

# UTHM thesis template Version 0.1 - Manual

## Using L<sup>A</sup>T<sub>E</sub>X (front-end L<sup>A</sup>T<sub>E</sub>X)

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## Abstract

This is an explanation of UTHM thesis template that I have prepared to suit UTHM thesis format style. However, the template is not fully completed but provides a general format and style. You can modify it to make it better from time to time and one day the template will be mature and perfectly matched with all expected requirements. If you modify the template and you think it is better than the this version, don't forget to modify this document as well and put your name as the contributors. Of course you can modify this abstract and other parts of this document. You may copy, distribute to others as you wish. This is free, you can redistribute it and/or modify it under the terms of the GNU General Public License as published by the Free Software Foundation; either version 2 of the License, or (at your option) any later version.

## 1 L<sup>A</sup>T<sub>E</sub>X package requirement

To be able to write your thesis using L<sup>A</sup>T<sub>E</sub>X have to make sure your L<sup>A</sup>T<sub>E</sub>X distribution already include several packages which is not the standard L<sup>A</sup>T<sub>E</sub>X packages in L<sup>A</sup>T<sub>E</sub>X.

The required packages: `koma-script`, `fancyhdr`, `caption`. The installation of any L<sup>A</sup>T<sub>E</sub>X package should be done from the L<sup>A</sup>T<sub>E</sub>X distribution. If you are running Ubuntu, you can install from Synaptic package manager where TexLive optional packages can be selected. For Windows users you should install from MikTeX package manager.

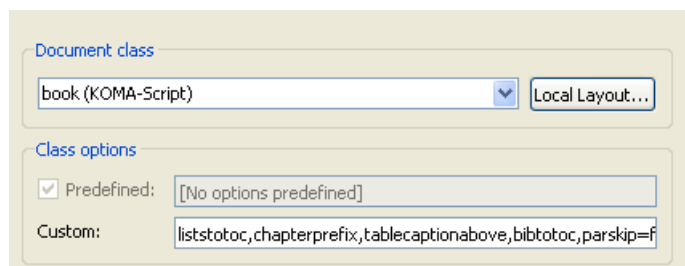
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\*Other contributors: If you modify it, your name will be listed here

## 2 Document preparation

### 2.1 Document class

UTHM thesis is written under L<sup>A</sup>T<sub>E</sub>X document class `book` (KOMA-Script). In order to employ this document class, from the menu **Document**▷**Settings** and from the option **Document Class** find `book` (KOMA-Script).



In the custom field, write the optional command: `listtotoc`, `chapterprefix`, `tablecaptionabove`, `bibtotoc`, `parskip=full`.

`listtotoc` prints all lists including List of Figures and List of Tables in TOC (Table of Contents). The default in `book` (KOMA-Script), all lists are not printed in TOC.

`chapterprefix` prints the “Chapter” prefix in front of chapter number in every chapter or in every chapter environment.

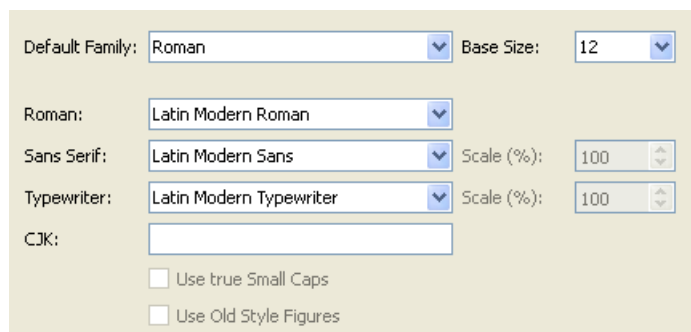
`tablecaptionabove` puts a correct space between table caption and the table. This is required for placing table below the caption table.

`bibtotoc` includes references heading in Table of Contents

`parskip=full` provides a full space between paragraph, as defined by the `book` (KOMA-Script) document class. This is important since in the thesis every paragraph must be visible and separated by a vertical space which is higher than the line space. In case an exact space between paragraphs is required, then you have to write a command `\setlength{\parskip}{1cm}` in L<sup>A</sup>T<sub>E</sub>X preamble as explained in section 3, instead of `parskip=full`. You may change the `1cm` to any space measurement as you wish.

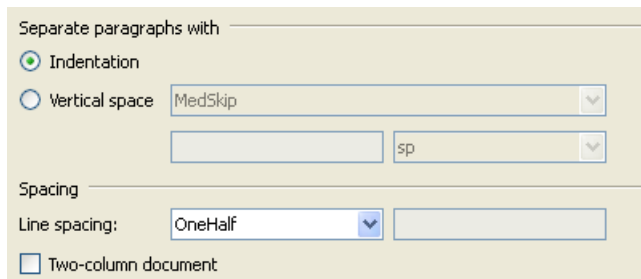
### 2.2 Fonts

The standard UTHM thesis is written in standard Roman font with base size of 12. The font setting should be adjusted. Go to **Document**▷**Settings** and from the option **Font** then change to the following entries:



## 2.3 Text layout

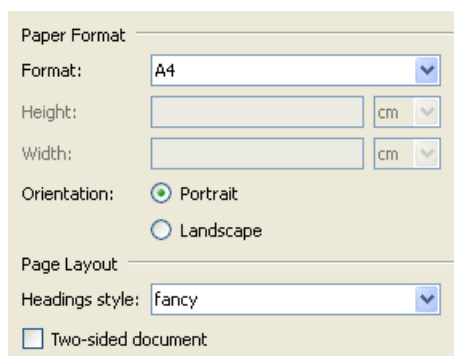
The line spacing of the text should be set here: from the menu **Document**▷**Settings** then set the line spacing to **OneHalf**.



The screenshot shows a settings dialog with two sections. The first section, 'Separate paragraphs with', has two radio buttons: 'Indentation' (selected) and 'Vertical space'. Below 'Vertical space' are two input fields: the first contains 'MedSkip' and the second is empty, followed by a unit dropdown set to 'sp'. The second section, 'Spacing', has a 'Line spacing:' label followed by a dropdown menu set to 'OneHalf' and an empty input field. At the bottom is a checkbox labeled 'Two-column document' which is unchecked.

## 2.4 Page layout

The thesis should be printed in A4 size paper. This should be declared from the menu **Document**▷**Settings** then set the paper format to **A4**. The heading style to be used is **fancy**. This fancy style requires **fancyhdr** package, so make sure you have installed this from your **L<sup>A</sup>T<sub>E</sub>X** package manager.

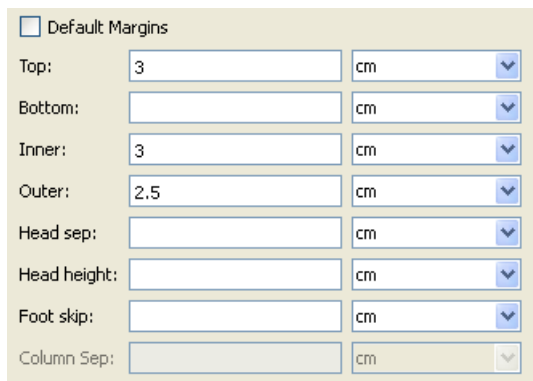


The screenshot shows a settings dialog with two sections. The first section, 'Paper Format', has a 'Format:' dropdown set to 'A4'. Below it are 'Height:' and 'Width:' labels, each followed by an empty input field and a unit dropdown set to 'cm'. The 'Orientation:' section has two radio buttons: 'Portrait' (selected) and 'Landscape'. The second section, 'Page Layout', has a 'Headings style:' dropdown set to 'fancy'. At the bottom is a checkbox labeled 'Two-sided document' which is unchecked.

## 2.5 Page margins

The default page margin of book (KOMA-Script) does not match with the margin requirement in UTHM Thesis, you need to modify it.

Go to menu **Document**▷**Settings** then under the option **Page Margins**, set the margins as follows

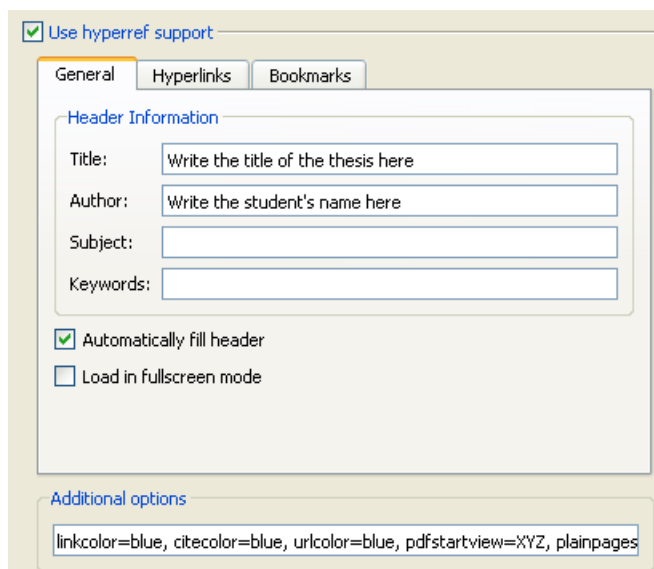


The screenshot shows a settings dialog with a section titled 'Default Margins' which has an unchecked checkbox. Below this are several labels followed by input fields and unit dropdowns: 'Top:' (3), 'Bottom:' (empty), 'Inner:' (3), 'Outer:' (2.5), 'Head sep:' (empty), 'Head height:' (empty), 'Foot skip:' (empty), and 'Column Sep:' (empty). All unit dropdowns are set to 'cm'.

## 2.6 PDF properties

Your pdf output can be nice with all links active, which means the table of contents links to the corresponding pages in the document. Other links within the document also accurately point to the referred page.

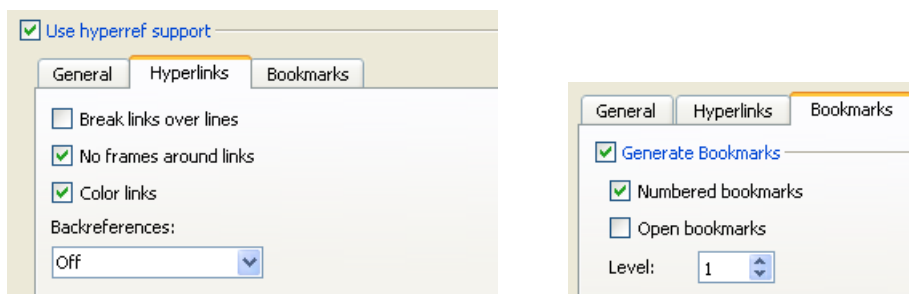
LyX has already included hyperref L<sup>A</sup>T<sub>E</sub>X package when you install LyX. What you need to do is just activating this package. Go to menu **Document** > **Settings** and from **PDF Properties** option enable the **Use hyperref support** by clicking the radio button. Write the title of the thesis and your name as the ID of pdf document.



The screenshot shows the 'Use hyperref support' dialog box with the 'General' tab selected. The 'Header Information' section contains four text input fields: 'Title' (placeholder: 'Write the title of the thesis here'), 'Author' (placeholder: 'Write the student's name here'), 'Subject', and 'Keywords'. Below these fields are two checkboxes: 'Automatically fill header' (checked) and 'Load in fullscreen mode' (unchecked). The 'Additional options' section at the bottom contains a text input field with the value 'linkcolor=blue, citecolor=blue, urlcolor=blue, pdfstartview=XYZ, plainpages'.

You need to write optional commands in Additional options field: `linkcolor=blue`, `citecolor=blue`, `urlcolor=blue`, `pdfstartview=XYZ`, `plainpages=false`, `pdfpagelabels`. The “blue” color is recommended during thesis writing process to see clearly all links. You may change the color to any standard color according to your preference. When your thesis is ready to print, the printed result will be better if you switch the color to “black”.

Once you have finished writing all optional commands in **General** tab, then modify the **Hyperlinks** and **Bookmark** tabs as follows:



The image shows two screenshots of the 'Use hyperref support' dialog box. The left screenshot shows the 'Hyperlinks' tab with the following options: 'Break links over lines' (unchecked), 'No frames around links' (checked), 'Color links' (checked), and 'Backreferences' set to 'Off' in a dropdown menu. The right screenshot shows the 'Bookmarks' tab with the following options: 'Generate Bookmarks' (checked), 'Numbered bookmarks' (checked), 'Open bookmarks' (unchecked), and 'Level' set to '1' in a dropdown menu.

If you want to know what the effects of changing the options under **Hyperlinks** and **Bookmarks** tabs, you can modify and view the pdf output. Perhaps you can find the most preferable to you.

### 3 L<sup>A</sup>T<sub>E</sub>X Preamble

The next step to prepare the thesis template is writing some additional command in L<sup>A</sup>T<sub>E</sub>X preamble, accessible from the menu Document > Settings, L<sup>A</sup>T<sub>E</sub>X preamble.

By default the document class book (KOMA-Script) always prints the date of printing in the title page. To disable this a command `\date{}` prints a blank date.

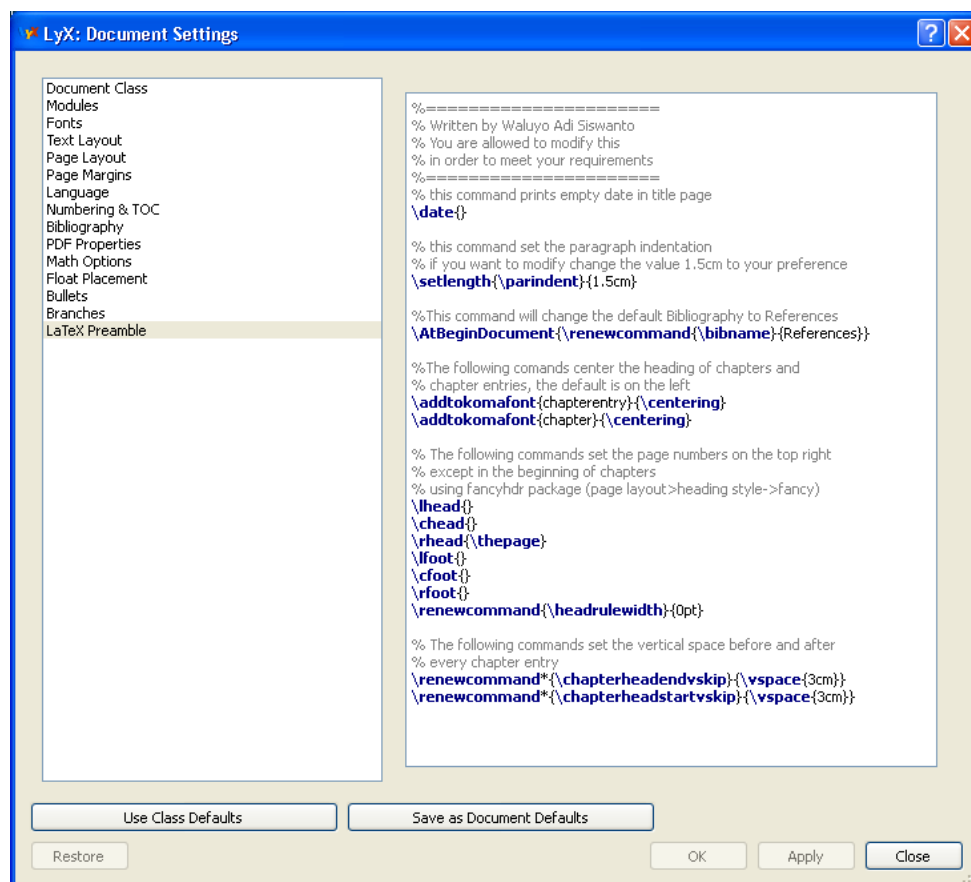
The indentation of the paragraph is set 1.5 cm. This definition should be controlled by the command `\setlength{\parindent}{1.5cm}`. If you want to set the vertical space in exact measurement (for example 1 cm), then you need to insert an additional command `\setlength{\parskip}{1cm}`. See another explanation in section 2.1.

The default of Bibliography heading name in book (KOMA-Script) is **Bibliography**. In UTHM thesis, the name is **References**. In this case you need to change the default name defined by `\bibname`, by using the following command:

```
\AtBeginDocument{\renewcommand{\bibname}{References}}
```

The command however works when you are using the default language which is English. In case you want to use another language rather than English. You have to access in the `babel` level. For example you want to use English (UK), then the command above should be modified to :

```
\AtBeginDocument{
  \addto\captionsbritish{
    \renewcommand{\bibname}{References}
  }
}
```



In UTHM thesis the page number should be located on the top-right except in the beginning of every chapter and chapter like pages the page number are located at the bottom of the page and centered. To follow this requirement a `fancyhdr` package is needed (see section 2.4). Write the following commands:

```

\lhead{}
\chead{}
\rhead{\thepage}
\lfoot{}
\cfoot{}
\rfoot{}
\renewcommand{\headrulewidth}{0pt}

```

Another style appeared in UTHM thesis is before and chapter entry, the vertical space is wider than the space between paragraphs. Assuming this vertical space is 3 cm, the following commands will set it accurately.

```

\renewcommand*{\chapterheadendvskip}{\vspace{3cm}}
\renewcommand*{\chapterheadstartvskip}{\vspace{3cm}}

```

## 4 Modification records

Version 0.1: (23-September-2010)

- <waluyo> The first version is released to public

## 5 Guidelines to contributors

Please free to modify and to contribute!

Whenever you modify UTHM thesis template (filename: `UTHM-Thesis-V-01.lyx`) you are requested to save in the subsequent version `UTHM-Thesis-V-xx.lyx`, where `xx` is the numbers. If you have modified V-01, you have to save V-02. Inside the document (the first page), there is a note indicating the version number and the date of release. Please modify this consistently with the file version.

You need to modify and to document the modifications that you have done in the manual (this file): `uthm-thesis-manual-V-01.lyx`.

Apart from the manual contents that should be in good agreement with the thesis template, there are several sections you need to modify. This is very important so that other contributors want to make better have sufficient information what have been done previously.

### Filename

You are requested to save the new version following. If the file is `UTHM-Thesis-V-01.lyx`, the released version to public must be `UTHM-Thesis-V-02.lyx`

### Title

The title must be adjusted according to the new release version

### PDF Properties

The title of the pdf properties (Document▷Settings and from PDF Properties) should be adjusted to be consistent with the version number

### Release date

The release date should modified before you release to public. This information is written in  $\text{\LaTeX}$  Preamble accessible from the menu Document▷Settings,  $\text{\LaTeX}$  Preamble

### Modification records

Write the summary of the modification in the new release. This modification records are written in section 4.