



**CAMOSUN COLLEGE**  
**School of Arts & Science**  
**Department of Chemistry & Geoscience**

**CHEM-121-004**  
**College Chemistry 2**  
**Winter 2019**

## **COURSE OUTLINE**

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

Ω Please note: This outline will not be kept indefinitely. It is recommended students keep this outline for their records, especially to assist in transfer credit to post-secondary institutions.

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### **1. Instructor Information**

Instructor:	Diana Li
Office Hours:	Monday 13:30-16:20 and Friday 14:30-16:20, or by appointment.
Location:	Fisher 344C
Phone:	250-370-3444
Email:	<a href="mailto:lid@camosun.bc.ca">lid@camosun.bc.ca</a>
Website:	<a href="http://camosun.ca/learn/programs/chem.html">http://camosun.ca/learn/programs/chem.html</a>

\*To avoid class interruptions & cancellations, please refrain from wearing fragrance or other strongly scented products to class!\*

### **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

Texts	"Chemistry, The Central Science: a broad perspective" by Brown et al., 2014—a.k.a. 3 <sup>rd</sup> Australian Custom Edition.
Other	◆ Chem 121 Lecture Notes Supplement & Appendix by D. Li, Winter 2015 Ed. This supplement goes with both 2 <sup>nd</sup> & 3 <sup>rd</sup> Australian editions of BLB but the 3 <sup>rd</sup> Australian edition is preferred. Note: Homework questions selected from both editions are not necessarily identical or equivalent. ◆ Chem 121 Lab Manual ◆ Molecular Model Kit—recommended for Chem 121 and other 2 <sup>nd</sup> year Chemistry courses (Chem 230, 231, etc.) ◆ Eye protection is mandatory & lab coat is recommended in the lab!

### 4. Course Content and Schedule

Lecture Plan:		
Chapter	Topic (approximate number of lecture hours)	
3 <sup>rd</sup> Ed. [2 <sup>nd</sup> Ed.]		
22-28	[21-27] Selected Topics in Organic Chemistry (9)	
15	[12]	Chemical Kinetics (7)
14	[4]	Thermochemistry (4)
14	[4]	Thermodynamics (3)
16	[13]	Chemical Equilibrium (3)
17	[14]	Acid-Base Equilibria (4)
18	[15]	Additional Aspects of Aqueous Equilibria (4)
19	[16]	Electrochemistry (3)

*Students may not use recording devices in the classroom without the prior permission of the instructor. However, the instructor's permission is not required when the use of a recording device is sanctioned by the College's Centre for Accessible Learning in order to accommodate a student's disability and when the instructor has been provided with an instructor notification letter which specifies the use of a recording device. Recordings made in the classroom are for the student's personal use only, and distribution of recorded material is prohibited.*

### 5. Basis of Student Assessment (Weighting)

Labs (up to 9 experiments)	22%
Test I (Organic Chem)	16% (Week VI Feb 11 Lab Period, 2.5 hours)*
Test II (Kinetics, Thermochem, & Thermodynamics)	22% (Week XII March 25 Lab Period, approx. 3 hours)*
Final Exam (comprehensive)	40% (TBA~Week V, 3 hours in April)

\* Test dates to be confirmed during the first week of classes in January.

Notes:

- (1) Student must pass the lab portion of the course to obtain credit for Chem 121. Your lab faculty will go over the lab component of Chem 121 and lab evaluation with you...
- (2) Student is encouraged to attempt both tests. Test score that is not as high as that of the April final exam will be dropped automatically and its weight redistributed to the final exam. However anyone who is caught cheating will receive zero for that test which will not be redistributed. For anyone who misses both tests, your final exam will then be 78% of the course grade!
- (3) Student must write each test as scheduled for his/her section. No one is allowed to write late and there will be no exceptions. Early exam is a privilege and not a right, thus, at full discretion of the instructor.

### 6. Grading System

Standard Grading System (GPA)

Competency Based Grading System

## 7. Recommended Materials to Assist Students to Succeed Throughout the Course

Hard copies of the 1<sup>st</sup>, 2<sup>nd</sup>, & 3<sup>rd</sup> Australian Editions of B-L-B are available in the Library Reserve Room.

**Note:** Short answers to all red numbered exercises are at the back of the text, and a hard copy of the Solutions Manual for the 1<sup>st</sup> Australian Edition is in the library. Answers to red & black numbered exercises are available from Di & she will email the 3<sup>rd</sup> edition answers to everyone. Please email Di if you need the 2<sup>nd</sup> edition answers.

## 8. College Supports, Services and Policies



### Immediate, Urgent, or Emergency Support

If you or someone you know requires immediate, urgent, or emergency support (e.g. illness, injury, thoughts of suicide, sexual assault, etc.), **SEEK HELP**. Resource contacts @

<http://camosun.ca/about/mental-health/emergency.html> or <http://camosun.ca/services/sexual-violence/get-support.html#urgent>

### College Services

Camosun offers a variety of health and academic support services, including counselling, dental, disability resource centre, help centre, learning skills, sexual violence support & education, library, and writing centre. For more information on each of these services, visit the **STUDENT SERVICES** link on the College website at <http://camosun.ca/>

### College Policies

Camosun strives to provide clear, transparent, and easily accessible policies that exemplify the college's commitment to life-changing learning. It is the student's responsibility to become familiar with the content of College policies. Policies are available on the College website at <http://camosun.ca/about/policies/>. Education and academic policies include, but are not limited to, Academic Progress, Admission, Course Withdrawals, Standards for Awarding Credentials, Involuntary Health and Safety Leave of Absence, Prior Learning Assessment, Medical/Compassionate Withdrawal, Sexual Violence and Misconduct, Student Ancillary Fees, Student Appeals, Student Conduct, and Student Penalties and Fines.

### A. GRADING SYSTEMS <http://camosun.ca/about/policies/index.html>

The following two grading systems are used at Camosun College:

#### 1. 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		1
0-49	F	Minimum level has not been achieved.	0

## 2. Competency Based Grading System (Non GPA)

This grading system is based on satisfactory acquisition of defined skills or successful completion of the course learning outcomes

Grade	Description
COM	The student has met the goals, criteria, or competencies established for this course, practicum or field placement.
DST	The student has met and exceeded, above and beyond expectation, the goals, criteria, or competencies established for this course, practicum or field placement.
NC	The student has not met the goals, criteria or competencies established for this course, practicum or field placement.

## B. 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 at <http://camosun.ca/about/policies/index.html> 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 are designed to have an anticipated enrollment that extends beyond one term. No more than two IP grades will be assigned for the same course.
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.