

# Useful L<sup>A</sup>T<sub>E</sub>X Commands

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## Document Classes

These will come at the beginning of the document, generally the very first line. Use `\begin{document}` to start adding content, and `\end{document}` to finish.

**book** Sets margins for double-sided printing

**letter** Less common, but used for writing letters

**article** Very versatile and commonly used class

**a0poster** Designed for poster formats

**slides** Large sans-serif font

**beamer** Commonly used class for presentations

## Document Class Options

You can also specify options to several LaTeX commands, by providing them in square brackets before the curly braces. You can use multiple options by separating them with commas. For example:

`\documentclass[a4paper,10pt]{article}` tells LaTeX to format the article for A4-sized paper, and use a 10pt font by default. Most of the above document classes will accept combinations of the below options. You should also try out other variations on them (e.g. `a3paper` works as well as `a4paper`, etc.). Certain document classes will set some options by default.

**10/11/12pt** Sets the default font size for the document

**twoside** Formats the margins for double-sided printing

**letterpaper/a4paper** Sets the paper size

**landscape** Use landscape orientation

**twocolumn** Uses two columns

**titlepage/notitlepage** Put the title on its own page

## Preamble

Some commands must be declared in the preamble, before `\begin{document}`, in order to take effect. This includes packages and the title information.

## Packages

Many packages are built in to LaTeX without needing to download anything additional – though many hundred more are available online to extend the capabilities of the system. Packages are declared using this command: `\usepackage{package}`. Some packages have an immediate effect by including them, others enable you to use new environments or commands.

**fullpage** Use 1 inch margins

**url** Insert URL: `\url{http://...}`

**multicol** Use  $n$  columns: `\begin{multicols}{n}`

**verbatim** Use verbatim: `\begin{verbatim}`

**graphicx** Show image: `\includegraphics{file}`

**times** Use Times New Roman font

## Title

The declaration `\maketitle` goes inside the document environment and formats this information. You can change whether it goes on its own page using the document class option.

`\author{text}` Author of the document

`\title{text}` Title of the document

`\date{text}` Date – you can use `\today` to generate the current date, or specify whatever text you want

## Document Structure

These commands help you to structure your document. You can add an asterisk \* (e.g. `\section*{title}`) to suppress the section numbers – these sections will not appear in the table of contents.

`\tableofcontents` Inserts a table of contents at the place the command is in the document

`\chapter{title}` A chapter

`\section{title}` A section

`\subsection{title}` A subsection

`\subsubsection{title}` A subsubsection

`\paragraph{title}` A paragraph – not particularly common

## Text Environments

Specify these using `\begin{environment}` and `\end{environment}`

**quote** Indented quote block

**verbatim** Monospace text with literal characters

**quotation** Like quote, with indented paragraphs

**verbatim\*** Verbatim, with spaces printed as `\_`

**verse** Like quotation, with inverted indentation

## Lists

`\begin{itemize}` Bulleted list

`\item text` Add an item

`\begin{enumerate}` Numbered list

`\item[x] text` Use *x* instead of bullet or number, required for description

`\begin{description}` Description list

## References

`\label{marker}` Set marker for cross-reference

`\pageref{marker}` Give page number of marker

`\ref{marker}` Give section number for marker

`\footnote{text}` Print footnote at bottom of page

## Floating Bodies

The *place* option can specify where on the page the float should go. You can add **!** to make sure that it will go in the right place even if LaTeX thinks it would be ugly. **t**=top, **h**=here, **b**=bottom, **p**=separate page. Captions and label markers should go inside the environment.

`\begin{table}[place]` Add numbered table

`\begin{figure}[place]` Add numbered figure

`\begin{equation}[place]` Add numbered equation

`\caption{text}` Caption for the float

## Text Properties

### Font Face

The *command* and *declaration* versions of these are mostly the same, though the command handles spacing a little better. If you use a declaration without the wrapping curly braces, the rest of the text in the document will be affected.

<i>Command</i>	<i>Declaration</i>	<i>Effect</i>
<code>\textrm{<i>text</i>}</code>	<code>{\rmfamily <i>text</i>}</code>	Roman family
<code>\textsf{<i>text</i>}</code>	<code>{\sffamily <i>text</i>}</code>	Sans serif family
<code>\texttt{<i>text</i>}</code>	<code>{\ttfamily <i>text</i>}</code>	Typewriter family
<code>\textmd{<i>text</i>}</code>	<code>{\mdseries <i>text</i>}</code>	Medium series
<code>\textbf{<i>text</i>}</code>	<code>{\bfseries <i>text</i>}</code>	<b>Bold series</b>
<code>\textup{<i>text</i>}</code>	<code>{\upshape <i>text</i>}</code>	Upright shape
<code>\textit{<i>text</i>}</code>	<code>{\itshape <i>text</i>}</code>	<i>Italic shape</i>
<code>\textsl{<i>text</i>}</code>	<code>{\slshape <i>text</i>}</code>	<i>Slanted shape</i>
<code>\textsc{<i>text</i>}</code>	<code>{\scshape <i>text</i>}</code>	SMALL CAPS SHAPE
<code>\emph{<i>text</i>}</code>	<code>{\em <i>text</i>}</code>	<i>Emphasized</i>
<code>\textnormal{<i>text</i>}</code>	<code>{\normalfont <i>text</i>}</code>	Document font
<code>\underline{<i>text</i>}</code>		<u>Underline</u>

### Font Size

These are declarations, and you should use the curly brace format (`{\small ...}`) in order to prevent it from affecting the whole document.

<code>\tiny text</code>	<code>\large text</code>
<code>\scriptsize text</code>	<code>\Large text</code>
<code>\footnotesize text</code>	<code>\LARGE text</code>
<code>\small text</code>	<code>\huge text</code>
<code>\normalsize text</code>	<code>\Huge text</code>

### Justification

<i>Environment</i>	<i>Declaration</i>
<code>\begin{center}</code>	<code>\centering</code>
<code>\begin{flushleft}</code>	<code>\raggedright</code>
<code>\begin{flushright}</code>	<code>\raggedleft</code>

### Text-mode Symbols

<code>\&amp; &amp;</code>	<code>\_ -</code>	<code>\ldots ...</code>	<code>\textbullet •</code>
<code>\\$ \$</code>	<code>\^{} ^</code>	<code>\textbar  </code>	<code>\textbackslash \</code>
<code>\% %</code>	<code>\~{} ~</code>	<code>\# #</code>	<code>\S §</code>

## Breaks

Note that it is necessary to have a blank line between paragraphs, or else LaTeX will treat them as the same paragraph.

`\``\` Begin new line without new paragraph

`\pagebreak` Begin new page

`\noindent` Do not indent current line

## Miscellaneous

`\sim` Prints  $\sim$  (instead of  $\sim$ )

`\vspace{l}` Vertical space of length  $l$

$\sim$  Space, prevents line break (e.g. George $\sim$ W. $\sim$ Bush) `\rule{w}{h}` Line of width  $w$  and height  $h$

`\hspace{l}` Horizontal space of length  $l$  (e.g.  $l=20\text{pt}$ )

## Tabular Environment

This environment (`\begin{tabular}{cols}`) is very useful for creating good-looking tables. The *cols* argument lets you specify how many columns the table should have, how they should be justified, and how they should be separated. Use a line-break (`\`) to separate rows. See the end of this document for an example.

### Tabular Column Specification

**l** Left-justified column

**|** Inserts vertical line between columns

**c** Centered column

**&** Separates cells by column

**r** Right-justified column

`\hline` Horizontal line between rows

## And More...

This is only scratching the surface of LaTeX. There is much, much more to the system, but this will hopefully give you a good starting point. So far, we have mostly only looked at what LaTeX can do in ‘text-mode’, but there are other modes we can use – the main one you’ll be interested in is ‘math-mode’, which will format text and numbers to better appear in a mathematical equation, or similar.

I encourage you to search online for more commands you can use. If you are stuck on a topic, there are plenty of sources available to help you out, such as the TeX Stack Exchange<sup>1</sup> and the LaTeX entry on WikiBooks<sup>2</sup>, and you are always welcome to send me an email if you feel I might be more useful to you.

While I can’t say you will definitely benefit from using LaTeX to write your documents, you may find it a useful skill to have, and it will enable you to produce high-quality, professional-looking work that your professors will appreciate if no-one else. There are also packages available designed for use in linguistics (e.g. typing the symbols of the International Phonetic Alphabet), so it’s probably worth knowing for that. And since it you (generally) compile to a PDF, you are guaranteeing that no matter who sees your final document, or what system or viewer they are using, it will look the same for them as it did when you compiled it.

If you have any questions, please let me know either in class or by email, and I will do my best to answer them.

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<sup>1</sup><http://tex.stackexchange.com/>

<sup>2</sup><https://en.wikibooks.org/wiki/LaTeX>

# Sample L<sup>A</sup>T<sub>E</sub>X document

Compile this and see if you can understand the output that you get. Try editing the document to see what changes you can make.

```
\documentclass[11pt]{article}
\usepackage{fullpage}
\title{Template}
\author{Name}
\begin{document}
\maketitle

\section{section}
\subsection*{subsection without number}
text \textbf{bold text} text. Some math:  $2+2=5$ 
\subsection{subsection}
text \emph{emphasized text} text.
discovered the structure of DNA.

A table:
\begin{table}[!h]
\begin{tabular}{|l|c|r|}
\hline
first & row & data \\
second & row & data \\
\hline
\end{tabular}
\caption{This is the caption}
\label{example:table}
\end{table}

The table is numbered \ref{example:table}.
\end{document}
```