Chem 321 Assignment Schedule

Prof. Adam Van Wynsberghe **Fall 2025**

Week	Date	Lecture Topic	Reading	Assignments
1	8/29 F	Class Introduction		
2	9/1 M	Classical Failures	1.1-3	
	9/3 W	de Broglie; Rydberg Formula and Bohr Model	1.4-8; Math Chapter A	**Practice CA**
	9/5 F	Heisenberg's Uncertainty Principle Double-Slit Experiment	1.9	**CA #1**
3	9/8 M	Classical Wave Equation I	2.1-5; Math Chapter B	
	9/10 W	Classical Wave Equation II		
	9/12 F	Schrödinger Equation; Operators	3.1-4	**CA #2**
4	9/15 M	Particle in a Box I	3.5-6	
	9/17 W	Particle in a Box II	Math Chapter C	
	9/19 F	Expectation Values	3.7-8	**CA #3**
5	9/22 M	Particle in a 3-D Box Postulates of QM I	3.9; 4.1-3	
	9/24 W	Postulates of QM II	4.4-6	
	9/26 F	Classical Harmonic Oscillator	5.1-3	**CA #4**

6	9/29 M	Quantum Harmonic Oscillator	5.4-7	
	10/1 W	Spherical Coordinates	Math Chapter D	

***** Independent Assignment I: Due Friday, October 3rd, 9:00 AM *****

	10/3 F	Rigid Rotor	5.8-9	
7	10/6 M	Molecular Interactions with Light; Rotational Selection Rules	13.11	
	10/8 W	Vibrational Selection Rules; Raman Spectroscopy	13.13	
	10/10 F	Rotational Selection Rules; Ro-Vib spectra	13.12; 13.1-2	**CA #5**
8	10/13 M	Deviations from HO/RR	13.3-5	
	10/15 W	Virtual Lecture only: Vibronic spectra	13.6-.7	
	10/17 F	No Lecture-Fall Recess		
9	10/20 M	Hydrogen Atom: Angular Equation	6.1-6.2	**CA #6**
	10/22 W	H Atom: Angular Momentum	6.3	
	10/24 F	H Atom: Radial Equation; Orbitals	6.4-7	**CA #7**
10	10/27 M	Variational Theory	7.1; Math Chapter E	
	10/29 W	Secular Equation	7.2-3	

***** Independent Assignment II: Due Friday, October 31st, 9:00 AM *****

	10/31 F	Perturbation Theory	7.4	

11	11/3 M	Hartree-Fock; Stern-Gerlach	8.1-3	
	11/5 W	Spin; Slater Determinants	8.4-6	
	11/7 F	Term Symbols and Hund's Rules; Atomic Spectra	8.8-11	**CA #8**
12	11/10 M	Born-Oppenheimer Approximation and Diatomic Bonding	9.1-6	
	11/12 W	Molecular Orbitals of Diatomics	9.12-13	
	11/14 F	Homonuclear Diatomics, s-p mixing	9.7-11	**CA #9**
13	11/17 M	Molecular Term Symbols	9.14-9.16	
	11/19 W	Local Bonding Theories; VSEPR	10.1	
	11/21 F	Valence Bond Theory & Polyatomic MO Theory	10.2-4	

***** Independent Assignment III: Due Friday, November 21st, 9:00 AM *****

Thanksgiving Break!

14	12/1 M	Walsh Correlation Diagrams and Hückel Theory	10.3-6	
	12/3 W	Basic Group Theory	12.2-3	
	12/5 F	MO's and Character Tables	10.4; 12.6	**CA #10**
15	12/8 M	Gaussian Basis Sets	11.1-4	
	12/10 W	Post Hartree-Fock Methods		
	12/12 F	Density Functional Theory		

***** Final Independent Assignment: Due Friday, December 19th, 12:00 PM *****