

usiinfthesis Dissertation Style Documentation*

Domenico Bianculli Jochen Wuttke

November 6, 2009

1 Overview

The usiinfthesis L^AT_EX class for USI-INF dissertations is based on the standard book class, and provides additional commands, environments and default text required for theses submitted at USI-INF. Some parts of the document structure are mandatory, and where possible, the class file generates those parts automatically. In place where this is not possible, the sample file and this documentation provide a guide how to get things right.

In the interest of having a somewhat consistent look-and-feel to all theses produced at USI-INF, the class file and the commands provided take care of formatting and document structure as much as possible. You are not supposed to change any of these commands or environments.

2 Document Structure

The minimal structure of a dissertation document is shown below:

```
\documentclass[]{usiinfthesis}

\title{My Dissertation - A very long title which runs \\ over two lines}
\author{Philo S. Doctor}
\Day{21}
\Month{September}
\Year{2009}
\place{Lugano}
\programDirector{The PhD program Director \emph{pro tempore}}

\begin{committee}
  \advisor{Prof.}{Alonzo}{Church}
  % other advisors
```

*usiinf and USI-INF stand for *Università della Svizzera Italiana (University of Lugano) - Faculty of Informatics*.

```

\coadvisor{Prof.}{Barry}{Boehm}{University of Southern California,
  USA}
% other co-advisors
\internalmember{Dr.}{Leslie}{Lamport}
% other internal members
\externalmember{Prof.}{Alan M.}{Turing}{Princeton University, USA}
% other external members
\end{committee}

\begin{document}
\maketitle

\frontmatter

\begin{abstract}
This is a very abstract abstract.
\end{abstract}

\begin{acknowledgements}

\end{acknowledgements}

\tableofcontents

\mainmatter

\chapter{Introduction}

\backmatter

\bibliographystyle{alpha}
\bibliography{biblio}

\end{document}

```

The commands in the preamble should be self-explanatory and are required to complete the title page and the list of your program committee members and such like. A good part of the document structure is encoded in the `\frontmatter`, `\mainmatter`, and `\backmatter` commands. These commands *must not* be omitted in your document.

2.1 The Frontmatter

The frontmatter of your document contains everything up to and including the table of contents, and possible lists of figures and tables. For USI-INF disserta-

Content part	created by	mandatory
Titlepage	<code>\maketitle</code>	yes
Submission page	<code>\frontmatter</code>	yes
Declaration of own work	<code>\frontmatter</code>	yes
Dedication	<code>\dedication</code>	no
Epigraph	<code>\openepigraph</code>	no
Abstract	<code>\begin{abstract} \end{abstract}</code>	yes
Acknowledgements	<code>\begin{acknowledgements}</code> <code>\end{acknowledgements}</code>	?
Table of Contents	<code>\tableofcontents</code>	yes
List of Figures	<code>\listoffigures</code>	no
List of Tables	<code>\listoftables</code>	no
any other list	?	no

Table 1: Parts of the frontmatter

tions the format and content of most parts of the frontmatter is rather rigidly prescribed. The dissertation class provides commands for all these elements, and most of the commands are processed internally by the `\frontmatter` command, so you don't have to worry about those. **Abstract** and **Acknowledgements** appear in the final document in the order you place them in the source. So take care to write the abstract before the acknowledgements. Table 1 lists all elements that may appear in the frontmatter, which commands create them, and whether or not they must be present in your thesis.

Extra sections you might want or need in your thesis are a second abstract in a language different from English (e.g., the language required by your double-doctorate program), or additional lists of special elements in the text. If you want for example a list of algorithms, you need to use an extra package to produce it. You can include it as the last part of the frontmatter. For the extra abstract, you can reuse the **abstract** environment with an extra parameter giving the heading of the section (see reference documentation and example).

By default the lists of figures and tables will be included in the table of contents if they are present in your document. Most (default) styles do *not* do that automatically, so if you add a list and it should appear in the contents, you will have to play with `\addcontentsline` to get what you want.

2.2 The Main Matter

The mainmatter of you thesis is the actual content you are supposed to write. The main matter *must* begin with the command `\mainmatter` before the first of your own chapters.

All structuring commands (from `\chapter` down to `\subsection`) can take an optional parameter with a shorter version of the section title. This shorter title will be used in the page header and the table of contents.

2.3 Appendices

If you want to have an appendix, use the command `\appendix` to switch the formatting to “appendix mode” and then use the normal `\chapter` command for each appendix you have.

2.4 The Backmatter

The backmatter contains your references, possibly a glossary and an index, and must be started with the command `\backmatter`.

The references and index (if present) will be included in the table of contents automatically. An index should start on a recto, that is a page with an odd page number. The easiest way to achieve this is to precede the `\theindex` command with a `\cleardoublepage`.

The `usiinfthesis` class does not provide any command or environment to produce a glossary or any other possible section that you might want to put in the back of your thesis. As usual, chapter opened with `\chapter` will also appear in the table of contents. while chapters opened with `\chapter*` will be ignored for the table of contents. In both cases, backmatter chapters are *not* numbered.

3 Command reference

This command reference lists only commands provided by the USI-INF dissertation class. Commands inherited from the `book` class or any of the loaded packages are not documented here, unless we made significant changes to them.

3.1 Preamble Commands and Environments

<code>\title</code>	The title of the proposal. This command is mandatory and takes one argument.
<code>\subtitle</code>	The subtitle of the proposal. This command is optional and takes one argument.
<code>\author</code>	The author of this thesis, i.e., you. This command is mandatory and takes one argument.
<code>committee</code>	This environment constructs the list of your committee members. Inside this environment you may use the <code>\advisor</code> , <code>\coadvisor</code> , <code>internalmember</code> , and <code>\externalmember</code> commands. This environment is mandatory. The committee members are alphabetically sorted when the document is typeset.
<code>\advisor</code>	The research advisor, or main advisor responsible for the student submitting the proposal. At least one instance of this command is mandatory. This commands takes three arguments: academic title, first and middle name, last name; an optional argument can be given to specify an affiliation different than USI.
<code>\coadvisor</code>	A co-advisor of the student. This command is optional and should only be used if you have one or more official co-advisors. This command takes four arguments: academic title, first and middle name, last name and affiliation.

<code>\internalmember</code>	Creates an entry for one internal member in the list of your committee. This command takes three arguments: academic title, first and middle name, last name; an optional argument can be given to specify an affiliation different than USI (e.g., an affiliated research institute).
<code>\externalmember</code>	Creates an entry for one external member in the list of your committee. This command takes four arguments: academic title, first and middle name, last name, affiliation.
<code>\programDirector</code>	The director of the USI-INF PhD program. This is mandatory and appears on the submission page.
<code>\Day Month Year</code>	These commands form the date when the dissertation was accepted. These are mandatory and appear on the title page and the submission page.
<code>\dedication</code>	Inserts an extra page with a dedication into the frontmatter. This command is optional and takes the full text of your dedication as argument.
<code>\openepigraph</code>	Inserts an opening epigraph into the frontmatter. This command is a variant of the normal <code>\epigraph</code> command. It takes the epigraphs text as the first, and the source as the second parameter. This command is optional.
<code>\place</code>	This should be <i>Lugano</i> , unless you finish your thesis some place else. This is mandatory and appears in your declaration of own work.

3.2 Text Body Commands and Environments

<code>abstract</code>	Inserts the abstract into the frontmatter. Use this environment to produce an abstract that conforms to the thesis requirements. If you need a second abstract in another language, use the syntax <code>\begin{abstract}[Sommario]</code> .
<code>acknowledgements</code>	Inserts the acknowledgements into the frontmatter. Use this environment to produce an acknowledgements section that conforms to the thesis requirements.
<code>\appendix</code>	This command switches formatting and pagination from the main text body to the form required for appendices. This command is optional and should only be used if you have appendices. In that case, it must appear <i>after</i> the last chapter of the main text, and <i>before</i> the first appendix.
<code>\backmatter</code>	This command switches formatting and pagination to the form used for the backmatter. This command <i>must</i> appear after the last chapter/appendix and before the (optional) glossary and references.
<code>\frontmatter</code>	Creates most of the frontmatter pages and initialises formatting and pagination settings. This command <i>must</i> appear after <code>\maketitle</code> and before any other commands or text.
<code>\mainmatter</code>	This command must appear after all frontmatter parts and before the first chapter of the main text body.

3.3 Class Options

`print`

The default layout produced by the class is targeted to “electronic” publishing and uses margins consistent with the normal L^AT_EX `oneside` option. This option switches the layout and various other things to something that is more suitable for two-sided printing and binding. Standard L^AT_EX options `oneside` or `twoside` are disabled.

`nohyper`

By default, the class loads the `hyperref` package with the proper options. Since the `hyperref` package redefines many L^AT_EX commands, it may conflict with other packages you use. This option let you disable the loading of the package.

4 Font Size

The default font size is 11pt. You can change it either to 10pt or to 12pt, by passing the corresponding option to the class.

5 Restrictions and Requirements

Commands and document elements listed here may not be changed or used in producing your thesis.

6 Required Packages

The `usinfothesis` class makes extensive use of a wide range of “standard”¹ L^AT_EX packages. Table 2 lists all packages (and options) that are loaded by the class, and thus do not need to be loaded in your thesis document.

The packages `beramono` and `mathdesign` select, respectively, the monospaced and the math fonts. The class file also uses the *Optima* font package for the sans serif fonts². `fontenc` and `textcomp` are required to make these fonts work properly.

7 Complete Document

The listing below shows the complete structure of your thesis with all optional content enabled. It is important that you do *not* change the order of the commands, parts, and sections in your own thesis.

¹Standard packages are the ones available in a modern L^AT_EX distribution, like T_EXLive (<http://www.tug.org/texlive>) and MacT_EX (<http://www.tug.org/mactex>).

²The *Optima* (aka *URW Classico*) font is not bundled with T_EXLive-based distributions. However, they provide a script, `getnonfreefonts`, for installing extra fonts. To install *Optima*, just type `getnonfreefonts classico` on the command line; the script requires `wget` to be installed.

Package	Options
amsmath	
book (class)	a4paper, 11pt, onecolumn, final, openright, titlepage
beramono	scaled
booktabs	
calc	
caption	font=sf, labelsep=period
datatool	
epigraph	
fancyhdr	
fontenc	T1
geometry	a4paper
graphicx	
hyperref	unicode, plainpages=false, pdfpagelabels, breaklinks
hypcap	all
mathdesign	charter
natbib	square
sectsty	
textcomp	
url	
xifthen	

Table 2: Required packages and selected options

```

\documentclass[]{usiinfthesis}

\title{The Title of my Dissertation} %compulsory
\subtitle{Subtitle: Reinventing the World} %optional
\author{Philo S. Doctor} %compulsory
\advisor{The Student's Advisor} %compulsory
\coadvisor{Co-Advisor} %optional
\Day{Yesterday} %defaults to \today
\Month{September} %compulsory
\Year{2009} %compulsory, put only the year
\place{Lugano} %compulsory
\programDirector{The PhD program Director \emph{pro tempore}} %compulsory

\begin{committee}
\advisor[Politecnico di Milano, Italy]{Prof.}{Carlo}{Ghezzi}
\advisor{Prof.}{Mehdi}{Jazayeri}
\coadvisor{Prof.}{Peter}{Naur}{K\o benhavns Universitet, Denmark}
\coadvisor{Prof.}{M. Douglas}{McIlroy}{Dartmouth College, USA}
\internalmember[Advanced Learning and Research Institute,
Switzerland]%
{Prof. Ing.}{Luigi}{Dadda}
\internalmember{Prof.}{Walter}{Binder}
\externalmember{}{Albert}{Endres}{IBM Academy of Technology}
\externalmember{Prof.}{Bertrand}{Meyer}%
{Eidgen\''ossische Technische Hochschule Z\"urich, Switzerland}
\externalmember{Prof.}{Jeff}{Kramer}{Imperial College London, United
Kingdom}
\end{committee}

\dedication{To my beloved} %optional
\openepigraph{Someone said \dots}{Someone} %optional

\makeindex %optional, also use \theindex at the end

\begin{document}
\maketitle %generates the titlepage, this is FIXED
\frontmatter %generates the frontmatter, this is FIXED

\begin{abstract}
This is a very abstract abstract.
\end{abstract}

\begin{abstract}[Zusammenfassung]
%creates a new abstract section with "Zusammenfassung" as heading
\end{abstract}

```



```

\begin{acknowledgements}
\end{acknowledgements}

\tableofcontents
\listoffigures %optional
\listoftables %optional
%add any other lists here

\mainmatter

\chapter{Introduction}

\chapter{A chapter title which will run over two lines --- it's for
testing purpose}

\section{The first section}

\section{The second, math section}

\section[third]{A very very long section, titled
  'The third section', with a rather short
  text alternative (third)}

\appendix %optional, use only if you have an appendix

\chapter{Some retarded material}
\section{It's over\dots}

\backmatter

\chapter{Glossary} %optional

%any style compatible with the natbib package
%\bibliographystyle{alpha}
\bibliographystyle{dcu}
%\bibliographystyle{plainnat}

\bibliography{biblio}

\cleardoublepage %the index starts on a recto!
\theindex %optional, use only if you have an index, must use
          %\makeindex in the preamble

\end{document}

```

8 Version History

2009/11/6 v. 1.1

Implemented some design changes suggested by the new PhD director, prof. Michele Lanza. Added support for multiple advisors and co-advisors. New commands for defining the committee members (design and code taken from the `usiinfdocprop` class).

2009/09/30 v. 1.0.8

Fixed spelling of the university name.

2009/07/05 v. 1.0.7

Fixed header capitalization problems in frontmatter. Fixed page number issue with `toc`, `lof`, `lot`

2009/05/05 v. 1.0.6

Fixed compatibility issue with `TikZ` package. Date commands have a new format.

2009/04/02 v. 1.0.5 (with fixes)

Typos in templated text fixed.

2009/03/27 v. 1.0.5

Changes to support SmallCaps in Sans Serif Fonts.

2009/03/17 v. 1.0.4

Cosmetic changes to templated text.

2008/07/25 v. 1.0.3

Added support for MSc theses.

2008/07/24 v. 1.0.2

Fixed documentation bug.

2008/03/18 v. 1.0.1

Fixed titlepage bug.

Fixed ToC, LoF, LoT, Bibliography and Index header formatting issues.

2008/03/17 v. 1.0 initial release