Physical Chemistry I

CHEM 3610

Fall 2024

Instructor:	Matthew Rowley	**Office Hours:**	Daily 10:00 am – 11:00 am
Telephone:	(435) 586-7875		
Email:	matthewrowley1@suu.edu	**Office:**	SC-220

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 128 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. 28	The Perfect Gas and Kinetic Model	1A-1B
	F, Aug. 30	Real Gases	1C
Week 2	M, Sep. 2	**Labor Day - No Class!**	
	W, Sep. 4	Internal Energy	2A
	F, Sep. 6	Enthalpy	2B
Week 3	M, Sep. 9	Thermochemistry	2C
	W, Sep. 11	State Functions and Exact Differentials	2D
	F, Sep. 13	Adiabatic Changes	2E
Week 4	M, Sep. 16	**Makeup/Review Day (Exam 1: Ch. 1–2)**	
	W, Sep. 18	Entropy	3A
	F, Sep. 20	Entropy Changes	3B
Week 5	M, Sep. 23	The Measurement of Entropy and the System	3C-3D
	W, Sep. 25	Combining the First and Second Laws	3D
	F, Sep. 27	Phase Diagrams of Pure Substances	4A

	Date	Topic	Chapter
Week 6	M, Sep. 30	Thermodynamic Aspects of Phase Transitions	4B
	W, Oct. 2	**Makeup/Review Day (Exam 2: Ch. 3–4)**	
	F, Oct. 4	The Thermodynamic Description of Mixtures	5A
Week 7	M, Oct. 7	The Properties of Solutions	5B
	W, Oct. 9	Phase Diagrams of Binary Systems	5C-5D
	F, Oct. 11	Phase Diagrams of Ternary Systems	5E
Week 8	M, Oct. 14	**Fall Break - No Class!**	
	W, Oct. 16	Activities	5F
	F, Oct. 18	The Equilibrium Constant	6A
Week 9	M, Oct. 21	The Response of Equilibria to the Conditions	6B
	W, Oct. 23	Electrochemical Cells	6C-6D
	F, Oct. 25	Transport in Gases	16A
Week 10	M, Oct. 28	Motion in Liquids	16B
	W, Oct. 30	Diffusion	16C
	F, Nov. 1	**Makeup/Review Day (Exam 3: Ch. 5, 6, 16)**	
Week 11	M, Nov. 4	The Rates of Chemical Reactions	17A
	W, Nov. 6	Integrated Rate Laws	17B
	F, Nov. 8	Reactions Approaching Equilibrium	17C
Week 12	M, Nov. 11	The Arrhenius Equation	17D
	W, Nov. 13	Reaction Mechanisms	17E-17F
	F, Nov. 15	Photochemistry	17G
Week 13	M, Nov. 18	Collision Theory	18A
	W, Nov. 20	Diffusion-Controlled Reactions	18B
	F, Nov. 22	Transition-State Theory	18C

	Date	Topic	Chapter
Week 14	M, Nov. 25	**Thanksgiving Break - No Class!**	
	W, Nov. 27	**Thanksgiving Break - No Class!**	
	F, Nov. 29	**Thanksgiving Break - No Class!**	
Week 15	M, Dec. 2	The Dynamics of Molecular Collisions	18D
	W, Dec. 4	Electron Transfer in Homogeneous Systems	18E
	F, Dec. 6	**Makeup/Review Day (Exam 4: Ch. 17–18)**	
		Final Exam	