

The kauthesis package*

Stefan Berthold
stefan.berthold@kau.se

December 20, 2012

1 Introduction

The `kauthesis` package provides L^AT_EX classes for master's theses (`kaumasters` class), collection theses (`kaucollection` class), and monographs (`kaureport` class). The latest version can be obtained from

<http://github.com/ZjMNZHgG5jMXw/kauthesis> .

The user's manual is found in `kauguide.pdf`. This file provides the source code documentation to all three classes.

2 Usage

2.1 Master's thesis

This template can be found in `kaumasterstemplate.tex`.

The `kaumasters` class is quite similar to L^AT_EX's `article` class. After loading the class, title, author, and institute have to be declared.

```
1 \*masterstemplate
2 \documentclass{kaumasters}
3 \title{The great thesis}
4 \author{Donald Duck}
5 \institute{Department of Mathematics and Computer Science}
6 \place{Duckburg}
```

The thesis starts with the front matter `\frontmatter`. It will (re)print the title. The macro `\maketitle` does not exist, since the title will be created by Karlstad University Studies.

```
7 \begin{document}
8 \frontmatter
```

The two madatory inhabitants of the front matter are the abstract (`\abstract` environment) and the `\tableofcontents`. If you like to write acknowledgements, put it between the abstract and the table of contents.

```
9 \begin{abstract}
10 This thesis describes the mathematical and computer science
11 background of Duckburg.
```

*This document corresponds to `kauthesis` v1.3, dated 2012/12/15.

```

12 \end{abstract}
13 \begin{acknowledgements}
14   Thanks.
15 \end{acknowledgements}
16 \tableofcontents

```

The main matter starts with `\mainmatter` for adjusting the page numbering and the content in the main matter is your work. Any macro or environment known from L^AT_EX's article class can be used here.

```

17 \mainmatter
18 \section{Duck Tales}
19 quack.
20 \end{document}
21 \</masterstemplate>

```

2.2 Collection thesis

This template can be found in `kaucollectiontemplate.tex`.

```

22 \<{*collectiontemplate}>
23 \documentclass{kaucollection}
24 \usepackage{scrpage2}
25 \pagestyle{scrheadings}
26 \renewcommand*{\headfont}{\normalfont\small}
27 \rehead{\thepaper}
28 \lohead{\thepapertitle}
29 \title{Title}
30 \author{Author}
31 \institute{Department}
32 \place{Place}
33 \begin{document}
34 \frontmatter
35 \begin{abstract}
36   Brief abstract.
37   \keywords keywords
38 \end{abstract}
39 \begin{acknowledgements}
40   Thanks.
41 \end{acknowledgements}
42 \tableofcontents
43 \listofpapers
44 \mainmatter
45 \section{Introduction}
46 \section{Summary of Appended Papers}
47 \listofsummaries
48 \section{Conclusions and Future Work}
49 \begin{kaupaper}[ author=Author
50                   , title=Paper Title
51                   , reference=reference text.
52                   , email=author@kau.se
53                   , summary=Abstract in the intro.
54                   , participation=I am the main author.
55                   , label=paper:shorttitle
56                   ]
57   \maketitle

```

```

58 \begin{abstract}
59   Paper abstract.
60 \end{abstract}
61   Paper content.
62 \end{kaupaper}
63 \end{document}
64 \end{collectiontemplate}

```

3 Implementation

3.1 Class options and dependencies

Class options are neither parsed nor passed to the underlying article class. All macros are derived from the standard article class.

```

65 (*collection | report | masters)
66 \ProcessOptions\relax
67 \LoadClass{article}

```

kauclear provides page style switches in `\cleardoublepage`, kaumeta defines the macros relevant for creating title information, e.g., `\institute`.

```

68 \RequirePackage{kauclear}
69 \RequirePackage{kaumeta}

```

kaustudies sets the page dimension to the format required by Karlstad University Studies, kauenvironments defines environments such as `researchquestions` and `contributions`, tikz allows to place content material with absolute coordinates (required by `\vanityquote`).

```

70 (*collection | report)
71 \RequirePackage{kaustudies}
72 \RequirePackage{kauenvironments}
73 \RequirePackage{tikz}
74 \end{collection | report}

```

kaupaper defines the macros for appending papers to the collection thesis.

```

75 (*collection)
76 \RequirePackage{kaupaper}
77 \end{collection}

```

kauparts defines `\kaupart`, a replacement for `\part`.

```

78 (*report)
79 \RequirePackage{kauparts}
80 \end{report}

```

Garamond becomes the default font on A4 page layout.

```

81 (*masters)
82 \RequirePackage[urw-garamond]{mathdesign}
83 \RequirePackage[paper=a4,pagesize,twoside=semi]{typearea}
84 \end{masters}

```

3.2 Language support

`\acknowledgementname` By default, the `acknowledgements` environment will create an unnumbered section with the title “Acknowledgements” (or “Tacksägelse”, if Swedish is chosen as

default language). The section headline can be changed to any other language by redefining the macro `\acknowledgementname`.

```
85 \AtBeginDocument{%
86   \ifpackageloaded{babel}%
87     {\newcommand*\acknowledgementname{%
88       \iflanguage{swedish}{Tacks\ "agelser}{Acknowledgements}}%
89     }%
90     {\newcommand*\acknowledgementname{Acknowledgements}}%
91 }
```

`\keywordname` The abstract of collection theses and reports is followed by the list of keywords. By default, the list is introduced by the word “Keywords” (and “Nyckelord” if the default language is set to Swedish). The list introduction can be changed to any other language by redefining the macro `\keywordname`.

```
92 (*collection | report)
93 \AtBeginDocument{%
94   \ifpackageloaded{babel}%
95     {\newcommand*\keywordname{%
96       \iflanguage{swedish}{Nyckelord}{Keywords}}%
97     }%
98     {\newcommand*\keywordname{Keywords}}%
99 }
100 </collection | report>
```

`\introname` In collection thesis, the main matter starts automatically with an Introductory Summary. The name of the Introductory Summary (“Inledande sammanfattning” in Swedish) can be changed to any other language by redefining the macro `\introname`.

```
101 (*collection)
102 \AtBeginDocument{%
103   \ifpackageloaded{babel}%
104     {\newcommand*\introname{%
105       \iflanguage{swedish}%
106         {Inledande sammanfattning}%
107         {Introductory Summary}}%
108     }%
109     {\newcommand*\introname{Introductory Summary}}%
110 }
111 </collection>
```

3.3 Title page

Karlstad University Studies will create the title page for the thesis, thus, creating an own title page is not necessary.

`\kauths@maketitle` The definition of `\maketitle` in the `article` class creates a title without creating a separate page. The original definition is preserved in `\kauths@maketitle`.

```
112 \let\kauths@maketitle\maketitle
```

`\maketitle` `\maketitle` does not serve any purpose. When invoked, it produces a warning, referring the user to the `abstract` environment.

```
113 \renewcommand\maketitle{%
```

```

114 \PackageWarning{maketitle does not serve any purpose in this class.
115     The abstract environment reproduces the title instead.}%
116 }

```

3.4 Front matter

The front matter starts after the title on page iii. It contains the abstract of the thesis, followed by an optional acknowledgements section and the table of contents. In collection theses and reports, the keywords are defined in the front matter.

\kauths@abstract The **abstract** environment of the article class provides a perfect layout for article abstracts in collection theses. It will be used for the abstracts of appended papers and preserved in the macro **\kauths@abstract**.

```

117 \let\kauths@abstract\abstract%
118 \let\kauths@endabstract\endabstract%

```

\frontmatter The front matter is started with **\frontmatter**. It is assumed that this macro directly runs after the optional **\maketitle**.

```

119 \newcommand*\frontmatter{%
120     \clearpage%

```

The front matter starts on page iii, i. e., two pages are reserved for the title.

```

121     \setcounter{page}{3}%
122     \renewcommand\thepage{\roman{page}}%

```

abstract The **abstract** environment in the front matter creates a title and an unnumbered abstract section.

```

123     \renewenvironment{abstract}{%

```

\keywords The abstract's last line in collection theses and reports is supposed to be a list of keywords preceded by **\keywords**.

```

124 (*collection | report)
125     \newcommand\keywords{\paragraph{\keywordname:}}%
126 </collection | report>

```

The abstract starts by repeating the title, author, and the institute.

```

127     \cleardoublepage%
128     \section*{\@title}%
129     \textsc{\@author}\par%
130     \noindent\textit{\@institute}%
131     \section*{\abstractname}%
132 }{%

```

The thesis continues after the abstract on an odd page.

```

133     \cleardoublepage%
134 }%
135 }

```

acknowledgements The environment **acknowledgements** creates an unnumbered section.

```

136 \newenvironment{acknowledgements}{%
137     \cleardoublepage%
138     \section*{\acknowledgementname}%
139 }{%

```

The author's name is reused to create an attribution line at the end of the acknowledgements section.

```
140 \par\bigskip\bigskip\bigskip\noindent\@place, \@date\hfill \@author%
141 \cleardoublepage%
142 }
```

`\kauths@tableofcontents` The `\tableofcontents` definition from the article class is preserved. It is not reused in this class.

```
143 \let\kauths@tableofcontents\tableofcontents
```

`\tableofcontents` The redefined macro makes the table of contents start on an odd page.

```
144 \renewcommand\tableofcontents{%
145 \cleardoublepage%
146 \kauths@tableofcontents%
147 }
```

3.5 Main matter

The main matter is started with `\mainmatter`. The macro resets the page counter to page 1 and, for collection theses, it immediately creates the part Introductory Summary.

`\mainmatter` The optional argument of `\mainmatter[body material]` can be used to get access to the part's title page, e.g., for adding a quote with `\vanityquote`.

```
148 \newcommand\mainmatter[1][]{%
149 \cleardoublepage%
```

The original definition of the `abstract` environment is restored.

```
150 \renewenvironment{abstract}{\kauths@abstract}{\kauths@endabstract}
```

The page counter is set to page 1.

```
151 \setcounter{page}{1}%
152 \pagenumbering{arabic}%
```

The Introductory Summary title page is created with `\introname` and *body material*.

```
153 <collection>
154 \kaupart*[body={#1}]{\introname}%
155 </collection>
156 }
```

`\vanityquote` The macro `\vanityquote{quote}{reference}` can be used in collection theses and reports to add quotes to the cover pages of parts, e.g., in *body material* of `\mainmatter`. The first argument, *quote*, is the quote and the second, *reference*, is the reference to the person which is quoted.

```
157 <collection | report>
158 \newcommand\vanityquote[2]{%
```

The quote is placed relative to the borders of the page. TikZ is doing the actual placing.

```
159 \begin{tikzpicture}[remember picture,overlay]%
```

The placing reference is the lower right corner of the page.

```
160 \path (current page.south east) +(-3,3.5)%
161 node%
162 [ anchor=south east%
163 , font=\large%
164 , text width=25em%
```

The closing quotation marks are placed outside the quote's right margin.

```
165 ] {\raggedleft''#1\rlap{'}}%
166 \normalfont\par\medskip\itshape #2\par};%
167 \end{tikzpicture}%
168 }
169 \collection | report)
```

`\part` In the `kaureport` class, the `\part{<headline>}` is replaced by `\kaupart`.

```
170 \*report)
171 \let\part\kaupart
172 \report)
173 \collection | report | masters)
```

Change History

v1.0	General: SBe's licentiate version . . . 1	v1.3	General: Merged the classes' dtx files 1
v1.1	General: Initial public release 1	v1.4	General: Fixed babel.sty support . . 1
v1.2	General: Support for babel.sty, Documentation added 1	v1.5	General: Added templates for kau- collection and kaureport 1

Index

Numbers written in *italic* refer to the page where the corresponding entry is described; numbers underlined refer to the code line of the definition; numbers in *roman* refer to the code lines where the entry is used.

Symbols	\abstractname 131	C
<code>\"</code> 88	<code>\acknowledgementname</code> <u>85</u> , 138	<code>\cleardoublepage</code> 127, 133,
<code>\@author</code> 129, 140	<code>acknowledgements</code> (en- vironment) <u>136</u>	137, 141, 145, 149
<code>\@date</code> 140	<code>\AtBeginDocument</code> 85, 93, 102	<code>\clearpage</code> 120
<code>\@ifpackageloaded</code> 86, 94, 103	<code>\author</code> 4, 30	D
<code>\@institute</code> 130		<code>\documentclass</code> . . . 2, 23
<code>\@place</code> 140		
<code>\@title</code> 128		
A	B	E
<code>\abstract</code> 117	<code>\begin</code> . . 7, 9, 13, 33,	<code>\end</code> . . 12, 15, 20, 38,
<code>abstract</code> (environ- ment) <u>123</u>	35, 39, 49, 58, 159	41, 60, 62, 63, 167
	<code>\bigskip</code> 140	<code>\endabstract</code> 118

environments:	<code>\let</code> 112,	<code>\renewcommand</code>
<code>abstract</code> <u>123</u>	117, 118, 143, 171	. 26, 113, 122, 144
<code>acknowledgements</code> <u>136</u>	<code>\listofpapers</code> 43	<code>\renewenvironment</code> .
	<code>\listofsummaries</code> . . . 47 123, 150
F	<code>\LoadClass</code> 67	<code>\RequirePackage</code> . . .
<code>\frontmatter</code> . 8, 34, <u>119</u>	<code>\lohead</code> 28	. . . 68, 69, 71–
		73, 76, 79, 82, 83
H	M	<code>\rlap</code> 165
<code>\headfont</code> 26	<code>\mainmatter</code> . 17, 44, <u>148</u>	<code>\roman</code> 122
<code>\hfill</code> 140	<code>\maketitle</code> 57, 112, <u>113</u>	
	<code>\medskip</code> 166	S
I	N	<code>\section</code> 18, 45,
<code>\iflanguage</code> . 88, 96, 105	<code>\noindent</code> 130, 140	46, 48, 128, 131, 138
<code>\institute</code> 5, 31	<code>\normalfont</code> 26, 166	<code>\setcounter</code> . . . 121, 151
<code>\introname</code> . . . <u>101</u> , 154		<code>\small</code> 26
<code>\itshape</code> 166	P	T
K	<code>\PackageWarning</code> . . . 114	<code>\tableofcontents</code> . .
<code>\kaupart</code> 154, 171	<code>\pagenumbering</code> 152	. . 16, 42, 143, <u>144</u>
<code>\kauths@abstract</code> . .	<code>\pagestyle</code> 25	<code>\textit</code> 130
. <u>117</u> , 150	<code>\par</code> 129, 140, 166	<code>\textsc</code> 129
<code>\kauths@endabstract</code>	<code>\paragraph</code> 125	<code>\thepage</code> 122
. 118, 150	<code>\part</code> <u>170</u>	<code>\thepaper</code> 27
<code>\kauths@maketitle</code> . <u>112</u>	<code>\path</code> 160	<code>\thepapertitle</code> 28
<code>\kauths@tableofcontents</code>	<code>\place</code> 6, 32	<code>\title</code> 3, 29
. <u>143</u> , 146	<code>\ProcessOptions</code> . . . 66	
<code>\keywordname</code> . . . <u>92</u> , 125	R	U
<code>\keywords</code> 37, <u>124</u>	<code>\raggedleft</code> 165	<code>\usepackage</code> 24
L	<code>\rehead</code> 27	V
<code>\large</code> 163	<code>\relax</code> 66	<code>\vanityquote</code> <u>157</u>