The UCB Thesis Class

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Abstract

This is a class file for theses and dissertations at the University of California, Berkeley. It is based on the `memoir` class, and therefore supports all of the functionality of that class. It should generate a document that meets all of the basic formatting requirements given in the *Dissertation Filing Guide* or the *Thesis Filing Guide* (as appropriate) produced by the UC Berkeley Graduate Division and available on the web at https://grad.berkeley.edu/academic-progress/. This version of the class is based on the dissertation and thesis guides, accessed in July 2019.

1 Introduction

The `ucbthesis` class is a modified version of the standard LaTeX `memoir` class that is accepted for use with University of California, Berkeley, Ph.D. dissertations and Master's theses. The available commands are almost identical to those of the `memoir` class, so the recommended starting point for documentation is general documentation for LaTeX.

This document class requires a reasonably recent version of the `memoir` class. It is known to work with `memoir` version "2010/09/19 v3.6g," but not with `memoir` version "2005/09/25 v1.618."

Note: The documentation for the `memoir` class is long (currently 583 pages), and the vast majority of it is completely irrelevant to the process of writing a thesis using `ucbthesis`. **Do not print out the documentation for the `memoir` class!** Doing so would be a huge waste of paper and money. Look to general LaTeX documentation instead.

The key features of the class are:

1. The primary modification to the `memoir` class is the setting of the margins and (for Master's theses prior to 2011) use of pseudo-double-spacing, since Berkeley's rules for Master's theses were still designed for typewriters. The latter is achieved by increasing the `\baselinestretch` parameter to 1.37. The `\baselinestretch` is returned to a single-spaced value of 1.00 for elements like tables, captions, and footnotes and for all displayed text (quote, quotation, and verse environments).

2. Margins are 1 inch on all sides.

3. Uses 12 point by default; you can use the 10pt or 11pt options for those sizes (but note that only 12pt should be used for the final submitted copy).

4. Page numbers are in the top right corner for all pages.

5. Complete, correct front matter for Berkeley dissertations can be generated. If you are not a Berkeley student, you should make sure that the front matter is OK with your school.

The `ucbthesis` class is derived from the `ucthesis` class—the name has been changed to reflect the fact that it is (probably) only valid for Berkeley theses. The `ucbthesis` class should be used for new theses (at Berkeley); `ucthesis` may still be used for older theses submitted prior to the change to electronic submission in Fall 2009, and will still be maintained for this purpose.

A (partial) list of thesis classes at other University of California campuses is available on the web at https://math.berkeley.edu/~vojta/ucthesis.html.

2 Using the `ucbthesis` Class

2.1 Sample Dissertation

There is a sample dissertation in the `example` subdirectory of the documentation directory. All of the files in that subdirectory form part of the sample dissertation. To produce a `pdf` or `dvi` file of the thesis, copy the files to some other directory and type the commands

```
pdflatex thesis
biber thesis
pdflatex thesis
```

(Use `latex` instead of `pdflatex` if you want a `dvi` file instead of a `pdf` file as output. You may need to replace `biber` with `bibtex`, depending

on your TeX setup—look at the output from the first run of `pdflatex` or `latex`.)

The file `references.bib` is its bibliography database (though the contents of the database are not important). Mostly this example document is useful as an example of how to produce the front matter.

If you don't understand LaTeX at all, this file might help you get started, but, since you're going to be writing a quite lengthy document, you should look into more comprehensive information on LaTeX. A list of TeX and LaTeX documentation is maintained at the web page http://www.tug.org/interest.html#doc.

2.2 Selecting the `ucbthesis` Class

To use the `ucbthesis` class, make sure that the `ucbthesis.cls` file is on your TEXINPUTS search path and use the following command at the start of your input file:

```
\documentclass{ucbthesis}
```

2.3 Class Options

The options for the `ucbthesis` class are given in Table 1. They should be selected on the `\documentclass` line, e.g.:

```
\documentclass[10pt,draft]{ucbthesis}
```

All options supported by the `memoir` class are also supported (although some of them would not be very useful for a thesis).

2.4 Page Headers

If you want to use page headers or footers other than the default ones, you should try using `headerfooter.sty` or `fancyheadings.sty`. The `myheadings` pagestyle doesn't work well and there is no workaround. The `headerfooter` and `fancyheadings` styles are widely distributed, well documented, and easy to use.

2.5 Overall Document Structure

The overall structure of a `.tex` file for a thesis is the same as most other LaTeX files: a `\documentclass` line, followed by declarations (e.g., `\usepackage` lines and macro definitions), and then one (or, rarely, more) instances of a `document` environment.

Your best guide for what goes inside the `document` environment is to follow the practice in the sample file `thesis.tex`. In a nutshell,

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Option	Description
`phd`	Selects formatting for doctoral dissertation (default)
`masters`	Selects formatting for Master's thesis submitted in 2012 or later: changes the word "dissertation" on the title page to "thesis."
`oldmasters`	Selects formatting for Master's thesis submitted in 2011 or earlier: selects double spacing and changes the word "dissertation" on the title page to "thesis."
`final`	Uses pseudo-double-spacing for Master's theses submitted in 2011 or earlier (default)
`draft`	Uses single-spacing throughout the document
`12pt`	Sets the default font size to 12 points (default)
`11pt`	Sets the default font size to 11 points. *Note:* This option should be used only for draft copies (e.g., to save paper). The final submitted copy must use 12-point fonts or larger
`10pt`	Sets the default font size to 10 points. *Note:* This option should be used only for draft copies (e.g., to save paper). The final submitted copy must use 12-point fonts or larger

Table 1: Document class options

though, this consists of declarations and environments for the front matter, followed by the main content of the thesis, and then the bibliography and any appendices. The structure of the part of the file corresponding to the front matter is described in the next section.

3   Front Matter

In addition to setting the page layout and line spacing, the other key service provided by the `ucbthesis` class is that it generates correct front matter (title page, approval page, abstract, etc.) with a fairly simple set of commands. This facility could be a little easier, but compared to an earlier state of affairs, it's pretty slick. The format of the front matter is specified quite explicitly in the documents "Dissertation Filing Guide" and "Thesis Filing Guide" produced by the UC Berkeley Graduate Division and available on the web at https://grad.berkeley.edu/academic-progress/. The current version of the class is based on the dissertation and thesis guides, accessed in July 2019.

A complete example of the use of the front matter commands can be found in the sample dissertation distributed with the class. Generally, the part of the LaTeX file that generates the front matter consists of the following portions:

- Declarations of text strings
- Macros to generate the title, approval, and copyright pages
- `abstract` environment
- `frontmatter` environment

These portions are described in the following subsections.

3.1   Declarations of Text Strings

To use the front matter macros and environments, you must first declare the text strings listed in Table 2. This is done by invoking the relevant macro with the string as its argument; for example, `\title{ Snakes in Ireland}`.

3.2   Title, Approval, and Copyright Pages

The title, approval, and copyright pages have extremely rigid formats that allow them to be generated automatically once the above declarations have been made. To generate them, invoke the macros

```
\maketitle
\approvalpage
```

Macro	Description
\title	Dissertation title
\author	Your name as registered with UC (usually with full middle name)
\degreeyear	Year your dissertation will be granted
\degreesemester	Semester (or term) your degree will be granted
\degree	The title of your degree (e.g. Doctor of Philosophy)
\jointinstitution	For joint degrees, the other institution
\chair	Title and name of your committee chair (e.g. "Professor Michael A. Harrison")
\cochair	Title and name of your committee co-chair (use with \chair, if you have a co-chair).
\cochairs	Titles and names of your (co-equal) committee co-chairs (replaces \chair and \cochair).
\othermembers	The names of the other members of your committee separated by linebreaks (e.g. `Professor Susan L. Graham\\ Professor Jim Pitman`)
\numberofmembers	The number of members on your committee. This defaults to 3 (and thus is optional) and can be any value from 3 to 6. It affects the number of lines on the approval page and the space between them.
\field	The official title of your field. This is usually your department's name, but at Berkeley, most Engineering degrees have a more complex name. Be sure to check the guidelines for any special twists on the name of your field.
\emphasis	The "designated emphasis" of your degree (if any)
\campus	The name of your UC campus. This should be capitalized (e.g. Berkeley). This is optional, and defaults to Berkeley.

Table 2: Declarations for Front Matter

```
\copyrightpage
```

You should probably invoke them in that order, because that's the order required by the guidelines. The approval page should not be part of the submitted thesis, but the `\approvalpage` macro may be used to generate the required approval page to be printed and submitted with the thesis.

3.3   Abstract Environment

Because you have to provide the text of the abstract, only the title can be generated automatically. So, there is an abstract environment. It generates the title and numbers the abstract in arabic numerals and makes sure that it starts on new page.

The advisor's signature no longer is required (or allowed) for the abstract.

3.4   Other Front Matter

The remaining front matter (dedication, table of contents, lists of figures and tables, acknowledgements) *must* be put inside the `frontmatter` environment, which ensures that page numbering is handled properly. Within this `frontmatter` environment, you put the environments and commands for the rest of the front matter. There are environments for `dedication` and `acknowledgements`, and the standard LaTeX commands for producing `\tableofcontents`, `\listoffigures`, and `\listoftables` should also go inside the `frontmatter` environment.

The standard LaTeX commands are well documented in the LaTeX manual. You may have to hand edit the `.lof` (list of figures) and `.lot` (list of tables) files to make verbose captions more suitable for this front matter. Once you do this, remember to use the `\nofiles` macro to keep them from getting overwritten.

The `ucbthesis` class provides `acknowledgements` and `dedication` environments, which produce corresponding sections in the front matter and make them start on a new page. The `acknowledgements` environment also puts the word "Acknowledgements" in large, bold, centered text at the top of the page. For formatting the dedication page, you're on your own. After all, the dedication is a kind of poetry and there's no predicting the right way to format poetry.

4 Obsolete Environments and Commands

Previous (unreleased) versions of the `ucbthesis` (and `ucthesis`) classes defined environments for producing small tables with single spacing. These environments are no longer necessary, since standard LaTeX now handles the situation properly. Replace the `\begin{...}` commands as indicated in Table 3, and change the corresponding `\end` commands accordingly.

Environment	Use Instead
smalltabular	\small\begin{tabular}
smalltabular*	\small\begin{tabular*}
scriptsizetabular	\scriptsize\begin{tabular}
scriptsizetabular*	\scriptsize\begin{tabular*}

Table 3: Obsolete environments

The `ucthesis` class also provided commands `\smallssp` and `\scriptsizessp`; these should now be changed to `\small\SingleSpacing` and `\scriptsize\SingleSpacing`, respectively.

5 Installing the ucbthesis Class

To install the `ucbthesis` class, you need to install the file `ucbthesis.cls` in your LaTeX class file repository. This generally should go in a directory `TEXMF/tex/latex/ucbthesis` (where `TEXMF` is the base of the `texmf` tree). Or, it can also be placed in the directory that you use when running LaTeX on your thesis.

You should also install the documentation files

```
README
ucbthesis.tex
ucbthesis.pdf
thesis.tex
abstract.tex
chap1.tex
chap2.tex
references.bib
```

in a similar directory under the documentation directory, generally `TEXMF/doc/latex/ucbthesis` for the first three files, and `TEXMF/doc/latex/ucbthesis/example` for the last five.

These files should already be placed in subdirectories reflecting the above guidelines, so that one might extract the `tar` file in the main `TEXMF` directory to get the right results.

6 Modification History

Version 3.3 was the initial release of `ucbthesis` (it was forked from `ucthesis`, hence the unusual version number). The package `ucthesis` was created for non-electronic submissions, and should no longer be used, except for printing out older theses. Version 3.3 was distributed only within Berkeley.

Version 3.4 switched to using the `memoir` class, eliminated the `smalltabular`, `smalltabular*`, `scriptsizetabular`, and `scriptsizetabular*` environments, and the `\smallssp` and `\scriptsizessp` commands. It also added support for co-chairs on the dissertation/thesis committee, joint degrees, and degrees with a Designated Emphasis. In addition, it was modified for release on CTAN.

Version 3.5 added support for printing the Designated Emphasis on the abstract page (a Graduate Division requirement).

Version 3.6 changed the font in the title from bold to regular and adjusted the spacing in the abstract page. It added `\cochairs` to the documentation. In the example, it added a sideways table, added sample uses of `\cochair` and `\cochairs`, and moved the (commented-out) appendix to after the bibliography (as per requirements).