

Syllabus

General Physics 2

(PHYS-112-L05, Spring 2008)

TR 6:30–7:45 p.m. in Haberlin 412

Text: *Principles of Physics* (4th Edition) Vol. 2
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Week	Dates	Chapter	Topics	Exams	Labs*
1	R 1/17	19	electric forces (Coulomb's law)		
2	T 1/22	19	electric field (point charges, line charges)		Electric charges
	R 1/24	19	electric field (plane charges)		
3	T 1/29	20	electric potential energy		Electric fields and potential
	R 1/31	20	electric potential (voltage), capacitor		
4	T 2/5	21	electric current, electric resistance		No Lab
	R 2/7			Exam 1	
5	T 2/12	21	resistor combinations, Kirchhoff's rules		Ohm's law and simple circuits
	R 2/14	21	resistor-capacitor circuits		
6	T 2/19	22	magnetic forces on moving charges		Resistance in DC circuits
	R 2/21	22	torques on current loops, magnetic dipole		
7	T 2/26	22	Biot-Savart law		RC circuits: time-varying signals
	R 2/28	22	magnetic field calculations		
8	T 3/11	23	motional emf, Faraday's law		Magnetic forces and fields
	R 3/13			Exam 2	
9	T 3/18	23	Lenz's law, self-inductance		Magnetic induction
			Easter Break		
10	T 3/25	24	electromagnetic waves		No Lab
	R 3/27	24	transverse waves and polarization		
11	T 4/1	25	reflection, refraction, and dispersion		No Lab
	R 4/3	26	images formed by mirrors and thin lenses		
12	T 4/8	26	ray diagrams		Geometric optics
	R 4/10			Exam 3	
13	T 4/15	26	the eye, microscopes, and telescopes		Thin lenses and curved mirrors
	R 4/17				
14	T 4/22	27	interference and diffraction of light		Wave optics
	R 4/24	28, 29	introduction to atomic physics		
15	T 4/29	30, 31	introduction to nuclear and particle physics		*See lab website for actual schedule
				Final	

Course Policies

Attendance:

You are expected to attend all scheduled classes and exams. You must notify me about any absences with a valid excuse (a note from the Class Dean). Significant number of absences will severely hinder your successful completion of this course.

Homework:

Homework assignments should be completed on time (usually due on Tuesday at 6:30pm). Answers to questions should be written legibly, and solutions to problems should be provided clearly. Show all pertinent calculations and relevant diagrams.

Exams:

There will be three exams (on Thursdays of the 4th, 8th, and 12th weeks). Make sure you do not miss any exams (no make-up exams will be given). The final exam will take place between May 3 and 10.

Grading policies:

(a) Lecture portion:

Weekly Homework	50 points
Exam 1	100 points
Exam 2	100 points
Exam 3	100 points
Final Exam	150 points
Total	$a = 500$ points

(b) Lab portion:

At the end of the semester, your lab grade will be forwarded to me by your lab professor. It will be a number that represents where you stand in the lab; it is the deviation from the average score in units of the standard deviation σ_b . That is, the lab professor will provide the quantity

$$b = \frac{x - \bar{x}}{\sigma_b}$$

where x is individual student's lab score,

\bar{x} is the average of scores in all of that lab professor's lab sections,

σ_b is the standard deviation of scores in that lab professor's lab sections.

For example, the lab average is 85.5, the standard deviation is ± 3.4 , and you got 82.2, then your lab grade would be -0.97 . If you got 94.0, your lab grade would be $+2.50$.

(c) Course grade:

The lecture portion contributes 85% to your overall course grade and the lab portion 15%. The formula for calculating your overall percent grade is

$$c = \frac{a}{500} \times 85\% + \frac{\bar{a} + b\sigma_a}{500} \times 15\%$$

where \bar{a} and σ_a are the average and standard deviation of lecture scores.

For example, you earned $a = 400$ from the lecture portion, where the average is $\bar{a} = 385$ with a standard deviation of $\sigma_a = 50$. If your lab grade is -0.97 , your overall grade is 78.1%. If your lab grade is $+2.50$, your overall grade is 83.3%.