Principles of Chemistry II

CHEM 1220

Spring 2022

Instructor:	Matthew Rowley	**Office Hours:**	Daily 10:00 am – 11:00 am
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Please include the course number in the subject line of all correspondence.

Tentative Schedule

Class will meet on Mondays, Wednesdays, Thursdays, and Fridays from 12:00-12:50 in room SC-214

For the best lecture experience, read the indicated textbook chapter *before* viewing each lecture

	Date	Topic	Chapter
Week 1	M, Jan. 10	Intermolecular Forces and Liquid Properties	12.1-12.2
		Phase Changes and Heating Curves	12.3
	W, Jan. 12	Vapor Pressure and Phase Diagrams	12.4-12.5
	R, Jan. 13	Classifying Solids and Unit Cells	12.6-12.7
	F, Jan. 14	Solvation and Saturation	13.1-13.2
Week 2	M, Jan. 17	**Martin Luther King Day - No Class!**	
	W, Jan. 19	Concentration Units	13.3
	R, Jan. 20	Colligative Properties	13.4-13.5
	F, Jan. 21	**Catch-up/Review Day** - Midterm Exam 1 (Ch. 12–13)	
Week 3	M, Jan. 24	Rates and Rate Laws	14.1-14.2
	W, Jan. 26	Integrated Rate Laws	14.3
	R, Jan. 27	Temperature and Activation Energy	14.4
		Reaction Mechanisms and Catalysis	14.5-14.6
	F, Jan. 28	Equilibrium Constants	15.1-15.2

	Date	Topic	Chapter
Week 4	M, Jan. 31	Equilibrium Expressions and Q	15.3-15.4
	W, Feb. 2	ICE Tables	15.5
	R, Feb. 3	Le Châtelier's Principle	15.6
	F, Feb. 4	Acid and Base Reactions	16.1-16.2
Week 5	M, Feb. 7	Autoionization and pH	16.3-16.4
	W, Feb. 9	Weak Acids and Bases	16.5
	R, Feb. 10	Polyprotic Acids and Salts	16.6-16.7
	F, Feb. 11	Acid Strength and Lewis Acids	16.8-16.9
Week 6	M, Feb. 14	**Catch-up/Review Day** - Midterm Exam 2 (Ch. 14–16)	
	W, Feb. 16	Buffers and the H-H Equation	17.1-17.2
	R, Feb. 17	Strong Acid/Base Titrations	17.3
	F, Feb. 18	Weak Acid/Base Titrations	17.4-17.5
Week 7	M, Feb. 21	**President's Day - No Class!**	
	W, Feb. 23	Solubility	17.6-17.7
	R, Feb. 24	Precipitation and Q	17.8
	F, Feb. 25	Metal Ions and Complexation	17.9-17.10
Week 8	M, Feb. 28	**Spring Break - No Class!**	
	W, Mar. 2	**Spring Break - No Class!**	
	R, Mar. 3	**Spring Break - No Class!**	
	F, Mar. 4	**Spring Break - No Class!**	
Week 9	M, Mar. 7	Entropy and Spontaneity	18.1
	W, Mar. 9	Entropy Changes and Temperature	18.2-18.3
	R, Mar. 10	Gibbs Energy and Temperature	18.4-18.5
	F, Mar. 11	Gibbs Energy and Equilibrium	18.6

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Week 10	M, Mar. 14	Redox Reactions	19.1-19.3
	W, Mar. 16	Voltaic Cells	19.4-19.5
	R, Mar. 17	Free Energy and Cell Potential	19.6
	F, Mar. 18	Nernst Equation and Applications	19.7
Week 11	M, Mar. 21	Electrochemical Cell Applications	19.8-19.9
	W, Mar. 23	**Catch-up/Review Day** - Midterm Exam 3 (Ch. 17–19)	
	R, Mar. 24	Radioactivity	20.1-20.2
	F, Mar. 25	Half-Life and Radiometric Dating	20.3-20.4
Week 12	M, Mar. 28	Fission and Fusion	20.5
	W, Mar. 30	**Festival of Excellence - No Class!**	
	R, Mar. 31	Energy and Nuclear Reactions	20.6-20.7
	F, Apr. 1	Hydrocarbons	21.1-21.2
Week 13	M, Apr. 4	Isomers	21.3
	W, Apr. 6	Classes of Organic Compounds	21.4-21.5
	R, Apr. 7	Polymers	21.6
	F, Apr. 8	Transition Metals	22.1-22.2
Week 14	M, Apr. 11	Coordination Compounds	22.3
	W, Apr. 13	Nomenclature and Isomerism	22.4-22.5
	R, Apr. 14	Crystal Field Theory and Spectroscopy	22.6-22.7
	F, Apr. 15	**Catch-up/Review Day** - Midterm Exam 4 (Ch. 20–22)	
Week 15	M, Apr. 18	Carbohydrates	23.1-23.2
	W, Apr. 20	Lipids	23.3
	R, Apr. 21	Amino Acids	23.4
	F, Apr. 22	Nucleic Acids	23.5
Finals Week	T, Apr. 26	**Final Exam** – 11:00-12:50 *Bring a Scantron and a Pencil!*	