

## PHYS 4090 Lab Report Guidelines

Please consider the following items as you write your lab report:

- Background and Context
  - Is the introductory and background material sufficient for someone not an expert in this area to understand the context and significance of this work?
  - Has related work been appropriately and adequately referenced?
- Technical Quality
  - Is the work relevant and accurate, free from errors, misconceptions, ambiguities?
  - Are interpretations/models supported by data?
  - Is the data analysis complete?
  - Are the conclusions well-supported?
- Clarity and Completeness
  - Is the work logically developed?
  - Is the presentation of data and/or modelling clear and easy to follow?
  - Is the discussion clear and unambiguous?
  - Is sufficient information provided for an expert reader to understand fully what was done, to repeat the experiment, or to duplicate the results presented?
  - Is enough detail presented to support the conclusions drawn?
  - Is the report “complete”, i.e., not requiring extensive reference to other work to permit understanding?
- Presentation
  - Are the English grammar and usage satisfactory?
  - Is the report loosely written or repetitious?
  - Does the report restate established scientific or engineering principles instead of merely providing the appropriate reference to such principles?
  - Is the font size appropriate and consistent?
  - Are the equations readable? Use of an equation editor is highly recommended.
- Figures and Tables
  - Are the figures and tables clearly labelled, legible, and with appropriate captions?
  - Are the figures and tables referred to in the text?
  - Are the figures and tables relevant?
  - Do the tables and figures show reduced rather than raw data?
  - Is the number of figures and tables appropriate?
- Symbols, Acronyms, and Abbreviations
  - Are all nonstandard abbreviations and acronyms identified at first use?
  - Does the report use proper and consistent symbols and abbreviations?

**Abstract**

Method, results and comparison to established values concisely stated.

**Introduction/Theory**

Strong motivation; appropriate theoretical and experimental background material; citations included; clear presentation; figures labelled with captions provided.

**Procedure/Method**

Important experiment details clearly presented; apparatus described; appropriate diagrams and citations included. No step-by-step recipe. No irrelevant diversions.

**Results/Analysis**

High quality data; data clearly presented in labelled tables and figures with captions; appropriate significant figures used; analysis explained and applied correctly; appropriate uncertainties justified and propagated correctly; sample calculation for error propagation; long tables placed in appendix.

**Discussion/Conclusion**

Sound physics explanations clearly presented; comparison to world average values including comment on agreement or lack thereof; discussion of major contributions to uncertainty, any systematic biases, and potential improvements included. Questions in lab manual answered.

**Citations/References**