

The mines-thesis class *

Ming Li[†] Jian Lin

January 8, 2020

Abstract

This package provides a class for graduate students at Colorado School of Mines to prepare their theses and dissertations.

Contents

1	User's guide	2
1.1	Installation	2
1.2	Invocation and options	2
1.3	Preprogrammed Formats	2
2	Implementation	4
2.1	Declaration of Options	4
2.2	Execution of Options	4
2.3	Package Loading	4
2.4	Main Code	4
2.4.1	Commands to define parameters for the front matter	4
2.4.2	Front Matter	5

*This document corresponds to mines-thesis v1.0, dated 2020/01/10.

[†]mili@mymail.mines.edu

1 User's guide

1.1 Installation

1.2 Invocation and options

`\documentclass` The mines-thesis class is invoked in the standard fashion.

```
\documentclass[\langle options \rangle]{mines-thesis}
```

There are several options corresponding to the type of the document and its general appearance. They are described below. Generally speaking, the options have `key=value` forms, for example,

```
\documentclass[screen=true, review=false]{mines-thesis}
```

The default options are `letterpaper,10pt. TODO review? oneseide? onecol-umn,draft,openany`

1.3 Preprogrammed Formats

```
\title
\author
\year
\degree
\advisor
\coadvisor
\department
\departmenthead
abstract
```

The environment `abstract` must *precede* the `\makefrontmatter` command. Again, this is different from the standard L^AT_EX. Putting `abstract` after `\makefrontmatter` will trigger an error.

```
\begin{abstract}
Here goes the abstract...
\end{abstract}
```

`\makefrontmatter` The front matter of a thesis includes:

1. Title page (Required)
2. Copyright page
3. Submittal page (Required)
4. Abstract (Required)
5. Table of Contents (Required)
6. Lists (Required if included in thesis)
 - (a) List of Figures

- (b) List of Tables
- (c) List of Equations (optional)
- (d) List of Plates
- (e) List of Symbols

7. Acknowledgments

8. Dedication

Invoking

`\makefrontmatter`

will generate all components listed above. It can be commented out until you need the front matter generated.

`\chapter`
`\section`
`\subsection`
`\subsubsection`
`\paragraph`

2 Implementation

The `review` boolean is defined here for use with the class options.

```
1 \RequirePackage{ifthen}
2 \RequirePackage{shapepar}
3 \newboolean{review}
4 \newboolean{auto} % for auto pyramid
```

2.1 Declaration of Options

```
5 \DeclareOption{draft}{\setboolean{review}{true}}
6 \DeclareOption{final}{\setboolean{review}{false}}
7 \PassOptionsToClass{letterpaper,12pt,oneside,onecolumn,final,openany}{report}}
8 \DeclareOption*{
9 \PassOptionsToClass{\CurrentOption}{memoir}
10 }
11 \ExecuteOptions{draft,letterpaper,12pt}
```

2.2 Execution of Options

```
12 \ProcessOptions\relax
```

2.3 Package Loading

```
13 \LoadClassWithOptions{memoir}
```

2.4 Main Code

2.4.1 Commands to define parameters for the front matter

```
14 \def\year#1{\gdef\@year{#1}}
15 \def\degree#1#2{\gdef\@degreeelv{#1}\@degreename{#2}}
16 \def\advisor#1{\gdef\@advisor{#1}}
17 \def\coadvisor#1{\gdef\@coadvisor{#1}}
18 \def\department#1{\gdef\@department{#1}}
19 \def\departmenthead#1{\gdef\@departmenthead{#1}}
```

The following are the initial values for some macros that provide info.

```
20 \gdef\@author{Your Name}
21 \gdef\@title{Title of the Thesis}
22 \gdef\@year{2020}
23 \gdef\@degreeelv{Doctor of Philosophy}
24 \gdef\@degreename{Geophysical Engineering}
25 \gdef\@advisor{Dr. Main Advisor}
26 \gdef\@coadvisor{Dr. Co Advisor}
27 \gdef\@department{Department of Some Name}
28 \gdef\@departmenthead{Dr. Department Head}
```

Set margins

```
29 % ^^A automatically set by the class option letterpaper
30 % ^^A \setstocksize{11in}{8.5in}
31 % ^^A set paper size equal to stock size
32 % ^^A \settrimmedsize{\stockheight}{\stockwidth}{*}
```

```

33 % ^^A set equal trim at the top and bottom
34 % ^^A \setlength{\trimtop}{\stockheight} % \trimtop = \stockheight
35 % ^^A \addtolength{\trimtop}{-\paperheight} % - \paperheight
36 % ^^A \setlength{\trimedge}{\stockwidth} % \trimedge = \stockwidth
37 % ^^A \addtolength{\trimedge}{-\paperwidth} % - \paperwidth
38 % ^^A \settrims{0.5\trimtop}{\trimedge}
39 \setpageecc{11in}{8.5in}{*}
40 % ^^A \settypeblocksize{\paperheight}{\paperwidth}{*}
41 \setlrmarginsandblock{1in}{*}{*}
42 \setulmarginsandblock{1in}{*}{*}
43 \setheadfoot{\onelineskip}{2\onelineskip}
44 \setheaderspaces{*}{2\onelineskip}{*}
45 \DoubleSpacing
46 \checkandfixthelayout
47

```

2.4.2 Front Matter

\makefrontmatter

```

48 \newcommand\makefrontmatter{
49   \pagenumbering{roman}
50   \pagestyle{empty}
51   \maketitlepage
52   \pagestyle{empty}
53   \makecopyrightpage
54   \pagestyle{plain}
55   \newpage
56   \pagenumbering{arabic}
57   \setcounter{page}{1}
58 }

```

\maketitlepage

The thesis title must be in all upper case letters, be centered on the page both horizontally and vertically, be in an inverted pyramid shape and the font size needs to be the same size as all other font in the main text (i.e. do not make the font size larger).

```

59 \newcommand\invertedpyramid{%
60 {0}          %line center at x=7
61 {0}  b{0}\ \  % text starts at (0,0)
62 {0}  t{-10}{20}\ \ % Line at y=0 starts at x=0 with length 14
63 {3}  t{-5}{10}\ \ % Line at y=10 starts at x=0 with length 14
64 {3}  e{5}      % text ends at (7,15)
65 }
66 \newcommand\autopyramid{\setboolean{auto}{true}}
67 \newcommand\maketitlepage{
68   \clearpage
69   \vspace*{\fill}
70   \begin{center}
71   \begin{minipage}{.8\textwidth}
72   \centering
73   \ifthenelse{\boolean{auto}}{\shapepar{\invertedpyramid}}{}

```

```

74      \MakeUppercase{\@title}
75 \end{minipage}
76 \end{center}
77 \vspace{\fill}
78 \begin{center}
79 by\\
80   \@author
81 \end{center}
82 \clearpage
83 }

```

`\makecopyrightpage` The thesis title must be in all upper case letters, be centered on the page both horizontally and vertically, be in an inverted pyramid shape and the font size needs to be the same size as all other font in the main text (i.e. do not make the font size larger).

```

84 \newcommand\makecopyrightpage{
85   \clearpage
86   \vspace*{\fill}
87   \begin{center}
88   \begin{minipage}{.8\textwidth}
89   \centering
90     Copyright~by~\@author~\@year\\
91     All~Rights~Reserved
92   \end{minipage}
93   \end{center}
94   \vspace{\fill}
95   \clearpage
96 }

```