

1 This is a section header

This is a section about sections (how ironic!). Sections are useful for dividing your project into manageable chunks. The sections that are probably most useful for a Math 2130 paper are the Introduction, Methodology, Results and Analysis, and Conclusion.

Notice that section numbering, choice of fonts, and so on, are taken care of for you.

1.1 This is a subsection header

You can also have subsections. Don't get carried away, though!

1.1.1 This is a subsubsection header

See, now it's just starting to get silly.

2 Formatting text

Simple text formatting in \LaTeX works by enclosing text in curly brackets (more properly called braces) and then applying one or more commands within the braces. For instance, you can make text appear in **boldface** or *italics*.

Surprisingly, underlining is handled differently in \LaTeX . This is for reasons of typesetting philosophy that probably don't interest you. What it boils down to is that you shouldn't use underlining in most instances: use italics instead.

You can also introduce a variety of font sizes: small, smaller, even smaller, smallest, and big, bigger, even bigger, really big, and biggest.

You can combine these commands as well. So, for instance, you could produce *really big text in italics*.

3 Environments

More complicated typesetting in \LaTeX is usually achieved using different environments. For example, we can center text:

this text is centred

We can also right-align text:

this text is right-aligned

\LaTeX offers many, many environments which accomplish different things.

4 Spacing

One thing people find peculiar about \LaTeX is that it's very picky about how it deals with spacing.

Here I've put one space between the words:

Hello world

Here I've put twenty spaces between them:

Hello world

But \LaTeX produces the same output in each case! This is because \LaTeX ignores any whitespace that it considers redundant. The same is true of tabs and separating text on different lines, but without any blank lines in-between.

Paragraphs are separated by one or more blank lines. Again, though, it doesn't matter if you use one blank line or a thousand: \LaTeX will ignore any extra blank lines.

5 Special text

You might have noticed that we were able to produce the \LaTeX symbol in this document very simply, because there's a \LaTeX command to do it. Many symbols can be created in a similar way. Note that, unlike most symbols, the \LaTeX symbol doesn't include a space after it, which is why we include an extra backslash at the end of the command (this forces a space when we need one). If we leave out the extra backslash, the \LaTeX symbol runs into the next word. This isn't something you'll have to worry about often, but it's worth noting just in case.

Symbols which are "special" characters in \LaTeX are treated in much the same way. You can usually reproduce these characters as text by putting a backslash in front of them: $\$, \%, \& \{, \}$, etc.

One thing that's handled slightly differently is quotes. You can put 'single' or "double" quotes around words, and you should be careful to ensure that the open or close the proper way.

6 Lists

Lists are very easy to make in \LaTeX . You can make enumerated lists:

1. step one
2. step two
3. step three
 - (a) a sub-step
 - (b) another sub-step

(c) a final sub-step

4. step four

In almost exactly the same way, you can make itemized lists:

- a point
- another point
 - a sub-point
- a final point
 - and a couple of
 - sub-points here too

Because enumerated and itemized lists are constructed in virtually the same way, it's very easy to switch back and forth between them. Also note that \LaTeX takes care of the numbering of an enumerated list, so you can add new items and switch their order without having to worry about things.

7 Tables

Tables have a slightly more complicated structure. We have to provide additional information about how many columns there will be, and how the text in them should be aligned. The options are:

option	what it does
l	left-aligns text (like this)
c	centres text
r	right-aligns text

You can also include vertical lines and horizontal lines in your table, as in Table 1.

Movie	Year	Genre	Oscars
<i>Casablanca</i>	1942	Drama	3
<i>Rear Window</i> (not the remake)	1954	Thriller	0
<i>Some Like it Hot</i>	1959	Comedy	1
<i>The Wizard of Oz</i>	1939	Fantasy	2

Table 1: A list of great films.

Note that, in this example, we've placed the table in a float environment so that \LaTeX can decide its best placement. It also means that we can give a concise but descriptive caption. Tables and figures are usually best placed in their respective float environments.