



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

**CHEM 110-04**  
**General College Chemistry 1**  
**2011F**

## COURSE OUTLINE

### 1. Instructor Information

(a)	Instructor:	Larry Lee		
(b)	Office Hours:	M, W: 1:30-3:00 T 11:30-12:30 Thr 11:30-1:30 F 1::30-2:30		
(c)	Location:	Fisher 348D		
(d)	Phone:	370-3463	Alternative Phone:	
(e)	Email:	leel@camosun.bc.ca		
(f)	Website:	<a href="http://faculty.camosun.ca/larrylee/">http://faculty.camosun.ca/larrylee/</a>		

### 2. Required Materials

- (a) Texts The Central Science, Brown, Lemay, Bursten, Prentice Hall, Australian 2<sup>nd</sup> edition
- (b) Lab Chemistry 110 lab manual (in house)
- (c) Lab Laboratory Safety Glasses

### 3. Intended Learning Outcomes

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.

#### 4. Course Content and Schedule

Class schedule:	Mon	10:30 – 11:20	Fisher 212
	Wed	10:30 – 11:20	Fisher 302
	Thurs	10:30 – 11:20	Fisher 302
Lab schedule:	Tue	8:30 – 11:20	Fisher 354

- a) **Scheduled lectures** are 3 hours per week.
- b) **Scheduled laboratory experiments** are two hours per week. The first hour will be dedicated towards one hour lecture or tutorial/quiz. The remaining two hours will be used to conduct hands-on experimental work. Each student will be expected to conduct their **own work** unless otherwise instructed. No student will be allowed to conduct experiments without safety glasses or wearing open toe footwear. If you miss a scheduled experiment, you will be assigned a mark of zero unless you have a medical reason accompanied with an official medical note for your absence.
- c) **Assignments:** end of chapter questions are assigned approximately once every two weeks. They are not marked so hand-in is not required. However, students are strongly encouraged to do them because the tests will **relate strongly** to these assignment questions. Solutions will be posted outside my office or on my website (temporary).

#### 5. Basis of Student Assessment (Weighting)

(a)	Weekly quizzes	10% (during first hour or lab period)
(b)	2 mid terms exams	30%
(c)	2 take home exams	10%
(d)	Final Exam	30%
(e)	Lab work	20 %

- a) Quizzes are every week and will cover material from previous week.
- b) Midterms are 120 minutes in length and will be given during the first two hours of a lab period.

The midterm schedule is shown below:

Midterm 1 – October 18, 2011

Midterm 2 – November 15, 2011

- c) Final exam is written the week following the end of the term. The final is a maximum **180 minutes** in duration and **all** the material covered in class will be examined.

Exam notes:

1. All exams count and an absence from an exam will result in a zero unless a medical note or equivalent is provided. In the event that an excuse is given for a missed quiz or midterm, the weighting for that quiz or midterm will be transferred to final exam. Missed final exam will result in an incomplete grade and student will need to receive the Dean's permission to write a deferred exam.
2. Non-programmable calculators are allowed during any quiz or exam.
3. Exams can be written in pencil or pen. If written in pencil, no remarking will be allowed.
4. If you obtain a mark in the final exam which is better than the sum of the marks obtained in the lecture portion of the course and with the condition that you completed all four midterms, I will count only the final exam. If the final exam is worst then the lecture portion, the final exam will count as 30% of the overall grade.

Laboratory notes:

1. You must complete at least 75% of the lab work and obtain a mark of at least 50% in order to pass the overall course. If you fail to hand in more than three lab reports, you will not pass the lab portion of the course and you will not be allowed to write the final exam.

## 6. 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 at [camosun.ca](http://camosun.ca) or 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.

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.

## 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.