



COURSE OUTLINE

The course description is online @ <http://camosun.ca/learn/calendar/current/web/chem.html>

Ω Please note: the College electronically stores this outline for five (5) years only.
It is **strongly recommended** you keep a copy of this outline with your academic records.
You will need this outline for any future application/s for transfer credit/s to other colleges/universities.

1. Instructor Information

(a)	Instructor:	Silvija Smith		
(b)	Office Hours:	4:45 pm – 5:45 pm, Tuesdays and Thursdays, or by appointment		
(c)	Location:	P233 (Lansdowne)		
(d)	Phone:	250-370-3372	Alternative Phone:	
(e)	Email:	smiths@camosun.bc.ca		
(f)	Website:	D2L		

* email is the preferred method of contact

2. Intended Learning Outcomes

(No changes are to be made to these Intended Learning Outcomes as approved by the Education Council of Camosun College.)

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

1. Identify, describe and account for the general characteristics of gases, liquids and solids - interionic and intermolecular forces; vaporization and condensation; melting and freezing; specific characteristics of water.
2. Utilize solution terminology, account for and compare the solubilities of ionic and molecular compounds, and describe the impact of temperature and pressure on solubility.
3. Describe the characteristics of solubility equilibria and use mathematical techniques employed in dealing with this phenomenon.
4. Describe and account for the colligative and osmotic properties of aqueous solutions.
5. Account for differences in the rates of chemical reactions, apply Le Chatelier's Principle to equilibrium processes, and explain how catalysts influence reaction rates.
6. Apply mathematics and equilibrium constant expressions to descriptions of reversible reactions and chemical equilibria.
7. Identify Arrhenius, Bronsted and Lewis acids and bases, and describe the chemical properties of each type of substance.
8. Describe the ionization of water, the pH scale, weak and strong acids and bases, neutralization and the actions of buffer solutions.
9. Perform mathematical calculations involving pH, hydronium ion concentrations and acid-base titrations.
10. Define oxidation and reduction and assign oxidation numbers to the elements of substances involved in oxidation-reduction reactions. Demonstrate the ability to use oxidation numbers in balancing redox reactions.
11. Demonstrate an understanding of electrochemistry and account for the characteristics and uses of the standard hydrogen electrode, standard reduction potentials, electrolytic and voltaic cells.
12. Describe the characteristics of the major types of organic compounds – alkanes, alkenes, alkynes, aromatic hydrocarbons, alcohols, ethers, aldehydes and ketones, carboxylic acids and esters, amines and amides.

3. Required Materials

(a)	Textbook (optional)	"Chemistry, The Central Science" by Brown, LeMay & Bursten, 3 rd Australian Edition (recommended for students going on to CHEM120/121). Lecture notes will be supplied on D2L
(b)	Lab Manual (Mandatory)	CHEM110 Lab Manual, Camosun College Publications.
(c)	Safety Glasses (Mandatory in Lab)	Bookstore has "UVEX" safety eyewear – please check with instructor if using others
(d)	Lab Coat (optional in Lab)	Bookstore has cloth coats available – please check with instructor if using others
(e)	Covered Footwear (Mandatory in Lab)	Exposed feet (e.g. sandals, flip-flops) are not permitted in the lab
(f)	Scientific Calculator (Mandatory)	Smartphones/PDAs or similar devices cannot be used during tests and exams

* All required materials are available at the Camosun College Bookstore.

4. Course Content and Schedule

(This section can include: class hours, lab hours, out of class requirements and/or dates for quizzes, exams, lectures, labs, seminars, practicums, etc.)

Locations & Times

	Time	Location
Lab	Tuesdays 6-8:50 pm	Fisher Building, Room F300
Lecture	Thursdays 6-8:50pm	Fisher Building, Room F202

Lecture Plan

Unit	Topic (approx. # of lecture hours)
1	Review (3)
2	Thermochemistry (6)
3	Chemical Kinetics (6)
4	Chemical Equilibrium (6)
5	Solubility (6)
6	Acids and Bases (6)
7	Electrochemistry (6)

Important Dates

Date	Event
Tuesday October 10 th	Midterm I (6-8pm, room TBA)
Tuesday November 14 th	Midterm II (6-8pm, room TBA)
December 11 th – 19 th	Final Exam Week (Exam date, time, location TBA)

Lab & Test Schedule

Week #	Lab Date (Tuesdays)	Experiment #	Experiment	Lab Report Due Date
1	Sept. 5	-	Lab Safety & Orientation	-
2	Sept. 12	4	Precipitation Reactions	Sept. 19*
3	Sept. 19	6	Acid-Base Titrations	Sept. 26
4	Sept. 26	1	Energy Changes	Oct. 3
5	Oct. 3	2	Reaction Rates	Oct. 17
6	Oct. 10	-	Midterm I	-
7	Oct. 17	3	Shifting Equilibria	Oct. 24
8	Oct. 24	7	Vitamin C, Aspirin, Magnesia	Nov. 7
9	Oct. 31	-	No Lab	-
10	Nov. 7	10	Oxidation-Reduction Reactions	Nov. 21
11	Nov. 14	-	Midterm II	-
12	Nov. 21	11	Oxidation of Iron	Nov. 28
13	Nov. 28	12	Electrochemistry	Dec. 5
14	Dec. 5	-	Exam Review	-

*date is subject to change

5. Basis of Student Assessment (Weighting)

(This section should be directly linked to the Intended Learning Outcomes.)

Labs	20 %
Assignments	20 %
Midterm I	15 %
Midterm II	15 %
Final Exam (comprehensive)	30%

- To write the final exam you must achieve a minimum final score of 50% on the laboratory work.
- You must pass both the lecture portion and the laboratory portion in order to pass the course.
- There will be no make-up midterm tests. The weight of a missed midterm will be reassigned to the final exam.
- If the percent score on the final exam is higher than one or both midterm marks, the final exam mark will replace the lower midterm mark(s).
- Assignments are posted online (via D2L) and must be printed off by the student, and submitted at the beginning of class on the designated due date. No late submissions will be accepted, and a mark of zero will be assigned.

The Laboratory Mark

- The laboratory mark is comprised of pre-lab assignments (10% of 20%), lab report (80% of 20%), and preparedness (10% of 20%).
- Pre-lab assignments can be found in the lab manual, and can be completed after reading through the lab experimental procedure. Pre-lab assignments must be submitted at the beginning of the lab period. **Late pre-labs will not be accepted**, and a mark of zero will be assigned. Each pre-lab is worth 10 marks, and comprises 10% of the 20% laboratory mark.
- Lab report worksheets will be provided online (via D2L) for students to print off **prior** to the lab period. Lab reports can usually be completed in-class but are otherwise due one week later (i.e. the following lab period – see above schedule for details.) Lab partners must hand in their own separate reports, even though they are expected to share equally in experimental work. Lab reports are due at the beginning of the lab period in which they are due, no late lab reports will be accepted, and a mark of zero will be assigned. Each lab report is worth 10 marks, and comprises 80% of the 20% laboratory mark.
- Wearing of **safety goggles and covered footwear is mandatory** in all labs. Students who forget safety goggles and/or covered footwear or fail to wear them will not be allowed to complete the lab. One warning will be given, after which the student will be asked to leave the lab, prohibiting them to complete the lab, and a mark of zero will be assigned for the lab report portion of the lab.
- Punctual attendance to all lab periods is mandatory.** Arriving after the pre-lab talk is finished will prohibit the late student to complete the lab, and thus a mark of zero will be assigned for the lab report. Prior arrangements must be made with the instructor via email, **at least 24 hours** in advance, if a student will be late or absent from the lab.

6. Grading System

(No changes are to be made to this section unless the Approved Course Description has been forwarded through the Education Council of Camosun College for approval.)

Standard Grading System (GPA)

Percentage	Grade	Description	Grade Point Equivalency
90-100	A+		9
85-89	A		8
80-84	A-		7
77-79	B+		6
73-76	B		5
70-72	B-		4
65-69	C+		3
60-64	C		2
50-59	D	Minimum level of achievement for which credit is granted; a course with a "D" grade cannot be used as a prerequisite.	1
0-49	F	Minimum level has not been achieved.	0

Temporary Grades

Temporary grades are assigned for specific circumstances and will convert to a final grade according to the grading scheme being used in the course. See Grading Policy E-1.5 at camosun.ca for information on conversion to final grades, and for additional information on student record and transcript notations.

Temporary Grade	Description
I	<i>Incomplete:</i> A temporary grade assigned when the requirements of a course have not yet been completed due to hardship or extenuating circumstances, such as illness or death in the family.
IP	<i>In progress:</i> A temporary grade assigned for courses that, due to design may require a further enrollment in the same course. No more than two IP grades will be assigned for the same course. (For these courses a final grade will be assigned to either the 3 rd course attempt or at the point of course completion.)
CW	<i>Compulsory Withdrawal:</i> A temporary grade assigned by a Dean when an instructor, after documenting the prescriptive strategies applied and consulting with peers, deems that a student is unsafe to self or others and must be removed from the lab, practicum, worksite, or field placement.

7. Recommended Materials or Services to Assist Students to Succeed Throughout the Course

LEARNING SUPPORT AND SERVICES FOR STUDENTS

There are a variety of services available for students to assist them throughout their learning. This information is available in the College calendar, at Student Services, or the College web site at camosun.ca.

STUDENT CONDUCT POLICY

There is a Student Conduct Policy **which includes plagiarism**. It is the student's responsibility to become familiar with the content of this policy. The policy is available in each School Administration Office, at Student Services, and the College web site in the Policy Section.