CAMOSUN COLLEGE	***SCHOOL OF ARTS & SCIENCE*** ***CHEMISTRY AND GEOSCIENCE DEPARTMENT*** **CHEM 110-01** **General College Chemistry 1** **2006F**

COURSE OUTLINE

The Approved Course Description is available on the web @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

Instructor:	Diana Li
Office Hours:	M, W, & Th 1:30-2:20 and 3:30-4:30 pm, or by appointment
Location:	F344C
Phone:	370-3444
Email:	lid@camosun.bc.ca
Website:	archive.camosun.bc.ca/schools/artsci/chemgeo/index.php.

To avoid class interruptions & cancellations, please refrain from wearing fragrance or other strongly scented products to class!

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. Identify, describe and account for the general characteristics of gases, liquids and solids - interionic and intermolecular forces; vaporization and condensation; melting and freezing; specific characteristics of water.
2. Utilize solution terminology, account for and compare the solubilities of ionic and molecular compounds, and describe the impact of temperature and pressure on solubility.
3. Describe the characteristics of solubility equilibria and use mathematical techniques employed in dealing with this phenomenon.
4. Describe and account for the colligative and osmotic properties of aqueous solutions.
5. Account for differences in the rates of chemical reactions, apply Le Chatelier's Principle to equilibrium processes, and explain how catalysts influence reaction rates.
6. Apply mathematics and equilibrium constant expressions to descriptions of reversible reactions and chemical equilibria.
7. Identify Arrhenius, Bronsted and Lewis acids and bases, and describe the chemical properties of each type of substance.
8. Describe the ionization of water, the pH scale, weak and strong acids and bases, neutralization and the actions of buffer solutions.

9. Perform mathematical calculations involving pH, hydronium ion concentrations and acid-base titrations.
10. Define oxidation and reduction and assign oxidation numbers to the elements of substances involved in oxidation-reduction reactions. Demonstrate the ability to use oxidation numbers in balancing redox reactions.
11. Demonstrate an understanding of electrochemistry and account for the characteristics and uses of the standard hydrogen electrode, standard reduction potentials, electrolytic and voltaic cells.
12. Describe the characteristics of the major types of organic compounds – alkanes, alkenes, alkynes, aromatic hydrocarbons, alcohols, ethers, aldehydes and ketones, carboxylic acids and esters, amines and amides.

3. Required Materials

Texts	♦ "Fundamentals of Chemistry" by R.A. Burns, 4th Ed. **or** ♦ "Chemistry: Principles & Reactions" by Masterton & Hurley, 5th Ed. **or** ♦ "Chemistry, The Central Science" by Brown, LeMay, & Bursten (a.k.a. B-L-B, the 10th Ed. is preferred over the 9th). Solutions Manual may be sold bundled with the text.
Other	♦ Chem 110 Lecture Notes Supplement & Appendix by D. Li, 2005 or 2006 Edition. ♦ Chem 110 Lab Manual (Safety glasses mandatory & lab coat recommended)

4. Course Content and Schedule

Lecture Plan:

Unit	Topic (approx. # of lecture hours)	Burns	Masterton & Hurley	B-L-B
1	Thermochemistry (8)	Ch. 3,11,13	Ch. 8 & 17	Ch. 5 & 19
2	Chemical Kinetics (5)	Ch. 15	Ch. 11	Ch. 14
3	Chemical Equilibrium (5)	Ch. 15	Ch. 12	Ch. 15
4	Solution & Solubility (5)	Ch. 4, 6, 9, 10,11,14	Ch. 2,4,10, 16	Ch. 2, 4,17
5	Acid-Base Equilibria (6)	Ch. 6,10,16	Ch. 2,4,13, 14	Ch. 4,16,17
6	Ionization & Neutralization (5)			
7-I	Oxidation & Reduction (4)	Ch. 6,10,17	Ch. 4	Ch. 4 & 20
7-II	Electrochemistry (3)	Ch. 17	Ch. 18	Ch. 20

5. Basis of Student Assessment (Weighting)

Labs (8 or 9 experiments)	20%
Test I (Units 1, 2, & 3)	20% (Week V Lab Period, 2-hour)*
Test II (Units 3, 4, & 5)	20% (Week X Lab Period, 2-hour)*
Final Exam (comprehensive)	40% (TBA ~Week V, 3 hours in December)

Notes:

(1) Student must pass the lab portion of the course to obtain credit for Chem 110.

(2) Student is encouraged to attempt both tests. Test score that is not as high as that of the 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 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.

* Test dates to be confirmed during the first week of classes in September.

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
95-100	A+		9
90-94	A		8
85-89	A-		7
80-84	B+		6
75-79	B		5
70-74	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** or 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 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	*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.

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.

7. Important Dates

Week
V Test I in Lab: Oct. 3 (Tue) 11:30-13:20 for 110-01; 15:30-17:20 for 110-04.
VI Oct. 9 (Mon): Thanksgiving Day
X Nov. 7 (Tue): Last Day to Withdraw or Change to Audit…
Test II in Lab: Nov. 7 (Tue) 11:30-13:20 for 110-01; 15:30-17:20 for 110-04.
XI Nov. 13 (Mon): Remembrance Day Observed

December 11-16 & 18-19: Exam Period for Fall 2006

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

Articles in the Library Reserve Room for Chem 110, 120, & 121:
(at least one copy of each of the followings)

- "Fundamentals of Chemistry" by R.A. Burns, 4th Ed.
- "Chemistry: Principles & Reactions" by Masterton & Hurley, 5th Ed.
- "Chemistry, The Central Science" by Brown, LeMay, & Bursten, 9th & 10th Ed.

Solutions Manual, Student's Guide & "Math Review Toolkit" are also available.

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 on the College web site in the Policy Section.