

## Laboratory syllabus Phys 4A Fall 2016

Laboratory experience is critical for any person entering a scientific or technical field.

All lab reports should be written by each individual student even if the lab is physically done collaboratively with other students.

Lab reports will emphasize error analyses; an experiment without error analysis is essentially worthless. You will be taught how to do proper error analysis using a variety of techniques.

For each lab you will have two sections:

a) Lab Notes/Skills Section

Here you keep notes for the lab given by the instructor during the first 15 minutes of lab.

b) Lab Report Section

Here you will write a formal lab report including any or all of the following: introduction, theory, hypothesis, raw data, presentation of error of each raw data measurement, data analysis, graphs, error analysis, discrepancy, Presentation of result with error for calculated quantities, specific conclusion and any 1D graphs, and general reflection (see webpage for more lab report details). You will be told which sections you need to do during lab class.

Your lab reports will be completed before you leave the lab. Lab reports will be written in the lab and your lab notebooks will be graded. Lab notebooks stay in the lab. No extra time will be allowed to write the lab report; the report must be finished in class.

Occasionally a problem is given as a supplement to lab work and is done in the lab notebook.

There will be 8-10 labs. 2 will be graded for content. 6 will be graded for effort. There are no make-up labs.

If you miss a lab that is graded for content, and it is excused (see below for definition of "excused"), then the instructor will choose the lab prior to the one being graded as a substitute lab to grade for you. If you miss a lab and it is not excused then your score for that lab is a zero.

In no circumstance can a student be excused from 2 labs. If you miss 2 or more labs then you cannot pass the class and may be dropped from the class; lab work is a necessary experience to learn and appreciate physics.

Lab Final: you will be given a lab final on the last lab day.

Lab Quizzes may also be given and count for 10% of the Lab final part (50% of the lab grade.)

Grading of Lab part of class:

The lab final/lab quizzes are worth 50 % of your overall lab grade. The 6 Lab reports are 50 % (16, 16, 3,3,3,3,3,3). You will not be told which 8 labs will be graded.

Students that are late for lab class will lose points proportional to the amount of time that they are late (compared to the entire lab cl