

	<p style="text-align: center;"><b>School of Arts &amp; Science</b>  <b>CHEMISTRY AND GEOSCIENCE DEPARTMENT</b></p> <p style="text-align: center;"><b>CHEM 120-001</b>  <b>College Chemistry 1</b>  <b>2010F</b></p>
-----------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

[svendsend@camosun.bc.ca](mailto:svendsend@camosun.bc.ca)

## COURSE OUTLINE

The Approved Course Description is available on the web @  
<http://camosun.ca/learn/calendar/current/web/chem.html>

*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:	Jakub Drnec	
(b)	Office Hours:	Thurs: 4:30pm-6:00pm, other arrangements are possible.	
(c)	Location:	Fisher building, room 348 A	
(d)	Phone:	(250) 370-3472	Alternative Phone: 250-382-3499
(e)	Email:	<a href="mailto:drnecj@camosun.bc.ca">drnecj@camosun.bc.ca</a>	
(f)	Website:	<a href="http://drnec.cz/cam_chem120">http://drnec.cz/cam_chem120</a>	

### 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 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) Principal Text: CHEMISTRY, The Central Science: a Broad Perspective by Brown, Lemay, Bursten, Murphy, Langford, Sagatys, 2<sup>nd</sup> edition. Pearsons Australia.

(b) Lab Experiments: Chemistry 120 Laboratory Manual, Fall 2007 Edn (In-house)

#### 4. Course Content and Schedule

(Can include: class hours, lab hours, out of class requirements and/or dates for quizzes, exams, lectures, labs, seminars, practicums, etc.)

Lecture Plan:	
Textbook chapter (Brown et al.)	Topic (approximate number of hours)
1-3	Review of selected topic (9)
9	Gases (3-4)
5	Electronic structure of atoms (7-8)
6	Periodic properties of the elements (3)
7	Basic concepts of chemical bonding (3-4)
8	Molecular geometry & bonding theory (3)
10	Intermolecular forces, liquids and solids (3)
11	Solutions (3)
20	Chemistry of environment (3)

Laboratory Schedule <sup>1</sup> :	
Date of Lab	Experiment
Sept 7 <sup>th</sup>	Lab orientation – mandatory attendance
Sept 14 <sup>th</sup>	Expt 2: Densities of solids and liquids
Sept 21 <sup>th</sup>	Expt 3: Stoichiometry of chemical reactions – group A
Sept 28 <sup>th</sup>	Expt 3: Stoichiometry of chemical reactions – group B
Oct 5 <sup>th</sup>	Expt 4: The spectroscopic determination of Nickel in aqueous solution
Oct 12 <sup>th</sup>	Review test (2 hrs)
Oct 19 <sup>th</sup>	Expt 5: Calorimetric determination of iron in a vitamin tablet
Oct 26 <sup>th</sup>	Expt 6: Determination of copper using atomic adsorption spectroscopy
Nov 2 <sup>nd</sup>	Expt 7: Determination of the total hardness of water using E.D.T.A.
Nov 9 <sup>th</sup>	Midterm test (2 hrs)
Nov 16 <sup>th</sup>	Expt 9: Preparation of potassium tris(oxalato)ferrate(III)
Nov 23 <sup>rd</sup>	Expt 10: Analysis and uses of potassium tris(oxalato)ferrate(III)
Nov 30 <sup>th</sup>	Expt 8: Molecular shapes
Dec 7 <sup>th</sup>	Exam info and problem solving practice

a) Assignments<sup>2</sup>

b) Review test.<sup>3</sup>

d) A 2-hour written midterm test.<sup>4</sup>

e) A three-hour written final examination at the end of the course on all the material in the course.

#### Notes

1. This is only a preliminary schedule. Changes can occur due to equipment failure or scheduling problems. Lab coats and safety glasses are mandatory.

2. Marked assignments will cover lecture material and will consist of 3-4 moderately difficult practical problems.
3. The 2 hr. review test will be on material covered in the first three weeks of the course. It will take place during the lab period of **week six (Oct 12<sup>th</sup>)**.
4. The 2 hr. midterm test will cover all the material in the course covered during the first nine weeks. It will take place during the lab period of **week ten (Nov 9<sup>th</sup>)**.

## 5. Basis of Student Assessment (Weighting)

*(Should be linked directly to learning outcomes.)*

- (a) 4 assignments 15%
- (b) Review test: 10%; Midterm test: 15%
- (c) Exams: Final Exam: 35%
- (d) Other (e.g., Attendance, Project, Group Work) Lab work: 25%

## Notes

1. Students must pass both portions of the course (the lab as well as the lecture) in order to pass the course.
2. Assignments are mandatory and students are expected to complete them all.
3. Students are encouraged to attend review and midterm tests. 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 60% of the course grade.
4. 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. 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 E-1.5 at **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

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