The fduthesis Class
LaTeX Thesis Template for Fudan University

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Contents

1 Introduction

fduthesis is a thesis template for Fudan University. This template is mostly written in LaTeX3 syntax, and provides a simple interface for users.

Getting started with LaTeX

This documentation is *not* a LaTeX tutorial at starter's level. If you are totally a newbie, please read some introductions like the famous lshort. Of course, there are countless LaTeX tutorials on the Internet. You can choose whatever you like.

About this documentation

In this documentation, different typefaces are used to represent different contents. Packages and classes are shown in sans-serif font, e.g. xeCJK package and fduthesis class. Commands and file names are shown in monospaced font, e.g. command `\fdusetup`, environment `abstract` and TeX document `thesis.tex`. Italic-shaped font with angle brackets outside means arguments, e.g. ⟨*English title*⟩. However, you do not need to type the brackets when using these commands. The example code has proper syntax highlighting so it will be much easier to read.

LaTeX code lines will have a blue line on their left, while for command lines there will be a pink line. The options, commands and environments in fduthesis will be surrounded by two horizontal lines. Their usages and descriptions are provided at the same time.

The options, commands and environments in fduthesis can be divided into the following three types:

- Those can be only used in *Chinese templates* are indicated by ᶻᴴ.
- Those can be only used in *English templates* are indicated by ᴱᴺ.
- If they do not have marks afterwards, then you can use them in both Chinese and English templates.

2 Installation

2.1 Obtaining **fduthesis**

2.1.1 Standard installation

If there are no special reasons, it is always recommended to install fduthesis with a package manager. For example, the following command will install the package in TeX Live (administrator permission may be required):

```
tlmgr install fduthesis
```

In TeX Live and MiKTeX, you can also install fduthesis through a graphical interface. It's rather simple and will not be described here.

2.1.2 Install manually

If you want to download the template from CTAN and install it manually, the recommended way is to use the TDS ZIP file:

- Download the TDS ZIP file for fduthesis;
- Copy all the files in `fduthesis.tds.zip` into the local TDS directory of TeX distribution.
- Run `mktexlsr` to update the ls-R database.

2.1.3   Development version

On CTAN, only the stable version of fduthesis is provided, where new features and bug fixes may not be included in time. To use the latest development version on GitHub, you can use the install script:

- Open the project's homepage, click "Code" button and choose "Download ZIP" to download `fduthesis-main.zip`. If you have git program on your computer, you can also clone the repository directly:

```
git clone https://github.com/stone-zeng/fduthesis.git
```

- Run `install-win.bat` (Windows) or `install-unix.sh` (Linux or macOS), all the necessary files will be found in the `thesis` folder then.

2.1.4   Overleaf

fduthesis also provides the Overleaf version. You can follow the link and login to edit directly on the web.

2.2   Composition of the template

There are several parts in fduthesis, including kernel template classes, configuration files, affiliated packages and user's guides. More details are listed in table 1.

Table 1   The main components of fduthesis

Files	Descriptions
fduthesis.cls	Document class for Chinese thesis.
fduthesis-en.cls	Document class for English thesis.
fduthesis.def	Configuration parameters file for fduthesis. Please do *not* modify it.
fdudoc.cls	Document class for user guides.
fdulogo.sty	Fudan University's visual identity.
fudan-emblem.pdf	University emblem.
fudan-emblem-new.pdf	University emblem (revised version).
fudan-name.pdf	Figure of university name.
README.md	The brief introduction.
fduthesis.pdf	User's guide in Chinese.
fduthesis-en.pdf	User's guide in English (this document).
fduthesis-code.pdf	Code implementation.

3   User's guide

3.1   Getting started

Here is a minimal TEX file for fduthesis:

```latex
% thesis.tex
\documentclass{fduthesis}
\begin{document}
  \chapter{欢迎}
  \section{Welcome to fduthesis!}
  你好，\LaTeX{}!
\end{document}
```

Compile this file under the instructions in subsection 3.2, you will get a 5-page article. Of course, most of it will be blank, as you may predicate.

The English version can be used in the same way:

```
% thesis-en.tex
\documentclass{fduthesis-en}
\begin{document}
  \chapter{Welcome}
  \section{Welcome to fduthesis!}
  Hello, \LaTeX{}!
\end{document}
```

The differences between English and Chinese version only live in the main body. Thesis cover, instructors list and declaration page are still printed in Chinese.

3.2 Compilation

fduthesis does NOT support pdfTeX. Please use XƎLATeX or LuaLATeX to compile, and XƎLATeX is recommended. To get the correct table of contents, footnotes and cross-references, you need to compile the source file at least twice.

In the following example, suppose your TeX source file is `thesis.tex`. Please execute the following commands if you want to use XƎLATeX:

```
xelatex thesis
xelatex thesis
```

You can use latexmk as well:

```
latexmk -xelatex thesis
```

LuaLATeX can be used in a similar way:

```
lualatex thesis
lualatex thesis
```

or

```
latexmk -lualatex thesis
```

3.3 Options of the template

You can specify some *template options* when loading fduthesis:

```
\documentclass[⟨options⟩]{fduthesis}
\documentclass[⟨options⟩]{fduthesis-en}
```

Some options are *boolean* — they only take the value `true` or `false`. For these options, you can abbreviate "⟨*option*⟩ = `true`" simply to "⟨*option*⟩".

type
New: 2018-02-01

`type = `*`doctor`*`|`*`master`*`|`**`bachelor`**

Choose the type of your thesis. The three options represent doctoral dissertation, master degree thesis and undergraduate thesis, respectively.

oneside
twoside

Specify whether single or double sided output should be generated. `twoside` will be chosen by default. These option will determine where the new chapters begin and how the headers display. The option `twoside` does *not* tell the printer to actually make a two-sided printout.

If choosing `twoside`, chapters will begin at the odd pages (right hand). However, they will begin at arbitrary pages available when choosing `oneside`. Table of contents, abstract and the list of symbols are considered as chapters and processed in the same way.

At two-sided mode, left headers on the even pages (left hand) in *main body* will show the title of chapters, while the right headers on the odd pages (right hand) will show the title of sections. Headers in *front matter* have the same style, but they will only show the title as "Contents", "Abstract", etc.

At one-sided mode, both left and right headers on *all* pages in main body will be shown. The text is the title of chapters and sections, respectively. In front matter, there are only middle headers, which show the corresponding titles.

---

draft

`draft` = *true*|**false**

Enable draft mode. Default off.

`draft` is a global option and will affect many packages. You may notice the following changes when using `draft`:

- Lines with overfull `\hbox`'s will be marked with a thick black square on the right margin.
- Will not include graphics files actually, but instead print a box of the size the graphic would take up, as well as the file name.
- Will not make hyperlinks and PDF bookmarks.
- Show the page frames.

---

config

`config` = {⟨*file*⟩}

New: 2018-01-31 File name of user profile. Default value is empty, so no profile is loaded automatically.

3.4 More options

\fdusetup

\fdusetup{⟨*key-value list*⟩}

fduthesis has provided a number of options, which can be given via the general command `\fdusetup`.

The argument of `\fdusetup` is a set of comma-separated option list. The options usually have the form of ⟨*key*⟩ = ⟨*value*⟩ and in some cases ⟨*value*⟩ can be omitted. For the same option, the values given later will override the the previous ones. Default values are indicated in **boldface** in the following descriptions.

`\fdusetup` follows LaTeX3 key-value style, and different types as well as various levels options are supported. In the key-value list, spaces around "=" will be trimmed; however, blank lines should never appear in the argument.

Similar with template options, "⟨*option*⟩ = true" can be abbreviated to ⟨*option*⟩ for boolean type.

Some options, such as `style` and `info`, may have sub-options. They can be set by the following two equivalent methods:

```
\fdusetup{
  style = {cjk-font = adobe, font-size = -4},
  info  = {
    title      = {论动体的电动力学},
    title*     = {On the Electrodynamics of Moving Bodies},
    author     = {阿尔伯特·爱因斯坦},
    author*    = {Albert Einstein},
    department = {物理学系}
  }
}
```

or

```
\fdusetup{
  style/cjk-font   = adobe,
  style/font-size  = -4,
  info/title       = {论动体的电动力学},
  info/title*      = {On the Electrodynamics of Moving Bodies},
  info/author      = {阿尔伯特·爱因斯坦},
  info/author*     = {Albert Einstein},
  info/department  = {物理学系}
}
```

Note that you may *not* put spaces around "/".

3.4.1 Style and format

<div style="border-left">style</div>

```
style = {⟨key-value list⟩}
style/⟨key⟩ = ⟨value⟩
```

This general option is for setting the thesis style and format. See the following details.

style/font

`font = garamond|libertinus|lm|palatino|`**`times`**`|times*|none`

Updated: 2019-03-05 Set fonts (including math fonts). The details can be found in table 2.

Table 2 Font configuration

	Roman	Sans-serif	Monospaced	Math
garamond	EB Garamond	Libertinus Sans	LM Mono[a]	Garamond Math
libertinus	Libertinus Serif	Libertinus Sans	LM Mono	Libertinus Math
lm	LM Roman	LM Sans	LM Mono	LM Math
palatino	TG Pagella[b]	Libertinus Sans	LM Mono	TG Pagella Math
times	XITS	TG Heros	TG Cursor	XITS Math
times*[c]	Times New Roman	Arial	Courier New	XITS Math

a "LM" is the abbreviation of Latin Modern.
b "TG" is the abbreviation of TeX Gyre.
c Here, Times New Roman, Arial and Courier New are commercial fonts. They are installed on Windows and macOS by default.

style/cjk-font ᶻᴴ

`cjk-font = adobe|`**`fandol`**`|founder|mac|sinotype|sourcehan|windows|none`

Updated: 2019-03-05 Set CJK (Chinese, Japanese and Korean) fonts. The details can be found in table 3.

Table 3 CJK font configuration

	Roman (song)	Sans-serif (hei)	Monospaced (fang)
adobe	Adobe Song Std	Adobe Heiti Std	Adobe Fangsong Std
fandol	FandolSong	FandolHei	FandolFang
founder	FZShuSong-Z01	FZHei-B01	FZFangSong-Z02
mac	Songti SC	Heiti SC	STFangsong
sinotype	STSong	STHeiti	STFangsong
sourcehan	Source Han Serif SC	Source Han Sans SC	—
windows	SimSun	SimHei	FangSong

When you choose `font = none` or `cjk-font = none`, fduthesis will disable the default western/CJK font settings. You may use `\setmainfont`, `\setCJKmainfont` and `\setmathfont`, etc. to configure the fonts manually.

---

style/font-size

`font-size = -4|5`

Specify the basic font size in your thesis.

---

style/fullwidth-stop ^{ᶻᴴ}

Updated: 2017-10-14

`fullwidth-stop = catcode|mapping|false`

Let full-width full stop ". " as the default full stop. Generally, this punctuation is used for scientific articles, where "。" is easily to be confused with subscript "。" or "₀".

If you choose `fullwidth-stop = catcode`, only *explicit* "。" will be replaced by ". "; when choosing `fullwidth-stop = mapping`, however, *all* the "。" will be replaced.

`mapping` is valid only under X⅃TEX. When compiling with LuaTEX, it is equivalent to `catcode`.

If you want to display "。" temporarily after setting `fullwidth-stop = mapping`, the following code snippet will be helpful:

```
% Compiled with XeTeX
% The outside braces is used for group
这是一个句号{\CJKfontspec{⟨font name⟩}[Mapping=full-stop]。}
```

---

style/footnote-style

```
footnote-style = plain|
                 libertinus|libertinus*|libertinus-sans|
                 pifont|pifont*|pifont-sans|pifont-sans*|
                 xits|xits-sans|xits-sans*
```

Set the style of footnote numbers. Note that western fonts will affect its default value (see table 4), so you may put it after `font` option. The one with `sans` is for the corresponding sansserif version, while ∗ for white on black version.

Table 4   Relationship between option `font` and the default value of `footnote-style`

Western fonts settings	libertinus	lm	palatino	times
Default value of footnote number style	libertinus	pifont	pifont	xits

---

style/hyperlink

New: 2017-08-13

`hyperlink = border|color|none`

Set the style of hyperlinks. `border` draws borders around hyperlinks; `color` displays hyperlinks in colorful text; `none` leads to plain text, which is useful when printing the final document.

---

style/hyperlink-color

New: 2017-08-13
Updated: 2021-12-27

`hyperlink-color = default|classic|material|graylevel|prl`

Set the color of hyperlinks. It is invalid if `hyperlink = none`. The related colors can be found in table 5.

---

style/bib-backend

New: 2018-01-25
Updated: 2023-05-11

`bib-backend = bibtex|biblatex`

Specify the backend or driver of bibliography processing. BIBTEX and natbib package will be used if you choose `bibtex`, while biber and biblatex will be used if you choose `biblatex`. If not specified, the citations and references will not be processed.

---

style/bib-style

New: 2017-10-28
Updated: 2018-01-25

`bib-style = author-year|numerical|⟨other style⟩`

Set the style of bibliography. `author-year` and `numerical` will follow the standard GB/T 7714–2015. By setting `bib-style = ⟨other style⟩`, you can use other bibliography style (`.bst` file for `bib-backend = bibtex` and `.bbx` file for `bib-backend = biblatex`). Suffix is not needed.

Table 5   Pre-defined hyperlink color schemes

Options	Cross references	URL	Citation
default	Fig. 1-2, Eq. (3.4)	http://g.cn	Ref. [1], (Knuth 1986)
classic	Fig. 1-2, Eq. (3.4)	http://g.cn	Ref. [1], (Knuth 1986)
material[a]	Fig. 1-2, Eq. (3.4)	http://g.cn	Ref. [1], (Knuth 1986)
graylevel[a]	Fig. 1-2, Eq. (3.4)	http://g.cn	Ref. [1], (Knuth 1986)
prl[b]	Fig. 1-2, Eq. (3.4)	http://g.cn	Ref. [1], (Knuth 1986)

a Material Design color palette (See https://material.io/guidelines/style/color.html).

b *Physical Review Letter* magazine.

---

style/cite-style

`cite-style = {⟨style⟩}`

New: 2018-01-25

Select citation style. Default value is empty, which means the citation style will follow your bibliography style (author-year or numeric). If you want change the citation style, the corresponding `.cbx` file must be available. This option is invalid when `bib-backend = bibtex`.

---

style/bib-resource

`bib-resource = {⟨bib file(s)⟩}`

New: 2018-01-25

Specify the bibliography database (usually in `.bib` format). If using more than one files, the file names should be separated with comma. When `bib-backend = biblatex`, you must type in the ".`bib`" suffix.

---

style/logo

`logo = {⟨file⟩}`

New: 2017-08-10

File name of the logo in thesis cover. Default value is `fudan-name.pdf`.

---

style/logo-size

`logo-size = {⟨width⟩}`
`logo-size = {⟨width⟩, ⟨height⟩}`

New: 2017-08-10

Size of the logo. By default, only width is set to `0.5\textwidth`. To set height only, you can put an empty group "{}" at ⟨*width*⟩.

---

style/auto-make-cover

`auto-make-cover = true|false`

New: 2017-07-06

Whether generate thesis cover, list of instructors (inside front cover) and declaration page (inside back cover) automatically. Entries in the cover can be specified also via `\fdusetup`, and you can find more details in subsubsection 3.4.2.

---

style/declaration-page

`declaration-page = {⟨file⟩}`

New: 2021-09-21

Insert the scanned declaration page PDF file. If empty (default), then the pre-defined declaration page will be inserted.

\makecoveri
\makecoverii
\makecoveriii

For generating thesis cover, list of instructors and declaration page manually. These commands cannot guarantee the correct page numbers, hence you should always use the auto-generated thesis cover unless necessary.

3.4.2   Personal information

---

info

`info = {⟨key-value list⟩}`
`info/⟨key⟩ = ⟨value⟩`

This general option is for entering your personal information. See the following details. Note that options with "∗" are the corresponding English items.

`info/degree`	`degree = `**`academic`**`|`*`professional`*
New: 2018-02-01 Updated: 2019-03-12	Degree type. This option can only be used in master degree thesis.

`info/title` `info/title*`	`title  = {`⟨*title in Chinese*⟩`}` `title* = {`⟨*title in English*⟩`}`

Title of your thesis. The line width is about 30 em by default, but you may break it with `\\` manually.

`info/author` `info/author*`	`author  = {`⟨*name in Chinese*⟩`}` `author* = {`⟨*name in English (or Pinyin)*⟩`}`

Author's name.

`info/supervisor`	`supervisor = {`⟨*name*⟩`}`

Supervisor's name.

`info/department`	`department = {`⟨*name*⟩`}`

Name of the department.

`info/major`	`major = {`⟨*name*⟩`}`

Name of the major.

`info/student-id`	`student-id = {`⟨*number*⟩`}`

Author's student ID.

In Fudan University, student ID has 11 digits. The first two are the year of attendance; next one represents the student's type (1 for doctor, 2 for master and 3 for bachelor); the following five digits are major ID while the last three are serial number.

`info/school-id`	`school-id = {`⟨*number*⟩`}`

School ID. Default value is 10246 (school ID of Fudan University).

`info/date`	`date = {`⟨*date*⟩`}`

Finish date of your thesis. Default value is the compilation date (`\today`).

`info/secret-level`	`secret-level = `**`none`**`|`*`i`*`|`*`ii`*`|`*`iii`*
New: 2017-07-04	Secret level. `i`, `ii` and `iii` means "秘密" (secret), "机密" (confidential) and "绝密" (top secret) respectively. `none` means your thesis is not secret-related and secret level and year will not be shown.

`info/secret-year`	`secret-year = {`⟨*year*⟩`}`
New: 2017-07-04	Secret year. It's recommended to use Chinese word as "五年" (5 years) here. This option is invalid if you have set `secret-level = none`.

`info/instructors`	`instructors = {`⟨*member 1, member 2, ...*⟩`}`

Instructors' name. Each name should be separated with comma. To disambiguate, you may put text containing comma into a group "`{...}`".

`info/keywords` `info/keywords*`	`keywords  = {`⟨*keywords in Chinese*⟩`}` `keywords* = {`⟨*keywords in English*⟩`}`

Keywords list. Each keyword should be separated with comma. To disambiguate, you may put text containing comma into a group "`{...}`".

<div style="float:left">info/clc</div>

```
clc = {⟨classification codes⟩}
```

Chinese Library Classification (CLC).

<div style="float:left">info/jel</div>

```
jel = {⟨classification codes⟩}
```

New: 2021-09-16   *Journal of Economic Literature* (JEL) Classification Code. It's only mandatory for some depart-
ments. When specified, CLC code in the English abstract will be replaced by it.

3.5   Writing your thesis

3.5.1   Front matter

<div style="float:left">\frontmatter</div>

Declare the beginning of front matter.

Front matter contains table of contents, abstracts and notation list. The page numbers in
front matter will be shown in lowercase Roman numerals, and will be counted separately with
main matter.

<div style="float:left">\tableofcontents</div>

Generate the table of contents (TOC). You need to compile the source file at least *twice* to get the
correct TOC. If your thesis contains many figures or tables, you may also use \listoffigures
or \listoftables to generate a list of them.

<div style="float:left">abstract</div>

```
% fduthesis (Chinese thesis)          % fduthesis-en (English thesis)
\begin{abstract}                      \begin{abstract}
  ⟨Chinese abstract⟩                          ⟨English abstract⟩
\end{abstract}                        \end{abstract}
```

<div style="float:left">abstract* ᶻᴴ</div>

```
% Only for fduthesis
\begin{abstract*}
  ⟨English abstract⟩
\end{abstract*}
```

Abstract environment. In fduthesis, abstract and abstract* are used for Chinese and English
abstract, respectively; while in fduthesis-en, there is no abstract* environment and you need
to write the English abstract merely.

At the end of abstract (both Chinese and English, if available), keywords list and CLC or
JEL code will be shown. They can be specified via command \fdusetup and you may refer to
subsubsection 3.4.2 for more details.

<div style="float:left">notation</div>

```
\begin{notation}[⟨column format⟩]
  ⟨symbol 1⟩  &  ⟨description⟩  \\
  ⟨symbol 2⟩  &  ⟨description⟩  \\
              ⋮
  ⟨symbol n⟩  &  ⟨description⟩
\end{notation}
```

Notation list (or symbol list, nomenclature) environment. The optional argument ⟨*column
format*⟩ is the same as in a standard LaTeX table. The default value is "lp{7.5cm}", which means
auto-width for the first column and fix-width (7.5 cm) for the second; both columns will be
left-aligned.

3.5.2   Main matter

<div style="float:left">\mainmatter</div>

Declare the beginning of main matter.

As the name suggests, "main matter" is the main body of your thesis. When working on a
big projects, it's usually a good idea to split the source file into several parts. The page numbers
in main matter are shown in arabic numerals.

`\footnote`

\footnote{⟨*text*⟩}

Insert a footnote. The style of footnote numbers can be set with option `style/footnotestyle`. See subsubsection 3.4.1 for more details.

`\caption`

\caption{⟨*caption*⟩}
\caption[⟨*short caption*⟩]{⟨*long caption*⟩}

Insert the caption of figure or table. The optional argument ⟨*short caption*⟩ will be shown in the list of figures/tables. In ⟨*long caption*⟩, you can write descriptions for several paragraphs, but ⟨*short caption*⟩ and the single ⟨*caption*⟩ will not allow multi-paragraph text (i.e. text containing \par) inside.

By convention, caption of a table is usually put *before* the table itself, while for figure it's the opposite. In addition, command \caption must be put inside float environments (e.g. `table` and `figure`).

Citations

`\cite`

\cite{⟨*bib key*⟩}
\cite[⟨*page number*⟩]{⟨*bib key*⟩}

Insert citations. The optional argument ⟨*page number*⟩ can be used to indicate the page number of the citation. The citation style varies among different bibliography styles. More commands are also provided to mark the citations, which can be found in table 6 (numerical style) and 7 (author-year style).

Table 6   Citations in numerical style

Styles	Results	`bib-backend = bibtex`	`bib-backend = biblatex`
Single	Text[1]	\cite{texbook}	Same as left
Multiple	Text[1–2]	\cite{texbook,companion}	Same as left
With page	Text[1]126–137	\cite[126--137]{texbook}	Same as left
With author	Knuth[1] states	\citet{texbook}	\authornumcite{texbook}
With page & author	Knuth[1]42 states	\citet[42]{texbook}	\authornumcite[42]{texbook}
No superscript	Text [1]	\parencite{texbook}	Same as left

Table 7   Citations in author-year style

Styles	Results	`bib-backend = bibtex`	`bib-backend = biblatex`
Single	(Knuth, 1986)	\citep{texbook}	\cite{texbook}
Multiple	(Knuth, 1986; Mittelbach et al., 2004)	\citep{texbook,companion}	\cite{texbook,companion}
With page	(Knuth, 1986)126–137	\citep[126--137]{texbook}	\cite[126--137]{texbook}
With author	Knuth (1986)	\citet{texbook}	Same as left
With page & author	Knuth (1986)42	\citet[42]{texbook}	Same as left

Theorem-like environments

axiom
corollary
definition
example
lemma
proof
theorem

```
\begin{proof}[⟨subheading⟩]
  ⟨procedure of proof⟩
\end{proof}
```

A series of pre-defined math environments.

A QED[1] symbol "∎" will be added at the end of `proof` environment. You need to compile the source file *twice* as in subsection 3.2 in order to make the position of QED symbol correct.

\newtheorem

Updated: 2017-12-12

```
\newtheorem[⟨options⟩]{⟨environment⟩}{⟨title⟩}
\newtheorem*[⟨options⟩]{⟨environment⟩}{⟨title⟩}
\begin{⟨environment⟩}[⟨subheading⟩]
  ⟨contents⟩
\end{⟨environment⟩}
```

Declare new math environments (theorems). If you use `\newtheorem*`, then the theorem will not be numbered, and a QED symbol "∎" will be added at the end of the environment. All the theorem environments defined by yourself can be used as the pre-defined ones.

Actually, the pre-defined math environments are just defined with `\newtheorem` and `\newtheorem*`:

```
\newtheorem*{proof}{proof}
\newtheorem{axiom}{axiom}
\newtheorem{corollary}{corollary}
...
```

Similar with `\fdusetup`, the optional argument ⟨*options*⟩ of `\newtheorem` is a key-value list as well. The available are described below. Note that you don't need to type in the "`theorem/`" prefix.

theorem/style

```
style = plain|margin|change|
        break|marginbreak|changebreak
```

The overall style of the theorem environment.

theorem/header-font

```
header-font = {⟨font⟩}
```

Font of the theorem header. Default value is `\sffamily` and `\bfseries\upshape` for Chinese and English template, respectively.

theorem/body-font

```
body-font = {⟨font⟩}
```

Font of the theorem body. Default value is `\fdu@kai` (楷体) and `\itshape` for Chinese and English template, respectively.

theorem/qed

```
qed = {⟨symbol⟩}
```

Theorem end mark. For `\newtheorem`, default value is empty; for `\newtheorem*`, default value is `\ensuremath{\QED}` (i.e. "∎").

theorem/counter

```
counter = {⟨counter⟩}
```

The theorem will be enumerated within ⟨*counter*⟩. For example, the default value is `chapter`, which means with each new `\chapter`, the enumeration begins again with 1. This option is invalid for `\newtheorem*`.

---

[1] Abbreviation of Latin phrase *quod erat demonstrandum*, means "what was to be demonstrated".

3.5.3   Back matter

`\backmatter`

Declare the beginning of back matter.

Back matter contains bibliography, declaration page, etc.

`\printbibliography`

`\printbibliography`[⟨*options*⟩]

Updated: 2018-01-25

Print the bibliography. When `bib-backend = bibtex`, then ⟨*options*⟩ is invalid and this command is equivalent to `\bibliography {`⟨*bib files*⟩`}`, where ⟨*bib files*⟩ should be specified with option `style/bib-resource` (see subsubsection 3.4.1). When `bib-backend = bibtex`, then `\printbibliography` is provided by biblatex and the available options can be found in its documentation.

acknowledgements

`\begin{acknowledgements}`
  ⟨*acknowledgements*⟩
`\end{acknowledgements}`

New: 2023-02-06

Acknowledgements.

4   Packages dependencies

Different compilation methods and options will result in a different packages dependency. Details are as follows:

- In any case, fduthesis will load the following packages *explicitly*:
  - xtemplate and l3keys2e, belong to l3packages bundle
  - ctexbook, belongs to CTEX bundle
  - amsmath, belongs to $\mathcal{AMS}$-LATEX bundle
  - unicode-math
  - geometry
  - fancyhdr
  - footmisc
  - ntheorem
  - graphicx
  - longtable
  - caption
  - xcolor
  - hyperref
- When chosen `style/footnote-style = pifont`, package pifont will be loaded. It belongs to psnfss bundle.
- When chosen `style/bib-backend = bibtex`, package natbib will be loaded. Meanwhile, program BIBTEX will be required for compilation. The bibliography style is provided by gbt7714.
- When chosen `style/bib-backend = biblatex`, package biblatex will be loaded. Program biber will be required then. The bibliography style is provided by biblatex-gb7714-2015.

Only the packages loaded directly by fduthesis are listed here. If you need to know the dependencies of the packages themselves, please refer to the corresponding manuals.