

The Class^{*}

西湖大学学位论文 L^AT_EX 模板

Mingyu Xia[†]

Released 2026-06-14 v0.0.1

Abstract | 摘要

The WESTLAKETHESIS is a L^AT_EX bundle for Westlake University dissertations, including Ph.D. thesis format, beamer theme, and poster template.

WESTLAKETHESIS 是西湖大学学位论文 L^AT_EX 套装, 其中包含博士论文格式, beamer 主题与 poster 模板.

User Agreement | 用户协议

1. This template is open source under the LPPL 1.3c license, and you are free to use the compiled PDF file.

本模板通过 LPPL 1.3c 协议开放源代码, 您可以随意使用编译出的 PDF 文件.

2. This template is built from [Reference Template for Degree Dissertations](#) distributed by [Westlake University Graduate School](#), the maintainer will not be responsible to the trouble of format review.

本模板根据[西湖大学研究生院](#)颁发的[学位论文参考模板](#)编写而成, 作者不对使用本模板产生的格式审查问题负责.

3. This template is highly experimental currently, use at own risk. Welcome to submit issues or PR on [GitHub](#) to contribute to the standardization of WESTLAKETHESIS.

本模板目前处于高度测试阶段, 可能存在格式风险. 欢迎前往 [GitHub](#) 提交反馈意见或拉取请求, 为推动规范化 WESTLAKETHESIS 贡献力量.

^{*}<https://ctan.org/pkg/westlakethesis>, <https://github.com/myhsia/westlakethesis>

[†]xiamingyu@westlake.edu.cn

1 Loading the template

Write down the line

```
\documentclass[mode = (thesis|beamer|poster)]{westlakethesis}
```

to use the interfaces provided by the corresponding `mode` in this template.

2 User's Interfaces

```
\westlakeset \westlakeset {\langle key-value list \rangle}
```

Configure the information of the thesis, and should be used only within the preamble.

Its mandatory argument accepts the following key-values:

`id = \langle text \rangle`: Configure the student ID.

`school = \langle key \rangle`: Configure the school, only the abbreviation is accepted. The template can map it to the full name automatically then output on the bilingual covers.

science, sci: School of Science

sls: School of Life Sciences

engineering, eng: School of Engineering

medicine, med: School of Medicine

`title, subject, author, PI = \langle text \rangle`: Configure the title, subject, author, supervisor, with the bilingual separated with a slash /.

`master = \langle true | false \rangle`: Switch the format to Master.

`bibsource = \langle string \rangle`: Configure the source of the bibliography.

```
\maketitle
```

Generates the cover page.

`abstract (env)` Inputs the abstract. It accepts one optional argument to choose the language.

```
\begin{abstract} [ \langle language \rangle ] \langle context \rangle \end{abstract}
```

`\keywords` `\keywords {\langle comma list \rangle}`.

Inputs the keywords, and should not outside the abstract environment.

`\printbibliography` Print the bibliography. If the users have not assigned the `bibsource` key in `\westlakeset`, then only a chapter title will be outputted.

`\commitment` `\commitment [\langle comma list \rangle]`

This command is used to generate the commitment page. It accepts one optional argument to include the signatures and dates, the signature file and data should be delimited with a half-width comma (,). The university requires 3 sets of signature and 3 sets of date on the commitment page. So, as an example, one can write

```
\commitment [ example-image-a, June 2025,
               example-image-a, July 2025,
               example-image-b, July 2025 ]
```

1 载入此模板

只需写下

```
\documentclass[mode = (thesis|beamer|poster)]{westlakethesis}
```

即可使用此模板中对应 `mode` (模式) 中提供的接口.

2 用户接口

```
\westlakeset \westlakeset {⟨键值列表⟩}
```

设置论文信息, 仅限在导言区使用. 其强制参数接受如下键值对:

`id=⟨text⟩`: 设置学号信息.

`school=⟨key⟩`: 设置所在学院, 仅接受学院简称. 模板会自动将简称映射到全称并输出在对应的中英文封面上.

`science, sci`: 理学院

`sls`: 生命科学学院

`engineering, eng`: 工学院

`medicine, med`: 医学院

`title, subject, author, PI=⟨text⟩`: 设置标题, 所属专业, 作者姓名, 导师姓名, 中英文版本之间以斜线 / 分割.

`master=⟨true|false⟩`: 切换至硕士学位论文格式.

`bibsource=⟨string⟩`: 设置参考文献文件源.

```
\maketitle
```

生成封面页.

`abstract (env.)` 输入摘要. 其接受一个可选参数用于选择摘要的语言.

```
\begin{abstract} [⟨language⟩] ⟨context⟩ \end{abstract}
```

`\keywords` `\keywords {〈逗号分隔列表〉}`.

输入关键词, 需在 `abstract` 环境中使用.

`\printbibliography` 输出参考文献. 若用户未在 `\westlakeset` 中指定 `bibsource`, 则只输出章节标题.

`\commitment` `\commitment [〈逗号分隔列表〉]`

此命令用于生成承诺书. 其接受一个可选参数用于插入签名和日期, 签名文件和日期之间需以半角逗号 (,) 间隔. 根据大学要求, 签名页上共有 3 组签名与日期. 例如, 用户可以输入

```
\commitment [ example-image-a, June 2025,  
               example-image-a, July 2025,  
               example-image-b, July 2025 ]
```

A The Source Code

Using wu as the namespace.

```
1 <@@=wu>
```

A.1 westlakethesis.cls

Start the optionlist class for l3docstrip.

```
2 <*class>
```

Knowledge Orange Define official colors¹.

```
Exploration Blue 3 \color_set:nnn { Knowledge Orange } { HTML } { F18B1C }
4 \color_set:nnn { Exploration Blue } { HTML } { 00498F }
```

(End of definition for Knowledge Orange and Exploration Blue.)

Message management: private functions for creating new message and broadcasting it as error, warning, or info.

```
\__wu_msg_new:nn 5 \clist_map_inline:nn { new, error, warning, info }
\__wu_msg_error:nn
\__wu_msg_warning:nn 6 {
\__wu_msg_info:nn 7 \cs_new_protected:cpn { __wu_msg_#1:nn }
8 { \use:c { msg_#1:nnn } { westlakethesis } }
9 }
```

(End of definition for __wu_msg_new:nn and others.)

New message: not found module, will be used in __wu_load_module:n.

```
10 \__wu_msg_new:nn { not ~ found ~ module }
11 { The ~ WestlakeThesis ~ module ~ `#1' ~ not ~ found. }
```

New message: not recommended fontset, will be used in the thesis mode.

```
12 \__wu_msg_new:nn { not ~ recommended ~ fontset }
13 {
14 The ~ fontset ~ `#1' ~ is ~ not ~ recommended, ~ using ~ `windows' ~
15 fontset ~ to ~ achieve ~ a ~ maximum ~ compliance ~ of ~ the ~ official ~
```

¹<https://en.westlake.edu.cn/about/VIS/>

```
16     requirement.
```

```
17 }
```

New message: unknown mode for global option mode key.

```
18 \__wu_msg_new:nn { unknown ~ mode }
```

```
19 { Couldn't ~ load ~ the ~ `#1' ~ mode ~ of ~ WestlakeThesis. }
```

__wu_unknown_option:n Function for passing unknown options to the basic class.

```
20 \cs_new_protected_nopar:Npn \__wu_unknown_option:n #1
```

```
21 {
```

```
22     \tl_if_empty:nTF {#1}
```

```
23     {
```

```
24         \clist_gput_right:NV \g__wu_base_cls_opt_clist \l_keys_key_str
```

```
25     }
```

```
26     {
```

```
27         \exp_args:NNx \clist_gput_right:Nn \g__wu_base_cls_opt_clist
```

```
28         { \l_keys_key_str = \exp_not:n {#1} }
```

```
29     }
```

```
30 }
```

Variable for storing basic class options.

```
\g__wu_base_cls_opt_clist 31 \clist_clear_new:N \g__wu_base_cls_opt_clist
```

(End of definition for __wu_unknown_option:n and \g__wu_base_cls_opt_clist.)

__wu_load_module:N Functions for loading module in westlakethesis.cls.

```
32 \cs_new_protected_nopar:Npn \__wu_load_module:N #1
```

```
33 {
```

```
34     \clist_map_inline:Nn #1
```

```
35     {
```

```
36         \file_if_exist_input:nF { wu-##1.code.tex }
```


```
37         { \__wu_msg_error:nn { not ~ found ~ module } { ##1 } }
```

```
38     }
```

```
39 }
```

(End of definition for __wu_load_module:N.)

Under different modes, the required modules will be loaded.

- `depend`: Loading the dependencies: class and packages.
- `kernel`: Inner functions for the thesis module.
- `params`: Storing the constant variables.
- `thesis`: Formats of Westlake University dissertations.
- `beamer`: Westlake University beamer template.
- `poster`: Westlake University poster template.
- `usrdoc`:  documentation.

```

\g__wu_clsoption_mode_str Loading the thesis mode by default.
\g__wu_module_usage_clist
40 \str_new:N \g__wu_clsoption_mode_str
41 \clist_new:N \g__wu_module_usage_clist
42 \keys_define:nn { __wu / clsoption }
43 {
44     mode          .choices:nn =
45         { thesis, beamer, poster, usrdoc }
46         { \str_gset:Nn \g__wu_clsoption_mode_str {#1} },
47     mode          .initial:n = { thesis },
48     mode          .usage:n   = { load   },
49     unknown       .code:n    = \__wu_unknown_option:n {#1},
50 }

```

Process the class options and loading the corresponding modules.

```

51 \ProcessKeyOptions [ __wu / clsoption ]
52 \str_case:NnF \g__wu_clsoption_mode_str
53 {
54     { thesis }
55     {
56         \clist_gset:Nn \g__wu_module_usage_clist
57         { depend, kernel, params, thesis }
58     }
59     { usrdoc }

```



```

60 {
61   \clist_gset:Nn \g__wu_module_usage_clist
62     { depend, kernel, usrdoc }
63 }
64 { beamer }
65 {
66   \clist_gset:Nn \g__wu_module_usage_clist
67     { depend, kernel, params, beamer }
68 }
69 { poster }
70 {
71   \clist_gset:Nn \g__wu_module_usage_clist
72     { poster }
73 }
74 } { \__wu_msg_error:nn { unknown mode } { \g__wu_clsoption_mode_str } }
75 \__wu_load_module:N \g__wu_module_usage_clist

```

(End of definition for \g__wu_clsoption_mode_str and \g__wu_module_usage_clist.)

\westlakeset L^AT_EX 2_ε user’s interface for filling information, only valid in preamble. The keys it accepts will be different under different modes. Then load the auxiliary function if it has been defined in current mode.

```

76 \onlypreamble \westlakeset
77 \NewDocumentCommand \westlakeset { m }
78 {
79   \exp_args:No \keys_set:nn { \g__wu_clsoption_mode_str / set } {#1}
80   \cs_if_exist_use:N \__wu_westlakeset_aux:
81 }

```

(End of definition for \westlakeset. This function is documented on page 3.)

End the optionlist class for l3docstrip.

```

82 \</class>

```

Key–value definitions for different modes. Using the namespace for filtering.

```

\l__wu_set_title_tl
\l__wu_set_author_tl
\l__wu_set_date_tl
\l__wu_set_bib_str
\l__wu_set_subject_tl
\l__wu_set_school_tl
\l__wu_set_PI_tl
\l__wu_set_id_tl
\l__wu_set_master_bool

```

```

84 <thesis>\keys_define:nn { thesis / set }
85 <beamer>\keys_define:nn { beamer / set }
86 <poster>\keys_define:nn { poster / set }
87 <usrdoc>\keys_define:nn { usrdoc / set }
88 {
89   title      .tl_set:N = \l__wu_set_title_tl,
90   author     .tl_set:N = \l__wu_set_author_tl,
91   date       .tl_set:N = \l__wu_set_date_tl,
92 <!usrdoc>    bibsource .str_set:N = \l__wu_set_bib_str,
93 <!usrdoc>    subject  .tl_set:N = \l__wu_set_subject_tl,
94 <thesis>    school   .tl_set:N = \l__wu_set_school_tl,
95 <thesis>    PI       .tl_set:N = \l__wu_set_PI_tl,
96 <thesis>    id       .tl_set:N = \l__wu_set_id_tl,
97 <thesis>    master   .bool_set:N = \l__wu_set_master_bool,
98 <thesis>    master   .initial:n = false,
99 <thesis>    master   .default:n = true,
100 }

```

The auxiliary function of `\westlakeset` for different modes. Parsing the bilingualism of the items title, school, subject, author, and PI after filling information, then decide **whether to load the gbt7714 package** by setting the boolean `\l__wu_load_bib_bool`.

```

101 \cs_new_protected:Npn \__wu_westlakeset_aux:
102 {
103 <thesis>    \clist_map_inline:nn { title, author, subject, school, PI }
104 <beamer|poster> \clist_map_inline:nn { title, author, subject }
105 <!usrdoc>    { \__wu_parse_slash_ab:c { \l__wu_set_##1_tl } }
106 <beamer>    \title [ \l__wu_set_title_tl_b ] { \l__wu_set_title_tl_a }
107 <beamer>    \author [ \l__wu_set_author_tl_b ] { \l__wu_set_author_tl_a }
108 <beamer>    \date { \l__wu_set_date_tl }
109 <!usrdoc>    \str_if_empty:NF \l__wu_set_bib_str
110 <!usrdoc>    { \bool_gset_true:N \l__wu_load_bib_bool }
111 }

```

Configure the metadata of the document via `hyperref`.

```

112 \hypersetup

```

```

113 {
114     hidelinks,
115     <usrdoc>    colorlinks,
116 }
117 </thesis | beamer | poster | usrdoc>

(End of definition for \l_wu_set_title_tl and others.)

```

A.2 wu-depend.code.tex

Start the optionlist depend for l3docstrip.

```

118 <*depend>

```

Prevent the warnings raised by xeCJK (valid for Xe_{La}TeX) when redefining fonts.

```

119 \sys_if_engine_xetex:T
120 { \PassOptionsToPackage { quiet } { xeCJK } }

```

Load the base classes and required packages under different modes: The zhlineskip, geometry, tocloft, lmodern, newtxtext, and microtype (only valid under the pdf_{La}TeX, Xe_{La}TeX, and Lua_{La}TeX engines) packages are only required in the thesis mode.

```

121 \str_case:en { \g_wu_clsoption_mode_str }
122 {
123     { thesis }
124     {
125         \clist_gput_right:Nn \g_wu_base_cls_opt_clist { a4paper, zihao = -4 }
126         \exp_args:NNV \LoadClass [ \g_wu_base_cls_opt_clist ] { ctexrep }
127         \RequirePackage [ bodytextleadingratio = 1.5 ] { zhlineskip }
128         \RequirePackage { geometry, lmodern, newtxtext }
129         \RequirePackage [ titles ] { tocloft }
130         \bool_lazy_or:nnT { \sys_if_engine_pdftex_p:      }
131                          { \sys_if_engine_opentype_p:    }
132                          { \RequirePackage { microtype } }
133     }
134     { beamer }
135     {
136         \clist_gput_right:Nn \g_wu_base_cls_opt_clist

```

```

137     { aspectratio = 1610 }
138     \exp_args:NNV \LoadClass [ \__wu_base_cls_opt_clist ] { beamer }
139   }
140   { usrdoc }
141   {
142     \clist_gput_right:Nn \__wu_base_cls_opt_clist
143       { 11pt, letterpaper, cs-break = true }
144     \exp_args:NNV \LoadClass [ \__wu_base_cls_opt_clist ] { l3doc }
145   }
146   { poster }
147   {
148     \clist_gput_right:Nn \__wu_base_cls_opt_clist
149       { }
150     \exp_args:NNV \LoadClass [ \__wu_base_cls_opt_clist ] { beamer }
151   }
152 }

```

Load the required packages for all of the modes.

```

153 \RequirePackage { graphicx, hyperref, lipsum, zhlipsum, array }

```

Configure the possible paths for searching figures.

```

154 \graphicspath
155 {
156   {./fig/} {./pic/} {./figure/} {./picture/} {./media/}
157   {./figs/} {./pics/} {./figures/} {./pictures/}
158 }

```

Determine whether to load the gbt7714 package according to \l__wu_load_bib_bool, which has been set via \westlakeset [here](#).

```

159 \hook_gput_code:nnn { begindocument / before } { . }
160 {
161   \bool_if_exist:NT \l__wu_load_bib_bool
162   {
163     \bool_if:NT \l__wu_load_bib_bool
164     {
165       \RequirePackage [ sort, uppercasefamily = false ] { gbt7714 }

```

```

166         \bibliographystyle { gbt7714-numeric }
167     }
168 }
169 }

```

End the optionlist depend for l3docstrip.

```

170 \</depend>

```

A.3 wu-kernel.code.tex

Start the optionlist kernel for l3docstrip.

```

171 \<*kernel>

```

`__wu_parse_slash_ab:c` This function is used for parsing the binary sequence variable `\#1` (delimited with `/`): store the first element in `\#1_a`, store the second element in `\#1_b`.

```

172 \cs_new:Npn \__wu_parse_slash_ab:c #1
173 {
174     \exp_args:Nc \tl_if_blank:VF {#1}
175     {
176         \tl_clear_new:c { #1_a }
177         \tl_clear_new:c { #1_b }
178         \seq_clear_new:N \l__wu_set_tmpa_seq
179         \seq_set_split:Nne \l__wu_set_tmpa_seq { / } { \use:c {#1} }
180         \seq_get_left:Nc \l__wu_set_tmpa_seq { #1_a }
181         \seq_get_right:Nc \l__wu_set_tmpa_seq { #1_b }
182     }
183 }
184 \cs_generate_variant:Nn \seq_get_left:NN { Nc }
185 \cs_generate_variant:Nn \seq_get_right:NN { Nc }

```

Temporary variable used in `__wu_parse_slash_ab:c`.

```

\l__wu_set_tmpa_seq 186 \seq_clear_new:N \l__wu_set_tmpa_seq

```

(End of definition for `__wu_parse_slash_ab:c` and `\l__wu_set_tmpa_seq`.)

`__wu_spread_box:nn` This function is used for typesetting the content #2 in a horizontal box to the width #1 by stretching the glue.

```

187 \cs_new_protected:Npn \__wu_spread_box:nn #1#2
188 {
189   \mode_leave_vertical:
190   \hbox_to_wd:nn {#1}
191     { \exp_args:Nee \tl_map_inline:nn {#2} { ##1 \hfil } \unskip }
192 }

```

(End of definition for __wu_spread_box:nn.)

`__wu_center_box:nnn` This function is used for typesetting the content #2 centering within several horizontal boxes with width #1, then underline every line with thickness #3.

```

193 \cs_new_protected:Npn \__wu_center_box:nnn #1#2#3
194 {
195   \mode_leave_vertical:
196   \dim_set:Nn \l_tmpa_dim {#1}
197   \box_gset_eq_drop:NN 1 \voidb@x
198   \group_begin:
199   \vbox_set:Nn 0
200   {
201     \dim_set:Nn \parindent {0pt}
202     \skip_set:Nn \leftskip {0pt plus 1fil}
203     \skip_set:Nn \rightskip {0pt plus -1fil}
204     \skip_set:Nn \parfillskip {0pt plus 2fil}
205     #3 \par
206     \loop
207     \box_set_to_last:N 2
208     \reverse_if:N \if_box_empty:N 2
209     \vbox_gset_top:Nn 1
210     {
211       \hbox_to_wd:nn {#1} { \strut \hbox_unpack_drop:N 2 }
212       \skip_vertical:n {#2}
213       \__box_rule_horizontal:nn { .5pt } { \c_zero_dim }
214       \skip_vertical:n { 9.6pt } \vbox_unpack_drop:N 1

```

```

215         }
216         \unskip \unpenalty
217         \repeat
218     }
219     \group_end:
220     \tex_box:D 1
221 }

(End of definition for \__wu_center_box:nnn.)

```

`__wu_signature_inline:n` This function is used to include the signature image file inline, i.e., centering align to the text with a height equal to 2.4 times the current font size.

```

222 \cs_new:Npn \__wu_signature_inline:n #1
223 {
224     \box_move_down:nn { \fp_eval:n { .9 * \f@size } \p@ }
225     {
226         \hbox:n
227         {
228             \includegraphics
229             [height = \fp_eval:n { 2.4 * \f@size } \p@] {#1}
230         }
231     }
232 }
233 \cs_new_nopar:Npn \__wu_fontsize:nn #1#2
234 {
235     \__wu_kernel_bilingual:nnn {#1}
236     {
237         \fontsize
238         { \dim_to_decimal:n { #2 bp } }
239         { \dim_to_decimal:n { (#2 bp) * 6 / 5 } } \selectfont
240     } { \ctex_zihao:n {#2} }
241 }

(End of definition for \__wu_signature_inline:n.)

```

`__wu_kernel_month:n` These functions are used to typeset month and year in English or Chinese.

`__wu_kernel_year:n`

```

242 \cs_new_protected_nopar:Npn \__wu_kernel_month:n #1
243 {
244   \__wu_kernel_bilingual:nnn {#1}
245   {
246     \if_case:w \int_value:w \c_sys_month_int
247     \or: January \or: February \or: March
248     \or: April   \or: May     \or: June
249     \or: July    \or: August  \or: September
250     \or: October \or: November \or: December
251     \fi:
252   }
253   { \zhnum_digits:Nn \c_false_bool { \int_value:w \c_sys_month_int } 月 }
254 }
255 \cs_new_protected_nopar:Npn \__wu_kernel_year:n #1
256 {
257   \__wu_kernel_bilingual:nnn {#1}
258   { \int_value:w \c_sys_year_int }
259   { \zhnum_digits:Nn \c_false_bool { \int_value:w \c_sys_year_int } 年 }
260 }

```

(End of definition for __wu_kernel_month:n and __wu_kernel_year:n.)

__wu_kernel_bilingual:nnn This function will output #2 when #1 equals to en, output #3 when #1 equals to cn.

```

261 \cs_new_nopar:Npn \__wu_kernel_bilingual:nnn #1#2#3
262 { \str_case:on {#1} { { en } {#2} { cn } {#3} } }

```

(End of definition for __wu_kernel_bilingual:nnn.)

\printbibliography L^AT_EX 2_ε user's interface for printing the bibliography. When the bibsource key is assigned in \westlakeset, it will output the complex bibliography; when the bibsource key is not assigned, it will output only a chapter title.

```

263 \hook_gput_code:nnn { begindocument / before } { . }
264 {
265   \bool_if_exist:NT \l__wu_load_bib_bool
266   {

```



```

267 \bool_if:NTF \l__wu_load_bib_bool
268 {
269 \DeclareDocumentCommand \printbibliography {}
270 {
271 \addcontentsline{toc}{chapter}{参考文献}
272 \group_begin:
273 \dim_set:Nn \bibsep {1pt}
274 \linespread{1.85} \__wu_fontsize:nn { cn } { 5 }
275 \bibliography { \l__wu_set_bib_str }
276 \group_end:
277 }
278 } { \newcommand \printbibliography { \chapter* { 参考文献 } } }
279 }
280 }

```

(End of definition for `\printbibliography`. This function is documented on page 4.)

End the optionlist kernel for `l3docstrip`.

```

281 \</kernel>

```

A.4 `wu-params.code.tex`

Start the optionlist params for `l3docstrip`.

```

282 \<*params>

```

`\l__wu_school_en_prop` Storing the aliases of the English and Chinese names of schools into two property lists.

```

\l__wu_school_cn_prop 283 \prop_new:N \l__wu_school_en_prop
284 \prop_new:N \l__wu_school_cn_prop
285 \prop_set_from_keyval:Nn \l__wu_school_en_prop
286 {
287 science = Science,
288 sci = Science,
289 engineering = Engineering,
290 eng = Engineering,
291 sls = Life ~ Sciences,
292 medicine = Medicine,

```

```

293     med          = Medicine,
294   }
295   \prop_set_from_keyval:Nn \l__wu_school_cn_prop
296   {
297     science      = 理学院,
298     sci          = 理学院,
299     engineering = 工学院,
300     eng          = 工学院,
301     sls          = 生命科学学院,
302     medicine     = 医学院,
303     med          = 医学院,
304   }

```

(End of definition for \l__wu_school_en_prop and \l__wu_school_cn_prop.)

```

\l__wu_cover_id_box   Storing the dimension variables by setting the content of boxes: The length of student
\l__wu_cover_code_box ID, the length of university code, the length of English cover items.
\l__wu_cover_en_table_box 305 \box_new:N \l__wu_cover_id_box
\l__wu_cover_id_dim    306 \box_new:N \l__wu_cover_code_box
\l__wu_cover_code_dim  307 \box_new:N \l__wu_cover_en_table_box
\l__wu_cover_en_table_dim 308 \hbox_gset:Nn \l__wu_cover_id_box { 0 }
309 \hbox_gset:Nn \l__wu_cover_code_box { School ~ Code: }
310 \hbox_gset:Nn \l__wu_cover_en_table_box
311 { \__wu_fontsize:nn { en } { 16 } \sffamily Supervisor: }
312 \dim_const:Nn \l__wu_cover_id_dim
313 { 13 \box_wd:N \l__wu_cover_id_box }
314 \dim_const:Nn \l__wu_cover_code_dim
315 { \box_wd:N \l__wu_cover_code_box }
316 \dim_const:Nn \l__wu_cover_en_table_dim
317 { \box_wd:N \l__wu_cover_en_table_box }

```

(End of definition for \l__wu_cover_id_box and others.)

```

\l__wu_cover_affilid_tl Store the text contents: The school code, the titles and context of the commitment page.
\l__wu_commitment_a_title_tl 318 \tl_const:Nn \l__wu_cover_affilid_tl { 14626 }
\l__wu_commitment_b_title_tl 319 \tl_const:Nn \l__wu_commitment_a_title_tl
\l__wu_commitment_a_body_tl
\l__wu_commitment_b_body_tl

```

```

320 { 西湖大学研究生学位论文独创性声明 }
321 \tl_const:Nn \l__wu_commitment_b_title_tl
322 { 西湖大学研究生学位论文版权使用授权书 }
323 \tl_const:Nn \l__wu_commitment_a_body_tl
324 {
325 本人声明：所呈交的学位论文是本人在导师指导下进行的研究工作及取得的研究成果。
326 除了文中特别加以标注和致谢的地方外，论文中不包含其他人已经发表或撰写过的研究
327 成果。与本人一同参与本研究工作的合作者所做的任何贡献均已在论文中作了明确的说
328 明并表示谢意。本声明的法律结果由本人承担。
329 }
330 \tl_const:Nn \l__wu_commitment_b_body_tl
331 {
332 本学位论文作者完全了解\ \underline{\kaishu 西湖大学}\ 有关收藏和利用博士、硕
333 士学位论文的规定，即：学校有权收藏、使用并向国家有关部门或机构送交论文的印刷
334 本和电子版本；允许论文被查阅和借阅；学校可以公布论文的全部或部分内容，可以采
335 用影印、缩印或其它复制手段保存论文。
336 }

```

(End of definition for \l__wu_cover_affilid_tl and others.)

`\l__wu_load_bib_bool` Boolean for judging whether to load the gbt7714 package.

```

337 \bool_new:N \l__wu_load_bib_bool

```

(End of definition for \l__wu_load_bib_bool.)

End the optionlist params for l3docstrip.

```

338 \</params>

```

A.5 wu-thesis.code.tex

Start the optionlist thesis for l3docstrip.

```

339 \*thesis

```

Check if current fontset is the officially recommended one.

```

340 \tl_if_eq:nVF { windows } \g__ctex_fontset_tl
341 {
342 \exp_args:Nno \__wu_msg_warning:nn

```

```

343     { not ~ recommended ~ fontset } { \g__ctex_fontset_tl }
344   }

```

Configure the geometry.

```

345 \geometry { a4paper, hmargin = 1.25in, vmargin = 1in }

```

\maketitle L^AT_EX 2_ε user's interface for generating cover page.

```

\__wu_maketitle_cn: 346 \RenewDocumentCommand \maketitle {}
\__wu_maketitle_en: 347 {
348   \__wu_maketitle_cn:
349   \__wu_maketitle_en:
350 }

```

Auxiliary commands of the \maketitle macro.

```

351 \cs_new_protected:Nn \__wu_maketitle_cn:
352 {
353   \begin{titlepage}
354     \group_begin:
355       \raggedleft \noindent
356       \fangsong
357       \linespread{1.0}\selectfont
358       \begin{tabular}
359       {
360         p { 4\ccwd } @{: }
361         p \l__wu_cover_id_dim
362       }
363       \__wu_spread_box:nn { 4\ccwd } { 单位代码 } &
364       \__wu_center_box:nnn { \l__wu_cover_id_dim } { -1.5pt }
365       { \l__wu_cover_affilid_tl } \\
366       \__wu_spread_box:nn { 4\ccwd } { 学号 } &
367       \__wu_center_box:nnn { \l__wu_cover_id_dim } { -1.5pt }
368       { \l__wu_set_id_tl } \\
369     \end{tabular}
370     \par \vspace{1.2\baselineskip}
371   \group_end:
372   \begin{center}

```

```

373 \includegraphics[height = 1.63cm]{westlake-badge-cn.pdf}
374 \par \vspace{.65\baselineskip}
375 \LARGE
376 \bool_if:NTF \l__wu_set_master_bool { 硕士 } { 博士 }
377 学位论文
378 \par \vspace{1.15\baselineskip}
379 \group_begin:
380 \linespread{1.5}\selectfont \Huge \sffamily
381 \parbox { 10\ccwd } { \centering \l__wu_set_title_tl_a }
382 \group_end:
383 \end{center}
384 \vfill
385 \begin{center}
386 \linespread{1.35} \__wu_fontsize:nn { cn } { 3 }
387 \begin{tabular} { p { 4\ccwd } @{: } p { 15ex } }
388 \__wu_spread_box:nn { 4\ccwd } { 培养单位 } &
389 \__wu_center_box:nnn { 15ex } { -4.5pt }
390 {
391 \prop_item:No \l__wu_school_cn_prop
392 { \l__wu_set_school_tl }
393 } \\
394 \__wu_spread_box:nn { 4\ccwd } { 学科 } &
395 \__wu_center_box:nnn { 15ex } { -4.5pt }
396 { \l__wu_set_subject_tl_a } \\
397 \__wu_spread_box:nn { 4\ccwd } { 研究生 } &
398 \__wu_center_box:nnn { 15ex } { -4.5pt }
399 { \l__wu_set_author_tl_a } \\
400 \__wu_spread_box:nn { 4\ccwd } { 指导教师 } &
401 \__wu_center_box:nnn { 15ex } { -4.5pt }
402 { \l__wu_set_PI_tl_a } \\
403 \end{tabular}
404 \par \vspace{3.5\baselineskip}
405 \__wu_fontsize:nn { cn } { 3 }
406 \__wu_kernel_year:n { cn } \__wu_kernel_month:n { cn }

```

```

407         \end{center}
408         \vspace*{1.25\baselineskip}
409     \end{titlepage}
410 }
411 \cs_new_protected:Nn \__wu_maketitle_en:
412 {
413     \begin{titlepage}
414     \group_begin:
415         \raggedleft \noindent
416         \fangsong
417         \linespread{1.0}\selectfont
418         \begin{tabular}
419         {
420             p \l__wu_cover_code_dim \a{~}
421             p \l__wu_cover_id_dim
422         }
423         School ~ Code: &
424         \__wu_center_box:nnn { \l__wu_cover_id_dim } { -1.5pt }
425         { \l__wu_cover_affilid_tl } \\\
426         Student ~ ID: &
427         \__wu_center_box:nnn { \l__wu_cover_id_dim } { -1.5pt }
428         { \l__wu_set_id_tl } \\\
429         \end{tabular}
430         \par \vspace{1.2\baselineskip}
431     \group_end:
432     \begin{center}
433         \includegraphics[height = 1.63cm]{westlake-badge-cn.pdf}
434         \par \vspace{2.5\baselineskip}
435         \group_begin:
436             \linespread{1.3}\selectfont \Huge \sffamily
437             \parbox { .9\linewidth }
438             {
439                 \centering
440                 \__wu_fontsize:nn { en } { 20 } \selectfont \bfseries \sffamily

```

```

441         \l_wu_set_title_tl_b
442     }
443     \par \vspace{1.1\baselineskip}
444 \group_end:
445 \group_begin:
446     \__wu_fontsize:nn { cn } { 4 } \sffamily \bfseries
447     (
448         Degree ~ of ~
449         \bool_if:NTF \l_wu_set_master_bool { Master } { Doctor }
450     )
451 \group_end:
452 \end{center}
453 \vfill
454 \begin{center}
455     \linespread{1.35} \__wu_fontsize:nn { cn } { 3 } \sffamily \selectfont
456     \begin{tabular}
457     {
458         p \l_wu_cover_en_table_dim @{\~}
459         p { 15ex }
460     }
461     School:      &
462     \__wu_center_box:nnn { 15ex } { -4.8pt }
463     {
464         \prop_item:No \l_wu_school_en_prop
465         { \l_wu_set_school_tl }
466     } \\
467     Discipline: &
468     \__wu_center_box:nnn { 15ex } { -4.8pt }
469     { \l_wu_set_subject_tl_b } \\
470     Candidate:  &
471     \__wu_center_box:nnn { 15ex } { -4.8pt }
472     { \l_wu_set_author_tl_b } \\
473     Supervisor: &
474     \__wu_center_box:nnn { 15ex } { -4.8pt }

```

```

475         { \l__wu_set_Pi_tl_b          } \\
476     \end{tabular}
477     \par \vspace{3.5\baselineskip}
478     \__wu_fontsize:nn { cn } { 3 }
479     \__wu_kernel_month:n { en }, \space \__wu_kernel_year:n { en }
480 \end{center}
481 \vspace*{1.25\baselineskip}
482 \end{titlepage}
483 }

```

(End of definition for `\maketitle`, `__wu_maketitle_cn:`, and `__wu_maketitle_en:`. This function is documented on page 3.)

abstract (env.) Generate the abstract in English and Chinese, and the command `\keywords` inside this environment will appear as English or Chinese version due to #1.

```

484 \RenewDocumentEnvironment {abstract} { 0 { en } }
485 {
486     \cleardoublepage
487     \tl_set:Nn \l__wu_abstract_language_tl {#1}
488     \null \vspace{1.8\baselineskip}
489     \@beginparpenalty\@lowpenalty
490     \noindent
491     \__wu_kernel_bilingual:nnn {#1}
492     {
493         \textbf { Abstract:~ }
494         \addcontentsline { toc } { chapter } { Abstract }
495     }
496     {
497         \textbf { 摘要: }
498         \addcontentsline { toc } { chapter } { 摘要 }
499     }
500     \ignorespaces
501 } { \@endparpenalty\@M }
502 \hook_gput_code:nnn { env / abstract / before } { . }
503 { \linespread{1.63}\selectfont }

```


\keywords L^AT_EX 2_ε user’s interface for typesetting keywords. Language will be chosen automatically inside the abstract environment.

```

504 \NewDocumentCommand \keywords { m }
505 {
506   \par \noindent
507   \__wu_kernel_bilingual:nnn { \l__wu_abstract_language_tl }
508   { \textbf { Keywords: ~ } \clist_use:nn {#1} { ;~ } }
509   { \textbf { 关键词:      } \clist_use:nn {#1} { ; } }
510 }

```

(End of definition for \keywords. This function is documented on page 4.)

\if@mainmatter Copy the commands from the book class.

\frontmatter *(End of definition for \if@mainmatter, \frontmatter, and \mainmatter.)*

\mainmatter

```

511 \newif \if@mainmatter \@mainmattertrue
512 \newcommand \frontmatter
513 { \cleardoublepage \@mainmatterfalse \pagenumbering {roman} }
514 \newcommand \mainmatter
515 { \cleardoublepage \@mainmattertrue \pagenumbering {arabic} }
516 % \hook_gput_code:nnn { cmd / @schapter / after } { . }
517 % { \addcontentsline{toc}{chapter}{\CTEX@chaptername} }

```

\commitment L^AT_EX 2_ε user’s interface for typesetting the commitment page, with signature image attached.

```

518 \NewDocumentCommand \commitment { 0{} }
519 {
520   \begin{titlepage}
521     \null \vspace{1.2\baselineskip}
522     \begin{center}
523       \__wu_fontsize:nn { cn } { 3 } \sffamily
524       \l__wu_commitment_a_title_tl
525     \end{center}
526     \par \vspace{.5\baselineskip}
527     \l__wu_commitment_a_body_tl

```

```

528 \par \vspace{2\baselineskip} \smallskip
529 \begin{minipage} { \dim_eval:n { .5\linewidth - 3\ccwd } }
530 学位论文作者签名：
531 \__wu_signature_inline:n { \clist_item:nn {#1} { 1 } }
532 \end{minipage} \hfill
533 \begin{minipage} { \dim_eval:n { .5\linewidth - 3\ccwd } }
534 签字日期：
535 \exp_args:Ne \tl_map_inline:nn { \clist_item:nn {#1} { 2 } } { ##1 }
536 \end{minipage}
537 \hspace*{2\ccwd}
538 \par \vspace{3.25\baselineskip}
539 \begin{center}
540 \__wu_fontsize:nn { cn } { 3 } \sffamily
541 \l__wu_commitment_b_title_tl
542 \end{center}
543 \par \vspace{.5\baselineskip}
544 \l__wu_commitment_b_body_tl
545 \par \vspace{2\baselineskip} \smallskip
546 \begin{minipage} { \dim_eval:n { .5\linewidth - 3\ccwd } }
547 学位论文作者签名：
548 \__wu_signature_inline:n { \clist_item:nn {#1} { 3 } }
549 \par \vspace{\baselineskip}
550 签字日期：
551 \exp_args:Ne \tl_map_inline:nn { \clist_item:nn {#1} { 4 } } { ##1 }
552 \end{minipage} \hfill
553 \begin{minipage} { \dim_eval:n { .5\linewidth - 3\ccwd } }
554 导师签名：
555 \__wu_signature_inline:n { \clist_item:nn {#1} { 5 } }
556 \par \vspace{\baselineskip}
557 签字日期：
558 \exp_args:Ne \tl_map_inline:nn { \clist_item:nn {#1} { 6 } } { ##1 }
559 \end{minipage}
560 \hspace*{2\ccwd}
561 \end{titlepage}

```

562 }

(End of definition for `\commitment`. This function is documented on page 4.)

Chapter (Heading 1) format.

```
563 \ctex_set:nn { chapter }
564 {
565   format+   = \__wu_fontsize:nn { cn } { 3 } \sffamily \mdseries,
566   number    = \arabic{chapter},
567   beforekip = 40pt,    afterkip = 30pt,
568   aftername = \enspace, fixskip,
569   tocline   = \CTEXnumberline{#1}#2
570 }
```

Section (Heading 2) format.

```
571 \ctex_set:nn { section }
572 {
573   format+   = \__wu_fontsize:nn { cn } { 4 } \sffamily \mdseries \raggedright,
574   beforekip = 18pt,    afterkip = 15pt,
575   aftername = \enspace, fixskip
576 }
```

Subsection (Heading 3) format.

```
577 \ctex_set:nn { subsection }
578 {
579   format+   = \__wu_fontsize:nn { en } { 13 } \sffamily \mdseries \raggedright,
580   beforekip = 15.5pt,  afterkip = 13.5pt,
581   aftername = \quad,   fixskip
582 }
```

Susubsection (Heading 4) format.

```
583 \ctex_set:nn { subsubsection }
584 {
585   format+   = \__wu_fontsize:nn { cn } { -4 } \sffamily \mdseries \raggedright,
586   beforekip = 13pt,    afterkip = 12pt,
587   aftername = \quad,   fixskip
588 }
```

Table of contents format.

```
589 \ctex_set:n { contentsname = 目\quad 录, secnumdepth = 3 }
590 \renewcommand \cftchapfont { \sffamily }
591 \renewcommand \cftchappagefont { \mdseries }
592 \renewcommand \cftchapleader { \cftdotfill { \cftdotsep } }
593 \dim_set:Nn \cftbeforechapskip { \c_zero_dim }
594 \dim_set:Nn \cftbeforesecskip { \c_zero_dim }
595 \dim_set:Nn \cftsecindent { \ccwd }
596 \dim_set:Nn \cftsubsecindent { 2\ccwd }
597 \dim_set:Nn \cftsecnumwidth { \ccwd }
598 \dim_set:Nn \cftsubsecnumwidth { 2\ccwd }
599 \renewcommand \cftdotsep { .5 }
600 \renewcommand \apnumwidth { 2ex }
```

End the optionlist thesis for l3docstrip.

```
601 \</thesis>
```

A.6 wu-beamer.code.tex

Start the optionlist beamer for l3docstrip.

```
602 \<*beamer>
```

Loading the westlake beamer theme.

```
603 \RequirePackage [ mono = false ] { libertine }
604 \RequirePackage { anyfontsize }
605 \usetheme [ logobg = westlake-logo.pdf, lbadge = westlake-badge-cn.pdf,
606           mainbg = westlake-paint-a.png, basebg = westlake-paint-b.png ]
607 { westlake }
```

End the optionlist beamer for l3docstrip.

```
608 \</beamer>
```

A.7 wu-usrdoc.code.tex

Start the optionlist usrdoc for l3docstrip.

```
609 \<*usrdoc>
```

Loading the l3draw package.

```
610 \RequirePackage { l3draw }
```

`\draw_lineto_tikz_w:` Auxiliary functions for parsing TikZ Bézier coordinates.

```
\draw_moveto_tikz_w: 611 \cs_new_protected:Npn \draw_lineto_tikz_w: (#1, #2)
\draw_curveto_tikz_w: 612 { \draw_path_lineto:n { (#1 cm, #2 cm) } }
613 \cs_new:Npn \draw_moveto_tikz_w: (#1, #2)
614 { \draw_path_moveto:n { (#1 cm, #2 cm) } }
615 \cs_new_protected:Npn \draw_curveto_tikz_w:
616 controls (#1, #2) and (#3, #4) .. (#5, #6)
617 {
618   \draw_path_curveto:nnn
619     { (#1 cm, #2 cm) } { (#3 cm, #4 cm) } {(#5 cm, #6cm)}
620 }
```

(End of definition for `\draw_lineto_tikz_w:`, `\draw_moveto_tikz_w:`, and `\draw_curveto_tikz_w:`.)

`\l_WESTLAKE_hologo_box` Boxes for saving **WESTLAKE** and **UNIVERSITY**.

```
\l_UNIVERSITY_hologo_box 621 % \begin{macrocode}
\l_wu_WESTLAKE_hologo_box 622 \box_new:N \l_WESTLAKE_hologo_box
\l_wu_UNIVERSITY_hologo_box 623 \box_new:N \l_UNIVERSITY_hologo_box
624 \box_new:N \l_wu_WESTLAKE_hologo_box
625 \box_new:N \l_wu_UNIVERSITY_hologo_box
626 \hbox_gset:Nn \l_WESTLAKE_hologo_box
627 {
628   \draw_begin:
629   \draw_transform_xscale:n { 1.3333 }
630   \draw_transform_yscale:n { -1.3333 }
631   % W
632   \draw_transform_xshift:n { 3.1946 cm/+1.3333 }
633   \draw_transform_yshift:n { 35.0833 cm/+1.3333 }
634   \draw_moveto_tikz_w: (0, 7.3361) \scan_stop:
635   \clist_map_inline:nn
636     {
637       {(0.0413, 7.4108)}, {(0.0706, 7.4108)}, {(0.0706, 7.2769)},
```

```

638      {(.0437, 7.2769)}, {(.0437, 7.3593)}, {(.0098, 7.298)},
639      {(-.0098, 7.298)}, {(-.0436, 7.3593)}, {(-.0436, 7.2769)},
640      {(-.0706, 7.2769)}, {(-.0706, 7.4108)}, {(-.0413, 7.4108)},
641      } { \draw_lineto_tikz_w: #1 \scan_stop: }
642 \draw_path_close:
643 \draw_transform_shift_reset:
644 % E
645 \draw_transform_xshift:n { 3.441 cm/+1.3333 }
646 \draw_transform_yshift:n { 35.1468 cm/+1.3333 }
647 \draw_moveto_tikz_w: (0, 7.3361)
648 \clist_map_inline:nn
649 {
650     {(-.0615, 7.3361)}, {(-.0615, 7.3067)}, {(-.005, 7.3067)},
651     {(-.005, 7.2823)}, {(-.0615, 7.2823)}, {(-.0615, 7.2547)},
652     {(0, 7.2547)}, {(0, 7.2291)}, {(-.0912, 7.2291)},
653     {(-.0912, 7.363)}, {(0, 7.363)}
654     } { \draw_lineto_tikz_w: #1 \scan_stop: }
655 \draw_path_close:
656 \draw_transform_shift_reset:
657 % S
658 \draw_transform_xshift:n { 3.5962 cm/+1.3333 }
659 \draw_transform_yshift:n { 35.1327 cm/+1.3333 }
660 \draw_moveto_tikz_w: (0, 7.3361) \scan_stop:
661 \clist_map_inline:nn
662 {
663     {controls (0, 7.3031) and (-.0258, 7.2965) .. (-.0447, 7.2916)},
664     {controls (-.0619, 7.2872) and (-.0689, 7.2845) .. (-.0689, 7.2755)},
665     {controls (-.0689, 7.2672) and (-.0621, 7.2623) .. (-.0506, 7.2623)},
666     {controls (-.0353, 7.2623) and (-.0315, 7.2703) .. (-.0313, 7.2774)},
667     } { \draw_curveto_tikz_w: #1 \scan_stop: }
668 \draw_lineto_tikz_w: (-.0027, 7.2774) \scan_stop:
669 \clist_map_inline:nn
670 {
671     {controls (-.0032, 7.2485) and (-.0277, 7.2354) .. (-.0504, 7.2354)},

```

```

672     {controls (-.0811, 7.2354) and (-.0971, 7.2556) .. (-.0971, 7.2755)},
673     {controls (-.0971, 7.3073) and (-.0724, 7.3133) .. (-.0543, 7.3177)},
674     {controls (-.0359, 7.3223) and (-.0284, 7.3253) .. (-.0284, 7.3369)},
675     {controls (-.0284, 7.3473) and (-.0398, 7.351) .. (-.0495, 7.351)},
676     {controls (-.0633, 7.351) and (-.0726, 7.3438) .. (-.0732, 7.333)},
677   } { \draw_curveto_tikz_w: #1 \scan_stop: }
678 \draw_lineto_tikz_w: (-.1014, 7.333) \scan_stop:
679 \clist_map_inline:nn
680   {
681     {controls (-.1008, 7.3588) and (-.079, 7.3781) .. (-.0501, 7.3781)},
682     {controls (-.0206, 7.3781) and (0, 7.3608) .. (0, 7.3361)},
683   } { \draw_curveto_tikz_w: #1 \scan_stop: }
684 \draw_path_close:
685 \draw_transform_shift_reset:
686 % T
687 \draw_transform_xshift:n { 3.6639 cm/+1.3333 }
688 \draw_transform_yshift:n { 35.1821 cm/+1.3333 }
689 \draw_moveto_tikz_w: (0, 7.3361) \scan_stop:
690 \clist_map_inline:nn
691   {
692     {(0.0309, 7.3361)}, {(0.0309, 7.2291)}, {(0.0693, 7.2291)},
693     {(0.0693, 7.2021)}, {(-.0384, 7.2021)}, {(-.0384, 7.2291)},
694     {(0, 7.2291)}
695   } { \draw_lineto_tikz_w: #1 \scan_stop: }
696 \draw_path_close:
697 \draw_transform_shift_reset:
698 % L
699 \draw_transform_xshift:n { 3.8971 cm/+1.3333 }
700 \draw_transform_yshift:n { 35.1468 cm/+1.3333 }
701 \draw_moveto_tikz_w: (0, 7.3361) \scan_stop:
702 \clist_map_inline:nn
703   {
704     {(-.0597, 7.3361)}, {(-.0597, 7.2291)}, {(-.0905, 7.2291)},
705     {(-.0905, 7.363)}, {(0, 7.363)}

```

```

706     } { \draw_lineto_tikz_w: #1 \scan_stop: }
707 \draw_path_close:
708 \draw_transform_shift_reset:
709 % A
710 \draw_transform_xshift:n { 3.9755 cm/+1.3333 }
711 \draw_transform_yshift:n { 35.1151 cm/+1.3333 }
712 \draw_moveto_tikz_w: (0, 7.3361) \scan_stop:
713 \clist_map_inline:nn
714 {
715     {(0.019, 7.2887)}, {(0.038, 7.3361)}, {(0, 7.3361)}
716 } { \draw_lineto_tikz_w: #1 \scan_stop: }
717 \draw_moveto_tikz_w: (0.0341, 7.2531)
718 \clist_map_inline:nn
719 {
720     {(0.0341, 7.2531)}, {(0.0039, 7.2531)}, {(-0.0499, 7.387)},
721     {(-0.0205, 7.387)}, {(-0.0098, 7.3604)}, {(0.0478, 7.3604)},
722     {(0.0585, 7.387)}, {(0.0879, 7.387)}
723 } { \draw_lineto_tikz_w: #1 \scan_stop: }
724 \draw_path_close:
725 \draw_transform_shift_reset:
726 % K
727 \draw_transform_xshift:n { 4.1547 cm/+1.3333 }
728 \draw_transform_yshift:n { 35.108 cm/+1.3333 }
729 \draw_moveto_tikz_w: (0, 7.3361) \scan_stop:
730 \clist_map_inline:nn
731 {
732     {(0.0527, 7.3926)}, {(0.0896, 7.3926)}, {(0.0271, 7.3256)},
733     {(0.0896, 7.2587)}, {(0.0527, 7.2587)}, {(0, 7.3152)},
734     {(0, 7.2587)}, {(-0.0309, 7.2587)}, {(-0.0309, 7.3926)},
735     {(0, 7.3926)}
736 } { \draw_lineto_tikz_w: #1 \scan_stop: }
737 \draw_path_close:
738 \draw_transform_shift_reset:
739 % E

```



```

740 \draw_transform_xshift:n { 4.4178 cm/+1.3333 }
741 \draw_transform_yshift:n { 35.1468 cm/+1.3333 }
742 \draw_moveto_tikz_w: (0, 7.3361) \scan_stop:
743 \clist_map_inline:nn
744 {
745     {(-.0615, 7.3361)}, {(-.0615, 7.3067)}, {(-.005, 7.3067)},
746     {(-.005, 7.2823)}, {(-.0615, 7.2823)}, {(-.0615, 7.2547)},
747     {(0, 7.2547)}, {(0, 7.2291)}, {(-.0912, 7.2291)},
748     {(-.0912, 7.363)}, {(0, 7.363)}
749 } { \draw_lineto_tikz_w: #1 \scan_stop: }
750 \draw_path_close:
751 \draw_transform_shift_reset:
752 \color_fill:n { Exploration Blue }
753 \draw_path_use_clear:n { fill }
754 \draw_end:
755 }
756 \hbox_gset:Nn \l_UNIVERSITY_hologo_box
757 {
758 \draw_begin:
759 \draw_transform_xscale:n { 1.3333 }
760 \draw_transform_yscale:n { -1.3333 }
761 % U
762 \draw_transform_xshift:n { 4.6517 cm/+1.3333 }
763 \draw_transform_yshift:n { 34.578 cm/+1.3333 }
764 \draw_moveto_tikz_w: (0, 7.5677) \scan_stop:
765 \clist_map_inline:nn
766 {
767     {controls (0, 7.5806) and (-.0119, 7.591) .. (-.0265, 7.591)},
768     {controls (-.0411, 7.591) and (-.053, 7.5806) .. (-.053, 7.5677)}
769 } { \draw_curveto_tikz_w: #1 \scan_stop: }
770 \clist_map_inline:nn
771 {
772     {(-.053, 7.4835)}, {(-.0839, 7.4835)}, {(-.0839, 7.5677)}
773 } { \draw_lineto_tikz_w: #1 \scan_stop: }

```

```

774 \clist_map_inline:nn
775 {
776   {controls (-.0839, 7.5976) and (-.0581, 7.6219).. (-.0265, 7.6219)},
777   {controls (0.0052, 7.6219) and (0.0309, 7.5976).. (0.0309, 7.5677)}
778 } { \draw_curveto_tikz_w: #1 \scan_stop: }
779 \clist_map_inline:nn
780 {
781   {(0.0309, 7.4835)}, {(0, 7.4835)}
782 } { \draw_lineto_tikz_w: #1 \scan_stop: }
783 \draw_path_close:
784 \draw_transform_shift_reset:
785 % N
786 \draw_transform_xshift:n { 4.8461 cm/+1.3333 }
787 \draw_transform_yshift:n { 34.5816 cm/+1.3333 }
788 \draw_moveto_tikz_w: (0, 7.5677) \scan_stop:
789 \clist_map_inline:nn
790 {
791   {(-.0586, 7.4812)}, {(-.092, 7.4812)}, {(-.092, 7.6151)},
792   {(-.0623, 7.6151)}, {(-.0623, 7.5285)}, {(-.0037, 7.6151)},
793   {(0.0297, 7.6151)}, {(0.0297, 7.4812)}, {(0, 7.4812)}
794 } { \draw_lineto_tikz_w: #1 \scan_stop: }
795 \draw_path_close:
796 \draw_transform_shift_reset:
797 % I
798 \draw_transform_xshift:n { 0 cm/+1.3333 }
799 \draw_transform_yshift:n { 36.8923 cm/+1.3333 }
800 \draw_moveto_tikz_w: (3.6872, 5.8818) \scan_stop:
801 \clist_map_inline:nn
802 {
803   {(3.7181, 5.8818)}, {(3.7181, 5.7479)}, {(3.6872, 5.7479)}
804 } { \draw_lineto_tikz_w: #1 \scan_stop: }
805 \draw_path_close:
806 \draw_transform_shift_reset:
807 % V

```

```

808 \draw_transform_xshift:n { 5.0659 cm/+1.3333 }
809 \draw_transform_yshift:n { 34.5921 cm/+1.3333 }
810 \draw_moveto_tikz_w: (0, 7.5677) \scan_stop:
811 \clist_map_inline:nn
812 {
813     {(-.0361, 7.4719)}, {(-.0655, 7.4719)}, {(-.0151, 7.6059)},
814     {(0.0151, 7.6059)}, {(0.0655, 7.4719)}, {(0.0361, 7.4719)}
815 } { \draw_lineto_tikz_w: #1 \scan_stop: }
816 \draw_path_close:
817 \draw_transform_shift_reset:
818 % E
819 \draw_transform_xshift:n { 5.1738 cm/+1.3333 }
820 \draw_transform_yshift:n { 34.6415 cm/+1.3333 }
821 \draw_moveto_tikz_w: (0, 7.5677) \scan_stop:
822 \clist_map_inline:nn
823 {
824     {(0.0912, 7.5677)}, {(0.0912, 7.5408)}, {(0.0297, 7.5408)},
825     {(0.0297, 7.5114)}, {(0.0861, 7.5114)}, {(0.0861, 7.487)},
826     {(0.0297, 7.487)}, {(0.0297, 7.4595)}, {(0.0912, 7.4595)},
827     {(0.0912, 7.4338)}, {(0, 7.4338)}
828 } { \draw_lineto_tikz_w: #1 \scan_stop: }
829 \draw_transform_shift_reset:
830 % R
831 \draw_transform_xshift:n { 5.4049 cm/+1.3333 }
832 \draw_transform_yshift:n { 34.5392 cm/+1.3333 }
833 \draw_moveto_tikz_w: (0, 7.5677) \scan_stop:
834 \clist_map_inline:nn
835 {
836     {(-.0295, 7.5677)}, {(-.0295, 7.5364)}, {(0, 7.5364)}
837 } { \draw_lineto_tikz_w: #1 \scan_stop: }
838 \clist_map_inline:nn
839 {
840     {controls (0.0085, 7.5364) and (0.0157, 7.5436) .. (0.0157, 7.5521)},
841     {controls (0.0157, 7.5606) and (0.0085, 7.5677) .. (0, 7.5677)}

```

```

842     } { \draw_curveto_tikz_w: #1 \scan_stop: }
843 \draw_moveto_tikz_w: (0.0182, 7.5889) \scan_stop:
844 \draw_lineto_tikz_w: (0.0191, 7.5885) \scan_stop:
845 \clist_map_inline:nn
846 {
847     {controls (0.0334, 7.5819) and (0.0427, 7.5677) .. (0.0427, 7.5521)},
848     {controls (0.0427, 7.53) and (0.0247, 7.5121) .. (0.0027, 7.5121)}
849 } { \draw_curveto_tikz_w: #1 \scan_stop: }
850 \clist_map_inline:nn
851 {
852     {(-.0592, 7.5121)}, {(-.0592, 7.646)}, {(-.0295, 7.646)},
853     {(-.0295, 7.5921)}, {(-.0114, 7.5921)}, {(0.0149, 7.646)},
854     {(0.0461, 7.646)}
855 } { \draw_lineto_tikz_w: #1 \scan_stop: }
856 \draw_transform_shift_reset:
857 % S
858 \draw_transform_xshift:n { 5.5541 cm/+1.3333 }
859 \draw_transform_yshift:n { 34.5322 cm/+1.3333 }
860 \draw_moveto_tikz_w: (0, 7.5677) \scan_stop:
861 \clist_map_inline:nn
862 {
863     {controls (-.0172, 7.5633) and (-.0242, 7.5606) .. (-.0242, 7.5516)},
864     {controls (-.0242, 7.5433) and (-.0174, 7.5384) .. (-.0059, 7.5384)},
865     {controls (0.0094, 7.5384) and (0.0132, 7.5463) .. (0.0135, 7.5534)}
866 } { \draw_curveto_tikz_w: #1 \scan_stop: }
867 \draw_lineto_tikz_w: (0.042, 7.5534) \scan_stop:
868 \clist_map_inline:nn
869 {
870     {controls (0.0415, 7.5246) and (0.017, 7.5114) .. (-.0057, 7.5114)},
871     {controls (-.0364, 7.5114) and (-.0524, 7.5316) .. (-.0524, 7.5516)},
872     {controls (-.0524, 7.5834) and (-.0277, 7.5895) .. (-.0096, 7.5938)},
873     {controls (0.0088, 7.5983) and (0.0163, 7.6013) .. (0.0163, 7.613)},
874     {controls (0.0163, 7.6234) and (0.0049, 7.6271) .. (-.0048, 7.6271)},
875     {controls (-.0186, 7.6271) and (-.0279, 7.6199) .. (-.0285, 7.609)}

```

```

876     } { \draw_curveto_tikz_w: #1 \scan_stop: }
877 \draw_lineto_tikz_w: (-.0567, 7.609) \scan_stop:
878 \clist_map_inline:nn
879 {
880     {controls (-.0561, 7.6349) and (-.0343, 7.6542) .. (-.0054, 7.6542)},
881     {controls (0.0241, 7.6542) and (0.0447, 7.6369) .. (0.0447, 7.6121)},
882     {controls (0.0447, 7.5792) and (0.0189, 7.5726) .. (0, 7.5677)}
883 } { \draw_curveto_tikz_w: #1 \scan_stop: }
884 \draw_transform_shift_reset:
885 % I
886 \draw_transform_xshift:n { 0.0 cm/+1.3333 }
887 \draw_transform_yshift:n { 36.8923 cm/+1.3333 }
888 \draw_moveto_tikz_w: (4.2252, 5.8818) \scan_stop:
889 \clist_map_inline:nn
890 {
891     {(4.2561, 5.8818)}, {(4.2561, 5.7479)}, {(4.2252, 5.7479)}
892 } { \draw_lineto_tikz_w: #1 \scan_stop: }
893 \draw_transform_shift_reset:
894 % T
895 \draw_transform_xshift:n { 5.6949 cm/+1.3333 }
896 \draw_transform_yshift:n { 34.5004 cm/+1.3333 }
897 \draw_moveto_tikz_w: (0, 7.5677) \scan_stop:
898 \clist_map_inline:nn
899 {
900     {(0.0384, 7.5677)}, {(0.0384, 7.6747)}, {(0.0693, 7.6747)},
901     {(0.0693, 7.5677)}, {(0.1076, 7.5677)}, {(0.1076, 7.5407)},
902     {(0, 7.5407)}
903 } { \draw_lineto_tikz_w: #1 \scan_stop: }
904 \draw_transform_shift_reset:
905 % Y
906 \draw_transform_xshift:n { 5.9796 cm/+1.3333 }
907 \draw_transform_yshift:n { 34.4651 cm/+1.3333 }
908 \draw_moveto_tikz_w: (0, 7.5677) \scan_stop:
909 \clist_map_inline:nn

```

```

910     {
911         {(-.0332, 7.6208)}, {(-.0663, 7.5677)}, {(-.0968, 7.5677)},
912         {(-.0486, 7.6449)}, {(-.0486, 7.7017)}, {(-.0178, 7.7017)},
913         {(-.0178, 7.6449)}, {(-.0176, 7.6447)}, {(0.0304, 7.5677)}
914     } { \draw_linetotikz_w: #1 \scan_stop: }
915     \draw_transform_shift_reset:
916     \color_fill:n { Exploration Blue }
917     \draw_path_use_clear:n { fill }
918     \draw_end:
919 }

```

(End of definition for `\l_WESTLAKE_hologo_box` and others. These variables are documented on page ??.)

```

\HoLogo@WESTLAKE Define logos for .
\HoLogo@UNIVERSITY 920 \def \HoLogo@WESTLAKE #1
\HoLogo@thesis 921 {
\HoLogo@westlakethesis 922 \box_gset_eq:NN \l_wu_WESTLAKE_hologo_box \l_WESTLAKE_hologo_box
\HoLogo@WestlakeThesis 923 \box_scale:Nnn \l_wu_WESTLAKE_hologo_box { \f@size / 10 } { \f@size / 10 }
924 \mode_leave_vertical:
925 \box_move_down:nn { \fp_eval:n { \f@size * .015 } \p@ }
926 { \box_use_drop:N \l_wu_WESTLAKE_hologo_box }
927 }
928 \def \HoLogo@UNIVERSITY #1
929 {
930 \box_gset_eq:NN \l_wu_UNIVERSITY_hologo_box \l_UNIVERSITY_hologo_box
931 \box_scale:Nnn \l_wu_UNIVERSITY_hologo_box { \f@size / 10 } { \f@size / 10 }
932 \mode_leave_vertical:
933 \box_move_down:nn { \fp_eval:n { \f@size * .015 } \p@ }
934 { \box_use_drop:N \l_wu_UNIVERSITY_hologo_box }
935 }
936 \def \HoLogo@thesis #1
937 {
938 \hbox_set:Nn \l_tmpa_box
939 {
940 \normalfont \scshape \fontencoding{T1}\fontfamily {LinuxBiolinumT-TLF}

```

```

941     \selectfont \tl_map_inline:nn { th\scan_stop: esis } { ##1\kern-.05em }
942   }
943   \box_scale:Nnn \l_tmpa_box { 1 } { 1.1 }
944   \color_select:n { Knowledge Orange }
945   \box_use_drop:N \l_tmpa_box
946 }
947 \def \HoLogo@westlakethesis #1
948 {
949   \scshape
950   \tl_map_inline:nn { westlak{e\kern-.1em}{T\kern-.05em}hesis } {##1\kern-.05em}
951 }
952 \def \HoLogo@WestlakeThesis #1
953 {
954   \draw_begin:
955   \hbox_set:Nn \l_tmpb_box
956     {
957     \hologo{WESTLAKE}
958     \HOLOGO@discretionary
959     \hologo{thesis}
960     }
961   \draw_path_moveto:n
962     { \f@size * .15pt/2, 1.3\box_ht:N \l_tmpb_box }
963   \draw_path_curveto:nnn
964     { \box_wd:N \l_tmpb_box/3, 1.9\box_ht:N \l_tmpb_box }
965     { 2\box_wd:N \l_tmpb_box/3, 1.9\box_ht:N \l_tmpb_box }
966     { \box_wd:N \l_tmpb_box - \f@size * .15pt/2, 1.3\box_ht:N \l_tmpb_box }
967   \color_select:n { Knowledge Orange }
968   \draw_set_cap_round:
969   \draw_set_linewidth:n { \f@size * .15pt }
970   \draw_path_use_clear:n { stroke }
971   \draw_box_use:N \l_tmpb_box
972   \draw_end:
973 }

```

(End of definition for \HoLogo@WESTLAKE and others.)

Load the docext package.

```
974 \RequirePackage [ color = Exploration Blue ] { docext }  
975 \DeclareDocumentCommand \mail { m } { \href{mailto:#1}{\ttfamily #1} }
```

End the optionlist usrdoc for l3docstrip.

```
976 \end{usrdoc}
```

Restore the namespace.

```
977 \end{namespace}
```


Index

The italic numbers denote the pages where the corresponding entry is described, numbers underlined point to the definition, all others indicate the places where it is used.

Symbols	
\\	365, 368, 393, 396, 399, 402, 425, 428, 466, 469, 472, 475
\#1	12
#1 commands:	
\#1_a	12
\#1_b	12
_	332
A	
abstract (env.)	1, 3, 23
\addcontentsline	271, 494, 498, 517
\arabic	566
\author	107
B	
\baselineskip	370, 374, 378, 404, 408, 430, 434, 443, 477, 481, 488, 521, 526, 528, 538, 543, 545, 549, 556
\begin	1, 3, 353, 358, 372, 385, 387, 413, 418, 432, 454, 456, 520, 522, 529, 533, 539, 546, 553, 621
\bfseries	440, 446
\bibliography	275
\bibliographystyle	166
\bibsep	273
bool commands:	
\bool_gset_true:N	110
\bool_if:NTF	163, 267, 376, 449
\bool_if_exist:NTF	161, 265
\bool_lazy_or:nnTF	130
\bool_new:N	337
\c_false_bool	253, 259
box commands:	
\box_gset_eq:NN	922, 930
\box_gset_eq_drop:NN	197
\box_ht:N	962, 964, 965, 966
\box_move_down:nn	224, 925, 933
\box_new:N	305, 306, 307, 622, 623, 624, 625
\box_scale:Nnn	923, 931, 943
\box_set_to_last:N	207
\box_use_drop:N	926, 934, 945
\box_wd:N	313, 315, 317, 964, 965, 966
\l_tmpa_box	938, 943, 945
\l_tmpb_box	955, 962, 964, 965, 966, 971
box internal commands:	
_box_rule_horizontal:nn	213
C	
\ccwd	360, 363, 366, 381, 387, 388, 394, 397, 400, 529, 533, 537, 546, 553, 560, 595, 596, 597, 598
\centering	381, 439
\cftbeforechapskip	593
\cftbeforesecskip	594
\cftchapfont	590
\cftchapleader	592
\cftchappagefont	591
\cftdotfill	592
\cftdotsep	592, 599

<code>\prop_new:N</code>	283, 284	<code>\seq_set_split:Nnn</code>	179
<code>\prop_set_from_keyval:Nn</code> . . .	285, 295	<code>\sffamily</code>	311, 380, 436, 440, 446, 455, 523, 540, 565, 573, 579, 585, 590
Q			
<code>\quad</code>	581, 587, 589	skip commands:	
R			
<code>\raggedleft</code>	355, 415	<code>\skip_set:Nn</code>	202, 203, 204
<code>\raggedright</code>	573, 579, 585	<code>\skip_vertical:n</code>	212, 214
<code>\renewcommand</code>	590, 591, 592, 599, 600	<code>\smallskip</code>	528, 545
<code>\RenewDocumentCommand</code>	346	<code>\space</code>	479
<code>\RenewDocumentEnvironment</code>	484	str commands:	
<code>\repeat</code>	217	<code>\str_case:nn</code>	121, 262
<code>\RequirePackage</code>	127, 128, 129, 132, 153, 165, 603, 604, 610, 974	<code>\str_case:NnTF</code>	52
reverse commands:		<code>\str_gset:Nn</code>	46
<code>\reverse_if:N</code>	208	<code>\str_if_empty:NnTF</code>	109
<code>\rightskip</code>	203	<code>\str_new:N</code>	40
S			
scan commands:		<code>\strut</code>	211
<code>\scan_stop:</code>	634, 641, 654, 660, 667, 668, 677, 678, 683, 689, 695, 701, 706, 712, 716, 723, 729, 736, 742, 749, 764, 769, 773, 778, 782, 788, 794, 800, 804, 810, 815, 821, 828, 833, 837, 842, 843, 844, 849, 855, 860, 866, 867, 876, 877, 883, 888, 892, 897, 903, 908, 914, 941	sys commands:	
<code>\scshape</code>	940, 949	<code>\sys_if_engine_opentype_p:</code>	131
<code>\selectfont</code>	239, 357, 380, 417, 436, 440, 455, 503, 941	<code>\sys_if_engine_pdftex_p:</code>	130
seq commands:		<code>\sys_if_engine_xetex:TF</code>	119
<code>\seq_clear:N</code>	178	<code>\c_sys_month_int</code>	246, 253
<code>\seq_clear_new:N</code>	186	<code>\c_sys_year_int</code>	258, 259
<code>\seq_get_left:NN</code>	180, 184	T	
<code>\seq_get_right:NN</code>	181, 185	T_EX and L^AT_EX 2_ε commands:	
		<code>\@M</code>	501
		<code>\@beginparpenalty</code>	489
		<code>\@endparpenalty</code>	501
		<code>\@lowpenalty</code>	489
		<code>\@mainmatterfalse</code>	513
		<code>\@mainmattertrue</code>	511, 515
		<code>\@onlypreamble</code>	76
		<code>\@pnumwidth</code>	600
		<code>\commitment</code>	2, 4
		<code>\CTEX@chaptername</code>	517

\l_wu_cover_id_box	305	\l_wu_set_date_tl	83
\l_wu_cover_id_dim		\l_wu_set_id_tl	83, 368, 428
....	305, 361, 364, 367, 421, 424, 427	\l_wu_set_master_bool	83, 376, 449
_wu_fontsize:nn		\l_wu_set_PI_tl	83
.	233, 274, 311, 386, 405, 440, 446,	\l_wu_set_PI_tl_a	402
	455, 478, 523, 540, 565, 573, 579, 585	\l_wu_set_PI_tl_b	475
_wu_kernel_bilingual:nnn		\l_wu_set_school_tl	83, 392, 465
....	235, 244, 257, 261, 261, 491, 507	\l_wu_set_subject_tl	83
_wu_kernel_month:n	242, 242, 406, 479	\l_wu_set_subject_tl_a	396
_wu_kernel_year:n	242, 255, 406, 479	\l_wu_set_subject_tl_b	469
\l_wu_load_bib_bool		\l_wu_set_title_tl	83
....	9, 11, 110, 161, 163, 265, 267, 337	\l_wu_set_title_tl_a	106, 381
_wu_load_module:N	32, 32, 75	\l_wu_set_title_tl_b	106, 441
_wu_load_module:n	5	\l_wu_set_tmpa_seq	
_wu_maketitle_cn:	346, 348, 351	178, 179, 180, 181, 186
_wu_maketitle_en:	346, 349, 411	_wu_signature_inline:n	
\g_wu_module_usage_clist	40	222, 222, 531, 548, 555
_wu_msg_error:nn	5, 37, 74	_wu_spread_box:nn	
_wu_msg_info:nn	5	.	187, 187, 363, 366, 388, 394, 397, 400
_wu_msg_new:nn	5, 10, 12, 18	\l_wu_UNIVERSITY_hologo_box	
_wu_msg_warning:nn	5, 342	621, 930, 931, 934
_wu_parse_slash_ab:N	12, 105, 172, 172	_wu_unknown_option:n	20, 20, 49
\l_wu_school_cn_prop	283, 391	\l_wu_WESTLAKE_hologo_box	
\l_wu_school_en_prop	283, 464	621, 922, 923, 926
\l_wu_set_author_tl	83	_wu_westlakeset_aux:	80, 101
\l_wu_set_author_tl_a	107, 399		
\l_wu_set_author_tl_b	107, 472		
\l_wu_set_bib_str	83, 275		

Z

zhnum commands:

\zhnum_digits:Nn	253, 259
------------------	----------