

Social Scientific Typesetting

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1 How L^AT_EX Works

L^AT_EX is one way to prepare professional-quality documents with a mixture of text, mathematics, and graphics. Creating a document in L^AT_EX is a two-step process: first you write the L^AT_EX code with your content embedded; second you compile the code to produce an output file. This process may sound unfamiliar to those accustomed to WYSIWYG¹ document editors, but you'll adapt quickly. There are many compelling reasons to do so.

First, L^AT_EX is editor-independent. When you have a `.tex` file, you can open and edit it in any T_EX editor without formatting issues (unlike opening a `.docx` file in Windows Notepad, e.g.). Like other simple text file formats, you need not worry about the `.tex` filetype becoming obsolete.

Second, L^AT_EX takes care of formatting for you, encouraging you to think more about the structure and content of your document. This, in turn, should produce better documents. In addition to this over-arching advantage, L^AT_EX enables you to include an extensive array of mathematical symbols, to create and include publication-quality tables, graphs, figures, enumerations, and the like. The flexibility of L^AT_EX means that you can also create your own symbols, control spacing and layout when necessary, and generate document components like title pages, abstracts, tables of contents, lists of figures, et cetera, with virtually zero additional effort. Another common task, moving tables and figures all to the end of a file, or moving them into the body of a paper, can be done in a single command.

Third, L^AT_EX has templates and many solutions for creating articles, books, dissertations, letters, reports, slides, posters, handouts, and more. In particular, L^AT_EX style files exist for formatting dissertations using the often-intricate standards required by many universities. Through B_IB_T_EX, L^AT_EX also enables powerful bibliography management. Using B_IB_T_EX, you can keep and augment a single bibliography file throughout your career, and include only the citations that you use or want in particular document's list of references. You can also change the bibliography style simply by pointing T_EX to a particular style file. This enables you to control a document's bibliography style without changing by hand certain

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¹“What you see is what you get”

commas to periods, certain italics to underlines, certain source types' order of bibliographic elements like author, year, et cetera, or the in-text reference style. Some journals require submission of the source L^AT_EX code for formatting.

2 How to Get Started with L^AT_EX

In order to use L^AT_EX, you need two components: a build of T_EX, and an editor within which you will create, construct, and change your code and content. Note this nice feature: the code is independent of the editor. When one editor disappears, becomes obsolete, or simply doesn't offer the functionality you want, you can change editors without having to worry about document version problems. There's effectively no such thing as backward-, forward-, or platform-incompatibility. T_EX code is T_EX code.

2.1 Mac OSX

One free, straightforward document preparation solution for Mac OS X:

1. Download [MacTeX](#).
2. Do one of the following:
 - (a) Write in RMarkdown (a `.Rmd` file, in RStudio, then "Knit to PDF").
 - (b) Download an editor, such as [Aquamacs](#). I use and recommend [Texpad](#).

2.2 Windows

One free, straightforward document preparation solution for Windows follows. (Please note that I have not implemented this myself since 2010.)

1. Download and install [MiKTeX](#). During installation,
 - (a) note the folder into which MiKTeX installs (see Point 3 below), and
 - (b) Select "Yes" to install packages on the fly.
2. Download and install [Texmaker](#) or [TeXnicCenter](#).
3. Open TeXnicCenter. When the Configuration Wizard emerges, the MiKTeX default executables folder starts with the MiKTeX folder (see Point 1 above), and ends with `\miktex\bin`. So, e.g., `C:\Program Files (x86)\MiKTeX 2.9\miktex\bin`.

2.3 Sample Files

You are ready to compile your first L^AT_EX file. Note that L^AT_EX will create several auxiliary files, and overwrite them when you compile.

1. Save my [sample.tex](#) and [samp.bib](#) files to a directory; for example, to the Desktop.

2. Open the `sample.tex` document in your editor.
3. Compile the `sample.tex` document in your editor. This should produce a PDF file.
4. (For TeXnicCenter) Change the output dialog box to “ $\LaTeX \Rightarrow$ PDF”.
5. (For TeXnicCenter) Build `sample.tex` (Ctrl-F7). Do this 2 or 3 more times, and all of the bibliography components should be integrated.
6. (For TeXnicCenter) View the file (F5, or just click on the PDF). Note that you should close the PDF before trying to recompile.
7. In case you have difficulty, the output file should look like my [sample.pdf](#).

3 References for \LaTeX

Many good references for writing \LaTeX code exist. [Oetiker et al. \(2008\)](#) and [Goossens, Mittelbach and Samarin \(1994\)](#) are two great places to get started. Also, if you have trouble finding the code for a particular symbol, [Detexify](#) can save the day.

Hope this helps!

References

- Goossens, Michel, Frank Mittelbach and Alexander Samarin. 1994. *The \LaTeX Companion*. New York: Addison-Wesley.
- Oetiker, Tobias, Hubert Partl, Irene Hyna and Elisabeth Schlegl. 2008. “The Not So Short Introduction to $\LaTeX 2\epsilon$.” *distributed with $\LaTeX 2\epsilon$, Version 4:24*.