

General Chemistry and Laboratory I

Chemistry 121

Section: D100

Term: 1999 Spring

Instructor: Lecturer: Dr. R. Hill. Office: SSB-8106.

Lab Instructor: Dr. J. Wolf. Office: C-9034.

Discussion 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; open tutorials.

Lecture Topics:

1 Lecture. Introduction. Chapter 1.

2 Lectures. Atoms/Atomic Theory. Ch. 2.

1 Lecture. Mole/Stoichiometry. Ch. 3.

3 Lectures. Chemical Reactions and Equations. Ch. 4,5.

4 Lectures. Gases. Ch. 6, 8.

3 Lectures. Thermochemistry. Ch. 7. EXAM I.

3 Lectures. Electrons in Atoms.Ch. 9.

2 Lectures. Periodic Properties. Ch. 10.

7 Lectures. Chemical Bonding.Ch. 11,12. EXAM II.

2 Lectures. Transition Metal Chemistry.Ch. 25*.

2 Lectures. Liquids/Solids. Ch. 13.

2 Lectures. Solutions. Ch. 14.

2 Lectures. Nuclear Chemistry. Ch. 26*. (Selected Sections*)

Laboratory Experiments:(on alternate weeks)

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Week 1. Introduction (all students attend)

Week 2/3. Chemical Reactions and Equations.

Week 4/5. Sequence of Copper Reactions.

Week 6/7. Molar Mass of a Gas.

Week 8/9. Synthesis and Analysis of a Complex Salt of Iron.

Week 10/11. Spectrophotometric Analysis of Ni²⁺ Ions in Solution.

Week 12/13. Colligative Properties.

Grading: Midterm Exams (2); Problem Sets; Lab Reports; Final Exam.

Required Texts: Petrucci & Harwood, "General Chemistry, Principles and Modern Applications", 7th Edition 1997. Model Kit included. Prentice Hall.

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

Recommended Texts: None

Materials/Supplies: None

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 12

Notes: None

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