

COURSE SYLLABUS



COURSE TITLE: CHEM-230: Organic Chemistry 1

CLASS SECTION: 001

TERM: W2025

COURSE CREDITS: 3

DELIVERY METHOD(S): In-person lab and lecture

Camosun College campuses are located on the traditional territories of the Lək̓ʷəŋən and W̱SÁNEĆ peoples. We acknowledge their welcome and graciousness to the students who seek knowledge here.

Learn more about Camosun's [Territorial Acknowledgement](#).

INSTRUCTOR DETAILS

NAME: Dr. Ryan Fradette

EMAIL: fradetter@camosun.ca

OFFICE: F344A

HOURS: Monday 12:30-2:30, Friday 11:00-12:00

As your course instructor, I endeavour to provide an inclusive learning environment. However, if you experience barriers to learning in this course, do not hesitate to discuss them with me. Camosun College is committed to identifying and removing institutional and social barriers that prevent access and impede success.

CALENDAR DESCRIPTION

This course provides a general introduction to the theory and practice of organic chemistry. Topics include: alkanes, stereochemistry, alkyl halides, substitution and elimination reactions, free radical reactions, alcohols, ethers, spectroscopy, alkanes and alkynes. The laboratory experiments are designed to expose students to a wide range of organic laboratory techniques.

PREREQUISITE(S):

One of:

C in CHEM 120

B in CHEM 112 and permission of the Chair

CO-REQUISITE(S):

All of:

C in CHEM 121

EXCLUSION(S):

COURSE LEARNING OUTCOMES / OBJECTIVES

Upon completion of this course a student will be able to:

1. Utilize the specialized vocabulary and nomenclature based on the IUPAC system for organic compounds including alkanes, cycloalkanes, alkenes, alkynes, alcohols, ethers, epoxides, and alkyl halides according to their structures and functional groups present.
2. Describe the general physical properties such as stability, acidity and basicity, density, melting and boiling point, and water solubility of the above compounds.
3. Describe the chemical properties of the above classes of organic compounds, and explain any differences and similarities.
4. Draw a synthetic scheme outlining the preparation of some of the compounds above and their subsequent reactions, including details such as stereochemistry of some typical reactions and mechanisms, stability of transition states, intermediates, products, and factors affecting the outcome.
5. Utilize the concepts of functional group transformations and reaction mechanisms to explain organic reactions.
6. Demonstrate an ability to apply the method of retrosynthetic analysis based on the knowledge of some general organic reactions of the above compounds.
7. Identify the fundamental differences among the three types of isomerism: structural, geometric, and stereo.
8. Recognize and draw Newman, Fischer, and Haworth projections.
9. Communicate an understanding of the Cahn-Prelog-Ingold sequence rules and to recognize basic differences between enantiomeric and diastereomeric compounds.
10. Communicate an understanding of the phenomena of infrared, ultra violet-visible, and mass spectroscopy and to interpret and predict the spectroscopic data for the classes of organic compounds listed above.

REQUIRED MATERIALS & RECOMMENDED PREPARATION / INFORMATION

Textbook

Access Key: Organic Chemistry 2e (Top Hat Interactive Text) Ogilvie

*Note I will also fully support the previous edition of the textbook;
Organic Chemistry: Mechanistic Patterns, Ogilvie ISBN: 9780176500269*

Lab

Chem 230/231 Organic Chemistry Experiments, Camosun College

Lab coat

Lab safety glasses or goggles

Recommended:

Molecular model kit

The following schedule is tentative and course components are subject to change with reasonable advance notice, as deemed appropriate by the instructor.

| Week # | Lab Monday or Tuesday 9:30-12:20pm | Monday (Lecture) 3:30-4:20 | Tuesday (Lecture) 3:30-4:20 | Wednesday (Lecture) 3:30-4:20 |
|--------------|---|----------------------------------|-----------------------------------|-------------------------------------|
| 1 Jan 6 | No lab Meeting | Intro Lecture | Chapter 1 | Chapter 1 |
| 2 Jan 13 | Lab Intro & Exp 1 – Melting points | Chapter 1 | Chapter 2 | Chapter 2 |
| 3 Jan 20 | Lab Worksheet | Chapter 2 | Chapter 3 | Chapter 3 |
| 4 Jan 27 | Exp 3 – Recrystallization | Chapter 3 | Chapter 4 Quiz 1 | Chapter 4 |
| 5 Feb 3 | Lab Worksheet | Chapter 4 | Chapter 4 | Chapter 5 |
| 6 Feb 10 | Exp 6 – Nutmeg | Midterm 1 | Chapter 5 | Chapter 6 |
| 7 Feb 17 | <i>Reading week</i> | <i>Reading week</i> | <i>Reading week</i> | <i>Reading week</i> |
| 8 Feb 24 | Exp 6 – Orange oil | Chapter 6 | Chapter 6 | Chapter 7 |
| 9 Mar 3 | Exp 4 – Separations | Chapter 7 | Chapter 7 | Chapter 7 |
| 10 Mar 10 | Lab Worksheet | Chapter 8 | Chapter 8 Quiz 2 | Chapter 8 |
| 11 Mar 17 | Exp 14 – Reduction of Fluorenone | Chapter 8 | Chapter 19 | Chapter 11 |
| 12 Mar 24 | Exp 8 – Reactivity of alkyl halides | Midterm 2 | Chapter 11 | Chapter 11 |
| 13 Mar 31 | Exp 13 – Oxidation Reactions | Chapter 11 | Chapter 12 | Everyday chemistry |
| 14 Apr 7 | Lab Worksheet <i>Logbooks Due</i> | Chapter 12 | Chapter 12 | Review |

Students registered with the Centre for Accessible Learning (CAL) who complete quizzes, tests, and exams with academic accommodations have booking procedures and deadlines with CAL where advanced notice is required. Deadlines can be reviewed on the [CAL exams page](http://camosun.ca/services/accessible-learning/exams.html). <http://camosun.ca/services/accessible-learning/exams.html>

EVALUATION OF LEARNING

| | Category | Breakdown |
|------------|---|--|
| | In-class Quizzes (15 mins) | 5% 2 in-class quizzes |
| | Midterm Exams (50 mins) | 30% 2 Exams |
| | Everyday Organic Chemistry Assignment (EDC) | 5% |
| Lab | Labs | 25% 8 Labs Assignments (16%) 4 Lab Worksheets (2%) Log book (4%) Performance and safety (3%) |
| Final Exam | Cumulative Final Exam (2.5 hrs) TBA | 35% |

In-class Quizzes

- The in-class quizzes will take place during the first 15 minutes of class
- they will be closed book
- Any considerations for missed quizzes must be provided to the instructor *prior* to the quiz.
 - Quizzes cannot be rewritten, the weight of a missed quiz with *prior* notification will be transferred to the next midterm exam
 - Missed quizzes without *prior* notification will result in a grade of zero

Midterm exams

- The tests will take place during lecture (50 minutes in length)
- They will be closed book
- Any considerations for missed tests must be provided to the instructor *prior* to the test.
 - Midterm exams cannot be rewritten, the weight of a missed midterm exam with *prior* notification will be transferred to the cumulative final exam
 - Missed exams without *prior* notification will result in a grade of zero

Everyday Chemistry

- This will be a project that will give you a chance to explore everyday chemistry, we will discuss this project in more detail in week 8

Lab

- A grade of at least 50% in the lab must be obtained to pass the course
- Even though you may perform the experiments with a partner, and collect identical data, you must submit your own assignment. Duplicate assignments will not be accepted and may be subject to academic infraction.
- Lab assignments will be submitted digitally to D2L as a single PDF by 11:59pm one week after the lab data is collected
- In the event of a student being unable to attend a laboratory class due to illness it is essential that you give your lab instructor the courtesy of an email prior to the lab. It may be possible for the instructor to provide lab data so you can complete the lab calculations for partial marks.
- Late lab assignments are deducted 20% if they are not submitted on time
 - Lab assignment extensions
 - You may use up to 2 lab extensions
 - The extensions are good for 2 days an additional 2 days (lab would now be due on Friday)
 - If you wish to use an extension the way you will notify me is by including your intention to use an extension in your assignment submission comments, you don't have to let me know in advance

- You will record your data in a detailed logbook which will be discussed in lecture in week 1
- The performance and safety portion of your lab grade is in place to ensure you are on-time, and working safely in the lab

If you have a concern about a grade you have received for an evaluation, please come and see me as soon as possible. Refer to the [Grade Review and Appeals](#) policy for more information.
<http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.14.pdf>

COURSE GUIDELINES & EXPECTATIONS

D2L news items and email will be my primary method of communication with you, please make sure you are checking D2L regularly

SCHOOL OR DEPARTMENTAL INFORMATION

The school of Arts and Science operates a Science help center with hours available for additional chemistry help on Mondays-Fridays. More information can be found by following the link below

<http://camosun.ca/learn/subjects/chemistry/>

STUDENT RESPONSIBILITY

Enrolment at Camosun assumes that the student will become a responsible member of the College community. As such, each student will display a positive work ethic, assist in the preservation of College property, and assume responsibility for their education by researching academic requirements and policies; demonstrating courtesy and respect toward others; and respecting expectations concerning attendance, assignments, deadlines, and appointments.

SUPPORTS AND SERVICES FOR STUDENTS

Camosun College offers a number of services to help you succeed in and out of the classroom. For a detailed overview of the supports and services visit <http://camosun.ca/students/>.

| | |
|-------------------------------------|---|
| Academic Advising | http://camosun.ca/advising |
| Accessible Learning | http://camosun.ca/accessible-learning |
| Counselling | http://camosun.ca/counselling |
| Career Services | http://camosun.ca/coop |
| Financial Aid and Awards | http://camosun.ca/financialaid |
| Help Centres (Math/English/Science) | http://camosun.ca/help-centres |

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|-------------------------------|---|
| Indigenous Student Support | http://camosun.ca/indigenous |
| International Student Support | http://camosun.ca/international/ |
| Learning Skills | http://camosun.ca/learningskills |
| Library | http://camosun.ca/services/library/ |
| Office of Student Support | http://camosun.ca/oss |
| Ombudsperson | http://camosun.ca/ombuds |
| Registration | http://camosun.ca/registration |
| Technology Support | http://camosun.ca/its |
| Writing Centre | http://camosun.ca/writing-centre |

If you have a mental health concern, please contact Counselling to arrange an appointment as soon as possible. Counselling sessions are available at both campuses during business hours. If you need urgent support after-hours, please contact the Vancouver Island Crisis Line at 1-888-494-3888 or call 911.

COLLEGE-WIDE POLICIES, PROCEDURES, REQUIREMENTS, AND STANDARDS

Academic Accommodations for Students with Disabilities

The College is committed to providing appropriate and reasonable academic accommodations to students with disabilities (i.e. physical, depression, learning, etc). If you have a disability, the [Centre for Accessible Learning](#) (CAL) can help you document your needs, and where disability-related barriers to access in your courses exist, create an accommodation plan. By making a plan through CAL, you can ensure you have the appropriate academic accommodations you need without disclosing your diagnosis or condition to course instructors. Please visit the CAL website for contacts and to learn how to get started:

<http://camosun.ca/services/accessible-learning/>

Academic Integrity

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.13.pdf> for policy regarding academic expectations and details for addressing and resolving matters of academic misconduct.

Academic Progress

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.1.pdf> for further details on how Camosun College monitors students' academic progress and what steps can be taken if a student is at risk of not meeting the College's academic progress standards.

Course Withdrawals Policy

Please visit <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.2.pdf> for further details about course withdrawals. For deadline for fees, course drop dates, and tuition refund, please visit <http://camosun.ca/learn/fees/#deadlines>.

Grading Policy

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.5.pdf> for further details about grading.

Grade Review and Appeals

Please visit <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.14.pdf> for policy relating to requests for review and appeal of grades.

Mandatory Attendance for First Class Meeting of Each Course

Camosun College requires mandatory attendance for the first class meeting of each course. If you do not attend, and do not provide your instructor with a reasonable reason in advance, you will be removed from the course and the space offered to the next waitlisted student. For more information, please see the “Attendance” section under “Registration Policies and Procedures” (<http://camosun.ca/learn/calendar/current/procedures.html>) and the Grading Policy at <http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.5.pdf>.

Medical / Compassionate Withdrawals

Students who are incapacitated and unable to complete or succeed in their studies by virtue of serious and demonstrated exceptional circumstances may be eligible for a medical/compassionate withdrawal. Please visit <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.8.pdf> to learn more about the process involved in a medical/compassionate withdrawal.

Sexual Violence and Misconduct

Camosun is committed to creating a campus culture of safety, respect, and consent. Camosun’s Office of Student Support is responsible for offering support to students impacted by sexual violence. Regardless of when or where the sexual violence or misconduct occurred, students can access support at Camosun. The Office of Student Support will make sure students have a safe and private place to talk and will help them understand what supports are available and their options for next steps. The Office of Student Support respects a student’s right to choose what is right for them. For more information see Camosun’s Sexualized Violence and Misconduct Policy: <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.9.pdf> and camosun.ca/sexual-violence. To contact the Office of Student Support: oss@camosun.ca or by phone: 250-370-3046 or 250-3703841

Student Misconduct (Non-Academic)

Camosun College is committed to building the academic competency of all students, seeks to empower students to become agents of their own learning, and promotes academic belonging for everyone. Camosun also expects that all students to conduct themselves in a manner that contributes to a positive, supportive, and safe learning environment. Please review Camosun College’s Student Misconduct Policy at <http://camosun.ca/about/policies/education-academic/e-2-student-services-and-support/e-2.5.pdf> to understand the College’s expectations of academic integrity and student behavioural conduct.

Changes to this syllabus: Every effort has been made to ensure that information in this syllabus is accurate at the time of publication. The College reserves the right to change courses if it becomes necessary so that

course content remains relevant. In such cases, the instructor will give the students clear and timely notice of the changes.