Introduction to LaTeX
Course Syllabus

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This course aims at familiarizing students and young researchers with LaTeX: a program for professional typesetting and bibliography management.

Principles of LaTeX

LaTeX is different from MS Word and other WYSIWYG ("what you see is what you get") editors: it separates visual appearance from the content of the document. You focus on what you want to write (in plain text) while the program takes care of the typesetting at a later stage (i.e., when you decide to compile your input file). You can guide the typesetting process by logical markups—concepts such as chapter, section, table, figure, boldface, italics, etc. Then you can relax while the LaTeX system takes care of formatting and layout.

LaTeX requires a little bit of time to get used to, but then it is really a blessing. Even if your skills are just moderate. The main advantages with respect to WYSIWYG editors are:

- Professional appearance. 99,9% of MS Word users are not skilled enough to approach the results of the LaTeX typesetting engine.

- Saving time. Especially for the typesetting of complex documents where handling the layout manually (e.g., in Word) is very painful and last-minute changes mean you can start all over again.

- Platform independence. No more problems with corrupted Word documents due to different operating systems.

- Convenient and time-saving bibliography management. No more copy and paste: you call all the references from a bibliography file and LaTeX inserts them for you at the end of the document, in the format you specify. LaTeX also monitors whether you cite consistently, whether references are lacking, etc.

- Aptness for scientific use: if you use greek letters, equations, and any other strange stuff, you are way better off with LaTeX.

- Seamless interface between your writings and your presentations.

- It's free!

True: if you want just to write a brief one-page document in Word, without particular attention to the layout, this is the faster and more convenient thing to do. (See also this Word/LaTeX comparison.) But for almost everything else, I use LaTeX.

Schedule

Meeting 1: Tuesday, 11 May, 10–13.

Meeting 2: Tuesday, 18 May, 10–13

Meeting 3: Tuesday 1 June, 10–13

Meeting 4: Tuesday 15 June, 10–13

The meetings will be held at Palazzo Nuovo in the classrooms on the first floor. (More information to follow.) It is possible to follow the course via WebEx/Google Meet.

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Meeting 1: We cover the basics of LaTeX, the principle of markup tagging and the structure of a LaTeX input file. Then we will focus on writing a simple document, structuring it, various forms of highlighting, including (numbered and unnumbered) lists, footnotes and endnotes, etc.

Meeting 2: You learn how to include somewhat more complex elements of a document, such as tables, figures, mathematical content, cross-references, etc.

Meeting 3: A main advantage of LaTeX is the professional bibliography management. In this meeting we will learn how to do it!

Meeting 4: You can also do presentations with LaTeX! While they are perhaps not as fancy as the output of some professional presentation software (e.g., Keynote, Prezi), they are definitely less messy than Power-Point and also very well structured. You learn how to write a presentation and how to integrate it with the other things you learned in this small course.

Before the Course

You should bring your computer to the meetings, so you can work on LaTeX code hands on. It is also recommended to pre-install the software that is necessary for running LaTeX and writing code. You need two things, essentially:

The Engine This is the program that compiles your LaTeX code, i.e., it "translates" your document into a pdf output. The engine decides on how to format your document, how to render equations, how to place tables and figures, and so on.

The Editor This is simply a program for writing LaTeX code. No particular requirements. You can even use a simple text editor, but it can be convenient to use a program that highlights LaTeX commands, contains some shortcuts in the upper bars, and typesets the input file (=calls the engine) with a simple click.

For the engine, I recommend to install the MikTeX distribution at https://miktex.org/. It is simple, functional and comes with an editor of its own (Texworks). The editor is somewhat spartanic, though. More features are offered by TeXstudio (all operating systems) and I would recommend it for the course. Good alternatives are WinEdt (for Windows) and LaTeXila (Linux). Decide yourself—the choice of the editor should make no difference.

In any case, install the engine (i.e., MikTeX) first, so the editor "knows" how to compile texts.

I am looking forward to the course and to welcoming you next Tuesday!