

# List of Basic L<sup>A</sup>T<sub>E</sub>X Commands

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## 1 Basic Document Structure

Basic Structure of Article L<sup>A</sup>T<sub>E</sub>X Document:

```
\documentclass{article}
\usepackage[utf8]{inputenc}
    ##Specification of type of document and style

\title{Your_Title}
\author{Author}
\date{This_Month_Year}

\begin{document}
    ##Marks the beginning of the main body of the document

    \maketitle
        ##Prints title, author, date at the top of the document

    \section{Name_of_the_Section}
        ##Marks beginning of new section

\end{document}
    ##Marks the end of the main body of the document
```

## 2 Text Formatting

Most commonly used commands for formatting text:

### 2.1 Styling

```
\textit{Italic_text}
\textbf{Bold_text}
\underline{Underlined_text}
\uppercase{Uppercase_text}
```

## 2.2 Size

```
\tiny tiny_text
\small small_text
\normalsize normal_size_text
\large large_text
\Large Large_text
\LARGE LARGE_text
```

## 3 Lists

### 3.1 Bullet Point Lists

```
\begin{itemize}
  \item Entry
  \item Entry
\end{itemize}
```

### 3.2 Ordered List

```
\begin{enumerate}
  \item First Entry
  \item Second Entry
\end{enumerate}
```

## 4 Tables

```
\begin{center}
  ##Indicates the beginning of centered item

\begin{tabular}{||c c||}
  ##Indicates the beginning of table
  ##Creates double vertical year

\hline
  ##New horizontal line

Title1 & Title 2 \\\
  ##Titles for each column separated by &

Row1Col1 & Row1Col2 \\\
  ##Values for row1 and indication of new line

\end{tabular}
  ##Indicates the end of table
```

```
\end{center}
    ##Indicates the end of centered item
```

## 5 Images

Package which needs to be added before the beginning of the document:

```
\usepackage{graphicx}
```

When inserting an image it needs to be uploaded to the file section.

Commands for inserting image into your L<sup>A</sup>T<sub>E</sub>X document:

```
\begin{figure}[H]
    ##Indicating the beginning of image item

\centering
    ##Centering of the picture

\includegraphics[height=5cm]{name_of_picture.png}
    ##Decides height and size of the picture
    ##Decides which picture gets added to the document

\caption{This is caption for your picture}
    ##Caption displayed bellow the picture

\end{figure}
    ##Indicates the end of the image item
```

## 6 Equations / Plots

### 6.1 Equations

Command used to display any variable or equations:

```
\ (\\)
$ $
\begin{math} \end{math}
```

Superscript:

~

Subscript:

-

All variables and symbols used in equations can be found here.

## 6.2 Plots

```
\begin{figure}[h]
    ##Indicates the beginning of figure

\begin{tikzpicture}
    ##Indicates the beginning of plot

\begin{axis}[
xlabel=x
ylabel=y]
    ##Decides the label for x and y axis

\addplot[color=red,mark=x]
    ##Decides the color of plotted graph
    and how are the end point going to be displayed

coordinates {
    (x,y)
    (a,z)};
    ##Coordinates of graph which will be plotted on the graph
    (in this case x,y,z,a are variables
    but should be substituted for real numbers)

\end{axis}
\end{tikzpicture}
    ##Indicates end of the plot

\end{figure}
    ##Indicates the end of the figure
```

## 7 Bibliography

When making references in L<sup>A</sup>T<sub>E</sub>X document a new file with the extension *.bib* needs to be added.

The structure of the file with *.bib* extension:

```
@article{nameofrefence,
author  = "Author",
title   = "Title",
year    = "Year",
journal = "Journal",
volume  = "Volumene_number",
number  = "Number",
pages   = "Page_From-Page_Till"
}
```

In L<sup>A</sup>T<sub>E</sub>X document:

In text:

```
\cite{nameofthereference}
```

At the end of the document:

```
\bibliographystyle{alpha}  
\bibliography{sample}
```

## 8 Presentation

```
\documentclass{beamer}  
    ##Indicates that the type of the document is presentation  
  
\title{Sample_title}  
\author{Anonymous}  
\institute{Overleaf}  
\date{2021}  
  
\begin{document}  
    ##Indicates the beginning of the main body of the document  
  
\begin{frame}{Sample frame title}  
    ##Indicates the beginning of the slide  
  
Content of the Slide  
  
\end{frame}  
    ##Indicates the end of the slide  
  
\end{document}  
    ##Indicates the end of the main body of the document
```