A TEMPLATE THESIS/DISSERTATION USING THE UTSATHESIS PACKAGE FOR LaTeX AND LyX USERS

by

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DISSERTATION
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THE UNIVERSITY OF TEXAS AT SAN ANTONIO
College of Sciences
Department of Computer Science
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DEDICATION

I would like to dedicate this thesis/dissertation template to UTSA graduate students.

ACKNOWLEDGEMENTS

First of all, I would like to thank Kevin Xu Su for creating an earlier version of the LaTeX style, Lijie Zhang for using an earlier version of this package to write her dissertation and to provide feedback.

I would also like to thank the UTSA Graduate School for reviewing the outcome of this template document and correction of formatting errors. This sample is based on UTSA 2016 Dissertation/Thesis format.

(Notice: If any part of the thesis/dissertation has been published before, the following two paragraphs should be included without alteration).

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December 2016

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The first chapter of this document is a description of the content and the usage of the UTSAthesis package. The remaining chapters serve to illustrate some use of LyX features for writing a thesis/dissertation.

The first line of the abstract has been indented as per required by the thesis/dissertation guideline.

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Chapter 1: INTRODUCTION

Several different versions of LaTeX packages have been used in the past by sciences and engineering PhD students to write Doctoral Dissertations since 2008. However, these packages are not compatible with each other. Also, there has been no LyX layout for writing UTSA thesis/dissertation. The UTSAthesis package was initially created to allow my students to use LyX to write their doctoral theses.

The UTSAthesis package contains UTSAthesis.sty, a LaTeX package for LaTeX users, and utsathesis.layout, a LyX layout for LyX users. These packages provide formatting commands that confirms to the guideline of thesis/dissertation of UTSA Graduate School as of September 2011. The UTSAthesis package also contains a sample and a template of a UTSA thesis/dissertation, for both LaTeX and LyX users.

The UTSAthesis.sty package was created based on a LaTeX package written by Kevin Xu Su in 2008. A number of PhD students from the Department of Computer Science have tested the earlier version of the packages and provided comments and suggestions. The Graduate School has provided comments to ensure that the style confirms to the requirements.

To write a thesis/dissertation using LaTeX, a suitable TeX/LaTeX distribution should be installed on the computer system. There are many TeX/LaTeX distributions for various operating systems, including TeXLive for Linux/Unix, MacTex for Mac OS, and MikTeX for Windows. Each distribution contains instructions for installation and configuration. For people who want to write thesis/dissertation using LyX, an appropriate LyX package can be downloaded from www.lyx.org and installed on the system, after the installation of the TeX/LaTeX distribution. The UTSAthesis package should then be installed into appropriate LaTeX and LyX directories within the computer system.

In the rest of this Chapter, I will discuss the content and usage of the UTSAthesis.sty and utsathesis.layout packages. In subsequent chapters, I will illustrate some typical structures of a doctoral dissertation. The content in those chapters is not directly related to the use of the thesis

package.

1.1 The UTSAthesis.sty Package

The UTSAthesis.sty is a LaTeX macro package that defines the LaTeX style of the doctoral dissertation and MS thesis for the University of Texas at San Antonio. It provides LaTeX commands to format thesis title, author, abstract, copyright, dedication, acknowledgments, supervisor, committee members, degrees, department, and college.

This package should be used with the LaTeX standard report class. See the sampleThesis.tex for an example and template. Other LaTeX packages will also typically be included in the a thesis/dissertation.

1.1.1 Installation

Place the UTSAthesis.sty in a directory under your personal texmf tree, for example, in /home/yourhome/.texmf/tex/latex/thesis. Remember to run texconfig to re-hash file list, so that the LaTeX can find this style file.

1.1.2 Use of UTSAthesis.sty Package

The general structure of a typical UTSA thesis/dissertation file, such as sampleThesis.tex, should look like the follows.

```
\documentclass[12pt,english]{report}
\usepackage{UTSAthesis}
... use other packages ...
\begin{document}
\committee{... }
\informationitems{... }
\thesiscopyright{...}
\dedication{\emph{I would like to dedicate this thesis/dissertation to ...}}
\title{\textbf{First line}\\ \textbf{second line }...}
\author{...}
\maketitle
\begin{acknowledgements} ... \end{acknowledgements}
\begin{abstract} ... \end{abstract}
\newpage
\pagenumbering {arabic}
\setcounter {page}{1}
\pagestyle{plain}
\chapter{...} % or \include{chap3}
...
\singlespace
\bibliographystyle{...}
\bibliography{...}
\begin{vita}...\end{vita}
```

Figure 1.1: Structure of a thesis LaTeX file

The following commands are defined in UTSAthesis.sty and should be used in the order suggested in Fig. 1.1 to provide required format information.

- \title{Thesis Title}. This can contain multiple lines. Use "\\" to go to the next line.
- \author{Name of Thesis Author}
- \thesiscopyright{Optional Copyright Statement}
- \dedication{Optional Dedication}
- Use the following commands to set up the dissertation/thesis committee
  - \supervisor{The first and last name, Degree}

  - \cosupervisor{The first and last name, Degree} if there is a co-supervisor. Otherwise, \committeeB{Committe member B Name, Degree}. Notice that, if co-supervisor command is used, it must be placed after the supervisor command.
  - \committeeC{Committe member C, Degree}
  - \committeeD{Committe member D, Degree}
  - \committeeE{Committe member E, Degree}

- Either \informationitems{Full Name of Degree}{Short Name of Degree}{Full Name of Department}{Full Name of College}{Month of Thesis}{Year of Thesis} or use the following commands separately.
  - \degree{Full Degree Name}
  - \degreeshort{Short Degree Name}
  - \department{Department Name}
  - \college{College Name}
  - \thesismonth{Month}
  - \thesisyear{Year}

- \maketitle is the command that produces the the title page, copyright page, and dedication page. The position of this command is critical for getting the correct formatting.

- \begin{acknowledgements}

  People, organization, supports that you want to thank for

  \end{acknowledgements}

- \begin{abstract}

  The abstract starts here. Should within one page.

  \end{abstract}

- The thesis/dissertation should then continue with chapters, appendixes, references. Before the first chapter, it is necessary to set Arabic page number. If the thesis/dissertation is long, it may be better to place chapters into separate LaTeX files and include these sub-files using \include{} command.

- \begin{vita}

  The last item is a one-page curriculum vita

  \end{vita}

1.1.3 Produce the Outcome

To produce the pdf version of the thesis/dissertation, run pdflatex and bibtex.

1.2 The utsathesis.layout Package

The utsathesis.layout is an LyX layout that provides a LyX document layout for UTSA dissertation/thesis. This layout should be used together with the UTSAthesis.sty.

1.2.1 Installation

First, install UTSAthesis.sty as described in Section 1.1. Then, installed the LyX on your system by following the instruction that comes with the LyX package. Next, place the utsathesis.layout into your personal LyX directory. On a Linux/Unix system, this directory is at ~/.lyx/layouts. On Mac OS, it is at /User/<name>/Library/Application Support/LyX-<version>/layouts. On Windows 7, it is at C:\Users\<name>\AppData\Roaming\lyx<version>\layouts. Remember to run Tools->Reconfigure inside LyX to re-configure the system.

1.2.2 Use of utsathesis.layout Package

This document (sampleThesis.lyx) provides a template for using the utsathesis.layout to write a Ph.D. dissertation. For a Master's thesis, go to Document->Settings and set the class option to ms.

Other important settings may include Document->Settings->LaTeX Preamble, and the bibliography style.

The document setting should be "report (UTSAthesis 2016)". The document should begin with committee info, thesis info, copyright, and dedication. These can be formatted using items in the FrontMatter in the pull-down menu. These should be followed by title, author, acknowledgments and the abstract. The placement and the order of these four items are important for generating the correctly formatted front pages of the thesis/dissertation. It is also important to add the "Start First Page" item right before the first chapter. This item will set the correct page numbers for the main portion of the thesis/dissertation.

At the end of the document, the "Vita" item in the BackMatter in the pull-down menu needs to be used to format a one-page vita.

Regular chapters can be included in the main thesis document or more likely as sub-files, one per chapter. If sub-files are preferred, make sure the document settings of all sub-files are identical to the main document.

Chapter 2: LITERATURE REVIEW

We have some citations [1, 2, 3]. See the Bibliography for the format of references.

Chapter 3: PROBLEM DEFINITION

This chapter illustrate the use of a sub-file named chapt3.lyx in LyX. The document setting of this sub-file is identical to the main document.

3.1 Using Definitions

Definition 1. A definition is numbered over the entire thesis.

Next is another definition.

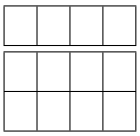
Definition 2. Here it is.

3.2 Using Figures

Here is an example of using figures. It is much easier to include pdf or jpeg graphs when use LyX together with pdflatex.

Put something here

(a) The first Sub-Figure



(b) The Second Sub-Figure

Figure 3.1: A Sample Figure with two sub-figures

Chapter 4: SOLUTION AND EVALUATION

In this chapter, we show the structures of math formula, theorem commands, and floats (such as algorithm and table).

4.1 A Theory

Definition 3. This is another definition.

Theorem 1. *This is a theorem.*

$$X = \frac{AB}{Y} \tag{4.1}$$

Proof. The proof is done here. □

4.2 An Algorithm

The following is the algorithm.

Algorithm 4.1 The Do-It-Yourself Method

1. Step One
2. Step Two

4.2.1 Evaluation

The evaluation results is shown in the following table. It is straightforward to place the caption of the table above or below the table.

The following is a long table

Table 4.1: Evaluation Results

	Method 1	Method 2	Method 3
Criterion 1			
Criterion 2			
Criterion 3			

Table 4.2: A Long Table

Column1	Column 2	Column 3	Column 4	Column 5
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
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24				

Table 4.2: Continued

25				
26				
27				
28				
29				
30				
31				
32				
33				

Chapter 5: FUTURE DIRECTIONS

There can be more chapters.

Appendix A: NOTATIONS

Here we show the use of multiple appendixes.

A.1 Math Notations

Each appendix can have sub-sections as a regular chapter.

A.2 Additional Notations

Appendix B: ONTOLOGIES

These is another appendix.

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[2] R. Melhem, D. Mossé, and E. (Mootaz) Elnozahy. The interplay of power management and fault recovery in real-time systems. *IEEE Trans. on Computers*, 53(2):217–231, 2004.

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VITA

This should be a one-page short vita.

There can be more paragraphs.