Week	Notes and quizzes	Tentative lecture topics (sections of McQuarrie to prepare before lecture) Monday Wednesday Friday		pare <i>before lecture</i>) Friday
15 Jan	Classes (including discussion) begin Thursday	-	-	<i>Chapter 15:</i> heat of surroundings (review 14-7) and heating curves (15-1 to 15-3)
22 Jan		Intermolecular forces (IMFs), dispersion, dipole-dipole (15-4), properties of liquids (15-5)	Hydrogen bonding and relative strength of IMFs (15-4)	Relative strength of IMFs, liquid/vapor interface (15-6)
29 Jan		Vapor pressure (15-6), phase diagrams (15-8) (Skip sections 15-9 to 15-13)	Chapter 16: colligative prop. (16-1), freezing point depression (16-3)	boiling point elevation (16-4), Vapor pressure lowering (16-2)
5 Feb	Quiz #1 (M)	Raoult's law, osmotic pressure (16-5) Reverse osmosis	Ideal solutions (16-6), Henry's law (16-7) Chapter 17: reaction rates (17-1, 17-2)	Method of initial rates (17-3), Zeroth order reactions, First-order reactions (17-4)
12 Feb		Half-life of 1 st order rxns (17-5) Second order reaction (17-8)	Half-life of second order reactions (17-9) Nuclear decay (17-6; <i>skip 17-7)</i>	Chapter 18: rxn mechanism (18-1), rate limiting step (18-4), Reversible reactions (18-5)
19 Feb	No classes Monday Wednesday is Monday schedule Quiz #2 (Wed.)	No classes today	Arrhenius theory and activation energy (18-2 and 18-3)	Arrhenius theory and activation energy, catalysts (18-6) (Skip 18-7)
26 Feb		Catalysts. <i>Chapter 19:</i> equilibrium (19-1 and 19-2), equilibrium constants (19-3)	Working with the reaction quotient (Q_c), equilibrium constant (K_c) (19-8, 19-9)	K_p versus K_c (19-4) calculations (19-5) Properties of K (19-6)
4 Mar	Quiz #3 (M) Next week is spring break	Le Chatelier's principle (19-7)	Chapter 22: solubility product (22-1) common ion (22-2) (Skip 22-3, 22-4, and 22-7)	Precipitation (22-5 and 22-6). <i>Chapter 20:</i> Bronsted-Lowry acid-base (20-1); <i>no Arrhenius!</i>
18 Mar		Bronsted-Lowry acid-base, Autoionization of water (20-2), pH (20-5)	Strong acids react 100% (20-3), weak acids do not (20-4, 20-6). K_a and acid strength (20-7)	Bases (20-9), <i>K_a</i> and <i>K_b</i> (20-10) (Skip 20-8 and 20-12)
25 Mar	Quiz #4 (M)	Relative strength of acids and bases (20-10)	Salt solutions (20-11) Chapter 21: titration reactions have 100% yield, strong acid titrations (21-4)	Weak acid titrations (21-5), midpoint (21-6), Henderson- Hasselbalch equation (21-1)
1 Apr		Buffer (21-2), titration past the equivalence point, weak base titrations (21-7)	Chapter 23: entropy (23-1 and 23-2)	Entropy of the system and reaction (23-3 to 23-5)
8 Apr	Quiz #5 (M)	Entropy and phase changes (23-6), revisit colligative properties	Gibbs free energy (23-6), Free energy and equilibrium (23-7)	ΔG versus ΔG° (23-8, 23-9) Van't Hoff equation (23-10)
15 Apr	No classes Monday	No classes today	Effect of temperature on <i>K</i> Chapter 24: oxidation states (24-1)	Redox reactions (24-2 to 24-5), titrations (24-6), <i>Chapter 25:</i> electrochemistry (25-1, 25-2)
22 Apr		Cell diagrams (25-3), Nernst equation (25-4)	Nernst equation (E versus E°), concentration cells (25-6)	Concentrations cells, applications of concentration cells (membranes)
29 Apr		Standard reduction potentials and strength of reducing agents (25-5)	Electrochemical work (25-7), Electrolysis (25-8) <i>(Last lecture)</i>	No lecture Finals begin 6 May CH102 Final Quiz T.B.D.

Week	Notes and quizzes	Tentative lecture topics; sections to prepare before lecture		
		Tuesday	Thursday	
15 Jan	Classes (including discussion) begin Thursday	-	Chapter 15: heat of surroundings (review 14-7) and heating curves (15-1 to 15-3), Intermolecular forces (IMFs), Dispersion	
22 Jan		Dispersion, dipole-dipole (15-4), properties of liquids (15-5), hydrogen bonding	Relative strength of IMFs (15-4), liquid/vapor interface (15-6), vapor pressure (15-6)	
29 Jan		Vapor pressure (15-6), phase diagrams (15-8) (Skip sections 15-9 to 15-13)	Chapter 16: colligative prop., concentrations (16-1), freezing and boiling points (16-3, 16-4), vapor pressure lowering (16-2)	
5 Feb	Quiz #1 (M)	Osmotic pressure (16-5), Reverse osmosis, Ideal solutions. (16-6), Henry's law (16-7) Chapter 17: reaction rates (17-1)	Rates and time (17-2), and initial rates (17-3), Initial rates, first-order reactions (17-4)	
12 Feb		Half-life of first order reactions (17-5), second order reaction (17-8), half-life of second order reactions (17-9), Nuclear decay (17-6)	Nuclear decay (17-6; <i>skip 17-7)</i> Chapter 18: rxn mechanism (18-1), rate limiting step (18-4), Reversible reactions (18-5)	
19 Feb	No classes Monday Wednesday is Monday schedule Quiz #2 (Wed.)	Arrhenius theory and activation energy (18-2 and 18-3), Arrhenius theory and activation energy, catalysts (18-6) (Skip 18-7)	Catalysts. Chapter 19: equilibrium (19-1 and 19-2), equilibrium constants (19-3), reaction quotient (Q_c) (19-8)	
26 Feb		Equilibrium constant (K_c) (19-8, 19-9) K_p versus K_c (19-4), calculations (19-5), properties of equilibrium constants (19-6)	Le Chatelier's principle (19-7), <i>Chapter 22:</i> solubility product (22-1) common ion (22-2) (<i>Skip</i> 22-3, 22-4, and 22-7)	
4 Mar	Quiz #3 (M) Next week is spring break	Precipitation (22-5 and 22-6). <i>Chapter 20:</i> Bronsted-Lowry acid-base (20-1); <i>no Arrhenius!,</i> Autoionization of water (20-2), pH (20-5)	Strong acids react 100% (20-3), weak acids do not (20-4, 20-6). <i>K</i> _a and acid strength (20-7)	
18 Mar		Bases (20-9), K_a and K_b (20-10), Relative strength of acids and bases (20-10) (Skip 20-8 and 20-12)	Salt solutions (20-11) <i>Chapter 21:</i> titration reactions have 100% yield, strong acid titrations (21-4)	
25 Mar	Quiz #4 (M)	Weak acid titrations (21-5), midpoint (21-6), Henderson-Hasselbalch equation (21-1), buffers (21-2)	Buffer (21-2), titration past the equivalence point, weak base titrations (21-7), Chapter 23: entropy (23-1 and 23-2)	
1 Apr		Entropy of the system and reaction (23-3 to 23-5) Entropy and phase changes (23-6) Revisit colligative properties,	Gibbs free energy (23-6), Free energy and equilibrium (23-7) ΔG versus ΔG°	
8 Apr	Quiz #5 (M)	ΔG versus ΔG° (23-8, 23-9), Van't Hoff equation and the effect of temperature on K (23-10)	<i>Chapter 24:</i> oxidation states (24-1), redox reactions (24-2 to 24-5), Redox titrations (24-6)	
15 Apr	No classes Monday	Chapter 25: electrochemistry (25-1, 25-2), cell diagrams (25-3), Nernst equation (25-4)	Nernst equation (E versus E°), concentration cells (25-6)	
22 Apr		Applications of concentration cells (membranes), standard reduction potentials and strength of reducing agents (25-5)	Electrochemical work (25-7), Electrolysis (25-8) Finish up. Last lecture today.	
29 Apr		No lecture today (Classes end on Wednesday)	Finals begin 6 May CH102 Final Quiz T.B.D.	