

# A Guide to L<sup>A</sup>T<sub>E</sub>X

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	<b>Glossary</b>	<b>24</b>
	<b>References</b>	<b>25</b>
	<b>A First Appendice Title</b>	<b>26</b>
	<b>B Second Appendice Title</b>	<b>26</b>



```
#          v   v   v           |           v   v
# texlive-latex-recommended    | texlive-fonts-recommended
#                               |           :
#                               |           v
#                               |           tipa
#                               |           |
#                               +-----+ | +-----+
#                               | | |
#                               v v v
#                               texlive-latex-base
```

```
sudo apt-get install texlive-latex-extra
```

### 1.3 Mac

TODO

## 2 LaTeX Mini Reference

### 2.1 Custom pages

Add custom pages or page parts to the documents

- *template/custom-pages/titlepage.tex*: Add custom titlepage
- *template/custom-pages/header-exam.tex*: For student tests
- *template/custom-pages/header-labo.tex*: Title for Labor documents
- *subpage.tex*: Add your custom subdocument

Nom: .....

1	2	3	4	5	note
(10)	(10)	(10)	(10)	(10)	

*template/custom-pages/header-exam.tex*

# A Guide to L<sup>A</sup>T<sub>E</sub>X

*template/custom-pages/header-labo.tex*

*template/custom-pages/signature-zas.tex*



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*template/custom-pages/signature-date-zas.tex*

```

\input{template/custom-pages/titlepage.tex}
\input{template/custom-pages/header-exam.tex}
\input{template/custom-pages/header-labo.tex}
\input{template/custom-pages/signature-zas.tex}
\input{subpage.tex}

```

## 2.2 General Formatting

### 2.2.1 Page Formatting

`\newpage`      % jump to new page  
`\\`                % new paragraph  
`\\*` or `\newline` % new line  
  
`%`                 % start line comment  
  
`\begin{comment}` % exclude part of a document (multiline comment)  
`\end{comment}`

### 2.2.2 Font sizes

Huge	<code>{\Huge Huge}</code>
huge	<code>{\huge huge}</code>
LARGE	<code>{\LARGE LARGE}</code>
Large	<code>{\Large Large}</code>
large	<code>{\large large}</code>
normal (default)	<code>{\normalsize normal (default)}</code>
small	<code>{\small small}</code>
footnotesize	<code>{\footnotesize footnotesize}</code>
scriptsize	<code>{\scriptsize scriptsize}</code>
tiny	<code>{\tiny tiny}</code>

### 2.2.3 Decorations

<i>Italic</i>	<code>\textit{Italic}</code>
Typewriter	<code>\texttt{Typewriter}</code>
<b>Bold</b>	<code>\textbf{Bold}</code>
Text	<code>\texttt{Text}</code>
Serif Font	<code>\textsf{Serif}</code>
Serif (Roman)	<code>\textrm{Sans Serif (Roman)}</code>
<u>Underline</u>	<code>\underline{Underline}</code>
<i>Emphasis</i>	<code>\emph{Emphasis}</code>

### 2.2.4 Text Alignment

left aligned text		<code>\raggedright</code>	right aligned text
		left aligned text	<code>\\</code>
	centered text	<code>\raggedleft</code>	right aligned text
		centered text	<code>\\</code>
justified text		<code>\centering</code>	centered text
		centered text	<code>\\</code>
		<code>\justify</code>	justified text
		justified text	<code>\\</code>

### 2.2.5 Links

<http://zawiki.zapto.org>  
[silvan.zahno@hevs.ch](mailto:silvan.zahno@hevs.ch)  
 Zawiki

```

\url{http://zawiki.zapto.org}
\href{mailto:\email}{\email}
\href{http://zawiki.zapto.org}{Zawiki}
  
```

## 2.2.6 Cross referencing

Set labels and reference them afterwards. Labels can be set anywhere hereafter examples for sections, equations and images.

### 2.2.6 Cross referencing

$$\sum_{i=0}^{\infty} a_i x^i \quad (1)$$

The equations 1 is a power series.



Figure 1 – Figure with reference label

figure 1 shows the logo.

```

\section{Cross referencing} \label{crossref}
\ref{crossref} \nameref{crossref}
  
```

```

\begin{equation} \label{eq:1}
\sum_{i=0}^{\infty} a_i x^i
\end{equation}
  
```

The equations `\ref{eq:1}` is a power series.

```

\begin{center}
\begingroup
\includegraphics[width=0.1\textwidth]{\logo}
\captionof{figure}{Figure with reference label}
\label{fig:logo}
\endgroup
\end{center}
figure \ref{fig:logo} shows the logo.
  
```

## 2.2.7 Line Decorations

Below is a line spanning document with hspace

```
\hspace*{-3.3835cm}\rule{\paperwidth}{0.4pt}
```

Below is a line from the left

```
\hspace*{-5.5cm}\rule{\paperwidth}{0.4pt}
```

Below is a line from the right

```
\hspace*{0cm}\rule{\paperwidth}{0.4pt}
```

Below is a line spanning textwidth

```
\noindent\rule{\textwidth}{1pt}
```

Below is a 2cm long line

```
\noindent\rule{2cm}{0.4pt}
```

Below is a 4cm long line

```
\noindent\rule{4cm}{0.4pt}
```

Below is a 8cm long line



```
\noindent\rule{8cm}{0.4pt}
```

## 2.3 General Elements

### 2.3.1 Include Pages

```
\input{template/custom-pages/titlepage.tex}
```

### 2.3.2 Sections

For creating Sections and sub sections there are multiple levels available.

```
\title{Document Title}
\subtitle{Document Subtitle}
-1 = \part{Part} (only available in report and book)
0 = \chapter{Chapter} (only available in report and book)
1 = \section{First Section}
2 = \subsection{Second Section}
3 = \subsubsection{Third Section}
4 = \paragraph{Paragraph}
5 = subparagraph{Subpararaph}
```

### 2.3.3 Lists

• One	<code>\begin{itemize}</code>
• Two	<code>\item One</code>
• Three	<code>\item Two</code>
	<code>\item Three</code>
	<code>\end{itemize}</code>
• One	<code>\begin{itemize}</code>
– Two	<code>\item One</code>
– Three	<code>\begin{itemize}</code>
– Four	<code>\item Two</code>
	<code>\item Three</code>
	<code>\item Four</code>
• Five	<code>\end{itemize}</code>
• Six	<code>\item Five</code>
	<code>\item Six</code>
	<code>\end{itemize}</code>
1. One	<code>\begin{enumerate}</code>
2. Two	<code>\item One</code>
3. Three	<code>\item Two</code>
	<code>\item Three</code>
	<code>\end{enumerate}</code>
1. One	(c) Four
(a) Two	2. Five
(b) Three	3. Six

```

\begin{enumerate}
  \item One
  \begin{enumerate}
    \item Two
    \item Three
    \item Four
  \end{enumerate}
  \item Five
  \item Six
\end{enumerate}

\begin{todolist}
  \item Normal item
  \item[\cmark] cmark item
  \item[\xmark] xmark item
  \item[\done] done item
  \item[\wontfix] wontfix item
\end{todolist}

```

- Normal item
- cmark item
- xmark item
- done item
- wontfix item

### 2.3.4 Multicolumns

Column 1

Column 2

```

\begin{multicols}{2}
  Column 1
  \vfill\null\columnbreak
  Column 2
\end{multicols}

```

## 2.4 Images



Figure 2 – Defined figure placement

```

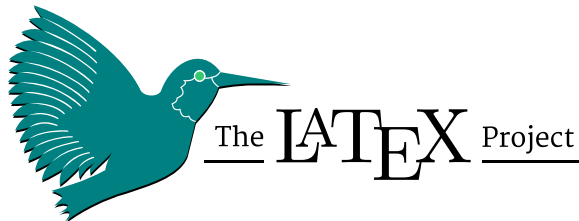
\begin{center}
  \begingroup
  \includegraphics[scale=0.5]{\logo}
  \captionof{figure}{Defined figure placement}
  \endgroup
\end{center}

```



Figure 3 – 100% Text Width

```
\begin{center}
  \begingroup
  \includegraphics[width=1.0\textwidth]{\logo}
  \captionof{figure}{100% Text Width}
  \endgroup
\end{center}
```



```
\begin{center}
  \begingroup
  \includegraphics[width=0.5\textwidth]{\logo}
  \captionof{figure}{50% Text Width}
  \endgroup
\end{center}
```

Figure 4 – 50% Text Width



Figure 5 – 30% Text Width

```
\begin{center}
  \begingroup
  \includegraphics[width=0.3\textwidth]{\logo}
  \captionof{figure}{30% Text Width}
  \endgroup
\end{center}
```



Figure 6 – 10% Text Width

```
\begin{center}
  \begingroup
  \includegraphics[width=0.1\textwidth]{\logo}
  \captionof{figure}{10% Text Width}
  \endgroup
\end{center}
```



```
\begin{center}
  \includegraphics[scale=0.8]{\logo}
\end{center}
```

Figure 1 shows a reference to the image

```
\begin{figure}
  \includegraphics{\logo}
  \captionof{figure}{Automatic figure placement}
  \label{fig:logo}
\end{figure}
```

## 2.5 Tables

Left	Center	Right	Right	Right
1.1	1.2	1.3	1.4	1.5
2.1	2.2	2.3	2.4	2.5
3.1	3.2	3.3	3.4	3.5
4.1	4.2	4.3	4.4	4.5
5.1	5.2	5.3	5.4	5.5
6.1	6.2	6.3	6.4	6.5
7.1	7.2	7.3	7.4	7.5

X	Q <sub>1</sub>	Q <sub>0</sub>	Y
0	0	0	0
0	0	1	1
0	1	0	1
0	1	1	0
1	0	0	1
1	0	1	1
1	1	0	1
1	1	1	0

Operator	Beschreibung
+	Addition
-	Subtraktion
*	Multiplikation
/	Teilung
**	Potenz
abs	absolut Wert
mod	Modulo
rem	Rest der Teilung
sla	arith Verschiebung links
sra	arith Verschiebung rechts

Table 1 – VHDL Operators

	Date	Col 1	Col 2
Room			
Row 1			
Row 2			
Row 3			

Multi-Row	Multi-Column Left
	Multi-Column Center
	Multi-Column Right

## 2.6 Colors

```

\begin{tabular}{l : c | r || r V{2.7} r \vline}
  Left & Center & Right & Right & Right \\
  1.1 & 1.2 & 1.3 & 1.4 & 1.5 \\
  2.1 & 2.2 & 2.3 & 2.4 & 2.5 \\
  3.1 & 3.2 & 3.3 & 3.4 & 3.5 \\
  4.1 & 4.2 & 4.3 & 4.4 & 4.5 \\
  5.1 & 5.2 & 5.3 & 5.4 & 5.5 \\
  6.1 & 6.2 & 6.3 & 6.4 & 6.5 \\
  7.1 & 7.2 & 7.3 & 7.4 & 7.5 \\
\end{tabular}

```

```

\begin{tabular}{c V{2.7} c c V{2.7} c}
  X & $Q_1$ & $Q_0$ & Y \\
  0 & 0 & 0 & 0 \\
  0 & 0 & 1 & 1 \\
  0 & 1 & 0 & 1 \\
  0 & 1 & 1 & 0 \\
  1 & 0 & 0 & 1 \\
  1 & 0 & 1 & 1 \\
  1 & 1 & 0 & 1 \\
  1 & 1 & 1 & 0 \\
\end{tabular}

```

```

\begin{group}
  \begin{tabular}{| c | c |}
    \hline
    \multicolumn{1}{|c|}{\emph{ Operator }} & \multicolumn{1}{|c|}{Addition} \\
    + & \\
    \multicolumn{1}{|c|}{Subtraktion} \\
    - & \\
    \multicolumn{1}{|c|}{Multiplikation} \\
    * & \\
    \multicolumn{1}{|c|}{Teilung} \\
    / & \\
    \multicolumn{1}{|c|}{Potenz} \\
    ** & \\
    \multicolumn{1}{|c|}{absolut Wert} \\
    abs & \\
    \multicolumn{1}{|c|}{Modulo} \\
    mod & \\
    \multicolumn{1}{|c|}{Rest der Teilung} \\
    rem & \\
    \multicolumn{1}{|c|}{arith Verschiebung links} \\
    sla & \\
    \multicolumn{1}{|c|}{arith Verschiebung rechts} \\
    sra & \\
  \end{tabular}
  \captionof{table}{VHDL Operators}
\end{group}

```

```

\begin{tabular}{|l|*{2}{c|}}\hline
  \backslashslashbox{Room}{Date}&\makebox[3em]{Col 1}&\makebox[3em]{Col 2} \\
  Row 1 && \\
  Row 2 && \\
  Row 3 && \\
\end{tabular}

```

Latex Symbol	Latex Code
black	<code>\textcolor{black}{black}</code>
	<code>\textcolor{white}{white}</code>
red	<code>\textcolor{red}{red}</code>
yellow	<code>\textcolor{yellow}{yellow}</code>
lime	<code>\textcolor{lime}{lime}</code>
olive	<code>\textcolor{olive}{olive}</code>
green	<code>\textcolor{green}{green}</code>
teal	<code>\textcolor{teal}{teal}</code>
blue	<code>\textcolor{blue}{blue}</code>
HEICyan	<code>\textcolor{HEICyan}{HEICyan}</code>
HEIMagenta	<code>\textcolor{HEIMagenta}{HEIMagenta}</code>
HEIYellow	<code>\textcolor{HEIYellow}{HEIYellow}</code>
HEIGreen	<code>\textcolor{HEIGreen}{HEIGreen}</code>
SPLGreen	<code>\textcolor{SPLGreen}{SPLGreen}</code>
SPLBlue	<code>\textcolor{SPLBlue}{SPLBlue}</code>
SPLPurple	<code>\textcolor{SPLPurple}{SPLPurple}</code>
mGray20	<code>\textcolor{mGray20}{mGray20}</code>
mGray40	<code>\textcolor{mGray40}{mGray40}</code>
mGray60	<code>\textcolor{mGray60}{mGray60}</code>
mGray80	<code>\textcolor{mGray80}{mGray80}</code>
	<code>\textcolor{mWhite}{mWhite}</code>
mBlack	<code>\textcolor{mBlack}{mBlack}</code>
mPink	<code>\textcolor{mPink}{mPink}</code>
Accent Color 1	<code>\textcolor{coloraccent1}{Accent Color 1}</code>
Accent Color 2	<code>\textcolor{coloraccent2}{Accent Color 2}</code>
Accent Color 3	<code>\textcolor{coloraccent3}{Accent Color 3}</code>
Color Background Header/Footer	<code>\textcolor{colorbackgroundheaderfooter}{Color Background Header/Footer}</code>
	<code>\textcolor{colortextheaderfooter}{Color Text Header/Footer}</code>
	<code>\textcolor{colorbackgroundfooter}{Color Background Footer}</code>
Color Text Footer	<code>\textcolor{colortextfooter}{Color Text Footer}</code>
	<code>\textcolor{colorbackgroundcanvas}{Color Background Canvas}</code>
Text Color	<code>\textcolor{colortext}{Text Color}</code>

Test text	<code>%\pagecolor{black} % would make this and all coming p</code>
	<code>{</code>
	<code>\color{mGray80}</code>
	<code>Test text \\\</code>
	<code>}</code>
	<code>{</code>
	<code>\color{coloraccent1}</code>
	<code>\rule{\linewidth}{1mm}</code>
	<code>}</code>
	<code>\colorbox{coloraccent2}{colorbox}</code>

## 2.7 Code

**2.7.0.1 Inline Code** Inline Code `int x = 0`  
 Inline Code `int x = 0`

Inline Code `\mintinline{cpp}{int x = 0}`  
 Inline Code `\lstinline{int x = 0}`

```
import numpy as np
class PiClass:
    """ Pi class for getting pi value """
```

```
def __init__():
    """ Returns value of Pi """
    return np.pi
```

### 2.7.0.2 Bloc Code

```

1 import numpy as np
2 class PiClass:
3     """ Pi class for getting pi value """
4     def __init__():
5         """ Returns value of Pi """
6         return np.pi

```

```

1 import numpy as np
2 class PiClass:
3     """ Pi class for getting pi value """
4     def __init__():
5         """ Returns value of Pi """
6         return np.pi

```

```

1 import numpy as np
2 class PiClass:
3     """ Pi class for getting pi value """
4     def __init__():
5         """ Returns value of Pi """
6         return np.pi

```

```

\begin{lstlisting}
import numpy as np
class PiClass:
    """ Pi class for getting pi value """
    def __init__():
        """ Returns value of Pi """
        return np.pi
\end{lstlisting}

```

```

\usemintedstyle{pastie}
\begin{minted}
[
fontsize=\footnotesize,
linenos
]{python}
import numpy as np
class PiClass:
    """ Pi class for getting pi value """
    def __init__():
        """ Returns value of Pi """
        return np.pi
\end{minted}

```

```

\usemintedstyle{monokai}
\begin{minted}
[
fontsize=\footnotesize,
bgcolor=black!80,
linenos
]{python}
import numpy as np
class PiClass:
    """ Pi class for getting pi value """
    def __init__():
        """ Returns value of Pi """
        return np.pi
\end{minted}

```

```

\usemintedstyle{bw}
\begin{minted}
[
frame=lines,
framesep=2mm,
baselinestretch=1.2,
bgcolor=gray!20,
fontsize=\footnotesize,
linenos
]{python}
import numpy as np
class PiClass:
    """ Pi class for getting pi value """
    def __init__():
        """ Returns value of Pi """
        return np.pi
\end{minted}

```

## 2.8 MathJax

- Mathjax Latest Documentation
- Stack Exchange Basic Tutorial and Quick Reference
- List of LaTeX Mathematical Symbols
- List of LaTeX Symbols

Mathjax code need to be places between \$ Symbols

- \$ ... \$: for inline Mathjax
- \$\$ ... \$\$: for bloc Mathjax

### 2.8.1 Text & Additions

Latex Symbol	Latex Code	Latex Symbol	Latex Code
normal text	<code>\text{normal text}</code>	<b>bold text</b>	<code>\textbf{bold text}</code>
<i>italic text</i>	<code>\textit{italic text}</code>	fixed spaced text	<code>\texttt{fixed spaced text}</code>
$Q_1 I_{\min}$	<code>Q_1 I_{\min}</code>	$x^2 x^{20}$	<code>x^2 x^{20}</code>
$\acute{x}$	<code>\acute{x}</code>	$\grave{x}$	<code>\grave{x}</code>
$\dot{x}$	<code>\dot{x}</code>	$\ddot{x}$	<code>\ddot{x}</code>
$\bar{x}$	<code>\bar{x}</code>	$\tilde{x}$	<code>\tilde{x}</code>
$\hat{x}$	<code>\hat{x}</code>	$\check{x}$	<code>\check{x}</code>
$\vec{x}$	<code>\vec{x}</code>	$\breve{x}$	<code>\breve{x}</code>
$\overset{over}{X}$	<code>\overset{over}{X}</code>	$\underset{under}{X}$	<code>\underset{under}{X}</code>
$\overline{xxx}$	<code>\overline{xxx}</code>	$\underline{xxx}$	<code>\underline{xxx}</code>
$\overbrace{xxx}$	<code>\overbrace{xxx}</code>	$\underbrace{xxx}$	<code>\underbrace{xxx}</code>
$\overleftarrow{xxx}$	<code>\overleftarrow{xxx}</code>	$\overrightarrow{xxx}$	<code>\overrightarrow{xxx}</code>
$\xleftarrow[under]{over}$	<code>\xleftarrow[under]{over}</code>	$\xrightarrow[under]{over}$	<code>\xrightarrow[under]{over}</code>

### 2.8.2 Spaces

Latex Symbol	Latex Code	Latex Symbol	Latex Code	Latex Symbol	Latex Code
$a b$	<code>a \mspace{3mu} b</code>	$a b$	<code>a \, b</code>	$a b$	<code>a \thinspace b</code>
$a b$	<code>a \mspace{4mu} b</code>	$a b$	<code>a \: b</code>	$a b$	<code>a \medspace b</code>
$a b$	<code>a \mspace{5mu} b</code>	$a b$	<code>a \; b</code>	$a b$	<code>a \thickspace b</code>
$a b$	<code>a \mspace{6mu} b</code>	$a b$	<code>a \ b</code>	-	-
$a \ b$	<code>a \mspace{18mu} b</code>	$a \ b$	<code>a \quad b</code>	-	-
$a \ \ b$	<code>a \mspace{36mu} b</code>	$a \ \ b$	<code>a \quad\quad b</code>	-	-
$a b$	<code>a \mspace{-3mu} b</code>	$a b$	<code>a \, b</code>	$a b$	<code>a \negthinspace b</code>
$a b$	<code>a \mspace{-4mu} b</code>	-	-	$a b$	<code>a \negmedspace b</code>
$a b$	<code>a \mspace{-5mu} b</code>	-	-	$a b$	<code>a \negthickspace b</code>

### 2.8.3 Greek Letters

Latex Symbol	Latex Code
$A\alpha$	<code>A \alpha</code>
$B\beta$	<code>B \beta</code>
$\Gamma\gamma$	<code>\Gamma \gamma</code>
$\Delta\delta$	<code>\Delta \delta</code>
$E\epsilon$	<code>E \epsilon</code>
$Z\zeta$	<code>Z \zeta</code>
$H\eta$	<code>H \eta</code>
$\Theta\theta$	<code>\Theta \theta</code>
$I\iota$	<code>I \iota</code>
$K\kappa$	<code>K \kappa</code>
$\Lambda\lambda$	<code>\Lambda \lambda</code>
$M\mu$	<code>M \mu</code>
$N\nu$	<code>N \nu</code>
$\Xi\xi$	<code>\Xi \xi</code>
$O\omicron$	<code>O \omicron</code>
$\Pi\pi$	<code>\Pi \pi</code>
$P\rho$	<code>P \rho</code>
$\Sigma\sigma$	<code>\Sigma \sigma</code>
$T\tau$	<code>T \tau</code>
$\Upsilon\upsilon$	<code>\Upsilon \upsilon</code>
$\Phi\phi$	<code>\Phi \phi</code>
$X\chi$	<code>X \chi</code>
$\Psi\psi$	<code>\Psi \psi</code>
$\Omega\omega$	<code>\Omega \omega</code>

### 2.8.4 Symbols

#### 2.8.4.1 Relational Operators

Latex Symbol	Latex Code	Latex Symbol	Latex Code
$<$	<code>&lt;</code>	$>$	<code>&gt;</code>
$\nless$	<code>\nless</code>	$\ngtr$	<code>\ngtr</code>
$\leq$	<code>\leq</code>	$\geq$	<code>\geq</code>
$\leqslant$	<code>\leqslant</code>	$\geqslant$	<code>\geqslant</code>
$\nleq$	<code>\nleq</code>	$\ngeq$	<code>\ngeq</code>
$\nleqslant$	<code>\nleqslant</code>	$\ngeqslant$	<code>\ngeqslant</code>
$\ll$	<code>\ll</code>	$\gg$	<code>\gg</code>
$\lll$	<code>\lll</code>	$\ggg$	<code>\ggg</code>
$\subset$	<code>\subset</code>	$\supset$	<code>\supset</code>
$\not\subset$	<code>\not\subset</code>	$\not\supset$	<code>\not\supset</code>
$\subseteq$	<code>\subseteq</code>	$\supseteq$	<code>\supseteq</code>
$\not\subseteq$	<code>\not\subseteq</code>	$\not\supseteq$	<code>\not\supseteq</code>

Latex Symbol	Latex Code
$=$	<code>=</code>
$\equiv$	<code>\equiv</code>
$\approx$	<code>\approx</code>
$\cong$	<code>\cong</code>
$\simeq$	<code>\simeq</code>
$\sim$	<code>\sim</code>
$\propto$	<code>\propto</code>
$\neq$	<code>\neq</code>



### 2.8.4.2 Arrows

Latex Symbol	Latex Code	Latex Symbol	Latex Code
$\rightarrow$	<code>\rightarrow</code>	$\leftarrow$	<code>\leftarrow</code>
$\Rightarrow$	<code>\Rightarrow</code>	$\Leftarrow$	<code>\Leftarrow</code>
$\longrightarrow$	<code>\longrightarrow</code>	$\rightarrow$	<code>\longrightarrow</code>
$\Longrightarrow$	<code>\Longrightarrow</code>	$\Rightarrow$	<code>\Rightarrow</code>
$\mapsto$	<code>\mapsto</code>	-	-
$\longmapsto$	<code>\longmapsto</code>	-	-
$\uparrow$	<code>\uparrow</code>	$\Uparrow$	<code>\Uparrow</code>
$\downarrow$	<code>\downarrow</code>	$\Downarrow$	<code>\Downarrow</code>
$\updownarrow$	<code>\updownarrow</code>	$\Updownarrow$	<code>\Updownarrow</code>

### 2.8.4.3 Boolesche Algebra Symbols

Operator	Latex Symbol	Latex Code
NEGATE	$\neg \bar{x} \bar{x}$	<code>\neg \overline{x} \bar{x}</code>
AND	$\bigwedge \wedge * \&$	<code>\bigwedge \wedge * \&amp;</code>
OR	$\bigvee \vee +  $	<code>\bigvee \vee +  </code>
XOR	$\oplus$	<code>\oplus</code>

### 2.8.4.4 Other Symbols

Latex Symbol	Latex Code	Latex Symbol	Latex Code	Latex Symbol	Latex Code
#	<code>\#</code>	‡	<code>\sharp</code>	§	<code>\S</code>
◇	<code>\lozenge</code>	◆	<code>\blacklozenge</code>	∞	<code>\infty</code>
□	<code>\square</code>	■	<code>\blacksquare</code>	♠	<code>\spadesuit</code>
△	<code>\triangle</code>	▲	<code>\blacktriangle</code>	♣	<code>\clubsuit</code>
▽	<code>\triangledown</code>	▼	<code>\blacktriangledown</code>	♥	<code>\heartsuit</code>
/	<code>\diagup</code>	\	<code>\diagdown</code>	◇	<code>\diamondsuit</code>
∅	<code>\varnothing</code>	∅	<code>\emptyset</code>	∠	<code>\angle</code>
□	<code>\square</code>	√	<code>\surd</code>	∠	<code>\measuredangle</code>

### 2.8.5 Math Symbols

#### 2.8.5.1 Trigonometry

Latex Symbol	Latex Code	Latex Symbol	Latex Code	Latex Symbol	Latex Code
sin	<code>\sin</code>	arcsin	<code>\arcsin</code>	sinh	<code>\sinh</code>
cos	<code>\cos</code>	arccos	<code>\arccos</code>	cosh	<code>\cosh</code>
tan	<code>\tan</code>	arctan	<code>\arctan</code>	tanh	<code>\tanh</code>

#### 2.8.5.2 Prefix Operators

Latex Symbol	Latex Code	Latex Symbol	Latex Code	Latex Symbol	Latex Code
$\int$	<code>\int</code>	$\oint$	<code>\oint</code>	$\sum$	<code>\sum</code>
$\prod$	<code>\prod</code>	$\coprod$	<code>\coprod</code>	-	-
$\odot$	<code>\odot</code>	$\oplus$	<code>\oplus</code>	$\otimes$	<code>\otimes</code>
$\cap$	<code>\cap</code>	$\cup$	<code>\cup</code>	$\sqcup$	<code>\sqcup</code>
$\bigcap$	<code>\bigcap</code>	$\bigcup$	<code>\bigcup</code>	-	-
$\bigvee$	<code>\bigvee</code>	$\bigwedge$	<code>\bigwedge</code>	-	-

## 2.9 Special Characters

### 2.9.1 Package Pifont

`\ding{0}`

Index	0	1	2	3	4	5	6	7
0								
8								
16								
24								
32		✂	✂	✂	✂	✂	📞	🕒
40	✈	✉	👉	👈	👉	👈	📎	📎
48	📎	🔗	🔗	✓	✓	✗	✗	✗
56	✗	✚	✚	✚	✚	✚	✚	✚
64	♠	♠	♠	♠	♠	♠	♠	♠
72	★	☆	⊕	☆	☆	☆	☆	☆
80	☆	✱	✱	✱	✱	✱	✱	✱
88	✱	✱	✱	✱	✱	✱	✱	✱
96	✱	✱	✱	✱	✱	✱	✱	✱
104	✱	✱	✱	✱	●	○	■	□
112	□	□	□	▲	▼	◆	◇	◐
120				•	•	“	”	
128								
136								
144								
152								
160		♪	•	•	♥	♣	♣	♣
168	♣	♦	♥	♠	①	②	③	④
176	⑤	⑥	⑦	⑧	⑨	⑩	①	②
184	③	④	⑤	⑥	⑦	⑧	⑨	⑩
192	①	②	③	④	⑤	⑥	⑦	⑧
200	⑨	⑩	①	②	③	④	⑤	⑥
208	⑦	⑧	⑨	⑩	→	→	↔	↕
216	↖	→	↘	→	→	→	→	→
224	⇒	⇒	⇒	⇒	⇒	⇒	⇒	⇒
232	⇒	⇒	⇒	⇒	⇒	⇒	⇒	⇒
230		⇒	⇒	⇒	⇒	⇒	⇒	⇒
248	⇒	⇒	⇒	⇒	⇒	⇒	⇒	⇒

### 2.9.2 ASCII Table

Dec	Hex	Binary	HTML	Char	Description
0	00	00000000	&#0;	NUL	Null
1	01	00000001	&#1;	SOH	Start of Header
2	02	00000010	&#2;	STX	Start of Text
3	03	00000011	&#3;	ETX	End of Text
4	04	00000100	&#4;	EOT	End of Transmission
5	05	00000101	&#5;	ENQ	Enquiry
6	06	00000110	&#6;	ACK	Acknowledge
7	07	00000111	&#7;	BEL	Bell
8	08	00001000	&#8;	BS	Backspace
9	09	00001001	&#9;	HT	Horizontal Tab
10	0A	00001010	&#10;	LF	Line Feed
11	0B	00001011	&#11;	VT	Vertical Tab

Dec	Hex	Binary	HTML	Char	Description
12	0C	00001100	&#12;	FF	Form Feed
13	0D	00001101	&#13;	CR	Carriage Return
14	0E	00001110	&#14;	SO	Shift Out
15	0F	00001111	&#15;	SI	Shift In
16	10	00010000	&#16;	DLE	Data Link Escape
17	11	00010001	&#17;	DC1	Device Control 1
18	12	00010010	&#18;	DC2	Device Control 2
19	13	00010011	&#19;	DC3	Device Control 3
20	14	00010100	&#20;	DC4	Device Control 4
21	15	00010101	&#21;	NAK	Negative Acknowledge
22	16	00010110	&#22;	SYN	Synchronize
23	17	00010111	&#23;	ETB	End of Transmission Block
24	18	00011000	&#24;	CAN	Cancel
25	19	00011001	&#25;	EM	End of Medium
26	1A	00011010	&#26;	SUB	Substitute
27	1B	00011011	&#27;	ESC	Escape
28	1C	00011100	&#28;	FS	File Separator
29	1D	00011101	&#29;	GS	Group Separator
30	1E	00011110	&#30;	RS	Record Separator
31	1F	00011111	&#31;	US	Unit Separator
32	20	00100000	&#32;	space	Space
33	21	00100001	&#33;	!	Exclamation mark
34	22	00100010	&#34;	"	Double quote
35	23	00100011	&#35;	#	Number
36	24	00100100	&#36;	\$	Dollar sign
37	25	00100101	&#37;	%	Percent
38	26	00100110	&#38;	&	Ampersand
39	27	00100111	&#39;	'	Single quote
40	28	00101000	&#40;	(	Left parenthesis
41	29	00101001	&#41;	)	Right parenthesis
42	2A	00101010	&#42;	*	Asterisk
43	2B	00101011	&#43;	+	Plus
44	2C	00101100	&#44;	,	Comma
45	2D	00101101	&#45;	-	Minus
46	2E	00101110	&#46;	.	Period
47	2F	00101111	&#47;	/	Slash
48	30	00110000	&#48;	0	Zero
49	31	00110001	&#49;	1	One
50	32	00110010	&#50;	2	Two
51	33	00110011	&#51;	3	Three
52	34	00110100	&#52;	4	Four
53	35	00110101	&#53;	5	Five
54	36	00110110	&#54;	6	Six
55	37	00110111	&#55;	7	Seven
56	38	00111000	&#56;	8	Eight
57	39	00111001	&#57;	9	Nine
58	3A	00111010	&#58;	:	Colon
59	3B	00111011	&#59;	;	Semicolon
60	3C	00111100	&#60;	<	Less than
61	3D	00111101	&#61;	=	Equality sign
62	3E	00111110	&#62;	>	Greater than
63	3F	00111111	&#63;	?	Question mark
64	40	01000000	&#64;	@	At sign
65	41	01000001	&#65;	A	Capital A
66	42	01000010	&#66;	B	Capital B
67	43	01000011	&#67;	C	Capital C

Dec	Hex	Binary	HTML	Char	Description
68	44	01000100	&#68;	D	Capital D
69	45	01000101	&#69;	E	Capital E
70	46	01000110	&#70;	F	Capital F
71	47	01000111	&#71;	G	Capital G
72	48	01001000	&#72;	H	Capital H
73	49	01001001	&#73;	I	Capital I
74	4A	01001010	&#74;	J	Capital J
75	4B	01001011	&#75;	K	Capital K
76	4C	01001100	&#76;	L	Capital L
77	4D	01001101	&#77;	M	Capital M
78	4E	01001110	&#78;	N	Capital N
79	4F	01001111	&#79;	O	Capital O
80	50	01010000	&#80;	P	Capital P
81	51	01010001	&#81;	Q	Capital Q
82	52	01010010	&#82;	R	Capital R
83	53	01010011	&#83;	S	Capital S
84	54	01010100	&#84;	T	Capital T
85	55	01010101	&#85;	U	Capital U
86	56	01010110	&#86;	V	Capital V
87	57	01010111	&#87;	W	Capital W
88	58	01011000	&#88;	X	Capital X
89	59	01011001	&#89;	Y	Capital Y
90	5A	01011010	&#90;	Z	Capital Z
91	5B	01011011	&#91;	[	Left square bracket
92	5C	01011100	&#92;	\	Backslash
93	5D	01011101	&#93;	]	Right square bracket
94	5E	01011110	&#94;	^	Caret / circumflex
95	5F	01011111	&#95;	_	Underscore
96	60	01100000	&#96;	`	Grave / accent
97	61	01100001	&#97;	a	Small a
98	62	01100010	&#98;	b	Small b
99	63	01100011	&#99;	c	Small c
100	64	01100100	&#100;	d	Small d
101	65	01100101	&#101;	e	Small e
102	66	01100110	&#102;	f	Small f
103	67	01100111	&#103;	g	Small g
104	68	01101000	&#104;	h	Small h
105	69	01101001	&#105;	i	Small i
106	6A	01101010	&#106;	j	Small j
107	6B	01101011	&#107;	k	Small k
108	6C	01101100	&#108;	l	Small l
109	6D	01101101	&#109;	m	Small m
110	6E	01101110	&#110;	n	Small n
111	6F	01101111	&#111;	o	Small o
112	70	01110000	&#112;	p	Small p
113	71	01110001	&#113;	q	Small q
114	72	01110010	&#114;	r	Small r
115	73	01110011	&#115;	s	Small s
116	74	01110100	&#116;	t	Small t
117	75	01110101	&#117;	u	Small u
118	76	01110110	&#118;	v	Small v
119	77	01110111	&#119;	w	Small w
120	78	01111000	&#120;	x	Small x
121	79	01111001	&#121;	y	Small y
122	7A	01111010	&#122;	z	Small z
123	7B	01111011	&#123;	{	Left curly bracket

Dec	Hex	Binary	HTML	Char	Description
124	7C	01111100	&#124;		Vertical bar
125	7D	01111101	&#125;		Right curly bracket
126	7E	01111110	&#126;		Tilde
127	7F	01111111	&#127;	DEL	Delete

### 2.9.3 Extended ASCII Table

Dec	Hex	Binary	HTML	Char	Description
128	80	10000000	-	Ç	ASCII Character
129	81	10000001	-	ü	ASCII Character
130	82	10000010	-	é	ASCII Character
131	83	10000011	-	â	ASCII Character
132	84	10000100	-	ä	ASCII Character
133	85	10000101	-	à	ASCII Character
134	86	10000110	-	å	ASCII Character
135	87	10000111	-	ç	ASCII Character
136	88	10001000	-	ê	ASCII Character
137	89	10001001	-	ë	ASCII Character
138	8A	10001010	-	è	ASCII Character
139	8B	10001011	-	ï	ASCII Character
140	8C	10001100	-	î	ASCII Character
141	8D	10001101	-	ì	ASCII Character
142	8E	10001110	-	Ä	ASCII Character
143	8F	10001111	-	Å	ASCII Character
144	90	10010000	-	É	ASCII Character
145	91	10010001	-	æ	ASCII Character
146	92	10010010	-	Æ	ASCII Character
147	93	10010011	-	ô	ASCII Character
148	94	10010100	-	ö	ASCII Character
149	95	10010101	-	ò	ASCII Character
150	96	10010110	-	û	ASCII Character
151	97	10010111	-	ù	ASCII Character
152	98	10011000	-	ÿ	ASCII Character
153	99	10011001	-	Ö	ASCII Character
154	9A	10011010	-	Ü	ASCII Character
155	9B	10011011	-	ç	ASCII Character
156	9C	10011100	-	£	ASCII Character
157	9D	10011101	-	¥	ASCII Character
158	9E	10011110	-		ASCII Character
159	9F	10011111	-	f	ASCII Character
160	A0	10100000	-	á	ASCII Character
161	A1	10100001	-	í	ASCII Character
162	A2	10100010	-	ó	ASCII Character
163	A3	10100011	-	ú	ASCII Character
164	A4	10100100	-	ñ	ASCII Character
165	A5	10100101	-	Ñ	ASCII Character
166	A6	10100110	-	ª	ASCII Character
167	A7	10100111	-	º	ASCII Character
168	A8	10101000	-	¿	ASCII Character
169	A9	10101001	-		ASCII Character
170	AA	10101010	-	¬	ASCII Character
171	AB	10101011	-	½	ASCII Character

Dec	Hex	Binary	HTML	Char	Description
172	AC	10101100	-	¼	ASCII Character
173	AD	10101101	-	½	ASCII Character
174	AE	10101110	-	¾	ASCII Character
175	AF	10101111	-	¸	ASCII Character
176	B0	10110000	-		ASCII Character
177	B1	10110001	-		ASCII Character
178	B2	10110010	-		ASCII Character
179	B3	10110011	-		ASCII Character
180	B4	10110100	-		ASCII Character
181	B5	10110101	-		ASCII Character
182	B6	10110110	-		ASCII Character
183	B7	10110111	-		ASCII Character
184	B8	10111000	-		ASCII Character
185	B9	10111001	-		ASCII Character
186	BA	10111010	-		ASCII Character
187	BB	10111011	-		ASCII Character
188	BC	10111100	-		ASCII Character
189	BD	10111101	-		ASCII Character
190	BE	10111110	-		ASCII Character
191	BF	10111111	-		ASCII Character
192	C0	11000000	-		ASCII Character
193	C1	11000001	-		ASCII Character
194	C2	11000010	-		ASCII Character
195	C3	11000011	-		ASCII Character
196	C4	11000100	-		ASCII Character
197	C5	11000101	-		ASCII Character
198	C6	11000110	-		ASCII Character
199	C7	11000111	-		ASCII Character
200	C8	11001000	-		ASCII Character
201	C9	11001001	-		ASCII Character
202	CA	11001010	-		ASCII Character
203	CB	11001011	-	¡	ASCII Character
204	CC	11001100	-	¢	ASCII Character
205	CD	11001101	-	£	ASCII Character
206	CE	11001110	-	¤	ASCII Character
207	CF	11001111	-	¥	ASCII Character
208	D0	11010000	-	¦	ASCII Character
209	D1	11010001	-	§	ASCII Character
210	D2	11010010	-	¨	ASCII Character
211	D3	11010011	-	©	ASCII Character
212	D4	11010100	-		ASCII Character
213	D5	11010101	-		ASCII Character
214	D6	11010110	-		ASCII Character
215	D7	11010111	-		ASCII Character
216	D8	11011000	-		ASCII Character
217	D9	11011001	-		ASCII Character
218	DA	11011010	-		ASCII Character
219	DB	11011011	-		ASCII Character
220	DC	11011100	-		ASCII Character
221	DD	11011101	-		ASCII Character
222	DE	11011110	-		ASCII Character
223	DF	11011111	-		ASCII Character
224	E0	11100000	-		ASCII Character
225	E1	11100001	-		ASCII Character
226	E2	11100010	-		ASCII Character
227	E3	11100011	-		ASCII Character

Dec	Hex	Binary	HTML	Char	Description
228	E4	11100100	-		ASCII Character
229	E5	11100101	-		ASCII Character
230	E6	11100110	-		ASCII Character
231	E7	11100111	-		ASCII Character
232	E8	11101000	-		ASCII Character
233	E9	11101001	-		ASCII Character
234	EA	11101010	-		ASCII Character
235	EB	11101011	-		ASCII Character
236	EC	11101100	-	∞	ASCII Character
237	ED	11101101	-		ASCII Character
238	EE	11101110	-		ASCII Character
239	EF	11101111	-		ASCII Character
240	F0	11110000	-		ASCII Character
241	F1	11110001	-	±	ASCII Character
242	F2	11110010	-		ASCII Character
243	F3	11110011	-		ASCII Character
244	F4	11110100	-		ASCII Character
245	F5	11110101	-		ASCII Character
246	F6	11110110	-	÷	ASCII Character
247	F7	11110111	-		ASCII Character
248	F8	11111000	-	°	ASCII Character
249	F9	11111001	-	·	ASCII Character
250	FA	11111010	-	·	ASCII Character
251	FB	11111011	-	√	ASCII Character
252	FC	11111100	-		ASCII Character
253	FD	11111101	-	²	ASCII Character
254	FE	11111110	-	■	ASCII Character
255	FF	11111111	-	-	ASCII Character

## 2.10 Additions

### 2.10.1 Acronyms

Latex Output	Latex Code	Description
Augmented Reality	<code>\acrlong{ar}</code>	Displays the phrase which the acronym stands for. Put the label of the acronym inside the braces.
AR	<code>\acrshort{ar}</code>	Prints the acronym whose label is passed as parameter.
Augmented Reality (AR)	<code>\acrfull{ar}</code>	Prints both, the acronym and its definition.

### 2.10.2 Glossary

Latex Output	Latex Code	Description
sprint	<code>\gls{sprint}</code>	To print the term, lowercase. For example, <code>\gls{sprint}</code> prints mathematics when used.
Sprint	<code>\Gls{sprint}</code>	The same as ut the first letter will be printed in uppercase. Example: <code>\Gls{sprint}</code> prints Mathematics
sprints	<code>\glspl{sprint}</code>	The same as ut the term is put in its plural form. For instance, <code>\glspl{sprint}</code> will write formulas in your final document.
Sprints	<code>\Glspl{sprint}</code>	The same as ut the term is put in its plural form. For example, <code>\Glspl{sprint}</code> renders as Formulas.

### 2.10.3 Bibliography

Latex Output	Latex Code	Description
[1]	<code>\cite{agency_drive_2019}</code>	Print the term, lowercase. For example, prints mathematics when used.



## Acronyms

**AR** Augmented Reality. 21

## Glossary

**sprint** Agile Development Cycle. 21

## References

- [1] Innosuisse-Swiss Innovation Agency. *Drive digitalisation forward in Switzerland!* Apr. 3, 2019. URL: [https://www.innosuisse.ch/inno/en/home/thematische-programme/impulsprogramm\\_digitalisierung.html](https://www.innosuisse.ch/inno/en/home/thematische-programme/impulsprogramm_digitalisierung.html) (visited on 04/03/2019).

## **Appendix A First Appendice Title**

Some images probably

## **Appendix B Second Appendice Title**

Some images probably