

usmthesis L^AT_EX template

Dr Wan Nor Arifin

Biostatistics and Research Methodology Unit,
Universiti Sains Malaysia

Email: wnarifin@usm.my



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The usmthesis L^AT_EX template

- Latest version available at <https://github.com/wnarifin/usmthesis>
- Started by Lim Lian Tze, a former USM postgraduate student in 2005, until Jan 2023
- The latest version follows USM Thesis version 1.5 from IPS Word Template

How to use usmthesis

Steps in using usmthesis \LaTeX :

- 1 Download from <https://github.com/wnarifin/usmthesis> and extract
- 2 Follow instructions in `quickstart.pdf`
 - ▶ Setting up
 - ▶ Using the template
 - ▶ Compiling your thesis
- 3 Also follow formatting hints in `usmthesis.pdf`

Setting up

Descriptions of each file, of note are:

- `usmthesis.tex` – most important, edit sparingly as needed
- `usmthesis.cls` – important, USM style of the thesis, usually no need to edit, unless you know what you are doing
- other `*.tex` files – the contents of your thesis, edit as you will

Using the template

Options in `usmthesis.tex`:

- `\documentclass[...]{usmthesis}`
- Thesis particulars
- List of ... tables, figures, algorithms, abbreviations etc
- Acknowledgments and abstracts
- Chapters
- Appendix
- Bibliography – thesis and list of publications

```
\documentclass[  
times / arial, % default is Times New Roman  
... and other options, no need to change ...  
{usmthesis}
```

Edit sparingly, latest edition is based on IPS v1.5 format

Thesis particulars

```
%% Enter particulars about your thesis HERE
% Your Name
\author{Lim Lian Tze}
% English title of your thesis
\title{Writing Your Thesis with LaTeX with a Very, Very, Very Long Title}
% Malay title of your thesis
\titlesms{Penulisan Tesis dengan LaTeX}
% Year submitted
\submityear{2022}
% Month submitted
\submitmonth{September}
%% Choose only 1 degree type! :-)
\degreetype{Doctor of Philosophy}
% \degreetype{Master of Science}
```

Self explanatory, must be edited accordingly for obvious reasons

List of ...

The options are scattered at several places in the `usmthesis.tex`

```
\listoftables \clearpage % when you include table as \begin{table}
\listoffigures \clearpage % when you include figure as begin{figure}
...
\listofplates \clearpage % when you include image as \begin{plate}
...
\listofalgorithms \clearpage % when you include algorithm \begin{algorithm}
...
% -- list of symbols, abbreviations, appendix --
\include{lo-sym} % mathematical symbols
\include{lo-abb} % abbreviations
\include{lo-app} % appendix
```

Very important, *uncomment*/comment (i.e. remove the %) to *include*/exclude the list of ...

List of Tables, Figures, Images and Algorithms

```
\listoftables \clearpage % when you include table
\listoffigures \clearpage % when you include figure
...
\listofplates \clearpage % when you include image
...
\listofalgorithms \clearpage % when you include algorithm
...
```

The lists are added automatically as you use

```
\begin{table}...\end{table}
\begin{figure}...\end{figure}
\begin{plate}...\end{plate}
\begin{algorithm}...\end{algorithm}
```

List of Symbols

```
\include{lo-sym} % mathematical symbols
```

The list is edited manually for the mathematical symbols used throughout the thesis in `lo-sym.tex`

```
\chapter{List of Symbols}

\begin{acronym}[lim\quad]
\acro{lim}[$\lim{}$]{Limit}
\acro{theta}[$\theta$]{Angle in radians}
\end{acronym}
```

List of Abbreviations

```
\include{lo-abb} % abbreviations
```

The list is edited manually for the abbreviations used throughout the thesis in `lo-abb.tex`

```
\chapter{List of Abbreviations}

\begin{acronym}[UTMK\quad]
\acro{IPS}{Institut Pengajian Siswazah}
\acro{PPSK}{Pusat Pengajian Sains Komputer}
\acro{USM}{Universiti Sains Malaysia}
\acro{UTMK}{Unit Terjemahan Melalui Komputer}
\end{acronym}
```

which can be reused in the thesis text as `\ac{IPS}`. The first use will utilize the full name, while the second use and so on will use the abbreviation

List of Appendices + the Appendices

```
\include{lo-app} % appendix  
...  
\appendix  
...  
\input{appendices}
```

The list is edited manually in `lo-abb.tex`

```
\chapter{List of Appendices}  
  
\begin{acronym}[APPENDIX A\quad]  
\acro{APPENDIX A}{\uppercase{Data Used}}  
\acro{APPENDIX B}{\uppercase{UML Diagrams}}  
\end{acronym}
```

However, edit `appendices.tex` for the files to be included as appendix

```
\include{app-data}  
\include{app-uml}
```

Acknowledgments, the Malay and English abstracts are added by these lines and the respective .tex files

```
\include{acknowledgement} % acknowledgement.tex  
...  
\input{abs-mal} % abs-mal.tex  
\input{abs-eng} % abs-eng.tex
```

Edit the content of each of these .tex files

Thesis Chapters

For the main thesis chapters, open `mainchaps.tex` file. This is actually added by this line

```
\input{mainchaps}
```

By default, the file includes the following files:

```
\include{chap-intro}  
\include{chap-review}  
\include{chap-design}  
\include{chap-implementation}  
\include{chap-discussion}  
\include{chap-conclusion}
```

Please change the name of the files and edit the `\include{<name>}` tag accordingly. This will change as different students will have different chapters

Thesis Bibliography and List of Publications

The references and list of publications are added by these lines:

```
\bibliographystyle{apacite}
\bibliographystyleown{apacite}
...
\bibliography{mybib}      % uses mybib.bib
...
\nociteown{lim:2007,lim:latextypesetting} % bibtex keys
\bibliographyown{mybib} % your publications
```

Change "mybib" to other name e.g. own.bib if you use a separate .bib file

Summary of what to edit

- `acknowledgements.tex`, `abs-mal.tex` and `abs-eng.tex`
- `mainchaps.tex` – edit according to your chapter file names
- `chap-*.tex` – edit as you please, but make sure edit `mainchaps.tex`
- `loa-sym.tex`, `loa-abb.tex`, `loa-app.tex` – edit accordingly to be reflected in `\include{loa-*}`
- `appendix.tex` – add file names for the appendices

Compiling your thesis

Four steps (in command line):

- 1 `pdflatex usmthesis`
- 2 `bibtex usmthesis`
- 3 `bibtex own`
- 4 `pdflatex usmthesis`

MUST replicate these four steps in your \LaTeX editor of choice, else just use the command line

Compiling in T_EXmaker

T_EXmaker specific tips:

- Must follow the four steps to make sure list of publications appear
- Open `usmthesis.tex`, go to **Options** ▷ **Define** current document as 'Master Document' – then compile according to the four steps: 1. PDFLaTeX, 2. BibTeX, 3. BibTeX Own, 4. PDFLaTeX
- Setup **Options** ▷ **Configure Texmaker** ▷ **Quick Build** – PDFLaTeX + BibTeX + PDFLaTeX + View PDF
- Noted that `bibtex own` only need to be successful once, only must be run again if you make changes to your list of publications

Happy L^AT_EXing!