

RICE UNIVERSITY

Thesis Template in L^AT_EX

by

Benjamin Coleman

A THESIS SUBMITTED
IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE

Master of LaTeX

APPROVED, THESIS COMMITTEE:

Professor A, Chair
Assistant Professor of Typography

Professor B
Assistant Professor of Graphics

Professor C
Professor of Preposterous Formatting
Guidelines

Houston, Texas

July, 2022

ABSTRACT

Thesis Template in L^AT_EX

by

Benjamin Coleman

In this work, we develop a thesis template that Rice University Graduate and Postdoctoral Studies (GPS) will tolerate. We also provide sarcastic commentary on the nature of graduate study.

An abstract is to be included with the thesis. Particular care should be taken in preparing the abstract since it will be published in Dissertation Abstracts or Master's Abstracts and the length is limited by the publisher. The abstract may not exceed 350 words for a doctorate or 150 words for a master's. In style, the abstract should be a miniature version of the thesis. It should be a summary of the results, conclusions or main arguments presented in the thesis.

It's pretty unlikely for the abstract to overflow to the following page, if you are following the guidelines. To check that the formatting is correct, we'll simulate this behavior with a `\newpage` command.

If we *do* overflow the abstract onto a new page, then there should not be any page numbers in the top right.

Acknowledgments

In generating this template, I would like to thank Jan Erik Odegard (who wrote the previous, more complicated version of this template in 1995) and Brent Carey (whose Word 2007 version of the template contained several jokes that we reproduce here).

Use this space to thank the funding and folks that contributed to your success in graduate school. Some view this as an informal section of the thesis, while others still consider this a piece within a formal document. You can thank people like your advisor(s), committee members, peers, friends, family, and even a special pet if you couldn't have done all the late nights without them! Be cautious to not reveal too much sensitive personal information that could be used in identity theft.

Note: Remove the `\newpage` command when preparing the final document - this is only to check that the page numbering behavior is correct.

If we have so many acknowledgements that it overflows onto a new page, then we have to show a page number (using Roman numerals) in the top right.

Contents

Abstract	ii
Acknowledgments	iv
List of Illustrations	viii
List of Tables	ix
List of Algorithms	x
Preface	xi
1 Introduction	1
1.1 Using the Template	1
2 Formatting the Text	2
2.1 Chapter Sections	2
2.1.1 Subsections	2
2.2 Page Numbers	2
2.2.1 Numbering the Front Matter	2
2.2.2 Numbering the Main Text	2
3 Formatting Other Stuff	4
3.1 Algorithms	4
3.2 Tables	5
3.3 Figures	5
3.4 Equations	5
3.4.1 Named Equations	6
3.5 Theorems	6

3.6 Citations	7
4 Conclusion and Future Work	9
Bibliography	10

Illustrations

3.1	My office.	8
3.2	Neighborhood surrounding Rice University (stylized).	8

Tables

3.1	Average day of a Rice graduate student.	5
-----	---	---

Algorithms

1	Finish PhD Program	4
---	------------------------------	---

Preface

You can optionally include a preface here. This feels a little pretentious, but I say *go for it*. If you don't want to include a preface, then delete this section.

Chapter 1

Introduction

There are a couple official Rice University LaTeX templates. The problem is that, as of 2020, these templates no longer compile with modern versions of LaTeX. There are also lots of superfluous style files that are unused and are – by now – over 30 years old. In 2022, things are much easier than they were in the 90s.

Specifically, we fixed the graphics and added algorithms. The previous template was unable to include figures and did not list algorithms in the table of contents.

Note: GPS accepted my Master’s thesis using this template, so it should be fine for you as well.

1.1 Using the Template

Unlike previous templates, this one only requires *one* .cls file instead of ten .cls and .sty files. That’s an order of magnitude fewer files! Just include `ruthesis.cls` in the same directory as your main LaTeX file and hit compile.

This template has been confirmed to work with Overleaf and TeX Live on MacOS Monterey (as of 2022).

Chapter 2

Formatting the Text

2.1 Chapter Sections

2.1.1 Subsections

Subsubsections

Note that subsubsections do not appear in the table of contents

2.2 Page Numbers

2.2.1 Numbering the Front Matter

Page numbers should not be shown on the Title Page, the Abstract, or on the first page of the Acknowledgments, Table of Contents, List of Tables or the Preface. However, the following pages (e.g., the second and succeeding pages) of each of these sections should be numbered using Roman numerals. The count for these preliminary pages should start with the title page. For example, if the thesis has a two-page abstract, then the second page of the acknowledgments should be the first page showing a number, and it should be numbered with the Roman numeral v.

2.2.2 Numbering the Main Text

Page numbers should be placed in the upper right corner of the page. Only the number should appear, not “page 9” or the abbreviation “p. 9.” On the first page of each

chapter, the number may be placed at the center bottom, one double space below the last line of type (the conventional placement), or at the top right corner.

Pages of the text itself and of all items following the text (i.e. the notes and bibliography) should be numbered consecutively throughout in Arabic numbers, beginning with number 1 on the first page of the first chapter or introduction (but not preface). Please number every page to be bound, including pages on which only illustrations, drawings, tables, or captions appear. The page numbers do not need to meet the 1" margin requirements.

Chapter 3

Formatting Other Stuff

You will probably have other things in your thesis (tables, figures, etc). Here is how to format those.

3.1 Algorithms

Previous Rice University thesis templates included additional style files to style algorithms. Fortunately, this is no longer necessary. You can use any algorithm environment that you wish. We'll use `algorithmic` to style Algorithm 1. Note the use of `setstretch` to reset the line spacing - if you don't do this, then the algorithm environment will just inherit the double spacing used for the main text (this looks atrocious).

Algorithm 1 Finish PhD Program

Input: A student.

Output: A PhD.

$N = 0$ number of papers published.

while not graduated **do**

$N = N + 1$

Anything within an `algorithm` environment will appear in the “Algorithms” section of the table of contents. If you don't want this for some reason, then you can comment out the `\listofalgorithms` command in the front matter.

Table 3.1 : Average day of a Rice graduate student.

Cups of Coffee	Hours in Lab	Productive Hours in Lab	Emails Received	Internet Videos Watched	Hours at Valhalla
3	10	3	56	12	2+

3.2 Tables

In similar fashion, we do not have to use any particular tabular package or environment, as long as everything lives within `table` floating environment. You can use whatever you please. I use the `\toprule`, `\midrule` and `\bottomrule` commands from the `booktabs` package because they look nice (Table 3.1).

3.3 Figures

Any figure that is included in the `figure` floating environment will be listed in the table of contents.

The template supports rasterized formats (PNG and JPG) as well as vector graphics (PDFs). Note that you'll need to convert SVGs to PDF as `includegraphics` does not natively support SVG.

As a test, Figure 3.1 is a JPG and Figure 3.2 is a PDF.

3.4 Equations

Numbered equations (Equation 3.1) are numbered according to the section and subsection.

$$1 + 1 = 2 \tag{3.1}$$

Non-numbered equations:

$$2 + 2 = 4$$

3.4.1 Named Equations

Would you like to caption equations and then list them in the table of contents? Well too bad! Adding things to the table of contents is easy if the thing is a LaTeX floating environment, but it's not so easy for other things. While we could define a custom custom floating environment that wraps `equation` for named equations, I'm going to let *you* do that if you want this behavior that badly.

3.5 Theorems

You can use whatever theorem style and environment you want. The default style numbers theorems independently of the section number. This can be changed without modifying the template by specifying `\numberwithin{theorem}{section}` at the top.

Unfortunately, due to the extremely large margins required by GPS, it is increasingly difficult to “pull a Fermat.” Nonetheless, we make our best attempt (Theorem 1).

Theorem 1. *For any integer $n > 2$, the equation $a^n + b^n = c^n$ has no positive integer solutions.*

Proof. The proof is too large to fit into the Texas-sized margins required by GPS and is hence left as an exercise to the reader. □

3.6 Citations

I used the standard IEEE Transactions citation style in my Masters thesis, and it was fine. For example, the proof of Theorem 1 is given by Andrew Wiles [1].



Figure 3.1 : My office.



Figure 3.2 : Neighborhood surrounding Rice University (stylized).

Chapter 4

Conclusion and Future Work

Go forth and graduate, my friends!

Bibliography

- [1] A. Wiles, “Modular elliptic curves and fermat’s last theorem,” *Annals of mathematics*, vol. 141, no. 3, pp. 443–551, 1995.