

Guide on Using mmuthesis

version 1.3

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***Disclaimer:** This particular version of the guide was written very quickly. Sorry if you find parts of it incoherent (I'm no longer sure if I have time to rewrite this!). But anyway, e-mail me if you have any questions.*

mmuthesis is a \LaTeX class for authoring theses that fulfil formatting specifications required by Multimedia University (MMU), Malaysia. The thesis preparation guide can be accessed at <http://research.mmu.edu.my/ips/node/188>.

A sample `thesis.tex` is included in the package, which I recommend you modify for your own thesis write-up. (You can rename it, but I'll stick with the file name 'thesis.tex' throughout this guide.)

1 Before You Start

1.1 Pre-requisite Packages

To streamline things, install the following packages first before using mmuthesis or compiling the example `thesis.tex`:

- memoir
- apacite
- multibib
- idxlayers
- endnotes
- glossaries
- babel
- longtable
- hyperref
- xfor
- lipsum (for `thesis.tex` only)

1.2 Files

Here's a quick list of the files required when writing your thesis with the mmuthesis class. Easiest way to go about things is to put all the files in the same directory. (See Section 2 for more details.)

- **mmuthesis.cls**, the \LaTeX class file implementing the MMU thesis formatting requirements.
- A "main driver" `.tex` file of your thesis, analogous to `int main()` or `public static void main(String[])`. You can name this file anything you like; it is known as `thesis.tex` in this guide. (See Section 2.)

This is the *only* file that you should run the processing tools on!

- A `.tex` file containing your thesis abstract. (See Section 2.5.)

- A `.tex` file containing your preface. (See Section 2.7.)
- `.tex` files containing your thesis chapters and appendices, one chapter per file. (See Section 2.8 and Section 2.9.)
- A `.bib` file containing your references and publications. (See Section 2.10 and 2.14).
- A `.tex` file containing your glossary. (See Section 2.11).

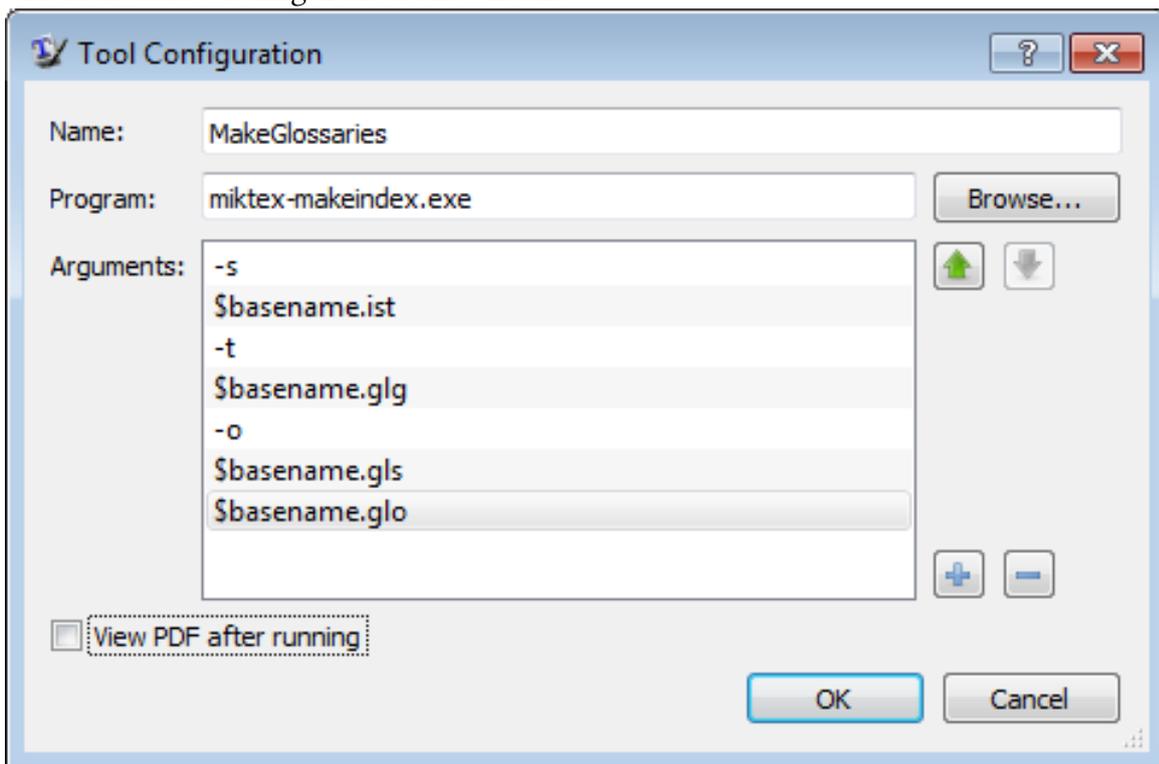
1.3 TeXworks Configuration

Assuming TeXworks is your \LaTeX editor of choice on Windows, you will probably want to configure it so that you can process your glossary and list of own publications from within TeXworks.

(You can always, of course, opt to run the relevant commands from the command line prompt, or adapt these configurations for other editors and operating systems: I have tested on Windows XP, Ubuntu and Mac OS X.)

1.3.1 Tool Configuration for Generating the Glossary

Access the TeXworks menu `Edit` \triangleright `Preferences...` \triangleright `Typesetting`. Add a new processing tool called “MakeGlossaries”. Configure it as shown below:



On Linux and Mac systems, this is equivalent to the command line

```
makeindex -s <base>.ist -t <base>.glg -o <base>.gls <base>.glo
```

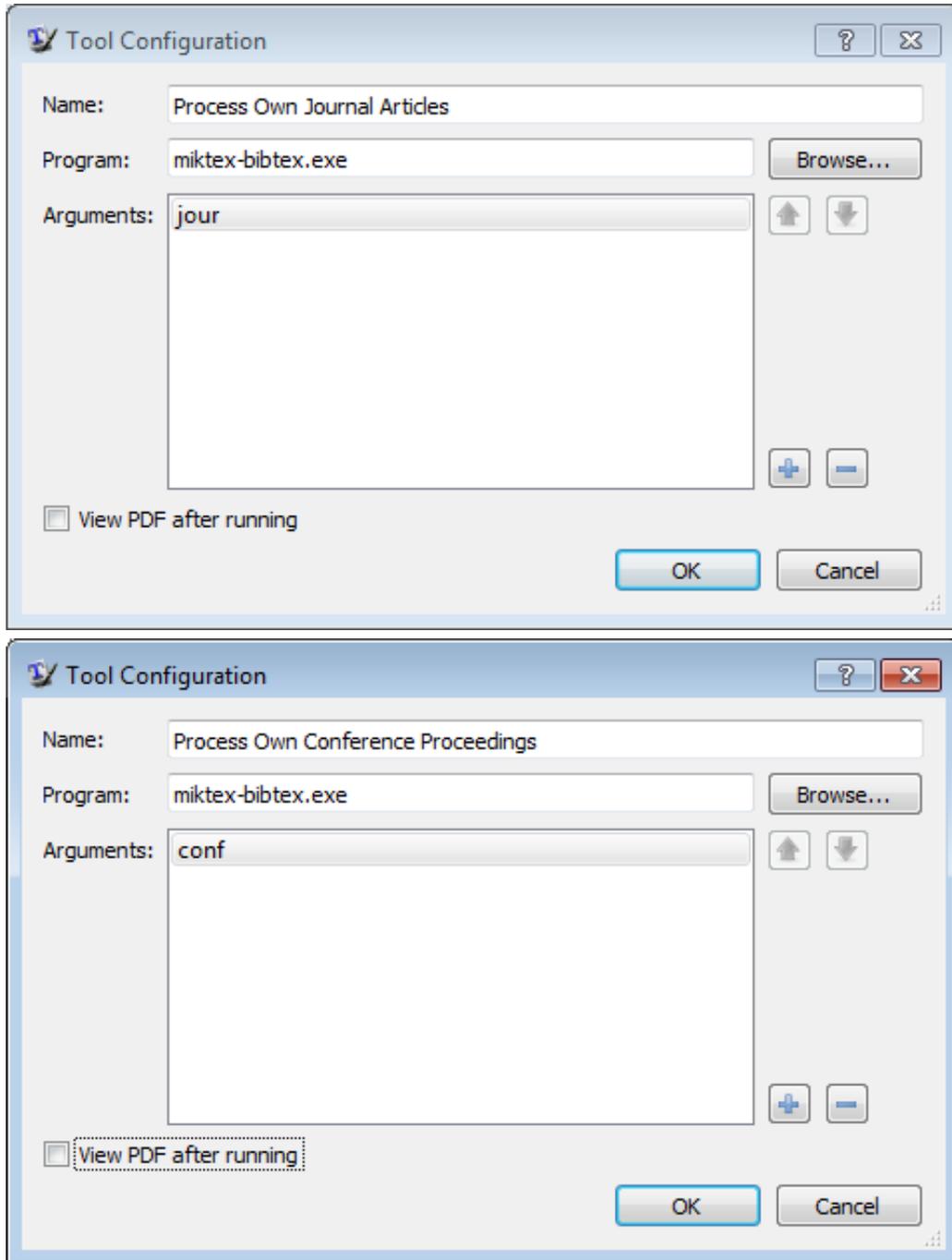
And if perl is installed on your system, then you can say simply

```
makeglossaries <base>
```

(where `<base>` is the name of your main driver file without the extension (thesis in this example).

1.3.2 Tool Configuration for Generating the Publication List

Access the TeXworks menu Edit ▸ Preferences... ▸ Typesetting. Add two new processing tools called “Process Own Journal Articles” and “Process Own Conference Proceedings”. Configure them as shown below:



This is equivalent to the command lines

```
bibtex jour  
bibtex conf
```

1.3.3 Compiling thesis.tex

The processing tools should be run on thesis.tex in the following sequence:

1. pdflatex + bibtex + makeindex
2. MakeGlossaries
3. Create own list of publications
4. pdflatex + bibtex + makeindex (twice)

You will need to run ‘MakeGlossaries’ and/or ‘Create own list of publications’ again if you add and use a *new glossary entry*, or a *new publication*.

1.4 Why is there a blank page before the title page and at the end?!

The thesis preparation guidelines say there needs to be a blank page between the cover and the title page, and another at the very end, so mmthesis forces one just in case you forgot to insert one. ;-)

1.5 Printing from Acrobat Reader

Remember to set the **paper size** to **A4** and **page scaling** to **None** in the Print dialog, otherwise the margins would be incorrect.

2 Using the mmthesis Class

2.1 Activation

To ‘activate’ the class, make sure your main document file (e.g. `thesis.tex`) starts off with `\documentclass{mmthesis}`:

```
\documentclass{mmthesis}
\usepackage{graphicx}
\usepackage{... other packages you need}
```

This will set up the page margins, paragraph spacing, indents, page numbers, font face and size, citation and bibliography format, amongst other things.

2.2 Author Information

You need to provide some author information in the preamble. Example lines from `thesis.tex`:

```
\author{Lim Lian Tze}
\title{My Ground-breaking Research}
\submissionyear{2012}
\submissionmonth{May}
\faculty{Faculty of Information Technology}
\degree{Doctor of Philosophy}
\qualification{B.Sc.~(Hons), Multimedia University, Malaysia\\
M.Sc., Universiti Sains Malaysia, Malaysia}
```

These information are needed to generate the preliminary pages.

2.3 Preliminary Pages

Once in the main document body, `\frontmatter` sets up the, well, front matter. This include setting the page numbers to lower-case Roman numerals.

`mmthesis` can generate the cover page, title page, copyright page and declaration page with the following lines (included in `thesis.tex`):

```
\makecoverandtitlepage  
\copyrightpage  
\declarationpage
```

2.4 Acknowledgements and Dedication

These are provided using `\acknowledgements` and `\dedication`:

```
\acknowledgements{I would like to thank my parents, my family, my  
supervisor...}  
\dedication{To my parents, my husband, and my daughter.}
```

2.5 Abstract

Write your abstract in a separate file (`sample-abstract.tex` in this example), and include it in `thesis.tex` like this:

```
\abstractfromfile{sample-abstract}
```

2.6 Table of contents, List of figures and tables

These are auto-generated by the following lines (included in `thesis.tex`):

```
{\clearpage\SingleSpacing  
\tableofcontents\clearpage  
\listoftables\clearpage  
\listoffigures\clearpage}
```

2.7 Preface

Write your preface in a separate file (`sample-preface.tex` in this example), and include it in `thesis.tex` like this:

```
\prefacefromfile{sample-preface}
```

2.8 Main Chapters

I highly recommend that each chapter be written in a separate file. For example, `chap-intro.tex` has the contents

```
!TEX ROOT=thesis.tex
\chapter{Introduction}
This is the introduction chapter.

\section{Problem Background}
We study the...
```

And `chap-litreview.tex`:

```
!TEX ROOT=thesis.tex
\chapter{Literature Review}
We review the state of the art in...

\section{Early Approach}
Researchers first attempted to...
```

In `thesis.tex`, these chapter files are included with the following lines:

```
\mainmatter           % signal start of main chapters
\include{chap-intro}  % no .tex extension!
\include{chap-litreview}
\include{...}
```

The `!TEX ROOT=thesis.tex` indicates to TeXworks (and also TeXshop on the Mac) that `chap-xxx.tex` are 'sub-files' of `thesis.tex`. This means if you hit `Ctrl - T` when you are editing `chap-xxx.tex`, `thesis.tex` will get compiled instead. Neat eh?

2.9 Appendices

Again, I recommend keeping each appendix chapter in its own file e.g. `app-umlDiagram.tex`:

```
!TEX ROOT=thesis.tex
\chapter{UML Diagrams}
...
```

And in `thesis.tex`:

```
\appendix % signal start of appendices
\include{app-umlDiagram}
\include{...}
```

2.10 Citations and Bibliography

mmthesis uses the apacite package to format citations and bibliography in the APA style. Note that mmthesis modifies the bibliography list by adding a numeric label to each entry, in line with MMU's requirements.

Here are some useful variants of the `\cite` command; see the apacite manual for full list.

- `\cite{Lim:2009}` → (Lim, 2009)
- `\citeNP{Lim:2009}` → Lim, 2009 (no parenthesis)
- `\cite<see>[p.~7]{Lim:2009}` → (see Lim, 2009, p. 7)
- `\citeauthor{Lim:2009}` → Lim
- `\citeyear{Lim:2009}` → (2009)

In `thesis.tex`, these lines will print the bibliography list:

```
\backmatter           % signal start of back matter
\bibliography{bibfile} % bibliography file name without .bib extension
```

2.11 Glossary

You can maintain a consistent glossary and acronym list using the glossaries package. It also supports acronym expansion on first mention! ☺

First, define your acronyms and terms in a separate file e.g. `myacronyms.tex`:

```
% \newglossaryentry{label}{name={term},description={explanation}}
\newglossaryentry{lexicon}{
name={lexicon},
description={The vocabulary of a language, including its words and
expressions. More formally, it is a language's inventory of lexemes}
}

% \newacronym[description={explanation}]{label}{abbrv}{full form}
\newacronym
[description={single word or words that are grouped in a language's lexicon}]
{LI}{LI}{lexical item}

\newacronym[description={The application of computational linguistics
principles to problems}]
{NLP}{NLP}{Natural Language Processing}

% when the plural form is irregular, specify firstplural and plural
\newacronym
[firstplural={parts of speech}, plural={POS},
description={linguistic category of lexical items}]
{POS}{POS}{part of speech}
```

Loading the glossary and acronym list, and later printing the list in `thesis.tex`:

```

% Must be loaded BEFORE \begin{document}!
\loadglsentries{myacronyms}
\begin{document}
...
\bibliography{bibfile}
% Glossaries is placed AFTER the bibliography
% (only entries that are actually used in the text will be listed)
\printglossaries
...

```

To mention them in the text (i.e. chap-xxx.tex etc):

```

Let's talk about \acp{LI} and \acp{POS} in \ac{NLP}. I mention again
\acp{LI}. We will also talk about \glsplural{lexicon}.

```

Notice how the acronyms are expanded on first use, as well as the use of `\glsplural` and `\acp` for plurals:

```

Let's talk about lexical items (LIs) and parts of speech (POS) in Natural Language Processing
(NLP). I mention again LIs. We will also talk about lexicons.

```

You will need to run `pdflatex`, the Make Glossaries tool that you configured earlier, then 2 more runs of `pdflatex` for the glossaries to appear properly.

Use `\Gls`, `\Glsplural`, `\Ac`, `\Acp` etc. if you need to capitalise the first letter of your terms at the beginning of sentences.

2.12 End Notes

MMU thesis guidelines seem to require end notes rather than footnotes. In any case, even if you do use `\footnote`, `mmthesis` will convert them all into `\endnote` internally.

While foot/end notes are not encouraged in scientific and engineering disciplines, if you do have any, the following line in `thesis.tex` will list them out:

```

\theendnotes

```

You will need 2 runs of `latex` (or `pdflatex`) for the Notes to appear.

2.13 Index

If you want to include an index for your thesis (it's optional), use `\index{keyword}` to insert index markers in your `chap-xxx.tex` or `app-xxx.tex` files. Then in your `thesis.tex`, after the Glossary and Notes:

```

{\SingleSpacing\printindex}

```

Remember to run the `makeindex` tool, as well as more runs of `pdflatex`, to produce the Index. See <http://en.wikibooks.org/wiki/LaTeX/Indexing> for advanced `\index` usage.

2.14 Publication List

Make sure you have included your own publications in your `.bib` file. To list your publications at the end of your `thesis.tex`, with journal articles and conference proceedings categorised separately:

```
\ownpubs % REQUIRED LINE
\nocitejour{Lim:2010,Lim:etal:2011} % list your journal articles
\nociteconf{Lim:2009} % list your conference proceedings
\bibliographyjour{bibfile} % bibliography file name without extension
\bibliographyconf{bibfile} % bibliography file name without extension
```

You will need to run the Process Own Journal Articles and Process Own Conference Proceedings tools you configured earlier, and another run of `pdflatex`, for the list to appear.