Jordan University of Science & Technology
Department of Applied Chemistry
General Chemistry, CHEM 102
Course Outline

Instructor's Name:
Office Location:
Office hours:

TEXTBOOK: CHEMISTRY The Central Science 12th Edition, by Brown, LeMay, Bursten, Murphy and Woodward 2014

Chapter	Sections	Hours	Suggested Problems
Chapter 5	***Thermochemistry*** 5.1 The Nature of Energy 5.2 The First Law of Thermodynamics 5.3 Enthalpy 5.4 Enthalpies of Reaction 5.5 Calorimetry 5.6 Hess's Law 5.7 Enthalpies of Formation	(5)	
Chapter 11	***Liquids and Intermolecular Forces*** 11.1 A Molecular Comparison of Gases, Liquids and Solids 11.2 Intermolecular Forces 11.3 Select Properties of Liquids 11.4 Phase Changes 11.5 Vapor Pressure	(3)	
Chapter 13	***Properties of Solutions*** 13.1 The Solution Process 13.2 Saturated Solutions and Solubility 13.3 Factors Affecting Solubility 13.4 Expressing Solution Concentration 13.5 Colligative Properties	(4)	
	Exam I (30%)		
Chapter 14	***Chemical Kinetics*** 14.1 Factors that Affect Reaction Rate 14.2 Reaction Rates 14.3 Concentration and Rate Law 14.4 The Change of Concentration with Time 14.5 Temperature and Rate 14.6 Reaction Mechanisms 14.7 Catalysis	(6)	
Chapter 15	***Chemical Equilibrium*** 15.1 The Concept of Equilibrium 15.2 The Equilibrium Constant 15.3 Understanding and Working with Equilibrium Constants 15.4 Heterogeneous Equilibria 15.5 Calculating Equilibrium Constants	(5)	

	15.6 Applications of Equilibrium Constants 15.7 Le Chatelier's Principle		
Chapter 16	***Acid-Base Equilibria*** 16.1 Acids and Bases: A Brief Review 16.2 Brønsted-Lowery Acids and Bases 16.3 The Autoionization of Water 16.4 the pH Scale 16.5 Strong Acids and Bases 16.6 Weak Acids 16.7 Weak Bases 16.8 Relationship Between K_a and K_b 16.9 Acid-Base Properties of Salt Solutions 16.10 Acid-Base Behavior and Chemical Structure 16.11 Lewis Acids and Bases	(6)	
	Exam II (30%)		
Chapter 17	***Additional Aspects of Aqueous Equilibria*** 17.1 The Common Ion Effect 17.2 Buffered Solutions	(2)	
Chapter 19	***Chemical Thermodynamics*** 19.1 Spontaneous Processes 19.2 Entropy and The Second Law of Thermodynamics 19.3 Molecular Interpretation of Entropy 19.4 Entropy Changes in Chemical Reactions 19.5 Gibbs Free Energy 19.6 Free Energy and Temperature 19.7 Free Energy and the Equilibrium Constant	(6)	
Chapter 20	***Electrochemistry*** 20.1 Oxidation States and Oxidation-Reduction Reactions 20.2 Balancing Redox Equations 20.3 Voltaic Cells 20.4 Cell Potentials Under Standard Conditions 20.5 Free Energy and Redox Reactions	(4)	
	Final Exam (40%)		

1. **كل طالب يتغيب عن امتحان يجب ان يقدم عذره خلال أسبوع (كحد أقصى من عقد الامتحان) و إلا يفقد حقه بتقديم الامتحان التكميلي.**
2. **أي محاوله غش يقوم بها الطالب يطبق عليه نظام تأديب ألطلبه و في حاله ضبط الطالب متلبسا بالغش أثناء تاديه الامتحان تطبق عليه المادة (6) من نظام تأديب الطلبة.**
3. **أذا تغيب الطالب عن أي مساق أكثر من 20% بعذر أو بدون عذر فإنه يفصل من ذلك المساق حسب تعليمات منح درجه البكالوريوس.**