

Documentation on L^AT_EX and the L^AT_EX Thesis Template

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1 Beginning with L^AT_EX

This is a document, written in L^AT_EX, that is meant to document the L^AT_EX thesis template I have written. It's supposed to be a gentle introduction to L^AT_EX, with some suggestions. For a more comprehensive introduction, I suggest <http://en.wikibooks.org/wiki/LaTeX>, or to simply Google “latex whatever-you-need”.

The first thing you need is a L^AT_EX compiler. Usually for Windows (those of you who use Linux or Unix I expect know as much about L^AT_EX as I do), the best choice is MikTeX. Simply go to <http://miktex.org/> and download the latest stable distribution. If using Windows Vista or 7, it's best to do package management as a non-administrator. More on that later. For Macintosh users, see http://guides.macrumors.com/Installing_LaTeX_on_a_Mac. The rest of this documentation that is OS specific will be for Windows.

After you've installed MikTeX, you have your choice of editor. TexWorks comes with MikTeX, but it is all in black and white, and has no autocomplete. There is another good free alternative, Latex Editor (LEd). It has colour coding as well as autocomplete. It is at <http://www.latexeditor.org/>. It also has spellcheck under add-ons on the side of the page. However, it does not handle bibliographies well, so I recommend writing your thesis in LEd and doing the final compiling in TexWorks.

2 Math Mode

To enter math mode, you can do one of two things (well, actually there are more ways, but let's keep it simple. You can use the dollar sign (\$) to open and close math mode, or use an environment, usually the equation or eqnarray environment. The difference is that the dollar sign makes math appear in the regular text of the document (with no spacing between text and math unless you put it there), and there are no equations numbers. In one of the environments, there is numbering by default, and always a space. If you want to turn off numbering for a certain (set of) equation(s), you use the asterick. The difference is

```
\begin{equation}
math stuff with a number
\end{equation}
\begin{equation*}
more math stuff without a number
\end{equation*}
```

If you're in an eqnarray environment where you don't want numbers for some, and numbers for others, you can always target a specific line by

```
\begin{eqnarray}
math stuff \nonumber\\
more math stuff \nonumber\\
stuff you want numbered \label{myeqn}\\
more stuff\nonumber
\end{eqnarray}
```

and you can refer to it with

```
\ref{myeqn}
```

You can use labels in equations, figures, tables, etc. The double backslash is a line break, by the way.

3 Bibliographies

For bibliographies, it's best to use BibTeX. What you have to do is include a .bib file in your thesis folder, with the correct format, and use

`\cite{bibreference}`

, where the little squiggle is the tilde below Escape (`~`), to cite a reference called `bibreference`. There are format rules for the BibTeX entries; see the template `.bib` file.

4 The L^AT_EX Template for Theses

Now there are a number of things I would like to tell you about the thesis template itself. It has examples of tables, math mode, etc. The more important things, however, are the pre-defined variables and macros I have included. For example `\super` and `\superj`, `\superc`, and `\supera`. The first is your supervisor, and the latter three are joint, co-, and alternate supervisors respectively. If you have one of these last three, that variable and only that variable of the three should be filled in; if you don't have one of these, leave them empty. They will appear if filled in, and not appear if not filled in. For the examining committee, or your review board, it works the same way: just leave the variables blank if there is no, for example, examiner four.

I have also used (and hopefully force upon you) the convention of chapters and appendices as separate documents, which you include in the main text by `\include`. This makes it much easier to edit chapters and appendices; in this way, you're not changing the entire document when changing a chapter. This, in turn, makes it easier to pin down errors when compiling your document.

You have to comment out acknowledgements and co-authorship where not applicable; it's really hard to make the template ignore blank space. Commenting, if you haven't looked at the template yet, is done with the percent sign.

There are four `tex` files in this template: `westernthesis.tex`, `appendixa.tex`, `chapter1.tex`, `chapter2.tex`. If there are more than two chapters in the thesis, create more `tex` as needed. Then, the new chapters need to be included in the `westernthesis.tex` following '`\include{chapter2}`', in the same style as chapter one and two are included.

If there is one or more sections that are not used, comment it or them out by adding one

There will probably more tables and graphs in a thesis. They will show up automatically in the section 'List of Figures' and 'List of Tables'.

In the appendices section, if there is more than one appendix, say there is B, C and D. Each of the appendices should have a separate `tex` file with the first

two lines following the general structure in `appendixa.tex`. That is the first two lines should keep the same with `AppA` be replaced by `AppB`, `AppC` and `AppD` respectively. In `westernthesis.tex`, include all the new appendices in the same way that appendix A is done.