How to Use This Template

1 Getting Started with LaTeX

If you are new to LaTeX, start by learning the basics such as document structure, environments, referencing, and how to compile a file. A good place to begin is the Overleaf Learn website:

`https://www.overleaf.com/learn`

2 Directory Structure

The template uses a folder-based structure to keep things organized. The main files and folders are:

- `main.tex` — The main file used to compile your thesis.
- `thesisinfo.tex` — Stores your title, name, advisor, program, etc.
- `contents/` — Contains all chapters, appendices, and special sections.
- `figures/` — Stores all images used in the thesis.
- `tables/` — (Optional) Stores separate table files.
- `bibliography.bib` — Contains all BibTeX references.

3 Configuring Document Class Options

The `VISTEC` document class supports options to set your degree level, school, and optional layout helpers. These options must be declared in the `main.tex` file using the `\documentclass` command.

3.1 Required Options

You must provide two required options: your degree type and school/program. The valid values are shown in the table below:

If your program is not listed, you can manually define `\degreefield`, `\school`, and `\program` in `thesisinfo.tex`.

3.2 Optional Layout Options

These optional settings help with layout debugging. Use them while editing, but dis-

Table 1 Required `documentclass` options for degree type and school/program

Option	Description
`phd`	Doctor of Philosophy
`master`	Master of Engineering
`ist`	Information Science and Technology (Program: Information Science and Technology)
`ese`	Energy Science and Engineering (Program: Chemical Engineering)
`mse`	Molecular Science and Engineering (Program: Materials Science and Engineering)
`bse`	Biomolecular Science and Engineering (Program: Biomolecular Science and Engineering)

able them before final submission.

Table 2 Optional `documentclass` options for layout assistance

Option	Purpose
`final`	Final output (default)
`showframe`	Show page margins and layout boxes
`showgrid`	Show grid background for positioning

3.3 Example Declaration

This example sets the document class for a Ph.D. student in the ist school and enables layout frames for debugging:

File: `main.tex`

```
1 \documentclass[phd, ist, showframe]{VISTEC}
```

4 Editing Thesis Metadata

All thesis metadata—such as the title, author name, student ID, advisor, and academic year—is defined in `thesisinfo.tex`. These values are used in the title page, approval page, and other formal sections.

File: `thesisinfo.tex`

```
\title{VISTEC Thesis Template: A Complete LaTeX Thesis Preparation Version 2}
\authortitle{Mr.}
\author{Author Name}
\studentid{1888888}
\examinationdate{18}{August}{2025}
\academicyear{2025}
\advisor{Asst. Prof. Dr. Advisor Name}
\memberone{Asst. Prof. Dr. Committee Member 1}
\membertwo{Asst. Prof. Dr. Committee Member 2}
\memberthree{Asst. Prof. Dr. Committee Member 3}
\gradcommittee{Prof. Dr. Pimchai Chaiyen}
```

5 Manual Line Break in Title

If your title is too long, it may not break naturally on the title page, approval page, or abstract page. You can insert a manual line break using `\linebreak` to improve the layout. The number controls how strongly LaTeX tries to break the line.

Table 3 Values for `\linebreak` and their meaning

Value	Effect
0	Weak suggestion only
1–3	Increasing strength of break
4	Forced line break

The example below breaks the title after the colon for better layout:

File: `thesisinfo.tex`

```
\title{VISTEC Thesis Template:\linebreak[2] A Complete LaTeX Thesis Preparation
↪  Version 2}
```

6 Organizing Chapter and Front Matter Files

Each part of your thesis—such as chapters, abstract, acknowledgments, and appendices—should be saved as a separate file in the `contents/` folder. These files are included in `main.tex` using the `\include{}` command.

The recommended structure is:

- **Front matter pages:**
  - `abstract.tex`

  - `acknowledgment.tex`
  - `abbreviations.tex`
  - `authorbiography.tex`
- **Main chapters:**
  - `chapter1.tex`, `chapter2.tex`, ..., `chapter5.tex`
- **Additional sections:**
  - `appendix.tex`

To include any file, use the `\include{}` command in `main.tex`, like this:

File: `main.tex`

```
\include{contents/abstract}
\include{contents/acknowledgment}
\include{contents/chapter1}
...
\include{contents/appendix}
```

7 Structuring Headings and References

To keep your document well-organized, use headings consistently: `\section`, `\subsection`, `\subsubsection`. Add `\label` after each heading to create a reference target. Use `\autoref` to reference them automatically with the correct prefix (e.g., "Section").

File: `contents/chapter1.tex`

```
\section{Introduction}
\label{sec:intro}

\begin{paragraph}
This is a paragraph. Refer to \autoref{sec:background}.
\end{paragraph}

\subsection{Background}
\label{sec:background}

\begin{subparagraph}
This is a subparagraph that expands on background context.
\end{subparagraph}

\subsubsection{Detailed Context}
\label{subsec:detail}

\begin{subsubparagraph}
This subsubparagraph elaborates on the content in \autoref{sec:background}.
\end{subsubparagraph}
```

Output:

1 **Introduction**

This is a paragraph. Refer to Section 1.2.

1.2 Background

This is a subparagraph that expands on background context.

1.2.1 Detailed Context

This subsubparagraph elaborates on the content in Section 1.2.

7.1 Referencing Tables, Figures, and Equations

To reference tables, figures, or equations, use `\label` and `\autoref`. Always place the `\label` right after the `\caption` or at the end of the equation environment. This ensures correct automatic prefixing like "Table", "Figure", or "Equation".

File: `contents/chapter1.tex`

```
% Referencing a table, figure, and equation
As shown in \autoref{tab:summary}, \autoref{fig:sample}, and \autoref{eq:loss},
↪  our results are consistent.

% Table example
\begin{table}[ht]
\small\singlespacingplus
\centering
\caption{Summary of accuracy across datasets.}
\label{tab:summary}
    \begin{tabular}{lll}
        \toprule
        Dataset & Subjects & Accuracy \\
        \midrule
        A & 10 & 85.2\% \\
        B & 12 & 88.6\% \\
        \bottomrule
    \end{tabular}
\end{table}

% Figure example
\begin{figure}[ht]
    \centering
    \includegraphics[width=0.9\linewidth]{figures/sample_plot.pdf}
    \caption{Accuracy comparison between models.}
    \label{fig:sample}
\end{figure}

% Equation (not shown in output box)
\begin{equation}
\mathcal{L}_{\text{total}} = \sum_{t=1}^{T} \alpha_t \cdot \mathcal{L}_t
```

```
\label{eq:loss}
\end{equation}
```

Output:

As shown in Table 1, Figure 1, and Equation 1, our results are consistent.

Table 1 Summary of accuracy across datasets.

[SAMPLE TABLE]

[SAMPLE PLOT]

Figure 1 Accuracy comparison between models.

$$\mathcal{L}_{\text{total}} = \sum_{t=1}^{T} \alpha_t \cdot \mathcal{L}_t \tag{1}$$

8 Customizing List Indentation

List indentation improves readability by visually separating content by level. This template provides three predefined indentation lengths:

Table 4 Predefined macros for list indentation

Macro	Indent Size
`\paritemindent`	1.65cm — First-level lists (main paragraph level)
`\subparitemindent`	2.8cm — Second-level lists (nested or subparagraph level)
`\subsubparitemindent`	4cm — Third-level lists (deeply nested content)

Below is an example of how to apply these indentation macros in `enumerate` and `itemize` environments. You can also use specific units like `cm` or `pt` when more control is needed.

File: `contents/xxx.tex`

```latex
% Custom indentation using predefined macros
\begin{enumerate}[itemindent=\paritemindent]
  \item First-level list item (using paritemindent)
\end{enumerate}

\begin{enumerate}[itemindent=\subparitemindent]
  \item Second-level list item (using subparitemindent)
\end{enumerate}

\begin{enumerate}[itemindent=\subsubparitemindent]
  \item Third-level list item (using subsubparitemindent)
\end{enumerate}

% Manual indentation using fixed units
\begin{itemize}[itemindent=2cm]
  \item Manually indented item using 2cm
\end{itemize}

```

Output:

1) First-level list item (using paritemindent)
    1) Second-level list item (using subparitemindent)
        1) Third-level list item (using subsubparitemindent)

- Manually indented item using 2cm

9 Font Size

This template customizes the default font settings for improved readability. The default font size is **12pt**. You may override it using any of the commands below.

Table 5 Font size commands with visual examples

Command	Font Size (pt)	Example Text
`\HUGE`	24pt	Some text
`\huge`	20pt	Some text
`\LARGE`	18pt	Some text
`\Large`	16pt	Some text
`\large`	14pt	Some text
`\normalsize`	12pt (default)	Some text
`\small`	11pt	Some text
`\footnotesize`	10pt	Some text
`\scriptsize`	9pt	Some text
`\tiny`	8pt	Some text

File: `contents/xxx.tex`

```
{\Large This should appear larger.}

{\small This should appear smaller.}
```

Output:

This should appear larger.

This should appear smaller.

10 Formatting Tips and Layout Troubleshooting

This section provides helpful solutions to common formatting issues in your thesis, such as overfull lines, missing continuation headers, and manual page breaks.

10.1 Fixing Overfull `\hbox` Warnings

An "Overfull `\hbox`" warning occurs when LaTeX cannot break a long word or line within the page margins. There are two typical solutions:

- Use `\hyphenation{}` in the preamble to define custom word break points.
- Insert a manual line break using `\newline` in the document body.

Example 1: Using Hyphenation Rules (recommend)

Place these commands in the preamble to help LaTeX break long words:

File: `main.tex`

```
\hyphenation{neurorehabi-litation} % Breaks as neurorehabi-litation
\hyphenation{multi-modal}          % Breaks as multi-modal
\hyphenation{inherent}             % Do not hyphenate this word
```

Example 2: Manual Line Break

Insert `\newline` at the desired point in a long sentence:

File: `contents/xxx.tex`

```
This sentence is too long and exceeds the margin, so we insert a break.\newline
Here is the continuation on the next line with proper indentation.
```

Use `\newline` only in body text. Avoid using it in math mode, figure captions, or references unless absolutely necessary.

10.2 Forcing a Page Break

To manually start a new page, use:

```
\newpage
```

10.3 Fixing Missing Continuation Headers in Lists

If a continuation header (e.g., `(Cont.)`) does not appear on the second page of a list, insert a dummy entry to trigger it. These entries are invisible but ensure correct layout. Uncomment the relevant lines based on the list affected.

Add this at the end of your `main.tex`:

File: `main.tex`

```
\addtocontents{lot}{\protect\contentsline{table}{\phantom{Dummy Invisible Table
↪  Entry}}{\phantom{\thepage}}{}}
\addtocontents{lof}{\protect\contentsline{figure}{\phantom{Dummy Invisible Figure
↪  Entry}}{\phantom{\thepage}}{}}
% \addtocontents{toc}{\protect\contentsline{chapter}{\phantom{Dummy Invisible ToC
↪  Entry}}{\phantom{\thepage}}{}}
```

10.4 Forcing Continuation Headers in the List of Abbreviations

If the continuation header in the List of Abbreviations does not appear automatically, use `\newpage` to manually break the page.

Example:

File: `contents/abbreviations.tex`

```tex
\newabbr{EEG}{Electroencephalogram}
\newabbr{MI}{Motor Imagery}
\newabbr{CNN}{Convolutional Neural Network}
\newabbr{\ce{H2O}}{Water}
\newpage % Force second page
\newabbr{DBU}{1,8-diazabicyclo[5.4.0]-7-undecene}
```