

PHYS260 (F18) General Physics: Vibration, Waves, Heat, and Electricity

Instructor: H.M. Milchberg, AVW 1415, milch@umd.edu

Lecture: PHY 1412, MW 4.30-5.45 pm

Office hours: MW 3.30-4.30 pm

Recommended reference: *University Physics, Young & Freedman, 14th ed.*

Other useful reference: *Fundamentals of Physics, any edition, by Halliday, Resnick, and Walker (Wiley)*

Lecture schedule

Week	Dates	Topic	Text chapters
1	Aug. 27-29	pressure, temperature, phase changes	17
2	Sept. 5	ideal gases, work, heat, 1 st law of thermo.	17-18
3	Sept. 10-12	specific heat, heat transfer, kinetic theory, mean free path, RMS speed	19
4	Sept. 17-19	equipartition, entropy, 2 nd law of thermo., heat engines and refrigerators	20
5	Sept. 24-26	oscillatory motion and waves	14-15
6	Oct. 1-3	superposition, standing waves, interference, beats	15-16
7	Oct. 8-10	static electricity, electric fields from charge distributions	21
8	Oct. 15	midterm #1, Mon. Oct. 15	
	Oct. 17	capacitors, motion in electric fields	21-22
9	Oct. 22-24	electric flux, Gauss's Law and applications	22
10	Oct. 29-31	electric potential energy and examples	23-24
11	Nov. 5-7	relation between E-field and potential	24
12	Nov. 12-14	capacitors and dielectrics, electric current, current density, cons. of charge	24-25
13	Nov. 19	resistivity, resistance, Ohm's law,	25-26
14	Nov. 26	DC circuits, Kirchhoff's laws, resistors in series and parallel	26
	Nov. 28	midterm #2, Wed. Nov. 28	
15	Dec. 3-5	R and RC circuits	26
16	Dec. 10	review lecture	

Final Exam: Thurs. Dec. 13, 6:30-8:30pm

Assignments: I will email (and post at ELMS) an assignment approximately every 1½ weeks. Assignments are to be completed on paper and handed in at the beginning of the class on the due date. Graded assignments will be handed back in the discussion sessions. There will be no online homework such as Mastering Physics. Feel free to use any similar sites for practice.

Lecture style, class notes, and attendance: I do not use PowerPoint or clickers; I write on the board. My notes are well-organized and relatively neat. The way to get the class notes is to show up for class. I do not take attendance.

Textbook: The recommended approach is to read the chapter sections indicated in the above table in advance of their associated lectures.

ELMS: I use it to post course documents, such as the syllabus, problem sets, and solutions for your online retrieval. I *do not* post grades online. If you want to keep a running tally of your grades, then come to the discussion sessions and collect your graded material.

Lectures missed: A substitute lecturer will be scheduled for the Sept. 19 and Oct. 17 slots.

Grade breakdown: Problem sets 20%; 2 midterm exams specific to this section, each 25%; common final exam 30%. Improvement is rewarded in this class: Best midterm is counted (you must do BOTH midterms). If final exam grade is higher than best midterm, final will count for 80% of final grade. Exam dates are shown in table.