

PHYSICS 260 MODERN PHYSICS						
<b>Lectures: Tuesday &amp; Thursday, 2:15–4:05 PM in Science Building room B326 (Physics Conference Room)</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 4:05-5:05 PM, Thursdays 9:00-10:00 AM 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 7319 8292</b>						
Grading Policy:						
Homework: 25%						
Midterm exam: 25%						
Presentations: 20%						
Final exam: 30%						
Week	Tuesday	Topic	URL or Pages in Textbook	Thursday	Topic	URL or Pages in Textbook
1				8/28/14	INTRODUCTION, classical physics, modern physics (QM,SR,etc.)	1-18
2	9/2/14	Light: wave or particles, Young 2-slit	102-110, 182-183 <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>	9/4/14	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	9/9/14	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>	9/11/14	Space Contraction, Time Dilation	31-58 <a href="http://www.fourmilab.ch/etexts/einstein/steprecel/www/">http://www.fourmilab.ch/etexts/einstein/steprecel/www/</a>
4	9/16/14	Momentum Energy	58-72	9/18/14	Black Body Radiation, Photoelectric Effect, Quantization	96-110
5	9/23/14	x		9/25/14	x	
6	9/30/14	Matter as Waves, deBroglie, Heisenberg Uncertainty, Schrodinger Equation	168-169, 182-197	10/2/14	Particle in infinitely deep box, SHM, not so deep box	201-225

7	10/7/14	Tunneling, radioactive decay, AFM, STM	226-235	10/9/14	<b>MIDTERM EXAM</b>	
8	10/14/14	Fermi Dirac, Bose Einstien statistics	311-334	10/16/14	Hydorgen Atom: Bohr, Schrodinger	241-268
9	10/21/14	Hydrogen Spectra	241-268	10/23/14	Multi-electron Atoms, Periodic Table	272-295
10	10/28/14	Zeeman, Stern-Gerlach, NMR, MRI	256-259	10/30/14	Masers, Lasers	347-356
11	11/4/14	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>	11/6/14	Nuclear Physics: fission, fusion, nucleosynthesis	486-505
12	11/11/14	Elementary Particles	519-551 <a href="http://en.wikipedia.org/wiki/Standard_Model">http://en.wikipedia.org/wiki/Standard_Model</a>	11/13/14	General Relativity, Cosmology, Inflation	555-574
13	11/18/14	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>	11/20/14	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>
14	11/25/14	Student presentations		11/27/14	x	
15	12/2/14	Student Presentations		12/4/14	Student Presentations	
16	12/9/14	Review		12/11/14	Review	
<b>FINAL EXAMS Dec 16-23, 2014</b>						