

Introduction to LaTeX

Tikz

Get information

- A very minimal introduction to TikZ
 - <http://cremeronline.com/LaTeX/minimaltikz.pdf>
- TikZ cheat sheet
 - <http://home.snc.edu/andershendrickson/tex/TikZcheatsheet.pdf>
- TikZ pour l'impatient
 - <http://math.et.info.free.fr/TikZ/bdd/TikZ-Impatient.pdf>
- Graphics with TikZ
 - <https://www.tug.org/pracjourn/2007-1/mertz/mertz.pdf>
- Slides: <https://kuleuven.box.com/v/ictscourse-latex>

Get information

- Look at the examples!
 - <http://www.texample.net/tikz/examples/>
- VisualTikZ
 - <https://www.ctan.org/pkg/visuالتikz>
 - Catalog with basic commands
- Google is your best friend!

TikZ?

- Pro
 - Draw with exact precision
 - Consistent typography
 - Fast for simple graphics
- Con
 - Steep learning curve
 - No WYSIWYG
 - Changes require recompilation

TikZ

- TikZ ist kein Zeichenprogramm
 - TikZ
 - easy to use high-level commands
 - PGF (Portable Graphics Format)
 - low-level commands
- Usage
 - `\usepackage{tikz}`
 - `inline`
 - `environment`

TikZ

Environment

```
\begin{tikzpicture}  
path1;  
path2;  
...  
pathn;  
\end{tikzpicture}
```

inline

```
\tikz{  
path1;  
path2;  
...  
pathn;  
}
```

Every TikZ drawing command ends with a semicolon

path – straight lines

- Everything is drawn on a so-called path
- A sequence of coordinates and drawing commands
- General syntax:
- `\path[options] (coordinate) command (coordinate);`
- like moving a pencil to some place and start drawing something.
- *File: tikz-path-1.tex*

More on lines

- Change the scale with the `scale` option
- *File: tikz-path-scale.tex*
- Create decorations (arrows, ...)
- **Change thickness:** `ultra thin`, `very thin`, `thin`, `semithick`, `thick`, `very thick` and `ultra thick`
- `dashed`, `dotted`
- *File: tikz-path-decorate.tex*

curves

- Draw intermediate points
- Draw with 'leaving angle' and 'arriving angle'
- TikZ has a math engine, enabling to `plot` functions
 - Specify the domain
 - Several math functions are supported
- *File: `tikz-path-curves.tex`*

fill

- `\fill` will fillup the drawing
- `\filldraw` will fill it up and draw a contour.
- *File: `tikz-path-fill.tex`*

nodes

- The most versatile object
- Use the flow:
 - node definition,
 - node declaration,
 - lines that join nodes.
- *File: tikz-path-node*
- *File: tikz-path-flowchart*