PHY1033C **Fall 2017**

Expectations and Guidelines

1. This is a survey course on physics. In this course we will focus on the development of ideas, conceptual understanding, and their applications to aid your understanding through discussion in lectures and simple experimentation. No serious mathematical skills are required in this course but we will use calculator to get numerical results. When you work on homework problems or exams, you do not have to copy the exact numbers shown on the calculator. Round up to the integer or one decimal point should be enough: 2345.0988 $\rightarrow$ 2345.1 is good enough.

2. Make sure you used the correct unit in SI for a given quantity. You will soon learn what are the correct units and what SI means.

3. Read the textbook preferably before the class.

4. Attend lectures and **record your own notes**. If you misses a class, I can let you make a copy of my notes.

5. Do your HW and finish your calculations. I do not expect you work on HW for several hours. You can always come to ask help from me.

6. Use the office hours wisely. I am here to make you succeed not to grade you out.

7. Quiz: mostly conceptual question that can be answered without calculations. If you did **3** & **4**, you will do well.

8. Exam: 60 - 70% of exams will be from your HW problems (almost identical). Therefore, I expect you get at least 60% in exams.

9. Overall, I expect 2 - 3 hrs of work per week in addition to the lectures.

Laboratory Guidelines

Requirements:

- Bound, quadrille ruled composition book for a laboratory journal.
  It is important that this book is bound to keep all of your notes together and that it has little squares on each page to aid in graph making. All laboratory work and reports are to be written in this journal. The laboratory journal is not to be taken home and will remain in the laboratory at all times (except when used for studying for the tests). small ruler This is important and used to make straight lines in graphs and will not be used for measurements in the lab.

- Calculator
  Most of the data collection in each experiment will be done in a group of two to four students or with the class as a whole. You are encouraged to discuss among yourselves your methods, analysis, and purpose. But each of you must record all of your data, and your journal will be graded independently from your lab partner's. Data should be entered directly into the book, you should not use bits of scrap paper or a rough draft. You can always cross out and start a data table over. There are no points for neatness, but if the grader cannot read your book, it is the same as not writing anything.

The following minimum structure is required for each laboratory write-up and for the proper upkeep of your journal.

1. Each experiment should have a TITLE and a date.

2. There should be a few sentences which describe the PURPOSE of the experiment.

3. There should be enough DESCRIPTION of what you actually do that some one unfamiliar with the lab and the lab handout, but familiar with physics, can read your report and understand what you did. A labeled diagram is often helpful.

4. DATA that is taken should be entered neatly in your journal. Nice columns, made with your ruler, look good. Any measurement that you make has some unit associated with it. If there is a number in your book it should be clear what your units are and what the number means. It is always a good idea to repeat any measurement and use the average value. The more measurements you make, the more accurate is your result. *It is recommended to do measurements to one-tenth of the smallest scale of your measuring equipment.*

5. The data ANALYSIS is the comparison of your measurements with the predictions of the laws of physics. If it is appropriate (and it usually is), then a simple graph of your data should be made. Make the graph BIG, label the axes and the tick marks, include units, give a title to the graph, and use your ruler for the axes. We try and choose the scale of the graph so that it is convenient, and it should never occupy less than half a page.

6. At the end of the write-up should be a CONCLUSION, stating what has been learnt from the experiment. Also this should contain intelligent comments about how what the main sources of error in the experiment, and how they might affect the result.