
GRANDE PRAIRIE REGIONAL COLLEGE
DEPARTMENT OF SCIENCE AND TECHNOLOGY
1998/99

CHEMISTRY 1010: Introductory University Chemistry I

PREREQUISITE: Chemistry 30 or equivalent

INSTRUCTORS: A2 Som Pillay Office E309 539-2985
 B2 Barry Ramaswamy Office J218 539-2072
 C2 Les Rawluk Office J214 539-2738

TEXT BOOK: *CHEMISTRY*

Raymond Chang
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LABORATORY: Chemistry 101 Experiments, University of Alberta, 1998/99
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.

COURSE EVALUATION

October Midterm	October 8, 1998	6:30 - 8:00 p.m.	20%
November Midterm	November 12, 1998	6:30 - 8:00 p.m.	20%
Final Exam			38%
Assignments			2%
Laboratory Reports			10%
Laboratory Exam	November 26, 1998	6:30 - 8:00 p.m.	10%

Any student concerns regarding the evening timetabling of exams must be addressed by September 15, 1998. Scheduling requests after this date will not be considered.

Assignments will be distributed on a weekly basis. Completion of assignments is essential 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 are required to maintain an overall average of 50% or better to pass the course.

CH1010 COURSE CONTENT

A: Matter and Stoichiometry	Chapters 1, 2, 3, 4	Pages 2-153
A.1	Units, uncertainty, significant figures, 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: Gases	Chapter 5	Pages 154-201
B.1	Gas laws of Boyle, Charles, and Avogadro	
B.2	Ideal gas law	
B.3	Gas stoichiometry	
B.4	Partial pressures	
B.5	Kinetic molecular theory	
B.6	Diffusion and Effusion	
B.7	Real gases	
C: Chemical Equilibrium	Chapter 14	Pages 558-595
C.1	Equilibrium condition	
C.2	Mass-action expression and the equilibrium constant	
C.3	Heterogeneous equilibria	
C.4	Applications of the equilibrium constant	
C.5	Le Châtelier's Principle	
D: Acids and Bases	Chapters 15 and 16	Pages 596-691
D.1	The nature of acids and bases	
D.2	Acid strength and the pH scale	
D.3	Calculating the pH of strong/weak acids	
D.4	Bases	
D.5	Salts	
D.6	Mixtures of weak acids and bases	
D.7	Common ion effect	
D.8	Buffer systems	
D.9	Acid/base titrations	
D.10	Slightly soluble salts	
D.11	Complex ion equilibria	
E: Atomic Structure	Chapters 7 and 8	Pages 242-327
E.1	Electromagnetic radiation	
E.2	Atomic spectra and the Bohr model	
E.3	Quantum mechanics and the atom	
E.4	Orbital shapes and energies	
E.5	Many-electron atoms	
E.6	Building of the periodic table	
E.7	Trends in atomic properties	
<i>Optional</i>		
F: Chemistry of the Main Group Elements	Chapters 20 and 21	Pages 816-869
F.1	Alkali metals	
F.2	Alkaline earths	
F.3	Halogens	
F.4	Noble gases	
F.5	Other main group elements	