Introduction to Modern Physics
PHYS 3305 (Fall 2018) Syllabus
http://www.physics.smu.edu/~kehoe/3305/F18.html

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Texts: "*Modern Physics*", 2nd edition, Randy Harris
Prerequisite: differential and integral calculus, scientific calculator
Class Coordinates: Tues. & Thurs. 12:30p.m – 1:50p.m. in Rm 158 Fondren Science
Office hours: 10am-12noon Thursday, or by appointment

Course Objectives: To provide an overview of the physics of the 20th century. Students will familiarize themselves with special relativity and quantum mechanics. They will also study the physics of nuclei, atoms and semiconductors. Modern applications will be discussed. Problem solving skill development will also be an emphasis of the class.

Method of Instruction: The class will consist of lectures. Homework is the foundation of your effort to acquire skill in using the material in the course. It will be due on each Tuesday following the week the material is covered and will be worth 20% of the course grade. No late homework is accepted.

Quizzes and Tests: There will be one mid-term exam, and one final exam. The mid-term will make up 20% of the class grade. The final is cumulative over the whole course and counts for 25% of the grade. There will be weekly 15 minute quizzes during the semester, scheduled on Tuesdays of each week. These will provide 20% of your grade. The lowest quiz grade will be dropped. Each quiz covers material since the last test or quiz. Tests and quizzes are closed book. You may bring a single 8.5"x11" sheet with important formulas and constants relevant for the material on each test and quiz. A presentation on a special topic at the end of the semester will count for 15% of the course grade.

Grading and Attendance Policy: In all cases, it is ***crucial*** to show your work to get credit for solutions to physics problems. Regrading requests must be well-justified in writing. Anticipated absences resulting from religious observance or officially sanctioned extracurricular activity must be brought to the instructor's attention at least 2 weeks in advance. Affected quizzes or tests will be given prior to the rest of the class. No other make-up quizzes or tests will be granted.

Physics 3305 Schedule, Spring 2018

Date	Reading, Homework	Tests, Quizzes, Presentations:
Aug 21 T	Ch 1: Precursors to Modern Physics	
Aug 23 Th	Ch 2: Special Relativity Ch 2 HW: 18,20,21,31; 45,51,54,62,70,84,94	
Aug 28 T	""	Quiz #1
Sep 4 T	""	Quiz #2
Sep 6 Th	Ch 3: EM Waves as Particles Ch 3 HW: 12,18,19,20,21,26,34,45,49,53	
Sep 11 T	**HW Ch 2 due**	Quiz #3
Sep 13 Th	Ch 4: Matter Particles as Waves Ch 4 HW: 17,18,19,22,24,41,43,48,62,63	
Sep 18 T	**HW Ch 3 due**	Quiz #4
Sep 25 T	Ch 5: Schrodinger Equation; **HW Ch 4 due** Ch 5 HW: 24,25,28,33,34; 50,60,61,62,78-82	Quiz #5
Oct 4 Th	""	Test #1 (Ch. 1-4)
Oct 9 T	*Fall Break, no class	
Oct 11 Th	Ch 6: Unbound States Ch 6 HW: 15,16,24,35,45,48,56 **HW Ch 5 due**	
Oct 18 Th	Ch 7: Hydrogen Atom Ch 7 HW: 21,32,36,37,38,44,58,68,85 **HW Ch 6 due**	Quiz #6
Nov 1 Th	Ch 8: Spin Ch 8 HW: 28,30,31,35,41,49,50,56,62,80 **HW Ch 7 due**	Quiz #7
Nov 8 Th	Practice talks	
Nov 13 T	Practice talks cont.	
Nov 15 Th	Ch 10.5-10.8: Semiconductors Ch 10 HW: 50,57,64,66 **HW Ch 8 due**	Quiz #8
Nov 20 T	Supernovae; **HW Ch 10 due**	
Nov 27 T	Final Presentations	
Nov 29 Th	Presentations cont.	
Dec 10 M		Final Exam 11:30am-2:30pm