

## CHEMISTRY 060 Section 2

### Course Outline Winter 2004

#### 1. Instructor

Alan Gell  
F 344B  
Office Hours as posted  
Phone 370-3446  
[gella@camosun.bc.ca](mailto:gella@camosun.bc.ca)

#### 2 Intended Learning Outcomes

After successfully completing all components of this course students will be able to:

1. Identify a sample as an element, compound or mixture
2. Determine whether a transformation is chemical or physical
3. Convert numbers from scientific notation to normal notation
4. Express answers to calculations to the correct number of significant figures
5. Arrange a group of elements in order of increasing atomic radius or ionization energy
6. Write the electron configuration for an atom
7. Draw dot diagrams for molecules and ions
8. Name binary ionic compounds
9. Name binary covalent compounds
10. Write chemical equations
11. Balance chemical equations by inspection
12. Classify reactions
13. Calculate theoretical yield of products from grams or moles of reactants
14. Solve limiting reactant problems
15. Do mass and mole conversions
16. Determine molecular formulas
17. Assign oxidation states
18. Determine whether a reaction is an oxidation-reduction reaction or not
19. Determine energy changes in chemical reactions.

#### 3. Required Materials

##### (a) Texts

Fundamentals of Chemistry, 4<sup>th</sup> ed., Ralph A. Burns, Prentice Hall  
Chemistry 060 Lab Manual

##### (b) Safety Goggles. These are essential in the lab

**4. Instruction**

**Classroom** 4 hours, **Lab** 2 hours  
**14 weeks**

**5. Assessment**

- (a) **Lab exercises**
- (b) **Written exams**

**6. Grading system**

Letter grades will be assigned, as in the A&S grading system

**7. Sequence of topics (subject to modification):**

**Introduction**

**Matter and energy**

**Measurements**

**Elements, atoms, periodic table**

**Atomic structure**

**Names and formulas of inorganic compounds**

**Periodic properties of elements**

**Chemical bonds**

**Chemical quantities**

**Chemical reactions**

**Stoichiometry: calculations based on chemical equations**

**Gases**

**8. Prerequisites:**

Math 10 or assessment