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Documentation

Writing your PhD thesis

A guide to the LaTeX document class **uiophdthesis**

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Abstract

LaTeX is an excellent tool for writing your PhD thesis, especially in combination with the bibliography tool BibLaTeX.

The University of Oslo has defined guidelines[1] for the PhD theses, and the University of Oslo Library and the Department of Informatics have developed the document class **uiophdthesis** in accordance with these guidelines. This documentation has been typeset using that class.

[1] See https://www.uio.no/english/services/print/doctoral-thesis/index.html.

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Introduction

Chapter 1

About the document class

The uiophdthesis class has the following features:

- The paper size is A4, which is what the printers require (see the guidelines in footnote on page 1). The thesis will be photographically reduced to 81 % when printed.
- The font size is 12 pt which will look all right in the reduced print.
- You should not attempt to create any kind of front page. This will always be supplied by the printers.[1]

1.1 Fonts

The default document font for uiophdthesis is the standard LaTeX font *Computer Modern* in combination with *Helvetica*. You may select a different font by using one of these options to \documentclass:

font=garamond selects *Garamond* with *Helvetica*

font=noto selects *Noto serif* with *Noto sans*

font=times selects *Times Roman* with *Helvetica*

1.2 Document structure

We recommend that you use the **\part*{...}** command to structure your thesis. (If you want numbered parts, you may omit the ***.)

[1] This documentation does have a front page because it provides technical information; it is not a thesis.

1.2.1 Included research papers

Your thesis is likely to contain one or more research paper published in various publications. When you want to include such a research paper, you should use the command **\uiopaper** rather than a \part or \part*. This will affect the numbering.

Many research papers were originally written in the article style which has no \chapter command. To make it easier to include these in the thesis, the \uiopaper command may be given as

\uiopaper[nochapter]{*paper title*}

Then, the paper will be properly typeset with no \chapter commands but \section as the highest structuring command.

If you want to include the research paper exactly as it was typeset, you can import it from a PDF file using the command **\uioincludepdf** giving the PDF file as parameter.

Chapter 2

Installation

If you are processing your LaTeX document on a stationary Linux computer at the University of Oslo, you need not worry about installing the uiophdthesis document class; it is already there.

2.1 On your personal computer

To use this document class on your own computer (which may run Linux, MacOS or Windows) you must do the following:

1. Fetch https://www.mn.uio.no/ifi/tjenester/it/hjelp/latex/uiotheses.zip. (Click on the URL to download the file.)
2. Unzip the files. You may place all the files in the same folder as your LaTeX source files.[1]

And that should be all.

2.2 Using Overleaf

If you are using Overleaf (see https://www.overleaf.com) to write your thesis, you may do the following to use the uiophdthesis document class:

1. Fetch https://www.mn.uio.no/ifi/tjenester/it/hjelp/latex/uiotheses.zip. (Click on the URL to download the file.)
2. Unpack the ZIP file.[2]
3. In your Overleaf project, select the upload icon ("⬆"). Then, select all the unzipped files and upload them.

Once this has been done, you may use the document class.

[1] If you know where LaTeX packages are kept on your computer, you can save them there to make them generally available. Remember to refresh your file name database afterwards.

[2] Overleaf allows import of ZIP files, but *only* if it is the first thing you do after creating a new project.

Chapter 3

Using the document class

To use this document class, just start your LaTeX file with

\documentclass[*options*]{uiophdthesis}

The option **font=*xxx*** is used to select your font; see Section 1.1 on page 7. All other options are passed to packages you use.

3.1 An example

The uiophdthesis package comes with a base file named **uiophdthesis-base.tex** containing the basic layout of your thesis; see Figure 3.1 on the next page. The idea is that you make a copy of that file, modify the specified texts, and then write your thesis.

Line 1: The document class should be **uiophdthesis**. You must also specify the language of your thesis.

Line 2: UTF-8 is the most common character encoding in use today, so, unless you specify otherwise in your text editor, you are likely to get this encoding.

Line 3: The url package provides the \url command which is very useful for typesetting long internet addresses. These should be set in a sans serif typeface (rather than `teletype`). For an example, see Section 2.1 on page 9.

Lines 4–6: These packages should always be included:

babel handles language adaption.

csquotes supports quote marks in various language. This package is required by biblatex; see below.

graphicx provides support for including illustrations.

textcomp adds many useful symbols.

varioref gives improved features for crossrefererencing.

uiophdthesis-base.tex

```
\documentclass[UKenglish]{uiophdthesis}   %% ... or norsk, nynorsk, USenglish
\usepackage[utf8]{inputenc}               %% ... or latin1
\usepackage[T1]{url}\urlstyle{sf}
\usepackage{babel, csquotes, graphicx, textcomp, varioref}
\usepackage[backend=biber,style=numeric-comp]{biblatex}
\usepackage[hidelinks, hypertexnames=false]{hyperref}

\title{The title of my thesis}        %% ... or whatever
\subtitle{A subtitle}                 %% ... or whatever
\author{My Name}                      %% ... or whoever

\addbibresource{mybib.bib}            %% ... or whatever

\begin{document}
\frontmatter{}
\maketitle[
  supervisor={A Supervisor},
  %% supervisors={A Supervisor\and Another Supervisor}, %% if more than one
  %% dept={Department of Something},  %% if you want to include it
  %% fac={Faculty of Theory},         %% if you want to include it
]

\begin{abstract}
  Here come 3--6 sentences describing your thesis.
\end{abstract}
\begin{xabstract}[Sammendrag]               %% ... or Abstract or ...
  Here comes the abstract in a different language.
  Note that a Norwegian abstract is mandatory!
\end{xabstract}

\tableofcontents{}                          %%
\listoffigures{}                            %% (omit if none)
\listoftables{}                             %% (omit if none)

\begin{preface}
  Here comes your preface, including acknowledgments and thanks.
\end{preface}

\mainmatter{}
\part*{Introduction}                  %% ... Innledning or Innleiing
\chapter{Background}                  %% ... or Bakgrunn
\section{Xxx's work}                  %% ... or whatever

\uiopaper{My first paper}             %% ... or ??
\chapter{Planning the project}        %% ... or ??
Some text ...

\uiopaper{My second paper}            %% ... or ??
%% \uioincludepdf{mypaper2.pdf}       %% (if you want to include a paper)

\part{Conclusion}                     %% ... or ?? (if any)
\chapter{Results}                     %% ... or ??
Some text ...

\backmatter{}
\printbibliography{}
\end{document}
```


Figure 3.1: The file uiophdthesis-base.tex

biblatex loads BibLaTeX which handles bibliographies.[1] The package options given here are recommended; they use the numeric citation style favoured in natural science.

hyperref provides hyperlinks both internally and externally.

Lines 8–9: You must always state a thesis title. You may also provide a subtitle, but that is not mandatory.

Line 10: Don't forget you own name!

Line 12: \addbibresouce specifies the name/s of your BibLaTeX bibliography file/s.

Line 15: specifies the start of the thesis front matter, i.e., abstract, table of contents etc.

Line 16: prints an inner title page. (This will appear after the front page so it is recommended.) Normally, just the title, subtitle and author's name is printed, but you may use these options to \maketitle for additional information:

dept={*department name*} gives the name of the department.

fac={*faculty name*} gives the faculty name.

supervisor={*supervisor's name*} names the supervisor.

supervisors={*supervisor's name* \and *name* \and *name*} gives the names of the supervisors, if there are more than one.

You may also use the standard \date command to specify the date.

Lines 23–25: contains your abstract.

Lines 26–29: contains your abstract in a different language, for example in Norwegian. **A Norwegian abstract is mandatory at the University of Oslo.**

Lines 31–33: produces your tables of content, figures and tables, accordingly.

Lines 35–37: is your preface.

Line 39: shows the start of the main part of your thesis.

Line 40–42: shows your thesis structure: \part, \chapter, \section, \subsection etc. Use the *-ed form for unnumbered headings.

Line 44–46: contains a research paper typeset as part of the thesis.

Line 48–49: contains a different research paper avaible as a PDF file.

[1] *Local guide to BibLaTeX* at https://www.mn.uio.no/ifi/tjenester/it/hjelp/latex/biblatex-guide.pdf is a simple introduction to creating your bibliography.

Line 51–53: is an additional thesis text not part of a paper.

Line 55: starts the back part containing appendices, bibliography and such.

Line 56: prints the bibliography created by BibLaTeX.

3.2 Another example

The file uiophdthesis-guide.tex shows the LaTeX source code for this documentation.