

# The `gsemthesis` class\*

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## Abstract

This article introduces the `gsemthesis` class for L<sup>A</sup>T<sub>E</sub>X. 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 thesis. This class is released under the LaTeX Project Public License version 1.3c.

## Contents

<b>1</b>	<b>Introduction</b>	<b>2</b>
<b>2</b>	<b>Usage</b>	<b>2</b>
2.1	Installation . . . . .	2
2.1.1	Requirements . . . . .	2
2.2	Getting started . . . . .	2
2.3	Writing the dissertation in French . . . . .	2
2.4	Configuring and printing the cover page . . . . .	3
2.5	Configuring and printing the front matter pages . . . . .	4
2.6	Introduction and conclusion . . . . .	4
2.7	Bibliography . . . . .	4
2.8	<i>Draft</i> mode . . . . .	4
2.9	Miscellaneous . . . . .	5
<b>3</b>	<b>Implementation</b>	<b>5</b>
3.1	Document properties . . . . .	5
3.2	Colors . . . . .	5
3.3	Graphics . . . . .	5
3.4	Link management . . . . .	6
3.5	Maths . . . . .	6
3.6	Page headers management . . . . .	6
3.7	Bibliography management . . . . .	7
3.8	Cover page . . . . .	8
3.8.1	System-level functions . . . . .	8
3.8.2	User-level functions . . . . .	9
3.9	Front matter . . . . .	11
3.10	Introduction and conclusion starter . . . . .	13
3.11	Miscellaneous . . . . .	13

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\*This document corresponds to `gsemthesis` v0.9.1, dated 2014/12/06.

## 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  $\text{\LaTeX}$  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 3.1 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 user interested in customizing the class can read the Section 3 which details the full implementation of the class with usefull comments.

This class was successfully tested with pdfTeX 3.1415926-2.5-1.40.14 (TeX Live 2013/Debian).

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

## 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  $\text{\LaTeX}$ .

### 2.1 Installation

#### 2.1.1 Requirements

### 2.2 Getting started

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

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

### 2.3 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}
```

## 2.4 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. The minimal example becomes:

```
\documentclass{gsemthesis}
\title{My PhD thesis}
\date{\today}
\where{Geneva}
\thesisNumber{480}
... (others configuration commands)
\begin{document}
\printcoverpage
Here is it, I started my PhD!
\end{document}
```

<code>\title</code> <code>\date</code> <code>\where</code> <code>\authorFirstname</code> <code>\authorLastname</code> <code>\thesisMention</code> <code>\thesisSupervisorA-B</code> <code>\thesisCommitteeA-F</code>  <code>\thesisNumber</code>	<p>The class use the classical <code>\title{text}</code> and <code>\date{text}</code> commands of the <code>book</code> class to set the title and the date. We add a command <code>\where{text}</code> to specify where the thesis was defended. Instead of using the <code>\author{text}</code> command we provide the two commands <code>\authorFirstname{text}</code> and <code>\authorLastname{text}</code> to separately handle the firstname and the lastname. You specify the specialization of your thesis with the <code>\thesisMention{text}</code>. You can specify information about your thesis supervisor with the <code>\supervisorA{title}{firstname}{lastname}</code> command. The <i>title</i> field is usually filled with “Prof.” If you have a second supervisor your can use the <code>\supervisorB</code> command to provides her/his information. You can specify information about members of your thesis comittee with the six <code>\thesisCommitteeA-F{title}{firstname}{lastname}{role}</code> commands. With the <i>role</i> field you specify the role played by this member in the committee. Generally you specify the role “Chair” in <code>\thesisCommitteeA</code> and leave the field empty for others commands <code>\thesisCommitteeB-F</code>. When you submit your PhD thesis to the Press Service of the Unige, a unique thesis number will be assign to identify your thesis. This number has to be printed on the cover page. The <code>\thesisNumber{text}</code> allows to print it.</p>
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## 2.5 Configuring and printing the front matter pages

<code>\printfrontmatter</code> <code>\acknowledgements</code> <code>\abstractEN</code> <code>\abstractFR</code> <code>\dedication</code>	<p>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 French you 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 <code>\printfrontmatter</code> command. The best place for this command is just after the <code>\printcoverpage</code> command. To fill these pages use the commands <code>\acknowledgements{text}</code>, <code>\abstractEN{text}</code>, <code>\abstractFR{text}</code>, and <code>\dedication{text}</code>. We suggest you use these commands in the preamble of the document, just after the commands used to set the cover page.</p>
--	--

## 2.6 Introduction and conclusion

<code>\startintroduction</code> <code>\startconclusion</code>	<p>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 <code>\chapter{introduction}</code> (respectively <code>\chapter{conclusion}</code>) to start a such chapter we provide the function <code>\startintroduction</code> (respectively <code>\startconclusion</code>) to easily start the chapter with a correct handling of the table of contents and page headers.</p>
--	---

## 2.7 Bibliography

*Forthcoming* (to discuss: use biblatex, require biber, author-year style, sorting scheme)

## 2.8 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}
```

## 2.9 Miscellaneous

`itemize*` The class also provides some optional functions that can turn out to be useful 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

## 3 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.

### 3.1 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 process options we just defined

```
9 \ProcessOptions
```

We use the `geometry` package to set margin properties

```
10 \RequirePackage[top=2.5cm, bottom=2.5cm, left=2.5cm, right=2.5cm]{geometry}
```

We use the `title` package to handle some specific text spacing (title)

```
11 \usepackage{setspace}
```

### 3.2 Colors

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.

```
12 \usepackage{xcolor}
```

```
13 \definecolor{erblue}{HTML}{126199}
```

```
14 \definecolor{erorange}{HTML}{FF7F00}
```

```
15 \definecolor{gsemblue}{HTML}{465F7F}
```

### 3.3 Graphics

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

```
16 \usepackage{graphicx}
```

```
17 \usepackage{float}
```

```
18 \usepackage{subfigure}
```

### 3.4 Link management

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

```
19 \RequirePackage{hyperref}
20 % \hypersetup{%
21 % colorlinks=true,%
22 % linkcolor=black,%
23 % filecolor=gsemblue,%
24 % citecolor=gsemblue,%
25 % urlcolor=gsemblue%
26 % }%
27 \hypersetup{%
28 colorlinks=true,%
29 linkcolor=black,%
30 filecolor=erblue,%
31 citecolor=erblue,%
32 urlcolor=erblue%
33 }%
```

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

```
34 \RequirePackage{url}
35 \urlstyle{sf}
```

### 3.5 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.

```
36 \usepackage{amssymb,amsmath,amsfonts}
```

### 3.6 Page headers management

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

```
37 \usepackage{fancyhdr}
```

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

```
38 \pagestyle{fancy}
39 \fancyhf{}
40 \fancyhead[L0]{\thepage\hfill\nouppercase{\leftmark}}
41 \fancyhead[RE]{\nouppercase{\rightmark}\hfill\thepage}
42 \fancyfoot[LE,R0]{}
```

We reset the `plain` style

```
43 \fancypagestyle{plain}{
44   \fancyhf{}
45   \renewcommand{\headrulewidth}{0pt}
46   \fancyfoot[LE,R0]{}
47 }
```

We define a style for the cover page (actually not used)

```
48 \fancypagestyle{cover}{
49   \fancyhf{}
50   \renewcommand{\headrulewidth}{0.5pt}
51   \renewcommand{\footrulewidth}{0.5pt}
52 }
```

We define a style for unnumbered chapters (starred chapters)

```

53 \fancypagestyle{unnumberedchapter}{
54   \fancyhf{}
55   \renewcommand{\headrulewidth}{0pt}
56   \renewcommand{\footrulewidth}{0pt}
57   \fancyhead[L0]{\nouppercase{\leftmark}}
58   \fancyhead[RE]{\nouppercase{\rightmark}}
59   \fancyfoot[LE,RO]{}
60 }

```

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

```

61 \fancypagestyle{empty}{
62   \fancyhf{}
63   \renewcommand{\headrulewidth}{0pt}
64   \fancyfoot[LE,RO]{}
65 }

```

Then we apply the empty style to odd page before a new chapter

```

66 \def\cleardoublepage{\clearpage\if@twoside \ifodd\c@page\else
67   \hbox{}
68   \thispagestyle{empty}
69   \newpage
70   \if@twocolumn\hbox{}\newpage\fi\fi\fi}
71 \clearpage{\pagestyle{empty}\cleardoublepage}

```

### 3.7 Bibliography management

We use biblatex/biber to process the bibliography

```

72 \iftoggle{fr}{
73   \usepackage[francais]{babel}
74 }{
75   \usepackage[english]{babel}
76 }
77 \usepackage{csquotes}
78 \usepackage{datetime} % WAWA: to define \monthyeardate
79 \newdateformat{monthyeardate}{\monthname[\THEMONTH] \THEYEAR}
80 \usepackage[backend=biber,natbib=true,style=authoryear,sorting=nymdt]{biblatex}

```

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. FIXME: remove the volume, or add the journal before the title. And we define the following sorting scheme

```

81 \DeclareSortingScheme{nymdt}{
82   \sort{
83     \field{presort}
84   }
85   \sort[final]{
86     \field{sortkey}
87   }
88   \sort{
89     \name{sortname}
90     \name{author}
91     \name{editor}
92     \name{translator}
93     \field{sorttitle}
94     \field{title}
95   }

```

```

96 \sort{
97   \field{sortyear}
98   \field{year}
99 }
100 \sort{
101   \field[padside=left,padwidth=2,padchar=0]{month}
102   \literal{00}
103 }
104 \sort{
105   \field[padside=left,padwidth=2,padchar=0]{day}
106   \literal{00}
107 }
108 \sort{
109   \field{sorttitle}
110 }
111 \sort{
112   \field[padside=left,padwidth=4,padchar=0]{volume}
113   \literal{0000}
114 }
115 }

```

## 3.8 Cover page

### 3.8.1 System-level functions

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

```

116 \def\thesisLocationLabel{
117 ~ \[0.4em]%
118 \iftoggle{fr}{
119 Une thse soumise la\[0.2em]
120 Geneva School of Economics and Management,\[0.2em]
121 Universit de Genve, Suisse,\[0.2em]
122 pour l'obtention du\[0.2em]
123 }{
124 A thesis submitted to the\[0.2em]
125 Geneva School of Economics and Management, \[0.2em]
126 University of Geneva, Switzerland,\[0.2em]
127 in fulfillment of the requirements for the degree of\[0.2em]
128 }
129 }
130
131 \iftoggle{fr}{
132 \def\thesisByLabel{par}
133 }{
134 \def\thesisByLabel{by}
135 }
136 %\def\thesisField{PhD in Statistics}
137 \iftoggle{fr}{
138 \def\thesisFieldLabel{Doctorat en}
139 }{
140 \def\thesisFieldLabel{PhD in}
141 }
142 \iftoggle{fr}{
143 \def\thesisCommitteeLabel{Membres du jury:}
144 }{
145 \def\thesisCommitteeLabel{Members of the thesis committee:}
146 }
147 \iftoggle{fr}{
148 \def\thesisNumberLabel{Thse no.}

```



```

149 }{
150   \def\thesisNumberLabel{Thesis No.}
151 }
152

```

### 3.8.2 User-level functions

Set up of the cover page and assimilated functions.

```

\where The where macro.
153 % \newcommand{\where}[1]{\def\thethesisWhere{#1}}

\authorFirstname The authorFirstname macro
154 \newcommand{\authorFirstname}[1]{\def\theauthorFirstname{#1}}

\authorLastname The authorLastname macro
155 \newcommand{\authorLastname}[1]{\def\theauthorLastname{\textsc{#1}}}

\thesisSupervisorA The SupervisorA macro
156 %\newcommand{\thesisSupervisorA}[3]{\def\thethesisSupervisorA{#1~#2~\textsc{#3}}}

\thesisSupervisorB The SupervisorB macro
157 %\newcommand{\thesisSupervisorB}[3]{\def\thethesisSupervisorB{#1~#2~\textsc{#3}}}

\thesisMention The thesisMention macro
158 %\newcommand{\thesisMention}[1]{\def\thethesisMention{#1}}

\thesisCommitteeA The thesisCommitteeA macro
159 \newcommand{\thesisCommitteeA}[4]{%
160   \ifx&#3&%
161     \def\thethesisCommitteeA{%
162   \else
163     \def\thethesisCommitteeA{#1~#2~\textsc{#3},~#4}%
164   \fi
165 }

\thesisCommitteeB The thesisCommitteeB macro
166 \newcommand{\thesisCommitteeB}[4]{%
167   \ifx&#3&%
168     \def\thethesisCommitteeB{%
169   \else
170     \def\thethesisCommitteeB{#1~#2~\textsc{#3},~#4}%
171   \fi
172 }

\thesisCommitteeC The thesisCommitteeC macro
173 \newcommand{\thesisCommitteeC}[4]{%
174   \ifx&#3&%
175     \def\thethesisCommitteeC{%
176   \else
177     \def\thethesisCommitteeC{#1~#2~\textsc{#3},~#4}%
178   \fi
179 }

\thesisCommitteeD The thesisCommitteeD macro
180 \newcommand{\thesisCommitteeD}[4]{%
181   \ifx&#3&%
182     \def\thethesisCommitteeD{%

```

```

183 \else
184   \def\thethesisCommitteeD{#1~#2~\textsc{#3},~#4}%
185 \fi
186 }

\thesisCommitteeE  The thesisCommitteeE macro
187 \newcommand{\thesisCommitteeE}[4]{%
188   \ifx&#3&%
189     \def\thethesisCommitteeE{%
190       \else
191       \def\thethesisCommitteeE{#1~#2~\textsc{#3},~#4}%
192     \fi
193   }

\thesisCommitteeF  The thesisCommitteeF macro
194 \newcommand{\thesisCommitteeF}[4]{%
195   \ifx&#3&%
196     \def\thethesisCommitteeF{%
197       \else
198       \def\thethesisCommitteeF{#1~#2~\textsc{#3},~#4}%
199     \fi
200   }

\thesisNumber  The thesisNumber macro
201 \newcommand{\thesisNumber}[1]{\def\thethesisNumber{#1}}

The cover page is created with the following code

\printcoverpage  Print the cover page of the thesis.
202 \newcommand{\printcoverpage}{%
203   \thispagestyle{empty}
204   \begin{center}
205     \rule{\linewidth}{0.4pt}
206
207     \vspace*{1.2cm}
208
209     {\huge
210       {\scshape
211         \begin{spacing}{0.8}
212           \@title
213         \end{spacing}
214       }
215     }
216
217     \vspace*{1.2cm}
218
219     \thesisByLabel
220
221     \vspace*{0.4cm}
222
223     {\large \theauthorFirstname~\theauthorLastname}
224
225     \vspace*{0.8cm}
226
227     \thesisLocationLabel
228     \thesisFieldLabel{~}\thethesisField
229
230     \vfill % \vspace*{0.4cm}
231

```

```

232 \iftoggle{draft}{
233   \iftoggle{fr}{
234     \emph{bauche}
235   }{
236     \emph{Draft}
237   }
238 }{} % something to add there?
239
240 \vspace*{0.8cm}
241
242 \iftoggle{draft}{~}{\thesisCommitteeLabel}
243
244 \vspace*{0.2em}
245
246 \iftoggle{draft}{~}{\thethesisCommitteeA}
247
248 \vspace*{0.2em}
249
250 \iftoggle{draft}{~}{\thethesisCommitteeB}
251
252 \vspace*{0.2em}
253
254 \iftoggle{draft}{~}{\thethesisCommitteeC}
255
256 \vspace*{0.2em}
257
258 \iftoggle{draft}{~}{\thethesisCommitteeD}
259
260 \vspace*{0.2em}
261
262 \iftoggle{draft}{~}{\thethesisCommitteeE}
263
264 \vspace*{0.2em}
265
266 \iftoggle{draft}{~}{\thethesisCommitteeF}
267
268 \vspace*{1.4cm}
269
270 %%%
271 % \vspace*{0.4cm}
272 % \vfill
273
274 \iftoggle{draft}{~}{\thesisNumberLabel{~}\thethesisNumber}
275
276 \vspace*{0.1cm}
277
278 \iftoggle{draft}{\@date}{\monthyeardate\today} % WAWA: if draft then full date displayed, otherwise
279
280 \vspace*{0.1cm}
281
282 \rule{\linewidth}{0.4pt}
283 \end{center}
284
285 }%

```

### 3.9 Front matter

`\acknowledgements` The acknowledgements macro

```
286 \newcommand{\acknowledgements}[1]{\def\theacknowledgements{#1}}
```

```

\abstractEN The abstractEN macro
287 \newcommand{\abstractEN}[1]{\def\theabstractEN{#1}}

\abstractFR The abstractFR macro
288 \newcommand{\abstractFR}[1]{\def\theabstractFR{#1}}

\dedication The dedication macro
289 \newcommand{\dedication}[1]{\def\thededication{#1}}

\printfrontmatter The front matter pages are created with the following code
290 \newcommand{\printfrontmatter}{%
291
292   \iftoggle{draft}{~}{
293     \frontmatter
294
295     \iftoggle{fr}{
296       \chapter*{Remerciements}
297       \addcontentsline{toc}{chapter}{Remerciements}
298     }{
299       \chapter*{Acknowledgements}
300       \addcontentsline{toc}{chapter}{Acknowledgements}
301     }
302     \label{ch:acknowledgements}
303     \thispagestyle{plain}
304     \theacknowledgements
305
306     \newpage
307
308     \iftoggle{fr}{
309       \chapter*{Rsum}
310       \addcontentsline{toc}{chapter}{Rsum}
311       \label{ch:abstractFR}
312       \thispagestyle{plain}
313       \theabstractFR
314
315       \newpage
316
317       \chapter*{Abstract}
318       \addcontentsline{toc}{chapter}{Abstract}
319       \label{ch:abstractEN}
320       \thispagestyle{plain}
321       \theabstractEN
322     }{
323       \chapter*{Abstract}
324       \addcontentsline{toc}{chapter}{Abstract}
325       \label{ch:abstractEN}
326       \thispagestyle{plain}
327       \theabstractEN
328
329       \newpage
330
331       \chapter*{Rsum}
332       \addcontentsline{toc}{chapter}{Rsum}
333       \label{ch:abstractFR}
334       \thispagestyle{plain}
335       \theabstractFR
336     }
337   }

```

```

338
339 \tableofcontents
340
341 \iftoggle{draft}{~}{
342   \cleardoublepage
343
344   \thispagestyle{plain}
345
346   \vspace*{4cm}
347   {\em
348    \raggedleft\thededication\par
349   }
350
351   \newpage
352 }
353
354 \mainmatter
355 }%

```

### 3.10 Introduction and conclusion starter

`\startintroduction` The front matter pages are created with the following code

```

356 \newcommand{\startintroduction}{%
357 \chapter*{Introduction}
358 \addcontentsline{toc}{chapter}{Introduction}
359 \label{ch:introduction}
360 \markboth{}{Introduction}
361 }

```

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

```

362 \newcommand{\startconclusion}{%
363 \chapter*{Conclusion}
364 \addcontentsline{toc}{chapter}{Conclusion}
365 \label{ch:conclusion}
366 \markboth{}{Conclusion}
367 }

```

### 3.11 Miscellaneous

`itemize*` This is a dummy environment. If it did anything, we'd describe its implementation here.

```

368 \newenvironment{itemize*}%
369 {\vspace{-2mm}\begin{itemize}%
370   \setlength{\itemsep}{0pt}%
371   \setlength{\parskip}{0pt}%
372 }%
373 {\end{itemize}\vspace{-2mm}%
374 }

```

## 4 Complete example

Forthcoming