

A DEMONSTRATION OF THE UNIVERSITY  
OF KENTUCKY MATHEMATICS  
DEPARTMENT DISSERTATION DOCUMENT  
CLASS

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Dedicated to things

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# Chapter 1

## There is only one chapter

### 1.1 Introduction and Installation

This is an example document to demonstrate the typesetting of a dissertation for the University of Kentucky. To see the specifications I am trying to meet go to

<http://www.research.uky.edu/gs/PrintedDissertationInstructions.html>.

It is build on top of the memoir document class. This is not installed here, but you can get it from CTAN. If you put the files in the same directory as the `ukthesis.cls` file they will be detected. There are two ways to get this all to work. First you must compile the `memoir` class following the instructions in the accompanying README file Them,

**Easy** Drop the `ukthesis.cls` and all of the memoir files into the same directory as your main  $\LaTeX$  document

**Hard** Copy the memoir files into the directory `texmf/tex/latex/memoir` and the documentation files into `texmf/doc/latex/memoir` in the root of your u drive. Copy `ukthesis.cls` to `texmf/tex/latex/ukthesis`. Now run the command `texhash` from the Unix side (using Putty). This will make it work on the Unix side. But MikTeX doesn't acknowledge that `texmf` directory so it won't work from the Windows side. To do this, create a file called `miktex.ini` in your u drive. Add to it the following

```
[LaTeX]
Input Dirs=.;u:\texmf//;%R\tex\latex//;%R\tex\generic//
```

and execute the command `initexmf --personal=miktex.ini` from a DOS (not Unix) prompt.

The supported method for producing a PDF file is to use `latex` then `dvips -t letter` to produce a postscript (for printed copies, this should be correct) and finally, `ps2pdf` to produce the PDF. `pdflatex` seems to produce correct results most of the time, but problems have been reported. Its use is not supported.

## 1.2 Document Structure

The most basic beginning for a dissertation is:

```
\documentclass[nosignatures,final]{ukthesis}
\usepackage[pdftitle={your name},
            pdftitle={The Title},
            pdfsubject={The Subject},
            pdfkeywords={Some Keywords},
            pdfproducer={Latex with hyperref},
            pdfcreator={latex->dvips->ps2pdf},
            pdfpagemode=UseOutlines,
            bookmarksopen=true,
            letterpaper,
            bookmarksnumbered=true]{hyperref}
\usepackage{memhfixc}
\maxsecnumdepth{subsection}
\changelocdepth{3}
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
\begin{document}
%author data
\author{your name}
\title{THE TITLE}
\abstract{an abstract}
\advisor{your advisor}
\keywords{keywords go here}
\dgs{DGS name here}
%the title pages
\frontmatter
\maketitle
\begin{acknowledgments}
Acknowledge people/things here
\end{acknowledgments}
\begin{dedication}
Dedicated to things (optional)
\end{dedication}
\tableofcontents*\clearpage
\listoffigures\clearpage
\listoftables\clearpage
%-----
\mainmatter
\chapter{The First Chapter}
\section{The First Section}
Math goes here.
\begin{figure}[h]
```

```
\centering
Here's a figure
\caption{A Simple Figure}
\end{figure}
\begin{table}[h]
\centering
\begin{tabular}{c|c}
Here & is \\ \hline
a & table
\end{tabular}
\caption{A Simple Table}
\end{table}
\copyrightnotice
%-----
\backmatter
put your bibliography/references here.
\chapter{Vita}
A brief vita goes here.
\end{document}
```

This skeleton may be found in the file `minimal-thesis.tex`, included with the class.

If you have no figures (tables) you should remove the `\listoffigures` (`\listoftables`).

If you are submitting electronically then you must submit in the PDF format. Make sure it opens correctly in the Acrobat reader. All cross references must be hyper-linked and you must have bookmarks pointing to certain major sections of the document. Your document also needs to include proper meta-data (i.e. your name, the title, etc.). This can all be done automatically using the `hyperref` package with some options:

```
\usepackage[pdfauthor={Your Name},
            pdftitle={The Title},
            pdfsubject={The Subject},
            pdfkeywords={Some Keywords},
            pdfproducer={Latex with hyperref},
            pdfcreator={latex->dvips->ps2pdf},
            pdfpagemode=UseOutlines,
            bookmarksopen=true,
            bookmarksnumbered=true]{hyperref}
\usepackage{memhfixc}
```

Note especially the options `bookmarksopen` and `bookmarksnumbered`. The first causes the PDF file to open with the bookmarks displayed in a sidebar (required) and the second places the chapter/section number in the name of the bookmark (required). It is recommended that you use the `url` package and the `\url` command to set URLs and e-mail addresses.



The supported document divisions and their formatings are:

## 1 Chapter

### 1.1 Section

#### Subsection

#### Subsubsection

The *expected* division is chapters divided into sections. If you use any of the deeper divisions you will need to use `\changepartdepth{depth}` to include them in the table of contents. Chapters have depth 0, sections depth 1 and so on. Set `depth` to the number for the deepest division of your thesis. You can use `\maxsecnumdepth{division}` to set the deepest division you want numbered. It defaults to `section`. Do not use the `part` division or any of division smaller than `subsubsection`.

## 1.3 Front Matter

The author must use the `\author`, `\title`, `\abstract` and `\advisor` macros to define the title page elements. Make sure that the title is in all capital letters and contains no “fancy” formatting. Math is fine, but no footnotes and no font changes (including font size changes). The title is set inside of a `\parbox`, so don't do anything it doesn't like. The year will always be set to the current year on the day when `latex` was last run. The advisor macro accepts an optional argument to indicate the department. This defaults to Mathematics but may be changed for other departments. Set `\dgs` to the name of the current Director of Graduate Studies. This may be omitted if you are submitting a printed copy and use the `nosignatures` option.

The graduate schools margin requirement's place an implicit limit on the length of the title. It must fit inside of a box whose width is `\linewidth` (about 6in) and whose height is 1.5in.

The abstract is set inside of the `\abstract` command, rather than the usual abstract environment. The environment is still available, but you shouldn't use it. Your abstract must not exceed 350 words. Other than that, use these just as you would the corresponding commands in the standard document classes. You must provide *exactly* 5 keywords using the `\keyword` macro.

Begin with `\frontmatter` command. This informs latex that you are including material non-content material for the front of the document. This will automatically change the numbering style to lowercase roman numerals beginning with iii. Issue the command `\maketitle` to produce the (numerous) title pages. The acknowledgments, dedication and table of contents are also front-matter.

## 1.4 Main Matter

Issue the command `\mainmatter` just before the first chapter. If you are using double or one-half spacing the necessary commands should be issued here and not at the before the front-matter.

The only supported font-sizes are 10pt and 12pt. The default is 12pt. Nothing should exceed a font size of 12pt.

Your figures and tables should be placed constantly, i.e., always where first referenced, always at the top of the page etc. Make sure you provide a caption for each so that they are caught in the list of figures (tables). If you have a large table that needs to be displayed sideways, the `sidewaystable` environment provided by the `rotating` package produces the correct formatting.

You must place a copyright notice at the end of each chapter. It should be centered and the bottom of the page, just above the number. A command `\copyrightnotice` is provided for this. Put it just before each `\chapter` command. In some situations (when the last page of the chapter is full) it may spill over onto a page by itself. The command `\copyrightprefix` is provided to customize the appearance of the notice. It is printed just before the name and year. Changing this is the easiest way to alter the appearance of the copyright notice.

## 1.5 Back Matter

Like the font and main-matter, begin the back-matter with the command `\backmatter`. This does a number of things including changing the chapter heading style to remove the numbers. Your bibliography and vita are back-matter as well as any appendices you may have. The rules for the main-matter also apply here.

## 1.6 Class Options

This class will accept most of the options the `memoir` class will accept. The major exceptions are the font size commands; only 12pt and 10pt are accepted. The following additional options are defined.

`12pt`, `10pt` Font-size options. The default is 12pt. The `final` option implies 12pt.

`pretty` Typeset the document in a nicer looking format that you can show off to your friends. This changes the titling commands so that they correspond the normal `memoir` commands. It also provides a command `\pretty` that you can use for optional typesetting. This document is typeset with the `pretty` option. For example

```
\pretty{\pagestyle{ruled}}
```

will add a line to the otherwise empty header only when the `pretty` option is on.

`final` Outputs a final version of the document suitable for submission. Implies `oneside` and `12pt`. option. `pretty` and `final` are mutually exclusive. This is the version the graduate school wants for electronic submission.

**oneside** For when you are printing on one side of the page. This is the default. Implied by option **final**.

**twoside** For when you are printing on both sides of the paper.

**nosignatures** By default the needed names are typed on the lines provided for signatures. If you are turning in a printed copy, you may not want this. The **nosignatures** option causes these lines to be left blank. Disabled by the **final** option.

## 1.7 Warnings

Here are some caveats and warnings

- You must have the most recent version of the **memoir** class.
- Errors about “Emulated packages” are because your version of the **memoir** class is too old.
- It is assumed that you are using 8.5 × 11 inch US letter paper. Other paper sizes will not work and are not supported. Some versions of **dvips** default to A4 paper (if your top margin is too small, this is why). Use the option **-t letter** to change this.
- If you change the headers or footers, put the changes inside the **\pretty** command so that they only affect the document when the **pretty** option is on.
- Likewise for the margins.
- Do not use the old, deprecated font commands like **\it** and **\bf** as they will not work with the **memoir** class. This shouldn’t surprise you since they were declared obsolete in 1996. Use **\textbf** and **\textit** instead.
- For double (or one-half) spacing use the built in memoir commands **\DoubleSpacing** or **\OnehalfSpacing**. Do not begin double spacing until you enter the main-matter.
- Problems have been reported using the **setspace** package on Windows Vista. This can be solved by copying the **setspace.sty** file to you local directory and renaming in **mysetspace.sty**. Then **\usepackage{mysetspace}** will load the package correctly.
- If you use a version of the **hyperref** package dated before 2006/11/15 you must put **\usepackage{memhfixc}** after you load **hyperref** otherwise you will get errors about **\chapternumberline** being undefined. This comes from the **memoir** class; it isn’t my fault.

- The `\date` command does not change the displayed year. You may change the year by renewing the `\year` command. By default, the displayed year is the year in which latex was last run on the document.
- If you are submitting a physical rather than an electronic copy, you must call the class with the option `nosignatures`. Use the options `oneside` and `twoside` as appropriate for how you print the document.
- The class produces overfull and underfull `\hbox` errors. Pay them no mind.
- I make no guarantees that this will not cause your computer to punch you in the face or other similar disasters. This code is used entirely at your own risk.