

The mines-thesis class *

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Abstract

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

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

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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

```
1 \RequirePackage{ifthen}
```

The `\collect@body` macro in `amsmath` is defined using `\def`. We load `environ` to access the `\long` version of this command

```
2 \RequirePackage{environ}
```

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

```
3 \newboolean{review}
```

2.1 Declaration of Options

```
4 \DeclareOption{draft}{\setboolean{review}{true}}
```

```
5 \DeclareOption{final}{\setboolean{review}{false}}
```

```
6 \PassOptionsToClass{letterpaper,12pt,oneside,onecolumn,final,openany}{report}}
```

```
7 \DeclareOption*{
```

```
8 \PassOptionsToClass{\CurrentOption}{memoir}
```

```
9 }
```

```
10 \ExecuteOptions{draft,letterpaper,12pt}
```

2.2 Execution of Options

```
11 \ProcessOptions\relax
```

2.3 Package Loading

```
12 \LoadClassWithOptions{memoir}
```

2.4 Main Code

2.4.1 Commands to define parameters for the front matter

```
13 \newboolean{auto} % for auto pyramid
```

```
14 \setboolean{auto}{false}
```

```
15 \def\year#1{\gdef\@year{#1}}
```

```
16 \newcommand{\degree}[2]{\gdef\@degreeelv{#1}\gdef\@degreename{#2}}
```

```
17 \def\advisor#1{\gdef\@advisor{#1}}
```

```
18 \def\coadvisor#1{\gdef\@coadvisor{#1}}
```

```
19 \def\department#1{\gdef\@department{#1}}
```

```
20 \def\departmenthead#1{\gdef\@departmenthead{#1}}
```

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

```
21 \gdef\@author{Your Name}
```

```
22 \gdef\@title{This is the first line of a medium length title,
```

```
23 this is the second line}
```

```
24 \gdef\@year{2020}
```

```
25 \gdef\@degreeelv{Doctor of Philosophy}
```

```
26 \gdef\@degreename{Computer Science}
```

```
27 \gdef\@advisor{Dr. Main Advisor}
```

```
28 % ^^A \gdef\@coadvisor{Dr. Co Advisor}
```

```
29 \gdef\@department{Department of Some Name}
```

```
30 \gdef\@departmenthead{Dr. Department Head}
```

Set margins

```

31 % ^^A automatically set by the class option letterpaper
32 % ^^A \setstocksize{11in}{8.5in}
33 % ^^A set paper size equal to stock size
34 % ^^A \settrimmedsize{\stockheight}{\stockwidth}{*}
35 % ^^A set equal trim at the top and bottom
36 % ^^A \setlength{\trimtop}{\stockheight} % \trimtop = \stockheight
37 % ^^A \addtolength{\trimtop}{-\paperheight} % - \paperheight
38 % ^^A \setlength{\trimedge}{\stockwidth} % \trimedge = \stockwidth
39 % ^^A \addtolength{\trimedge}{-\paperwidth} % - \paperwidth
40 % ^^A \settrims{0.5\trimtop}{\trimedge}
41 \setpagecc{11in}{8.5in}{*}
42 % ^^A \settypeblocksize{\paperheight}{\paperwidth}{*}
43 \setlrmarginsandblock{1in}{*}{*}
44 \setulmarginsandblock{1in}{*}{*}
45 \setheadfoot{\onelineskip}{2\onelineskip}
46 \setheaderspaces{*}{2\onelineskip}{*}
47 \DoubleSpacing
48 \checkandfixthelayout
49

```

2.4.2 Front Matter

`\makefrontmatter`

```

50 \newcommand{\makefrontmatter}{
51   \pagenumbering{roman}
52   \pagestyle{empty}
53   \maketitlepage
54   \makecopyrightpage
55   \pagestyle{plain}
56   \setcounter{page}{2}
57   \makesubmittalpage
58   \makeabstractpage
59   \clearpage
60   \pagenumbering{arabic}
61   \setcounter{page}{1}
62 }

```

`\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).

```

63 \DeclareRobustCommand{\invpyr}[1]{
64   \vbox{
65     \hsize=\textwidth
66     \parindent=0pt
67     \emergencystretch=1in
68     \parshape 6
69     0.01\textwidth .98\textwidth
70     0.1\textwidth .8\textwidth
71     0.15\textwidth .7\textwidth

```

```

72 0.2\textwidth .6\textwidth
73 0.25\textwidth .5\textwidth
74 0.3\textwidth .4\textwidth
75 \leftskip=0pt plus 1fil
76 \rightskip=0pt plus -1fil
77 \parfillskip=0pt plus 2fil
78 #1\par
79 }
80 }
81 \newcommand{\autotitle}{\setboolean{auto}{true}}
82 \newcommand{\maketitlepage}{
83 \clearpage
84 \begin{vplace}
85 \centering
86 \ifthenelse{\boolean{auto}}
87 {\invpyr{\MakeUppercase{\@title}}}
88 {\@title}
89 \end{vplace}
90 \begin{center}
91 by\
92 \@author
93 \end{center}
94 \clearpage
95 }

```

`\makecopyrightpage` Copyright Page. This is an optional page that follows the title page. No displayed page number, centered upper and lower case text.

```

96 \newcommand{\makecopyrightpage}{
97 \clearpage
98 \begin{vplace}[0.8]
99 \centering
100 Copyright~by~\@author~\@year\
101 All~Rights~Reserved
102 \end{vplace}
103 \clearpage
104 }

```

`\makesubmittalpage` Submittal Page. This is a required page that displays the Roman numeral ii page number. Beginning with this page, front matter Roman numeral page numbers are centered 1/2 inch from the bottom edge of page. All signatures are required before the final thesis format review.

```

105 \newcommand{\makesubmittalpage}{
106 \clearpage
107 A thesis submitted to the Faculty and the Board of
108 Trustees of the Colorado School of Mines in partial
109 fulfillment of the requirements for the degree of
110 {\@degreeelv} ({\@degreename}).
111
112 \vspace{2em}

```

```

113 \begin{flushleft}
114 Golden, Colorado\\[.5em]
115 Date \underline{\hspace{2in}}
116 \end{flushleft}
117
118 \vspace{.5em}
119 \begin{flushright}
120 Signed: \underline{\hspace{2in}}\\
121 {\@author}\\[2em]
122
123 Signed: \underline{\hspace{2in}}\\
124 \begin{SingleSpace}
125 {\@advisor}\\
126 Thesis Advisor\\[2em]
127 \end{SingleSpace}
128
129
130 \@ifundefined{@coadvisor}
131 {
132 \vspace{2.5em}
133 }
134 {
135 Signed: \underline{\hspace{2in}}\\
136 \begin{SingleSpace}
137 {\@coadvisor}\\
138 Thesis Advisor
139 \end{SingleSpace}
140 }
141
142 \end{flushright}
143
144 \begin{flushleft}
145 Golden, Colorado\\[.5em]
146 Date \underline{\hspace{2in}}
147 \end{flushleft}
148
149 \vspace{.5em}
150 \begin{flushright}
151 Signed: \underline{\hspace{2in}}\\
152
153 \begin{SingleSpace}
154 {\@departmenthead}\\
155 Professor and Head\\
156 {\@department}
157 \end{SingleSpace}
158
159 \end{flushright}
160
161 \clearpage
162 }

```

```

\makeabstractpage ABSTRACT (title) is centered horizontally, 1 keyboard return below 1 inch top
                  margin and in ALL UPPER CASE LETTERS. Each paragraph should be in-
                  dented.

abstract We redefine the abstract enviroment. First, we need to save the text
163 \renewenvironment{abstract}{\Collect@Body\@saveabstract}{\}

\@saveabstract And saving the abstract
164 \newcommand{\@saveabstract}[1]{
165 \long\gdef\@abstract{#1}
166 }

167
168
169 \newcommand{\makeabstractpage}{
170 \clearpage
171 {\centering
172 ABSTRACT\
173 }
174 \@abstract
175 \clearpage
176 }

```