



**School of Arts & Science**  
**CHEMISTRY AND GEOSCIENCE DEPARTMENT**

**CHEM 120-03**  
**College Chemistry 2**  
**2008W**

## COURSE OUTLINE

The Approved Course Description is available on the web @ [camosun.bc.ca](http://camosun.bc.ca)

Ω Please note: this outline will be electronically stored for five (5) years only.  
It is strongly recommended students keep this outline for your records.

### 1. Instructor Information

(a)	Instructor:	Devin Mitchell		
(b)	Office Hours:	Monday- Thursday 5:00 – 6:20 pm		
(c)	Location:	F348A		
(d)	Phone:	370-3472	Alternative Phone:	
(e)	Email:	mitchelld@camosun.bc.ca		

### 2. Intended Learning Outcomes

*(No changes are to be made to this section, unless the Approved Course Description has been forwarded through EDCO for approval.)*

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 et. al., 2007—a.k.a. B-L-B Australian Edition.
(b)	Other	♦ Chem 120 Lab Manual (Safety glasses mandatory & lab coat recommended)

#### 4. Course Content and Schedule

##### Lectures:

Monday	6:30 to 9:20 pm in F336
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##### Lecture Plan:

Unit	Topic (approximate number of lecture hours)	Reference
1	Introduction and Review (9)	1, 2, 3
2	Gases (3)	9
3	Electronic Structure (6)	5
4	Periodic Trends (3)	6
5	Bonding (9)	7, 8
6	Intermolecular Forces (6)	10
7	Solutions (3)	11
8	Chemistry and the Environment (3)	16

##### Chem. 121 Lab Schedule, Tuesday 6:30-9:20 pm in F356 (Subject to Change)

Week, beginning	Activity
<b>Wk I, Jan 7</b>	<b>Lab Orientation—Attendance Mandatory</b>
<b>Wk II, Jan 14</b>	<b>Expt. 2</b> Densities of Solids & Liquids
<b>Wk III, Jan 21</b>	<b>Expt. 3</b> Stoichiometry of Chem Rxn <b>GpA</b>
<b>Wk IV, Jan 28</b>	<b>Expt. 3</b> Stoichiometry of Chem Rxn <b>GpB</b>
<b>Wk V, Feb 4</b>	<b>Expt. 4</b> Spectroscopic Determination of Nickel
<b>Wk VI, Feb 11</b>	<b>Test 1 in Lab</b>
<b>Reading Break: Week V, Thursday, Feb 14 and Friday, Feb 15</b>	
<b>Wk VII, Feb 18</b>	<b>Expt. 5</b> Colorimetric Determination of Iron
<b>Wk VIII, Feb 25</b>	<b>Expt. 6</b> Determination of Copper Using A.A. Spec.
<b>Wk IX, Mar 3</b>	<b>Expt. 7</b> Determination of the Total Hardness of Water
<b>Wk X, Mar 10</b>	<b>Expt. 9</b> Preparation of $K_3[Fe(ox)_3]$
<b>Wk XI, Mar 17</b>	<b>Expt. 10</b> Analysis of $K_3[Fe(ox)_3]$
<b>Mar 21 Good Friday, Mar 24 Easter Monday</b>	
<b>Wk XII, Mar 24</b>	<b>Test II in Lab</b>
<b>Wk XIII, Mar 31</b>	<b>Expt. 8</b> Molecular Shapes & VSEPR Lecture
<b>Wk XIV, Apr 7</b>	<b>Lecture &amp; Exam Review</b>

## 5. Basis of Student Assessment (Weighting)

(Should be linked directly to learning outcomes.)

Labs (8 or 9 experiments)	25%
Test I (Intro, Gases, Electronic Structure)	20% (Week VI Lab Period, up to 3 hours)*
Test II ( Bonding, Intermolecular Forces)	20% (Week XI Lab Period, up to 3 hours*)
Final Exam (comprehensive)	35% (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.
- (2) Student is encouraged to attempt both tests. Test scores that is not as high as that of the April final exam will be dropped automatically and its weight redistributed to the final exam. You may choose not to write one or both tests, your final exam will then be 80% of the course grade!!
- (3) Student must write each test in the lab period 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

(No changes are to be made to this section, unless the Approved Course Description has been forwarded through EDCO 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 at [camosun.ca](http://camosun.ca) or information on conversion to final grades, and for additional information on student record and transcript notations.

Temporary Grade	Description
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<b>I</b>	<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.
<b>IP</b>	<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.
<b>CW</b>	<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.

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.

## 7. Important Dates

Week

- VI Feb. ♥ (Thur) & Feb. 15 (Fri): Reading Break
- X Mar. 10 (Mon): Last Day to Withdraw or Change to Audit...
- XI Mar. 21 (Fri): Good Friday—College Closed
- XII Mar. 24 (Mon): Easter Monday—College Closed
- April 14-19 & 21-22: Exam Period for Winter 2008

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

Articles in the Library Reserve Room for Chem 120 & 121:  
(at least one copy of the followings)

9<sup>th</sup> & 10<sup>th</sup> Editions B-L-B: Text & Solutions Manual, Student's Guide, "Math Review Toolkit" & "The Essentials of Organic Chemistry" booklet. (Note: short answers to all red # exercises are at the back of the Text)

Australian B-L-B &

- ◆ OneKey—a text-specific online resource tool: [www.pearsoned.com.au/brown](http://www.pearsoned.com.au/brown)
  - ◆ Answers to black # exercises in the Australian B-L-B are available online:  
<http://www.pearsoned.com.au/Catalogue/TitleDetails.aspx?isbn=9780733974595#Instructor>  
Username: PEAResources  
Password: teamw0rk  
The password is case sensitive, and the 0 in teamw0rk is the number zero!
- (Note: short answers to all red # exercises are at the back of the Text)

## 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](http://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 on the College web site in the Policy Section.

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