

Simon Fraser University
Science

CHEM 121 - 4

**General Chemistry and Laboratory I
D01.00
Semester 2009-1**

Instructor:	Lecture Instructor: Dr. L. Hanlan Laboratory Instructor: Dr. S. Lavieri
Description/topics:	Atomic structure and chemical bonding; gases, liquids, solids, and solutions; thermochemistry; chemical reactions; periodic properties; stoichiometry. 3 lecture hours/week; 4 laboratory hours/2 weeks; one hour tutorials. Lecture Topics: 1 Lecture. Introduction. 2 Lectures. Atoms, Molecules and Ions. Ch. 2. 2 Lectures. Stoichiometry. Ch. 3. 3 Lectures. Chemical Reactions. Ch. 4/18*. 4 Lectures. Gases. Ch. 5 MIDTERM I EXAM. 3 Lectures. Thermochemistry. Ch. 9. 3 Lectures. Atomic Theory. Ch. 12. 2 Lectures. Periodic Properties. Ch. 12. 4 Lectures. Bonding Concepts. Ch. 13. MIDTERM II EXAM 4 Lectures. Covalent Bonding Orbitals. Ch. 14. 3 Lectures. Liquids and Solids. Ch. 16. 3 Lectures. Solutions. Ch. 17. Laboratory Experiments: Exp. 1. Introduction (all students attend) Exp. 2. Chemical Reactions and Equations. Exp. 3. Sequence of Copper Reactions. Exp. 4. Molar Mass of a Gas. Exp. 5. Synthesis and Analysis of a Complex Salt of Iron. Exp. 6. Spectrophotometric Analysis of Nickel(II) Ions in Solution. Exp. 7. Colligative Properties

Grading: 30% Two Midterm Exam (each 15%); 10% LON CAPA Problem Sets; 20% Laboratory; 40% Final Exam.

Required texts: Steven S. Zumdahl, "Chemical Principles". 6th Edition. 2009. Houghton Mifflin Co.
A Lab Manual will be distributed at the first laboratory session.

Recommended texts: None

Materials/supplies: i-clicker, Scientific calculator: TBA for Midterms and Final exam, safety glasses, millimeter graph paper.

Prerequisite/corequisite: **Prerequisite:** B.C. High School Chemistry 12 or CHEM 111 (or 101 & 106).
Corequisite: MATH 151(or 154) and PHYS 120 (or 101) are recommended.
Students may not count both CHEM 120 and 121 for credit.
Students may not count both CHEM 121 and (CHEM 102 and 115) for credit.

Notes: **Purchase of i-clicker available at SFU Bookstore.**
Students must pass both the lecture and laboratory components individually to obtain a passing grade in Chem 121.
CHEM 121 Laboratory sessions begin in the first week of classes.

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