



## 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:	John Lee		
(b)	Office Hours:	See posted times on F344A door		
(c)	Location:	F344A		
(d)	Phone:	250 370 3446	Alternative Phone:	
(e)	Email:	leejohn@camosun.ca		
(f)	Website:	D2L		

### 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. 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) **Mastering Chemistry Course Code.** A My lab Mastering Chemistry Access Code can be purchased from the Camosun Bookstore. **Your Course code is valid for multiple courses for 2 years from purchase. So if you already have a code (from Chemistry 120) there is no need to get another.**  
If you have previously purchased a new textbook (Custom Camosun Edition) or ebook (see below) then this includes a My Lab Mastering Chemistry Course Code.
- (b) **Chemistry 121 Laboratory Manual.**

#### Other Recommended Materials for the Course

Chemistry, The Central Science, Brown, le May, Bursten. *Custom Camosun Edition*. \$145. (For hard copy, ebook access and My lab Mastering Chemistry course code). ebook and My lab Mastering Chemistry course code only \$114.

The 2<sup>nd</sup> and 1<sup>st</sup> Australian editions of this textbook are also acceptable. **Note: New textbooks come with a My Lab Mastering Chemistry Code.**

## Other Recommended Materials for the Course

My Chemistry 110 Course Pack is available for review on D2L.

## 4. Course Content and Schedule

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

Lecture Times: Monday E 348, Thursday E348, Friday E344: 8.30 - 9.20 am

Laboratory Time: Friday: 9.30 to 12.20 pm in F 356

<http://camosun.ca/events/important-dates.html?y=2017>

## 5. Basis of Student Assessment (Weighting)

The course mark will be derived in the following manner:

- 2 Midterm tests: 10 % each.
- A 3 hour written final examination covering all the material in the course: 30 %
- Online mastering chemistry assignments: 25 %
- Laboratory component: 25 %

If it is advantageous to the student the theory mark will be solely derived from the final examination, or a combination of midterm(s) and final. **Missed Mastering Chemistry assignment marks may not be carried over.** The due dates for these assignments will not be extended.

In the event of a midterm test being missed due to illness/other commitments the weight of the missed test will be carried over to the final. There are no make-up dates midterm.

## The Laboratory Mark

The breakdown of the Laboratory mark is as follows:

Pre-lab assignments (completed prior to starting the lab class).	20 %
<b>Quality of Lab Reports/Assignments</b>	<b>80 %</b>

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No more than **2 laboratory classes may be missed**, during the course. In the event of a student being unable to attend a laboratory class it is advised that the student attempt to obtain data from a partner or perform the class with another section in order to complete the assignment/report. It is essential that you give your lab instructor the courtesy of an email in the event that you miss a laboratory class.

A student that attends the laboratory class but does not present a written report will receive a (maximum) score of 40%.

Students are responsible for obtaining their own safety glasses and laboratory jacket from the bookstore. It is not the responsibility of the College to provide you with safety equipment.

## 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](http://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. <i>(For these courses a final grade will be assigned to either the 3<sup>rd</sup> course attempt or at the point of course completion.)</i>
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

<p>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 <a href="http://camosun.ca">camosun.ca</a>.</p>
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## 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.

[ADDITIONAL COMMENTS AS APPROPRIATE OR AS REQUIRED](#)

## 8. Winter 2017- Chem 121-001 Provisional Lab Schedule

Tuesdays, 9:30-12:20 pm in Fisher 356

Note: This is only a preliminary lab schedule, changes will be made due to equipment &/or scheduling. Lab coat and eye protection are both mandatory and **ARE NOT PROVIDED BY THE DEPARTMENT.**

Week Number Begins on	Activity & Experiment Number	Actual Date of Lab Tuesday
I Jan 9 <sup>th</sup>	Group A Preparation of aspirin	Jan 10 <sup>th</sup>
II Jan 16 <sup>th</sup>	Group B Preparation of aspirin	Jan 17 <sup>th</sup>
III Jan 23 <sup>rd</sup>	Group A Expt. 3 Preparation of Benzoic acid	Jan 24 <sup>th</sup>
IV Jan 30 <sup>th</sup>	Group B Expt. 3 Preparation of Benzoic acid	Jan 31 <sup>st</sup>
V Feb 6 <sup>th</sup>	Midterm 1	Feb 7 <sup>th</sup>
VI Feb 13 <sup>th</sup>	College closed for reading week	Feb 14 <sup>th</sup>
VII Feb 20 <sup>th</sup>	Expt. 2 Analysis of an unknown acid	Feb 21 <sup>st</sup>
VIII Feb 27 <sup>th</sup>	[Expt. 6 The rate of iodination of acetone]	Feb 28 <sup>th</sup>
IX Mar 6 <sup>th</sup>	Let's make soap!	Mar 7 <sup>th</sup>
X Mar 13 <sup>th</sup>	Expt 10 Thermochemistry	Mar 14 <sup>th</sup>
XI Mar 20 <sup>th</sup>	Midterm Test 2	Mar 21 <sup>st</sup>
XII Mar 27 <sup>th</sup>	Expt. 8 Gravimetric Chloride analysis	Mar 28 <sup>th</sup>
XIII Apr 3 <sup>rd</sup>	Expt. 9 Copper(I) chloride	Apr 4 <sup>th</sup>
XIV Apr 10 <sup>th</sup>	Material Review	Apr 11 <sup>th</sup>
Final Exam Period	Final Exams Apr 17 <sup>th</sup> to Apr 25 <sup>th</sup>	