

General Information

"The great intellectual division of mankind is not along geographical or racial lines, but between those who understand and practice the experimental method and those who do not understand and do not practice it."

G. Sarton

SCHEDULE - SPRING 2014

Week of	Experiment
Jan. 13	Electrostatic Phenomena
Jan. 20	Electrostatic report due Friday
Jan. 27	Electric Field Mapping
Feb. 3	Electric field report due Friday
Feb. 10	Deflection of Electrons
Feb. 17	Deflection report due Friday
Feb. 24	Ampere's Law
Mar. 3	Ampere's Law, continued; Midterm Recess
Mar. 10	Ampere's law report due Friday
Mar. 17	The Oscilloscope
Mar. 24	Oscilloscope report due Friday
Mar. 31	Electromagnetic Induction
Apr. 7	Induction report due Friday
Apr. 14	Simple Oscillators
Apr. 21	Oscillators report due Friday

Reports are due by 5 PM on the days listed. Early submissions are always welcome, while late work will be penalized at the rate of 5 percentage points per day or fraction late. Reports will not be accepted more than 10 days after the due date or the first day of finals, whichever is earlier.

LABORATORY ORGANIZATION

The experimental work is semi self-paced, in that you may work any time the laboratory room is open. Apparatus will be available and reports will be due according to the included schedule. Assistance is available on request.

Each exercise will require 2-4 hours in lab to complete the measurements, plus additional time to prepare a report. You may work with *one* partner if you wish, but it is not required. In any case, each student is expected to be familiar with all phases of the experiment and to produce an independent report of the results.

Note that the amount of equipment is limited, so it will be impossible for all students to undertake an experiment immediately before a deadline.

DATA TAKING

Once the apparatus is set up, you can start taking data. If at all possible, make a plot of the data as you go along. Your graph will very quickly tell you if the data are reasonable, if the parameters are being varied enough, and if the apparatus is working.

The apparatus you are using, although relatively simple, is remarkably expensive. Please be gentle so that neither you nor the apparatus is damaged. Particularly delicate or hazardous operations are noted in the lab manual as they occur. Please heed the warnings. If a piece of equipment does malfunction, please tell the instructor so it can be repaired. We usually have a spare with which you can finish the lab.

REPORTS

A template will be provided for each exercise. Record the data as indicated, attach supporting plots, and answer the questions posed.

GRADES

The lab grade is based on the quality of the experimental work and the lab reports. The resulting score will be reported to the lecturer as your grade for the laboratory portion of PHYS 112.

Grading is a necessary evil but you should be aware that most students do reasonable work and get good scores. A good grade is not, therefore, the most valuable thing you can get from this part of the course.