

<b>MPTC SYLLABUS - MODERN PHYSICS</b>	
Dr. S. Dalley	Spring 2013: Wed 5:30 pm - 8:30 p.m.

<b>Objectives:</b> Upon successful completion of this course, students will be able to
1) demonstrate the ability to understand, critique, and draw conclusions from relevant experimental data.
2) explain how the concepts and findings of modern physics shape our world

			PRE-CLASS READING
Lecture	Quiz	TOPIC	<u>(I)nside (R)elativity, (Q)uantum (U)niverse</u>
23-Jan		LEC - Classical Background   LAB - Magnetic Accelerator	
30-Jan	5,6	LAB - Speed of Light   LEC - Special Relativity	lab manual; IR 3.1-3.10
6-Feb	7,8	LEC - $E = mc^2$ & Paradoxes   LAB - Lorentz Transformations	IR 4.1-4.8; lab manual
13-Feb	9,10	LAB - Curved Space   LEC - General Relativity	lab manual; IR 5.1-5.8
20-Feb	11,12	LEC - Cosmology   LAB - Hubble's Law	IR 6.1-6.6; lab manual
27-Feb		LEC - Dark Matter & Energy   LAB - Age of the Universe	lab manual
6-Mar	13,14	LEC - Waves vs. Particles   LAB - Planck's Constant	QU 1; lab manual
SPRING BREAK			
20-Mar	15,16	LEC - Uncertainty   LAB - Diffraction	QU 2, 3; lab manual
27-Mar	17,18	LEC - Atoms   LAB - Hydrogen Spectrum	QU 4; lab manual
3-Apr	20,21	LEC - Quantum Tunneling   LAB - Radioactivity	QU 5; lab manual
10-Apr	22,23	LEC - Quantum Co-operation   LAB - Lasers	QU 7; lab manual
17-Apr		Movie viewing "Copenhagen"   Discussion	
24-Apr	24,25	LEC - Synthesis   LAB - Particle Identification	QU 11, 12; web page intro
1-May		LAB - Z mass   LEC - Beyond the Standard Model	lab manual

