Quick Start Guide for LaTeXon the AFIT Network

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***Abstract*— There are numerous guides to LaTeXcommands, but knowing commands is no help unless you also know how to set up and use a LaTeX compiler to turn those commands into a document. There are also guides on-line that tell you how to download and install everything you need, but since none of us have admin privileges that's not very helpful. Fortunately, (almost) everything you need is already on the AFIT network. So forget those other guides (for now)...here is how to get started with the tools available on the AFIT network.**

I. Why Latex?

First, you might be thinking this sounds like a pain, so why bother? The reason is pretty simple: LaTeXdoes what you tell it to do. There is some pain up front while you learn how to use it. But you can be sure Word will make you pay too—by randomly moving figures, incorrectly numbering equations, and so on. Pick your poison. For small documents, Word is fine. For a large technical document with lots of equations, figures and references, it is (in my opinion) a real beast.

II. Software Setup

There are a lot of ways you could do this, but the simplest way (I know of) to get up and running is to just run

`R:\LaTeX\WinEdt5.5\WinEdt.exe`

and let WinEdt do the hard stuff for you. WinEdt is basically just a text editor, but it is linked in to MiKTeX (a Latex compiler) and several other helper apps that make it very convenient.

III. Document Files

There are really two things you need here. A "class" (.cls) or "style" (.sty) file[1] which defines your template and a .tex file which contains all your content. Making a template file is hard, but there are many available on-line ... just use an existing one! You probably want to also start with an existing .tex file and modify it rather than build your own from scratch.

Just put the .cls and .tex file in the same folder (a *local* folder please, not in `R:\LaTeX\WinEdt5.5)`. You should also make sure the document class (near the top of the .tex file) matches your template name. For this file, I'm using the *IEEE Transactions* template provided in the file `ieeetran.cls`, so the top of my .tex file looks like:

```
\documentclass[10pt,journal]{IEEEtran}.
```

Alternatively, some style files (such as `osajnl2.sty` for OSA Journals) you call in a separate line, like this:

```
\documentclass[10pt]{article}
\usepackage{osajnl2}.
```

If I later decide to use a different style (to submit to a different journal, for example), all I have to do is change my style file. There are typically a few tweaks[2] involved in changing styles, but its really pretty painless.

Note that you don't really need to do anything to the template file. Just put it in the folder. All your work will go in the .tex file.

IV. Viewing your Document

LaTeXis basically a programming language, and your document is source code. It needs to be compiled just like any other code. To convert your source code into a document,

1) save your file.
2) click the Texify button (the little wolf(dog?) icon) in WinEdt. This creates a preview, which is stored in a .dvi file.
3) if the preview window doesn't open on its own, click on the DVI Preview button (magnifying glass).
4) if you're happy with the preview and want to make a 'real' document out of it, click the dvi→pdf button.

There are a lot of other ways to get from code to document, but this works to get you started. You can play around with different combinations.

V. LaTeXcommands

Now that you can create a document, you probably want to know what to put in it. There are a *lot* of sources for that. There are several guides available in `L:\enp students\LaTeX` [3]. There are also many more resources on-line, such as:

- http:www.ctan.org
- http:www.tug.org
- http:stommel.tamu.edu baumtextex.html
- http:www.nhn.ou.edu morrisonLaTeXindex.shtml

[1] You can actually get away without this file by using some built-in classes. But for publications and theses you'll always need the style file, so lets just get used to it now, huh?

[2] usually with the author info, OCIS codes, and other preamble info that the "\maketitle" command will use to format the title page

[3] of particular interest are `LaTeX Quick Reference v1-1.pdf` written by AFIT's own Lt Col Anderson and `ENPthesis.sty`, the updated thesis template (thanks to Lt Col Anderson and Maj Magnus).