# The gsemthesis class\*

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#### Abstract

This article introduces the gsemthesis class for LATEX. The gsemthesis class is a PhD thesis template for the Geneva School of Economics and Management (GSEM), University of Geneva, Switzerland. The class provides utilities to easily set up the cover page, the front matter pages, the pages headers, etc. with respect to the official guidelines of the GSEM Faculty for writing PhD dissertations. This class is released under the LaTeX Project Public License version 1.3c.

<sup>\*</sup>This document corresponds to gsemthesis v0.9.3, dated 2015/01/16.

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### 1 Introduction

PhD thesis published within the Geneva School of Economics and Management have to follows some guidelines, especially for the cover page. The gsemthesis class is a LATEX template providing utilities to easily set up these guidelines in your thesis. In addition the class loads several usefull packages generally used when writing a thesis. We recommend the user to have a look to the class definition in Section 4.1 to be aware of the list of packages that the class already includes. The Section 2 details how to start with the gsemthesis class and how to configure your thesis. The Section 3 provides a minimal working example you can copy/paste for starting your dissertation. The user interested in customizing the class can read the Section 4 which details the full implementation of the class with usefull comments.

This class was successfully tested with TeX Live 2013/Debian, TeX Live 2014/CentOS; Windows7 and MiKTeX-2.9.5105/Windows7.

This class has been written by Emmanuel ROUSSEAUX with contributions from William AEBERHARD and Tuan NGUYEN.

The development version is hosted on GitHub<sup>1</sup>. If you are interested in contributing to this class or if you want to beta test latest versions, please visit the repository.

### 2 Usage

This Section introduces the use of the gsemthesis class. All macros and environments the class provides are described. We assume the user is already familiar with LATEX.

### 2.1 Requirements

The class requires a recent version of either TeX Live ( $\geq$  2014 recommended,  $\geq$  2013 minimal) or MiKTeX ( $\geq$  2.9.5x minimal). As the class preload some common packages (see Section 4 for the detailed list), we suggest to use install your LATeX distribution in full mode to make things working out-of-the-box.

The class uses biblatex/biber for managing the bibliography. Please refer to the Section 2.8 for configuring your editor to use it.

#### 2.2 Getting started

To use the class start your document with the command \documentclass{gsemthesis}. A minimal document is:

\documentclass{gsemthesis}
\begin{document}
\printcoverpage
\newpage
Here is it, I started my PhD!
\end{document}

The Section 3 provides a minimal working example you can copy/paste for starting your dissertation. Commands available for configuring your thesis are explained in the following sections.

<sup>1</sup>https://github.com/emmanuelrousseaux/gsemthesis

#### 2.3 Configuring your editor to store files in UTF-8

The class assumes that all your .tex and .bib files are encoded in UTF-8. The UTF-8 encoding is a dominant character encoding available on all recent systems and used by default by a lot of editors. As a consequence, it limits encoding problems when sharing files from different systems (Windows, MacOS, Unix/Linux, web sites, etc.). If some of your source files are stored with a different encoding, you may experience rendering problems with accentued/foreign characters. These characters can occur, for instance, in author names of the bibliography. For making sure you won't experience rendering problems, consider (1) storing your files in UTF-8 and (2) set UTF-8 as the default encoding of your editor. Any recent text editor is able to convert files to UTF-8. TeXstudio and TeXmaker seem to used UTF-8 by default. Rstudio seems to use the system default encoding. To change this setting go to  $File > Save\ with\ encoding$ . On NotePad++ go to  $Encoding > Convert\ to\ UTF-8$ .

### 2.4 Writing the dissertation in French

The GSEM accepts English and French for PhD thesis dissertations. Default language is English. If you write your dissertation in French, you have to you the fr class option as follows:

\documentclass[fr]{gsemthesis}

#### 2.5 Configuring and printing the cover page

\printcoverpage

The class provides the GSEM PhD thesis cover page ready to be printed. You can ask to print it by calling \printcoverpage just after the \begin{document}. Before printing the cover page you first need to configure it with your thesis details: title, author, supervisors, committee, etc.

\title \date \authorFirstname \authorLastname \thesisField

 $\verb|\thesisCommitteeA-F||$ 

\thesisNumber

The class uses the classical \title{text} and \date{text} commands of the book class to set the title and the date. Instead of using the \author{text} command we provide the two commands \authorFirstname{text} and \authorLastname{text} to separately handle the firstname and the lastname. You specify the PhD you are enrolled in with the \thesisField{text}, among others: Economics, Management, Statistics, Information Systems. Please contact the scientific committee of your PhD to obtain the applicable title. You can specify information about members of your thesis committee with the six \thesisCommitteeA-F{title}{firstname}{lastname}{role} commands. With the role field you specify the role played by this member in the committee and his/her affiliation. Generally you specify the role "Chair" in \thesisCommitteeA, the role "adviser" for your adviser/co-advisers, and leave the field empty for the other members. When your manuscript has been accepted by your jury, the Faculty attributes a unique thesis number which has to be printed on the cover page. The \thesisNumber{text} allows to supply it.

#### 2.6 Configuring and printing the front matter pages

After the cover page the thesis has to provide in a the following order (1) the acknowledgements, (2,3) an abstract in both English and French (the order depending on the main language of your dissertation: if your dissertation is written in English you will start with the English abstract; if your dissertation is written in Frenchyou will start with the French abstract), (4) the table of contents, and (5) an optional dedication. These elements are usually called the front matter. These pages will be printed by calling the \printfrontmatter command. The best place for this command is just after the \printcoverpage command. To fill these pages use the commands \acknowledgements{text}, \abstractEN{text}, \abstractEN{text}, and

\printfrontmatter

\acknowledgements
\abstractEN
\abstractFR
\dedication

\dedication{text}. We suggest you use these commands in the preambule of the document, just after the commands used to set the cover page.

#### 2.7 Introduction and conclusion

\startintroduction \startconclusion

Generally we don't want to number the introduction and the conclusion, but we want they appear in the table of contents. This leads to a specific handling of the creation of these chapter, especially to have correct page headers. Therefore, instead of using \chapter{introduction} (respectively \chapter{conclusion}) to start a such chapter we provide the function \startintroduction (respectively \startconclusion) to easily start the chapter with a correct handling of the table of contents and page headers.

#### 2.8 Bibliography

To produce the bibliography, the gsemthesis class uses the package biblatex with biber in backend instead of the package bibtex. The package biblatex is installed by default with any recent version of TeX Live<sup>2</sup> (full installation) and MiKTeX, but you must first configure your TeX Editor to use it.

#### 2.8.1 Configure TeXstudio to run biber

In the TeXstudio preferences (click on Options  $\rightarrow$  Configure TeXstudio), choose the 'Build' tab and modify the 'Default Bibliography' to 'Biber'.

Run 'Build & View' from the 'Tools' menu (or press the two green arrows icon), which will create a PDF but with the bibliography not completed.

Run 'Bibliography' from the 'Tools' menu.

Run 'Build & View' again to create a PDF with the bibliography.

#### 2.8.2 Configure Texmaker to run biber

In the Texmaker preferences (click on Options  $\rightarrow$  Configure Texmaker), choose the 'Commands' tab and replace bibtex % by biber % in the field Bib(la)tex. On Windows, you may also browse to the biber.exe using the folder icon on the side.

Choose the 'Quick Build' tab and select the second option PdfLaTeX + Bib(la)tex + PdfLaTex (x2) + View Pdf

Now your 'Quick Build' button will create a PDF with the bibliography.

#### 2.8.3 Configure Rstudio/knitr to run biber

In Rstudio/knitr you have to include the following chunk in your .Rnw document:

```
<<tex-setup, include=FALSE, cache=FALSE, echo=FALSE>>=
Sys.setenv(
   TEXINPUTS=getwd(),
   BIBINPUTS=getwd(),
   BSTINPUTS=getwd()
)
```

<sup>&</sup>lt;sup>2</sup>On Ubuntu/Debian, you may have to install it manually: sudo apt-get install texlive-bibtex-extra biber

#### 2.8.4 Basic commands

To add a bibliography into your document, you have to define your bib file in the preamble of your tex file: \addbibresource{literature-review-topic1.bib} Then, at the end of your document, the command \printbibliography will create the bibliography.

#### 2.8.5 Using you own bibliography management configuration

If you prefer not to use the bibliography management configuration we implemented in this class, you can disabled it and writing you own. Disabling the *gsemthesis* bibliography management configuration is easily done with the custombib class option:

\documentclass[custombib]{gsemthesis}

When using this option you will have to provide the package you want to use for managing your bibliography (natbib, chapterbib, etc.). As the option disables all settings you will also need to load the package biblatex if you want to use it.

#### 2.9 Draft mode

When sharing draft versions of your dissertation you may prefer to hide some items of the cover page (thesis committee, thesis number, etc.) and some Sections (acknowledgments, the dedications. etc.) that probably have not been defined yet. For this purpose you can use the draft option:

\documentclass[draft]{gsemthesis}

*Note:* this draft mode extends the classical LATEX draft mode and then all packages supporting a draft mode will also switch to the draft mode<sup>3</sup>. For convenience purposes we forced packages graphicx and hyperref to be in *final* mode even when draft mode is on.

#### 2.10 Miscellaneous

itemize\*

The class also provides some optional functions that can turn out to be usefull when writing your thesis. The default itemize environment set important spaces between each items, the previous paragraph and the next paragraph. The itemize\* environment reduces these spaces to allow a more compact (and nicer) presentation of a list item. Forthcoming. To add: section in redaction, todonotes

<sup>&</sup>lt;sup>3</sup>Common packages supporting a draft mode are: changes (final disables markup of changes, and list of changes), graphics (draw frames instead of including images), graphics (draw frames instead of including images), hyperref (disable all linking features), listings (don't include external files), listofsymbols (final suppresses printing of macro names and unused symbols), mfpic (assume every latex run to be the first one), microtype (disable all features), pdfcomment (final suppresses the comments), pdfpages (don't include external file but print a frame box), pgf (similar to graphics/x: all images will be replaced by empty rectangles), showkeys (draft shows the labels, the default option), thumbs (thumbs' width=2pt, thumbs' text=black, thumbs' color=grey), varioref (turn warnings in error messages). Source: http://tex.stackexchange.com/questions/49277/what-does-the-draft-mode-change/49278

### 3 Minimal working example

```
\documentclass{gsemthesis}
\title{An innovative approach to deal with a very important issue}
\date{\today}
\authorFirstname{Firstname}
\authorLastname{Lastname}
\thesisField{Econometrics}
\thesisCommitteeA{Prof.}{Mike}{Moore}{Adviser, University of Geneva}
\thesisCommitteeB{Prof.}{Mike}{Moore}{Chair, University of Honolulu}
\thesisCommitteeC{Prof.}{Mike}{Moore}{University of Omsk}
\thesisCommitteeD{Dr.}{Mike}{Moore}{Eidgenössische Technische Hochschule Zürich}
\thesisNumber{480}
\acknowledgements{Your acknowledgements}
\abstractEN{English version of the abstract}
\abstractFR{French version of the abstract}
\dedication{To my family.}
\addbibresource{literature-review-topic1.bib}
\addbibresource{literature-review-topic2.bib}
\begin{document}
\printcoverpage
\printfrontmatter
% INTRODUCTION
\startintroduction
Write your introduction here.
% CHAPTER
\chapter{A first chapter}
\label{ch:chapterone}
My chapter 1.
% CONCLUSION
\startconclusion
The conclusion.
% BACKMATTER
\listoftables
\listoffigures
% Bibliography (at the end)
\newpage
\printbibliography
\end{document}
```

### 4 Implementation

In this Section the full code of the gsemthesis is discussed. The reader interested in customizing the class will find useful comments to understand the design of the class.

### 4.1 Document properties

```
The class is derived from the standard book class as follows:
 1 \LoadClass[a4paper,12pt,twoside] {book}
We set the document encoding to UTF-8
 2 \usepackage[utf8]{inputenc}
We use the lmodern vectorial fonts to render the document.
 3 \usepackage{lmodern}
We use the etoolbox package for defining class options (fr. draft)
 4 \usepackage{etoolbox}
We add the option fr
 5 \newtoggle{fr}
 6 \DeclareOption{fr}{\toggletrue{fr}}
We add the option draft
 7 \newtoggle{draft}
 8 \DeclareOption{draft}{\toggletrue{draft}}
We add the option custombib
 9 \newtoggle{custombib}
10 \DeclareOption{custombib}{\toggletrue{custombib}}
The recommended page format is A4. The B5 page format is given in option.
11 \DeclareOption{b5paper}{
    \PassOptionsToClass{\CurrentOption}{book}
13 }
14 \ProcessOptions
We use the geometry package to set margin properties
15 \RequirePackage[top=2.5cm, bottom=2.5cm, left=2.5cm, right=2.5cm]{geometry}
We use the package to handle some specific text spacing (title)
```

#### 4.2 Colors

16 \usepackage{setspace}

We define some nice colors that will be later used for links (url, email, citations, etc.). The gsemblue color is the official color (to date 2014.02.20) of the GSEM Faculty.

```
17 \usepackage{xcolor}
18 \definecolor{erblue}{HTML}{126199}
19 \definecolor{erorange}{HTML}{FF7F00}
20 \definecolor{gsemblue}{HTML}{465F7F}
```

#### 4.3 Graphics

We add some practical packages to handle several image files (.png, .pdf), handle placement of graphics, and handle subfigures

```
21 \usepackage[final]{graphicx}
22 \usepackage{float}
23 \usepackage{subfigure}
```

#### 4.4 Link management

We use the hyperref package to manage internal links and set colors for each link type.

```
24 \RequirePackage{hyperref}
25 % \hypersetup{%
26 % colorlinks=true,%
27 % linkcolor=black,%
28 % filecolor=gsemblue,%
29 % citecolor=gsemblue,%
30 % urlcolor=gsemblue%
31 % }%
32 \hypersetup{
33
   colorlinks=true,
   linkcolor=black,
34
   filecolor=erblue,
35
   citecolor=erblue,
    urlcolor=erblue,
39 }
```

We use the url package for a complete support of external links and define a nice font style.

```
40 \RequirePackage{url}
41 \urlstyle{sf}
```

#### 4.5 Maths

We add standard packages from the American Mathematical Society to handle mathematical symbols, environment (equations, etc.) and the Computer Modern font use by default to render math.

42 \usepackage{amssymb,amsmath,amsfonts}

#### 4.6 Page headers management

We use the fancyhdr package for a fine tuning of headers and footers of the different page type (cover page, chapters, unumbered chapters, etc.).

43 \usepackage{fancyhdr}

The capital letters given in option of \fancyhead or \fancyfoot commands respectively stands for:

- E: Even page
- O: Odd page
- L: Left field
- C: Center field
- R: Right field
- H: Header
- F: Footer

We set the fancy page style (default page style) as follows:

```
44 \pagestyle{fancy}
45 \fancyhf{}
46 \fancyhead[LE]{\thepage}
47 \fancyhead[RE]{\nouppercase{\leftmark}}
48 \fancyhead[LO]{\nouppercase{\rightmark}}
49 \fancyhead[RO]{\thepage}
50 \fancyfoot[LE,RO]{}
```

```
We reset the plain style
51 \fancypagestyle{plain}{
    \fancyhf{}
    \renewcommand{\headrulewidth}{Opt}
53
54
    \fancyfoot[LE,RO]{}
55 }
We define a style for the cover page (actually not used)
56 \fancypagestyle{cover}{
    \fancyhf{}
57
58
    \renewcommand{\headrulewidth}{0.5pt}
59
    \renewcommand{\footrulewidth}{0.5pt}
60 }
We define a style for unumbered chapters (starred chapters)
61 \fancypagestyle{unnumberedchapter}{
    \fancyhf{}
    \renewcommand{\headrulewidth}{Opt}
63
    \renewcommand{\footrulewidth}{0pt}
64
    \fancyhead[LE]{\thepage}
    \fancyhead[RE]{}
    \fancyhead[L0]{}
    \fancyhead[RO]{\thepage}
    \fancyfoot[LE,RO]{}
70 }
When a new chapter starts on a odd number, we add a blank page to force it to start to
a even number. We define an empty style for this blank page
71 \fancypagestyle{empty}{
    \fancyhf{}
    \renewcommand{\headrulewidth}{Opt}
    \fancyfoot[LE,RO]{}
74
75 }
Then we apply the empty style to odd page before a new chapter
76 \def\cleardoublepage{\clearpage\if@twoside \ifodd\c@page\else
      \hbox{}
77
78
      \thispagestyle{empty}
79
      \newpage
      \if@twocolumn\hbox{}\newpage\fi\fi\fi}
81 \clearpage{\pagestyle{empty}\cleardoublepage}
We define the default language of the document.
82 \left\{ fr \right\}
    \usepackage[francais]{babel}
    \usepackage[T1]{fontenc}
84
85 }{
    \usepackage[english]{babel}
87 }
This package provides the commands \og and \fg for correctly handling French quotes.
88 \usepackage{csquotes}
We define the date format for the cover page (non-draft mode).
89 \usepackage{datetime}
90 \newdateformat{monthyeardate}{\monthname[\THEMONTH] \THEYEAR}
```

#### 4.7 Bibliography management

We use biblatex/biber to process the bibliography with the following settings: (1) citations with more than two authors will always be writen as "First author et al.", (2) this "et

al." rule is applied even if it leads to ambiguities between long list of authors with the same first author.

```
91 \iftoggle{custombib}{}{
92 \usepackage[backend=biber,natbib=true,style=authoryear-comp,sorting=nymdt,%
93 maxbibnames=99,mincitenames=1,maxcitenames=2,uniquelist=false]{biblatex}
94 }
```

We use the style authoryear to print authors and the year when citing a document in the text. We define a customized sorting style to sort the list of references (printed at the end of the document) according to this (ordered) attributes: name, year, month, day, and title. We define the following sorting scheme:

```
95 \iftoggle{custombib}{}{
     \DeclareSortingScheme{nymdt}{
97
        \sort{
          \field{presort}
98
99
        \sort[final]{
100
          \field{sortkey}
101
102
103
        \sort{
          \name{sortname}
104
105
          \name{author}
          \name{editor}
106
107
          \name{translator}
108
          \field{sorttitle}
109
          \field{title}
110
       }
111
        \sort{
          \field{sortyear}
112
          \field{year}
113
114
        \sort{
115
          \field[padside=left,padwidth=2,padchar=0] {month}
116
          \literal{00}
117
118
119
120
          \field[padside=left,padwidth=2,padchar=0]{day}
          \literal{00}
121
122
123
        \sort{
         \field{sorttitle}
124
126
          \field[padside=left,padwidth=4,padchar=0]{volume}
127
          \literal{0000}
128
        }
129
     }
130
131 }
```

#### 4.8 Cover page

### 4.8.1 System-level functions

The following commands define labels for the different parts of the cover page

```
132 \def\theFaculty{Geneva School of Economics and Management}
133
134 \def\thesisLocationLabel{
135 ~ \\[0.4em]\%
136 \iftoggle{fr}{
```

```
Une thèse soumise à la\\[0.2em]
                   137
                   138
                          \theFaculty\\[0.2em]
                          Université de Genève, Suisse, \\[0.2em]
                   139
                          pour l'obtention du\\[0.2em]
                   140
                  141
                          A thesis submitted to the \\[0.2em]
                  142
                          \theFaculty, \\[0.2em]
                   143
                          University of Geneva, Switzerland, \\[0.2em]
                   144
                   145
                          in fulfillment of the requirements for the degree of \\[0.2em]
                   146
                  147 }
                  148
                  149 \left\{ fr \right\}
                   150 \def\thesisByLabel{par}
                   151 }{
                   152
                       \def\thesisByLabel{by}
                   153 }
                   154 \iftoggle{fr}{
                       \def\thesisFieldLabel{Doctorat en}
                   155
                   156 }{
                   157
                        \def\thesisFieldLabel{PhD in}
                   158 }
                   159 \iftoggle{fr}{
                   160 \def\thesisCommitteeLabel{Membres du jury:}
                   161 }{
                   162 \def\thesisCommitteeLabel{Members of the thesis committee:}
                   163 }
                   164 \iftoggle{fr}{
                       \def\thesisNumberLabel{Thèse no.}
                   166 }{
                       \def\thesisNumberLabel{Thesis No.}
                   168 }
                   169
                   4.8.2 User-level functions
                   Set up of the cover page and assimilated functions.
 \authorFirstname Set up the \theauthorFirstname variable.
                   170 \def\theauthorFirstname{}
                   171 \newcommand{\authorFirstname}[1]{\def\theauthorFirstname{#1}}
  \authorLastname Set up the \theauthorLastname variable.
                   172 \def\theauthorLastname{}
                   173 \newcommand{\authorLastname}[1]{\def\theauthorLastname{\textsc{#1}}}
     \thesisField Set up the \thethesisField variable.
                   174 \def\thethesisField{}
                   175 \newcommand{\thesisField}[1]{\def\thethesisField{#1}}
\thesisCommitteeA Set up the \thethesisCommitteeA variable.
                  176 \def\thethesisCommitteeA{}
                   177 \newcommand{\thesisCommitteeA}[4]{%
                   178 \ifx&#3&%
                  179 \def\thethesisCommitteeA{}%
                   180 \ensuremath{\setminus} else
                   181 \def\thethesisCommitteeA{#1~#2~\textsc{#3},~#4}%
                   182 \fi
                   183 }
```

```
\thesisCommitteeB Set up the \thethesisCommitteeB variable.
                    184 \def \thethesisCommitteeB{}
                    185 \newcommand{\thesisCommitteeB}[4]{%
                    186 \ifx&#3&%
                    187 \def\thethesisCommitteeB{}%
                    188 \ensuremath{\setminus} else
                    189 \quad \texttt{\def}\thethesisCommitteeB{\#1^*\#2^*\textsc{\#3},~\#4}\%
                    190 \fi
                    191 }
\thesisCommitteeC Set up the \thethesisCommitteeC variable.
                    192 \def\thethesisCommitteeC{}
                    193 \newcommand{\thesisCommitteeC}[4]{%
                    194 \ifx&#3&%
                    195 \def\thethesisCommitteeC{}%
                    196 \else
                    197 \def\thethesisCommitteeC{#1~#2~\textsc{#3},~#4}%
                    198 \fi
                    199 }
\thesisCommitteeD Set up the \thethesisCommitteeD variable.
                    200 \def\thethesisCommitteeD{}
                    201 \newcommand{\thesisCommitteeD}[4]{%
                    202 \ifx&#3&%
                    203 \def\thethesisCommitteeD{}%
                    204 \ensuremath{\setminus} else
                    205 \def\thethesisCommitteeD{#1~#2~\textsc{#3},~#4}%
                    206 \fi
                    207 }
\thesisCommitteeE Set up the \thethesisCommitteeE variable.
                    208 \def\thethesisCommitteeE{}
                    209 \newcommand{\thesisCommitteeE}[4]{%
                    210 \ifx&#3&%
                    211 \def\thethesisCommitteeE{}%
                    212 \ensuremath{\setminus} else
                    213 \def\thethesisCommitteeE{#1~#2~\textsc{#3},~#4}%
                    214 \fi
                    215 }
\thesisCommitteeF Set up the \thethesisCommitteeF variable.
                    216 \def\thethesisCommitteeF{}
                    217 \newcommand{\thesisCommitteeF}[4]{%
                    218 \ifx&#3&%
                    219 \def\thethesisCommitteeF{}%
                    220 \ensuremath{\setminus} \text{else}
                     \label{lem:committeef} $$221 $$ \def\thethesisCommitteeF{#1~#2~\texttextsc{#3},~#4}% $
                    222 \fi
                    223 }
    \thesisNumber Set up the \thethesisNumber variable.
                    224 \def\thethesisNumber{}
                    225 \newcommand{\thesisNumber}[1]{\def\thethesisNumber{#1}}
                     The cover page is created with the following code
  \printcoverpage Print the cover page of the thesis.
                    226 \newcommand{\printcoverpage}{%
```

```
\thispagestyle{empty}
227
228
     \begin{center}
     \rule{\linewidth}{0.4pt}
229
230
     \vspace*{1.2cm}
231
232
233
     {\huge
       {\scshape
234
         \begin{spacing}{0.8}
235
236
           \@title
         \end{spacing}
237
238
       }
     }
239
240
241
     \vspace*{1.2cm}
242
     \thesisByLabel
243
244
     \vspace*{0.4cm}
245
^{246}
     {\large \theauthorFirstname~\theauthorLastname}
247
248
     \vspace*{0.8cm}
249
250
251
     \thesisLocationLabel
     \thesisFieldLabel{~}\thethesisField
252
253
254
     \vfill
255
     \iftoggle{draft}{
256
       \iftoggle{fr}{
257
         \emph{Ébauche}
258
       }{
259
         \emph{Draft}
260
261
     }
262
263
264
     \iftoggle{draft}{~}{
       \vspace*{0.8cm}
265
266
       \t
267
268
269
     \vspace*{0.2em}
270
271
     272
273
     \vspace*{0.2em}
274
275
     \iftoggle{draft}{~}{\thethesisCommitteeB}
276
277
278
     \vspace*{0.2em}
279
     \iftoggle{draft}{~}{\thethesisCommitteeC}
280
281
282
     \vspace*{0.2em}
283
284
     \iftoggle{draft}{~}{\thethesisCommitteeD}
285
```

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\vspace*{0.2em}
                                                                                       286
                                                                                       287
                                                                                       288
                                                                                                                \iftoggle{draft}{~}{\thethesisCommitteeE}
                                                                                       289
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                                                                                       290
                                                                                       291
                                                                                                                \iftoggle{draft}{~}{\thethesisCommitteeF}
                                                                                       292
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                                                                                                                \vspace*{1.4cm}
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                                                                                                                \iftoggle{draft}{~}{\thesisNumberLabel{~}\thethesisNumber}
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                                                                                                                \vspace*{0.1cm}
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                                                                                                                <caption> \left( \begin{array}{c} \left( \begin{array}{c} 1 & 1 \\ \end{array} \right) & \\ \begin{array}{c} 1 & 1 \\ \end{array} \right) & \\ \begin{array}{c} 1 & 1 \\ \end{array} \right) & \\ \begin{array}{c} 1 & 1 \\ \end{array} \right) & \\ \begin{array}{c} 1 & 1 \\ \end{array} \right) & \\ \begin{array}{c} 1 & 1 \\ \end{array} \right) & \\ \begin{array}{c} 1 & 1 \\ \end{array} \right) & \\ \begin{array}{c} 1 & 1 \\ \end{array} \right) & \\ \begin{array}{c} 1 & 1 \\ \end{array} \right) & \\ \begin{array}{c} 1 & 1 \\ \end{array} \right) & \\ \begin{array}{c} 1 & 1 \\ \end{array} \right) & \\ \begin{array}{c} 1 & 1 \\ \end{array} \right) & \\ \begin{array}{c} 1 & 1 \\ \end{array} \right) & \\ \begin{array}{c} 1 & 1 \\ \end{array} \right) & \\ \begin{array}{c} 1 & 1 \\ \end{array} \right) & \\ \begin{array}{c} 1 & 1 \\ \end{array} \right) & \\ \begin{array}{c} 1 & 1 \\ \end{array} \right) & \\ \begin{array}{c} 1 & 1 \\ \end{array} \right) & \\ \begin{array}{c} 1 & 1 \\ \end{array} \right) & \\ \begin{array}{c} 1 & 1 \\ \end{array} \right) & \\ \begin{array}{c} 1 & 1 \\ \end{array} \right) & \\ \begin{array}{c} 1 & 1 \\ \end{array} \right) & \\ \begin{array}{c} 1 & 1 \\ \end{array} \right) & \\ \begin{array}{c} 1 & 1 \\ \end{array} \right) & \\ \begin{array}{c} 1 & 1 \\ \end{array} \right) & \\ \begin{array}{c} 1 & 1 \\ \end{array} \right) & \\ \begin{array}{c} 1 & 1 \\ \end{array} \right) & \\ \begin{array}{c} 1 & 1 \\ \end{array} \right) & \\ \begin{array}{c} 1 & 1 \\ \end{array} \right) & \\ \begin{array}{c} 1 & 1 \\ \end{array} \right) & \\ \begin{array}{c} 1 & 1 \\ \end{array} \right) & \\ \begin{array}{c} 1 & 1 \\ \end{array} \right) & \\ \begin{array}{c} 1 & 1 \\ \end{array} \right) & \\ \begin{array}{c} 1 & 1 \\ \end{array} \right) & \\ \begin{array}{c} 1 & 1 \\ \end{array} \right) & \\ \begin{array}{c} 1 & 1 \\ \end{array} \right) & \\ \begin{array}{c} 1 & 1 \\ \end{array} \right) & \\ \begin{array}{c} 1 & 1 \\ \end{array} \right) & \\ \begin{array}{c} 1 & 1 \\ \end{array} \right) & \\ \begin{array}{c} 1 & 1 \\ \end{array} \right) & \\ \begin{array}{c} 1 & 1 \\ \end{array} \right) & \\ \begin{array}{c} 1 & 1 \\ \end{array} \right) \\ \begin{array}{c} 1 \\ \end{array} \right) \\ \begin{array}
                                                                                       304
                                                                                                                \end{center}
                                                                                       305
                                                                                       306 }
                                                                                          4.9
                                                                                                                          Front matter
\acknowledgements Set up the \theacknowledgements variable.
                                                                                       307 \def\theacknowledgements{}
                                                                                       308 \end{\acknowledgements} [1] {\def\theacknowledgements} {\#1} }
                            \abstractEN Set up the \theabstractEN variable.
                                                                                       309 \def\theabstractEN{}
                                                                                       310 \newcommand{\abstractEN}[1]{\def\theabstractEN{#1}}
                            \abstractFR Set up the \theabstractFR variable.
                                                                                       311 \def\theabstractFR{}
                                                                                       312 \newcommand{\abstractFR}[1]{\def\theabstractFR{#1}}
                             \dedication Set up the \thededication variable.
                                                                                       313 \def\thededication{}
                                                                                       314 \newcommand{\dedication} [1] {\def\thededication{#1}}
\printfrontmatter The front matter pages are created with the following code
                                                                                       315 \newcommand{\printfrontmatter}{%
                                                                                       316
                                                                                                                \iftoggle{draft}{~}{
                                                                                       317
                                                                                                                          \frontmatter
                                                                                       318
                                                                                       319
                                                                                                                          \iftoggle{fr}{
                                                                                       320
                                                                                       321
                                                                                                                                    \chapter*{Remerciements}
                                                                                       322
                                                                                                                                    \addcontentsline{toc}{chapter}{Remerciements}
                                                                                       323
                                                                                       324
                                                                                                                                    \chapter*{Acknowledgements}
                                                                                                                                    \addcontentsline{toc}{chapter}{Acknowledgements}
                                                                                       325
                                                                                       326
                                                                                                                          \label{ch:acknowledgements}
                                                                                       327
                                                                                       328
                                                                                                                          \thispagestyle{plain}
                                                                                                                          \theacknowledgements
                                                                                       329
                                                                                       330
                                                                                       331
                                                                                                                          \newpage
```

```
332
333
       \iftoggle{fr}{
334
         \chapter*{Résumé}
          \addcontentsline{toc}{chapter}{Résumé}
335
         \label{ch:abstractFR}
336
         \thispagestyle{plain}
337
         \t
338
339
340
         \newpage
341
         \chapter*{Abstract}
342
         \addcontentsline{toc}{chapter}{Abstract}
343
          \label{ch:abstractEN}
344
          \thispagestyle{plain}
345
346
          \theabstractEN
347
       }{
         \chapter*{Abstract}
348
         \addcontentsline{toc}{chapter}{Abstract}
349
         \label{ch:abstractEN}
350
         \thispagestyle{plain}
351
         \theabstractEN
352
353
354
         \newpage
355
         \chapter*{Résumé}
356
357
          \addcontentsline{toc}{chapter}{Résumé}
358
         \label{ch:abstractFR}
359
          \thispagestyle{plain}
360
          \theabstractFR
361
     }
362
363
     \tableofcontents
364
365
     \iftoggle{draft}{~}{
366
367
       \cleardoublepage
368
369
       \thispagestyle{plain}
370
       \vspace*{4cm}
371
       {\rm m}
372
373
       \raggedleft\thededication\par
374
375
376
       \newpage
     }
377
378
     \mainmatter
379
380 }%
```

#### Introduction and conclusion starter 4.10

```
\startintroduction The front matter pages are created with the following code
                   381 \newcommand{\startintroduction}{\%
                   382 \chapter*{Introduction}
                   383 \label{lem:chapter} \{Introduction\}
                   384 \label{ch:introduction}
                   385 \markboth{}{Introduction}
                   386 }
```

```
\verb|\startconclusion| The front matter pages are created with the following code|
```

```
387 \newcommand{\startconclusion}{%
388 \chapter*{Conclusion}
389 \addcontentsline{toc}{chapter}{Conclusion}
390 \label{ch:conclusion}
391 \markboth{}{Conclusion}
392 }
```

#### 4.11 Miscellaneous

itemize\* A narrowed version of the itemize environment. implementation here.

```
393 \newenvironment{itemize*}%
394 {\vspace{-2mm}\begin{itemize}%
395 \setlength{\itemsep}{0pt}%
396 \setlength{\parskip}{0pt}%
397 }%
398 {\end{itemize}\vspace{-2mm}%
399 }
```