

Introduction L^AT_EX Document

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1 Introduction

Here is a test sentence in L^AT_EX. And another sentence...

And a new paragraph!

L^AT_EX works based on environments, many times with the begin and end commands. So, when you type letters in a math environment they display differently than in regular text.

After following below, it is possible to add cross-references like Table [1](#).

2 Text Modifications & Sectioning

Add new sections or subsections (or subsubsections) as needed. Chapter is not used often as it is part of the book and report templates when adding them as part of the document structure (multiple files integrated).

2.1 Subsection

2.1.1 Subsubsection

You can **bold** or *italicize* text this way. Emph is also *used for italics or changing within an existing mode*. Underline is not used often, but available. “Quotes are added like this” - remember that ”quote” will not work correctly (desktop distributions may not even read them as with other special characters).

Use tiny for small text and huge for very large text or go back to normal.

- Take
- notes
- with
- bullets
 - And

- embed
- for
 - * additional
 - * layers

Sub_{scripts} and super^{scripts} can also be added.

3 Math, Tables, & Figures

3.1 Math

Use \$ to use the math environment for in-line text like α_1 and $E = mc^2$ (errors result w/o \$). Or set up numbered equations:

$$\iint_a^b f(x, y) \, dx \, dy \tag{1}$$

Some math commands are included, but amsmath is needed for many (good package to add). Equation 1 shows a double integral.

3.2 Tables

Tables can be easily added with the tabular environment: $\begin{array}{c|c|c} a & b & c \\ d & e & f \end{array}$

It is easier to use the table environment with it: The square brackets are an

1	2
3	4

Table 1: Lots of table options exist!

optional command that tells L^AT_EX where to put your table (h = approximately here, use ! to bypass regular settings). The label command is for referencing the table in text like this: Table 1.

Cross-reference can be added above for the equation too.

3.3 Figures

Any image can be added by uploading it via the button on the left panel. Then add the figure like this: Overfull is a very common error to see when inserting images. You can use an optional command like scale or set the width/height more directly (i.e. textwidth command). And of course reference in the text with Figure 1.

L^AT_EX attempts to put floats where you tell it to, but you will see warnings if there are issues. Take care of placement last as they will automatically shift based on your content.



Figure 1: From latex-project.org

4 Linking + References & Bibliographies

4.1 Linking

There are a number of ways to hyperlink text in L^AT_EX, but one useful package is `hyperref` giving the option to do things like this: [Overleaf's Website](#). Adjust look of links with the package (all set to blue here).

`hyperref` can also add linking within the document - add reference to table or figure up in our start and try clicking on it.

4.2 References

For basic references, these are built-in to L^AT_EX, but you will want to add a package for more options like what you'd see in a journal article (demo of `natbib` here).

Create a new file (name.bib) and grab some references! Google Scholar works fine (click on quote symbol & copy/paste over to .bib file) or databases like Engineering Village...

Here's a sample reference at the end of the sentence ([Cruz et al., 2020](#)) (p = parenthetical citation). [London et al. \(2021\)](#) is for author name (year) did... But, not all citation styles support this, so you may need to adjust what style you're using or how citing. Cite multiple references like this ([Cruz et al., 2020](#); [London et al., 2021](#)).

Why use a citation manager? So you can do a direct link or just import a set of references for your paper (if you have a large library) - Zotero great because it has extra features for L^AT_EX. Use BetterBibTex [see here for install info](#).

5 Tips & Help

- [Overleaf documentation/help](#) - Overleaf's library of information, examples, and more
- [CTAN](#) - Comprehensive TeX Archive Network, listing and documentation for packages
- [Stackexchange](#) - online Q&A for users, very helpful
- [L^AT_EX Project](#) - main site for L^AT_EX, also has links for desktop distributions

- [Virginia Tech Overleaf](#) - VT's Overleaf templates (including [Latest VT ETD template](#), last checked on April 13, 2022)
- Sarah Over, PhD - Engineering Collections & Research Analyst (Newman), sover05@vt.edu

References

- Cruz, S., London, J., and Lightner, T. (2020). Measuring links between awareness and implementation of engineering education research in practice. *ASEE Annual Conference and Exposition, Conference Proceedings, June 2020*.
- London, J., Carberry, A., Ayela-Uwangue, A., Lee, E., Huerta, M., Abhyankar, R., Huang, W., Yasuhara, K., Allendoerfer, C., and Cruz, S. (2021). The pioneers' stories as a tool for introducing graduate students to the engineering education research community. *Advances in Engineering Education*, 8(3):1–22.