GRANDE PRAIRIE REGIONAL COLLEGE DEPARTMENT OF SCIENCE AND TECHNOLOGY 2004/2005

CHEMISTRY 1010: Introductory University Chemistry I

Section A3

CONTACT HOURS: 3 Lecture hours per week; 1 Seminar hour per week; 3 Laboratory hours

per week; Total of 105 contact hours

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

INSTRUCTOR: Barry Ramaswamy O±ce J218 539-2072

EMAIL: bramaswamy@gprc.ab.ca

WEBSITE: http://blackboard.gprc.ab.ca

OFFICE HOURS: Unrestricted

TEXT BOOK: Required: CHEMISTRY 6th Edition

Steven S. Zumdahl and Susan A. Zumdahl

Houghton Mifflin Company ©2003

LABORATORY: Required lab manual: Introductory University Chemistry I (Chem 101)

and 103), University of Alberta, 2004/2005

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			
February Midterm	15%		
March Midterm	20%		
Final Exam	38%		
Quizzes/Assignments	5%		
Laboratory Reports	12%		
Laboratory Exam	10%		

Alpha Grade	Approximate Percentage Conversion
A+	90-100
A	85-89
A-	80-84
B+	76-79
В	73-75
B-	70-72
C+	67-69
C	64-66
C-	60-63
D+	55-59
D	50-54
F	0-49

Assignments will be distributed on a weekly basis. 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 37 of the 2004/2005 calendar), a repeat final examination will not be granted in this course.

CH1010 course content

A:	Matte	r and Stoichiometry	Chapters 1, 2, 3, 4	Pages 1-187		
	A.1	Units, dimensional analysis	1 , , , ,	C		
	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:	Atom	ic Structure Chapters 2 and 7	7 Pages 46{61 ar	nd Pages 289-344		
	B.1	Introduction to Atomic Structure	\mathcal{E}	S		
	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:	Chem	ical Bonding C	Chapters 8 and 9	Pages 347-436		
	C.1	Types of chemical bonds and electrone	<u>=</u>	S		
	C.2	Ionic bonding	2			
	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				
	C.10	Polymers (if time permits)				
D:	States	of Matter Chapters 5 and 10	Pages 189-239 an	d Pages 449-508		
	D.1	Intermolecular forces	_	_		
	D.2	Gases				
	D.3	Liquids, solutions				
	D.4	Solids				
	D.5	Phase diagrams, changes of state				
	D.6	Semi-and superconducting materials (i	f time permits)			
E:	Chem	Chemistry of the Elements				
	E.1	Organizing principles of the periodic ta				
	E.2	Acids and bases				
	E.3	Oxidizing and reducing agents				
	E.4	Alkali metal, alkaline earth metals, p-b	lock elements			