

# PHYS 597 laboratory report template

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This is a L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> template for preparing a laboratory experiment report for the Fall 2015 PHYS 597 Senior Physics Laboratory course in the Department of Physics and Astronomy at the University of Calgary.

A scientific paper includes many sections.

*Abstract.* An abstract, or summary, is published together with a research article, giving the reader a "pre-view" of what's to come. Abstracts may also be published separately. They allow other scientists to quickly decide if they want to read the article in depth. The abstract should be a little less technical than the article itself. Your abstract should be one paragraph (100-250) words, which summarizes the content of the paper.

It is not easy to include all this information in just a few words. Start by writing a summary that includes whatever you think is important, and then gradually prune it down by removing unnecessary words, while still retaining the necessary concepts.

Abstracts (except for Nature Journals) don't include abbreviations or citations.

*Introduction.* What is the general topic of your investigation? Why is it interesting? What does it build on (include the relevant literature). What did you show? One to four paragraphs should be enough.

*Theory.* Briefly describe the underpinning theory. Explain the meaning of formulas in words. Equations to which you want to refer to later need equation numbers.

*Experiment.* Describe the setup and the procedure used to take data. Include a figure depicting the setup. Figures (and tables) have to be numbered and feature a caption that describes what is shown in the figure. You can either explain the figure in the caption, or refer to the text in which it is described. If the figure is copied from another source, cite the source.

*Results.* Use graphs and tables if appropriate, but also summarize your main findings in the text. Do NOT discuss the results or speculate as to why something happened; that goes into the Discussion. You don't have to include all the data you've gotten (the less important data should be in your lab book).

*Results and discussion.* Highlight the most significant results, but don't just repeat what you've written in the Results section. How do these results relate to the original question? Do the data support your hypothesis? If your results were unexpected, try to explain why. Is there another way to interpret your results? What further research would be necessary to answer the questions raised by your results? How could you improve the results?

*Conclusion.* End with a short paragraph that summarizes your conclusion, emphasizing why it is relevant.



FIG. 1: The University of Calgary Coat of Arms.

Instructions for formatting the report are as follows:

- Strictly no more than 2 pages, A4 or letter size.
- Acceptable file format is Adobe PDF.
- Please use the Times font family.
- All margins should be at least 2.5 cm.
- Single-spaced lines.
- Please use the following layout.
  1. Title (15 pt, boldface, centered)
  2. Names of authors (10 pt, boldface, centered, presenting author underlined if known)
  3. Affiliations (10 pt, Italic, centered)
  4. Presenting author's e-mail address
  5. Main text (10 pt, two columns)
  6. References
- Table and figure captions should use font size 9.
- All characters in the figures, including super- and subscripts, should be at least 1 mm in size.

Equations, references [1], figures and tables may be in-

cluded using appropriate L<sup>A</sup>T<sub>E</sub>X environments as follows:

$$E = mc^2. \quad (1)$$

TABLE I: Important dates.

First report deadline	October 09
Second report deadline	November 06
Third report deadline	December 04

All these elements should be formatted in accordance with the *Physical Review Letters Style and Notation*

*Guide* [2].

The total size of your contribution should not exceed 5MB.

This template is available from <http://rqc.ru/conference/>.

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[1] L.-M. Duan, M. D. Lukin, J. I. Cirac and P. Zoller, *Nature* **414**, 413 (2001).

[2] <http://journals.aps.org/files/styleguide-pr.pdf>.