Jordan University of Science & Technology
Department of Applied Chemistry
General Chemistry, CHEM 101
Course Outline

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TEXTBOOK: CHEMISTRY THE CENTRAL SCIENCE 12th Edition, by Brown, LeMay, Bursten, Murphy and Woodward 2014

Chapter	Sections	Hours
Chapter 1	***Introduction: Matter and Measurement*** 1.2 Classifications of Matter 1.3 Properties of Matter 1.4 Units of Measurement 1.5 Uncertainty in Measurement 1.6 Dimensional Analysis	(4)
Chapter 2	**Atoms, Molecules, and Ions** 2.1 The Atomic Theory of Matter 2.2 The Discovery of Atomic Structure 2.3 The Modern View of Atomic Structure 2.4 Atomic Weights 2.5The Periodic Table 2.6Molecules and Molecular Compounds 2.7Ions and Ionic Compounds 2.8Naming Inorganic Compounds	(4)
Chapter 3	***Stoichiometry: Calculations with Chemical Formulas and Equations*** 3.1 Chemical Equations 3.2 Some Simple Patterns of Chemical Reactivity 3.3 Formula Weights 3.4 Avogadro's Number and the Mole 3.5 Empirical Formulas from Analysis 3.6 Quantitative Information from Balanced Equations 3.7 Limiting Reagents	(5)
Chapter 4	***Reactions in Aqueous Solutions*** 4.1 General Properties of Aqueous Solutions 4.2 Precipitation Reactions 4.3 Acids, Bases and Neutralization Reactions 4.4 Oxidation-Reduction Reactions 4.5 Concentrations of Solutions 4.6 Solution Stoichiometry and Chemical Analysis	(4)
Chapter 6	***Electronic Structure of Atoms*** 6.1 The Wave Nature of Light 6.2 Quantized Energy and Photons 6.3 Line Spectra and the Bohr Model 6.4 The Wave Behavior of Matter 6.5 Quantum Mechanics and Atomic Orbitals	(6)

	6.6 Representations of Orbitals 6.7 Many-Electron Atoms 6.8 Electron Configurations 6.9 Electron Configurations and the Periodic Table	
Chapter 7	***Periodic Properties of the Elements*** 7.1 Development of the Periodic Table 7.2 Effective Nuclear Charge 7.3 Sizes of Atoms and Ions 7.4 Ionization Energy 7.5 Electron Affinity 7.6 Metals, Nonmetals and Metalloids	(4)
Chapter 8	***Basic Concepts of Chemical Bonding*** 8.1 Lewis Symbols and the Octet Rule 8.2 Ionic Bonding 8.3 Covalent Bonding 8.4 Bond Polarity and Electronegativity 8.5 Drawing Lewis Structures 8.6 Resonance Structures 8.7 Exceptions to the Octet Rule 8.8 Strengths of Covalent Bonds	(5)
Chapter 9	***Molecular Geometry and Bonding Theories*** 9.1 Molecular Shapes 9.2 The VSEPR Model 9.3 Molecular Shape and Molecular Geometry 9.4 Covalent Bonding and Orbital Overlap 9.5 Hybrid Orbitals 9.6 Multiple Bonds 9.7 Molecular Orbitals 9.8 Period 2 Diatomic Molecules	(5)
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)

1. **كل طالب يتغيب عن امتحان يجب ان يقدم عذره خلال أســـبوع (كحد أقصـــى من عقد الامتحان) و إلا يفقد حقه بتقديم الامتحان التكميلي.**
2. **أي محاوله غش يقوم بها الطالب يطبق عليه نظام تأديب الطلبه و في حاله ضـــبط الطالب متلبســـا بالغش أثناء تأدية الامتحان تطبق عليه المادة (6) من نظام تأديب الطلبة.**
3. **أذا تغيب الطالب عن أي مســاق أكثر من 20% بعذر أو بدون عذر فإنه يفصــل من ذلك المســاق حســب تعليمات منح درجه البكالوريوس.**