CAMOSUN COLLEGE	**School of Arts & Science** **CHEMISTRY AND GEOSCIENCE DEPARTMENT** **CHEM 100-001** **Introductory Chemistry** **Winter 2012**

COURSE OUTLINE

This course is a basic introduction to chemistry and is intended for students with little or no background in chemistry. Topics include chemical formulae and equations, simplest formula, atomic mass, mole concept, molarity, periodic table, molecules and chemical bonding, and some descriptive chemistry. Experiments will emphasize basic lab techniques.

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

☐ *Please note: the College electronically stores this outline for five (5) years only.*
*It is **strongly recommended** you keep a copy of this outline with your academic records.*
You will need this outline for any future application/s for transfer credit/s to other colleges/universities.

1. Course Locations & Times

	Time	Location
Lecture	Tuesday 6:30 – 7:20 PM Thursday 6:30 – 9:20 PM	Fisher Building, Room 212
Lab	Tuesday 7:30 – 9:20 PM	Fisher Building, Room 300

2. Instructor Information

Instructor:	David Stuss
Office Hours:	Mon 14:30-15:20, Wed 12:30-14:20, Thu 12:30-13:20
Location:	F344D
Phone:	250-370-3506
Email:	stussd@camosun.bc.ca
Website:	http://camosun.ca/learn/programs/chem.html

3. Intended Learning Outcomes

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

1. Use dimensional analysis, metric and SI units in performing chemical calculations.
2. Utilize the specialized vocabulary and nomenclature of chemistry and name chemical compounds, and identify and construct chemical formulas.
3. Summarize the characteristics of electrons, protons and neutrons, and identify their roles as components of atoms, ions and isotopes, including radioisotopes.
4. Describe atomic structure, the differences between elements, and the role of the periodic table in organizing elements within a coherent theoretical and empirical system.
5. Describe and account for the periodic table trends concerning atomic number, atomic radius, ionization energy and electronegativity.
6. Compare the formation and characteristics of ionic and molecular compounds.
7. Perform mathematical calculations involving chemical formulas, molecular weights, moles, Avogadro's number and Molarity.
8. Balance chemical equations, including use of the mole concept, and solve stoichiometry problems.
9. Account for the general characteristics of the gas, liquid, and solid states.
10. Conduct experiments in basic chemistry, utilizing common chemistry laboratory equipment with an enhanced knowledge and practice in basic lab skills.

3. Required Materials

Texts	**Required:** Chem 100 Course Notes / Lab Manual / Problem Sets, Department of Chemistry & Geoscience, Camosun College. May 2011.
Other	**Mandatory** (in lab): Safety glasses, lab coat/full-length clothing & full-cover footwear **Recommended**: Scientific calculator

4. Important Dates

Week	Date(s)	Event
6	Feb 16 – 17	Reading Break
8	Feb 28	Midterm Exam
10	Mar 12	Last day to withdraw
13	Apr 6 – 9	Easter weekend
15	Apr 16 - 21	Exam week - Finals

5. Course Content and Schedule

Credits	4 credits		**Number of weeks**	14
Workload / week	4 h lecture 2 h lab 6 h study		**Pre-requisite**	Math 10 or assessment

Lecture Plan

Unit	Topic	Unit	Topic
1	Measurements & Calculations	7	Chemical Bonding
2	Introductory Terminology	8	Gases
3	Chemical Formulas & Names	9	Liquids & Solutions
4	Calculations Based Upon Formulas	10	Organic Chemistry
5	Stoichiometry	11	Radioactivity
6	Periodic Table & Electron Distributions		

Lectures & homework exercises will follow the coursepack at a pace of approximately one unit per week. There will be a review period with additional practice material prior to exams.

Lab & Exam Schedule

Week	Date	Lab No.	Lab Name
1	Jan 10	-	Safety Orientation
2	Jan 17	Exp 1	Density
3	Jan 24	Exp 3	Separating Mixtures
4	Jan 31	Exp 4	Heat of Combustion
5	Feb 7	Exp 15 /5	Accuracy & Precision
6	Feb 14	Exp 5	Recycling Copper
7	Feb 21	Exp 7 /5	The Copper & Silver Nitrate Reaction
8	Feb 28	**-**	**Midterm Exam**
9	Mar 6	-	*Molecular Models*
10	Mar 13	Exp 8	Water of Hydration
11	Mar 20	Exp 10	Volume of a Gas
12	Mar 27	Exp 12	Neutralization
13	Apr 3	Exp 13	Synthesis of Aspirin
14	Apr 10	-	*Review*
15	Apr 16 - 21	-	**Final Exam Week**

6. Basis of Student Assessment

Labs (10)	30%
Quizzes (6)	15%
Midterm Exam	20%
Final Exam (comprehensive)	35%

1. To write the final exam you must participate in **a minimum of 8 / 10 lab classes** and have a minimum final score of **50%** on laboratory work.

2. You must pass **both** the lecture portion and the laboratory portion in order to pass the course.

3. If the final exam mark is higher than the midterm & quiz mark, it will be used for the final mark on the theory section of the course.

4. In the event of a quiz or midterm test being missed due to illness/other, the weight of the missed quiz/test will be carried over to the final exam.

Quizzes: 6 in-class, 30 minute review quizzes on recent material

Quiz	Chapters	Date*		Quiz	Chapters	Date*
1	1	Jan 17		4	5	Feb 21
2	2	Jan 26		5	6 - 7	Mar 13
3	3 - 4	Feb 7		6	8 - 9	Mar 27

(**Quiz dates are approximate and may change with advance notice provided by the instructor*).

The Laboratory Mark

The lab mark is based on attendance and the laboratory report. A student that participates in a laboratory class without completing the lab report will receive a minimum score of 50% on that lab (a report must still be submitted).

Students must watch an introductory Lab Safety video in the first lab class before they can begin any experiments. In the event of missing the Lab Safety presentation students are responsible for watching the (30 minute) safety DVD, available from the technician's office prior to their first experiment.

Attendance in the lab periods is mandatory. There are **NO EXCEPTIONS** other than an official doctor's note. Missed labs without adequate reasons will result in a mark of zero for that lab. **Permissions for an exception must be documented by email permission from the instructor.**

Laboratory reports can usually be completed in-class but are otherwise due in the following experimental lab period. The lab manual has been designed to allow students to hand in the completed pages taken directly from the manual. Each lab partner must hand in a separate report even if though lab partners are expected to share equally in experimental work. A detailed marking key will be handed out in the first lab.

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** for information on conversion to final grades, and for additional information on student record and transcript notations.

Temporary Grade	Description
I	*Incomplete*: 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	*In progress*: 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 3rd course attempt or at the point of course completion.)*
CW	*Compulsory Withdrawal:* 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.

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 the College web site in the Policy Section.

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 Resource Centre for Students with Disabilities 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.