

PHYSICS 260 MODERN PHYSICS						
<b>Lectures: Tuesday &amp; Thursday, 2:15–4:05 PM in Science Building room A143</b>						
Dr. Larry Liebovitch: <a href="http://people.qc.cuny.edu/Faculty/Larry.Liebovitch/">http://people.qc.cuny.edu/Faculty/Larry.Liebovitch/</a>						
Office Hours: Tuesdays, Thursdays 4:05-5:05 PM in SB B322						
<b>Textbook: S. T. Thornton and A. Rex, Modern Physics for Scientists and Engineers, (Brooks/Cole – Cengage Learning, 4th edi</b>						
<b>Homework: Webassign: Class key: qc 8433 3567</b>						
Grading Policy:						
Homework: 25%						
Midterm exam: 25%						
Presentations: HW Problems 10%, 4-Minute Video 10%						
Final exam: 30%						
Week	Tuesday	Topic	URL or Pages in Textbook	Thursday	Topic	URL or Pages in Textbook
1				8/27/15	INTRODUCTION, classical physics, modern physics (QM,SR,etc.)	1-18
2	9/1/15	Blackbody Radiation, PhotoElectric Effect, Light: wave or particles, Young 2-slit	96-110, 182-183 <a href="http://en.wikipedia.org/wiki/Ultraviolet_catastrophe">http://en.wikipedia.org/wiki/Ultraviolet_catastrophe</a> <a href="http://en.wikipedia.org/wiki/Annus_Mirabilis_Papers">http://en.wikipedia.org/wiki/Annus_Mirabilis_Papers</a> <a href="http://www.feynmanlectures.caltech.edu/II_01.html">http://www.feynmanlectures.caltech.edu/II_01.html</a> <a href="http://en.wikipedia.org/wiki/Uncertainty_principle">http://en.wikipedia.org/wiki/Uncertainty_principle</a>	9/3/15	Stellar Aberration, Fizeau, Michelson-Morley, Invariants (2-d vector, Chaos, attractors)	21-26 <a href="http://en.wikipedia.org/wiki/Michelson-Morley_experiment">http://en.wikipedia.org/wiki/Michelson-Morley_experiment</a> <a href="http://www.ccs.fau.edu/~liebovitch/complexy-20.html">http://www.ccs.fau.edu/~liebovitch/complexy-20.html</a>
3	9/8/15	Einstein's thought - c, Relativity Postulates, Maxwells Equations Invariant under Lorentz Transformation	26-31, 73-75 <a href="http://resonanceswavesandfields.blogspot.com/2011/07/deriving-electromagnetic-wave-equation.html">http://resonanceswavesandfields.blogspot.com/2011/07/deriving-electromagnetic-wave-equation.html</a> <a href="http://resonanceswavesandfields.blogspot.com/2011/07/invariance-of-electromagnetic-wave.html">http://resonanceswavesandfields.blogspot.com/2011/07/invariance-of-electromagnetic-wave.html</a>	9/10/15	<b>x No Class Monday Schedule</b>	x
4	9/15/15	<b>x No Classes</b>	x	9/17/15	Space Contraction, Time Dilation	31-58 <a href="http://www.fourmilab.ch/etexts/einstein/stepcel/www/">http://www.fourmilab.ch/etexts/einstein/stepcel/www/</a>
4	9/22/15	<b>x No Classes</b>	x	9/24/15	Momentum Energy	58-72

4				<b>FRIDAY 9/25/15</b>	Black Body Radiation, Photoelectric Effect, Quantization	96-110	
5	9/29/15	Matter as Waves, deBroglie, Heisenberg Uncertainty, Schrodinger Equation	168-169, 182-197	10/1/15	Particle in infinitely deep box, SHM, not so deep box	201-225	
6	10/6/15	Tunneling, radioactive decay, AFM, STM	226-235	10/8/15	<b>MIDTERM EXAM</b>		
7	10/13/15	Fermi Dirac, Bose Einstien statistics	311-334	10/15/15	Hydorgen Atom: Bohr, Schrodinger	241-268	
8	10/20/15	Hydrogen Spectra	241-268	10/22/15	Multi-electron Atoms, Periodic Table	272-295	
9	10/27/15	Zeeman, Stern- Gerlach, NMR, MRI	256-259	10/29/15	Masers, Lasers	347-356	
10	11/3/15	Quantum Computing, Quantum Cryptography	<a href="http://en.wikipedia.org/wiki/EPR_paradox">http://en.wikipedia.org/wiki/EPR_paradox</a> <a href="http://en.wikipedia.org/wiki/Quantum_computer">http://en.wikipedia.org/wiki/Quantum_computer</a>	11/5/15	Nuclear Physics: fission, fusion, nucleosynthesis	486-505	
11	11/10/15	Elementary Particles	519-551 <a href="http://en.wikipedia.org/wiki/Standard_Model">http://en.wikipedia.org/wiki/Standard_Model</a>	11/12/15	General Relativity, Cosmology, Inflation	555-574	
12	11/17/15	Biological Applications	<a href="http://en.wikipedia.org/wiki/Systems_biology">http://en.wikipedia.org/wiki/Systems_biology</a> <a href="http://www.weizmann.ac.il/mcb/UriAlon/">http://www.weizmann.ac.il/mcb/UriAlon/</a>	11/19/15	Social Applications	<a href="http://www.barabasilab.com/projects.php">http://www.barabasilab.com/projects.php</a> <a href="http://en.wikipedia.org/wiki/Social_network">http://en.wikipedia.org/wiki/Social_network</a>	
13	11/24/15	Student presentations		11/26/15	<b>x No Classes</b>	x	
14	12/1/15	Student Presentations		12/3/15	Student Presentations		
15	12/8/15	Review		12/10/15	Review		
	<b>FINAL EXAMS Dec 15-23, 2015</b>						