Honour Chemistry Unit 1 Outline: Basic Chemistry

Chapters 3 & 4: Scientific Measurement & Problem Solving in Chemistry

Classes	Topics	Suggested Reading	✓	Assignments	✓
1	Course Outline				
2	Lab Safety, Qualitative and Quantitative Measurements, Scientific Notations, Exact Numbers, Uncertainty, Theoretical and Experimental Values, Percent Yield and Percent Error, Significant Digits, SI Units **Lab Safety Quiz (September 7, Fri)**	Lab Safety Contract and Video 3.1 The Importance of Measurement (pg. 51 – 53) 3.2 Uncertainty in Measurements (pg. 54 – 61) 3.3 International System of Units (pg. 63 – 67)		pg. 53 #2 to 4 pg. 58 #5, 6; pg. 59 #7, 8; pg. 60 #9, 10; pg. 61 #11, 12;pg. 62 #13 to 16 pg. 67 #17 to 22	
2	Mass vs. Weight Density $\left(D = \frac{m}{V}\right)$, Temperature (Kelvin and Degree Celsius), Unit Factor (Analysis) Method, Multiple Unit Factors	3.4 Density (pg. 68 – 71) 3.5 Temperature (pg. 74 – 77) 4.1 Skills Used in Solving Problems (pg. 83 – 88) 4.2 Simple Conversion Problems (pg. 89 – 95) 4.3 More-Complex Problems (pg. 97 – 102)		pg. 71 #23, 24; pg. 72 #25, 26, 28 pg. 75 #30 to 35 pg. 93 #9, 10; pg. 94 #11 to 13; pg. 95 #15 to 19 pg. 100 #28 to 31	
3	**Chapters 3 and 4 Quiz** **(September 14, Fri)**			**pg. 78–79 #36 to 61, 64 to 70** **pg. 103–104 #33 to 50, 52 to 55**	

Chapters 2 & 5: Matter and Change & Atomic Structure and the Periodic Table

Classes	Topics	Suggested Reading	✓	Assignments	✓
1	Matter, State of Matter, Physical Properties, Classification of Matter (Pure Substance, Elements, Compounds, Atoms, Molecules, Heterogeneous vs. Homogeneous Mixtures), Methods of Separating Mixtures, Physical vs. Chemical Changes	2.1 Matter (pg. 29 – 31) 2.2 Mixtures (pg. 32 – 34) 2.3 Elements and Compounds (pg. 36 – 40)		pg. 31 #1 to 4 pg. 34 #5, 6; pg. 35 #7 to 12 pg. 39 #13; pg. 40 #14 to 18	
2	Chemical Reactions, Reactants and Products, Chemical Word Equation, Conservation of Mass, Atomic Theories (Dalton, J. J. Thomson, Nuclear, Quantum), Atomic Number, Mass Number, Isotopes, Subatomic Particles	2.4 Chemical Reactions (pg. 41 – 42) 5.1 Atoms (pg. 107 – 108) 5.2 Structure of the Nuclear Atom (pg. 108 – 112) 5.3 Distinguishing Between Atoms (pg. 113 – 121)		pg. 43 #19 to 23 pg. 115 # 7, 8; pg. 116 #9 to 11; pg. 117 #12, 13; pg. 120 #14, 15; pg. 121 #16 to 26	
3	Periodic Table of Elements, Periods and Groups, Periodic Law, Metals vs. Non-Metals, Metalloids, Atomic Orbitals, Valence Electrons	5.4 The Periodic Table: Organizing the Elements (pg. 123 – 126)		pg. 126 #28 to 30, 32	
4	**Chapters 2 and 5 Quiz** **(September 24, Mon)**			**pg. 47–48 #24 to 43** **pg. 129 #33 to 50, 52, 53**	

Chapter 6: Chemical Names and Formulas

Classes	Topics	Suggested Reading	✓	Assignments	✓
1	Molecules, Ions (Cations and Anions), Molecular and Ionic Compounds, Chemical Formulas, Diatomic and Polyatomic Elements, Law of Definite and Multiple Proportions	6.1 Introduction to Chemical Bonding (pg. 133 – 137) 6.2 Representing Chemical Compounds (pg. 138 – 142)		pg. 136 #1 and 2; pg. 137 #3 to 9 pg. 142 #10, 11, 14 and 15	
2	Monoatomic Ions, Polyatomic (Complex) Ions, Oxyanions, Nomenclature of Ionic Compounds and Hydrates	6.3 Ionic Charges (pg. 143 – 148) 6.4 Ionic Compounds (pg. 149 – 156)		pg. 145 #16, 17; pg. 146 #18, 19; pg. 148 #20, 22 and 23 pg. 151 # 24, 25; pg. 153 # 26, 27; pg 155 #28, 29; 156 # 30 to 36	
3	Naming Molecular Compounds and Acids, Names and Formulas of some Common Molecular Compounds	6.5 Molecular Compounds and Acids (pg. 158 – 160) 6.6 Summary of Naming and Formula Writing (pg. 161 – 162)		pg. 159 # 37, 38; pg. 160 # 39 to 42 pg. 163 #43 and 44	
4	**Lab #1: Lab Safety, Measuring Techniques & Diagnostic Tests for H_2, O_2, and CO_2 (September 28, Fri)**	Lab #1 Procedure		**Lab #1 Report (Due October 4, Thurs)**	
5	**Chapters 6 Quiz (October 1, Mon)**			**pg. 166–167 #45 to 71, 73**	

Chapter 7: Chemical Quantities

Classes	Topics	Suggested Reading	✓	Assignments	✓
1	Mole, Avogadro's Number, Molar Mass (Grams Atomic Mass, Grams Molecular Mass, Grams Formula Mass), Conversions between Mass, Mole, and Molar Mass $\left(n = \frac{m}{M}\right)$	7.1 The Mole (pg. 171 to 179) 7.2 Mole-Mass Relationship (pg. 182 – 183)		pg. 174 #3, 4; pg. 175 #5, 6; pg. 179 #7, 8; pg. 181 #9 to 11, 13, 14 pg. 183 #16 to 19; pg. 186 #24, 27	
2	Percent Composition, Empirical and Molecular Formulas	7.3 Percent Composition and Chemical Formulas (pg. 188 – 194)		pg. 189 #29, 30; pg. 191 #31 to 33; pg. 192 #34; pg. 193 # 35, 36; pg. 194 #37, 38; pg. 195 #39 to 43	
3	**Unit 1 Test (covers Chapters 2 to 7) (October 12, Fri)**			**pg. 198 #45 to 52, 55, 56, 60 to 66** **pg. 81 #1 to 12; pg. 105 # 1 to 15** **pg. 49 #1 to 11, 15 to 17; pg. 131 #1 to 9** **pg. 169 #1 to 15; pg. 201 #1 to 3, 4 to 14**	