

Phoebe's Official LaTeX Template & Style Guide

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Abstract. This document is part of the official LaTeX template for Phoebe articles. It provides our authors with rules and guidelines for setting up the layout of their article's manuscript.

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1 General Instructions

In case you are completely new to LaTeX: A great resource for start learning LaTeX which has also many useful tutorials and nice tips even for advanced users is Overleaf's documentation. You will find an online version at <https://www.overleaf.com/learn>.

1.1 Getting started

Every article project consists of several files:

1. `article.tex` — The main file where you put your article's content.
2. `phoebe.cls` — The LaTeX class must always be included.
3. `references.bib` — The file where you manage your bibliography.
4. `preamble.sty` — An empty file where you may include additional packages and define custom commands.
5. `asset/` — A folder where you store all your images.
6. `fonts/` — A necessary folder for all needed fonts.

Please use LuaLaTeX to compile your document. A minimal working example is given below.

```
% article.tex

\documentclass[language=english]{phoebe}

% define some variables
\title{My Article}
\author{Jane Doe}
\date{\today}
\email{phoebe@uni-heidelberg.de}
\keywords{Phoebe, LaTeX, Template}
\abstract{Your abstract}
```

```
% load file with bibliography
\addbibresource{references.bib}

\begin{document}

\maketitle

% your text goes here.

\begingroup
\raggedright
\printbibliography
\endgroup

\end{document}
```

You may find a template for `references.bib` in Sec. 5.

1.2 Article Length

Your article should be 2–5 pages long including footnotes, captions and bibliography. If you need more space you might want to consider splitting up the content and submit two shorter articles.

1.3 Abstract

Every article needs a short abstract of about 250 words to provide readers with a short summary of the content.

1.4 Additional LaTeX Packages

The class covers only a couple of features. If you need more packages, simply add them to the preamble. Never modify the class file. In case of compilation errors please contact phoebe@uni-heidelberg.de.

2 Typography

2.1 Punctuation

2.2 New Paragraphs

If you want to start a new paragraph, you could either use the \TeX command `\par` or leave a blank line (this has the same effect). The commonly used `\\` has a different effect, depending on the environment and only starts a new line. It should therefore be avoided.

2.3 Headings

Phoebe only uses sections and subsections.

2.4 Hyphen and Dash

A hyphen (single `-`) is used to combine words (e.g. low-density). The en-dash (two `--`) is slightly larger and is used to indicate ranges (e.g. this month we publish 2–5 articles). The en-dash is identical in length to the minus sign. When in math mode, LaTeX will automatically use a minus sign when a single `-` is used. em-dashes (`---`) should not be used in the journal.

LaTeX assumes that a period marks the end of a sentence and as such puts a bit of extra space after it. This is wrong if the period is used in an abbreviation, e.g. “i.e.” To avoid this, place a space (e.g. `\`) after the period. In the previous example, the abbreviation period also marks the end of the sentence. In such case only one period is required.

2.5 Quotation Marks

The typography of quotation marks usually vary from country to country. However, the package `csquotes` facilitates

```
The quick brown fox \enquote{Harvey} jumps over
the lazy dog \enquote{Bruno}.
```

Depending on the language you chose in the class options at the very beginning, `csquotes` will fill in their correct form used in the respective country:

The quick brown fox “Harvey” jumps over the lazy dog “Bruno”.

2.6 Units

Variables are set in italics (this happens automatically in math mode), however units are always roman (upright). They should be separated by a non-breaking space. For reciprocal units, use a superscript, e.g. cm s^{-1} . Use either SI or cgs units.

Tab. 1. Conventions for labelling objects in \LaTeX .

Convention	Object
<code>sec</code>	Section
<code>ssec</code>	Subsection
<code>eq</code>	Equation
<code>fig</code>	Figure
<code>tab</code>	Table

Please make use of the `siunitx` package (already loaded with this class) as it takes care of the aforementioned rules.

```
R = \SI{8,3145}{\joule\per\mole\per\kelvin}
```

$$R = 8.3145 \text{ J mol}^{-1} \text{ K}^{-1} \quad (1)$$

If you need a unit that is not already defined, you can define your own units like so¹

```
\DeclareSIUnit\parsec{pc}
```

The axis of plots must have the according unit. This should be written as x/cm . Note that commonly found notation $x[\text{cm}]$ is not acceptable. Square brackets denote the unit of a quantity (just like value is denoted by curly brackets), i.e. $x = \{x\}[x]$. Take the example $x = 12 \text{ cm}$, i.e. $[x] = \text{cm}$. For more details, see section 7 of the [NIST Guide to the SI](#).

2.7 URLs and Hyperlinks

Please use `\url` for writing blank URLs, e.g. <https://phoebe.pubpub.org>, and `\href` if you want to write a description instead, e.g. [Phoebe](#).

```
\url{phoebe.pubpub.org}
\href{phoebe.pubpub.org}{Phoebe}
```

Keep in mind that URLs without `https://` won’t usually work.

Sections, equations, figures and tables can be referenced by using `label` and `ref` commands.

```
\section{Methods}
\label{sec:methods}
```

See [\ref{sec:methods}](#) for the methods.

The value inside `label` is completely arbitrary, however, there are some conventions you might want to follow:

¹ You might want to put those type of commands into preamble.sty.

3 Math

3.1 Equations

```
\begin{equation}
\int_{-\infty}^{+\infty} e^{-x^2} \mathrm{d}x = \sqrt{\pi}
\end{equation}
```

$$\int_{-\infty}^{+\infty} e^{-x^2} dx = \sqrt{\pi} \quad (2)$$

If you like to show a short calculation with some steps in between, you may want to align these equations for better readability:

```
\begin{align*}
\int_a^b \sin(x) \mathrm{d}x &= -\frac{1}{2} \left[ e^{ib} - e^{ia} - (e^{-ib} - e^{-ia}) \right] \\
&= \frac{e^{ia} + e^{-ia}}{2} - \frac{e^{ib} + e^{-ib}}{2} \\
&= \cos(a) - \cos(b)
\end{align*}
```

$$\begin{aligned} \int_a^b \sin(x) dx &= -\frac{1}{2} [e^{ib} - e^{ia} - (e^{-ib} - e^{-ia})] \\ &= \frac{e^{ia} + e^{-ia}}{2} - \frac{e^{ib} + e^{-ib}}{2} \\ &= \cos(a) - \cos(b) \end{aligned}$$

Equations should always be punctuated whenever they appear at the end of a sentence.

3.2 Differentials

Differentials are always set upright:

```
\frac{\mathrm{d}f(x)}{\mathrm{d}x}
```

$$\frac{df(x)}{dx} \quad (3)$$

3.3 Vectors

Vectors are set in bold-italic, please don't use any arrows:

```
\begin{equation}
\nabla \times \mathbf{E} = -\frac{\partial \mathbf{B}}{\partial t}
\end{equation}
```

$$\nabla \times \mathbf{E} = -\frac{\partial \mathbf{B}}{\partial t} \quad (4)$$

3.4 Multi-letter function names

```
\begin{equation}
\log e^x = x
\end{equation}
```

$$\log e^x = x \quad (5)$$

If you want to define new function names you may want to add

```
\DeclareMathOperator{\MyNewFunction}{MNF}
```

to the preamble of your document.

3.5 Definition, Theorem, Proof

```
\theoremstyle{definition}
\newtheorem{definition}{Definition}
\theoremstyle{plain}
\newtheorem{theorem}{Theorem}
\newtheorem{lemma}{Lemma}
```

```
\begin{definition}
Let $f: \mathbb{R} \rightarrow \mathbb{R}$ be
a function.
\end{definition}
```

```
\begin{theorem}
$f$ is a function.
\end{theorem}
```

```
\begin{proof}
You get it, right?
\end{proof}
```

Definition 1. Let $f : \mathbb{R} \rightarrow \mathbb{R}$ be a function.

Theorem 1. f is a function.

Proof. You get it, right? □

3.6 Tensors and Indices

3.7 Cases

```
f(n) = \begin{cases}
n/2 & \text{if } n \text{ is even} \\
3n+1 & \text{if } n \text{ is odd}
\end{cases}
```

$$f(n) = \begin{cases} n/2 & n \text{ is even} \\ 3n+1 & n \text{ is odd} \end{cases} \quad (6)$$

Tab. 2. Some Shakespeare’s plays.

Title	Type	Year
A Midsummer Night’s Dream	Comedy	1594
Romeo and Juliet	Tragedy	1595
Much Ado About Nothing	Comedy	1599
Hamlet	Tragedy	1601
Henry VIII	History	1613

3.8 Matrices

```
\begin{pmatrix}
0 & 1 \\
1 & 0
\end{pmatrix}
```

$$\begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix} \tag{7}$$

4 Figures and Tables

We follow the convention that tables are placed at the top of a page while figures appear at the bottom.

```
\begin{table}[t]
\begin{center}
\caption{Your caption goes here.}
\setlength\defaultaddspace{0.5em}
\begin{tabularx}{\columnwidth}{ll}
\toprule
Column 1 & Column 2 \\
\midrule
A & 1 \\
B & 2 \\
\bottomrule
\end{tabularx}
\end{center}
\end{table}
```

5 Bibliography

We use biblatex with biber as the backend for the references. The file with the entries should be loaded before the main document starts with \addbibresource{ }.

There are two main citation commands: for in-line citations use \citet{ } and for citations in parantheses use \citep{ }, see Tab 4.

```
See~\citet{article,unpublished}.
See~\citet{article,phdthesis}.
See~\citep{article}.
```

See Jane Doe (2023a,b).
See Jane Doe (2023a) and John Doe (2023).
See (Jane Doe, 2023a).

To manage your references you may want to include a separate file. We give here a template which might work for most cases.

If you want to refer to lecture notes, please use misc.

```
% references.bib

@article{article,
  author = "{Doe}, Jane and {Doe}, John",
  title = "My Wonderful Phoebe Article",
  journal = "Phoebe",
  year = 2023,
  volume = "1",
  number = "1",
  pages = "1-5",
}

@book{book,
  author = {{Doe}, John},
  title = {My New Bestseller},
  year = {2023},
  publisher = {University Publishing}
}

@online{online,
  label = {Phoebe},
  title = {My First Online Article},
  url = {https://phoebe.pubpub.org},
  year = {2023},
  urldate = {2023-06-02}
}

@mastersthesis{mastersthesis,
  author = "{Doe}, Jane",
  title = "My Master Thesis",
  school = "My University",
  year = 2020,
  address = "My Home Town",
  month = sep
}

@phdthesis{phdthesis,
  author = "{Doe}, John",
  title = "My Doctoral Thesis",
  school = "My University",
  address = "My Home Town",
  year = 2023,
  month = jun
}

@misc{misc,
  title = "Some Miscellaneous Stuff",
  author = "{Phoebe}",
  howpublished = "\url{https://phoebe.pubpub.org}",
  year = 2023,
  note = "Accessed: 2023-07-06"
}
```

Tab. 3. *Some Bond Films with Sean Connery.*

Film Title	Year	Villain	Bond Girl	Key Car
Dr No	1962	Doctor No	Ursula Andress · <i>Honey Ryder</i>	Sunbeam Alpine
From Russia With Love	1963	Red Grant	Daniela Bianchi · <i>Tatiana Romanova</i>	Bentley Mark IV
Goldfinger	1964	Goldfinger	Honor Blackman · <i>Pussy Galore</i>	Aston Martin DB5
Thunderball	1965	Emilio Largo	Claudine Auger · <i>Domino</i>	Aston Martin DB5
You Only Live Twice	1967	Blofeld	Akiko Wakabayashi · <i>Aki</i>	Toyota 2000 GT

Tab. 4. *Some citation commands. Taken from Overleaf (2023).*

Command	Description
<code>\citet{}</code>	Textual citation
<code>\citep{}</code>	Parenthetical citation
<code>\citet*{}</code>	Same as <code>\citet</code> but if there are several authors, all names are printed
<code>\citep*{}</code>	The same as <code>\citep</code> but if there are several authors, all names are printed
<code>\citeauthor{}</code>	Prints only the name of the author(s)
<code>\citeyear{}</code>	Prints only the year of the publication

```
@unpublished{unpublished,
  author = "{Doe}, Jane",
  title  = "Some Yet To Be Published Stuff",
  year   = 2023
}
```

References

- Doe, Jane (2023a). "My Wonderful Phoebe Article". In: *Phoebe Gazette für Studentische Forschung* 1.1, pp. 1–5.
- (2023b). "Some Yet To Be Published Stuff".
- Doe, John (June 2023). "My Doctoral Thesis". PhD thesis. My Home Town: My University.
- Overleaf (2023). *Natbib citation styles*. URL: https://de.overleaf.com/learn/latex/Natbib_citation_styles (visited on 09/23/2023).