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Documentation

Writing your master's thesis

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

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Chapter 1

Writing your thesis

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

There are no official specifications for the contents of a master's thesis at the University of Oslo (only the front page) but the University of Oslo Library and the Department of Informatics have developed this document class which we believe is well suited.

There exists a companion LaTeX package called uiomasterfp to get an official front page for the thesis (also used in this document); uiomasterthesis only defines the typography of the contents.

1.1 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 uiomasterthesis document class; it is already there.

1.1.1 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. Download https://www.mn.uio.no/ifi/tjenester/it/hjelp/latex/uiotheses.zip. (Click on the URL to download the file.)

   You should also fetch the companion file https://www.mn.uio.no/ifi/tjenester/it/hjelp/latex/uiomasterfp.zip to get an official front page.

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.

[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.

1.1.2 Using Overleaf

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

1. Download 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.

1.2 Using the document class

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

```
\documentclass[options]{uiomasterthesis}
```

Any options are passed to packages you use.

1.3 An example

The uiomasterthesis package comes with a base file named **uiomasterthesis-base.tex** containing the basic layout of your thesis; see Figure 1.1 on the facing 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 **uiomasterthesis**. 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 1.1.1 on the previous page.

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.

uiomasterfp is used to create the official University of Oslo front page.

varioref gives improved features for crossrfererencing.

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

uiomasterthesis-base.tex

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

\title{The title of my thesis}        %% ... or whatever
\subtitle{Any short subtitle}         %% ... if any
\author{My Name}                      %% ... or whoever

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

\begin{document}
\uiomasterfp[dept={Department of Physics},  %% ... or your department
  program={Physics},                        %% ... or your study program
  supervisor={The Name},                    %% ... or blank
  % or supervisors={A Name\and B Name},     %% if more than one
  long]                                     %% ... or short

\frontmatter{}
\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.
\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

\part{The project}                    %% ... or ??
\chapter{Planning the project}        %% ... or ??

\part{Conclusion}                     %% ... or ??
\chapter{Results}                     %% ... or ??

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

Figure 1.1: The file uiomasterthesis-base.tex

biblatex loads BibLaTeX which handles bibliographies.[3] The package options given here are recommended; they use the numeric citation style favoured in natural science.

hyperref provides hyperlinks both internally and externally.

Line 8: You must always state a thesis title.

Line 9: Often, a subtitle is useful.[4]

Line 10: Don't forget you own name!

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

Line 15–19: You should place your call on \uiomasterfp just after \begin{document}. The most common options are:

dept={...} states your department.

program={...} tells your study programme.

supervisor={...} names your supervisor. If you have more than one supervisor, use supervisors= instead, and separate the names with \and.

long or **short** displays the number of ECTS study points your thesis represents (60 or 30).

Line 22: specifies the start of the thesis front matter, i.e., abstract, table of contents etc.

Lines 23–25: contains your abstract.

Lines 26–28: contains your abstract in a different language.

Lines 30–32: produces your tables of content, figures and tables, accordingly.

Lines 34–36: is you preface.

Line 38: shows the start of the main part of your thesis.

Line 39–41: shows your thesis structure: \part, \chapter, \section, \subsection etc. Use the *-ed form for unnumbered headings.

Line 49: starts the back part containing appendices, bibliography and such.

Line 50: prints the bibliography created by BibLaTeX.

1.4 Another example

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

[3] *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.

[4] The \subtitle command is not standard LaTeX but supplied by the uiomasterfp package.