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Introduction to LaTeX

Tikz

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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

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Get information

- Look at the examples!
  - http://www.texample.net/tikz/examples/
- VisualTikZ
  - https://www.ctan.org/pkg/visualtikz
  - 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

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TikZ

Environment

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

inline

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

Every TikZ drawing command ends with a semicolon

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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*

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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*

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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*