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| #1: Jan 9 | Course Introduction  
Chapter 1: Relativity I  
Experimental Basis, Einstein Postulates | Chapter 1.1 – 1.5 |  |  |
| #2: Jan. 16 | Chapter 1: Relativity I  
Lorentz Transformations, Time Dilation and Length Contraction Doppler Effect  
Chapter 2: Relativity II  
Relativistic Momentum | Chapter 1.6, 2.1-2.4 | Problem Set 1 Due Fri., Jan. 20 | MLK Day  
No class Monday, Jan. 16 |
| #3: Jan 23 | Chapter 2: Relativity II  
Energy, Mass-Energy Conservation, (Invariant Mass)  
Chapter 3: Quanta  
Charge quantization, blackbody radiation | Chapter 3.1-3.4 | Problem Set 2 Due Fri. Jan. 27 |  |
| #4: Jan. 30 | Chapter 3: Quanta  
photoelectric effect, X-rays and Compton effect  
Chapter 4: Nuclear Atom  
Atomic Spectra, Rutherford model | Chapter 4.1 – 4.6 | Problem Set 3 Due Fri., Feb. 3 |  |
| #5: Feb. 6 | Chapter 4: Nuclear Atom  
Bohr model, X-ray spectra, (Franck-Hertz experiment)  
Chapter 5: Particles as Waves  
de Broglie waves and measurements | Chapter 5.1-5.5 |  | Exam 1:  
Friday, Feb 10 Chapters 1-3 |
| #6: Feb. 13 | Chapter 5: Particles as Waves  
wave packets, wave functions, probability, uncertainty principle and consequences, wave-particle duality | Chapter 5.6, 5.7 | Problem Set 4 Due Fri., Feb. 17 |  |
| #7: Feb. 20 | Chapter 6: Schrodinger Equation  
1D infinite square well, expectation values and operators | Chapter 6.1-6.6 | Problem Set 5 Due Fri., Feb. 24 |  |
| #8: Feb. 27 | Chapter 6: Schrodinger Equation  
simple harmonic oscillator, reflection and transmission of waves  
Chapter 7: Atomic Physics  
3D Schrodinger equation | Chapter 7.1-7.3 | Problem Set 6 Due Fri., Mar. 3 |  |
| #9: Mar. 6 | quantization of angular momentum and energy, hydrogen wave functions, electron spin | Chapter 7.4-7.5 |  | Exam 2: Friday,  
Mar 10 Chapters 4-6 |
| #10: Mar. 20 | Chapter 7: Atomic Physics  
total angular momentum, spin-orbit coupling, 2 particle SE | Chapter 7.6 | Problem Set 7 Due Fri., Mar. 24 |  |

MARCH 11-18, SPRING BREAK
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