

# L<sup>A</sup>T<sub>E</sub>X course

The essentials of modern L<sup>A</sup>T<sub>E</sub>X

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June 6, 2016

# Silke Hofstra

Within Scintilla:

- ▶ Templates
- ▶ Codex
- ▶ Chief  $\LaTeX$  nerd

To the world:

- ▶ Developer of packages: sourceserifpro, sourcesanspro, etc.
- ▶ CTAN: <https://www.ctan.org/author/hofstra>
- ▶  $\TeX$  StackExchange: <https://tex.stackexchange.com/users/17484/silke>

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## LaTeX according to Wikipedia

**LaTeX** (*/ˈleɪtɛk/ LAY-tek or /ˈlɑːtɛk/ LAH-tek<sup>[1]</sup>*) is a document preparation system and document markup language. [...] LaTeX is not the name of a particular editing program, but refers to the encoding or tagging conventions that are used in LaTeX documents. Almost any editing program or word-processor may be used to write LaTeX documents [...]

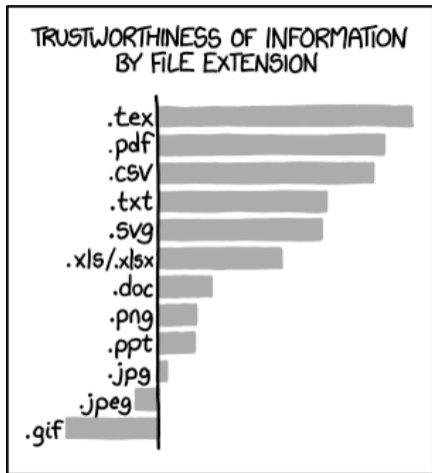
— Wikipedia

But what *is* L<sup>A</sup>T<sub>E</sub>X?

L<sup>A</sup>T<sub>E</sub>X is a language that allows you to create documents in almost any text editor by focussing primarily on *content* and *structure*, not *how it looks*.

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# Trust

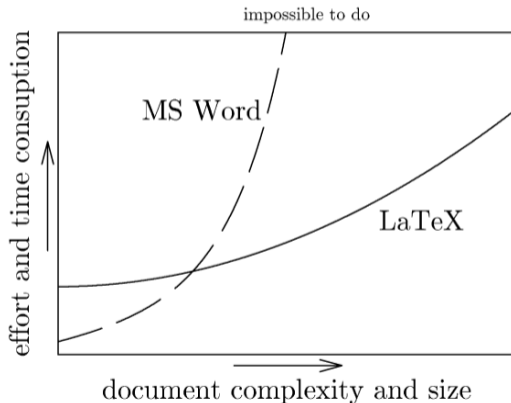


Source: [XKCD 1301 'File Extensions'](#)

## 'Ease' of use

“Latex makes difficult things easy, and easy things very difficult”

— Umij



Source: [Marko Pinteric](#)



## L<sup>A</sup>T<sub>E</sub>X vs MS Office (1/2)

L<sup>A</sup>T<sub>E</sub>X is better at

- ▶ High quality typography (kerning, hyphenation, etc)
- ▶ Separating *content* and *formatting*
- ▶ Mathematics
- ▶ Collaboration and version control (SVN, Git)
- ▶ Automation, programmability and consistency
- ▶ Compatibility and stability
- ▶ Keeping money in your pockets

## L<sup>A</sup>T<sub>E</sub>X vs MS Office (2/2)

Office is better at

- ▶ Showing you what you get immediately
- ▶ Checking spelling/grammar
- ▶ Being easy to learn
- ▶ Having everything in one 'package'

## The perils of 'what you see is what you get' (1/2)

WYSIWYG allow the user to mix up *form* and *function*.

### **Example:**

To emphasise something in Word, one makes it *italic*.

In L<sup>A</sup>T<sub>E</sub>X one places *emphasis*.

You can change the way *emphasis* behaves, not how *italics* behave.

## The perils of 'what you see is what you get' (2/2)

WYSIWYG allow the user to mix up *form* and *function*.

### Example:

What is the difference between the following lines?

**New Chapter**

**New Chapter**

What is the difference between the following lines?

```
\section*{New Chapter}  
\textbf{\Large New Chapter}
```

**New Chapter**

**New Chapter**

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T<sub>E</sub>X (from Greek τέχνη – skill, art, technique) was designed by *Donald E. Knuth* in 1978.

Knuth designed T<sub>E</sub>X because he was dissatisfied with the ‘state of the art’ typesetting for the second volume of *The Art of Computer Programming*. A computer programmer by trade, he designed T<sub>E</sub>X to typeset decent documents and mathematics.

Because Knuth was a scientist he designed T<sub>E</sub>X to be easy to use by other scientists and mathematicians.

The current T<sub>E</sub>X version is 3.1415926 from 2008.

In the early 1980's *Leslie Lamport* designed L<sup>A</sup>T<sub>E</sub>X, a set of macros built on T<sub>E</sub>X to make it easier for users to focus on the content of documents.

The current L<sup>A</sup>T<sub>E</sub>X version is L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub>.

L<sup>A</sup>T<sub>E</sub>X 3 is still under development, but some features are available already.

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# Distributions

There are three main  $\text{\LaTeX}$  distributions:

- ▶  $\text{\TeX}$  Live (Unix / Linux / Windows)
- ▶ Mac $\text{\TeX}$  (Mac OSX)
- ▶ Mik $\text{\TeX}$  (Windows)

# Editors

- ▶ TeXworks
- ▶ TeXnicCenter
- ▶ TeXmaker
- ▶ TeXstudio
- ▶ Emacs with AUCTeX
- ▶ Vim LaTeX-suite

# Engines

- ▶ pdf $\LaTeX$
- ▶ Xe $\LaTeX$  ( $\LaTeX$ 3)
- ▶ Lua $\LaTeX$  ( $\LaTeX$ 3 + Lua)

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## Get Help

- ▶ [The L<sup>A</sup>T<sub>E</sub>X Wikibook](#)
- ▶ [The T<sub>E</sub>X Stack Exchange](#)
- ▶ [This question on the T<sub>E</sub>X Stack Exchange](#)

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## Course materials

Course manual & assignments:

<https://www.scintilla.utwente.nl/docs/cursus/latex/manual/manual.pdf>

All course materials:

<https://www.scintilla.utwente.nl/docs/cursus/latex/>