

The thcover package

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October 25, 2018

Abstract

Complying with the rules defined by French universities for the layout of front and back covers of PhD thesis is often difficult. Exceptionally, the WYSIWYG approach could be an advantage: resorting to a text processing application like MS-Office or Libre-Office to produce a PDF version, that can be incorporated by using the `pdfpages` package.

We propose here a pure pdfL^AT_EX solution for the thesis of some Paris’s region universities. Another advantage is that the metadata are automatically added to the PDF, and also that a PDF/A file can be easily produced.

1 Introduction

Some templates, generally provided as \star -Office files or PDF files, are defined with a single column with centered material, and the problem is simply to cope with the size of the font of different lines, and the proper spacing of successive lines¹.

Some others are really layout-driven with absolutely positioned material, and often some background material like images². In such cases, the sizes and spacing are fixed, and the problem reduces to implement the absolute positioning on the page.

Furthermore, one typical problem common to all institutions is the formatting of the committee list, which slightly differ from one to another, even if all of them handle basically the same information.

In what follows we will describe the package specifically written for this purpose, at this stage for the four universities “Université PSL”, “Sorbonne Université”, “Université Paris Diderot”, and “Université Paris Saclay”³.

2 Installation

All the files must be unpacked in a place where L^AT_EX can find them. The best place is a `tex/latex/thcover/` sub-directory of a **TDS compliant folder**, usually named `texmf`⁴.

If do not have the rights to write in the main `texmf` directory, or do not want to alter it, the normal procedure consist in creating a personal T_EX directory, say `~/mytexmf`, and tell to the database handler to browse it when refreshing⁵ If you finally do not success for that, simply put the required files in your working directory.

The TeX files of the package contains the main style `thcover.sty`, 4 definition files (one per institution : `PSLcover.def`, `SUcover.def`, `UPDcover.def`, `UPSaclaycover.def` and two sample files `testcover.tex` and `test_meta.tex`. The package contains beside a lot of PDF files providing the backgrounds and some logos. It is recommended to put the logos in a subfolder `logo` of the main working directory.

¹See the templates from [Sorbonne Université](#) or [Université Paris Diderot](#).

²See the templates from [Université PSL](#) or [Univesité Paris-Saclay](#)

³Since the development of the package, some alternative appeared on the web...

⁴On Windows computers it is directly `MiKTeX 2.9`; on linux/Unix it is generally `/usr/share/texmf` or something like this. You can have a hint by using `kpsewhich article.cls` on the command line

⁵For MiKTeX on Windows, use the console or `initexmf -user-roots= /mytexmf`. For TeXlive, see `tlmgr` or `mactlmgr`

3 Usage

Once the files ready, add in your preamble : `\usepackage[<options>]{thcover}`. The options are provided as keys-pairs or boolean (meaning `true` when present).

3.1 Options

A single option is mandatory:

`etab` A string identifying the university, presently among `SU`, `PSL`, `UPSACLAY`, `UPD`. No default

The other string (optional) options are as follow:

`lang` A string identifying the main language of the thesis: `french` or `english`, which defines the version of the title shown on the front cover, except for `PSL`, where both are already printed. Default to `french`.

`meta` A string providing the name of the file containing metadata (see § 3.3 below). Default to `\jobname_meta.tex` (where `\jobname` is the base name of the main file).

`pdf` A string specifying the PDF version to be the produced. Recognized values are `pdf14`, `pdf15` and `pdfa`. See below (§ 3.4) for option `pdfa` requesting the production of a PDF/A 2b file. (Default to `pdf15`).

The (optional) boolean options are:

`arial` If present, request the loading of an **Arial-like** font for typesetting the front cover page⁶. The default is to the use of the normal **Sans serif** font⁷. This options is recommended for `PSL` and `UPSACLAY`, and not for the others. Default to `false`.

`creativecommons` Whether or not include on the front cover page the standard **Creative Commons** icons for the license **BY-NC-ND** . Default to `false`.

Example:

```
\usepackage[etab=UPSACLAY,meta=test_meta.tex,arial,creativecommons]{thcover}
```

3.2 Commands

The package defines to types of to user commands :

- The commands like `\author` or `\thesisname` used in the meta datafile⁸.
- The commands to produce the cover pages:

`frontcover` which clearly produces the first coverpage.

`backcover` which clearly produces the fourth coverpage.

In order to produce the covers :

- For the front cover simply place `\frontcover` just after `\begin{document}`.
- For the back cover simply place `\backcover` just before `\end{document}`.
- To get both of them, one can also use the command `\maketitle` just *before* `\begin{document}`.

⁶More specifically **TeX Gyre Heros**.

⁷More specifically **lms** for Latin Modern fonts.

⁸Like in standard classes, `\author` defines the macro `@author`, but `\@author` is not unset after use.

Table 1: Commands used to define the meta-data

Command	Definition	Example/Remark
<code>\author*</code>	Author full name	Eugène TRIBOULET
<code>\advisor</code>	Advisor full name	Tryphon TOURNESOL
<code>\thesisname*</code>	Name of thesis	Thèse de doctorat
<code>\gradename*</code>	Name of grade	docteur
<code>\univ*</code>	Name of university	de l'Université PSL
<code>\atinstitution</code>	Institution of work	à l'École normale supérieure
<code>\atlab</code>	Lab of work	au Laboratoire de tintinologie
<code>\logos*</code>	Up to three logos to display	{PSL}{ENS}{}
<code>\specialite</code>	Specialty of thesis	Physique
<code>\ecoledoctrnum</code>	Number of doctoral school	564
<code>\ecoledoctr*</code>	Name of doctoral school	Physique en Île-de-France
<code>\ecoledoctracro</code>	Acronym of doctoral school	EDPIF
<code>\titlefr*</code>	French title	
<code>\titleen*</code>	English title	
<code>\titlemetafr</code>	French title for meta-data	wo quotes or special chars
<code>\titlemetaen</code>	English title for meta-data	wo quotes or special chars
<code>\date*</code>	Date of defense	
<code>\resume*</code>	Abstract in French	
<code>\abstract*</code>	Abstract in English	
<code>\motscles*</code>	Keywords in French	
<code>\keywords*</code>	Keywords in English	
<code>\jury*</code>	Members of the committee	
<code>\reference</code>	Reference number of the thesis	
<code>\defensecity</code>	City of defense	à Paris

3.3 Meta-data files

In all situation, it is necessary to build a meta-data file which contains all the setting needed to build the cover pages and that could be also used to set the meta-data of the PDF files. This file is named by default `\jobname_meta.tex`, but this name can be overridden by defining the option `meta`.

The list of the values to define in this file is given in table 1. The general rule is that the meta-data file uses macros like the usual `\title` or `\author`, which internally will define the corresponding `\@title` and `\@author`, used to build the pages.

The metadata file structure is essentially independently from the target university. In table 1 the common mandatory elements are marked with an `*`. The need for the others can change from an university to another, but the best is surely to fill all of them.

We discuss below the specific details of the `\jury`, the four version of `\title**`.

`\jury`

As the formatting of the committee list differs from one university to the other, one can not directly enter a properly formatted tabular.

A common format is used, which is parsed with a different function for each institution. This common format is defined by a 2 levels list. The first level correspond to lines relative to the committee members and delimited by the separator `\\` (like in a `tabular`). The second level corresponds to various fields of a given member, which are delimited by `-+-` (unlike `tabular` which uses `&`).

The order of the fields is mandatory, and extraneous spaces must be avoided. Generally speaking commands must be avoided as they break the parsing algorithm. There are two an important exceptions to this rule :

- the civility for ladies in the committee which must be entered with the command `\Mme`.
- if a field is empty, it must be replaced by the command `\empty`.

Exemple: the committee in the sample file `test_meta.tex` is defined as :

```
\jury{%
M.--Alfredo--Topolin--Professeur--Université de Genève,--Rapporteur \\
M.--Fan--Se-Yeng--Professeur--Université de Shanghai,--Rapporteur \\
\Mme --Bianca--Castafiore--Cantatrice--la Scala di Milano,--Examinatrice \\
M.--Tryphon--Tournesol--Professeur--Institut de Moulinsart,--Directeur de thèse \\
M.--Séraphin--Lampion--Agent d'assurances--\empty--Invité
}
```

Please notice that, according French regulation, the committee president is not known *before* the defense. The corresponding role will be added in the post-defense version of the thesis

`\title**`

From the administrative point of view, the title is *unique*, and the others are translations. If you do not provide a language `lang` in the options, or set it to `french`, the French title defined by `\title` will be typeset on the front cover. In the opposite case (option `lang=english`) it is the English `\titleen` which will become the *true* `\title`, mostly in the case of a thesis written in English. Nevertheless this will change neither the titles shown on the fourth cover page, nor the metadata, which uses both titles, and the French version remains the *main* title.

As for the jury, you should as much as possible avoid commands in the titles, with to exceptions :

- French quotes («guillemets») must be entered as `\og` and `\fg`.
- If a title must be broken one or several times, use a `\linebreak[1]` or `\linebreak[2]` to define the good places.

If the `\title` or `\titleen` contain these commands, or curly simple or double quotes, or any other special character, the PDF metadata could be garbled or completely broken. In such case you must provide cleaned versions in the corresponding `\titlemeta` or `\titlemetaen`

3.4 PDF/A production

— *This functionality is still en beta-version.* —

In some (rare) cases you will be requested to provide a PDF file conforming to the **PDF/A specification**. In PDF/A the A stands for “Archival”, meaning that this format is intended to achieve the best long term archival processes. Theses format (there are more than 10 variants) impose some restrictions to the content in terms of links, fonts or images. The key is that the file must be as much as possible “self contained”. An important condition is that all the fonts are embedded in the file, including those used in PDF figures embedded with `\includegraphics` or `\includepdf`. For further information you will have to search documentation on the Web.

The production of PDF/A with pdfL^AT_EX is enabled by the use of the **pdfx package**, provided that you have a recent enough version of **pdftex** and **pdfx** (it works since late 2016 releases : pdfTeX, v 3.14159265-2.6-1.40.16 and pdfx v 1.5.4).

The production of a PDF/A file implies to embed more metadata in a specific format named `\jobname.xmpdata`. This file is then converted to an XML version named `pdfa.xmpi`, finally included in the PDF by the ean of the `xmpincl` package. The option `pdf=pdfa` of the present packages create the `\jobname.xmpdata` by using the provided metadata and then loads the **pdfx** package with the suited options.

4 Some notes about implementation

Caveats

- The maximal size of the English **abstract** (an of French **resume**) is set by default to 1700 characters, spaces included, according to the Suddoc regulation. Some institutions could accept much longer abstract, even though the space available on the back cover can not host them. When the abstract/resume is longer than this maximum, a warning is issued on the back cover, and the whole block of text is resized to fit in the page. These annoying difficulties can be fixed by:
 - Shortening the Abstrac or resume
 - Or override the preset maximum with, for example, `\gdef\absmaxlength{2400}` before loading `thcover`
 - Or simply suppress the warning by adding `final` in the `documentclass`'s options.
- This package is intended to be compilwith `pdflatex`. It has not been tested with neither legacy `latex`, nor `xelatex` /`luatex`.
- The package `hyperref` is not mandatory for using this package, except if you select option `pdf=pdfa`. The medata inclusion take care to select the appropriate method.
- This package is intended to work with Latin Modern as main font , and was not tested with another font set.
- The font `lms` does not has bold small caps : if it's used, the small caps are silently converted in uppercase. Th use of `arial` option fixes this problem.
- The `UPDcover.def` is not yet available, but will be working ASAP.
- The layout of PSL coverpages have been modified a few days ago (2018-10-20). The file `PSLcobver.def` will be updated soon.

Required packages

The following packages are automatically loaded in any case:

```
ifpdf graphicx color xcolor geometry etoolbox
calc xstring eso-pic kvoptions adjustbox
```

We have chosen to not use the (advanced but heavy) package `pfg/tikz` that could ease the absolute positioning and some other tasks, in order to not slow down the compilation for the users who do not already use it for other purpose. Hence the absolute positioning, when needed, if performed using `eso-pic`, and the parsing of the committee uses the internal list of `etoolbox` and the string parsing of `xstrings`.

The following packages are selectively loaded depending of the selected options :

package	option	package	option
<code>uarial*</code>	<code>arial</code>	<code>multido</code>	<code>etab=SU</code>
<code>multicol</code>	<code>etab=UPSACLAY</code>	<code>pdfx†</code>	<code>pdf=pdfa</code>

* : requires a manual installation of the TeX Gyre fonts

† : requires a manual or automated installation of all the packages loaded by `pdfx`.

List of loaded files, fonts not included (from `-recorder` option of `pdflatex` compiler)

tex/latex/eso-pic/eso-pic.sty	tex/latex/adjustbox/trimclip.sty	tex/latex/multido/multido.sty
tex/generic/oberdiek/atbegshi.sty	tex/latex/collectbox/collectbox.sty	tex/generic/multido/multido.tex
tex/generic/oberdiek/infwarerr.sty	tex/latex/adjustbox/tc-pdftex.def	tex/context/base/supp-pdf.mkii
tex/generic/oberdiek/ltxcmds.sty	tex/latex/ifoddpaper/ifoddpaper.sty	tex/latex/oberdiek/epstopdf-
tex/latex/adjustbox/adjustbox.sty	tex/latex/varwidth/varwidth.sty	base.sty
tex/latex/xkeyval/xkeyval.sty	tex/latex/xstring/xstring.sty	tex/latex/oberdiek/grfext.sty
tex/latex/xkeyval/xkeyval.sty	tex/generic/xstring/xstring.tex	tex/generic/oberdiek/kvdefinekeys.sty
tex/generic/xkeyval/xkeyval.tex	tex/latex/oberdiek/kvoptions.sty	tex/generic/oberdiek/pdftexcmds.sty
tex/generic/xkeyval/xkvutils.tex	tex/generic/oberdiek/etexcmds.sty	
tex/latex/adjustbox/adjcalc.sty	tex/generic/oberdiek/ifluatex.sty	