

COURSE SYLLABUS



COURSE TITLE: CHEM-120-College Chemistry 1

CLASS SECTION:

TERM: Winter 2025

COURSE CREDITS: 3

DELIVERY METHOD(S):

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

INSTRUCTOR DETAILS

NAME: Larry Lee

EMAIL: leel@camosun.ca

OFFICE: F344B

HOURS: Please see door and D2L Larry's schedule

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

For both university and technology students, this course starts with atomic structure and periodic properties and leads to a discussion of chemical bonding, thermochemistry, molecular structure, intermolecular structure, colligative properties, intermolecular forces of attraction and their role in environmental issues. The experiments include chemical synthesis and analysis by titration and spectroscopy.

PREREQUISITE(S):

One of: C in Chemistry 12; or C in Chemistry 12 Camosun Alternative

CO-REQUISITE(S):

EQUIVALENCIES:

COURSE LEARNING OUTCOMES / OBJECTIVES

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

1. Utilize nomenclature rules to name ionic and covalent compounds.
2. Demonstrate an understanding of stoichiometry by balancing chemical equations and performing mathematical calculations involving chemical reactions.
3. Describe the electronic structure of any atom in the periodic table and apply it to explain many of the physical and chemical properties of the elements.
4. Utilize simple bonding theories to explain why elements combine to form the compounds they do and also to explain many of the properties of compounds.
5. Apply knowledge of intermolecular interactions to rationalize many important physical properties of bulk matter in the gas, liquid and solid phases.
6. Use standard chemistry lab equipment, including burets, pipets, Buchner filters, and volumetric glassware in the correct manner.
7. Perform many standard laboratory procedures, such as titrations, preparation of standard solutions, the preparation, isolation, and purification of compounds, as well as use spectrophotometers to make analytical measurements.

REQUIRED MATERIALS & RECOMMENDED PREPARATION / INFORMATION

- (a) Free textbook – Chemistry, 2nd edition (Openstax)
<https://openstax.org/details/books/chemistry-2e>
- (b) Lab Experiments: Chemistry 120 Laboratory Manual (In-house), 2020 Edition.
Printed copy available at the Camosun Bookstore (\$9.85)
- (c) Lab safety glasses (\$25.99 at the Camosun Bookstore) (d) Lab coat
- (d) Camosun Learning Management system: Desired to Learn (D2L) to access information (course outline, lecture slides, quizzes, laboratory schedule and relevant laboratory information): <http://online.camosun.ca>

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

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

WEEK or DATE RANGE	ACTIVITY or TOPIC	OTHER NOTES
1	Chapter 1 Matter and Measurement	
2	Chapter 2 Atoms, Molecules, and Ions part 1 Chapter 6 Electronic Structure of Atoms and Electronic Configurations	
3	Chapter 6 Periodic Properties of Elements	
4	Chapter 2 – Atoms, molecules and Ions part 2	
5	Chapter 7 Covalent Bonding and Molecular Geometry (Covalent bonding, ionic bonding, Lewis structures)	
6	Covalent Bonding, Molecular Geometry Formal charges, Resonance structures, Molecular structure and Polarity.	
7	Reading week – no classes during reading week	
8	Chapter 8 Advanced Theories of Covalent Bonding	
9	Chapter 3 Composition of Substances and Solutions	
10	Chapter 4 Chemical Stoichiometry Chapter 4 Reactions in Aqueous solutions Chapter 7	Of
11	Chapter 9 Gases	
12	Chapter 11 Liquids and Solids	
13	Chapter 12 Solutions	
14	Environmental Chemistry (handout)	
15	Final Exam period	

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 noticed 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>

- a) **Scheduled lectures** are 50 minutes (in person)
Scheduled labs are 170 minutes per week (2h and 50 min)

Class schedule:	Lectures	Tu, Thurs	3:30 – 4:20 pm	F210
	Lecture	Thurs	3:30 – 4:20 am	F338
	Lab	Tuesday	9:30 – 12:20 pm	F356

Laboratory schedule (tentative)

WEEK	Date	ACTIVITY or TOPIC	OTHER NOTES
1	Jan 6	Safety orientation and Lab expectations	Student must attend
2	Jan 13	Expt 3. Stoichiometry of reactions (GROUP A)*	Half Class
3	Jan 20	Expt 3. Stoichiometry of reactions (GROUP B)*	Half Class
4	Jan 27	Expt 4. Spectroscopic Determination of Nickel	Full
5	Feb 3	Expt 5. Colorimetric Determination of Iron in a Vitamin	Full
6	Feb 10	Test 1 (Feb 11, 2025, Classroom TBA)	Full
7	Feb 17 week	Reading week – no classes during reading week	No lab
8	Feb 24	Expt 6. Determination of Copper using Atomic Absorption	Full
9	Mar 3	Expt 7. Determination of Total Hardness of Water	Full
10	Mar 10	Expt 8. Molecular shapes (VSEPR)	Ful in class
11	Mar 17	Test 2 (March 18, 2025, Classroom TBA)	Full
12	Mar 24	Expt 9. Preparation of Potassium Tris(oxalate)Ferrate(III)	Full
13	Mar 31	Expt 10. Analysis of Potassium Tris(oxalate)Ferrate(III)	Full
14	Apr 7	No Lab – Lecture/Review	Class Full
15	April 14	Final Exam period	Scheduled room

Note * Week 2 and 3 are the only two weeks that the lab is split into two groups. All other weeks, students must attend the normal weekly schedule.

EVALUATION OF LEARNING

DESCRIPTION	WEIGHTING
Term Test 1 Feb 11, 2025	17.5%
Term Test 2 Mar 18, 2025	17.5%
Laboratory Assignments	25%
Final Exam	40%
	TOTAL
	100%

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](http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.14.pdf) policy for more information.
<http://camosun.ca/about/policies/education-academic/e-1-programming-and-instruction/e-1.14.pdf>

COURSE GUIDELINES & EXPECTATIONS

Students must attend the first laboratory meeting which is on safety in the laboratory and general laboratory procedure.

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

You will not be allowed to perform an experiment if you are not wearing the required safety equipment.

As Chemistry is a practical science, there are expectations that you attend all the lab periods. No more than one lab maybe missed without a medical excuse as this will compromise the learning outcomes. You must notify the instructor regarding your absence within the same week of the missed lab, otherwise a zero is given to that lab period. If you miss the second and subsequent lab periods, the instructor may provide you with data to complete the write-up, but you may be given partial grade for not completing the practical work.

Students must read the lab and answer the prelab questions (available on D2L as a pre-laboratory requirement). To be more familiar with the experiment, a preparation of a flow chart will make the lab experience more enjoyable as you become efficient and confident with the hand-on work in the lab.

If you miss an experiment you will be given a mark of zero for the experiment unless you have a valid medical reason or family emergency, in which case supporting documentation must be supplied.

You must submit a minimum of **SIX** laboratory reports in order to pass the laboratory portion of the course.

You must pass both the lecture and laboratory portions of the course separately in order to obtain a passing grade overall. A score of 50% on the lab is needed to pass the course.

If you miss a term test the weighting from that test will be transferred to the final exam.

It is advantageous to the student, if either, or both, the term test marks are inferior to the final exam mark, the weighting will be replaced by an equal weighting from the final exam.

All labs are due within one week of completion of lab work, unless otherwise noted by the instructor or posted on D2L or prior instructor permission has been granted, or an accommodation is in-place. The format of the report will be post-lab questions or video format or a full written report of the experimental work and summary of the data. **All work must be submitted in D2L assignment folder.**

Student may share data when working in partners, but each student must submit their own report. In the event, that reports are too similar, a warning or a zero will be given to the report.

Late submissions of laboratory reports and/or assignments will be penalized and none accepted if more than five days past the deadline.

The Final exam is cumulative (It will cover all course material).

Final exam is schedule April 14-24, 2025 Do not make travel arrangements during this period unless you know your exam schedule.

SCHOOL OR DEPARTMENTAL INFORMATION

Science Help Centre:

All day 9 – 4:30 F262

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 camosun.ca/services.

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

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

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.

To contact the Office of Student Support: 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