Principles of Chemistry II

CHEM 1220

Spring 2024

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

- Section 01 will meet from 11:00-11:50 in room SC-302
- Section 04 will meet from 2:00-2:50 in room SC-228

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

	Date	Topic	Chapter
Week 1	M, Jan. 8	Intermolecular Forces and Liquid Properties	12.1-12.2
	W, Jan. 10	Phase Changes and Heating Curves	12.3
	R, Jan. 11	Vapor Pressure and Phase Diagrams	12.4-12.5
	F, Jan. 12	Classifying Solids and Unit Cells	12.6-12.7
Week 2	M, Jan. 15	**Martin Luther King Day - No Class!**	
	W, Jan. 17	Solvation and Saturation	13.1-13.2
	R, Jan. 18	Concentration Units	13.3
	F, Jan. 19	Colligative Properties	13.4-13.5
Week 3	M, Jan. 22	**Catch-up/Review Day - Midterm Exam 1 (Ch. 12–13)**	
	W, Jan. 24	Rates and Rate Laws	14.1-14.2
	R, Jan. 25	Integrated Rate Laws	14.3
	F, Jan. 26	Temperature and Activation Energy	14.4

	Date	Topic	Chapter
Week 4	M, Jan. 29	Reaction Mechanisms and Catalysis	14.5-14.6
	W, Jan. 31	Equilibrium Constants	15.1-15.2
	R, Feb. 1	Equilibrium Expressions and Q	15.3-15.4
	F, Feb. 2	ICE Tables	15.5
Week 5	M, Feb. 5	Le Châtelier's Principle	15.6
	W, Feb. 7	**Catch-up/Review Day - Midterm Exam 2 (Ch. 14–15)**	
	R, Feb. 8	Acid and Base Reactions	16.1-16.2
	F, Feb. 9	Autoionization and pH	16.3-16.4
Week 6	M, Feb. 12	Weak Acids and Bases	16.5
	W, Feb. 14	Polyprotic Acids and Salts	16.6-16.7
	R, Feb. 15	Acid Strength and Lewis Acids	16.8-16.9
	F, Feb. 16	Buffers and the H-H Equation	17.1-17.2
Week 7	M, Feb. 19	**President's Day - No Class!**	
	W, Feb. 21	Strong Acid/Base Titrations	17.3
	R, Feb. 22	Weak Acid/Base Titrations	17.4-17.5
	F, Feb. 23	Solubility	17.6-17.7
Week 8	M, Feb. 26	**Spring Break - No Class!**	
	W, Feb. 28	**Spring Break - No Class!**	
	R, Feb. 29	**Spring Break - No Class!**	
	F, Mar. 1	**Spring Break - No Class!**	
Week 9	M, Mar. 4	Precipitation and Q	17.8
	W, Mar. 6	Metal Ions and Complexation	17.9-17.10
	R, Mar. 7	**Catch-up/Review Day - Midterm Exam 3 (Ch. 16–17)**	
	F, Mar. 8	Entropy and Spontaneity	18.1

	Date	Topic	Chapter
Week 10	M, Mar. 11	Entropy Changes and Temperature	18.2-18.3
	W, Mar. 13	Gibbs Energy and Temperature	18.4-18.5
	R, Mar. 14	Gibbs Energy and Equilibrium	18.6
	F, Mar. 15	Redox Reactions	19.1-19.3
Week 11	M, Mar. 18	Voltaic Cells	19.4-19.5
	W, Mar. 20	Free Energy and Cell Potential	19.6
	R, Mar. 21	Nernst Equation and Applications	19.7
	F, Mar. 22	Electrochemical Cell Applications	19.8-19.9
Week 12	M, Mar. 25	Radioactivity	20.1-20.2
	W, Mar. 27	Half-Life and Radiometric Dating	20.3-20.4
	R, Mar. 28	Fission and Fusion	20.5
	F, Mar. 29	Energy and Nuclear Reactions	20.6-20.7
Week 13	M, Apr. 1	**Catch-up/Review Day - Midterm Exam 4 (Ch. 18–20)**	
	W, Apr. 3	Hydrocarbons	21.1-21.2
	R, Apr. 4	Isomers	21.3
	F, Apr. 5	Classes of Organic Compounds	21.4-21.5
Week 14	M, Apr. 8	Polymers	21.6
	W, Apr. 10	Transition Metals and Coordination Compounds	22.1-22.3
	R, Apr. 11	Nomenclature and Isomerism	22.4-22.5
	F, Apr. 12	Crystal Field Theory and Spectroscopy	22.6-22.7
Week 15	M, Apr. 15	Carbohydrates	23.1-23.2
	W, Apr. 17	Lipids, Amino Acids, and Nucleic Acids	23.3-23.5
	R, Apr. 18	**Catch-up/Review Day - Comprehensive Final Exam**	
Finals Week	M, Apr. 22	**Section 01** Final Exam 11:00-12:50 Bring a pencil and scantron	
	R, Apr. 25	**Section 04** Final Exam 1:00-2:50 Bring a pencil and scantron	