walter Products Molecular Orbital Theory & Structural Molecular Model Kit
   $26.99

V. Class Schedule and Topics *(tentative)*

Date	Lecture
Jul 3	Welcome and Syllabus Review Lecture Topic: Introduction to Organic Chemistry McMurry Chapter 6: *An Overview of Organic Reactions*
Jul 8, 10	Lecture Topic: Aromatic Compounds McMurry Chapters 15 and 16: *Chemistry of Benzene*
Jul 15, 17	Lecture Topic: Alcohols and Derivatives McMurry Chapters 17 and 18: *Chemistry of Alcohols, Phenols, Ethers, Epoxides, Thiols and Sulfides*
Jul 22, 24	**Lecture Topic: Review and Tutorial Session (July 22)** **Mid-Term Test: *Aromatic Compounds, Alcohols, and its Derivatives (July 24)*** **McMurry Chapters: 15-18**
Jul 29, 31	Lecture Topic: Carbonyl Compounds and their Reactivity McMurry Chapters 19, 22 and 23: *Carbonyl Compound Reactions*
Aug 5, 7	Lecture Topic: Amines, Carboxylic Acids and Derivatives McMurry Chapters 20, 21 and 24: *Chemistry of Amines, Carboxylic Acids and Derivatives*
Aug 12, 14	**Lecture Topic: Review and Tutorial Session (Aug 14)** **Final Test: *Carbonyl Compounds, Amines, Carboxylic Acids and Derivatives (Aug 17-23)*** **McMurry Chapters: 19-24**

VI. Grading

Final grade distribution as follows:

1. **Assignments (40%)**

   Description: There will be weekly (4 total) in-class group assignments, 2 prior to the mid-term and 2 before the final exam. Each will be worth (10%) and will contain problem solving questions similar to those on exams.

2. **Mid-term test (30%)**

   Date & Location: Thursday July 24, 8:35 am – 11:25 am, location: Steacie (SC) 103
   Description: Mid-term test will cover in-class lecture material on Aromatic Compounds, Alcohols and its Derivatives based on McMurry Chapters: 15-18

3. **Final test (30%)**

   Date & Location: Final exam period: Aug 17-23, location: TBD
   Description: Final test will cover in-class lecture material on Carbonyl Compounds, Amines, Carboxylic Acids and its Derivatives based on McMurry Chapters: 19-24

4. **Laboratory (30%_Chem 2204)**
   Date & Location: Mondays (M) and Wednesday (W) 12:35 pm – 3:25 pm, location: Steacie (SC) 204D
   Description: Laboratory grades consists of pre-lab reports and quizzes, lab experiments and formal lab reports

Note: Chem 2204 final course grade = 70% (lecture assignments & tests) + 30% (lab)
Chem 2208 final course grade = 100% (lecture assignments & tests)

VII. Course Learning Objectives

In this course, students will learn to:
1. Develop a fundamental chemical understanding of the principles in organic chemistry
2. Implement organic reaction mechanisms to understand functional group transformations
3. Elucidate and interpret molecular structure from spectroscopic data
4. Understand the risks and hazards in organic chemistry laboratory practice and propose sustainable alternatives where appropriate
5. Explain the link between organic chemistry and related fields based on scientific literacy
6. Apply organic chemistry to solve complex society problems

VIII. Approach to study

Course expectations and study approach:
1. Attend lectures and tutorials, take notes and ask questions. Review lecture notes before class.
2. Review lecture notes following class. Practice assigned problems. Avoid falling behind.
3. Assemble your groups quickly and participate in your in-class assignments. Follow-up and/or ask questions when needed.
4. Ask questions and feedback from the course instructor and TA during class and office hours.

VIV. Course Policies

Attendance:

All lectures will begin promptly at the scheduled time. Do not be late or you may not be admitted to that period.

1. Absences:
   Students are responsible for getting the lecture material from their classmates or review the lecture material in the event of an absence.
2. Makeups and Lateness:
   Are only permissible with the approval from the instructor. If approved, the student will have one additional week to complete the task. A grade of 0 will be administered if the student does not complete the make-up task within the allotted time period.

Instructor Responsibilities:

Instructor will be responsible for managing the in-class lecture presentations. The instructor will also be responsible for addressing student questions during and after the lectures, including

tutorials and office hours. The instructor will also aid in the preparation of the course requirements (e.g., tutorials). If anything is unclear or mis-understood, ask your instructor, that is here to help! Instructor questions may be addressed during lecture, email, office hours and by appointment.

Student Responsibilities:

Students will be responsible to attend lecture, participate in the course requirements, take notes and ask questions. Students also have the responsibility of obtaining lecture notes from classmates, for any missed lectures, which should be reviewed before the next class. Keep pace with the lecture material and review the lecture notes on a weekly basis. If additional explanation is required, ask questions in class, attend office hours and tutorials, email questions or schedule appointments if scheduling conflicts persist. For additional help, contact science student services:

Science Student Success Centre
3431 Herzberg Laboratories
1125 Colonel By Drive,
Ottawa, ON K1S 5B6

https://sssc.carleton.ca/
Phone: (613) 520-2600 Ext. 3111

X. Academic Honesty:

Lying, cheating and stealing are not tolerated in civilized society and in scientific work. While you will be encouraged to collaborate, you must follow directions in preparing work independently.

1. Relevant examples of lying include but are not limited to signing in someone else's name on assignments and exams, falsifying documentation or statements to receive an excused absence and claiming to have completed an assignment that you did not complete.

2. Relevant examples of cheating include but are not limited to copying another student's assignment and purporting it as your own or collaborating with another student on an assignment or exam for which collaboration is prohibited.

3. Relevant examples of stealing include plagiarism (purporting another's work no matter the source as your own), removing any items from the classroom or from another student's work area without permission.

XI. Information Technology Service Desk:

The first point of contact for any technology related question or problem is Carleton University's Information Technology Service (ITS) Desk. Contact ITS by phone by calling 613-520-3700, via e-mail at its.service.desk@carleton.ca or chat carleton.ca/its/chat

ITS is staffed by professionals Monday-Friday from 8 a.m.-4:30 p.m. ITS provides phone support for most University applications, including Carleton Central, Brightspace Learning Management System, Carleton 360, Microsoft Windows, and the Microsoft Office suite.

Course Outline Resources

XII. Academic Accommodations:

It is the policy and practice of Carleton University to promote equity, diversity and inclusion (EDI) in its learning environments. If you have a documented disability you may be eligible for reasonable accommodations in compliance with University policy. To request accommodations or assistance, please self-identify with the Paul Menton Centre (PMC) at:

501 University Centre
1125 Colonel By Drive,
Ottawa, ON K1S 5B6
Email:pmc@carleton.ca
Phone:613-520-6608

PMC will help make special arrangements to meet your academic obligations during the term. For more details, visit the Equity Services website: **carleton.ca/equity/wpcontent/uploads/Student-Guide-to-Academic-Accommodation.pdf**

For more information about the services available at the university and to obtain information about sexual violence and/or support, visit: **carleton.ca/sexual-violence-support**

Please contact me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist that can be based but not limited to a pregnancy or health, religious, travel and extracurricular student activity obligations. For more details, visit the Equity Services website. https://carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf

XIII. Academic and Professional Integrity Policy:

Students are expected to follow the Academic and Professional Integrity Policy outlined in the Student Guide. These include:

1. Dependability: candidates are reliable, timely, and consistent in their presence and preparation for courses at the university as well as their field settings.
2. Respect & Empathy: candidates are respectful in their address, writing, language, and physical space toward faculty, university staff, school personnel, peers, students in field.
3. Open-mindedness: candidates respect the context and experience of others; developing skills to use that information in classroom conversation, writing, and lesson planning.
4. Integrity: candidates submit original work, fully cite all sources associated with the development of their work and recognize that the university fully supports the use of anti-plagiarism software in support of academic integrity.

5. Passion for the profession: the right for all students to have access to positive and productive learning environments, and a recognition that the teacher's dedication is to provide a thriving learning environment for all students.