

## PHYSICS 260 MODERN PHYSICS

Lectures: Tuesday & Thursday, 4:50–6:40 PM in Science Building room A143

Dr. Larry Liebovitch: <http://people.qc.cuny.edu/Faculty/Larry.Liebovitch/>

Office Hours: Tuesdays, Thursdays 1:15-2:15 PM in SB B322

Textbook: S. T. Thornton and A. Rex, *Modern Physics for Scientists and Engineers*, (Brooks/Cole – Cengage Learning, 4th ED)

Homework: Webassign: Class key: qc 4465 1275

Grading Policy:

Homework: 25%

Midterm exam: 25%

Presentations: HW Problems 10%, 4-Minute Video 10%

Final exam: 30%

Week	Tuesday	Topic	Textbook	Thursday	Topic	Textbook
1				8/25/16	INTRODUCTION, classical physics, modern physics (QM,SR,etc.)	1-18
2	8/30/16	Blackbody Radiation, PhotoElectric Effect, Light: wave or particles, Young 2-slit	96-110, 182-183	9/1/16	Stellar Aberration, Fizeau, Michelson-Morley, Invariants (2-d vector, Chaos, attractors)	21-26
3	9/6/16	Einstein's thought - c, Relativity Postulates, Maxwells Equations Invariant under Lorentz Transformation	26-31, 73-75	9/8/16	Space Contraction, Time Dilation	31-58
4	9/13/16	Momentum Energy, Mossbauer	58-72	9/15/16	Doppler, Emission, Absorption	96-110
5	9/20/16	Mossbauer Spectra, Signal Averaging, Pair Production		9/22/16	Atoms have pieces!	84-91
6	9/27/16	Matter as Waves, deBroglie, Heisenberg Uncertainty, Schrodinger Equation	168-169, 182-197	9/29/16	Review for Midterm Exam	
7	10/4/16	x	No Classes	10/6/16	x	Monday Schedule
8	10/11/16	x	No Classes	10/13/16	Particle in infinitely deep box, SHM, not so deep box	201-225
				FRIDAY 10/14/16	Tunneling, radioactive decay, AFM, STM	226-235
9	10/18/16	Fermi Dirac, Bose Einstein statistics	311-334	10/20/16	MIDTERM EXAM	
10	10/25/16	Hydrogen Atom: Bohr, Schrodinger	241-268	10/27/16	Hydrogen Spectra	241-268
11	11/1/16	Multi-electron Atoms, Periodic Table	272-295	11/3/16	Zeeman, Stern-Gerlach, NMR, MRI	256-259
12	11/8/16	Masers, Lasers	347-356	11/10/16	Quantum Computing, Quantum Cryptography	
13	11/15/16	Nuclear Physics: fission, fusion, nucleosynthesis	486-505	11/17/16	Elementary Particles	519-551
14	11/22/16	General Relativity, Cosmology, Inflation	555-574	11/24/16	x	No Classes
15	11/29/16	Applications		12/1/16	Student Presentations	
16	12/6/16	Student Presentations		12/8/16	Review for Final Exam	
	<b>FINAL EXAM December 14-21, 2016</b>					