

# PHYS328W: Guidelines for Papers

## 1. Experimental Work

- (a) Use the available equipment effectively.
- (b) Collect enough data of good enough quality to extract credible results.
- (c) If things go wrong, make a reasonable effort to correct the problems.

## 2. Writing

- (a) Describe your work in enough detail that others can attempt to reproduce your results with similar equipment. Describe what you did. Avoid writing in the style of an instruction manual. Avoid lists of equipment.
- (b) Use clear, precise, objective language. Replace or supplement ambiguous language like “acceptable” or “pretty good,” with language that describes what you mean.
- (c) Effectively integrate equations and references to figures and tables into your writing. They are part of the story.
- (d) Organize your sentences and paragraphs in a coherent, logical sequence.
- (e) Engage fully in the process of writing and revising drafts.

## 3. Analysis and Reasoning

- (a) Report a *complete* analysis of your data. If more information can be extracted from your data, extract it.
- (b) Address uncertainties as indicated in the lab assignment.  
*We do not emphasize uncertainties very much in the electronics context, where agreement between measurement, theory, and simulation is generally quite good, and much of the time, devices are designed to allow for operating parameters to vary within acceptable ranges. This is not an invitation to develop the habit of ignoring uncertainties in general!*
- (c) Commentary
  - i. Comment on the agreement of your results with theory/established results.
  - ii. Describe how one might *productively* improve on your work.
  - iii. Only make claims supported and accompanied by compelling evidence.

## 4. Mechanics

- (a) Figures and Tables
  - i. Label the axes of all of your graphs. Include units.
  - ii. Include captions with all figures and tables, and refer to each figure and table at least once in the text of your paper. Use the  $\LaTeX$  `\label{}` and `\ref{}` commands to manage figure and table references.
- (b) References
  - i. Bibliography format: Table I of <http://forms.aps.org/author/styleguide.pdf>.
  - ii. Use the  $\LaTeX$  `thebibliography` environment and `\cite{}` commands to produce numbered citations. List references in the order of first citation in your paper.
- (c) Include units and uncertainties with all measurements and results derived from them.
- (d) Find and fix grammar, punctuation, spelling, and typesetting errors.