



# L<sup>A</sup>T<sub>E</sub>X for beginners

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**DATA  
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I used the following sources :

- ▶ [https://fr.overleaf.com/learn/latex/Learn\\_LaTeX\\_in\\_30\\_minutes](https://fr.overleaf.com/learn/latex/Learn_LaTeX_in_30_minutes)
- ▶ <https://perso.univ-st-etienne.fr/ezequel/1info/>

$\LaTeX$  is a markup tool that allows to format text (similar to HTML).

There is plenty of available library for automatic formatting.

It is extensively used in academic, e.g., conferences/journals provide official templates that automatically format the  $\LaTeX$  output. The use of the official template is **mandatory**

## Example 1

```
Example of text in \textbf{bold}
```

When compiled, it outputs :

Example of text in **bold**

There is mainly three classes of documents in  $\text{\LaTeX}$

- ▶ article : basic
- ▶ beamer : presentation (like powerpoint)
- ▶ books : report, thesis, books (organized in chapter)

Everything is written in a `.tex` file, which is then compiled. There is plenty of compilers for  $\text{\LaTeX}$ .

Personally, I use overLeaf, which is a free online tool. It allows to write with others. Cons : sometimes the compilation is slow

### A basic .tex file

```
\documentclass{article}
```

```
\begin{document}
```

First document. This is a simple example, with no extra parameters or packages included.

```
\end{document}
```

You can add options between [ and ]

### A basic .tex file

```
\documentclass[12pt,a4paper,twocolumn]{article}
\begin{document}
First document. This is a simple example, with no
extra parameters or packages included.
\end{document}
```

### Adding a title

```
\documentclass[12pt,a4paper,twocolumn]{article}
```

```
\title{My first \LaTeX document}
```

```
\author{Bob Bobby}
```

```
\date{\today}
```

```
\begin{document}
```

```
\maketitle
```

First document. This is a simple example, with no extra parameters or packages included.

```
\end{document}
```

bold, underline, italic

```
Some of the \textbf{greatest}
discoveries in \underline{science}
were made by \textit{accident}.
```

Some of the **greatest** discoveries in science were made by *accident*.



### Lists :

```
\begin{itemize}
  \item entry one
  \item entry 2
\end{itemize}
```

- ▶ entry one
- ▶ entry 2

### Numbered lists :

```
\begin{enumerate}  
  \item entry one  
  \item entry 2  
\end{enumerate}
```

- 1 entry one
- 2 entry 2

You need

```
\usepackage{graphicx}
```

to use the width adjustment

### Images

```
\includegraphics [width=0.2\textwidth] {img/logo2.png}
```



### Images with caption

```
\begin{figure}[h]
  \centering
  \includegraphics[width=0.2\textwidth]{img/logo2.png}
  \caption{the logo}
  \label{fig:logo}
\end{figure}
```



Figure – the logo

### Math mode

In physics, the mass-energy equivalence is stated by the equation  $E=mc^2$ , discovered in 1905 by A. Einstein.

In physics, the mass-energy equivalence is stated by the equation  $E = mc^2$ , discovered in 1905 by A. Einstein.

## Equations

In natural units ( $c = 1$ ), the formula expresses the identity

```
\begin{equation}
```

```
E=m
```

```
\end{equation}
```

In natural units ( $c = 1$ ), the formula expresses the identity

$$E = m \tag{1}$$

For beautiful tables, use

```
\usepackage{booktabs}
```

### Tables

```
\begin{tabular}{rcc}  
& Cora & Dblp \\ \toprule  
Text & abstract & title \\ Documents & 2 211 & 60 744 \\ Links & 5 001 & 52 914 \\ \bottomrule  
\end{tabular}
```

	Cora	Dblp
Text	abstract	title
Documents	2 211	60 744
Links	5 001	52 914

### Sections

```
\chapter{Name Chapter}  
\section{Name section}  
\subsection{Name sub section}  
\subsubsection{Name sub sub section}  
\paragraph{Name of the paragraph}
```

### Table of contents

```
\tableofcontents
```



### $\LaTeX$ cheat sheets

- ▶ <https://wch.github.io/latexsheet/>
- ▶ [https://fr.overleaf.com/learn/latex/Learn\\_LaTeX\\_in\\_30\\_minutes](https://fr.overleaf.com/learn/latex/Learn_LaTeX_in_30_minutes)