Kiel Computer Science Series

Manual

Abstract

This manual describes the "Kiel Computer Science Series", the Institution Series of the Department of Computer Science (Institut für Informatik) at Kiel University (Christian-Albrechts-Universität zu Kiel), in the following called *Series*. The Series' website is `http://www.informatik.uni-kiel.de/kcss`, where additional information, material, and existing publications can be found.

Advanced users of the Series' LaTeX style can consult Section C at the very end of this manual in order to follow recent development.

1 Scope of the Series

The following works written at the Department of Computer Science are eligible to be published in the Series:

▷ Dissertations and habilitation treatises. Dissertations written at the Department of Computer Science must be published in the Series.

▷ Lecture notes and textbooks of sufficient quality.

▷ Surveys, collections, handbooks, and alike of sufficient quality.

The following works are *not* eligible to be published in the Series:

▷ Student's thesis, e. g., Bachelor's, Master's, and Diploma theses.

▷ Technical reports. There is a separate infrastructure for technical reports at the Department of Computer Science in Kiel.[1]

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[1] `http://www.informatik.uni-kiel.de/ifi/forschung/technische-berichte/`

▷ Yet unpublished original research, save dissertations and habilitation treatises.

The Series' LaTeX style may be used also for works not published in the Series. However, only works published in the Series (which includes approval by our Quality Assurance, explained below) are allowed to bear the name "Kiel Computer Science Series" and its acronym KCSS. Also, the KCSS book cover may only be used when publishing in the Series.

2 Rationale

The aims of this series are twofold.

(i) It shall provide technical and administrative support to authors. It shall help and encourage authors to create high-quality documents with a unified appearance, and publish them in printed and electronic form.

(ii) It shall provide a means for authors to emphasize the quality and maturity of their work. This is particularly interesting for lecture notes, text books, surveys, etc. The Series provides an alternative to the 'traditional' way of using a commercial publisher. Note that with the Series, all rights remain with the author – the Department of Computer Science merely demands that the author gives his or her permission to the Department to publish the work electronically (as PDF) without charge. This way it is ensured that a maximum number of people can benefit from the work, students in particular.

A LaTeX style was developed for the Series. This style is intended to achieve a common look and feel for all works published in the Series. This covers basic settings such as paper size and fonts but also details such as heading and enumeration styles. Many options are provided to adjust the layout, but if publishing in the Series, most of them should be left at their default values. This is explained in more detail below.

As this style is carefully developed with an eye on good typography – or what a majority of literature presents as good typography –, some people might want to use it also for other kinds of documents (e. g., Bachelor's and Master's theses) or to create a different layout of a Series publication (e. g., a DIN A4 version as a proof copy). The many package options can be used to change the layout for such use cases.

3 Process for Publishing in the Series

1. Prepare your document using the LaTeX style explained below. Use the layout options requested for the Series.

2. Send the signed form "Einverständniserklärung"[2] to Quality Assurance (QA). This form gives the Department of Computer Science the rights to publish electronic versions of your work (as PDF) without charge.

   QA will respond by issuing you a number (e. g., 2011/1) and optionally an ISBN. Fees for ISBN registration have to be covered by the author.

3. Prepare book cover using the number and the ISBN, if any.

4. Send book cover and document to QA in PDF format.

5. Wait for approval by QA, if necessary adjust layout as requested by QA. When using the LaTeX style with recommended options, only minor adjustments will be necessary in general.

6. From the files approved by QA, produce printed copies (for your own use) using a printing service of your choice. You may ask QA for recommendations which service to use; see also Section 4.

7. Send the final version as PDF to QA to be made available on the Department's server. Two PDFs of the work are requested: the one from which printed copies are made, and one with the `compact=strong` option set for better screen viewing and reading on mobile devices (this option reduces margins but maintains all line and page breaks). In addition, the PDF of the book cover is also requested.

8. If printed copies can be ordered online, inform QA where orders can be placed, so that appropriate pointers can be put on the Series' website.

9. (Optional) The library of Schloss Dagstuhl[3], the Leibniz Center for Informatics, aims for an in-depth coverage of literature on computer science. It is therefore recommended that you send the library a – preferrably hard-cover – copy of your book. Should you attend a future Dagstuhl seminar, this copy will then also be on display on a special shelf in the library during the seminar.

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[2]Can be obtained via `http://www.informatik.uni-kiel.de/kcss`

[3]`http://www.dagstuhl.de/en/library/`

4 Choosing a Printing Service

In general, each author can choose a printing service of his or her choice, because the Department of Computer Science has no interest in creating any frame contract with a specific service provider and does not want to profit financially. Sales revenues are only to be used by the author and hence, any legal contract is only between the author and the printing service.

However, publishing in the Series means that the Department of Computer Science of the CAU Kiel is the *editor* of the work and wants to achieve a common look and feel of all issues. Hence, there are certain requirements to a printing service listed below. As there is not the one-and-only perfect printing service, recommendations of possible printing services can be obtained from QA. Services differ in conditions, in particular concerning the rights of the author.

4.1 Requirements to a Printing Service

▷ Paper format of a book in the Series is US Trade, which is 15.24 cm × 22.86 cm and supported by at least one major printing service. The printing service should support this format or at least a format very close to this, e. g., 15.5 cm × 22 cm, as provided by another major printing service. This should be taken into consideration when you prepare the document, since paper format may have implication on layout.

▷ All works in the Series are also made available electronically (without charge) from a server run by the Department of Computer Science. Hence it is required that the printing service allows that in the given circumstances.

▷ Authors are encouraged to make printed copies available for order online. If this is intended, the printing service needs to provide the necessary sales and distribution infrastructure for the book.

▷ If printed copies shall be made available for order, they should be offered as a laminated hardcover *and* as a paperback version. The latter is intended to provide a low-priced version affordable for students.

▷ The hardcover should be a casewrap, not a dustjacket one.

▷ The background for the book cover should be white. The book cover should be matte, but at least not high gloss.

▷ If the option is given, a round spine should be preferred over a flat one.

5   Choosing a Price for Printed Copies

Usually, the price charged to customers who buy a printed copy through the printing service can be set by the author. The Department of Computer Science does not impose any hard limits on how the author should choose that price. However, the Series' focus is on *maximum dissemination*, so authors are encouraged to choose a moderate price. Note also that everyone in principle is able and allowed to produce a printed copy for himself or herself from the PDFs available on the Department's servers; this is intended.

6   Numbers and Versions

Works in the Series are numbered consecutively for each year, starting with 1 in each new year. So a particular work can be referred to by giving its year and that counter within the year, e. g., the number "2011/7" designates the 7th work in year 2011. The number of a work is placed on the book cover at two locations: on the spine and on the front.

   The number of a work never changes, even when its contents is revised. To indicate a new revision, a version number is used. When the work is first published, it must have version at least 1.0 (smaller versions can be used internally during the proof reading stage). The number and version appear at the beginning of the work on a page with meta data in the form: number, then the letter "v" followed by the version. E. g., "2011/7 v1.2" designates version 1.2 of the work number 2011/7. This information optionally may be followed by the word "dated" and then a date on which the version was published, in order to give the reader an idea how recent the version is, how much time went by during two versions, etc. If a date is given, it should be specified in ISO 8601 form, i. e., YYYY-MM-DD. For example, when version 1.2 of work 2011/7 was first published on the 15th of November 2011, then we write "2011/7 v1.2 dated 2011-11-15".

7   Basic Usage of the LATEX Style

The style consists of two files `ifiseries.sty` and `localTheorem.sty`. Compilation should be done with `pdflatex`. The most basic usage is like so:

```
\documentclass[10pt]{book}
\usepackage{ifiseries}
\begin{document}
\end{document}
```

A multitude of useful packages is loaded by the style, so commonly you will only need a very few additional \usepackage commands.

By default, no theorem environments are defined. To have a broad set of theorem environments available, use the theorems option. It can be set to numbersfirst or numberslast. Details are explained below. Here is a short example with theorems enabled:

```
\documentclass[10pt]{book}
\usepackage[theorems=numbersfirst]{ifiseries}
\begin{document}
\end{document}
```

8 Important Options for the LATEX Style

If in doubt, most of the default options are fine. In this section, a few options are presented that however commonly need to be adjusted. Any modifications beyond this which noticeably influence the layout must be approved by QA when publishing in the Series.

8.1 When Using an Outdated TEX Live

When using TEX Live version 2009 or earlier (perhaps this also applies to version 2010), it may be necessary to use the legacytexlive=true option. You should first try to get away without it, but if problems arise then try using this option. One of the major effects of this option is that bibtex will be used for the bibliography (if any) instead of the newer and recommended biblatex.[4]

Many Linux distributions offer LATEX as packages, but those are most often outdated and not good enough. Installing TEX Live[5] manually is easy and gives an up-to-date LATEX system. At the time of writing, Ubuntu still ships with the

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[4]"BibTeX" is not to be confused with "bibtex". Roughly speaking, the former denotes a bibliography system, which we use in any case. The latter denotes a specific way to handle this system. A modern replacement for bibtex is biblatex.

[5]http://www.tug.org/texlive/

heavily outdated TeX Live 2009. Although we recommend a more recent version (at least version 2011) it is possible to use the Series' style with TeX Live 2009, using the `legacytexlive=true` option. When using Ubuntu, be sure to install the `texlive-full` package.

8.2 Setting the Paper Size and Binding Offset

The default paper size is US Trade, which is 15.24 cm × 22.86 cm. The 15.5 cm × 22 cm format can be chosen by `paper=15522`. Paper sizes can also be specified explicitly, e. g., `paperwidth=15.5cm,paperheight=22cm` would do the same as `paper=15522`.

A binding offset can be set via `bindingoffset`; it is passed as-is to the `geometry` package's option of the same name. The inner margins on "normal" pages will be increased by this amount and the text block width reduced. On pages that are centered with respect to the paper (e. g., main title page and part title pages), this amount is added to the inner margin by our style (the `geometry` package's `bindingoffset` option has no effect there). The default is 0 mm. Be aware that binding offset has influence on the width of the text block, so it should be fixed as early as possible.

The default page layout makes the outer margins twice the size of the inner margins. There are good reasons for this choice. However, for larger numbers of pages (say, 300 pages or more) it can lead to the inner margins appearing too small in the middle of the book, or even text being difficult to read. This can be counter-acted by using a binding offset. Another possibility is to change the page layout such that inner and outer margins have the same size, while maintaining the width of the text block. This is done using the `hcenter=true` option.

8.3 Declaring the Main Language

By default, English will be assumed to be the main language of the document. The language can be switched inside the document using the `\selectlanguage` command or the `otherlanguage` environment, see the documentation of the `babel` package for details. In case that German is the main language, the option `language=german` should be used. This makes German the default language and takes care of some additional adjustments, like dotted numbers in section headings.

Another important change concerns the bibliography if `bibtex` is used instead of `biblatex`. Then the style attempts to provide support for a German bibliography using `babelbib`. The default and recommended way however is to let the style

use `biblatex` and *not* `bibtex`. When `legacytexlive` is given, then this default automatically changes in favor of `bibtex`, since `biblatex` is not available under older TEX Live versions. So the combination of `legacytexlive=true` and `language=german` effects some profound changes on the bibliography.

When using `biblatex`, be sure to add appropriate `hyphenation` fields in your BibTeX database to declare the language of each bibliography entry.

8.4 Choosing a Theorem System

A theorem system may be specified via the `theorems` option. The following two possibilities exist:

`theorems=numbersfirst` Theorems start with the number first, e. g., "3.2.7 Theorem". All theorem types (theorem, proposition, etc.) and equations share the same counter. Third-level numbers are reset in each section. Numbering is within sections, e. g., theorems in a section with number 3.2 are numbered 3.2.1, 3.2.2, and so on. To avoid confusion, numbering of subsections and below is disabled.

This numbering scheme makes it very comfortable to find a particular theorem or equation, given its number. It is also suited for numbering each paragraph.

`theorems=numberslast` The number comes second, e. g., "Theorem 3.2.7". All theorem types (theorem, proposition, etc.) share the same counter, but equations have their own counter. Numbering is within chapters.

The language for the theorem system (e. g., "Theorem" vs. "Satz") is deduced from the main language of the document, explained above.

The environment in which theorems are numbered is set to a reasonable default. The `theoremswithin` option can be used to change it. When there are no numbered sections, it should be set to `chapter` in order to avoid redundant "0" components in theorem designators.

8.5 Choosing a Figure System

The figure system provides means to format figures and their captions. You may choose between the following:

`figure=floatrow` The `floatrow` package is used. This is the default.

`figure=subfig` The `subfig` package is used. Additionally, the `sidecap` package is loaded.

8.6 Reducing Margins

For electronic publication, it is required that – in addition to the PDF from which the printed copies are created – one PDF is delivered with margins and running titles reduced for better screen viewing but otherwise being identical to the printed version. This is achieved easily with the `compact` option. Setting `compact=strong` creates the required PDF.

9 Structure of a Document in the Series

Documents published in the Series should follow a particular structure:

1. Title page. A macro `\gentitlepage` is provided for generic title pages. For dissertations, a more specific title page can be generated with a macro `\disstitlepage`. The use of those macros is demonstrated below and explained in more detail in Section 10. For a student's thesis, a macro `\studtitlepage` is provided, see Section B. Alternatively, `\makegentitlepage`, `\makedisstitlepage`, or `\makestudtitlepage` can be used after setting parameters by appropriate `\renewcommands`, explained later.

2. Meta information, on one page. This page should be generated using the `\metapage` macro or alternatively by `\makemetapage` after setting parameters via `\renewcommand` as explained later. In particular, this macro prints the correct ISSNs. Its use is demonstrated below and explained in more detail in Section 10.

3. A chapter titled "About this Series". The text for this chapter is the same for all works and is provided as a file `about-this-series.tex`, which can be included.

4. For dissertations, a page naming the reviewers and date of disputation. This page can be generated using the `\dissreviewerpage` macro or alternatively the `\makedissreviewerpage` macro after setting parameters via `\renewcommand` as explained later. For a student's thesis, a macro `\eidesstatt` is provided to be called at this point, see Section B.

5. Summary. For dissertations and habilitation treatises, it is common to give the summary in German, even if the rest of the work is in English.

6. Abstract. This is a very compact summary.

7. For dissertation and habilitation treatises, a preface written by the supervisor. This preface should be titled "Preface by *SUPERVISOR*", where *SUPERVISOR* is to be replaced by the name of the supervisor.

8. A preface written by the author. If there is a preface by the supervisor, the preface by the author should be titled "Preface by the Author", otherwise just "Preface".

   This preface may contain acknowledgements in a section titled "Acknowledgements".

9. The table of contents, generated with `\tableofcontents`.

10. If applicable, the list of figures, generated with `\listoffigures`.

11. If applicable, the list of tables, generated with `\listoftables`.

12. The main part of the work, divided into chapters. Additional divisions may be introduced using parts.

13. Appendices, if any.

14. Bibliography. The main bibliography should be created with `\tocbibliography` instead of `\bibliography`. The former takes care of a correct entry in the table of contents and the PDF bookmarks. The name of the bibliography (as it appears in the heading and table of contents) is "Bibliography" by default and "Bibliografie" if `language=german`. It can be adjusted using the `refname` option.

    The `\tocbibliography` command does not take any arguments (contrary to `\bibliography`). The name of the BibTeX database can be given using the `bibresource` option to the style, e. g.,:

    ```
    \usepackage[bibresource={my/bib}]{ifiseries}
    ```

    By default, `biblatex` is used for the bibliography, not `bibtex`. When `biblatex` is used, additional bibliography databases can be specified in the preamble with `\addbibresource`, see the `biblatex` documentation. It is also admissable to leave the `bibresource` option empty and only use `\addbibresource` manually.

9.1 Example Dissertation

Here is an example code for a dissertation (a template file similar to this is available from the website; that should be used when starting to write). We use \blindtext in places where text is to be filled in by the author (or the supervisor). The titles "First Part", "First Chapter", etc. are only placeholders and must be replaced by the actual titles. The bibliography is assumed to be generated from a BibTeX database in the file mybib.bib.

```
\documentclass[10pt]{book}
\usepackage[theorems=numbersfirst,bibresource=mybib]{ifiseries}

\begin{document}

\frontmatter

\disstitlepage%
{My Fake Dissertation \\[.1em]
With a Long Title \\[.1em]
Over Three Lines}%
{Just for Fun}%
{Dipl.-Math.~John Q. Postgraduate}%
{nat}%
{2011}

\metapage%
{2011/99 v1.0 dated 2011-11-15}%
{\url{http://john-q-postgraduate.name}}%
{Fake Research Group}%
{John Q. Postgraduate.
\textit{My Fake Dissertation With a Long Title.}
Number 2011/99 in Kiel Computer Science Series.
Department of Computer Science, 2011.
Dissertation, Faculty of Engineering,
Kiel University.}%
{manual-demo.metapage.bib}%
{2011 by John Q. Postgraduate}%
{}
```

9. Structure of a Document in the Series

```
\input{about-this-series}

\dissreviewerpage%
{Prof.~Dr.~Musterprofessor \par Musteruni in Musterstadt}%
{Prof.~Dr.~Musterprofessor \par Musteruni in Musterstadt}%
{}% no third reviewer
{30.~Februar 2000}%

\selectlanguage{ngerman}
\chapter*{Zusammenfassung}
\blindtext
\selectlanguage{english}

\chapter*{Abstract}
\blindtext

\chapter{Preface by John Q. Supervisor} % by the supervisor
\blindtext

\chapter{Preface by the Author}
\blindtext
\section*{Acknowledgements}
\blindtext

\tableofcontents
\listoffigures
\listoftables

\mainmatter

\part{First Part}
\chapter{First Chapter}
\blindtext

\chapter{Second Chapter}
\blindtext
```

```
\part{Second Part}
\chapter{Third Chapter}
\blindtext

\appendix
\chapter{First Chapter of Appendix}
\blindtext

\chapter{Second Chapter of Appendix}
\blindtext

\backmatter

\tocbibliography

\end{document}
```

10 Helpful Features Provided by the LaTeX Style

Latin Abbreviations: Smart macros for common abbreviations are provided: \eg, \ie, \cf, \Eg, \Ie, \Cf, \etal, \etc, \vs. The first six will automatically insert a comma and an \xspace if not followed by a comma already. The last three will insert a dot and an \xspace when not followed by a dot already. Any dots inserted by the macro, are also followed by \@, which signals that here is not the end of a sentence. This is important for horizontal spacing.

Enumerations: Compact versions of all three enumeration environments are provided:

```
compactitemize
compactenumerate
compactdescription
```

They are often more appropriate when the enumeration semantically is part of a paragraph.

10. Helpful Features Provided by the LaTeX Style

(These environments are still provided when using `layout=false`, but then they are not compact anymore. The `layout` option is explained in Section A and is not required for publishing in the Series.)

Smart References: The `hyperref` package's `\autoref` feature is configured. Instead of `\ref` you can use `\autoref` and have the words "Chapter", "Section", "Theorem", etc. automatically inserted.

Acronyms: Acronyms like the Extensible Markup Language (XML) or Unified Modeling Language (UML) should be used with the `acronym` package, which is already loaded and configured by default. It handles many useful features about acronyms such as a list of acronyms or providing a long version of the acronym when it is used for the first time such as for XML and UML above. Additionally acronyms are typeset a little bit smaller in order to better integrate into normal text.

Generic Title Page: For the generic title pages, the macro `\gentitlepage` is provided. It takes the following 4 arguments:

1. Title
2. Subtitle
3. Author(s)
4. A text to be set at the bottom of the title page

Alternatively, the title page can be generated with `\makegentitlepage` after using `\renewcommand` on the following commands: `\titlepagetitle`, `\titlepagesubtitle`, `\titlepageauthor`, `\titlepagetext`.

Dissertation Title Page: For the mandatory title page for dissertations, the macro `\disstitlepage` is provided (it performs an appropriate call to `\gentitlepage`). It takes the following 5 arguments:

1. Title
2. Subtitle
3. Name of candidate
4. Indicator for the type of degree: either `nat` or `ing`
5. Year of submission

Alternatively, the title page can be generated with `\makedisstitlepage` after using `\renewcommand` on the following commands: `\titlepagetitle`, `\titlepagesubtitle`, `\titlepageauthor`, `\disstitlepagedegree` (defaults to nat), `\disstitlepageyear`.

Meta Data Page: Each work must have a page with meta data. It can be created with the `\metapage` macro. It takes the following 7 arguments:

1. Number of the work in the Series plus version, and an optional date for the version. E. g., if the number of the work is 2011/99 and the version is 1.2 released on 2011-11-12, then the first argument would be:

   ```
   2011/99 v1.2 dated 2011-11-12
   ```

   Or, if omitting the date is preferred by the author, then just: `2011/99 v1.2`

2. Contact information of the author, e. g., a permanent web or e-mail address. If no contact information shall be provided, leave this argument empty.

3. Name of the research group in the Department with which the author is affiliated.

4. An example how to cite this work.

5. The name of a file with an example BibTeX entry for the work. This will be included using `\lstinputlisting`.

6. Year of copyright and name of author.

7. Some additional text to be put below the other information. This argument may be left empty.

   When choosing *Books on Demand* as a printing service, the following text is required here: "Herstellung: Books on Demand GmbH, Norderstedt". Do not use the word "Verlag" here, it will cause confusion.

Alternatively, this page can be generated with `\makemetapage` after using `\renewcommand` on the following commands: `\metapageversion`, `\metapagecontact`, `\metapagegroup`, `\metapagecite`, `\metapagebibfile`, `\metapagecopyright`, `\metapagetext`.

Dissertation Reviewer Page: For the mandatory page stating the reviewers and date of disputation for dissertations, the macro `\dissreviewerpage` is provided. It takes the following 4 arguments:

1. First reviewer. To have a rule drawn, write an underscore: _

2. Second reviewer. The underscore works here as well.

3. Third reviewer. The underscore works here as well. In addition, this field can be left completely empty, for no third reviewer at all.

4. Date of disputation. The underscore works here as well.

Alternatively, this page can be generated with `\makedissreviewerpage` after using `\renewcommand` on the following commands: `\dissreviewerpagei` (defaults to underscore), `\dissreviewerpageii` (defaults to underscore), `\dissreviewerpageiii` (defaults to empty), `\dissreviewerpagedate`.

11 Book Cover

The package for the book cover is in the file `kcssCover.sty`. Several lengths and a few other options can be set when it is loaded. The contents of the cover (title, author, text on the back, etc.) can be specified by `\renewcommand`ing certain commands.

11.1 Common Length Options

The following length options commonly have to be given. If unsure about their meaning, you can experiment with different values and observe how the cover changes. All those values should be based on information given by the printing service.

`coverwidth` Width of the cover (when the book is closed and without the binding).

`coverheight` Height of the cover.

`smallercoverwidth`, `smallercoverheight` The cover for the hardcover usually is slightly wider and higher than for the paperback. The cover style tries to make both versions look as similar as possible. To this end, the width and height of the paperback has to be specified. This is done via options `smallercoverwidth` and `smallercoverheight`. They must always be specified. When creating the paperback cover, they are the same as `coverwidth` and `coverheight`, respectively.

`spinewidth` Width of the spine. It depends on the number of pages. The printing service should offer some way to calculate the spine width.

`spinecorr` Spine correction. This should reflect the width of the binding on each the front and the back.

bleed Width of an additional margin all around the cover. Colored areas should extend fully into the bleed. The packages takes care of this with regard to the colored boxes, provided the correct bleed is specified.

safety Width of a margin inside the cover, where no important information should be placed. This option has no effect on layout, but it determines the positions of green help lines shown when `safetylines=true` is given. Those lines provide a way to check that no contents extends into the safety margin.

frontgraphicxshift, frontgraphicyshift Amount by which the graphic on the front is shiftet in x and y direction, respectively. Adjust that until you find the result pleasing. Giving zero values puts the graphic in the center of the front.

11.2 Boolean Options

showlayoutlines Whether to show black lines which mark key features of the layout. This can be helpful to get an idea of the logic of the layout, which in turn can help, e. g., to decide how to position the graphic on the front. Default is `false`.

showsafetylines Whether to show green lines which mark the safety margin. Default is `false`.

showbleedlines Whether to show red lines which mark the border of the cover and thus the beginning of the bleed area. Default is `true`, but it should be set to `false` for production.

germantext Whether to use the German version of the text about the Series on the back. Default is `false`, so the English text is used.

twolineresearchgroup Whether the name of the research group stretches accross two lines. The default is `false`, which indicates that the name of the research group occupies just a single line. This information is required to adjust the layout by a few millimeters.

11.3 Commands to be Redefined

Modest deviations from the text sizes given below (`\Large`, `\Huge`, etc.) are allowed if the text otherwise would not fit nicely.

11. Book Cover

`\spinetitle` The title how it appears on the spine. It should be `\Large` and `\textbf`. Example:

```
\renewcommand{\spinetitle}{\Large\textbf{My Fake Dissertation}}
```

`\spineauthor` The author how it appears on the spine. It should be `\Large`.

`\kcssnumber` The KCSS number, e. g., 2011/1. It should be given without any size modifiers.

`\fronttitle` The title how it appears on the front. It should be `\Huge` and `\textbf`. If it stretches over multiple lines, it may be a good idea to increase spacing between lines, e. g., by using `\\[.5m]` to end the line.

`\frontauthor` The author how it appears on the front. It should be `\LARGE`.

`\backtext` The text in the blue box on the back. It should be given without any size modifiers. The length of this text should be adjusted in order to fill an amount of space that makes the back of the book good-looking. The blue area should stretch far enough to the bottom, but should not get too close to the text about the Series, outside of the blue area.

The text should in large part (about $\frac{3}{4}$ to $\frac{2}{3}$) be a summary of the book's contents so designed to gain the potential reader's interest. The last part (about $\frac{1}{4}$ to $\frac{1}{3}$) should be a short CV of the author.

The CV may contain a photograph of the author. The text should be wrapped around the photograph. This can be achieved by means of the `wrapfigure` environment. Let us look at an example:

```
\par\medskip%
\begin{wrapfigure}[6]{l}{2.35cm}
  \vspace{-\baselineskip}
  \includegraphics[width=2.35cm]{no_photo}
\end{wrapfigure}%
\color{white}%
```

First, we introduce some vertical space to the rest of the test with a `\medskip`. Then the `wrapfigure` environment starts. It contains a photo scaled to 2.35 cm width; this width is also passed to the `wrapfigure` environment. A negative vertical space is necessary sometimes, here of length `-\baselineskip`. The

wrapfigure environment takes two more arguments besides the width. First, we have to tell it the number of lines of text that shall be displayed to the side of the picture; this cannot be computed accurately enough in an automatic way. Then we have to specify whether the picture shall be left or right; it should be chosen to put it left. After the wrapfigure environment, it is necessary to explicitly switch back to white text color.

\isbn The ISBN bar code to be displayed on the back, if any. If none shall be displayed, define this command to be empty. If an ISBN bar code shall be displayed, this command usually will be a single \includegraphics command.

\researchgroup The name of the research group, to be displayed on the back below the Department's logo. It should be given without any size modifiers. It can be a single line or two lines, separated by \\. In the latter case, also set twolineresearchgroup=true.

11.4 Document Class and Packages

The document class should be standalone, and besides the kcssCover, the ifiseries package should also be loaded with the pagelayout=false option to prevent interference with the layout. The base font size should be 12. Here is an example preamble:

```
\documentclass[12pt]{standalone}
\usepackage[pagelayout=false]{ifiseries}
\usepackage[%
showbleedlines=false,%
coverwidth=15.56cm,%
coverheight=23.50cm,%
bleed=1.905cm,%
smallercoverwidth=15.24cm,%
smallercoverheight=22.86cm,%
spinewidth=2cm,%
spinecorr=5mm,%
safety=5mm,%
frontgraphicxshift=0cm,%
frontgraphicyshift=-3cm,%
]{kcssCover}
```

After the preamble, \renewcommands follow. The actual cover is created using \makecover. The body of the document should look simply like this:

```
\begin{document}
\makecover
\end{document}
```

12 Troubleshooting

12.1 Embedding Fonts

Printing services require that all fonts are embedded in the PDF, and that should also be so for the PDFs offered on the Department's website. Under most circumstances, fonts are already embedded after a normal run of pdflatex. This can be checked using the command line utility pdffonts.

If graphics are included that were created with programs that do not embed fonts, some fonts may be missing. We made good experiences with the following command in such cases:

```
gs -sDEVICE=pdfwrite -q -dBATCH -dNOPAUSE -dSAFER \
-dPDFX \
-dPDFSETTINGS=/prepress \
-dAutoFilterColorImages=false \
-dColorImageFilter=/FlatEncode \
-dAutoFilterGrayImages=false \
-dGrayImageFilter=/FlatEncode \
-sOutputFile=myDiss-out.pdf \
-c '>setdistillerparams' \
-f myDiss.pdf \
-c quit
```

12.2 Lines Extending into Margins

When lines extend into margins, additional places for hyphenation can be defined or manual line breaks inserted. Another method is switching to sloppy mode temporarily. This is done by inserting the command \sloppy shortly before the unfortunate line break. Shortly after, the command \fussy should be issued.

Alternatively, there is an environment called `sloppypar`. The sloppy mode can be particularly useful with long URLs.

Sloppy mode should not be used for larger parts of the document or for the whole document.

13 Pointers for Writing Good LaTeX

▷ General advice: pay attention to detail.

▷ Check "Obsolete commands and packages".[6]

▷ Read "Mathmode" by Herbert Voß.[7]

▷ Follow the `booktabs` packages to typeset tables.

▷ Check package documentation. Some useful packages that are already loaded by our style are: `algorithm2e`, `enumitem`, `floatrow` (or `subfig` and `sidecap`), `hyperref`, `listings`, `numprint`, `varioref`.

  To check their documentation, type `texdoc` followed by the package's name.

▷ Use BibTeX (with `biblatex`) rather than writing the bibliography by hand.

▷ Define your own macros for recurring markup and constructions. This helps to give your document a consistent look. It also allows to make changes by just changing the macro definitions.

  As an example, suppose constructions like the following appear frequently in your document: `\{x\in\mathds{R} ; \: x>0 \}`. First, you should have a macro for the real numbers:

        \newcommand{\RR}{\mathds{R}}

  Then you should have a macro for "the set of all elements such that...":

        \newcommand{\setst}[2]{\{#1 ; \: #2 \}}

  This reduces the construction to `\setst{x\in\RR}{x>0}`. This results in easier to write and also more readable code. Also, if one later would like to have a different symbol in there (instead of the semicolon), more space after the colon, or whatever, only a *single* command definition has to be changed.

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[6] `http://www.ctan.org/tex-archive/info/l2tabu/`

[7] `http://ctan.org/tex-archive/info/math/voss/mathmode/`

13. Pointers for Writing Good LaTeX

▷ Pay attention to horizontal spacing. By default, horizontal space between sentences is enlarged. If a dot, exclamation mark, or question mark is *not* to signal the end of a sentence, follow it by `\@`, i. e., a backslash and the "at" sign. Be aware that the effect of one of those characters (dot, exclamation mark, question mark) on horizontal spacing can survive other characters in between; e. g., in the following, the space between the closing parenthesis and the next word would be enlarged: `(foo.) bar`. To prevent that, write: `(foo.\@) bar`.

If you feel this is complicated and not worth it, put `\frenchspacing` at the beginning of your document. Horizontal spacing between sentences will never be automatically enlarged then.

▷ Only put small horizontal spaces after intermediate dots in series of initials, like so: `A.\,B.~Name`

The tilde is in order that no line break happens between initials and the last name.

▷ Pay attention to hyphenation. For English text, check the documentation of the `hyphenat` package, which is automatically loaded. For German text, check the relevant section in the `babel` package's manual.

A common pitfall is that compound words with a hyphen, like "forward-compatibility", will not be subject to additional hyphenation if written with a hyphen in the source code. For English text, use `\hyp` instead to allow the word to be hyphenated otherwise, so write: `forward\hyp{}compatibility`. For German text, use: `"=` (These are two characters: double quotes, then an equal sign.)

▷ End paragraphs by a blank line or `\par`. A double backslash `\\` does *not* mark the end of a paragraph! When additional vertical spacing between paragraphs is required, use `\smallskip`, `\medskip`, or `\bigskip`.

▷ In case of excessive or inconsistent vertical spacing, try `\raggedbottom` at the beginning of the document. Beware, however, that this option also has its drawbacks with respect to typography.

Alternatively, use `\par\vfill` at the end of problematic pages.

▷ Use `\label` and `\ref` or `\autoref`. Do not hard-code Chapter, Section, etc. numbers.

▷ Do not be afraid of floating figures. Our style adjusts several placement parameters to improve the placement mechanism. Only use the `h` option to the `figure` environment when you are sure that it is required and will not cause problems. When using `h`, pay attention that no sequence like this occurs: figure, one or two lines of text, and then a page break.

▷ When additional colors are required, e. g., for syntax highlighting in source code, have a look at the university colors.[8]

▷ When no changes to the text are expected anymore until the next release, check for unfortunate line and page breaks. It is admissible to enlarge single pages by one or two lines by use of one of the following:

```
\enlargethispage{\baselineskip}
\enlargethispage{2\baselineskip}
```

▷ Write clean source code; follow a certain coding style. Use blank lines and comments to structure the source code.

Write short lines in your source code, preferably use semantic line breaks. Rule of thumb: break the line (i. e., press the Return or Enter key) after each clause of a sentence. This makes the code easier to `diff`. This makes the code easier to edit. Do not confuse a line break with the wrap function of your editor!

▷ Use a version control system (such as Mercurial or Subversion) to manage LATEX code. This helps tracking changes and prevents data loss. The Department can help setting up the required repositories.

14 Contact

▷ Reinhard von Hanxleden `rvh@informatik.uni-kiel.de` (Organization and QA)

▷ Lasse Kliemann `lki@informatik.uni-kiel.de` (LATEX questions, website, other technical questions)

▷ Hauke Fuhrmann `haf@informatik.uni-kiel.de` (Printing service, ISBN)

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[8]`http://www.rz.uni-kiel.de/ausgabe/CAU-Farben.pdf`

15 Credits

The Kiel Computer Science Series was initiated by Hauke Fuhrmann and Reinhard von Hanxleden in 2011. Its concept and the interior design were established by Hauke Fuhrmann, Reinhard von Hanxleden, Lasse Kliemann, and Christoph D. Schulze.[9] The book cover design was conceived by Hauke Fuhrmann. All LaTeX implementations, the website, and the manual were written and are being maintained by Lasse Kliemann. Organization and quality assurance is provided by Reinhard von Hanxleden. Technical support is provided by Hauke Fuhrmann and Lasse Kliemann.

16 Known Bugs

1. The PDF bookmarks for sections in the appendix are broken when using the `article` class. Any suggestions are welcome. Since publishing in the Series implies using the `book` class, this bug does not affect publishing in the Series.

A Optional Arguments for the LaTeX Style

The style takes several optional arguments. Most of them can (and usually should) be left at their defaults when publishing in the Series (for a few exceptions see Section 8).

A.1 Document Class

The style works with the `book` and `article` classes. When publishing in the Series, `book` should be used. But for other use cases, `article` may be more appropriate. For example, this manual is written using the LaTeX style of the Series combined with the `article` class.

A.2 Basic Layout

`layout` A Boolean option. When set `false`, the style tries to suppress all major changes to the layout. This is useful when combining with a different style,

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[9] `cds@informatik.uni-kiel.de`

e. g., as required by another publisher. Such a situation may arise when parts of a thesis are published in a conference proceedings or in a journal where a different style is mandatory.

pagelayout A Boolean option. If `false`, no changes to the page geometry (margins, text block, etc.) are made (unless `compact` is used). See also the `paper` option below. The default is `true`.

paper, paperwidth, paperheight Controls the paper size. All sizes known to the `geometry` package can be chosen via the `paper` option, including `a4paper` and `a5paper`. If a paper size is not known to the `geometry` package, you can specify its dimensions explicitly using `paperwidth` and `paperheight`. For example, one would write:

```
paperwidth=13.5cm,paperheight=21.5cm
```

This will overwrite any choice made via `paper`.

The default paper size is US Trade, which is $15.24\,\text{cm} \times 22.86\,\text{cm}$. If using much larger paper sizes than this (e. g., A4), it is recommended to also specify `largepaper=true` (see below). For larger paper sizes, it also might be appropriate to increase the basic font size.

Using `paper=` will cause the style not to set the paper size (unless `compact` is used, which works by redifining the paper size). Together with `pagelayout=false`, it can be used to avoid any calls to the `geometry` package's `\geometry` command.

largepaper A Boolean option. If set `true` then other defaults for `marginfrac`, `headsepmult`, and `footskipmult` are set, which are better suited for larger paper sizes, e. g., A4. See below for details. The default is `false`.

marginfrac If the `twoside` option is given to the document class (default for `book`) then this parameter controls which fraction of the paper width is used for the inner margin; the outer margin is twice that size. The same fraction of the paper height is used for the upper margin; the bottom margin is twice that size. This page layout follows a "sound, elegant and basic medieval structure" (Bringhurst [**Bri08**]).

The default is 12; if using `largepaper=true` then the default is 9.

When the paper proportions are $2:3$, as with US Trade or Royal, then a value of 9 gives an additional feature: the height of the text block is the paper width.

A. Optional Arguments for the LaTeX Style

When the `oneside` option is given to the document class (default for `article`), then first the above construction is applied, but finally the text block is horizontally centered. The width of the text block is not changed, so each the left and the right margin are $\frac{3}{2}$ times the page width divided by `marginfrac`.

`headsepmult` This number multiplied by `\baselineskip` defines the distance between header and text block. The default is `1.5`. This should not be changed when printing on US Trade paper or paper of approximately the same size. When `largepaper` is set, the default is `2`.

`footskipmult` This number multiplied by `\baselineskip` defines the distance between page number and text block. The default is `3`. This should not be changed when printing on US Trade paper or paper of approximately the same size. When `largepaper` is set, the default is `3.5`.

`bindingoffset` This is passed as-is to the `geometry` package's option of the same name. Moreover, it is added to the inner margin of otherwise centered pages. The default is $0\,\text{mm}$.

`hcenter` A Boolean option. If `true`, the inner and outer margins are made equally wide while maintaining the width of the text block. The default is `false` if the `twoside` class option is given (default for `book` class), otherwise the default is `true`.

`runningtitle` A Boolean option. If `false`, then running titles are not printed. This option has no influence on the size of the text block. The default is `true`.

`leftmarkright` A Boolean option. If `true`, then `\rightmark` is defined to be the same as `\leftmark`. This is mostly useful for the `book` document class when there are no sections. Then the left and the right running titles will show the name of the chapter. The default is `false`.

`compact` When publishing electronically, it is desirable to reduce margins. This makes it easier to read the PDF on a small screen, like the one of an e-book reader. It also makes it easier to work with the PDF on a computer screen with multiple windows opened. The `compact` option allows to trim margins, headers, and footers, while leaving the rest of the document as it is – in particular all page breaks are maintained exactly as they are. (Exception: title pages created with `\gentitlepage` receive some extra vertical space at the top for a better appearance.) Possible choices are:

`compact=` Do nothing. This is the default and should be used for printing.

`compact=moderate` Trim margins to a minimum and move headers and footers as close as possible to the text block.

`compact=strong` Trim margins to a minimum, disable headers completely and move footers as close as possible to the text block.

`font` To select the font. Default is `Palatino`. Choices for fonts are:

`font=Bera` *Bera Serif* combined with *Bera Sans* and *Bera Mono*.

`font=Charter` *Charter* combined with *Bera Sans* and *Bera Mono*. This font sometimes has the problem: "Too many math alphabets used in version normal." Fixes for this are welcome.

`font=ConcreteEuler` *Computer Concrete* with sans-serif headings and combined with *Euler* math fonts and *Bera Mono*.

`font=Kerkis` *Kerkis* with semi-bold headings and combined with *Bera Sans* and *Bera Mono*. This font sometimes has trouble in math mode, e. g., tildas extending into symbols.

`font=KP` The *KP* fonts. They have some resemblance with *Palatino*.

`font=LatinModern` *Latin Modern* with sans-serif headings and combined with *Bera Mono*.

`font=Palatino` *Palatino* combined with *Bera Sans* and *Bera Mono*.

`font=Times` *Times* combined with *Helvetica* and *Bera Mono*.

`font=Termes` *TeX Gyre Termes* combined with *Bera Sans* and *Bera Mono*.

`font=Utopia` *Utopia* combined with *Bera Sans* and *Bera Mono*.

`dottednumbers` A Boolean option, controlling whether a dot is placed at the end of section and theorem counters. If set `false`, section headings will look like "1.4.2 Heading". If set `true`, headings will look like "1.4.2. Heading". The latter is more common in German texts. The default of the option depends on the `language` option: if `language=english` (the default), then `dottednumbers=false` is default. If `language=german`, then `dottednumbers=true` is default.

`halfparskip` A Boolean option. If set `true`, it disables paragraph indentation and instead increases vertical space between paragraphs. This is only justified when

the document mainly consists of very short paragraphs. Normally, this option should not be used.

halfparskipfill If using `halfparskip`, this option controls the fraction of a line that is kept blank at the end of a paragraph. This is needed to detect the end of a paragraph even if it is the last paragraph on a page. The default is `0.25`, i. e., $\frac{1}{4}$ of a line.

A.3 Bibliography

biblatex A Boolean option controlling whether the `biblatex` package is loaded. The default is `true`, unless `legacytexlive` is given.

biblatexstyle The style to use with `biblatex`, if using `biblatex`. The value of this option is passed to the `style=` option of `biblatex`. The default is `alphabetic`.

biblatexOptions Additional options to pass to the `biblatex` package, if loaded. Default is `maxbibnames=10,babel=other`.

babelbib A Boolean option controlling whether the `babelbib` package is loaded. The default is `false`, unless `legacytexlive` and `language=german` is given.

natbib A Boolean option controlling whether the `natbib` package is loaded. The default is `false`, unless `legacytexlive` is given.

natbibOptions Options to pass to the `natbib` package, if loaded. The default is `sort,numbers`.

bibliographystyle The bibliography style to use for `bibtex`. Default is `alphaurl`, but when `language=german` and `legacytexlive` are given, the default is `babalpha`. This option is ignored when using `biblatex`; then `biblatexstyle` and `biblatexOptions` can be used to tune the bibliography style (and the citation style).

bibresource The BibTeX database file to use. If using `biblatex`, this is directly passed to `\addbibresource`, if non-empty. If using `bibtex`, this is passed to `\bibliography`.

refname The name of the bibliography as it appears in the heading and table of contents.

A.4   Environments

algorithmOptions   Options to pass to the `algorithm2e` package. Default is:

> `linesnumbered,ruled,vlined`

algorithmForwardCompatibility   A Boolean option controlling whether certain forward-compatibility hacks for the `algorithm2e` package are loaded. The default is `true`. You can disable this if it should cause problems.

algorithmBackwardCompatibility   The same for backward-compatibility. It is `true` by default, but can be safely disabled by users of recent TEX Live versions.

tikz   A Boolean option whether the `tikz` package and several TikZ libraries are loaded. Default is `true`.

figure   Which figure system to use. You can choose from the following options:

figure=   No figure system is loaded. You can then manually load and configure a figure system of your choice.

figure=floatrow   The `floatrow` package is used. This is the default.

figure=subfig   The `subfig` package is used. Additionally, the `sidecap` package is loaded.

subfigOptions   Options to be passed to the `subfig` package, if it is loaded. Whether it is loaded can be controlled via the `figure` option. The default for `subfigOptions` is `caption=false,font=footnotesize`.

theorems   Which theorem numbering scheme to use. Per default, no theorem environments are defined. The following values can be chosen:

theorems=numbersfirst   Theorems start with the number first, e. g., "3.2.7 Theorem". All theorem types (theorem, proposition, etc.) and equations share the same counter. Third-level numbers are reset in each section. Numbering is within sections, e. g., theorems in a section with number 3.2 are numbered 3.2.1, 3.2.2, and so on. To avoid confusion, numbering of subsections and below is disabled.

This numbering scheme makes it very comfortable to find a particular theorem or equation, given its number. It is also suited for numbering each paragraph.

theorems=numberslast The number comes second, e. g., "Theorem 3.2.7". All theorem types (theorem, proposition, etc.) share the same counter, but equations have their own counter. Numbering is within chapters.

You can also load a theorem system of your choice, e. g., ntheorem.

theoremswithin The environment in which theorems are numbered. The default is section when using the book class and subsection when using the article class. When there are no numbered sections in a book, it should be set to chapter in order to avoid redundant "0" components in theorem designators. When there are no numbered subsections in an article, it should be set to section for the same reason.

A.5 Misc Settings

acronymOptions Options to be passed to the acronym package. The default is smaller,nohyperlinks,printonlyused.

babelOptions Options to pass to the babel package. Default is ngerman,english, if also language=english is given (which is the default for the language option). If language=german is given, the default is english,ngerman. The language can be switched inside the document using the \selectlanguage command or the otherlanguage environment.

inputencOptions The input encoding to choose. Default is utf8.

language Controls defaults for babelOptions, variorefOptions, refname, and dottednumbers. If legacytexlive is given, also controls defauls for babelbib and bibliographystyle. Possible values are language=english (the default) and language=german.

legacytexlive A Boolean option controlling whether certain features not available in older TeX Live versions shall be avoided. Default is false, which assumes TeX Live version 2011 or newer. Setting to true has the following effects: default to natbib=true and biblatex=false. If language=german, then also load the babalpha package and make bibliographystyle=babalpha default.

variorefOptions Options to pass to the varioref package. Default are no options if language=english. If language=german then the default is ngerman.

A.6 Missing an Option?

In case you would like to configure the style in a way not yet supported, please contact the implementation maintainer (Section 14). Do not use modified versions of the style file, unless you know exactly what you are doing.

A.7 Examples

A book in *Latin Modern* font:

```
\documentclass[10pt]{book}
\usepackage[font=LatinModern]{ifiseries}
\begin{document}
\end{document}
```

An article on A4 paper:

```
\documentclass[11pt,twoside]{article}
\usepackage[paper=a4paper,largepaper=true]{ifiseries}
\begin{document}
\end{document}
```

B Using the Style for a Student's Thesis

With the many options explained above, the style can be adapted to other use cases, e. g., for a student's thesis. A macro \studtitlepage for a title page is provided as well as a macro \eidesstatt for the "Eidesstattliche Erklärung". The macro \studtitlepage (which internally makes a call to \gentitlepage) takes the following 7 arguments:

1. Title

2. Subtitle

3. Name of candidate

4. Type of thesis in German, e. g., "Bachelor-Arbeit"

5. Year of submission

6. Research group, may also be in German

7. Name of supervisor

Here is an example:

```
\studtitlepage%
{My Fake Bachelor's Thesis \\[.1em]
With a Long Title \\[.1em]
Over Three Lines}%
{Just for Fun}%
{John Q. Pregraduate}%
{Bachelor-Arbeit}%
{2011}%
{Imagin\"are Arbeitsgruppe}%
{John Q. Supervisor}
```

Instead of \studtitlepage, you can use \makestudtitlepage after using \renewcommand on the following commands: \titlepagetitle, \titlepagesubtitle, \titlepageauthor, \studtitlepagetype (defaults to "Bachelor-Arbeit"), \studtitlepageyear, \studtitlepagegroup, \studtitlepagesupervisor.

C News

2012-03-11

For the bibliography, `biblatex` is now the default instead of `bibtex`. To get `bibtex` back, use `biblatex=false,natbib=true`. In any case, the \tocbibliography does not take an argument anymore. Instead, the bibliography database can (for `bibtex` it must) be specified using the `bibresource` option, e. g., `bibresource=my/bib/file`.

`biblatex` is almost a drop-in replacement for `bibtex` with many interesting features. In particular, it allows multilingual bibliographies easily – just add appropriate `hyphenation` fields to your BibTeX database entries. Please consult the `biblatex` documentation to learn more about the exciting new possibilities.

Unfortunately, `biblatex` is not available on the ancient TeX Live 2009, which still ships with Ubuntu at the time of writing. It is recommended to install a recent TeX Live (at least 2011) manually. Compatibility with older versions is achieved via `legacytexlive=true`, but this of course will disable `biblatex`.