



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

**CHEM-120-002**  
**College Chemistry 1**  
**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**

(a) Instructor	Dr. Steve McKinnon
(b) Office hours	See Schedule or by appointment
(c) Location	Fisher 348A
(d) Phone	250-370-3472 <b>Alternative:</b> _____
(e) E-mail	mckinnons@camosun.bc.ca
(f) Website	D2L

### **2. Intended Learning Outcomes**

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

1. Utilize nomenclature rules to name ionic and covalent compounds.
2. Demonstrate an understanding of stoichiometry by balancing chemical equations and performing mathematical calculations involving chemical reactions.
3. Describe the electronic structure of any atom in the periodic table and apply it to explain many of the physical and chemical properties of the elements.
4. Utilize simple bonding theories to explain why elements combine to form the compounds they do and also to explain many of the properties of compounds.
5. Apply knowledge of intermolecular interactions to rationalize many important physical properties of bulk matter in the gas, liquid and solid phases.
6. Use standard chemistry lab equipment, including burets, pipets, Buchner filters, and volumetric glassware in the correct manner.
7. Perform many standard laboratory procedures, such as titrations, preparation of standard solutions, the preparation, isolation, and purification of compounds, as well as use spectrophotometers to make analytical measurements.

### **3. Required Materials**

- (a) Lab Experiments: Chemistry 120 Laboratory Manual, (In-house)
- (b) Safety Glasses

## Optional

Mastering Chemistry Course Code. \$50 Access Code can be purchased from the Pearson Website <http://www.pearson.com.au/9781442563902> or the bookstore (\$75). If you choose to purchase a new textbook or ebook (see below) then a Mastering Chemistry Course Code is included. (valid for 24 months after activation).

## Other Recommended Materials

CHEMISTRY, The Central Science: a Broad Perspective<sup>®</sup> by Brown, Lemay, Bursten, Langford, Sagatys, and Duffy. Prentice Hall, Australian 3<sup>rd</sup> edition.  
\$145 (Hard copy with access code)  
\$114 (ebook with access code)

The 1<sup>st</sup> and 2<sup>nd</sup> editions or other texts are also acceptable, but you will still need to purchase a **Mastering Chemistry access code**.

## 4. Course Content and Schedule

Lecture Plan:	
Textbook chapter (Brown at al.)	Topic (approximate number of hours)
2-4	Review of selected topics (6)
6	Electronic structure of atoms (7-8)
7	Periodic properties of the elements (3)
8	Basic concepts of chemical bonding (3-4)
9	Molecular geometry & bonding theory (3)
10	Gases (3-4)
11	Intermolecular forces, liquids and solids (3)
12	Solutions (3)
13	Chemistry of the environment (3)

## 5. Basis of Student Assessment (Weighting)

(a) Midterm Test I	(L.O. 1 and 2)	15%
(b) Midterm Test II	(L.O. 3 – 5)	20%
(c) Final Exam	Cumulative	40%
(d) Laboratory	(L.O. 6 and 7)	25%
(e) MyLabMastering	Optional	15%

### Notes

1. Students must complete a minimum of 70% of the laboratory work to pass the laboratory component of Chem 120. Students must pass the laboratory portion (>50%) of the course in order to obtain credit for Chem 120.
2. A 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. For anyone who misses both tests, your final exam will then be 60% of the course grade.
3. Students must write each test as scheduled. No one is allowed to write late and there will be no exceptions. Early exam is a privilege and not a right, at full discretion of the instructor.
4. Mastering is an optional online set of assignments. If completion will increase your grade, the additional 15% will replace part of your overall lecture grade.

## Important Dates

Feb 12 (Tues): **Test I 9:30-11:00am in Lab**  
Feb 18-22: Reading Break  
Mar 19 (Tues): **Test II 9:30-11:00am in Lab**  
Apr 19 (Fri): Good Friday  
Apr 22 (Mon): Easter Monday

**Final Exam Period:** April 15-18 and 23-26

See Camosun website for information on fee and drop deadlines.  
<http://camosun.ca/learn/fees/#deadlines>

## 6. Grading System

- Standard Grading System (GPA)  
 Competency Based Grading System

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

n/a

## 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.

# Winter 2019 Lab Schedule

Chem 120-002 – Tuesdays, 9:30-12:20 in Fisher 356

Week Number	Activity & Experiment Number	Date of Lab Tuesday
I	Intro and Safety Orientation - Mandatory	Jan 8
II	Expt. 2 - Densities of Solids & Liquids	Jan 15
III	Expt. 3 - Stoichiometry of Chemical Reactions—Gp A	Jan 21
IV	Expt. 3 - Stoichiometry of Chemical Reactions—Gp B	Jan 29
V	Expt. 4 - Spectroscopic Determination of $[\text{Ni}^{2+}]$ in Aqueous Solution	Feb 5
VI	<b>Test I in Lab (1.5 hours)</b>	Feb 12
VII	Family Day / Reading Break	Feb 19
VIII	Expt. 5 - Spectrophotometric Determination of Iron	Feb 26
IX	Expt. 6 - Determination of Copper Using Atomic Absorption Spectroscopy	Mar 5
X	Expt. 7 - Determination of the Total Hardness of Water Using E.D.T.A.	Mar 12
XI	<b>Test II in Lab (1.5 hours)</b>	Mar 19
XII	Expt. 8 - Molecular Shapes & VSEPR Lecture	Mar 26
XIII	Expt. 9 - The Preparation of Potassium Tris(oxalato)Ferrate(III)	Apr 2
XIV	Expt. 10 - Analysis of Potassium Tris(oxalato)Ferrate(III)	Apr 9
<b>Final Exam Period: Apr 15-18 and 23-26</b>		

**Note:** This is only a preliminary lab schedule, changes will be made due to equipment &/or glassware problems, or rescheduling of tests...

## Eye protection is mandatory!!