

# Introduction to L<sup>A</sup>T<sub>E</sub>X

## A Method for Scientific Writing

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# Installation

## On Windows, Linux and Mac

- **Windows:** Install MiKTeX or T<sub>E</sub>XLive. *After* that install your favourite editor. Configure the path to provide the editor with the exact location of the MiKTeX software.
- **Linux:** Make sure to have the full version of T<sub>E</sub>XLive, install your favourite editor (use the package manager).
- **Mac:** Install the MacT<sub>E</sub>X package (<http://tug.org/mactex/>). Either use the editor that comes with it (T<sub>E</sub>XShop) or install your favourite editor.

### Hint:

If MiKTeX is not working try a different server.

# Components

## Document Format

**Header:** Determines the formatting

- Document class: *article*, *book*, *report*, *letter* with options for fonts and printing (equivalent KOMA Skript classes: scr)

```
\documentclass[options]{class}
```

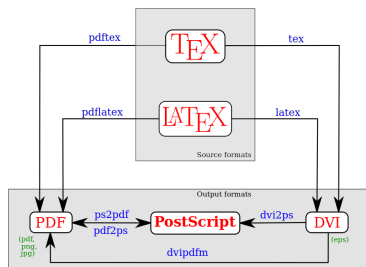
- Usepackages: Activation of special macros

```
\usepackage[parameters]{package}
```

**Main Body:** The content of the document that is being formatted by the header

**Special Pages:** Bibliography, appendix commands

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



## Warning!

The only important file types are .tex, .cls and .sty, .bib and .bst. They are not temporary and should not be deleted.

# Layout

## Page Style

`\pagestyle{'style'}` and `\thispagestyle{'style'}`

- **empty:** Header and footer are cleared
- **plain:** Header is clear, but the footer contains the page number in the center
- **headings:** Footer is blank, header displays information according to document class and page number top right
- **myheadings:** Page number is top right, and it is possible to control the rest of the header
- **fancy:** For better control over the headers and footers

`\usepackage{fancyhdr}`

# Formatting

## Page Size and Structure

- $\text{\LaTeX}$  comes with predefined page and margin sizes for every style and document class
- For manipulation: `\usepackage[options]{geometry}`
- The landscape format is an option of the geometry package
- Text in multiple columns:  
`\begin{multicols}{#}...lots of text...\end{multicols}`

### Warning!

As  $\text{\LaTeX}$  is a globally recognized set of typesetting defaults, additional page formatting should be done not without reason and always with great care.

# Formatting

## Colors

`\usepackage{color}` and `\usepackage[options]{xcolor}`

- Define colors: `\definecolor{'name'}{'model'}{'color-spec'}`
- Coloring text: `\textcolor{declared-color}{text}`
- Coloring the background: `\colorbox{declared-color}{text}`

# Formatting

## Fonts

Various font styles, shapes and sizes are available.

Font encoding can be modified with

```
\usepackage['encoding']{fontenc}
```

### Warning!

For the sake of consistent typography playing a lot with fonts is highly discouraged. This is the work of font and class designers, not end users.