

LaTeX Tutorial

Doug Rubino

1 LaTeX Editors

Latex is a type-setting language, created in part facilitate mathematical type-setting. I would recommend that students in any computational or theoretical science should take the time to learn Latex. I would appreciate if you at least attempted to use Latex (or some other equation editor) for writing your homework assignments, so we can keep everything in the course digital.

To use Latex, you need both a tex distribution and an editor. Below I give links for both Windows and Mac distributions and editors. I have personally used only the Windows version.

Windows:

Miktex: <http://www.miktex.org/2.8/setup>
TexnicCenter: <http://www.texniccenter.org/resources/downloads/29>

Mac:

MacTex: <http://www.tug.org/mactex/2009/>
TexShop: <http://www.uoregon.edu/~koch/texshop/obtaining.html>
Lyx: <http://www.lyx.org/Home>

If you are using Windows, first download and install Miktex. Remember the directory where you are installing it, as you will need to link TexnicCenter directly to one of the Miktex subfolders. Then download and install TexnicCenter. When you run TexnicCenter, you will be asked to provide the location of some file in Miktex, I don't remember the exact location. Email me if you are having trouble.

In TexnicCenter, set the small options bar in the center so that it reads

LaTeX => PDF.

Along with this tutorial, there should be a file titled *HomeworkTemplate.tex*. Place this file along with the accompanying image file in its own folder and open it. When you compile, several new files will be generated. to compile, press **Shift + CTRL + F5** to compile.

If you are using Mac OS, TexShop looks like it will have similar functionality to TexnicCenter. I have also heard good things about Lyx, which is a higher-level equation editor. It is more than sufficient for typing up your homework. If you are having difficulty or if these packages don't do what I expect them to, let me know, and I will find a better solution for Latex editing.

2 Latex Template

HomeworkTemplate.tex provides a simple template for your homework assignments. I think this file should compile on any system, but there could be platform specific differences. All you really need to know how to do for the homework is:

1. How to construct a numbered list. This is done with the commands:

```
\begin{enumerate} \item ... \item \end{enumerate}
```

2. How to include a figure.
3. How to write in math mode.
4. How to write an equation.
5. How to write a derivation.

Everything in *HomeworkTemplate.tex* is meant to be copied and edited directly for your homework. Here are a few additional resources for Latex:

Equation Editor: <http://www.codecogs.com/components/equationeditor/equationeditor.php>
Latex for Logicians: http://www.phil.cam.ac.uk/teaching_staff/Smith/logicmatters/l41logiciansnew.html
Latex Cookbook: <http://www.personal.ceu.hu/tex/cookbook.html#inline>

The Equation Editor helps you figure out the syntax for Latex math mode. Latex for Logicians contains links to complete symbol lists. The Latex Cookbook gives simple various typesetting examples for math mode.