PHY 3101 Schedule (Subject to Change)

Week	Material	Reading Assignment	Homework Assignment	Announcements
#1: Jan. 3	Course Introduction Syllabus, Policies **Chapter 1: Relativity I** Experimental Basis, Einstein Postulates	Chapter 1.1 – 1.4		
#2: Jan. 10	**Chapter 1: Relativity I** Lorentz Transformations, Time Dilation and Length Contraction **Chapter 2: Relativity II** Relativistic Momentum, Energy,	Chapter 2.1- 2.4	Problem Set 1 Due Friday, Jan. 14	
#3: Jan. 17	**Chapter 2: Relativity II** Mass-Energy Conservation, (Invariant Mass) **Chapter 3: Quanta** Charge quantization, blackbody radiation	Chapter 3.1-3.2	Problem Set 2 Due Friday, Jan. 21	Monday, Jan. 17 MLK Day No class
#4: Jan. 24	**Chapter 3: Quanta** Photoelectric effect, X-rays and Compton effect	Chapter 3.3-3.4	Problem Set 3 Due Friday, Jan. 28	
#5: Jan. 31	**Chapter 4: Nuclear Atom** Atomic Spectra, Rutherford model, Bohr model, X-ray spectra, (Franck-Hertz experiment)	Chapter 4.1 – 4.6	Problem Set 4 Due, Feb. 4	
#6: Feb. 7	**Chapter 5: Particles as Waves** de Broglie waves and measurements, wave packets, wave functions, probability	Chapter 5.1-5.5		**Midterm Exam 2: Friday, Feb. 11 Chapters 1-4**
#7: Feb. 14	**Chapter 5: Particles as Waves** uncertainty principle and consequences, wave-particle duality **Chapter 6: Schrodinger Equation** 1D, infinite square well, finite square well	Chapter 5.6, 5.7, 6.1-6.2	Problem Set 5 Due Friday, Feb. 18	
#8: Feb. 21	**Chapter 6: Schrodinger Equation** Expectation values and operators, simple harmonic oscillator, reflection and transmission of waves	Chapter 6.3 - 6.6	Problem Set 6 Due Friday Feb. 25	
#9: Feb 28	**SPRING BREAK**			
#10: Mar. 7	**Chapter 7: Atomic Physics** 3D Schrodinger equation, quantization of angular momentum and energy , Hydrogen wave functions	Chapter 7.1 – 7.4	Problem Set 7 Due Friday Mar. 11	
#11: Mar. 14	**Chapter 7: Atomic Physics** Electron spin, total angular momentum, spin-orbit coupling, 2 particle SE, (periodic table), (excited states)	Chapter 7.5 – 7.8	Problem Set 8 Due Friday Mar. 18	

#12: Mar. 21	**Chapter 8: Statistical Physics** Classical statistics, Boltzmann Distribution	Chapter 8.1-8.3	Problem Set 9 Due Wednesday Mar. 23	**Midterm Exam 2: Friday, Mar. 25 Chapters 5-7**
#13: Mar. 28	**Chapter 8: Statistical Physics** Quantum statistics, BEC, photon and Fermion gas	Chapter 8.1-8.3	Problem Set 10 Due Friday Apr. 1	
#14: Apr. 4	**Special Topic I** To be selected by class	Chapter 9.5,9.6	Problem Set 11 Due Friday Apr. 8	
#15: Apr. 11	**Special Topic II** To be selected by class	Chapter 10.1 – 10.3	Problem Set 12 Due Friday Apr. 15	
#16: Apr. 18	**Special Topic III** To be selected by class	Chapters 10.5, 10.6, 10.9	Problem Set 13 Due Friday Apr. 22	
April 28	**FINAL EXAM (Venue TBA)**			