

General Chemistry and Laboratory I

Chemistry 121

Section: D100

Term: 2003 Summer

Instructor: Lecturer: Dr. K. Ghandi. Room: C9039. Phone: 291-5653.

Laboratory: Dr. S. Lavieri. Room: C-8066. Phone: 291-3537.

Discussion Topics: Atomic structure and chemical bonding; gases, liquids, solids, and solutions;

thermochemistry; chemical reactions; periodic properties; chiometry.

3 lecture hours/week; 4 laboratory hours/2 weeks; open 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.

3 Lectures. Thermochemistry. Ch. 9.

EXAM I.

3 Lectures. Atomic Theory. Ch. 12.

2 Lectures. Periodic Properties. Ch. 12.

4 Lectures. Bonding Concepts.Ch. 13.

4 Lectures. Covalent Bonding Orbitals.Ch. 14.

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EXAM II.

3 Lectures. Liquids and Solids. Ch. 16.

3 Lectures. Solutions. Ch. 17.

* Selected section.

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% Midterm Exams (2); 10% CAPA Problem Sets; 20% Laboratory; 40% Final Exam.

Required Texts: Steven S. Zumdahl, "Chemical Principles". 4th Edition. 2002. Houghton Mifflin Co.

A Lab Manual will be distributed at the first laboratory lecture.

Recommended Texts: None

Materials/Supplies: Scientific calculator, safety glasses(or prescription 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.

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Students may not count both CHEM 120 and 121 for credit.

Students may not count both CH

Notes: A passing grade in the laboratory section must be achieved for a passing grade in Chem 121.

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