Principles of Chemistry II

CHEM 1220

Fall 2025

Instructor:	Matthew Rowley	**Office Hours:**	Daily 11:00 am – 12:00 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 226 (Science Center)
For the best lecture experience, read the indicated textbook chapter *before* viewing each lecture

	Date	Topic	Chapter
Week 1	W, Aug. 27	Intermolecular Forces	10.1
	R, Aug. 28	Properties of Liquids	10.2
	F, Aug. 29	Phase Transitions	10.3
Week 2	M, Sep. 1	**Labor Day - No Class!**	
	W, Sep. 3	Phase Diagrams	10.4
	R, Sep. 4	The Solid State of Matter	10.5
	F, Sep. 5	Lattice Structures in Crystalline Solids	10.6
Week 3	M, Sep. 8	The Dissolution Process	11.1
	W, Sep. 10	Electrolytes	11.2
	R, Sep. 11	Solubilty	11.3
	F, Sep. 12	Colligative Properties	11.4

	Date	Topic	Chapter
Week 4	M, Sep. 15	Colloids	11.5
	W, Sep. 17	**Catch-up/Review Day for Exam 1: Chapters 10 and 11**	
	R, Sep. 18	Chemical Reaction Rates	12.1
	F, Sep. 19	Factors Affecting Reaction Rates	12.2
Week 5	M, Sep. 22	Rate Laws	12.3
	W, Sep. 24	Integrated Rate Laws	12.4
	R, Sep. 25	Collision Theory	12.5
	F, Sep. 26	Reaction Mechanisms	12.6
Week 6	M, Sep. 29	Catalysis	12.7
	W, Oct. 1	Chemical Equilibria	13.1
	R, Oct. 2	Equilibrium Constants	13.2
	F, Oct. 3	Shifting Equilibria: Le Châtelier's Principle	13.3
Week 7	M, Oct. 6	Equilibrium Concentrations	13.4
	W, Oct. 8	**Catch-up/Review Day for Exam 2: Chapters 12 and 13**	
	R, Oct. 9	Brønsted-Lowry Acids and Bases	14.1
	F, Oct. 10	pH and pOH	14.2
Week 8	M, Oct. 13	**Fall Break - No Class!**	
	W, Oct. 15	Relative Strengths of Acids and Bases	14.3
	R, Oct. 16	Hydrolysis of Salts	14.4
	F, Oct. 17	Polyprotic Acids	14.5
Week 9	M, Oct. 20	Buffers	14.6
	W, Oct. 22	Acid-Base Titrations	14.7
	R, Oct. 23	Precipitation and Dissolution	15.1
	F, Oct. 24	Lewis Acids and Bases	15.2

	Date	Topic	Chapter
Week 10	M, Oct. 27	Coupled Equilibria	15.3
	W, Oct. 29	**Catch-up/Review Day for Exam 3: Chapters 14 and 15**	
	R, Oct. 30	Spontaneity	16.1
	F, Oct. 31	Entropy	16.2
Week 11	M, Nov. 3	The Second and Third Laws of Thermodynamics	16.3
	W, Nov. 5	Free Energy	16.4
	R, Nov. 6	Review of Redox Chemistry	17.1
	F, Nov. 7	Galvanic Cells	17.2
Week 12	M, Nov. 10	Electrode and Cell Potentials	17.3
	W, Nov. 12	Potential, Fee Energy, and Equilibrium	17.4
	R, Nov. 13	Batteries and Fuel Cells	17.5
	F, Nov. 14	Corrosion	17.6
Week 13	M, Nov. 17	Electrolysis	17.7
	W, Nov. 19	**Catch-up/Review Day for Exam 4: Chapters 16 and 17**	
	R, Nov. 20	Nuclear Structure and Stability	21.1
	F, Nov. 21	Nuclear Equations	21.2
Week 14	M, Nov. 24	**Thanksgiving Break - No Class!**	
	W, Nov. 26	**Thanksgiving Break - No Class!**	
	R, Nov. 27	**Thanksgiving Break - No Class!**	
	F, Nov. 28	**Thanksgiving Break - No Class!**	
Week 15	M, Dec. 1	Radioactive Decay	21.3
	W, Dec. 3	Transmutation and Nuclear Energy	21.4
	R, Dec. 4	Uses of Radioisotopes	21.5
	F, Dec. 5	Biological Effects of Radiation	21.6
Finals Week	T, Dec. 9	**Final Exam** 11:00-12:50 Bring a pencil and a scantron sheet	