

# How to Use This Template

## 1 Getting Started with L<sup>A</sup>T<sub>E</sub>X

If you are new to L<sup>A</sup>T<sub>E</sub>X, 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 disable them before final submission.

**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)

**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**

---

```
1 \title{VISTEC Thesis Template: A Complete LaTeX Thesis Preparation Version 2}
2 \author{Mr.}
3 \author{Author Name}
4 \studentid{1888888}
5 \examinationdate{18}{August}{2025}
6 \academicyear{2025}
7 \advisor{Asst. Prof. Dr. Advisor Name}
8 \memberone{Asst. Prof. Dr. Committee Member 1}
9 \membertwo{Asst. Prof. Dr. Committee Member 2}
10 \memberthree{Asst. Prof. Dr. Committee Member 3}
11 \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**

---

```
1 \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 `\includechapter{}` 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 `\includechapter{}` command in `main.tex`, like this:

**File: main.tex**

---

```

1 \includechapter{contents/abstract}
2 \includechapter{contents/acknowledgment}
3 \includechapter{contents/chapter1}
4 ...
5 \includechapter{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**

---

```

1 \section{Introduction}
2 \label{sec:intro}
3
4 \begin{paragraph}
5 This is a paragraph. Refer to \autoref{sec:background}.
6 \end{paragraph}
7
8 \subsection{Background}
9 \label{sec:background}
10
11 \begin{subparagraph}
12 This is a subparagraph that expands on background context.
13 \end{subparagraph}
14
15 \subsubsection{Detailed Context}
16 \label{subsec:detail}
17
18 \begin{subsubparagraph}
19 This subsubparagraph elaborates on the content in \autoref{sec:background}.
20 \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`

```
1 % Referencing a table, figure, and equation
2 As shown in \autoref{tab:summary}, \autoref{fig:sample}, and \autoref{eq:loss},
  ↪ our results are consistent.
3
4 % Table example
5 \begin{table}[ht]
6 \small\singlespacingplus
7 \centering
8 \caption{Summary of accuracy across datasets.}
9 \label{tab:summary}
10 \begin{tabular}{lll}
11 \toprule
12 Dataset & Subjects & Accuracy \\
13 \midrule
14 A & 10 & 85.2\% \\
15 B & 12 & 88.6\% \\
16 \bottomrule
17 \end{tabular}
18 \end{table}
19
20 % Figure example
21 \begin{figure}[ht]
22 \centering
23 \includechaptergraphics[width=0.9\linewidth]{figures/sample_plot.pdf}
24 \caption{Accuracy comparison between models.}
25 \label{fig:sample}
26 \end{figure}
27
28 % Equation (not shown in output box)
29 \begin{equation}
30 \mathcal{L}_{\text{total}} = \sum_{t=1}^T \alpha_t \cdot \mathcal{L}_t
```

31 `\label{eq:loss}`  
32 `\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
<code>\paritemindent</code>	1.65cm — First-level lists (main paragraph level)
<code>\subparitemindent</code>	2.8cm — Second-level lists (nested or subparagraph level)
<code>\subsubparitemindent</code>	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

---

```
1 % Custom indentation using predefined macros
2 \begin{enumerate}[itemindent=\paritemindent]
3   \item First-level list item (using paritemindent)
4 \end{enumerate}
5
6 \begin{enumerate}[itemindent=\subparitemindent]
7   \item Second-level list item (using subparitemindent)
8 \end{enumerate}
9
10 \begin{enumerate}[itemindent=\subsubparitemindent]
11   \item Third-level list item (using subsubparitemindent)
12 \end{enumerate}
13
14 % Manual indentation using fixed units
15 \begin{itemize}[itemindent=2cm]
16   \item Manually indented item using 2cm
17 \end{itemize}
18
```

---

### 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
<code>\HUGE</code>	24pt	Some text
<code>\huge</code>	20pt	Some text
<code>\LARGE</code>	18pt	Some text
<code>\Large</code>	16pt	Some text
<code>\large</code>	14pt	Some text
<code>\normalsize</code>	12pt (default)	Some text
<code>\small</code>	11pt	Some text
<code>\footnotesize</code>	10pt	Some text
<code>\scriptsize</code>	9pt	Some text
<code>\tiny</code>	8pt	Some text

**File:** contents/xxx.tex

```
1 {\Large This should appear larger.}
2
3 {\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



---

```

1 \hyphenation{neurorehabi-litation} % Breaks as neurorehabi-litation
2 \hyphenation{multi-modal}         % Breaks as multi-modal
3 \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**

---

```

1 This sentence is too long and exceeds the margin, so we insert a break.\newline
2 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:

---

```

1 \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**

---

```

1 \addtocontents{lot}{\protect\contentsline{table}{\phantom{Dummy Invisible Table
  ↳ Entry}}{\phantom{\thepage}}{}}
2 \addtocontents{lof}{\protect\contentsline{figure}{\phantom{Dummy Invisible Figure
  ↳ Entry}}{\phantom{\thepage}}{}}
3 % \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

---

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

---