

PHY252 Grading Rubric

Introduction (½ – 1 page, 10 points)

- State what you are measuring, and what the ramifications of that measurement are on your understanding of physics
- Motivate the experiment with context – include some kind of discussion of the relevant physics, and at least one equation closely related to what you're measuring (or the relation you're trying to demonstrate is true)
- State what you expect your results to be, and why.
- Give *detailed* instructions on what you will do to measure the quantity under investigation
- If necessary, describe how a measurement device works and how it will help you measure your quantity

Analysis and Discussion (roughly 2 pages, not including plots, 50 points):

- Include the raw data you collect in the lab, generally organized in tables. Tables should have titles and labelled rows and columns, with the units indicated where appropriate.
- Record and describe all uncertainties, both systematic and statistical.
- Describe all manipulations you perform on the data, including relevant equations and error propagation.
- Describe in detail the primary numerical analysis you perform on the data – either a χ^2 fit or integral – and all of the details of the fit, its parameters, and its accuracy.

After you get a result:

- Report result, and uncertainty on the result, including a mention of how reliable the result is
- Discuss whether the result matches the predictions you made in the introduction, note the consequences of the result

Conclusion (roughly ½ page, 20 points):

- State what you measured, and results +/- uncertainty
- Does result match theory?
- State why your result is or isn't reliable, what you might do to improve further measurements

Complete Datasheet (10 points)

Some extra notes:

- Make sure you pay attention to the difference between statistical and systematic uncertainties – be specific when discussing uncertainties which type of uncertainties they are
- Always include all the raw data. If you have an outlier, it must be included in the analysis UNLESS you have a very good reason why you think the outlier should be omitted, and only then do the analysis without that data point.