CHM 1046 General Chemistry II Topics
Text: General Chemistry, 9th Edition Covering CH 11-19 with CH 23

Topic	CHM 1046	M = mandatory O = optional V = overview R=review
Rates of Reactions and Chemical Kinetics	Order of rxns	M
	Rate law expression	M
	Factors affecting rate and rate constant	M
	$T_{1/2}$	M
	Collision theory	M
	Arrhenius equation	M
	Potential energy diagram (E_a, catalysts, transition state)	M
	Rate determining step	M
	Mechanisms and validation of mechanisms	M
	Integrated rate laws	M
Chemical Equilibrium	Definition of equilibrium	M
	Homo & hetero equilibrium expressions	M
	Mass action expression (K_a, K_b, K_w, K_p, K_{sp})	M
	pH	M
	Reaction quotient	M
	Common ion effect	M
	Henderson/Hasselbach equation	M
	Buffers a& perturbations	M
	Le Chatelier's Principle	M
	Gibbs free-energy expression	M
Electrochemistry	Redox	M
	Nernst equation	M
	Reduction potential	M
	Cell notation and diagrams	M
	SHE electrode	M
	Activation series	M
	Voltaic and electrolytic cells	M
	Gibbs free-energy expression	M
	Applications	V
	Balancinf redox equations (acidic & basis sol'ns)	M
Solutions	Properties of liquids	M
	Dilutions	M
	Solubility rules	M
	Colligative properties	M
	Henry's law	M
	Concentration expressions	M
	Intermolecular attractions	M
Intermolecular Forces, Solids, & Liquids	Unit cells & types	O
	Vapor pressure	M
	Solid types	M
	Phase diagrams	M
	Lattice types and units	O
Thermodynamics	Changes in enthalpy, entropy, Gibb's free energy	M
	Relative to reaction spontaneity	M
	3 laws	M
	Standard enthalpy	M
	Thermodynamics vs kinetic control	V
	Energy diagrams	M
	Hess's Law	M
Nuclear Chemistry (optional)	Types of radioactive decay	O
	Safety	O
	Half-life	O
	Nuclear stability	O
	Fusion and fission	O

Organic Chemistry	Functional groups	V
	Nomenclature	V
	First ten (alkanes, alkenes, alkynes)	V
	Isomer’s	V
	Review Lewis Structures	V
	Intro to mechanisms	V