

CHEM 110 Syllabus
Chemistry, 10/e by Raymond Chang

Week#	Lecture#	Topic	Chapter	Pages
1	1	Introduction, SI-Units and their prefix	1	16 - 17
	2	The Atomic Theory, The Structure of the Atom	2	42 – 49
	3	Atomic Number, Mass Number, and Isotopes	2	49 – 50
2	4	The Periodic Table, Molecules and Ions	2	51 – 54
	5	Chemical Formulas, Naming Compounds	2	55 – 64
	6	Atomic Mass, Avogadro's Number and the Molar Mass of an Element, Molecular Mass	3	80 – 87
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	8	Percent Composition of Compounds, Experimental Determination of Empirical and Molecular Formulas	3	88 – 94
	9	Chemical Reactions and Chemical Equations	3	94 – 99
4	10	Amounts of Reactants and Products	3	99 – 103
	11	Limiting Reagents, Reaction Yield	3	103 – 107
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5	13	Concentration of Solutions (Molarity and dilution)	4	147 – 151
	14	Substances That Exist as Gases, Pressure of a Gas	5	174 – 178
	15	The Gas Laws, The Ideal Gas Equations, Dalton's Law of Partial Pressures	5	179 – 190 196 – 201
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	17	From Classical Physics to Quantum Theory	7	276 – 279
	18	Bohr's Theory of the Hydrogen Atom, The Dual Nature of the Electron	7	282 – 291
7	19	Quantum Numbers, Atomic Orbitals	7	294 – 300
	20	Electron Configurations, The Building-Up Principle	7	300 – 310
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8	22	Periodic Classification of the Elements	8	326 – 330
	23	Periodic Variation in Physical Properties	8	330 – 335
	24	Ionization Energy, Electron Affinity	8	337 - 343

9	25	Lewis Dot Symbols, The Ionic Bond	9	366 – 369
	26	The Covalent Bond, Electronegativity, Writing Lewis Structures, Formal Charge and Lewis Structures	9	374 – 386
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10	28	The Concept of Resonance, Exceptions to the Octet Rule	9	386 – 392
	29	The Concept of Equilibrium and the Equilibrium Constant, Writing Equilibrium Constant Expressions	14	616 – 630
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11	31	The Relationship Between Chemical Kinetics and Chemical Equilibrium, What Does the Equilibrium Constant Tell Us?	14	630 – 637
	32	Factors That Affect Chemical Equilibrium	14	638 – 644
	33	The Acid-Base Properties of Water, pH—A Measure of Acidity, Weak Acids and Acid Ionization Constants	15	661 – 666 670 – 677
12	34	The Common Ion Effect, Buffer Solutions,	16	714 – 723
	35	Solubility Equilibria	16	735 – 742
	36	Hybridization of Atomic Orbitals (Organic) (sp^3 , sp^2 , sp)	10	428 – 432
13	37	Classes of Organic Compounds, Aliphatic Hydrocarbons (alkane, cycloalkanes, alkenes, alkynes)	24	(1026 – 1030) (1033 – 1037)
	38	Aromatic Hydrocarbons (nomenclature), Chemistry of the Functional Groups (Functional groups only)		(1039 – 1040) (1047)
	39	Proteins, Nucleic Acids	25	1067 – 1078