

Thesis/Dissertation Title

A Thesis

Presented to
the faculty of the School of Engineering and Applied Science
University of Virginia

in partial fulfillment
of the requirements for the degree
Master of Science

by

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May 2019

APPROVAL SHEET

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is submitted in partial fulfillment of the requirements
for the degree of
Master of Science

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A handwritten signature in black ink, appearing to read 'CHB', is written over a horizontal line.

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May 2019

*TODO:*make copyright page here

Abstract

Write your abstract here.

Your abstract can be any length, but should be a maximum of 350 words for a Dissertation for ProQuest's print indices (or 150 words for a Master's Thesis); otherwise it will be truncated for those uses [1].

To my parents.

Acknowledgements

I would like to thank the Department of ... for providing ... I would like to thank my parents, without whom my life would not be possible. I would also like to thank my advisor, my dissertation committee, and my research collaborators because every graduate student needs to do so. And finally, I thank the members of my research group, to whom ...

Don't forget to ask your advisor if your work was sponsored by a grant that needs to be acknowledged in this section.

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Acronyms

ABC A... B... C.... 1

Glossary

term descriptions. 1

Chapter 1

Introduction

1.1 Background

A... B... C... (ABC)

TERM

1.2 Thesis Overview

Chapter 2

Chapter Name

2.1 Topic 1

Contents of topic 1...

2.2 Topic 2

Contents of topic 2...

Chapter 3

Discussion and Future Work

3.1 Discussion

3.2 Future Work

Future work should include ... It should also ...

References

- [1] ProQuest. PQ/UMI GradWorks Guide F2006. <http://www.princeton.edu/~mudd/thesis/Submissionguide.pdf>, 2006.
- [2] S. Fear. Publication quality tables in LaTeX. Available from CTAN, macros/latex/contrib/booktabs, <http://www.ctan.org/tex-archive/macros/latex/contrib/booktabs/booktabs.pdf>, 2005.
- [3] Seeley G. Mudd Manuscript Library. Submitting your Doctoral Dissertation or Masters Thesis to the Mudd Manuscript Library. <http://www.princeton.edu/~mudd/thesis/>, May 2009.
- [4] Princeton University Library. Doctor of Philosophy Dissertation and Master's Thesis Requirements. <http://www.princeton.edu/~mudd/thesis/MuddDissertationRequirements.pdf>, September 2009.

Appendix A

Implementation Details

Appendices are just chapters, included after the `\appendix` command.

A.1 Switching Formats

When switching `printmode` on and off (see Section B.4), you may need to delete the output `.aux` files to get the document code to compile correctly. This is because the `hyperref` package is switched off for `printmode`, but this package inserts extra tags into the contents lines in the auxiliary files for PDF links, and these can cause errors when the package is not used.

A.2 Long Tables

Long tables span multiple pages. By default they are treated like body text, but we want them to be single spaced all the time. The class therefore defines a new command, `\tablespacing`, that is placed before a long table to switch to single spacing when the rest of the document is in double spacing mode. Another command, `\bodyspacing`, is placed after the long table to switch back to double spacing. Normal tables using `tabular` automatically use single spacing and do not require the extra commands.

When the documentclass is defined with the ‘`singlespace`’ option, these commands are automatically adjusted to stay in single spacing after the long table.

Make sure there is always at least one blank line after the `\bodyspacing` command before the end of the file.

Some times long tables do not format correctly on the first pass. If the column widths are wrong, try running the \LaTeX compiler one or two extra times to allow it to better calculate the column widths.

If you want your long table to break pages at a specific point, you can insert the command `\pagebreak[4]`, to tell \LaTeX that it really should put a page break there. `\pagebreak[2]` gives it a hint that this is a good place for a page break, if needed. If there’s a row that really should not be broken across a page, use `*`, which will usually prevent a pagebreak.

A.3 Booktabs

The `booktabs` package is included to print nicer tables. See the package documentation [2] for more details and motivation. Generally, all vertical lines are removed from the tables for a better visual appearance (so don’t put them in), and better spacing and line thicknesses are used for the horizontal rules. The rules are defined as `\toprule` at the top of the table, `\midrule` in between the heading and the body of the table (or between sections of the table), and `\bottomrule` at the end of the

table. `\cmidrule` can be used with the appropriate options to have a rule that spans only certain columns of the table.

A.4 Bibliography and Footnotes

The bibliography and any footnotes can also be single spaced, even for the electronic copy. The template is already setup to do this.

Bibliography entries go in the .bib file. As usual, be sure to compile the L^AT_EXcode, then run BibTeX, and then run L^AT_EXagain.

To cite websites and other electronically accessed materials, you can use the ‘@electronic’ type of BibTeX entry, and use the ‘howpublished’ field to include the URL of the source material.

The formatting of bibliography entries will be done automatically. Usually the titles are changed to have only the first word capitalized. If you’d prefer to have your original formatting preserved, place the title in an extra set of curly braces, i.e., “title = {{My title has an AcroNyM that should stay unchanged}},”.

A.5 Figures and Tables

The captions of figures and tables take an optional parameter in square brackets, specifying the caption text to be used in the Table of Contents. The regular caption in curly braces is used for the table itself.

Generally captions for tables are placed above the table, while captions for figures are placed below the figure.

Appendix B

Usage

This L^AT_EX template and document class `puthesis.cls`, were adapted from “Dissertation template and document class for Princeton University”. The Mudd Library website [3] provides detailed specifications for how to format your dissertation [4] (for Princeton use). Also, review the ProQuest Dissertation Guide [1], which has additional formatting rules that are important for the submission of the electronic copy of your dissertation. The Princeton University template was created in 2010 by Jeffrey Dwoskin, and adapted from a template provided by the math department. Their original version is available at: <http://www.math.princeton.edu/graduate/tex/puthesis.html>

This is **NOT** an official document. Please verify your school and department requirements before using this template or document class.

B.1 Figures

Everyone needs floating figures in their dissertation.

As shown in Figure B.1, the Mudd Library dissertation requirements [4] specify additional options for formatting the title page. For example, if your thesis has multiple volumes, or to indicate the proper formatting for a master’s thesis.

B.2 Tables

Tables are also quite important. Any table that can fit entirely on one page can be a floating table. If a table is longer and will span multiple pages, a long table can be inserted in-line with the text. This is demonstrated in Table B.2, and explained in Appendix A.

Tables that fit on one page use normal floating figures. Keep the ‘p’ placement option (in addition to ‘h’ and ‘t’) so that if the float cannot fit in-line with the document text, it can be on a separate page by itself immediately after it is placed. Without the ‘p’ option, the float may get pushed to the end of the chapter, along with all other floats in the chapter that follow it.

Table B.1 lists the various options for publishing your dissertation, with costs, as of 2010. You will have to bring a check for the appropriate amount, made out to “Princeton University Library”, when you submit your bound dissertation copies to Mudd Library, along with the appropriate forms and the electronic copy of your dissertation burned to a CD (not a DVD) as a single PDF file. (See [4].)

Traditional publishing is cheaper initially and lets you earn royalties if the publisher sells many copies of your dissertation. However, most of us won’t have a best-seller dissertation and most likely won’t earn royalties anyway. Instead, by choosing open access publishing, your dissertation will be available online for free to anyone who is interested. I strongly advocate for open access, to maximize the impact of your research.

Your dissertation is protected by copyright regardless of whether or not you have the copyright registered. However, registration establishes a public record of your copyright claim [4]. ProQuest

Appendix B

TITLE OF DOCTORAL DISSERTATION [OR MASTER'S THESIS]

Volume (if more than one bound volume)

Legal Name of Author

A DISSERTATION [OR THESIS]

PRESENTED TO THE FACULTY

OF PRINCETON UNIVERSITY

IN CANDIDACY FOR THE DEGREE

OF DOCTOR OF PHILOSOPHY [OR MASTER OF ARTS]

RECOMMENDED FOR ACCEPTANCE

BY THE DEPARTMENT OF [OR PROGRAM IN]

[NAME OF DEPARTMENT OR PROGRAM]

[Adviser: John Doe]

Month* Year

*(The month must be the one when the degree will be granted by the Board of Trustees.
Usually, the only acceptable months are January, April, June, September and November)

Figure B.1: Sample title page layout [4]

will submit the copyright registration for an extra fee (about \$55). Alternatively, you can register it yourself at the Copyright Office's website for only \$35: <http://www.copyright.gov/eco/>.

B.3 Usage

To start, in your main .tex file, use this class as your main documentclass instead of 'report' or 'book'. For example:

Table B.2: List of options for the puthesis document class and template

| Option | Description |
|--|--|
| 12pt | Specify the font size for body text as a parameter to <code>documentclass</code> . The Mudd Library requirements [4] state that 12pt is preferred for serif fonts (e.g., Times New Roman) and 10pt for sans-serif fonts (e.g., Arial). |
| letterpaper | If your document is coming out in a4paper, your LaTeX defaults may be wrong. Set this option as a parameter to <code>documentclass</code> to have the correct 8.5”x11” paper size. |
| lot | Set this option as a parameter to <code>documentclass</code> to insert a List of Tables after the Table of Contents. |
| lof | Set this option as a parameter to <code>documentclass</code> to insert a List of Figures after the Table of Contents and the List of Figures. |
| glo | Set this option as a parameter to <code>documentclass</code> to insert a List of Acronyms and a List of Glossaries after the Table of Contents and the other lists. |
| singlespace | Set this option as a parameter to <code>documentclass</code> to single space your document. Double spacing is the default otherwise, and is required for the electronic copy you submit to ProQuest. Single spacing is permitted for the printed and bound copies for Mudd Library. |
| draft | Set this option as a parameter to <code>documentclass</code> to have L ^A T _E Xmark sections of your document that have formatting errors (e.g., overfull hboxes). |
| <code>\newcommand</code> <code>{\printmode}{}{}</code> | Insert this command after the <code>documentclass</code> command to turn off the hyperref package to produce a PDF suitable for printing. |
| <code>\newcommand</code> <code>{\proquestmode}{}{}</code> | Insert this command after the <code>documentclass</code> command to turn off the ‘colorlinks’ option to the hyperref package. Links in the pdf document will then be outlined in color instead of having the text itself be colored. This is more suitable when the PDF may be viewed online or printed by the reader. |
| <code>\makefrontmatter</code> | Insert this command after the <code>\begin{document}</code> command, but before including your chapters to insert the Table of Contents and other front matter. |
| <code>\title</code> | Set the title of your dissertation. Used on the title page and in the PDF properties. |
| <code>\submitted</code> | Set the submission date of your dissertation. Used on the title page. This should be the month and year when your degree will be conferred, generally only January, April, June, September, or November. Check the Mudd Library rules [3] for the appropriate deadlines. |
| <code>\copyrightyear</code> | Set the submission year of your dissertation. Used on the copyright page. |
| <code>\author</code> | Your full name. Used on the title page, copyright page, and the PDF properties. |
| <code>\adviser</code> | Your adviser’s full name. Used on the title page. |

(Continued on next page)

Table B.2: (continued)

| Option | Description |
|---|--|
| <code>\departmentprefix</code> | The wording that precedes your department or program name. Used on the title page. The default is “Department of”, since most people list their department and can leave this out (e.g., Department of Electrical Engineering), however if yours is a program, set <code>\departmentprefix{Programin}</code> |
| <code>\department</code> | The name of your department or program. Used on the title page. |
| <code>\renewcommand{\maketitlepage}{}{}</code> | Disable the insertion of the title page in the front matter. This is useful for early drafts of your dissertation. |
| <code>\renewcommand*{\makecopyrightpage}{}{}</code> | Disable the insertion of the copyright page in the front matter. This is useful for early drafts of your dissertation. |
| <code>\renewcommand*{\makeabstract}{}{}</code> | Disable the insertion of the abstract in the front matter. This is useful for early drafts of your dissertation. |

I’ve seen other people print their dissertations using `\pagestyle{headings}`, which places running headings on the top of each page with the chapter number, chapter name, and page number. This documentclass is not currently compatible with this option – the margins are setup to be correct with page numbers in the footer, placing them 3/4” from the edge of the paper, as required. If you wish to use headings, you will need to adjust the margins accordingly.