
GRANDE PRAIRIE REGIONAL COLLEGE
DEPARTMENT OF SCIENCE
THIRTIETH SESSION 1995/96

CHEMISTRY 1020: Introductory University Chemistry II

PREREQUISITE: CH 1010 or equivalent

TEXT BOOK: *CHEMISTRY* The Molecular Nature of Matter and Change
Martin Silberberg
Mosby, Toronto ©1996

LABORATORY: Chemistry 101/102 Experiments, University of Alberta, 1995/96
Lab coats and safety glasses are compulsory, and are available at the Bookstore.

SEMINAR: Seminars consist of problem solving, discussion of weekly problem sets, quizzes, and a brief introduction to the upcoming Laboratory experiment.

COURSE EVALUATION

February Midterm	15.0%
March Midterm	15.0%
April Exam	40.0%
Assignments and Quizzes	10.0%
Laboratory	20.0%
Total	100.0%

Assignments will be distributed on a weekly basis. Completion of assignments is essential to successfully understanding the course.

Attendance to all lectures and seminars is strongly recommended. Laboratory attendance to each specific experiment is compulsory; a passing grade in the laboratory component is required to pass the course. A doctor's medical note is required for all excused absences!

Students are required to maintain an overall average of 50% or better to pass the course.

CH1020 COURSE CONTENT

- A: Aqueous Equilibria** Chapter 18 Pages 803–836
- A.1 Solubility products
 - A.2 Complex ion formation
 - A.3 Application: selective precipitation
- B: Thermodynamics** Chapter 19 Pages 837–873
- B.1 Entropy and the Second Law
 - B.2 Entropy of the system and the surroundings
 - B.3 Free energy
 - B.4 Entropy and free energy in chemical reactions
 - B.5 The effect of temperature on reactions
 - B.6 Free energy and equilibrium
- C: Electrochemistry** Chapter 20 Pages 874–930
- C.1 Half cells
 - C.2 Galvanic cells
 - C.3 Cell potential, electrical Work, and free energy
 - C.4 Dependence on concentration—the Nernst equation
 - C.5 Electrolytic cells
- D: Chemical Kinetics** Chapter 15 Pages 644–693
- D.1 Reaction rates
 - D.2 Introduction to rate laws
 - D.3 Determining rate law form
 - D.4 Integrated rate law
 - D.5 Reaction mechanisms
 - D.6 Catalysis
- E: Structure and Bonding** Chapter 10 Pages 394–411
- E.1 VSEPR theory
 - E.2 Molecular orbitals
- F: Transition Elements and Coordination Compounds** Chapter 22 Pages 972–1011
- F.1 Overview of the transition metals
 - F.2 Coordination compounds
 - F.3 Isomerism