

TENTATIVE SCHEDULE FOR PHYSICS 402, FALL 2016							
Date	Mtg.#	Reading Assignment	Topic	HW Due	Exams		
Week 1		Griffiths / Krane / Liboff					
8/29	1	1-1.6, 4.1 / 1.1-1.4, 5.1, 5.3 / 1	Review of QM, QM in 3D				
8/31	2	4.1,4.2 / 7.2,7.2 / 10	Hydrogen Atom Review				
9/2	3	4.3 / 7.1, 7.4 / 9	Angular Momentum Review	#0			
Week 2							
9/5		LABOR DAY					
9/7	4	4.4 / 6.4, 7.6 / 11.6-11.8	Spin of the Electron, Pauli Spin Matrices				
9/9	5	6.1 / * / 13.1	Stern-Gerlach and Time Independent Perturbation Theory	#1			
Week 3							
9/12	6	6.1 / * / 13.1	Time-Independent Perturbation Theory				
9/14	7	6.1, 6.3 / * / 13.1	2nd-Order Perturbation Theory and Fine Structure				
9/16	8	6.3 / 7.8 / 12.2	Spin-Orbit Interaction	#2			
Week 4							
9/19	9	6.3 / 7.8 / 12.2	J=L+S Addition of Angular Momenta				
9/21	10	6.4 / 7.7 / *	Spins and Entangled States				
9/23	11	6.5 / * / *	Hyperfine Splitting and the 21-cm line	#3			
Week 5							
9/26	12	6.2 / * / 13.3	Degenerate Perturbation Theory, Stark effect				
9/28	13	7.2 / 8.7 / 12.6	He Atom				
9/30	14	5.1 / 8.1 / 12.3	Pauli Exclusion Principle and He	#4			
Week 6							
10/3	15	5.1, 5.2 / 8.2 / 12.3	Exchange				
10/5	16	5.2 / 8.3, 8.4 / 12.4	Excited States of He, Periodic Table				
10/7	17	10.1 / * / 12.7	H ₂ Molecule, Bonding	#5			
Week 7							
10/10	18		Review				
10/12	19		Chapters 4, 6 (roughly)		EXAM #1		
10/14	20	9.1 / * / 13.5	Time Dependent Perturbation Theory				
Week 8							
10/17	21	9.1 / * / 16	Two Level Systems, Quantum Computing, Entanglement				
10/19	22	9.1 / * / 13.6	Sinusoidal Perturbation, Atomic Transitions				
10/21	23	9.1 / /	Rabi oscillations, Rotating wave approximation	#6			
Week 9							
10/24	24	9.2 / * / 13.9	Absorption of Radiation, Selection Rules				
10/26	25	9.3 / 8.8 / 13.7	Absorption, Spontaneous Emission, LASERs				
10/28	26	5.4 / 10.2 / 11.11,12.8	Quantum Statistical Mechanics	#7			
Week 10							
10/31	27	5.4 / 10.5 / 12.3	Distinguishable And Indistinguishable Particles				
11/2	28	5.4 / 10.5 / *	Occupation Distribution Functions				
11/4	29	5.4 / 10.6 / *	Photons in a box	#8			
Week 11							
11/7	30	5.4 / 10.6 / *	Density of States				
11/9	31	5.4 / 10.6 / 12.8	Superfluid He-4				
11/11	32	* / * / 12.8	Bose-Einstein Condensation	#9			
Week 12							
11/14	33	* / * / *	Review				
11/16	34		Chapters 5, 9 (roughly)		EXAM #2		
11/18	35	5.3 / 11.1-11.4 / 13.4	Electrons in a Crystal, Band structure				
Week 13							
11/21	36	5.3 / 11.1-11.4 / 13.4	Free-electron metal, Fermi energy				
11/23		Thanksgiving					
11/25		Recess					
Week 14							
11/28	37	* / 11.7 / 12.8	Cooper Pairing of Electrons				
11/30	38	8.1 / * / 7.10	WKB Approximation				
12/2	39	8.2 / 12.7 / 7.10	Fowler-Nordheim Tunneling, STM	#10			
Week 15							
12/5	40	7.1, 7.2 / *	Variational Principle				
12/7	41	10.2 / * / *	Aharonov-Bohm Effect				
12/9	42	* / * / *	Quantum Chaos	#11			
Week 16							
12/12	43	* / * / *	Review				
12/20	44		FINAL EXAM [8 AM to 10 AM]		FINAL EXAM		
		* means no reading assignment from this text. Look elsewhere!					