LaTeX 2ε Guide for cplslarge

Cambridge Style for Authors

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AUTHOR SUBMISSION GUIDE: SETTING UP YOUR LaTeX 2ε FILES

This guide is for the authors who are preparing books for `Cambridge` using the LaTeX 2ε document preparation system. It is designed to assist authors in the preparation of manuscripts using LaTeX 2ε. The process of rendering your manuscript into a book involves many aspects, including design, format, style, typographic and graphic standards. Consistent preparation of manuscripts using the LaTeX 2ε `Cambridge` style allows greater ease and economy in transforming your manuscript into bound book stock.

1 INTRODUCTION

The LaTeX 2ε document preparation system is a special version of the TeX typesetting program. LaTeX 2ε adds to TeX a collection of commands which simplify typesetting by allowing the author to concentrate on the logical structure of the document rather than its visual layout.

LaTeX 2ε provides a consistent and comprehensive document preparation interface. There are simple-to-use commands for generating a table of contents, lists of figures and/or tables and indexes. LaTeX 2ε can automatically number list entries, equations, figures, tables and footnotes, as well as parts, chapters, sections and subsections. Using this numbering system, bibliographic citations, page references and cross references to any other numbered entity (e.g. chapter, section, equation, figure, list entry, etc.) are quite straightforward.

LaTeX 2ε is a powerful tool for managing long and complex documents. In particular, partial processing enables long documents to be produced chapter by chapter without losing sequential information. The use of document classes allows a simple change of style (or style option) to transform the appearance of your document.

2 THE CAMBRIDGE DOCUMENT CLASS

The `Cambridge` standard designs have been implemented as a LaTeX 2ε class file. The class files are based on the BOOK class as discussed in the LaTeX 2ε manual. Commands which differ from the standard LaTeX 2ε interface, or which are provided in addition to the standard interface, are explained in this guide. Note that this guide is *not* a substitute for the LaTeX 2ε manual itself.

We assume that an author using this package has a prior working knowledge of LaTeX 2ε, so the basics of LaTeX 2ε are not included in this guide. For guidance on the command names of the mathematical symbols the author is referred to any book on LaTeX 2ε. We particularly recommend two books for reference:

1. *LaTeX 2ε: A Document Preparation System* by Leslie Lamport (referred to as **Book 1** in this guide), © 1994 by Addison-Wesley Publishing Company, Inc., ISBN 0-201-52983-1.
2. *LaTeX 2ε Companion* by Michel Goosens, Frank Mittelbach, and Alexander Samarin (referred to as **Book 2** in this guide), © 1994 by Addison-Wesley Publishing Company, Inc., ISBN 0-201-54199-8.

2.1 Frenchspacing

The `\frenchspacing` option has been selected by default. This ensures that no extra space is inserted after full points, and is normal practice. If there is a strong reason for reversing this, you can key `\nonfrenchspacing` in the preamble.

3 CODING YOUR DOCUMENT

Most commands described in this guide are part of the standard LaTeX 2ε package. Hence, the syntax, usage, examples or packages described in any LaTeX 2ε manual may be used here also. However, the syntax/usage of some commands has been changed, and some commands are newly defined to accommodate the `Cambridge` typographic style. Such changes are explicitly mentioned in the sections where these commands are described.

3.1 Chapter numbering

If your book starts with an unnumbered chapter (e.g. `\chapter*{Introduction}`, then make all the numbered elements (e.g. section heads) unnumbered as well, by using `\section*{...}`. Otherwise, sections will be numbered 0.1, 0.2, etc.

3.2 Section numbering

LaTeX 2ε provides four levels of section heads, and they are all defined in the `cplslarge` class file:

- Heading A – `\section`.
- Heading B – `\subsection`.
- Heading C – `\subsubsection`.
- Heading D – `\paragraph`.

You can reduce the level of numbered section heads (it is not advisable to increase them). For instance, if you only want headings numbered down to subsections, add the following line to the preamble: `\setcounter{secnumdepth}{3}`. To number down to sections, make this `\setcounter{secnumdepth}{1}`, etc.

4 FONTS

The only fonts that are used in the style/class files are Computer Modern (CM) typefaces, which are part of the TeX/LaTeX 2ε installation. The CM font family consists of regular text fonts, sanserif fonts, typewriter fonts, and math symbol fonts, which are sufficient for preparing most documents. If you need to use any special symbols or characters that are not part of the CM family, you will have to define them before they are used.

5 DRIVER FILE

We highly recommend that you use a driver file (one *root* file, which "`\include`"s various other files) for making your book. (**Book 1:** Section 4.4; **Book 2:** Section 2.1.2)

You should maintain the frontmatter (title page, table of contents, preface, etc.), chapters, appendices, and backmatter (bibliography, index, etc.) as separate `*.tex` files. The driver file, say `sample.tex`, is the root file which "`\include`"s all these individual files for compilation. For example, the file `sample.tex` may look like the following, if the book has 2 chapters, 1 appendix, frontmatter, and backmatter:

```
\documentclass{cplslarge} %%% or the class name
\begin{document}
\frontmatter%% Frontmatter
  \maketitle
  \tableofcontents
  \listoffigures
  \listoftables
  \listofcontributors
  \printphotogallery
  \include{acknow}
  \include{forward}
\mainmatter
  \part{Getting started}
  \include{chap1}%
  \include{chap2}%
\backmatter
  \appendix
  \include{appendix}
  \endappendix
  \bibliography{cplslargesample}
  \bibliographystyle{cambridgeauthordate}
  \printindex
\end{document}
```

When the book is organized into different modules in this way, documents can be reformatted selectively by using the command `\includeonly`. For example, if you make changes only to Chapter 2, placing the command `\includeonly{chap2}` before the `\begin{document}` command compiles only the file chap2.tex, keeping the cross references between chapters and references to bibliographic citations, etc. intact (**Book 2:** Section 2.5, Managing References). The numbers for the chapter, page or any other counters that should fall in sequence with the preceding chapters will automatically be reset correctly within the new Chapter 2.

If you need to change or add any macro, you must create a new file for this purpose. For example, if the file you created is `mymacros.tex`, it is made available to your document if you place the command "`\input{mymacros.tex}`" before the `\begin{document}` command in the file `sample.tex`.

6 PAGE STYLES AND RUNNING HEADS

In standard `cplslarge` class file, as in BOOK class, chapter titles and author's surname are used as running headlines at the top of every page. The section heading is used on odd-numbered pages (rectos) and the chapter title appears on even-numbered pages (versos).

The `\pagestyle` and `\thispagestyle` commands should *not* be used. Similarly, the commands `\markright` and `\markboth` should not be necessary. However, there is a simple way to add running heads in the chapter:

```
\author[Authorlastname]{authorfirstname
                                authorlastname}
\chapter{Author Submission Guide:
              Setting Up Your \LaTeXe\ Files}
```

7 FRONTMATTER

The series, half title, title and imprint pages are generated by `\maketitle` command. This command includes `\jobname.ttl` file; in this file you have to use below mentioned environment for producing frontmatter of the book.

- For Series page

```
\begin{seriespage}
  ...
  \serieseditor{...}
  ...
  \end{seriespage}
```

- For Half title page

```
\begin{htpage}
  \title{...}
  \subtitle{...}
  \author{...}
\end{htpage}
```

- For Title page

```
\begin{titlepage}
  \title{...}
  \subtitle{...}
  \editortag{...}
  \author{...}
  \affil{...}
\end{titlepage}
```

- For imprint page

```
\begin{imprintpage}
  \pressname{...}
  . . .
  \dsctext{...}
\end{imprintpage}
```

Table of contents is produced using the standard LaTeX 2ε command `\tableofcontents`. This command should be placed after `\frontmatter` and LaTeX 2ε does the rest for you. This command also produces a "Contents" heading which starts on a new page.

There are other such similar commands like `\listoffigures` and `\listoftables` for producing a list of figures and a list of tables, respectively. They work exactly the same as the table of contents.

7.1 List of contributors

The code for generating an automatic list of contributors should be entered after the author and chapter titles, as follows:

```
\contributor{mario acuna}
{NASA Goddard Space Flight Center\\
Laboratory for Extraterrestrial Physics\\
Code 695\\
Greenbelt, MD 20771\\
USA}
\contributor{ray arvidson}
{Earth \& Planetary Science\\
Washington University\\
St Louis, MO 63130\\
USA}
```

You then simply need to add the `\listofcontributors` command after the table of contents (or after the artwork lists, if included), as follows:

```
\tableofcontents
\listoffigures
\listoftables
\listofcontributors
```

7.1.1 Note to editors regarding the list of contributors

The contributors will appear in the same order as they are called in, since the list is generated in the same way as the table of contents. This means that at the final stage, the file will require editing to make the entries alphabetic.

Once you have a complete list of contributors, comment out the line which is generating them, and replace it as shown below:

```
\tableofcontents
\listoffigures
\listoftables
%\listofcontributors
\editedlistofcontributors
```

Next, rename the file with the extension `.loc` to `editedloc.tex` (in the case of this guide, you would rename `sample.loc` to `editedloc.tex`). Edit this file as required, then run the file through LaTeX once more, and the edited version will appear.

7.2 Photo gallery

All authors' photos and their names can be printed in a new page as a gallery. You have to create a file called `\jobname.pic` and code the respective author names and photos as: `\photogallery{Autho name}{photo.eps}`. The gallery output is produced using `\printphotogallery` command

7.3 Acknowledgments

Acknowledgments should be coded within acknowledgment environment as:

```
\begin{acknowledgment}
. . .
. . .
\end{acknowledgment}
```

7.4 Foreword

Foreword should be coded within foreword environment as:

```
\begin{foreword}
. . .
\end{foreword}
```

8 MAINMATTER

8.1 Extract

The environment `{extract}` is identical to the standard LaTeX 2ε environment `{quote}`, except that the command `source` is an additional feature in this style file.

An example of coding for extract is given below:

> Chirographi fermentet cathedras, ut rures imputat incredibiliter lascivius cathedras. Agricolae amputat chirographi. Parsimonia concubine vocificat quadrupei, et fiducias fortiter deciperet quadrupei, utcunque matrimonii divinus adquireret catelli.
>
> Source line

The extract environment is coded as follows

```
\begin{extract}
Chirographi fermentet cathedras, ut rures imputat
incredibiliter lascivius cathedras. Agricolae
amputat chirographi. Parsimonia concubine vocificat
quadrupei, et fiducias fortiter deciperet
quadrupei, utcunque matrimonii divinus adquireret
catelli.
\source{Source line}
\end{extract}
```

8.2 Typesetting mathematics

The `cplslarge` class file will set displayed mathematics left aligned to the column width, provided that you use the LaTeX 2ε standard of open- and closed-square brackets as delimiters.
The equation

$$\sum_{i=1}^{p} \lambda_i = (S)$$

was typeset using the `cplslarge` class file with the commands

```
\[
  \sum_{i=1}^p \lambda_i = (S)
\]
```

For display equations, cross-referencing is encouraged. For example:

```
\begin{equation}
  (n-1)^{-1} \sum^n_{i=1} (X_i - \overline{X})^2.
  \label{eq:samplevar}
\end{equation}
Equation~(\ref{eq:samplevar}) gives the formula for
sample variance.
```

The following output is generated with the above coding:

$$(n-1)^{-1} \sum_{i=1}^{n} (X_i - \overline{X})^2. \tag{1}$$

Equation (1) gives the formula for sample variance.

8.3 Lists

The `cplslarge` Standard class files provides the three standard list environments:

8.3.1 Numbered list

The `enumerate` environment numbers each list item with a arabic numeral.

```
\begin{enumerate}
\item first item
\item second item
\item :
\item last item
\end{enumerate}
```

This produces the following list:
1. first item
2. second item
3. :
4. last item

8.3.2 Unnumbered lists

The `unnumlist` environment is coded as below.

```
\begin{unnumlist}
\item first item first item first item first
item first item first item first item first
item first item .
\item second item second item second item
second item second item second item second
item second item
\item :
\item last item last item last item last
item last item last item last item last item
last item last item.
\end{unnumlist}
```

This produces the following list:
- first item first item first item first item first item first item first item first item first item.
- second item second item second item second item second item second item second item second item second item.
- :
- last item last item last item last item last item last item last item last item last item last item.

8.3.3 Bulleted lists

The `bulletlist` environment numbers each list item with a bullet.

```
\begin{itemize}
\item first item
\item second item
\item :
\item last item
\end{itemize}
```

This produces the following list:
- first item
- second item
- :
- last item

8.4 Illustrations (or figures)

The `cplslarge` class will cope with most positioning of your figures. Note that if you are producing a list of illustrations (using `\listoffigures`), you need to repeat the caption in square braces, but without the full point.

An example of coding `{figure}` is given below:

```
This is the paragraph in my book where
Figure \ref{f1} is referred to for the very
first time. So I am placing the figure
coding immediately after this paragraph.

\begin{figure}
\figurebox{}{}{cplsfigure.eps}
\caption{This is the text of a figure caption.}
\label{f1}
\end{figure}
```

This is a paragraph in my book where Figure 1 is referred to for the very first time. So I am placing the figure coding immediately after this paragraph.

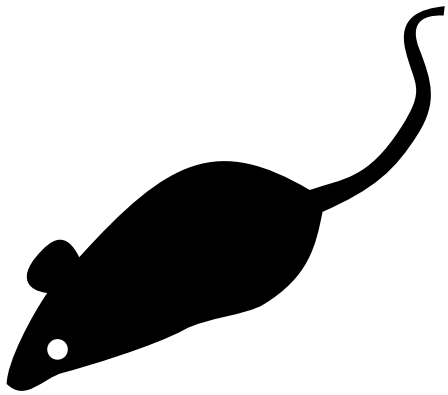

Figure 1 This is the text of a figure caption.

Even if the figure does not have a caption, the command `\caption` must be used with empty arguments to generate the figure number.

The `\figurebox` command takes in three arguments. The first argument is the width of the figure, the second argument is the height of the figure, and the last argument is the name of the file that contains the image of the figure in EPS format. In case you do not have the figure file, the third argument can be left empty and an empty box is drawn.

Example of placing a figure in EPS file format:

```
\figurebox{7pc}{10pc}{figfile.eps}
```

If the file name is available (i.e., if the third argument is not empty), the first two arguments, namely, the height and the width of the figure are ignored, and the natural height and width of the eps file is used.

The command `\figurebox` is not part of the standard LaTeX 2ε package.

Please note, `\adjustfigure{...}` command should be used in the second column of the page where twocolumn figures occur, to adjust placement of captions. `\adjustfigure` command takes as an argument the height of the figure caption, for example caption of Figure 1.1 in sample has been adjusted using `\adjustfigure{20pt}` command.

8.5 Tables

The standard `cplslarge` class will cope with most positioning of your tables and you should not normally use the optional positional qualifiers on the `table` environment which would override these decisions. Table captions (titles) must be at the top; therefore, the `\caption` command should appear before the body of the table. For example, Table 1 is produced using the following commands:

```
\begin{table}
\caption{Missions and Investigations Relevant to
Mars Surface Science: 1988--2007}%
\label{sample-table}%
\begin{tabular}{@{}lllll@{}}\toprule%
Time, t(s)&$r_{N1}$ (cm)&$r_{N2}$ (cm)&$r_{N3}$
          (cm)&$r_{N4}$ (cm)\\
                          \hline
```

Table 1. *Missions and Investigations Relevant to Mars Surface Science: 1988–2007*

Time, t(s)	r_{N1} (cm)	r_{N2} (cm)	r_{N3} (cm)	r_{N4} (cm)
10	8.2	8.6	8.5	8.0
15	8.1	8.1	8.1	8.5
30	8.5	8.5	9.1	9.3
45	9.2	9.2	9.2	9.5
60	9.5	9.6	9.8	9.8
90	9.8	1.0	1.0	1.3

Notes: Investigations discussed in this book, CRISM (Compact Reconnaissance Imaging Spectrometer for Mars), CTX (Context Camera).

```
10 & 8.2  & 8.6   & 8.5   & 8.0 \\\hline
15 & 8.1  & 8.1   & 8.1   & 8.5 \\\hline
30 & 8.5  & 8.5   & 9.1   & 9.3 \\\hline
45 & 9.2  & 9.2   & 9.2   & 9.5 \\\hline
60 & 9.5  & 9.6   & 9.8   & 9.8 \\\hline
90 & 9.8  & 1.0   & 1.0   & 1.3 \\\botrule
\end {tabular}
\begin{tabnote}
Notes: Investigations discussed in this book,
CRISM (Compact Reconnaissance Imaging
Spectrometer for Mars), CTX (Context
Camera).
\end{tabnote}
\end{table}
```

8.5.1 Landscape figures and tables, using rotating.sty

Landscape figures and tables (floats) may be typeset using the `rotating.sty` package. Note that the direction of rotation depends on the page number – which requires at least two passes through LaTeX 2ε. If we are going to know whether pages are odd or even, we need to use the `\pageref` mechanism, and labels. But labels won't work unless the user has put in a caption. *Beware!*

The landscape figure was typeset using the following coding:

```
\begin{sidewaysfigure*}
\figurebox{}{}{cplsfigure.eps}
\caption{This is a example of landscape figures.}
\label{f2}
\end{sidewaysfigure*}
```

The landscape table was typeset using the following coding:

```
\begin{sidewaystable*}
\caption{Missions and Investigations Relevant to
Mars Surface Science: 1988--2007}\label{table2}%
\begin{tabular}{@{}lllll@{}}\toprule%
Time, t(s)&$r_{N1}$ (cm)&$r_{N2}$ (cm)&$r_{N3}$
          (cm)&$r_{N4}$ (cm)\\
                                \hline
10 & 8.2  & 8.6   & 8.5   & 8.0 \\\hline
15 & 8.1  & 8.1   & 8.1   & 8.5 \\\hline
```

```
30 & 8.5  & 8.5   & 9.1   & 9.3 \\\hline
45 & 9.2  & 9.2   & 9.2   & 9.5 \\\hline
60 & 9.5  & 9.6   & 9.8   & 9.8 \\\hline
90 & 9.8  & 1.0   & 1.0   & 1.3 \\\botrule
\end {tabular}
\begin{tabnote}
Notes: Investigations discussed in this book,
CRISM (Compact Reconnaissance Imaging
Spectrometer for Mars), CTX (Context
Camera).
\end{tabnote}
\end{sidewaystable*}
```

8.6 Footnotes

The `cplslarge` class provides `\footnote` command for footnote[1] environment.

9 BACKMATTER

9.1 Reference and bibliography lists

9.1.1 Automatic lists using BibTeX

The bibliography file for `sample.tex` is called `cplslargesample.bib`; the bibliography style is `cambridgeauthordate.bst`, so place the final two commands at the point where you would like the references to appear:

```
% \renewcommand{\refname}{Bibliography}
  \bibliography{cplslargesample}
  \bibliographystyle{cambridgeauthordate}
```

Note that if you uncomment the third line shown above, you can change the heading from 'References' to 'Bibliography'. Next, LaTeX 2ε your book twice. Then run BibTeX by executing the command

```
bibtex sample
```

Finally, run your book through LaTeX 2ε twice again. This series of runs will generate a file called `sample.bbl`, which will then be included by `\bibliography{cplslargesample}`.

Suppose you have cited 8 entries from the 'cplslargesample' database, e.g. `\cite{MenshEst}`; `\cite{Kasymp}`; `\cite{VGFH}`; `\cite{HamMaz94}`; `\cite{HamLower}`; `\cite{AiBar87}`; `\cite{MMS}`; and `\cite{HamAtomBond}`; the output will be just those 8 entries.

Please note, `\chapterreferencefalse` command should be used for generating chapter-wise reference list.

9.2 Index

The index can be generated automatically by marking the index terminology throughout the text using the command `\index{index-term}` and using the `MakeIndex` program to generate sorted index lists.

[1] The footnote counter will be reset on chapters.

In your `.tex` source file, use the coding as below.

```
text ...
text-word-to-be-indexed\index{index-word}
more text
follows ...
```

text ... text-word-to-be-indexed more text follows...

The`\index{index-term}` command must immediately follow the term to be indexed to ensure correct page reference.

If you are using the `MakeIndex` program, follow the `MakeIndex` documentation to generate the index, which includes the following main steps.

- You have to include `makeidx.sty` in your document.
- Put the `\makeindex` command in the preamble, i.e., between the `\documentclass` and `\begin{document}` command.
- Put the `\printindex` command where you want the index to appear, usually at the end, right before the `\end{document}` command.
- Compile your document, in our case `sample.tex`, which will generate the file `sample.idx`.
- Run the `MakeIndex` program on the file `sample.idx`, which will generate the file `sample.ind`.
- Now, compiling the document `sample.tex` again, will generate the typeset index pages where the `\printindex` command appears.

A new command `\seealso` is defined in this `makeindex.sty` file, which is akin to the `\see` command described in `MakeIndex` documentation.

Using the `MakeIndex` program to generate index is highly recommended.

9.2.1 Creating multiple indexes using multind.sty

Multiple indexes can be generated using `multind.sty`. This style file redefines the `\makeindex`, `\index` and `\printindex` commands to deal with multiple indexes.

Suppose you want to create an author index and a subject index. The entries should be in the text as usual, but take the following form:

```
\index{authors}{Knuth}
\index{authors}{Lamport}
\index{authors}{Eijkhout}
\index{subject}{gravitation}
\index{subject}{force!gravitational}
\index{subject}{force!interactive}
```

In the preamble, you need to add the following lines:

```
\usepackage{multind}
\makeindex{authors}
\makeindex{subject}
```

which can be ignored. At the point where you wish your indexes to appear, you then need the commands:

```
\printindex{authors}{Author index}
\printindex{subject}{Subject index}
```

Run your book through LaTeX 2ε enough times so that the labels, etc., are stable. Then execute the commands:

```
makeindex authors
makeindex subject
```

To include the indexes, you need to run LaTeX 2ε one more time.

9.3 How to typeset appendix

Appendix can be generated using the following coding:

```
\appendix
\include{appendix}
\endappendix
```