

Physics 112-01—General Physics II: Electricity, Magnetism, and Optics
Homework Assignment #1
Due Wednesday, January 31, 2018, 11 a.m.

This assignment has 3 basic parts: Enroll in Mastering Physics, do the on-line “HW #1” assignment, and do the pencil-and-paper problem below.

Enroll in Mastering Physics.

First, you will need a “Student Access Kit”. If you bought your text at Lafayette’s bookstore, you should have received the kit with the text. If you got a 2-semester kit last semester, you should be able to use it again; no further purchase is necessary. If you do not have a kit, you can purchase one on-line at <http://www.masteringphysics.com>. Be sure to click on the right textbook—we are using Knight’s *College Physics, 3rd edition*. Once you have your kit, you can register online at <http://www.masteringphysics.com>. When asked to provide a Student ID, *please* use your Lafayette e-mail ID, e.g. something like smithj. Anything else will complicate grading and make it harder to ensure you get credit for your work.

Once you have registered, you can log in at the Mastering Physics web site and enroll yourself in this course. The course ID is `LafayettePhys112Spring2018`.

Do “HW #1.”

The first part of this assignment is intended to help introduce you to the system, including the ways to enter mathematical expressions. It is worthwhile to go through it. The first five problems are for practice (*i.e.* they don’t count) but you should try them. You will get more out of the system and ultimately save yourself time and avoid frustration if you invest a little time now. You probably did these same problems last semester, but a quick review may still be helpful. Use your own best judgment.

The last 8 problems are the graded physics problems for this week. They count, so don’t skip them.

Do the Pencil-and-Paper problems.

Chapter 15: Problems 17 (30 pts.) and 68 (30 pts.)

Please write neatly and show your work clearly. I need to be able to follow your reasoning. Staple your pages together.

Grading

The text rates problem difficulties with vertical bars; One, two, and three-bar problems will typically be assigned 10, 20, and 30 points respectively. Your total score for each week will be the sum of the on-line and pencil-and-paper scores divided by the total number of possible points. For your overall homework grade, each week’s assignment will be weighted equally. The lowest week will be dropped.

Significant Figures

Interpretation of any physical measurement or prediction involves understanding the underlying uncertainties. Unfortunately, a proper handling of propagating uncertainties in calculations would get quite involved for this course. In the lab, you will spend a good deal

of time and effort thinking about and accounting for uncertainties in your results. In the lecture portion of the class, however, we will adopt a simpler approach.

Most problems will require numerical answers. You should normally aim for at least 1% accuracy. Typically, this means keeping 4 or 5 digits in intermediate calculations (or just leaving the intermediate result in your calculator memory) and 3 digits in your final answer. MasteringPhysics will sometimes tell you to give your final answer to 2 digits. You may ignore that and give 3 digits. If you need to use an answer in a later part of a problem, you should definitely use the full-precision answer, not one rounded off to 2 digits. Again, your goal is to get the right answer to at least 1% accuracy. Excessive round-off can sometimes make a big difference.

Academic Honesty

If you get bogged down with any of the problems, do not hesitate to discuss them with your instructor or with a fellow student. However, if you discuss a problem with *anyone* (besides your instructor) you should acknowledge that collaboration. Please see the Academic Honesty policy for more information about appropriate and inappropriate collaboration.