1 A brief introduction to LaTeX

1.1 Getting started

LaTeXis pronounced "LAY tek". It is a mathematically oriented text processing system. You create a source file (with a .tex extension, called a "tek file"), and process it to create a finished document. You need to learn some of the commands used in the source file in order to create your own documents. You should examine this tex file together with the output so that you can see how to build the constructs you want in your document.

Search the internet for "latex for windows" or "MiKTex" to download. That's the version I'm using to generate this document. There are plenty of tutorials on the internet, so you can search them for advanced features. It will likely take you years to become an expert.

1.2 Typing text and simple mathematical expressions

Typing text is simple – you just type. To start a new paragraph, insert a blank line in the source file. LaTeXuses a set of *environments* to format special objects. Mathematical symbols are created in the math environment. For example, x=3 is different from $x = 3$. There are many symbols available: Let $\epsilon > 0$, $\int f(x)\,dx$, $\frac{x^2+2}{y_i}$. Wait, some of those don't look good in a line of text, so we change environments: $\int f(x)\,dx$, $\dfrac{x^2 + 2}{y_i}$. Check

`http://latex.wikia.com/wiki/List_of_LaTeX_symbols`

for a list of symbols.

1.3 Displayed equations

Sometimes, you'll want to display and number prominent equations. Use the eqnarray environment:

$$\dot{C} = (1 - C) + \beta C \tag{1}$$

To suppress the equation number, do this:

$$\dot{C} = (1 - C) + \beta C$$

To stack equations, use double backslash to go to the next line:

$$\dot{\tilde{C}} = (1 - \tilde{C}) + \beta C$$
$$\frac{\partial F}{\partial t} = \sin\left(\frac{\tilde{C} + t}{KD}\right) \tag{2}$$

Those equations can be aligned at the equal signs using tab delimiters. This looks better:

$$\ddot{\tilde{C}} = (1 - \tilde{C}) + \beta C \tag{3}$$
$$\frac{\partial F}{\partial t} = \sin\left(\frac{\tilde{C} + t}{KD}\right) \tag{4}$$

1.4   Lists

You can created numbered or bulleted lists as follows.

1. First item

2. Second item

   (a) Wow, sublists!
   (b) Another subitem
   (c) Ok, now it's tedious

3. Third item

If you don't want numbers, try this:

- One

- Two

or you use your own symbols:

A. One

C. Two

1.5 Tables

You define tables by specifying the number of columns (using alignment symbols l, r or c) and typing the rows one at a time, using tab delimiters:

x	y	Error
3	4	0.05
4.2	-3.2	0.00024
0.2	-6	0.03

1.6 Disclaimer

This is a very weak tutorial! Check my web site for some tex files, and check the wiki page.