



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:	Steve McKinnon		
(b)	Office Hours:	TBA		
(c)	Location:	F348A		
(d)	Phone:	370-3472	Alternative Phone:	
(e)	Email:	mckinnons@camosun.bc.ca		
(f)	Website:			

2. Intended Learning Outcomes

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

1. Utilize the specialized vocabulary and nomenclature based on the IUPAC system of organic compounds to name and draw structures for many simple organic compounds containing the common functional groups.
2. Write chemical reactions to illustrate numerous transformations between organic functional groups.
3. Draw structural and stereoisomers of organic compounds and name stereoisomers based upon the IUPAC system of nomenclature.
4. Demonstrate an understanding of the factors that influence the rate of a chemical reaction, deduce the rate of a chemical reaction from time/concentration data, and utilize rate laws to perform kinetic calculations.
5. Apply the laws of thermodynamics and account for the factors that lead to spontaneous physical and chemical changes.
6. Explain how and why reactions attain equilibrium positions and perform calculations pertaining to equilibrium systems.
7. Describe redox reactions, use electrochemical data to predict the spontaneity of redox reactions, and comprehend the structures of electrochemical cells.
8. Describe various acid-base theories and apply these theories to acid-base reactions in aqueous solution.
9. Perform experiments in the areas of preparative organic, preparative inorganic, physical and analytical chemistry and use the various associated pieces of laboratory equipment.

3. Required Materials

- (a) Texts: CHEMISTRY, The Central Science: a Broad Perspective, by Brown, Lemay, Bursten, Langford, Sagatys, and Duffy. Prentice Hall. Australian edition 2nd edition (blue).
The 1st edition (purple/green) is acceptable along with the 10th and 11th US editions.
- (b) Lab Manual: Chemistry 121 Laboratory Manual, Fall 2007 Edition (From the bookstore)
- (c) Safety glasses are mandatory for laboratory activities. These can be purchased at the campus bookstore.

4. Course Content and Schedule

Subject	Material Covered	Classes (approximate)	Textbook chapters*
Organic Chemistry	Alkane /Alkenes structure and properties, including naming alkanes / alkenes, reactions and stereochemistry, functional groups and some reactions. Polymers depending on schedule	9	21 to 26. Selected topics.
Chemical Kinetics	Reaction rates, change in concentration with time, temperature and rate, reaction mechanisms and catalysis	5	12
Thermochemistry	Energy, 1 st law of thermodynamics, enthalpy, calorimetry, Hess' Law, enthalpies of formation	3	4
Thermodynamics	Spontaneity, 2 nd law of thermodynamics, entropy, Gibbs Free Energy, free energy and temperature, free energy and equilibrium	3	4
Equilibrium	Equilibrium constants, heterogeneous equilibria, working with equilibrium constants	4	13
Acids and Bases	Acids and bases, pH scale, K_a and K_b , auto-ionization of water, acid strength of ions	5	14
Aqueous equilibria	Titration, common ion effect, buffers, solubility equilibrium	3	15
Electrochemistry	Redox reactions, balancing redox equations, half cells and the Nernst equation	3	3, 16

*textbook chapters are from Brown, LeMay, Bursten; 2nd Australian edition

Important Dates

Week

- VI Feb 11 (Mon): Family Day
- VII Feb 18 (Mon): **Test I in Lab from 6:30 to 8:20 pm**
- VII Feb 21, 22 (Thurs, Fri): Reading Break (College Closed)
- X Mar 12 (Tues): Last Day to Withdraw or Change to Audit...
- XI Mar 19 (Mon): **Test II in Lab from 6:30 to 8:20 pm**
- XII Mar 29 (Fri): Good Friday
- XIII April 1 (Mon): Easter Monday
- April 15-20, 22, 23: Exam Period for Winter 2013

5. Basis of Student Assessment (Weighting)

- (a) Midterm Test I (20%) - Learning Outcomes 1-3
- (b) Midterm Test II (20%) - Learning Outcomes 4-5
- (c) Final Exam (35%) - Comprehensive
- (d) Laboratory (25%)

6. Grading System

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.