

# Introductory Physics Laboratory Survival Guide

August 2018

This syllabus exists to inform you, the student, of the grading policies and lab/recitation structures and to answer many of the common question you might have about the course..

## **When do we meet for lab?**

There are twelve physics labs and fifteen recitations sessions in the semester. Most weeks you will go to recitation for 75 minutes, have a short break then proceed to your lab for 75 minutes.

## **How will the recitation be used?**

A recitation is a time for the professor or teaching assistant and students to sit down in an informal session to discuss the material. It is not a lecture, but more of a question and answer session where you can bring up the areas of the material that you are having a difficult time understanding. You are encouraged to ask questions about homework problems and such. You are also likely to have a quiz every week in recitation.

## **How do I need to prepare for the laboratory session?**

At the beginning of the laboratory session your T.A. may give a short lecture on the upcoming lab. However, it is your responsibility to have read the entire lab manual for that week and to come prepared to answer questions (or take a quiz). Some of the lab equipment is a little complicated to use at first, so the TA may use this time to explain the usage of some equipment. Your previous weeks lab write-up should be finished before going to your recitation.

## **How Should I Prepare for Lab?**

You should read the lab on your own before coming to class. Some labs (especially in Physics 221) have pre-lab videos that you should watch. It's not a bad idea to prepare a pre-lab notebook which is organized and neat before coming to class. As you read the lab manual, take note of data tables and other experimental values that likely will need to be recorded. You might consider making a pre-lab notebook with empty tables but clearly labeled rows and columns, as well as separate spaces for single values not belonging to the tables. These tables and blank spaces should correspond to the different parts of the lab. When you actually perform the experiments, you can simply fill in these empty spaces and tables! This allows you to see if missed anything, and gives you a perspective as to where you are in the lab.

Some of the labs require a formal report; some do not. Your TA will make clear which labs require which type of write-up. The formal lab write-ups consist of two parts: format and content. The format refers to all the individual parts of the lab, for example, procedure, results, tables, conclusions etc.. A detailed description of how each section or part should be written is described in the sample lab write-up. Refer to this sample when writing your actual lab reports. The content refers to the text written under the format headings. You will be graded on clarity, completeness and correctness. Further grading details are left to the discretion of the T.A. *These include penalties for unsafe laboratory practices.* The lab equipment must be handled carefully by all people in the lab. Some of the equipment must be used with safety glasses. You must wear them when your TA specifies that you do so. (No, you do not have to wear safety goggles when plotting data.) Goofing around in the lab can not only cause injury but broken lab equipment. Horseplay and unsafe conduct can be cause for expulsion from the lab. Safety is Everyone's Job!

## **Is there anything else I need to know about labs?**

Sure!

- At the end of each lab, the T.A. must sign and date everyone's data sheets and/or lab notebooks. You must turn in this signed datasheet with your report. This ensures that every student is participating in the lab, and it also serves to confirm your attendance at lab, should the issue come up later.
- All labs must be typed.
- All labs are due in one week, at the beginning of the following recitation period. Late labs will be penalized. See your syllabus for details. Any lab you do not complete earns you a zero. Too many zeros in labs will likely result in your failing the course. If you cannot attend a lab, consult with your TA at least a week before the lab meets. There are NO make-up days at the end of the semester, so make every effort to arrange things with your TA if you know in advance you cannot make your regular lab in any particular week.
- Plagiarism is grounds for failing. Any students turning in near identical lab reports, or obviously copying from another student's work will receive a failing grade for that lab. Blindly copying and pasting wikipedia pages is also plagiarism!
- Doctoring data is also grounds for failing. The purpose of these labs is not to get the "right" answer but to learn how to do experiments, analyze data and explain your results.

## **Now that I know the rules, what actual experiments are we going to do?**

The experiments that you will be doing are contained in Lab manuals available on the Physics Department webpage under "Resources" at the URL: <https://science.iit.edu/physics/resources>. We look forward to working with you this semester!

Good Luck and Happy Labbing!!!