GRANDE PRAIRIE REGIONAL COLLEGE
DEPARTMENT OF SCIENCE AND TECHNOLOGY
2003/2004

CHEMISTRY 1010:	Introductory University Chemistry I
PREREQUISITE:	Chemistry 30 or equivalent
TRANSFER CREDITS:	CH1010 to U. of Alberta CHEM 101, 3 credits CH1010/1020 to U. of Calgary CHEM 201/203, 6 credits
INSTRUCTORS:	A2 Barry Ramaswamy Office J218 539-2072 B2 Les Rawluk Office J214 539-2738 C2 Les Rawluk Office J214 539-2738
TEXT BOOK:	*CHEMISTRY* 6^{th} *Edition* Steven S. Zumdahl and Susan A. Zumdahl Houghton Mifflin Company ©2003
WEBSITE:	http://webct.gprc.ab.ca
EMAIL:	bramaswamy@gprc.ab.ca lrawluk@gprc.ab.ca
LABORATORY:	Introductory University Chemistry I (Chem 101 and 103), University of Alberta, 2003/2004 **Lab coats** and **safety glasses** are **compulsory**, and are available at the Bookstore. A Laboratory Breakage Deposit of $30 per Chemistry course must be paid to the Cashier (Room C315), and the receipt must be shown to the Laboratory Technician (Mrs. Omana Pillay) during the first Laboratory class.
SEMINAR:	Seminars consist of problem solving, discussion of lecture materials, and a brief introduction to the upcoming Laboratory experiment. A short quiz will be part of most seminars.

COURSE EVALUATION

October Midterm	15%
November Midterm	20%
Final Exam	38%
Quizzes/Assignments	5%
Laboratory Reports	12%
Laboratory Exam	10%

Assignments will be distributed on a weekly basis. Answers and complete solutions will be available for the student in both hardcopy and electronic format. Completion of assignments is strongly recommended to succeed in 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 must obtain an overall average of 50% or better to pass the course. Students are encouraged to participate in class discussions, and help is available outside the classroom. **Appointments are not necessary.**

According to GPRC policy (see page 36 of the 2003/2004 calendar), a repeat final examination will not be granted in this course.

CH1010 COURSE CONTENT

A: Matter and Stoichiometry — Chapters 1, 2, 3, 4 — Pages 1–187

- A.1 Units, dimensional analysis
- A.2 Naming simple compounds
- A.3 The mole
- A.4 Empirical and molecular formula of a compound
- A.5 Calculations involving a limiting reagent
- A.6 Aqueous solutions and molarity
- A.7 Precipitation reactions

B: Atomic Structure — Chapters 2 and 7 — Pages 46–61 and Pages 289–344

- B.1 Introduction to Atomic Structure
- B.2 Electromagnetic radiation
- B.3 Atomic spectra and the Bohr model
- B.4 Quantum mechanics and the atom
- B.5 Orbital shapes and energies
- B.6 Many-electron atoms
- B.7 Building of the periodic table
- B.8 Trends in atomic properties

C: Chemical Bonding — Chapters 8 and 9 — Pages 347–436

- C.1 Types of chemical bonds and electronegativity
- C.2 Ionic bonding
- C.3 Lattice energy
- C.4 Covalent bonding
- C.5 Bond energies and chemical reactions
- C.6 Lewis structures; octet rule, resonance, formal charge, exceptions
- C.7 VSEPR theory and molecular shape
- C.8 Hybridization
- C.9 Molecular orbital theory

D: States of Matter — Chapters 5 and 10 — Pages 189–239 and Pages 449–508

- D.1 Intermolecular forces
- D.2 Gases
- D.3 Liquids
- D.4 Solids
- D.5 Phase diagrams

E: Chemistry of the Elements — Chapters 2, 4, 19 and 20 — Pages 58–60, 158–179, 913–982

- E.1 Organizing principles of the periodic table
- E.2 Acids and bases
- E.3 Oxidizing and reducing agents
- E.4 Alkali metal, alkaline earth metals, p-block elements