



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

**CHEM 120-01**  
**College Chemistry 1**  
**2015F**

## COURSE OUTLINE

The Approved Course Description is available on the web @ \_\_\_\_\_

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:	Stephen McKinnon		
(b)	Office Hours:	TBA (posted on office door)		
(c)	Location:	Fisher 348A		
(d)	Phone:	250-370-3472	Alternative Phone:	
(e)	Email:	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) 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.

The 1<sup>st</sup> and 2<sup>nd</sup> editions are also acceptable.

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

- (c) Safety Glasses

#### 4. Course Content and Schedule

Lecture Plan:	
Textbook chapter (Brown et al.)	Topic (approximate number of hours)
2-4	Review of selected topics (6)
10	Gases (3-4)
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)
11	Intermolecular forces, liquids and solids (3)
12	Solutions (3)
13	Chemistry of the environment (3)

#### 5. Basis of Student Assessment and 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%

#### 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 of the course in order to obtain credit for Chem 120.
2. Test score that is not as high as that of December 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 75% 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.

#### 6. Important Dates

##### Week

- V** Oct. 5 (Mon): **Test I 6:30-9:00pm in Lab**
- VII** Oct. 12 (Mon): Thanksgiving Day
- X** Nov. 9 (Mon): Last day to Withdraw from course or Change to Audit  
Nov. 11 (Wed): Remembrance Day
- XI** Nov. 16 (Mon): **Test II 6:30-9:00pm in Lab**

**Final Exam Period:** Dec. 14-19, 21 and 22

#### 7. 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](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. (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.)
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.

## 8. 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](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.

## Fall 2015 Lab Schedule

**Chem 120-001 – Mondays, 18:30-21:20 in Fisher 356**

Week Number Begins on	Activity & Experiment Number	Actual Date of Lab Monday
I Sept 7 <sup>th</sup> , Labour Day	Labour Day	Sept 7 <sup>th</sup>
II Sept 14 <sup>th</sup>	Expt. 2 Densities of Solids & Liquids	Sept 14 <sup>th</sup>
III Sept 21 <sup>st</sup>	Expt. 3 Stoichiometry of Chem. Rxns— <b>Gp A</b>	Sept 21 <sup>st</sup>
IV Sept 28 <sup>th</sup>	Expt. 3 Stoichiometry of Chem. Rxns— <b>Gp B</b>	Sept 28 <sup>th</sup>
V Oct 5 <sup>th</sup>	<b>Test I in Lab (2.5 hours)</b>	Oct 5 <sup>th</sup>
VI Oct 12 <sup>th</sup>	Thanksgiving	Oct 12 <sup>th</sup>
VII Oct 19 <sup>th</sup>	Expt. 4 The Spectroscopic Determination of Nickel in Aqueous Solution	Oct 19 <sup>th</sup>
VIII Oct 26 <sup>th</sup>	Expt. 6 Determination of Copper Using Atomic Absorption Spectroscopy	Oct 26 <sup>th</sup>
IX Nov 2 <sup>nd</sup>	Expt. 7 Determination of the Total Hardness of Water Using E.D.T.A.	Nov 2 <sup>nd</sup>
X Nov 9 <sup>th</sup>	Expt. 9 The Preparation of Potassium Tris(oxalato)Ferrate(III)	Nov 9 <sup>th</sup>
XI Nov 16 <sup>th</sup>	<b>Test II in Lab (2.5 hours)</b>	Nov 16 <sup>th</sup>
XII Nov 23 <sup>rd</sup>	Expt. 10 Analysis of Potassium Tris(oxalato)Ferrate(III)	Nov 23 <sup>rd</sup>
XIII Nov 30 <sup>th</sup>	Expt. 8 Molecular Shapes & VSEPR Lecture	Nov 30 <sup>th</sup>
XIV Dec 7 <sup>th</sup>	Exam Info & Review	Dec 7 <sup>th</sup>
<b>Final Exam Period - Dec 14 – 19, 21 and 22</b>		

**Note: This is only a preliminary lab schedule, changes will be made due to equipment &/or glassware problems, or rescheduling of tests... Lab coat and eye protection are both mandatory!!**