A LATEX FORMAT FOR THESES AND DISSERTATIONS

By

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ACKNOWLEDGMENTS

This is where you thank the people that made your work possible: grant awarding agencies, advisors, your committee, mom and dad, whatever.

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CHAPTER I

Introduction

This document is intended to provide a template for writing a master's thesis or dissertation. In particular, this document correctly adheres to all of Vanderbilt University's formatting standards for the Electrical Engineering and Computer Science Department as of December 2010. If you are using this template to submit a thesis to a different institution or department, please review your department's submission guidelines as this template may not be applicable.

In order to see the LaTeX code used to generate this document, please refer to the VanderbiltDissertationFormat.tex file located in this directory.

I.1 Figures, Tables, Equations, and Algorithms

In addition to fulfilling the necessary formatting requirements, this document will also show examples of how insert images, tables, algorithms, and references into your LaTeX documentation. Each will be demonstrated in its own subsection to illustrate subsection use.

I.1.1 Inserting Figures

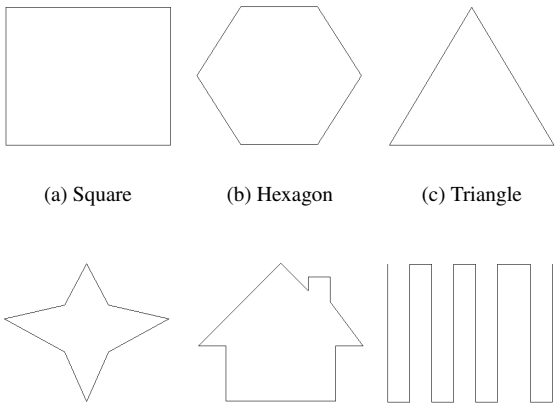
Figure insertion can vary depending on what you need to insert. The code associated with Figure I.1 illustrates how to insert single figures, which is the method you will likely use the most often.

More complex figure insertion (e.g. inserting multiple figures that have a single caption) can also be achieved. Figure I.2 illustrates how to insert multiple figures.

I.1.2 Using Tables

Tables can be entered directly into your LaTeX document; however, inserting tables directly into your dissertation .tex file can result in unwanted clutter. It is generally cleaner to write the table in its own .tex file and then insert the .tex file into your dissertation .tex file. This is the method used by this template. An example table can be seen in Table I.1.

Figure I.1: A sample figure.



(a) Square (b) Hexagon (c) Triangle

(d) Star (e) House (f) Square Path

Figure I.2: Multiple figure insertion example

Condition		Metric I	Metric II
Method A	**Mean**	1505.644	1428.076
	Std	726.160	541.098
	Reduction	0.000	0.000
Method B	**Mean**	1490.841	1426.620
	Std	735.995	543.489
	Reduction	14.803	1.456
Method C	**Mean**	591.843	458.001
	Std	458.332	153.099
	Reduction	913.801	970.075
Method D	**Mean**	566.089	638.568
	Std	701.194	304.485
	Reduction	939.555	789.508
Method E	**Mean**	242.422	186.369
	Std	390.052	129.654
	Reduction	1263.222	1241.707

Table I.1: A sample table.

I.1.3 Equations and Equation Arrays

A simple equation can be seen in Equation I.1:

$$m = \frac{y_2 - y_1}{x_2 - x_1}. \tag{I.1}$$

An equation array can be seen in Equation I.2:

$$\begin{aligned} B(t) &= \sum_{i=0}^{n} \binom{n}{i} (1-t)^{n-i} t^i \mathbf{P}_i \\ &= (1-t)^n \mathbf{P}_0 + \binom{n}{1} t \mathbf{P}_1 + \cdots \\ \cdots &+ \binom{n}{n-1} (1-t)^{n-1} \mathbf{P}_{n-1} + t^n \mathbf{P}_n, \quad t \in [0,1] \end{aligned} \tag{I.2}$$

I.1.4 Algorithms

An example of a Bayes' Filter (Thrun et al., 2005) algorithm can be seen in Algorithm 1. Note that there are numerous methods for inserting algorithms. This template just demonstrates one.

Algorithm 1 The Bayes filter algorithm.

BayesFilter[$bel(x_{t-1})$, u_t, z_t]

1: **for** all x_t **do**
2: $\quad \overline{bel}(x_t) = \int p(x_t|u_t, x_{t-1}) bel(x_{t-1}) dx_{t-1}$
3: $\quad bel(x_t) = \eta\, p(z_t|x_t) \overline{bel}(x_t)$
4: **end for**
5: **return** $bel(x_t)$

CHAPTER II

Other Important Dissertation Topics

This chapter will discuss briefly other topics important to dissertation completion. Specifically, how to handle lists of figures and tables, as well as how to generate acronyms/abbreviations. Inserting references will also be discussed.

II.1 Lists of Figures, Tables, and Acronyms

Lists of figures and tables should be built automatically from the figures and tables you insert in this document. The list of acronyms is also generated automatically, but acronyms must be defined before they can be added to a list of acronyms. See the VanderbiltDissertationFormat.tex (VDF) file for an example of how to insert an acronym appropriately. Note that there are numerous ways within LaTeX to manage lists of acronyms. This template utilizes the nomencl package.

II.2 Using References

There are numerous methods to insert references into your document. Please refer to the VanderbiltDissertationFormat.tex file to see how references were added to this document and how the Bibliography was generated.

BIBLIOGRAPHY

Thrun, S., Burgard, W., and Fox, D. (2005). *Probabilistic Robotics*. The MIT Press, 1st edition.