

Introduction to L^AT_EX

L^AT_EX is the typesetting software used today by most mathematicians and physicists. It is built on a typesetting engine called T_EX (pronounced *tek*, after the Greek root in *technology*), originally created by Stanford computer scientist Don Knuth in the late 1970s. The biggest advantage to T_EX is that it makes it relatively easy to produce beautifully typeset mathematical expressions and equations. L^AT_EX (originally by Leslie Lamport) adds higher-level features to T_EX, such as default formats for common document types and automatic numbering of equations and endnotes.

L^AT_EX is free software and you may eventually wish to install it on your own computer. It's a very large download, however, and there could be other installation complications. So unless you already have it installed and have used it before, I recommend that for now you access L^AT_EX through a cloud-based implementation called Overleaf.

Point your web browser to overleaf.com and click the “create a new paper” button. You'll then see a split-screen window displaying a template document. You type in the pane on the left, and the typeset output appears (after some delay) in the pane on the right. Click the “source” button near the upper-left corner, to see (and edit) the actual source code of the template. This template is far more complicated than we need, so delete *everything* in the left pane and then type the following:

```
\documentclass[12pt]{article}
\begin{document}
Hello, world!
\end{document}
```

You'll probably get an error message from the auto-update feature, and have to click “re-compile from scratch”, but eventually you should see the words “Hello, world!” on an otherwise blank page at the right. Congratulations! (Let me know if you need help.)

Now please refer to the example source code on the accompanying page, and follow this example to create a one-page, double-spaced document with a title and author, telling me a little bit about yourself. I hope you'll say something about what you're hoping to get out of this course, and include any questions or concerns you may have.

As long as you're just writing paragraphs of ordinary text, L^AT_EX is mostly straightforward. Extra spaces and tabs in your source code will be ignored, as are line breaks, except that a blank line indicates a paragraph break. There are a few quirks to get used to for producing curly quotation marks, dashes, and special symbols like \$ and %, so try to avoid using those symbols for now.

When you are finished creating your document, click the PDF button at the top of the window to download the finished output. Print this page and turn it in. You may also wish to sign up for a free account on the Overleaf site, so you can save your work there.

As the semester goes on, I hope you will enjoy learning and using this powerful system for producing beautiful mathematical documents.

```
\documentclass[12pt]{article}
\usepackage[letterpaper, margin=1.25in]{geometry}
\usepackage{setspace}
```

```
\begin{document}
```

```
\title{A little about me}
\author{Daniel V. Schroeder}
\maketitle
```

```
\doublespacing
```

I was born in St. Louis and grew up in the suburb of Webster Groves. I then attended Carleton College in Minnesota, and went from there to Stanford University, where I worked in the Theory Group at the Stanford Linear Accelerator Center and received my PhD in 1990. I taught at Pomona College for one year and at Grinnell College for two years before coming to Weber State in 1993. The big attractions for me here at WSU were my Physics Department colleagues, the emphasis on teaching undergraduates, and being able to enjoy hiking and other recreation in the nearby mountains.

Although I have done research in quantum electrodynamics applied to high-energy particle beams, my niche in the profession is more as a textbook author and editor. I helped write a graduate-level textbook on quantum field theory, and later wrote an undergraduate textbook on thermal physics. I recently finished a five-year stint as associate editor of the American Journal of Physics.

I have taught Electromagnetic Theory three times before here at WSU, and I also taught it long ago at Pomona and Grinnell. It's probably the most mathematical course that I teach, and I always hope that the students will enjoy the mathematical concepts as much as I do. I especially like teaching this course because the textbook, by David Griffiths, is so well written.

```
\end{document}
```