
GRANDE PRAIRIE REGIONAL COLLEGE
DEPARTMENT OF SCIENCE
TWENTY-NINTH SESSION 1994/95

CHEMISTRY 1020: Introductory University Chemistry, SECTION A3

PREREQUISITE: CH 1010 or equivalent

INSTRUCTOR: Les Rawluk, Office #J214, Phone 539-2738

TRANSFER CREDIT: U of Alberta: CH1010 and CH1020 together transfer to
Chem 100, 6 credits

U of Calgary: Chem 203, 3 credits

U of Lethbridge: Chem 2000, 3 credits

LECTURES: Monday, Wednesday, Friday 12:00 – 12:50 in J202

TEXT BOOK: CHEMISTRY 3^d Edition

Steven S. Zumdahl

D.C.Heath and Company, Toronto

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LABORATORY: Chemistry 100/104 Experiments, University of Alberta, 1994/95
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	10.0%
March Midterm	10.0%
April Exam	45.0%
Assignments	10.0%
Quizzes	5.0%
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.

CH 1020 COURSE CONTENT

A: Chemical Equilibrium	Chapter 12	Pages 595–635
A.1 The Equilibrium Condition and Equilibrium Constant		
A.2 Equilibrium Expression Involving Pressures		
A.3 Heterogeneous Equilibria		
A.4 Applications of the Equilibrium Constant		
A.5 Le Châtelier's Principle		
B: Acids and Bases	Chapter 14	Pages 637–695
B.1 The Nature of Acids and Bases		
B.2 Acid Strength and the pH Scale		
B.3 Calculating the pH of Strong/Weak Acids		
B.4 Bases		
B.5 Polyprotic Acids		
B.6 Salts		
C: Applications of Aqueous Equilibria	Chapter 15	Pages 697–765
C.1 Common Ion Effect		
C.2 Buffers		
C.3 Titrations		
C.4 Solubility Equilibria and the Solubility Product		
C.5 Complex Ion Equilibria		
D: Thermodynamics: Entropy and Free Energy	Chapter 16	Pages 767–809
D.1 Spontaneous Processes and Entropy		
D.2 Entropy: Physical Changes and the Second Law		
D.3 Effect of Temperature on Spontaneity		
D.4 Free Energy		
D.5 Entropy and Free Energy in Chemical Reactions		
D.6 Pressure Dependence of Free Energy		
D.7 Free Energy and Equilibrium		
D.8 Free Energy and Work		
E: Electrochemistry	Chapter 17	Pages 811–859
E.1 Galvanic Cells		
E.2 Standard Reduction Potentials		
E.3 Cell Potential, Electrical Work, and Free Energy		
E.4 Cell Potential Dependence on Concentration		
E.5 Electrolysis		
F: Chemical Kinetics	Chapter 12	Pages 543–593
F.1 Reaction Rates		
F.2 Introduction to Rate Laws		
F.3 Determining Rate Law Form		
F.4 Integrated Rate Law		
F.5 Reaction Mechanisms		
F.6 Catalysis		