

Become a L^AT_EX Guru – Preliminary Syllabus

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HSSP 2010

Please note that this syllabus is preliminary, and may change based on what students in the class accomplish, and if they request topics.

1. Day 1 - Introduction to L^AT_EX

This class will introduce L^AT_EX to those who've never really worked with L^AT_EX before, and help them learn the basics. It will be very similar to my Spark class on L^AT_EX.

- (a) How to set up a document
 - i. Necessary code
- (b) Help files
- (c) Good L^AT_EX practices
- (d) Optional (but useful) packages
- (e) Basic math typesetting
 - i. Ways to get into math mode
 - ii. A few common math things
 - iii. A few not so common math things
- (f) Things to watch out for
- (g) Other environments
- (h) Exercises

2. Day 2 – Review Day 1 Material

- (a) Basic Packages
 - i. `amsmath`
 - ii. `amssymb`
 - iii. `hyperref`
- (b) Basic math
 - i. Commands with parameters
 - A. `\frac{numerator}{denominator}`
 - B. `\sqrt{x}`, `\sqrt[n]{x}`
 - ii. Commands without parameters
 - A. Letters and symbols
 - B. Operators (`\sum`, `\lim`, `\prod`, ...)

- (c) More exercises
- 3. Day 3 – Bibliographies and graphics
 - (a) Bibliographies
 - i. `thebibliography` environment
 - ii. `BibTeX`
 - iii. `hyperref` package
 - (b) Graphics
 - i. `graphicx` package
 - ii. `pgf`, `tikz`
 - iii. Asymptote and Geogebra
- 4. Day 4 – Customizing `LATEX`
 - (a) Simple customizations
 - i. Document classes
 - ii. More about packages
 - iii. `\include` and `\input`
 - (b) Lists
 - i. `itemize`, `enumerate`, and `list`
 - ii. `enumerate` package
 - (c) Complex customizations - defining your own commands
 - i. `\newcommand`, `\renewcommand`, `\providecommand`
 - ii. `\def`
- 5. Day 5 – Basic Math
 - (a) Counters
 - i. `\newcounter`
 - ii. `\setcounter`
 - iii. `\addtocounter`
 - iv. `\arabic`
 - v. `\roman`
 - vi. `\value`
 - (b) Lengths
 - i. `\newlength`
 - ii. `\setlength`
 - iii. `\addtolength`
 - iv. `\settowidth`
 - (c) Computation and branching
 - i. `ifthen`, `xifthen` packages
 - ii. `calc` package