

Jordan University of Science & Technology
Department of Applied Chemistry
General Chemistry, CHEM 103
Course Outline

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

Chapter	Sections	Hours	Suggested Problems
Chapter 1	<i>Introduction: Matter and Measurement</i> 1.4 Units of Measurement 1.5 Uncertainty in Measurement 1.6 Dimensional Analysis	(3)	
Chapter 2	<i>Atoms Molecules and Ions</i> 2.5 The Periodic Table 2.7 Ions and Ionic Compounds	(1)	
Chapter 3	<i>Stoichiometry: Calculations with Chemical Formulas and Equations</i> 3.1 Chemical Equations 3.3 Formula weight 3.4 Avogadro's Number and the Mole 3.6 Quantitative Information from Balanced Equations 3.7 Limiting Reagents	(4)	
Chapter 4	<i>Reactions in Aqueous Solutions</i> 4.5 Concentrations of Solutions 4.6 Solution Stoichiometry and Chemical Analysis	(3)	
Chapter 8	<i>Basic Concepts of Chemical Bonding</i> 8.1 Lewis Symbols and the Octet Rule 8.2 Ionic Bonding (includes <u>Ionic Radius Trends</u> in Chapter 7-section 7.3) 8.3 Covalent Bonding 8.4 Bond Polarity and Electronegativity 8.5 Drawing Lewis Structures 8.6 Resonance Structures	(5)	
Chapter 9	<i>Molecular Geometry and Bonding Theories</i> 9.1 Molecular Shapes 9.2 The VSEPR Model 9.3 Molecular Shape and Molecular Polarity	(2)	
Midterm Exam (50%)			

Chapter 10	Gases 10.1 Characteristics of Gases 10.2 Pressure 10.3 The Gas Laws 10.4 The Ideal Gas Equation 10.5 Further Applications of the Ideal Gas Equation 10.6 Gas Mixtures and Partial Pressures 10.7 The Kinetic-Molecular Theory of Gases 10.8 Molecular Effusion and Diffusion	(5)	
Chapter 13	Properties of Solutions 13.4 Expressing Solution Concentration 13.5 Colligative Properties	(3)	
Chapter 14	Chemical Kinetics 14.1 Factors that Affect Reaction Rates 14.2 Reaction Rates 14.3 Concentration and Rate Law 14.4 The Change of Concentration with Time 14.5 Temperature and Rate	(5)	
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)	
Chapter 17	Additional Aspects of Aqueous Equilibria 17.1 The Common Ion Effect 17.2 Buffered Solutions	(2)	
Final Exam (50%)			

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 الطلبة و في حاله ضبط الطالب متلبسا بالغش أثناء تاديه الامتحان تطبق عليه المادة (6) من نظام تأديب الطلبة.
3. إذا تغيب الطالب عن أي مساق أكثر من 20% بعذر أو بدون عذر فإنه يفصل من ذلك المساق حسب تعليمات منح درجه البكالوريوس.