

Physics 3700 Modern Physics Outline (Tentative)				Fall 2007				
Week	Date	Monday	Wednesday	Friday	Lab			
1	27-Aug	Intro 9.1 Stat Physics Overview	A.5 Mean Values and Distributions 9.2 Maxwell Velocity Dist	9.3 Equipartition Thrm 9.4 Maxwell Speed Dist 3.5 Blackbody Radiation	Intro to statistics and error analysis			
2	3-Sep	Labor Day	Intro to Special Relativity Galilean Transformations	2.2 Michelson-Morley	Lab: Johnson Noise			
3	10-Sep	2.4 Lorentz Transformation 2.5 Time Dilation	2.5 Length Contraction 2.6 Addition of Velocities	2.7 Experimental Verification 2.8 Twin Paradox	Recitation			
4	17-Sep	2.9 Space Time 2.10 Doppler Effect	2.11 Relativistic Momentum 2.12 Relativistic Energy	2.13 Computations in Modern Physics 2.14 Electromagnetism and SR	<b>Student Talks (all class period)</b>			
5	24-Sep	TEST 1 (statistical physics and SR)	15.1 Tenets of General Rel 15.2 Tests of GR	15.3 Gravitational Waves 15.4 Black Holes 15.5 Frame Dragging	Lab: Optical Doppler Shift			
6	1-Oct	5.1 X-Ray Scattering 5.2 DeBroglie Waves	5.4 Wave Motion	5.5 Waves or Particles? 5.6 Uncert. Principle	Recitation			
7	8-Oct	5.7 Probability, etc. 5.8 Particle in a Box	6.1 Schrodinger Eqn	6.2 Expectation Values 6.3 Infinite Square Well	Lab: Photoelectric Effect			
8	15-Oct	Fall Break	6.7 Barriers and Tunneling	<b>Test 2 (ch.5, 6)</b>	Fall Break			
9	22-Oct	7.1 S.E. and the H atom 7.2 Solution for H atom	7.3 Quantum Numbers	7.4 Normal Zeeman Effect	Recitation			
10	29-Oct	7.5 Spin 7.6 Energy Levels and Probabilities	8.1 Atomic Structure and the periodic table 8.2 Total Angular Momentum	8.2 continued 8.3 Anomalous Zeeman Effect	Lab: X-Ray			
11	5-Nov	9.5 Classical and Quantum Statistics 9.6 Fermi-Dirac Statistics	9.7 Bose-Einstein Statistics	<b>Test 3 (Ch.7,8, 9)</b>	Recitation			
12	12-Nov	Veteran's Day	10.1 Molecular Bonding and Spectra	10.2 Lasers	Lab:Spectroscopy			
13	19-Nov	14.1 Early Particle Discoveries 14.2 The Fundamental Interactions	14.3 Classifications of Elementary Particles	Thanksgiving	Recitation			
14	26-Nov	14.4 Conservation Laws and Symmetries	14.5 Quarks 14.6 Families of Matter	14.7 Beyond the Standard Model	?			
15	3-Dec	14.8 Accelerators	Conclusions	Final Exams				
<b>Final Exam: Chs. 10, 14, Tues Dec. 11 2006, 10:30 am - 12:30 pm</b>								