

The kauthesis package*

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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. Different authors in author lists can be separated by commas (","), and different supervisors by semicolons (;). The formatting will be done by L^AT_EX.

```
1 \documentclass{kaumasters}
2 \title{Title}
3 \author{Author}
4 \supervisor{Super}
5 \examiner{Exam}
6 \institute{Department of Mathematics and Computer Science}
7 \place{Place}
```

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.

```
9 \begin{document}
10 \frontmatter
```

The two mandatory 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.

*This document corresponds to `kauthesis` v1.8, dated 2012/04/18.

```

11 \begin{abstract}
12   Abstract.
13 \end{abstract}
14 \approvalpage%
15 \begin{acknowledgements}
16   Thanks.
17 \end{acknowledgements}
18 \tableofcontents

```

The main matter starts with `\mainmatter` for adjusting the page numbering. 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.

```

19 \mainmatter
20 \section{Introduction}
21 \end{document}
22 \</masterstemplate>

```

2.2 Report

This template can be found in `kaureporttemplate.tex`. Like the master's thesis class, the report class is derived from the L^AT_EX article class.

```

23 \<reporttemplate>
24 \documentclass{kaureport}

```

After loading the class, title, author, and institute have to be declared.

```

25 \title{Title}
26 \author{Author}
27 \institute{Department of Mathematics and Computer Science}
28 \place{Place}
29 \begin{document}

```

The two mandatory 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.

```

30 \frontmatter
31 \begin{abstract}
32   Brief abstract.
33   \keywords keywords
34 \end{abstract}
35 \begin{acknowledgements}
36   Thanks.
37 \end{acknowledgements}
38 \tableofcontents

```

The main matter starts with `\mainmatter` for adjusting the page numbering. 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.

```

39 \mainmatter
40 \part{Introduction}
41 \section{Related work}
42 \part{Conclusions and Future Work}
43 \end{document}
44 \</reporttemplate>

```

2.3 Collection thesis

This template can be found in `kaucollectiontemplate.tex`. Like the master's thesis class, the report class is derived from the L^AT_EX article class.

```
45 (*collectiontemplate)
46 \documentclass{kaucollection}
```

Page headings and can be created using the `scrheadings` packages.

```
47 \usepackage{scrpage2}
48 \pagestyle{scrheadings}
49 \renewcommand*{\headfont}{\normalfont\small}
50 \rehead{\thepaper}
51 \lohead{\thepapertitle}
```

After loading the class, title, author, and institute have to be declared.

```
52 \title{Title}
53 \author{Author}
54 \institute{Department of Mathematics and Computer Science}
55 \place{Place}
56 \begin{document}
```

The two mandatory 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.

```
57 \frontmatter
58 \begin{abstract}
59   Brief abstract.
60   \keywords keywords
61 \end{abstract}
62 \begin{acknowledgements}
63   Thanks.
64 \end{acknowledgements}
65 \tableofcontents
```

The table of contents is followed by the list of papers.

```
66 \listofpapers
```

The main matter starts with `\mainmatter` for adjusting the page numbering.

```
67 \mainmatter
68 \section{Introduction}
```

Create a list of summaries of all appended papers with `\listofsummaries`.

```
69 \section{Summary of Appended Papers}
70 \listofsummaries
71 \section{Conclusions and Future Work}
```

Append papers, each in an own `kaupaper` environment.

```
72 \begin{kaupaper}[ author=Author
73                   , title=Paper Title
74                   , reference=reference text.
75                   , email=author@kau.se
76                   , summary=Abstract in the intro.
77                   , participation=I am the main author.
78                   , label=paper:shorttitle
79                   ]
```

Appended papers may have their own titles and abstracts.

```
80 \maketitle
81 \begin{abstract}
82   Paper abstract.
83 \end{abstract}
84   Paper content.
85 \end{kaupaper}
86 \end{document}
87 \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.

```
88 (*collection | report | masters)
89 \ProcessOptions\relax
90 \LoadClass{article}
```

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

```
91 \RequirePackage{kauclear}
92 \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`).

```
93 (*collection | report)
94 \RequirePackage{kaustudies}
95 \RequirePackage{kauenvironments}
96 \RequirePackage{tikz}
97 \collection | report)
```

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

```
98 (*collection)
99 \RequirePackage{kaupaper}
100 \collection)
```

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

```
101 (*report)
102 \RequirePackage{kauparts}
103 \report)
```

Garamond becomes the default font on A4 page layout.

```
104 (*masters)
105 \RequirePackage[urw-garamond]{mathdesign}
106 \RequirePackage[paper=a4,pagesize,twoside=semi]{typearea}
107 \RequirePackage{kaulist}
108 \masters)
```

3.2 Language support

`\acknowledgementname` By default, the `acknowledgements` environment will create an unnumbered section with the title “Acknowledgements” (or “Tacksägelser”, if Swedish is chosen as default language). The section headline can be changed to any other language by redefining the macro `\acknowledgementname`.

```
109 \AtBeginDocument{%
110   \@ifpackageloaded{babel}%
111     {\newcommand*\acknowledgementname{%
112       \iflanguage{swedish}{Tacks\ "agelser}{Acknowledgements}}}%
113   }%
114   {\newcommand*\acknowledgementname{Acknowledgements}}}%
115 }
```

`\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`.

```
116 (*collection | report)
117 \AtBeginDocument{%
118   \@ifpackageloaded{babel}%
119     {\newcommand*\keywordname{%
120       \iflanguage{swedish}{Nyckelord}{Keywords}}}%
121   }%
122   {\newcommand*\keywordname{Keywords}}}%
123 }
124 </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`.

```
125 (*collection)
126 \AtBeginDocument{%
127   \@ifpackageloaded{babel}%
128     {\newcommand*\introname{%
129       \iflanguage{swedish}%
130         {Inledande sammanfattning}%
131         {Introductory Summary}}}%
132   }%
133   {\newcommand*\introname{Introductory Summary}}}%
134 }
135 </collection>
```

A master’s thesis needs to be approved by the supervisor and the examiner.

```
136 (*masters)
```

`\approvalname` This macro contains the word “approved”.

```
137 \AtBeginDocument{%
138   \@ifpackageloaded{babel}%
139     {\newcommand*\approvalname{%
140       \iflanguage{swedish}%
141         {Inledande sammanfattning}%
142         {Introductory Summary}}}%
143   }%
144   {\newcommand*\approvalname{Introductory Summary}}}%
145 }
```

```

141      {Godk\and}%
142      {Approved}}}%
143  }%
144  {\newcommand*\approvalname{Approved}}}%
145 }

```

\examinationname This macro contains the name of the examination.

```

146 \AtBeginDocument{%
147   \ifpackageloaded{babel}%
148     {\newcommand*\examinationname{%
149       \iflanguage{swedish}%
150         {magisterexamen}%
151         {Master's degree}}}%
152   }%
153   {\newcommand*\examinationname{Master's degree}}}%
154 }

```

\approvaltext The approval text.

```

155 \AtBeginDocument{%
156   \ifpackageloaded{babel}%
157     {\newcommand*\approvaltext{%
158       \iflanguage{swedish}%
159         {Denna uppsats \ar skriven som en del av det arbete som kr\av %
160          f\or att erh\aa lla en \examinationname{} i datavetenskap. Allt %
161          material i denna rapport, vilket inte \ar mitt eget, har blivit %
162          tydligt identifierat och inget material \ar inkluderat som %
163          tidigare anv\ants f\or erh\aa llande av annan examen.}%
164         {This thesis is submitted in partial fulfillment of the %
165          requirements for the \examinationname{} in Computer Science. %
166          All material in this thesis which is not my own work has been %
167          identified and no material is included for which a degree has %
168          previously been conferred.}}%
169       }%
170     {\newcommand*\approvaltext{This thesis is submitted in partial %
171      fulfillment of the requirements for the \examinationname{} in %
172      Computer Science. All material in this thesis which is not my own %
173      work has been identified and no material is included for which a %
174      degree has previously been conferred.}}%
175 }

```

\supervisorname This macro contains the word “supervisor”.

```

176 \AtBeginDocument{%
177   \ifpackageloaded{babel}%
178     {\newcommand*\supervisorname{%
179       \iflanguage{swedish}%
180         {Handledare}%
181         {Supervisor}}}%
182   }%
183   {\newcommand*\supervisorname{Supervisor}}}%
184 }

```

\examinername This macro contains the word “examiner”.

```

185 \AtBeginDocument{%
186   \ifpackageloaded{babel}%

```

```

187     {\newcommand*\examinername{%
188         \iflanguage{swedish}%
189             {Examinator}%
190             {Examiner}}%
191     }%
192     {\newcommand*\examinername{Examiner}}%
193 }
194 </masters>

```

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**.

```
195 \let\kauths@maketitle\maketitle
```

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

```

196 \renewcommand\maketitle{%
197     \PackageWarning{maketitle} does not serve any purpose in this class.
198     The abstract environment reproduces the title instead.}%
199 }

```

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**.

```

200 \let\kauths@abstract\abstract%
201 \let\kauths@endabstract\endabstract%

```

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

```

202 \newcommand*\frontmatter{%
203     \clearpage%
    The front matter starts on page iii, i. e., two pages are reserved for the title.
204     \setcounter{page}{3}%
205     \renewcommand\thepage{\roman{page}}%

```

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

```
206 \renewenvironment{abstract}{%
```

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

```
207 (*collection | report)
208     \newcommand\keywords{\paragraph{\keywordname:}}%
209 (/collection | report)
```

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

```
210     \cleardoublepage%
211     \section*{\@title}%
212 (*collection | report)
213     \textsc{\@author}\par%
214 (/collection | report)
215 (*masters)
216     \textsc{\prettylist{\@author}}\par%
217 (/masters)
218     \noindent\textit{\@institute}%
219     \section*{\abstractname}%
220 }{%
```

The thesis continues after the abstract on an odd page.

```
221     \cleardoublepage%
222 }%
223 }
```

`\approvalpage` The macro `\approvalpage` creates an approval page for Master's theses.

```
224 (*masters)
225 \newcommand\approvalpage{%
226     \cleardoublepage%
227     \newcommand\sig{\makebox[7cm]{\hrulefill}}}%
228     \newcommand\signer[1]{\begin{quote}\sig ##1\end{quote}\mbox{}}%
229     \noindent\approvaltext\mbox{\bigskip%
230     \foreach \x in \@author {\signer{\x}}%
231     \mbox{\bigskip\mbox{\bigskip%
232     \approvalname,\mbox{\bigskip%
233     \begin{quote}%
234         \sig\supervisorname: \@supervisor\mbox{\bigskip}%
235         \sig\examinername: \@examiner
236     \end{quote}%
237 }
238 (/masters)
```

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

```
239 \newenvironment{acknowledgements}{%
240     \cleardoublepage%
241     \section*{\acknowledgementname}%
242 }{%
```

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

```
243     \par\bigskip\bigskip\bigskip\noindent\@place, \@date\hfill \@author%
244     \cleardoublepage%
245 }
```


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

```
246 \let\kauths@tableofcontents\tableofcontents
```

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

```
247 \renewcommand\tableofcontents{%
248   \cleardoublepage%
249   \kauths@tableofcontents%
250 }
```

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`.

```
251 \newcommand\mainmatter[1][]{%
252   \cleardoublepage%
```

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

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

The page counter is set to page 1.

```
254   \setcounter{page}{1}%
255   \pagenumbering{arabic}%
```

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

```
256 \collection
257   \kaupart*[body={#1}]{\introname}%
258 \collection
259 }
```

`\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.

```
260 \collection|report
261 \newcommand\vanityquote[2]{%
```

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

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

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

```
263     \path (current page.south east) +(-3,3.5)%
264         node%
265         [ anchor=south east%
266           , font=\large%
267           , text width=25em%
```

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

```

268      ] {\raggedleft‘‘#1\rlap{’’}%
269          \normalfont\par\medskip\itshape #2\par};%
270 \end{tikzpicture}%
271 }
272 </collection | report>

```

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

```

273 <*report>
274 \let\part\kaupart
275 </report>
276 </collection | report | masters>

```

Change History

v1.0	General: SBe’s licentiate version . . . 1	v1.5	General: Added templates for kau- collection and kaureport 1
v1.1	General: Initial public release 1	v1.6	General: Merged the styles’ dtx files 1
v1.2	General: Support for babel.sty, Documentation added 1	v1.7	General: Added approval page to kaumasters 1
v1.3	General: Merged the classes’ dtx files 1	v1.8	General: Improved author’s signa- tures on the approval page of kaumasters 1
v1.4	General: Fixed babel.sty support . . . 1		

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