

Writing your Thesis or Dissertation with L^AT_EX

The Graduate School
University of South Carolina

2008-2009

This guide is to help you prepare your thesis or dissertation by familiarizing you with the L^AT_EX typesetting system. Those familiar with L^AT_EX will already know most of the information presented in this document, but should consider reading the final section which describes the contents of this distribution.

1 Brief Introduction to L^AT_EX

L^AT_EX is a powerful typesetting system that is capable of generating high quality documents and is freely available over the web. It is essentially a programming language, and therefore lacks many of the features that you may be accustomed to with word processors. Although learning the system can be a daunting task, what L^AT_EX lacks in accessibility it makes up for in flexibility. L^AT_EX utilizes packages which allow the user to create complex formatting with simple commands. This allows users to focus on the content of their document rather than the appearance. For a good article on the benefits of using L^AT_EX visit <http://www.osnews.com/story/10766>.

L^AT_EX is especially useful, if not essential, to those in fields such as mathematics and engineering, and helpful to any field that requires unusual fonts, languages, or formatting that your typical word processor cannot create. Would it be worthwhile for you to use L^AT_EX in preparing your thesis or dissertation? Ask yourself the following questions:

- Will your paper include long, complex formulas?
- Will your paper utilize many unusual symbols such as Greek letters?
- Will your paper incorporate multiple languages with different writing systems such as Hebrew?

If you answered yes to any of these questions, then you should seriously consider writing your thesis or dissertation using L^AT_EX.

2 What you will need

Before you begin preparing your document, you will need two things:

1. A \LaTeX distribution

The distribution contains files that are needed to process your file into a presentable document. They are freely available over the internet.

MiKTeX

<http://www.miktex.org/>

Works on most Windows operating systems.

TeXLive

<http://www.tug.org/texlive/>

Versions available for most Unix-based operating systems, Windows, and Mac OS X.

2. A text editor

A text editor is needed to edit all \LaTeX associated files. There are many different text editors available that differ in the amount of features they may include. These range from the lowly Microsoft notepad to fully featured programs containing features such as spell check and command highlighting. While any text editor for programming will work, one designed with \LaTeX -specific features may be helpful. Click the links below for listings of various \LaTeX free editors available on the web:

<http://miktex.org/links>

<http://www.tug.org/interest.html#packages>

Also, you may want to consider getting a DVI viewer. \LaTeX is capable of generating documents in .dvi, .pdf, and .ps formats. However, working with DVI files can be faster and easier than the PDF or PS formats. MiKTeX comes bundled with YAP, a fast and easy to use DVI viewer.

3 Resources to Help You Get Started

<http://www.latex-project.org/>

Firstly, you may wish to visit the official homepage for the \LaTeX project. This website contains some basic introductory information, as well as up to date news on the current version.

There are several high quality guidebooks available which details the numerous aspects of \LaTeX . The following are written by individuals directly involved in the upkeep of the core system, and are highly recommended:

Guide to \LaTeX , 4th Edition

by Helmut Kopka and Patrick W. Daly.

Published by Addison-Wesley

ISBN: 0321173856

An excellent introduction to the core fundamentals of \LaTeX .

The \LaTeX Companion, 2nd Edition

by Frank Mittelbach, Michel Goossens, Johannes Braams, David Carlisle, Chris Rowley.

Published by Addison-Wesley

ISBN: 0201362996

An essential resource for all serious \LaTeX users with expanded coverage on important packages.

The \LaTeX Graphics Companion, 2nd Edition

by Michel Goossens, Frank Mittelbach, Sebastian Rahtz, Denis Roegel, Herbert Voss.

Published by Addison-Wesley ISBN: 0321508920

Contains information related to the creation and utilization of complex graphics functions.

The web also has a myriad of helpful resources available for free:

TeX Users Group Homepage

<http://www.tug.org/>

TUG is an organization dedicated to typesetting with \TeX -based systems. Their webpage has a wealth of information for all users. Definitely check out the “TeX web resources” link for an extensive listing of web-based instructional material.

Indian TeX Users Group Online Tutorials

<http://www.tug.org.in/tutorials.html/>

A comprehensive collection of microlessons that introduce the basic conventions and functionalities of \LaTeX .

LaTeX Wikibook

<http://en.wikibooks.org/wiki/LaTeX>

A somewhat rudimentary but easily accessible reference guide.

LaTeX Forum

<http://www.cqf.info/forum/viewforum.php?f=4>

While there are not many forums dedicated to the discussion of L^AT_EX, this is perhaps the most active.

4 Description of Files within this Distribution

The files within this distribution were created to help aid you in the creation of your thesis or dissertation in accordance with the Graduate School's submission criteria:

uscthesis.cls

The essential file for preparing your thesis or dissertation using L^AT_EX. All submissions should use this documentclass to ensure that it conforms to the criteria established by the University of South Carolina Graduate School in the [Thesis and Dissertation Guidelines](#).

uscthesisdoc.pdf

This document details the functionality of uscthesis.cls and associated files, as well as general advice related to the proper composition of your work files. Study this document fully for proper usage of the uscthesis class.

main.tex

An example template for the main file of a thesis created using the uscthesis class.

uscnatbib.sty

This package is needed for use with the standard LaTeX package. natbib.sty has one way to achieve the layout of bibliographies, using BibT_EX, in accordance with the constraints of the Graduate School.

uscamsrefs.sty

This package is needed for the layout of bibliographies using the American Mathematics Societies citation style in accordance with the constraints of the Graduate School.