

# COURSE SYLLABUS



COURSE TITLE: CHEM-230-Organic Chemistry 1

CLASS SECTION: 001 A and 001C

TERM: 2024F

COURSE CREDITS: 3

DELIVERY METHOD(S): In person (face-to-face) with in class labs

Camosun College respectfully acknowledges that our campuses are situated on the territories of the Lək̓ʷəŋən (Songhees and Kosapsum) and WSÁNEĆ peoples. We honour their knowledge and welcome to all students who seek education here.

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## INSTRUCTOR DETAILS

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NAME: Larry Lee

EMAIL: leel@camosun.ca

OFFICE: F344B

HOURS: Posted on Door and D2L

*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

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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): C in CHEM 121

## COURSE LEARNING OUTCOMES / OBJECTIVES

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

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.

Describe the general physical properties such as stability, acidity and basicity, density, melting and boiling point, and water solubility of the above compounds.

Describe the chemical properties of the above classes of organic compounds, and explain any differences and similarities.

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.

Utilize the concepts of functional group transformations and reaction mechanisms to explain organic reactions.

Demonstrate an ability to apply the method of retrosynthetic analysis based on the knowledge of some general organic reactions of the above compounds.

Identify the fundamental differences among the three types of isomerism: structural, geometric, and stereo.

Recognize and draw Newman, Fischer, and Haworth projections.

Communicate an understanding of the Cahn-Prelog-Ingold sequence rules and to recognize basic differences between enantiomeric and diastereomeric compounds.

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

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- Organic chemistry, 10<sup>th</sup> edition, John McMurry available Free on Openstax <https://openstax.org/subjects/science> or D2L
- Access to Desired to Learn (D2L) <https://online.camosun.ca>
- Lab Manual Chem 230 and 231, Camosun College, 2018, by Nasr Khalifa
- A molecular model is highly recommended. You can borrow one from Camosun College.
- Lab safety glasses are required (Bring your own) and Lab coat is strongly recommended.

COURSE SCHEDULE, TOPICS, AND ASSOCIATED PREPARATION / ACTIVITY / EVALUATION

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

WEEK	DATE RANGE	ACTIVITY or TOPIC	OTHER NOTES
1	Sept 3 - 6	Lab orientation, review of bonding and naming	Work sheet 1
2	Sept 9 - 13	Melting point analysis	<b>Experiment</b>
3	Sept 16- 20	Chapter 3 conformers (Lab manual Exp 7 Q 1-7)	Work sheet 3 ( part 1)
4	Sept 23- 27	Recrystallization and sublimation	<b>Experiment</b>
5	Oct 1 - 4	Lecture Chapter 4 Stereoisomers (Lab manual Exp 7 Q 8-15)	Work sheet 3 (part 2)
6	Oct 7 - 11	Separation of mixtures	<b>Experiment</b>
7	Oct 15- 18	Expt 6 Natural product synthesis Isolation of Trimyristin only	<b>Experiment</b>
8	Oct 21- 25	<b>TEST 1</b>	Test 1
9	Oct 28 - Nov 1	Cyclohexene from Cyclohexanol	<b>Experiment</b>
10	Nov 4 - 8	Natural product synthesis (limonene only)	<b>Experiment</b>
11	Nov 12 - 15	Expt 8. Relative rates of substitution reaction	<b>TEST 2</b>
12	Nov 18-22	TEST 2	<b>Test 2</b>
13	Nov 25 - 29	Retrosynthesis	Worksheet 8
14	Dec 2- 6	Review of Term	

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](https://camosun.ca/services/academic-supports/accessible-learning/academic-accommodations-exams). <https://camosun.ca/services/academic-supports/accessible-learning/academic-accommodations-exams>

## EVALUATION OF LEARNING

DESCRIPTION	WEIGHTING
Laboratory work and Worksheet 2 (part 1) and 2 (part 2), Laboratory notebook	25%
Term Test 1 (October 22 and 24, 2024)	15%
Term Test 2 (Nov 19 and 21 2024)	15%
Online assessment D2L	10 %
Final exam	35%
	TOTAL
	100%

## COURSE GUIDELINES & EXPECTATIONS

Class attendance is highly recommended. It is not mandatory, but a higher success rate is obtainable with showing up to class, writing notes, asking question, and keeping engaged. If student misses class, it is their responsibility to ask a classmate for what was missed and to obtain notes.

**Term tests are compulsory** and the mark for any single term test or combination of term tests is **not** replaced by the final exam mark except as described below.

A zero is give as the mark for any quiz or final exam not written and for which no official medical excuse is provided. The medical excuse must be dated within the week of the exam and must be handed in within two weeks of the exam date. **Students will not be required to disclose their medical condition to the instructor. This information may be disclosed to the Center for Accessible Learning.**

The final exam at the end of the course will cover all course material.

During the experimental work, students are expected to wear safety glasses and closed toe footwear. No sandals, flip-flops, or bare feet is allowed in the labs. It is highly recommended that students wear a lab coat to protect from acids and bases, and odorous chemicals. All students must abide by laboratory safety rules.

All students are expected to prepare for the experimental portion of the lab. A lab manual is available at the Lansdowne Camosun Book store. It will contain experimental introduction, procedure and post laboratory questions. This lab manual is used for both CHEM 230 and CHEM 231.

Along with a lab manual, students must keep a bound lab journal (no loose leaf pages are allowed). The journal must be brought to the lab for inspection. An attachment is available for what is expected.

To prepare for the experimental, it is the student's responsibility to know what experiment is assigned for the period. Students must read the lab, prepare a flow chart (with drawings), and table of reagents, and table for product analysis. For synthesis labs, one or more chemical reactions must be included in the preparation.

All students will be expected **to show up for the lab on time**. At the beginning of the lab, safety precautions and any demonstration of experimental techniques will be presented. Students who show up late, may be dismissed at instructor's discretion and will lose lab marks. Students who show up to the lab without reading and preparing for the lab may be dismissed at instructor's discretion as they pose a serious risk of injury.

At the end of the experimental, students must clean with soap and water the glassware and return to their drawer. Return equipment clean and wipe lab bench with soap and water. Lab report score will be reduced for the weekly lab in the event glassware is left unclean.

In order to pass the course, students must pass the laboratory with a score of 50 %. There is an expectation that students complete all laboratory experiments, along with the associated assignments.

In the event that you miss a laboratory session due to illness or extenuating circumstances (as outlined in the Academic Concessions Policy\*\*), you must inform your instructor via email before the laboratory session.

Your instructor may require you to complete the assignment using data provided, or an online version of the experiment.

All labs are due within one week of completion of lab work, unless otherwise noted by the instructor and posted on D2L. The format of the report will contain a scan copy (use CAM Scanner) of the lab note book for the specific experiment and assigned post-lab questions or video format of the experimental work and summary of the data. **All work scanner (properly) and must be submitted in D2L assignment folder.**

No late assignments will be accepted unless you have prior accommodations through CAL, or you have requested an extension due to illness or extenuating circumstances (as outlined in the Academic Concessions Policy).

Late labs and worksheets (expt 7) will be penalized at 10% for each week late. Once labs or worksheets (expt 7) are returned to students, no late work can be submitted for grading.

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. If you complete the practical part of an experiment, but fail to upload an assignment by the due date without a granted extension, you may be given a participation mark only.

All D2L quizzes will be due two weeks from the posted date. There will be one additional opportunity to redo a D2L quiz and the highest grade obtained for that particular quiz will be rewarded. Answers will be available at the end of the due date. No redoing quiz can be done after this period.

Final exam is schedule Dec 12-19, 2024. Do not make travel arrangements during this period unless you know your exam schedule.

## SCHOOL OR DEPARTMENTAL INFORMATION

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Science Help centre in F264 is open for additional help .

Camosun is a scent free environment

## STUDENT RESPONSIBILITY

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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

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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 [camosun.ca/services](https://camosun.ca/services).

Support Service	Website
Academic Advising	<a href="https://camosun.ca/services/academic-supports/academic-advising">camosun.ca/services/academic-supports/academic-advising</a>
Accessible Learning	<a href="https://camosun.ca/services/academic-supports/accessible-learning">camosun.ca/services/academic-supports/accessible-learning</a>
Counselling	<a href="https://camosun.ca/services/health-and-wellness/counselling-centre">camosun.ca/services/health-and-wellness/counselling-centre</a>
Career Services	<a href="https://camosun.ca/services/co-operative-education-and-career-services">camosun.ca/services/co-operative-education-and-career-services</a>
Financial Aid and Awards	<a href="https://camosun.ca/registration-records/financial-aid-awards">camosun.ca/registration-records/financial-aid-awards</a>
Help Centres (Math/English/Science)	<a href="https://camosun.ca/services/academic-supports/help-centres">camosun.ca/services/academic-supports/help-centres</a>
Indigenous Student Support	<a href="https://camosun.ca/programs-courses/iecc/indigenous-student-services">camosun.ca/programs-courses/iecc/indigenous-student-services</a>
International Student Support	<a href="https://camosun.ca/international">camosun.ca/international</a>
Learning Skills	<a href="https://camosun.ca/services/academic-supports/help-centres/writing-centre-learning-skills">camosun.ca/services/academic-supports/help-centres/writing-centre-learning-skills</a>
Library	<a href="https://camosun.ca/services/library">camosun.ca/services/library</a>
Office of Student Support	<a href="https://camosun.ca/services/office-student-support">camosun.ca/services/office-student-support</a>
Ombudsperson	<a href="https://camosun.ca/services/ombudsperson">camosun.ca/services/ombudsperson</a>
Registration	<a href="https://camosun.ca/registration-records/registration">camosun.ca/registration-records/registration</a>

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Support Service	Website
Technology Support	<a href="https://camosun.ca/services/its">camosun.ca/services/its</a>
Writing Centre	<a href="https://camosun.ca/services/academic-supports/help-centres/writing-centre-learning-skills">camosun.ca/services/academic-supports/help-centres/writing-centre-learning-skills</a>

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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.

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## COLLEGE-WIDE POLICIES, PROCEDURES, REQUIREMENTS, AND STANDARDS

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### Academic Integrity

Students are expected to comply with all College policy regarding academic integrity; which is about honest and ethical behaviour in your education journey. The following guide is designed to help you understand your responsibilities: <https://camosun.libguides.com/academicintegrity/welcome>  
Please visit <https://camosun.ca/sites/default/files/2021-05/e-1.13.pdf> for Camosun's Academic Integrity policy and details for addressing and resolving matters of academic misconduct.

### Academic Accommodations for Students with Disabilities

Camosun College is committed to achieving full accessibility for persons with disabilities. Part of this commitment includes arranging appropriate academic accommodations for students with disabilities to ensure they have an equitable opportunity to participate in all of their academic activities. If you are a student with a documented disability and think you may need accommodations, you are strongly encouraged to contact the Centre for Accessible Learning (CAL) and register as early as possible. Please visit the CAL website for more information about the process of registering with CAL, including important deadlines: <https://camosun.ca/cal>

### Academic Progress

Please visit <https://camosun.ca/sites/default/files/2023-02/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 <https://camosun.ca/sites/default/files/2021-05/e-2.2.pdf> for further details about course withdrawals. For deadline for fees, course drop dates, and tuition refund, please visit <https://camosun.ca/registration-records/tuition-fees#deadlines>.

### Grading Policy

Please visit <https://camosun.ca/sites/default/files/2021-05/e-1.5.pdf> for further details about grading.

### Grade Review and Appeals

Please visit <https://camosun.ca/sites/default/files/2021-05/e-1.14.pdf> for policy relating to requests for review and appeal of grades.

### 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 (see [Medical/Compassionate Withdrawals policy](#)). Please visit <https://camosun.ca/services/forms#medical> to learn more about the process involved in a medical/compassionate withdrawal.

### Sexual Violence

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 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 Policy: <https://camosun.ca/sites/default/files/2021-05/e-2.9.pdf> and [camosun.ca/services/sexual-violence-support-and-education](https://camosun.ca/services/sexual-violence-support-and-education).

To contact the Office of Student Support: [oss@camosun.ca](mailto:oss@camosun.ca) or by phone: 250-370-3046 or 250-370-3841

### 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 <https://camosun.ca/sites/default/files/2021-05/e-2.5.pdf> to understand the College's expectations of academic integrity and student behavioural conduct.

### Looking for other policies?

The full suite of College policies and directives can be found here: <https://camosun.ca/about/camosun-college-policies-and-directives>

**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.

