JYDISS — A Class for Writing Doctoral Dissertations at the Faculty of Information Technology of the University of Jyväskylä

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Abstract

This class is designed to facilitate the writing of a doctoral dissertation (or a Licentiate's thesis) at the Department of Information Technology of the University of Jyväskylä. It may also be used elsewhere if it conforms to their requirements.

1 Read this first

The class is provided with the hope that it is useful but no assurance of correctness. We urge you to consider it your honor-bound duty to *let us know of any deficiencies* that you may find when using this class. First, however, please verify that any strangeness you may witness is not mandated by the university publishing unit specifications!

While this class has already been used to typeset several subsequently approved theses successfully, *it is always your responsibility, as the author,* to ensure that the document meets the requirements set by the university and the faculty in question. This class aids in that, but it does not, and cannot, implement the all of the typesetting requirements.

Please, subscribe to the mailing list Tutkielma-TeX (`http://lists.jyu.fi/mailman/listinfo/tutkielma-tex`), and ask there any questions you might have. The subscribers there may be able to help you faster than we can.

We make changes to the class from time to time. Class development happens and releases are provided in Yousource (see `https://yousource.`

`it.jyu.fi/latex-thesis-classes`) We will announce new releases on the mailing list.

2 Invocation

Invoke the class with the usual `\documentclass{jydiss}`. In order to write a Licentiate's thesis, use the `licentiate` option.

2.1 Input Character Set Options

Input character set options allow to specify with what character set the source file is written. Available character sets are:

`ascii` ASCII encoding (ISO 646).

`utf8` UTF-8 (Unicode) (requires recent inputenc package).

`utf8x` UTF-8 (Unicode) using ucs.sty. Incompatible with biblatex.

`latin1` ISO-8859-1 encoding (Western Europe languages) (default).

`latin2` ISO-8859-2 encoding (Central Europe languages).

`latin3` ISO-8859-3 encoding (Esperanto, Maltese).

`latin5` ISO-8859-5 encoding (Cyrillic).

`latin9` ISO-8859-15 encoding (Western European languages with the Euro symbol).

`applemac` Old Macintosh encoding.

`ansinew` Windows 3.11 ANSI (extended ISO-8859-1) encoding.

`cp1252` synonym for `ansinew`.

`cp1250` MS Windows 1250 (central and eastern Europe languages) code page.

`decmulti` DEC Multinational Character Set encoding.

`next` Next encoding.

`cp437` IBM 437 code page.

`cp437de` IBM 437 code page (German version).

`cp850` IBM 850 code page.

`cp852` IBM 852 code page.

`cp865` IBM 865 code page.

Usual encodings, by platform, are:

Linux `latin1` (or nowadays more often than not, `latin9` or `utf8`).

MS Windows `cp1252`.

Old Macintosh `applemac`.

OS X `utf8`.

2.2 Package-related Options

`index` will add support for an index in the document, based on the method using the **makeindex** external program. It loads the *makeidx* package, inserts the index's title in the body of the thesis and into the table of contents. Actually including the index is done by putting `\printindex` at the desired place in the document.

`subfigure` will tell the class that the *subfigure* package is being used (incompatibilities between *tocloft* and *subfigure* make it necessary to tell *tocloft* that *subfigure* is being used).

`listings` will load and configure *listings* to conform to the University requirements.

2.3 General Layout Options

`licentiate` will change some layout details to match the Licentiate's theses specs.

`finnish` will enable support for Finnish language (probably incomplete). Note that this option can be used only if the licentiate option has been selected since doctoral theses in IT are always in English (this restriction can be removed if needed).

`lof` will include the list of figures into the document.

`lot` will include the list of tables into the document.

`loa` will include the list of algorithms into the document (to be used with the *algorithm* package).

`loar` will include the list of included articles into the document.

`shortloft` will put the lists of figures and tables on the same page, if they are short. *Do not use it if you do not have a list of figures.*

`contribinloar` will put the content of the `contribution` environment in the list of included articles. If this option is not set, the content of `contribution` will be ignored, and the author is free to put the contribution's text anywhere in the document.

`contribbefore` will place the description of the author's contribution before the list of included articles instead of after. The `contribinloar` option must be set for this one to have any effect.

`bibweaklang` has effect only if the *jydiss* bibliography style is used with BibTEX; it will restrict the effect of any language field in a BibTEX record to hyphenation only. Without this option, using the *jydiss* bibliography style, the language field will affect also the overall language used in the entry (things like "in" versus "teoksessa" etc.).

2.4 Layout Fine-Tuning Options

`altlongcaption` will break long captions (i.e. captions which are longer than the width of the text) into a paragraph which is aligned to the left margin instead of being justified to the right of the label.

`alttt` will use the *TXTT* typewritefont instead of *Courier*. According to some, *TXTT* is looking better than *Courier* when typset along *Palatino*.

`boldartref` will set the in-text references to the included articles in bold instead of being surrounded by square brackets.

3 Preamble Commands

The following commands can be used before the `\begin{document}`. Some of those are optional (their default values are described along with the command) and the others are mandatory. If one of the mandatory commands is not used, a reminder will be printed inside the document.

`\title` document's title (mandatory).

`\subtitle` document's subtitle (optional).

`\entitle` document's title in English (mandatory in Finnish documents, ignored otherwise)

`\setauthor` document's author (two arguments: first names and surname) (mandatory).

`\disstype` type of work (defaults to "Dissertation draft manuscript").

`\abstract` abstract in English (mandatory).

`\keywords` document's keywords in English (mandatory).

`\people` list of the people involved in the work (see also below).

`\epigraph` a quotation, dedication or other similar note (not to be confused with the acknowledgements section) set on a page of its own, vertically centered, just before the abstract

`\email` typesets an e-mail address (see also below).

`\isbn` set the ISBN of the thesis (to be obtained from the library when the thesis is ready to be published) (mandatory; multiple uses allowed; see also below).

`\issn` set the ISSN of the thesis (not needed for IT faculty theses published in the University series)

`\series` set the name of the series in which the thesis will be published (not needed for IT faculty theses published in the University series)

`\serialnumber` set the thesis' serial number (to be obtained from the library when it is ready to be published).

The `\people` command is used differently from the other ones, since it contains `\item` commands, as a list would do. The syntax for the `\item` is as follows: `\item[`*role*`]{`*information*`}` where *role* is the role of the person (e.g. author, supervisor, opponent, reviewer, examiner), and *information* is the contact information for that person (e.g. name, organization, $\cdots$)

The `\isbn` command takes an optional argument that, when present and nonempty, is typeset after the ISBN itself in parentheses. The command can also be repeated, to specify more than one ISBN. For example

```
\isbn[nid.]{123-456-78-9012-3}
\isbn[PDF]{345-678-90-1234-5}
```

produces

ISBN 123-456-78-9012-3 (nid.)
ISBN 345-678-90-1234-5 (PDF)

in the appropriate place on the abstract page. Please note that these ISBNs are fictitious and must not be used in real theses.

The `\email` command can be used anywhere in the document, but more particularily in `\people`, for including the author's e-mail address.

4 Sectioning Commands

The available sectioning commands are:

`\preface` Preface.

`\acknowledgements` Acknowledgements.

`\termlist` Glossary.

`\mainmatter` Marks the beginning of the main part of the document. Should appear before the first `\chapter`. It mainly includes all the "List of" (if any), the table of contents, and the list of articles (if any).

`\tailmatter` Marks the end of the body of the document. Should appear before the bibliography and before the Finnish Summary (Yhteenveto) for proper page numbering in these chapters.

`\backmatter` Marks the end of the main part of the document. Should appear after `\appendice` (if any) and before `\includedarticles`. Chapters are not allowed anymore after `\backmatter`.

`\chapter` Beginning of a chapter.

`\section` Beginning of a section.

`\subsection` Beginning of a subsection.

`\subsubsection` Beginning of a subsubsection. (NOTE: Not specified by the University Library guidelines. Use at your own risk.)

`\bibliography` allows to specify a list of references. Should be put before the appendices.

`\appendices` Marks the beginning of the appendices. The `\chapter` command should not be used anymore, use `\appendix` instead. It also changes the behavior of `\section` and `\subsection` so that the word "Appendix" is prepended to it.

`\appendix` Like `\chapter`, but prepends the word "Appendix" in front of the number.

`\includedarticles` inserts an "Included Articles" line to the table of contents. The `article` environment can be used below it to include articles.

`\finnishsummary` begins the "Yhteenveto (Finnish Summary)" chapter and adds the "Finnish summary" entry in the abstract page. See also the `yhteenveto` environment below.

`\printindex` includes the index in the document (see also the `index` option.

Note that `\subsubsection`, `\paragraph` and `\subparagraph` are available, but not recommended.

In addition to the previous commands, the following environments is available:

`yhteenveto` Useful for writing the Finnish summary of an English-language thesis. The environment uses `\finnishsummary` to typeset the summary chapter's title, and selects Finnish as the language for the duration of the environment. Under the Publishing Unit's rules, the yhteenveto belongs near the end of the thesis, before the bibliography.

`acronyms` Adds a chapter called "Acronyms" (the name can be changed by using the `\setacronyms` command). Each individual acronym is specified using the `\item` command, with the following syntax: `\item[`*acronym*`]{`*full text*`}` where *acronym* is the given acronym, and *full text* is it meaning.

`article` Adds a title page (right-hand) for an included article (which is inserted to the document after printing. The `article` environment takes one argument, which is a bibliographical label, and contains commands describing the article:

`\arttitle` is the title of the included article.

`\artauthor` is the author of the included article.

`\artyear` is the year the article has been published.

`\artpublish` contains information about how or where the article has been published.

`\artpublishmore` contains extra information about how and where the article has been published. The content of this macro is not automatically italicized in the list of included articles.

`\artcopyright` outputs information about the owner of the copyright of the article, after the mention "Reprinted with kind permission of "

`\artpages` is the number of pages of the included articles (this allows correct page numbering for content located after the included articles, and correct count of the total number of pages)

`\arthide` adds the article in the "list of included articles", but does not make a titlepage for it.

In addition, the `\artmakebib` command can be used for redefining the layout of the references in the list of included articles, and the `\artmaketitle` command for controling the layout of the title page of the included article.

Note that citing an included article works correctly only if the `loar` option is used. Currently, citing an included article is not supported if *biblatex* is in use.

`contribution` Defines the author's contribution regarding the included articles. This environment may appear anywhere in the document, and its content will be added just after the list of included articles, under the same heading. Using the `contribbefore` class option, the text will be added before the list of included articles.

5 Useful Internal Commands

JYDISS is based on the BOOK class; all the features in BOOK are available in JYDISS. Here is a list of additional packages which are loaded by JYDISS, you do not need to load these in your document:

- *makeidx*, if JYDISS is called with option `index`.
- *babel* with options `finnish` and `english`.
- *inputenc* with the input encoding character set specified in the options of JYDISS.

- *textcomp*
- *fontenc*
- *palatino* along with *mathpazo* for mathematical fonts
- *tocloft*
- *everyshi*
- *geometry*
- *remreset*
- *caption*
- *ifthen*

The following commands are not part of the official API of JYDISS but can be useful in some circumstances:

`\ifpdf` can be used to enable different behaviors depending on wether the output of LaTeX is PDF (typically, when using **pdflatex**) or not. Here is a useful example:

```
\ifpdf
  \usepackage[pdftex]{hyperref}
  \hypersetup{colorlinks,citecolor=blue}
\else
  \RequirePackage[hypertex]{hyperref}
\fi
```

`\HyMakeUppercase` turns text to uppercase in a way which is compatible with hyperref when using **pdflatex**. Useful especially as an argument to `\addcontentsline` or `\addtocontents`.

`\captionsfinnish` contains the definitions of captions in Finnish language.

`\captionsenglish` contains the definitions of captions in English language.

`\addto` adds definitions to lists of captions (see above). Here is how to add `\somecaptionname` to Babel's Finnish translated names:

```
\addto\captionsfinnish{
  \def\somecaptionname{Joku nimi}
}
\addto\captionsenglish{
  \def\somecaptionname{Some name}
}
```

After that, `\somecaptionname` will be defined as "Joku nimi" when Finnish language is selected, and as "Some name" when English language is selected.

`\almostchapter` creates a chapter heading anywhere in a page (i.e., it does not make a blank page first).

`\openanychapter` creates a chapter heading at the top of the next page, wether it is odd-numbered or not (`\chapter` always puts the heading on an odd-numbered page).

6 Using the provided BibLaTeX style

This package comes with an **experimental** BibLaTeX style. Since it is experimental, there may be bugs and infelicities, even quite severe ones. Send feedback to Antti-Juhani Kaijanaho

Note that citing an included article is not supported at this time when using the BibLaTeX style.

To use this style, put the line

```
\usepackage[backend=biber,style=jydiss]{biblatex}
```

somewhere in your thesis preamble. Using bibtex in the place of biber as the backend should work, as well, though the use of biber is recommended.

If you use sources whose original publication date is decades or centuries earlier than the date of the edition you use, you can optionally use the `origdate` field to specify the original publication date. Normally this field is ignored, but you can specify `citeorigdate=slash` or `citeorigdate=bracket` to *biblatex* (when using the *jydiss* style) to indicate that the original publication year should be included in citations. Under the option `citeorigdate=slash`, citations of works with `origdate` look like "Frege (1892/1948)"; under the option `citeorigdate=bracket`, such citations look like "Frege ([1892] 1948)". Currently, `origdate` is not shown in the bibliography.

In other respects, using the style should be similar to using any of the standard BibLaTeX styles. See the BibLaTeX's own manual for more information.

7 Using the provided BibTeX style

Note that BibTeX is a legacy system. Use BibLaTeX and Biber if possible.

This package comes now with an optional BibTeX style file. The style implements the style guidelines for bibliographies specified by the University of Jyväskylä publication unit.

To use the style, specify `\bibliographystyle{jydiss}` somewhere in your document. You must also load the *natbib* package, since the style file is intended to be used with an author–year citation style.

Any standard BibTeX database ought to work with the style file, but there are the following additional features available:

- The `language` field may be used in any BibTeX record, which must be a Babel language name (either `finnish` or `english`). That particular bibliography entry will then be rendered in that language, regardless of the document's overall language.[1]
- The `url` field may be used in any BibTeX record to give the URL where the document in question is accessible. It is recommended that `accessed` is used in conjunction with this field.
- The `doi` field may be used in any BibTeX record to specify the Digital Object Identifier (DOI) of the document in question. Do not include the "doi:" prefix, please. It is a good idea to provide a DOI where one is available.
- The `accessed` field may be used in any BibTeX record to specify the date when the document in question was accessed (through the URL or DOI given separately) by the thesis author. The format is "`{`*year*`}{`*month*`}{`*day*`}`". (Note that this field is very nonstandard, and works only with the provided style file.)

8 Tips and Tricks

8.1 *algorithm* and *hyperref*

algorithm (and all packages based on *float*) interact badly with *hyperref*, since they both redefine `\caption`, producing a lot of warnings when used with

[1] If you want to use the same language for all entries, use the `bibweaklang` document-class option; then the entry language will only affect hyphenation.

pdflatex. You must therefore load these packages *after* loading *hyperref*. The following piece of black magic will prevent the warnings.

```
% patch of float's \caption to avoid double anchor setting by \refstepcounter
% of float's \caption and in hyperref's \@caption.
 \begingroup
 \makeatletter
 \def\x#1\refstepcounter#2\@nil{%
 \endgroup
 \def\caption{#1\H@refstepcounter#2}%
}%
\expandafter\x\caption\@nil
```

8.2 Finnish Hyphenation

If you write your thesis in Finnish, it is useful to have Finnish hyphenation enabled. You can check if it is enabled by looking for the words "hyphenation" and "finnish" in the output of **latex**. If it is similar to the following example, it is already enabled.

```
This is e-TeX, Version 3.14159-2.1 (Web2C 7.4.5)
entering extended mode
(./thesis.tex
LaTeX2e <2001/06/01>
Babel <v3.7h> and hyphenation patterns for american, french,
 german, ngerman, finnish, nohyphenation, loaded.
```

Otherwise, you can enable it by following these instructions (for the **tetex** distribution in Linux; if you use another distribution, contact your administrator):
Edit `/etc/texmf/language.dat`, uncomment the line

```
%finnish  fi8hyph.tex
```

by removing the `%`, and then run

```
fmtutil --all
```

if it is in your distribution (it may be a Debian script, I'm not sure) or if you dont have **fmtutil** go to the directory containing the tex format files (`/var/lib/texmf/web2c` in Debian, otherwise search for a file called `latex.fmt` and go into the directory containing that file) and run

```
tex -ini -jobname=tex -progname=tex tex.ini
tex -ini -jobname=latex -progname=latex latex.ini
```

```
etex -ini -jobname=latex -progname=latex *latex.ini
etex -ini -jobname=etex -progname=etex *etex.ini
etex -ini -jobname=elatex -progname=elatex *elatex.ini
pdftex -ini -jobname=pdftex -progname=pdftex pdftex.ini
pdftex -ini -jobname=pdflatex -progname=pdflatex pdflatex.ini
pdfetex -ini -jobname=pdflatex -progname=pdflatex *pdflatex.ini
pdfetex -ini -jobname=pdfetex -progname=pdfetex *pdfetex.ini
pdfetex -ini -jobname=pdfelatex -progname=pdfelatex *pdfelatex.ini
```

9 Bugs

When using *hyperref* with the `dvips` option, titles in the list of figures and list of tables do not fold if they are longer than the width of the text.

When using *hyperref*, citations of included articles are linked to the list of included articles, not to the title page of the article.

When citing multiple references, the citation in the body of the document will be enclosed in square brackets (normal layout) even if it contains a citation of an included articles (which should be in bold and without brackets). It will however be prefixed with "P" and be identifiable as a reference to an included article.