

L^AT_EXnotes

aleptosis*, too much tea

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1 Font style and size

Here is a series of font styles:

Use `\textbf{}` for **bold**!

Use `\textit{}` for *italics*!

Use `\underline{}` to underline!

Also ***combine them!***

Use `\textsl{}` for *slanted*!

Use `\textsc{}` FOR SMALL CAPS!

Use `\emph{}` *emphasize*!

Here are the default font families:

`\textrm{}` makes text Serif (roman)!

`\textsf{}` makes it Sans Serif!

`\texttt{}` makes it Typewriter (monospace)!

Here are some font sizes (relative to starting size):

Here, size names are the commands (case sensitive)! e.g. `\tiny{}`, `\large{}`, `\Large{}` and `\huge{}`

This is tiny! This is small! This is large! I said Large! NO, LARGE!!!
Now huge! Aaand back to normal size.

*find me on twitter!

2 Formatting

Abstract

`\begin{abstract}` formats an abstract environment.

This is a first paragraph.

`\\` creates a line break.

`\newline` also creates a line break.

`\begin{center}` centres the text! You can also align it left (`\flushleft`) or right (`\flushright`), or do nothing to leave it justified.

A blank line creates a new paragraph!

The `\par` command also creates a new paragraph!

You can insert horizontal space in text!

You can set a specific width with `\hspace{width}` (all units allowed.) or you can have a break with `\hfill` that automatically fills all the space available.

You can make this pretty by adding a line with `\hrulefill` _____ or dots with `\dotfill` Useful for signatures and indices!

You can also insert vertical space! Again, you can either use `\vspace{height}` to specify a distance or use `\vfill` to automatically

fill the space available (will take into account other elements in page).

`\smallskip`, `\medskip` and `\bigskip` are also somewhat dynamic ways to insert vertical space.

Columns

Square brackets mark the header text on top of the columns. Put whatever you want here but figures/tables.

This text should end up in column 1.	This text should end up in column 2.	This text should end up in column 3.
--------------------------------------	--------------------------------------	--------------------------------------

And would you look at that - it did. Yay.

Sections hierarchy (commands):

- 1. part: only available in report doc class
- 0. chapter: only available in book doc class
- 1. section
- 2. subsection
- 3. subsubsection
- 4. paragraph
- 5. subparagraph

Any of these can be made unnumbered by adding an * before the opening curly brace.

Units accepted by \LaTeX :

Abbreviation	Value
pt	~ 0.0138 inch or 0.3515 mm
mm	a millimeter
cm	a centimeter
in	an inch
ex	\sim height of an 'x' in the current font
em	\sim width of an 'M' in the current font
mu	math unit equal to $1/18$ em

Table 1: \LaTeX units summary

Paragraph formatting

By default, the first paragraph of a section or a chapter is not indented.

The second is, and the indent size is defined in the preamble.

All subsequent ones are too.

The `\noindent` command changes this.

This is a paragraph that spans multiple lines that I am using to test the line spacing options. Really there is not that much to see here. Carry on.

3 Figures and referencing



Figure 1: me

`\cref{}`, from the `cleveref` package, is used to reference the figure label, Figure 1, while `\cpageref{}` will refer to the page it is in, Page 4. You can also use `\cref{}` to refer to a section, like Section 3.

Change settings for the package in the preamble. You can use the built-in reference system with `\ref{}` and `\pageref{}`, but it will only produce the number, and not the label.

4 Lists and maths

Environments are sections of the document that present themselves in a different way to the rest. They start with `\begin{}` and end in... well, `\end{}`. You already encountered plenty in the previous sections. Here are some of them in more details.

Lists

- `\itemize` environment
- This is an unordered list
- It uses bullet points
- Text can be of any length

1. `\enumerate` environment
2. This is an ordered list
3. It uses numbers
4. The list number increases with each item

Description environment: adds a description for every item!

This is an item, and this the description.

Numbering: none.

Math

These are ways to write mathematical expressions, inline mode: $E = mc^2$, $E = mc^2$, $E = mc^2$

These are ways to write mathematical expressions, display mode:

$$E = mc^2 \tag{1}$$

$$E = mc^2$$

$$E = mc^2$$

Like everything else, display mode mathematical equations can be referenced with `\cref`, e.g. Equation (1). Unnumbered equations can also be referenced by number but cannot be easily recognised.

Tables

Col1	Col2	Col2
A	23	10000
B	2	66
C	5	58

Table 2: Fancy table

The table can then be referred to as Table 2 on Page 6.

5 Colours

The `xcolour` package allows to colour things. The basic colours it supports are (white), black, red, green, blue, cyan, magenta, and yellow.

Adding `dvipsnames` to the package in the preamble allows you to name a few more, like Teal Blue or Wild Strawberry (careful with the caps!). You can also change the background colour for the text.

The `color` command (instead of `textcolor`) can be used to switch the colour of an entire block of text until it ends - or until the end of the environment. Remember to switch back in that case!

Here is a list of custom colours (defined in the preamble) instead.

- Pink with rgb
- Pink with RGB
- Pink with cmyk
- Gray with gray
- Rubine red at 70% intensity
- A mix of 10% green and 90% orange
- Defined with HTML code

These can be used for any element that takes a colour as parameter, like a line.

6 Table of contents

Contents

1	Font style and size	1
2	Formatting	2
3	Figures and referencing	4
4	Lists and maths	5
5	Colours	6
6	Table of contents	7
	Include me please!	7
7	Referencing with BibLaTeX	8
8	Input and include	9
8.1	Input	9
8.2	Include	10

Include me please!

Table of contents don't include unnumbered sections. if one needs to be added, then the command `\addcontentsline{toc}{section}{Unnumbered Section}` can be used above that unnumbered section. For example, this unnumbered section is in the ToC.

I want to be left out!

This unnumbered section is not in the ToC.

7 Referencing with BibLaTeX

Cite things like this: Dirac, 1981, Einstein, 1905, D. E. Knuth, 1973, D. Knuth, n.d.! You can change the referencing style in the preamble. Make sure your editor of choice is using Biber (or your backend of choice) as its default bibliography tool!

References

- Einstein, A. (1905). Zur Elektrodynamik bewegter Körper. (German) [On the electrodynamics of moving bodies]. *Annalen der Physik*, 322(10), 891–921. doi:<http://dx.doi.org/10.1002/andp.19053221004>
- Knuth, D. E. (1973). Fundamental algorithms. (Chap. 1.2). Addison-Wesley.
- Dirac, P. A. M. (1981). *The principles of quantum mechanics*. International series of monographs on physics. Clarendon Press.
- Knuth, D. (n.d.). Knuth: Computers and typesetting. Retrieved from <http://www-cs-faculty.stanford.edu/~uno/abcde.html>. ((accessed: 01.09.2016))

8 Input and include

These commands allow to import content from other .tex files into the main documents, which makes things a lot easier when working on a bigger project.

8.1 Input

This subsection comes from a different file, added to the main document with the input command. This is the more basic command of the two:

- It inputs the contents of the file where the command is inserted (no page breaks);
- Ideal for adding long sections of text or separate figures;
- Can be nested;
- Unlikely to have side effects;
- Can be used everywhere, in the document body, preamble, in packages etc.
- Section numbering remains consistent with main document.

8.2 Include

This subsection also comes from a different file, added to the main document with the `include` command. This is the more complex command of the two:

- It forces a page break (`clearpage`) before inserting the new content;
- Ideal for for bigger contents, like entire book chapters;
- Cannot be nested;
- It creates a dedicated `.aux` file, meaning the file could potentially compiled on its own (this one cannot though!) - the `subfile` and `standalone` packages offer a better alternative if you want to do this;
- Can only be used in the document body, not in preamble, packages or `restricted/math` mode;
- Also here, numbering remains consistent.

The command `\includeonly{filename1,filename2,...}` can be used in the preamble of the main document to only load selected sections. This allows you to only work on one section at a time while also keeping consistent numbering and referencing.