厦門大學

本 科 毕 业 论 文

（主修专业）

厦门大学本科毕业论文 LaTeX 模版

A LaTeX Template of Xiamen University Undergraduate Thesis

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厦门大学本科学位论文诚信承诺书

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年　　　月　　　日

Acknowledgements

Although the "Xiamen University Undergraduate Thesis (Design) Guidelines" (《厦门大学本科毕业论文（设计）规范》) stipulate that the acknowledgments should be placed in the preliminary sections, in most cases, acknowledgments are typically placed at the end of the thesis.

The "Guidelines" also emphasize that the acknowledgments should briefly express gratitude to those who directly assisted in the research and writing process of the thesis (such as advisors, instructors, and other individuals). Therefore, if this template has been helpful for your thesis, you might consider mentioning it in the acknowledgments.

摘　　要

本模版基于厦门大学图书馆 i 学堂 LaTeX 讲座中提供的硕博毕业论文模版 (厦门大学图书馆, 2021) 改编而来，并根据《厦门大学本科毕业论文（设计）规范》(厦门大学教务处, 2016) 进行了大幅度的格式调整。本模版提供高清封面、诚信承诺书、中英文摘要环境、中英文目录自动生成、附录环境、参考文献环境、致谢环境等。本模版还自带了 Windows 中的中易宋体、中易黑体、中易楷体、中易仿宋字体，以兼容缺少这些字体的 Linux 和 macOS 系统。

关键词：本科毕业论文；LaTeX；厦门大学

Abstract

This template is adapted from the master and doctoral dissertation template provided in the LaTeX lecture of Xiamen University Library i-School (厦门大学图书馆, 2021), and has been greatly adjusted according to the *Xiamen University Undergraduate Thesis (Design) Specifications* (厦门大学教务处, 2016). This template provides high-definition cover, letter of declaration, Chinese and English abstract environment, automatic generation of table of contents in Chinese and English, appendix environment, reference environment, acknowledgements environment, etc. This template also comes with SimSun, SimHei, SimKai, and SimFang fonts in Windows to be compatible with Linux and macOS systems which lack these fonts.

Key Words: Undergraduate Thesis; LaTeX; Xiamen University

目　录

Contents

Chapter 1   Introduction

1.1 Environment Setup

First, you need to set up the LaTeX environment. It is recommended to use TeX Live + VSCode. TeX Live can be downloaded from https://www.tug.org/texlive/, and after installing VSCode, you will need to search for and install the LaTeX Workshop extension.

1.2 Compiling

Once the environment is set up, you can download the code for this template from GitHub (F5Soft.site, 2022). After downloading, try opening the example.tex file and click the green run button in the top right corner to compile. On macOS systems, the compilation will usually fail due to pdflatex not being able to find the corresponding Chinese fonts. To resolve this, go to the LaTeX Workshop panel on the left, select "Recipe" as latexmk (xelatex), and click run to compile successfully.

1.3 Use Templates

This template encapsulates a large number of formatting settings based on the "Xiamen University Undergraduate Thesis (Design) Guidelines" (厦门大学教务处, 2016), so that users do not need to worry about various formatting commands. All you need to do is set the chapter titles and fill in the abstract, appendix, references, acknowledgments, and other sections.

1.3.1 Example Paper

The example.tex file contains detailed comments and usage examples, which you can directly modify based on the provided example. All illustrations in the thesis should be placed in the "figures" folder and included according to their file names.

1.3.2 Customization

The xmu.cls file is the template file. If you have a perfectionist tendency towards typesetting and wish to fine-tune the template details like I did, you can modify the xmu.cls template file yourself. The template file also includes many comments to assist

you in making changes. If you are satisfied with the modifications, you can contribute by submitting a pull request on GitHub (F5Soft.site, 2022). You can also open an issue to suggest features you would like to add.

Modifying the template requires a certain level of LaTeX knowledge. You can refer to the "LaTeX 2e Complete Learning Manual" (《LaTeX 2e 完全学习手册》) (胡伟, 2013) and "Simple and Straightforward LaTeX" (《简单粗暴 LaTeX》) (吴康隆, 2020) for guidance on making changes.

Chapter 2   Examples

2.1 Section (English Ver.)

A first-level heading (chapter) will always start on a new page.

2.1.1 Subsection (English Ver.)

Use the xmuchapter, xmusection, and xmusubsection commands to specify the first-level (chapter), second-level (section), and third-level (subsection) headings. Due to the requirements for a bilingual table of contents, each of these three commands takes two parameters: the first parameter is the title in Chinese, and the second parameter is the title in English.

2.1.1.1 Subsubsection (English Ver.)

If a fourth-level heading is required, it will not appear in the table of contents.

2.2 Figures and Tables

2.2.1 Figures

Images are numbered according to the chapter number and the image number (e.g., chapter number-image number). The caption for the image can be set using the caption command, and the image number can be referenced using the label and ref commands. The Xiamen University logo is shown in the figure below 2-1. According to the "Xia-

Figure 2-1: Xiamen University logo

men University Undergraduate Thesis (Design) Guidelines" (厦门大学教务处, 2016),

the title and figure number of the image should be placed at the center below the image. Below is an example showing two images side by side:

Figure 2-2: Xiamen University logo

Figure 2-3: Xiamen University text

2.2.2 Tables

For tables, the numbering follows the format chapter number-table number. Similarly, the table caption can be set using the caption command, and the table number can be referenced using the label and ref commands. The table 2-1 below shows an example of a database table design. According to the "Xiamen University Undergraduate Thesis

Table 2-1: Basic Information Table

Field Name	Field Type	Length	Field Description	Notes
Account Number	Number	30		Primary Key
Password	Number	30	Encrypted	
Name	Varchar	50		
Email Address	Varchar	50	Required for VIP customers	

(Design) Guidelines" (厦门大学教务处, 2016), the title and table number should be placed at the center above the table. The font for the table content should be 5-point Songti, and the font for the table header should be 5-point bold Songti.

2.3 Plotting

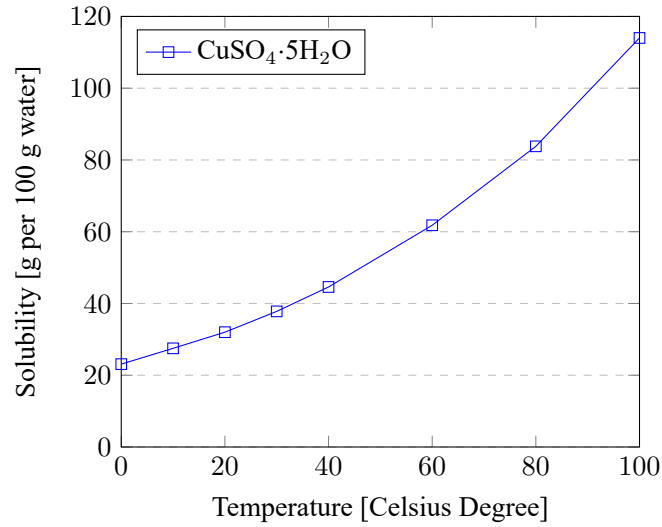The tikzpicture environment can be used to draw functions, line charts, scatter plots, etc., as shown in Figure 2-4.

2.4 Formulas

Formulas can be divided into inline formulas $a^2 + b^2 = c^2$ and display formulas:

$$\int_a^b \int_a^x \int_x^{x^2} (3y + 7)z \ \mathrm{d}z \ \mathrm{d}y \ \mathrm{d}x$$

$$|-0.75|^2 + (5.5 - 4.2)^2 + \sqrt[4.2]{3} + \log_{3.3} 4.7 + \cos 1.24 \sin 1.7 \approx 5.17$$

Figure 2-4: Temperature dependence of CuSO$_4$·5H$_2$O solubility

If you need to assign a formula number, you can also use the label and ref commands for referencing. The correct result of Equation 2-1 should be $\frac{\sqrt{3}}{6}$。

$$\lim_{x \to 0} \frac{\int_{\sin x}^{x} \sqrt{3 + t^2}\, \mathrm{d}t}{x(e^{x^2} - 1)} \tag{2-1}$$

Equation 2-2 provides an example of a matrix. Note that it is better to use boldsymbol rather than bm for bold letters.

$$\boldsymbol{Ax} = \boldsymbol{b}, \quad \boldsymbol{A} = \begin{pmatrix} a_{11} & a_{12} & a_{13} \\ a_{21} & a_{22} & a_{23} \\ a_{31} & a_{32} & a_{33} \end{pmatrix}, \quad \boldsymbol{b} = \begin{pmatrix} b_1 \\ b_2 \\ b_3 \end{pmatrix} \tag{2-2}$$

Equation 2-3 provides an example of a determinant:

$$\begin{vmatrix} 1 & 2 \\ 3 & 4 \end{vmatrix} = 1 \times 4 - 2 \times 3 = -2 \tag{2-3}$$

Equation 2-4 provides an example of a system of equations:

$$\begin{cases} mgh = mv_1^2 \\ \dfrac{1}{2}mv_2^2 - \dfrac{1}{2}mv_1^2 = F_f s \quad \Rightarrow s, v_1, F_f \\ F_f = \mu mg \end{cases} \tag{2-4}$$

2.5 Algorithms

If you only need to display code, you may consider using the verbatim environment[1] . Here is a footnote. You can insert footnotes using the footnote command[2] .

```
#include <unistd.h>
int main()
{
    write(STDOUT_FILENO, "Hello, world!\n", 14);
    return 0;
}
```

If you only need to display an algorithm without showing the actual code, you can use the algorithm environment, as shown in Algorithm 1:

Algorithm 1: Loop-based summation algorithm

Data: sum, i: integer
begin
    for $i \leftarrow 0$ **to** 100 **do**
        sum $\leftarrow$ sum $+ i$;
        if sum > 4000 **then**
            break;
        end
    end
    print i;
end

---

① For more advanced code display, you can consider using the lstlisting environment from the listings package, which supports syntax highlighting, line breaks, line numbering, custom colors, custom fonts, and more.
② Footnote example.

References

F5Soft.site, 2022. 厦门大学本科毕业论文 LaTeX 模版[EB/OL]. https://github.com/F5Soft/xmu -template.

胡伟, 2013. LaTeX 2e 完全学习手册[M]. 清华大学出版社.

厦门大学教务处, 2016. 厦门大学本科毕业论文（设计）规范[Z]. 厦门大学教务处: 厦大教〔2016〕5 号.

厦门大学图书馆, 2021. i 学堂直播：使用 LaTeX 排版论文全攻略-进阶篇[EB/OL]. https://library.xmu.edu.cn/wd/jzkj/i_xt.htm.

吴康隆, 2020. 简单高效 LaTeX[M]. 人民邮电出版社.

Appendix

A.1 Tables

Here are some contents for the appendix, such as tables or other explanations, like Appendix Table A-1. The numbering in the appendix begins with the letter "A." For

Table A-1: Appendix Table Example

Item		
Animal	Description	Price ($)
Gnat	per gram	13.65
	each	0.01
Gnu	stuffed	92.50
Emu	stuffed	33.33
Armadillo	frozen	8.99

example, Equation A-1.

$$\sin\left(2x + \frac{\pi}{2}\right) = \frac{1}{2} \tag{A-1}$$

A.2 Abstract of Xiamen University Undergraduate Dissertation (Design) Specification

主修专业毕业论文（设计）封面使用 160g 白色双胶纸，辅修封面为 160g 浅黄色皮纹纸。内页均为 A4 规格 80g 双胶纸。

章的标题占 2 行，标题以外的文字为 1.5 倍行距。

上边距和左边距应留 25mm 以上间隙，下边距和右边距应分别留 20mm 以上间隙。

每页须加"页眉"和"页码"。奇数页页眉内容为当前章名，如"第一章绪论"。偶数页页眉内容为论文题目。学位论文的页码，正文、参考文献、附录部分用阿拉伯数字连续编码并居中，前置部分用罗马数字单独连续编码居中（封面除外）。

封面中文标题：二号黑体

封面英文标题：三号 Times New Roman 加粗

中文摘要标题：小三号黑体

中文关键词标题：小四号黑体

中文摘要、关键词内容：小四号宋体

英文摘要标题：小三号 Times New Roman 加粗

英文关键词标题：小四号 Times New Roman 加粗

英文摘要、关键词内容：小四号 Times New Roman

中文目录标题：小三号黑体

中文目录中章的标题：四号黑体

中文目录中节的标题：小四号黑体

中文目录中三级标题：小四号宋体

英文目录标题：小三号 Times New Roman 加粗

英文目录中章的标题：四号 Times New Roman 加粗

英文目录中节的标题：小四号 Times New Roman 加粗

英文目录中三级标题：小四号 Times New Roman

章的标题：小三号黑体

节的标题：四号黑体

三级标题：小四号黑体

正文：小四号宋体

页眉：小五号宋体

页码：小五号 Times New Roman

注释内容：小五号宋体

表格、图的标题、单位、表头：五号宋体加粗

表格内容：五号宋体

表格、图的资料来源：小五号宋体

参考文献标题：小三号黑体

中文参考文献表：五号宋体

英文参考文献表：五号 Times New Roman

附录标题：小三号黑体

致谢标题：小三号黑体

致谢内容：小四号宋体

对于中英文混杂的内容，**中文的字体若是用宋体，英文的字体则采用 Times**

New Roman；中文的字体若是黑体，英文的字体则采用 Arial。③

The cover of the thesis (design) for the major should use 160g white double offset paper, while the cover for the minor should use 160g light yellow leather-textured paper. The inner pages should be A4 size with 80g double offset paper.

The title of each chapter occupies 2 lines, and the line spacing for text other than the title is 1.5 times the normal line spacing.

The top and left margins should be at least 25mm, and the bottom and right margins should be at least 20mm.

Each page should include a "header" and "page number". The header on odd-numbered pages should contain the current chapter title, such as "Chapter 1 Introduction", while the header on even-numbered pages should contain the thesis title. The page numbers for the thesis, including the main text, references, and appendices, should be consecutively numbered with Arabic numerals, centered. The preliminary sections should use Roman numerals for page numbers, also centered (excluding the cover page).

Cover page Chinese title: size 2, boldface black font

Cover page English title: size 3, bold Times New Roman

Chinese abstract title: size 3, boldface black font

Chinese keywords title: size 4, boldface black font

Chinese abstract and keywords content: size 4, Songti font

English abstract title: size 3, bold Times New Roman

English keywords title: size 4, bold Times New Roman

English abstract and keywords content: size 4, Times New Roman

Chinese table of contents title: size 3, boldface black font

Chapter titles in the Chinese table of contents: size 4, boldface black font

Section titles in the Chinese table of contents: size 4, boldface black font

Subsection titles in the Chinese table of contents: size 4, Songti font

English table of contents title: size 3, bold Times New Roman

Chapter titles in the English table of contents: size 4, bold Times New Roman

Section titles in the English table of contents: size 4, bold Times New Roman

Subsection titles in the English table of contents: size 4, Times New Roman

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③ 因此，本模版提供了如下的几种字体设置。rm：罗马字族，中文宋体，英文 Times。sf：等线字族，中文黑体，英文 Arial。bf：粗体序列，中文黑体，英文 Times 加粗。it：斜体序列，中文楷体，英文 Times 斜体。如果需要使用难看的宋体加粗，则需要通过 \bf\songti 实现。当然，也可以使用 songti、heiti、kaishu 手动指定中文字体，此时英文字体均默认为 Times。

Chapter title: size 3, boldface black font

Section title: size 4, boldface black font

Subsection title: size 4, boldface black font

Main text: size 4, Songti font

Header: size 5, Songti font

Page number: size 5, Times New Roman

Notes: size 5, Songti font

Table and figure titles, units, and table headers: size 5, bold Songti font

Table content: size 5, Songti font

Source of table/figure data: size 5, Songti font

References title: size 3, boldface black font

Chinese references list: size 5, Songti font

English references list: size 5, Times New Roman font

Appendix title: size 3, boldface black font

Acknowledgements title: size 3, boldface black font

Acknowledgements content: size 4, Songti font

For mixed Chinese and English content, **if the Chinese font is Songti, the English font should be Times New Roman**; if the Chinese font is Heiti, the English font should be Arial.④

A.2.1 Subsection in Appendix

A.2.1.1 Subsubsection in Appendix

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④ Therefore, this template provides the following font settings: rm: Roman family, Chinese Songti, English Times. sf: Sans-serif family, Chinese Heiti, English Arial. bf: Bold sequence, Chinese Heiti, English Times bold. it: Italic sequence, Chinese Kaishu, English Times italic. If a less visually appealing bold Songti is required, it can be achieved by using \bf\songti. Alternatively, the Chinese fonts Songti, Heiti, or Kaishu can be manually specified, with Times as the default font for English.