

PHYSICAL CHEMISTRY I

CHEM 3610

Fall 2022

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

Tentative Schedule

This class will meet on Mondays, Wednesdays, and Fridays from 12:00 to 12:50 pm in room 127 of the Science Center (SC).

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

	Date	Topic	Chapter
Week 1	W, Aug. 31	The Perfect Gas and Kinetic Model	1A-1B
	F, Sep. 2	Real Gases	1C
Week 2	M, Sep. 5	Labor Day - No Class!	
	W, Sep. 7	Internal Energy	2A
	F, Sep. 9	Enthalpy	2B
Week 3	M, Sep. 12	Thermochemistry	2C
	W, Sep. 14	State Functions and Exact Differentials	2D
	F, Sep. 16	Adiabatic Changes	2E
Week 4	M, Sep. 19	Makeup/Review Day (Midterm 1: Ch. 1–2)	
	W, Sep. 21	Entropy	3A
	F, Sep. 23	Entropy Changes	3B
Week 5	M, Sep. 26	The Measurement of Entropy and the System	3C-3D
	W, Sep. 28	Combining the First and Second Laws	3D
	F, Sep. 30	Phase Diagrams of Pure Substances	4A

	Date	Topic	Chapter
Week 6	M, Oct. 3	Thermodynamic Aspects of Phase Transitions	4B
	W, Oct. 5	Makeup/Review Day (Midterm 2: Ch. 3–4)	
	F, Oct. 7	The Thermodynamic Description of Mixtures	5A
Week 7	M, Oct. 10	The Properties of Solutions	5B
	W, Oct. 12	Phase Diagrams of Binary Systems	5C-5D
	F, Oct. 14	Phase Diagrams of Ternary Systems	5E
Week 8	M, Oct. 17	Fall Break - No Class!	
	W, Oct. 19	Activities	5F
	F, Oct. 21	The Equilibrium Constant	6A
Week 9	M, Oct. 24	The Response of Equilibria to the Conditions	6B
	W, Oct. 26	Electrochemical Cells	6C-6D
	F, Oct. 28	Transport in Gases	16A
Week 10	M, Oct. 31	Motion in Liquids	16B
	W, Nov. 2	Diffusion	16C
	F, Nov. 4	Makeup/Review Day (Midterm 3: Ch. 5, 6, 16)	
Week 11	M, Nov. 7	The Rates of Chemical Reactions	17A
	W, Nov. 9	Integrated Rate Laws	17B
	F, Nov. 11	Reactions Approaching Equilibrium	17C
Week 12	M, Nov. 14	The Arrhenius Equation	17D
	W, Nov. 16	Reaction Mechanisms	17E-17F
	F, Nov. 18	Photochemistry	17G
Week 13	M, Nov. 21	Thanksgiving Break - No Class!	
	W, Nov. 23	Thanksgiving Break - No Class!	
	F, Nov. 25	Thanksgiving Break - No Class!	

	Date	Topic	Chapter
Week 14	M, Nov. 28	Collision Theory	18A
	W, Nov. 30	Diffusion-Controlled Reactions	18B
	F, Dec. 2	Transition-State Theory	18C
Week 15	M, Dec. 5	The Dynamics of Molecular Collisions	18D
	W, Dec. 7	Electron Transfer in Homogeneous Systems	18E
	F, Dec. 9	Makeup/Review Day (Midterm 4: Ch. 17–18)	
Finals Week	W, Dec. 14	Final Exam 11:00–12:50 Bring a pencil and a scantron!	