

# Introduction to $\text{\LaTeX}$

A better way of typesetting documents

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Recurse Center

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What is  $\text{\LaTeX}$ ?

Why use it?

$\text{\LaTeX}$  basics

Resources

—Break—

Helpful commands

Using packages

Math in  $\text{\LaTeX}$

Other useful features



- ▶ A system/markup language for typesetting documents
- ▶ Originally geared towards scientific/technical documents
- ▶ Free software
- ▶ Very customizable
- ▶ Part of the greater  $\text{\TeX}$  family ( $\text{\TeX}$ , XeLaTeX, LuaLaTeX...)



- ▶ Scholarly articles (vastly superior to Word etc.)
- ▶ Theses, dissertations
- ▶ Slides & posters
- ▶ ...and more!



## Pros

- ▶ The de facto standard for academic articles
- ▶ Many journals, conferences, etc. have style files
- ▶ Very easy to include formulas, symbols, etc.
- ▶ Version-control your documents!
- ▶ Pre-existing packages for pretty much anything;  
If you really can't find one for feature X, write your own!
- ▶ Huge, active community of users

## Cons:

- ▶ Learning curve; can be overwhelming at first
- ▶ The perfect document set-up can take a while
- ▶ You *will* get weird errors (see slide 4)



To see how a basic article works, take a look at  
`example/simple-example.tex`!



Simplest option:

1. Create and edit a `.tex` file in your favorite editor
2. At the command line run `pdflatex filename.tex`
3. View the beautiful `.pdf` file it generated and rejoice!

Other compilation/editing options:

- ▶ Sublime Text plugin (plugins also exist for other editors)
- ▶ TeXmaker (cross-platform):  
<http://www.xmlmath.net/texmaker/>
- ▶ Other GUIs for Windows, Mac, Linux
- ▶ Online collaborative editor: <https://www.sharelatex.com/>



## Documentation/guides:

- ▶ Wikibooks manual:  
<https://en.wikibooks.org/wiki/LaTeX>
- ▶ ShareLaTeX documentation:  
<https://www.sharelatex.com/learn>

## Getting help:

- ▶  $\text{T}_\text{E}\text{X}/\text{L}_\text{A}\text{T}_\text{E}\text{X}$  Stack Exchange:  
<http://tex.stackexchange.com/>
- ▶ Google is your friend!  
Someone else has definitely had problem X.





If you need to leave, now's a good time!  
More details after the break.



Take a look at `cheatsheet/cheatsheet.pdf`!



In preamble: `\usepackage{packagename}`

- ▶ Page layout: `\usepackage[margin=1.5in]{geometry}`
- ▶ Include image files: `graphicx`
- ▶ Include web links: `hyperref`
- ▶ Display code: `verbatim` or `listings`
- ▶ Control line spacing more easily: `setspace`
- ▶ Customize headers/footers: `fancyhdr`
- ▶ Customize figure/table captions: `caption`
- ▶ More control over lists: `enumitem`



## Useful packages:

- ▶ Advanced math `amsmath`, fixes `mathtools`
- ▶ Options adjust all of single symbol (`[<opt.>]amsmath`)
- ▶ Environment packages control layout of the whole document
- ▶ GUI outputs code

<https://www.codecogs.com/latex/eqneditor.php>

## Resources:

- ▶ Example-laden wiki to give you a jump-start  
<https://en.wikibooks.org/wiki/LaTeX/Mathematics>
- ▶ Draw your symbol, find package needed  
<https://detexify.kirelabs.org>
- ▶ GUI which outputs code  
<https://www.codecogs.com/latex/eqneditor.php>
- ▶ Searchable community forum  
<https://www.codecogs.com/latex/eqneditor.php>

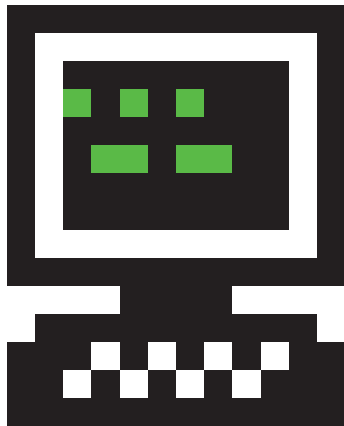


Figure 1: The RC logo



Table 1: Recusers

Name	Pseudonym	Batch
Veronica Hanus	Flight Witch	Fall 2
Anjana Vakil	Spandex Governor	Fall 2

## Useful packages:

- ▶ Controlling table widths: `tabularx`
- ▶ Multi-row cells: `multirow`
- ▶ Better formatting: `booktabs`



Meta-example: You're looking at it! Whoaaa!



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## Pitfalls:

- ▶ Standard themes are uuuugly
- ▶ Setting up a template you like can be a headache
- ▶ Many academics who use  $\text{\LaTeX}$  for articles still use PowerPoint etc. for slides/posters



## `.bib` files

List all your sources in bibtex format.

Many citation systems (e.g. Google scholar, Mendeley) offer an “export to bibtex” option.

## `biblatex` Package

Allows you to fully customize citation and bibliography styles.