AP Chemistry Curriculum Map
2024-2025

Unit Letter and Title	Chapter number/	Description of topics	Estimated Timing
A Stoichiometry and other Foundations	Ch 1: Introduction: Matter and Measurement Ch 2: Atoms, Molecules, Ions Ch 3: Stoichiometry Ch 7: Periodic Properties	• Matter Map (1.2 & 1.3) • Sig Figs (counting and in calculations) (1.5) • Types of Compounds (2.5, 2.6, 2.7) • Nomenclature (2.8) • Mole conversions (3.4) • Empirical Formulas (3.5) • Stoichiometry (3.6 & 3.7) • Molarity (4.5) • Basics of Atom and PT (metal vs nonmetals, and ionic vs molecular compounds) (7.6)	2 wks
B Reactions and Redox (Electrochem)	Ch 4: Reactions in aqueous solution Ch 20: Electrochemistry	• Solubility Rules (See EK 6.C.3.d for list) (4.2) • Net ionic equations (4.2) • Molarity (4.5) • Particle diagrams (13.1-13.5) • Oxidation numbers (4.4) • Galvanic Cells (20.3) • Electrolytic Cells and Electrolysis (20.9) • Current Calculations (20.9)	4 wks
C Thermo	Ch 5: Thermochemistry Ch 19: Thermodynamics	• Energy (5.1 & 5.2) • Enthalpy (5.3, 5.4, 5.7) • Calorimetry (5.5) • Hess's Law (5.6) • Entropy (19.2, 19.3, 19.4) • Gibbs Free Energy (19.5) • Free energy and Temp (19.6) • Free energy and the Equilibrium Constant (19.7) • Free energy and cell potential (20.5)	4 wks
D Gases	Ch 10: Gases	• Pressure (10.2) • Gas Laws (10.3) • Ideal gas-equation (10.4) • Further applications of ideal-gas equation (10.5) • Gas mixtures and partial pressure (10.6) • Kinetic-Molecular Theory (10.7) • Real gases (10.9)	3 wks
E Kinetics	Ch 14: Kinetics	• Factors that affect rate (14.1) • Rate Law, Rate Constant, Method of Initial Rates, Beer's Law (14.3) • Reaction Orders, esp. graphs and integrated rate law (14.4) • Collision Theory and Energy Profiles (14.5) • Mechanisms (14.6) • Catalysts (14.7) • Maxwell-Boltzmann Distribution Curves	2 wks
End of 1st semester = 15 weeks			

F Equilibrium and Solubility	Ch 15: Equilibrium Ch 17: Solubility-Product Constant, K_{sp} (Heterogeneous application of EQ)	• Equilibrium Basics, esp. overall concept, EQ expressions, EQ constant, and EQ graphs (15.1 & 15.2) • Q vs. K (15.2, 15.4, 15.5, 15.6) • ICE charts in moles, molarity, and pressure • Le Chatelier's Principle (15.7) • Solubility-product constant (17.4) • Calculate solubility from K_{sp} (17.4) • Common Ion affects solubility (17.5)	4 wks
G Acid/Base	Ch 4: Acid Base Rxns 4.3, 4.6, Ch 16: Acid/Base Application of EQ (Homogenous application of EQ)	• Acids, Bases, Strength, and Rxns (4.3, 16.1, 16.2, 16.5) • K_w, pH, $[H^+]$, $[OH^-]$, pOH (16.3, 16.4) • Strong and Weak Acids, esp. K_a calculations (16.5, 16.6) • Strong and Weak Bases, esp. K_b calculations (16.5, 16.7, 16.8) • Acidic/Basic Salts (16.9) • How structure affects Acid Strength (16.10) • Stoich, Chem analysis, Titrations (4.6, 17.3) • Buffers (17.2)	3 wks
H Electrons and Periodicity	Ch 6: Electronic Structure of Atoms Ch. 7: Periodic Properties of the Elements	• Electron Configurations (6.8 & 6.9) • Light Calculations (6.1 & 6.1) • Atomic Theory (2.1) • Energy levels, sublevels, orbitals (6.5 & 6.6) • PES (not in textbook) • Coulomb's Law and Mass Spectrometry (2.3) • Effective Nuclear Charge (7.2) • Periodic Trends (7.4)	2 wks
I Geometry	Ch 8: Basic Concepts of Chemical Bonding Ch 9: Molecular Geometry and bonding Theory	• Ionic vs Covalent Bonding (8.2 & 8.3) • Lewis Structures (8.1, 8.5, 8.6, 8.7) • Bond Strength (8.8) • Molecular shapes and VSEPR (9.1 & 9.2) • Polarity (8.4 & 9.3) • Hybrid Orbitals (9.5)	2 wks
J Intermolecular Forces (IMF)	Ch 11: Liquids and IMF Ch 12: Solids and Modern Materials	• IMF & properties of liquids (11.2 & 11.3) • General info about Solids (12.1 & 12.2) • Metallic, Ionic, Molecular, and Covalent-network solids (12.3 – 12.7)	2 wks
REVIEW!!!			2 wk
AP Test – May 6th, 2025 = 15 weeks after start of 2nd semester (14 weeks of content, 2 weeks of review)			
Up to Teacher Discretion: Probably Organic, Nuclear, and/or Environmental Chem			2 wks
Finals Week			