Introduction

Ron Bannon's edited version of Eric Towne's original Introduction.

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How not to sound like an idiot. Well, I know I am often accused of being an idiot, especially by my wife. However, I must say that many mathematicians are totally unforgiving when it comes to pronouncing certain proper names[1] and even some common nouns—they may openly call you an *idiot*. So, let's start with how one is to pronounce LaTeX without sounding like an idiot. Quite simply, LaTeX does not rhyme with "paychecks", or even with "Playtex®". The final sound of the word LaTeX is that of the Greek letter "chi" (χ), which sounds approximately like the English letter "k." You know, you really won't sound like an *idiot* if you mispronounce LaTeX, but you might be surprised how others will correct you.

Types of files. The main types of LaTeX files are the following.

.tex files [LaTeX] are the source files that contain the raw code. This is what you need to hand-in for all assignments and the final exam.

.dvi files [DeVice Independent] files are the typeset (output) files. I really don't want to see these at all, but you still might see others using them.

.pdf files [Portable Document Format] are easily sharable typeset (output) files. This has, in my opinion, become a default. I am hopeful that this format will evolve into something more like the ePub format. For now though, .pdf files will serve you well.

The key file to save (to your Dropbox[2] account or somewhere safe) is the .tex file. There are other files (.aux, .log, .sty, .synctex.gz and so on) but we will not discuss them here. Most software packages also allow you create a (or at least export your .dvi) .pdf file directly, which is useful for posting online or sending to persons who do not have LaTeX software on their computers. Almost everyone can read and print .pdf files without trouble.

Software. You can type the .tex file using any text editor you like, but you'll need special software to translate this source into an .dvi or .pdf file. Some programs, such as TeXShop, combine these two aspects into one piece of software; much of the free software available (see the course webpage[3] for other options), regardless of platform, will do likewise.

Using this website. Each assignment starts with .tex file that you will need to typeset, hopefully into a .pdf file. You will need to read this .tex file and then carefully examine the .pdf file that it generates—making sense out of how the two relate to one another is the *lesson*. Once you

[1] Just try pronouncing Euler phonetically!

[2] `https://www.dropbox.com/referrals/NTQ5MTgwNTI5`

[3] `http://m11.mathography.org`

understand the lesson you will need to look at the exercise, which is a .pdf, then using what you've learned you will need to create a .tex file that will actually create the exercise. A video is posted to make this very important process clearer.

Notation. Some of the mathematical notation used in these lesson files was chosen to illustrate particular LaTeX–related concepts. It may or may not be the same as the notation in the suggested textbook and is therefore not meant to be definitive. You'll see a variety of ways of doing the same exact thing in LaTeX.

Goals of this course. This course is intended to provide lessons and exercises on some of the essential topics a math student needs in order to typeset documents. The hope is that students will see these lessons early in their educational careers and will then be able to return to them for review when using LaTeX in later courses or when writing their undergraduate/graduate theses. A set of sample thesis files is also included.

What this course is not. This course is not meant to be a comprehensive demonstration of how to do everything possible in LaTeX. For that, you should consult the full-length books or one of the many online resources, some of which can be accessed through the course's website.

Finally, please send any suggestions or reports of errors to Ron Bannon at

`ron.bannon@mathography.org`.

Enjoy!