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SCUOLA DI INGEGNERIA INDUSTRIALE
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article-format manual

TESI DI LAUREA MAGISTRALE IN
XXXXXXXXXXXXX ENGINEERING - INGEGNERIA XXXXXXXXXXXXX

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Academic year:
2024-2025

Abstract: Here goes the Abstract in English of your thesis (in article format) followed by a list of keywords. The Abstract is a concise summary of the content of the thesis (single page of text) and a guide to the most important contributions included in your thesis. The Abstract is the very last thing you write. It should be a self-contained text and should be clear to someone who hasn't (yet) read the whole manuscript. The Abstract should contain the answers to the main research questions that have been addressed in your thesis. It needs to summarize the motivations and the adopted approach as well as the findings of your work and their relevance and impact. The Abstract is the part appearing in the record of your thesis inside POLITesi, the Digital Archive of PhD and Master Theses (Laurea Magistrale) of Politecnico di Milano. The Abstract will be followed by a list of four to six keywords. Keywords are a tool to help indexers and search engines to find relevant documents. To be relevant and effective, keywords must be chosen carefully. They should represent the content of your work and be specific to your field or sub-field. Keywords may be a single word or two to four words

Keywords:

1. Introduction

This document is intended to be both an example of the Polimi Typst template for Master Theses in article format, as well as a short introduction to its use. It is not intended to be a general introduction to Typst itself, and the reader is assumed to be familiar with the basics of creating and compiling Typst documents.

The cover page of the thesis in article format must contain all the relevant information: title of the thesis, name of the Study Programme, name(s) of the author(s), student ID number, name of the supervisor, name(s) of the co-supervisor(s) (if any), academic year.

Be sure to select a title that is meaningful. It should contain important keywords to be identified by indexer. Keep the title as concise as possible and comprehensible even to people who are not experts in your field. The title has to be chosen at the end of your work so that it accurately captures the main subject of the manuscript.

It is convenient to break the article format of your thesis (in article format) into sections and subsections. If necessary, subsubsections, paragraphs and subparagraphs can be used.

A new section is created by the command

= Title of the section

The numbering can be turned off by using the complete function:

```
#heading(numbering: none, "Title of the section")
```

A new subsection is created by the command:

== Title of the subsection

and similarly the numbering can be turned off as earlier, but changing the level:

```
#heading(numbering: none, level: 2 "Title of the section")
```

It is recommended to give a label to each section by using the command

= Title of the section<section-name>

where the argument is just a text string that you'll use to reference that part as follows: @section-name.

2. Sections and subsections

It is convenient to organize the Executive Summary of your thesis into sections and subsections. If necessary, subsubsections, paragraphs and subparagraphs can be also used. A new section or subsection can be included with the commands

= Title of the section

== Title of the subsection

It is recommended to give a label to each section by using the command

= Title of the section<section-name>

where the argument is just a text string that you'll use to reference that part as follows: @section-name.

3. Equations

In LaTeX, there are many environments (`equation`, `equation*`, `aligned`) – in Typst there is just the `equation` environment called with dollars [1]:

- Inline math, same as LaTeX:

$$\text{\$}a^2 + b^2 = c^2\text{\$}$$

$$a^2 + b^2 = c^2$$

- Block math, by adding whitespaces before and after the content:

$$\text{\$ } a^2 + b^2 = c^2 \text{\$}$$

$$a^2 + b^2 = c^2$$

Now a more complex equation:

$$\left\{ \begin{array}{l} \Delta \cdot \boldsymbol{D} = \rho, \\ \Delta \times \boldsymbol{E} + \frac{\partial \boldsymbol{B}}{\partial t} = 0, \\ \Delta \cdot \boldsymbol{B} = 0, \\ \Delta \times \boldsymbol{H} - \frac{\partial \boldsymbol{D}}{\partial t} = \boldsymbol{J}. \end{array} \right.$$

By default, the equations are **not** numbered – however if you need to:

$$\left\{ \begin{array}{l} \Delta \cdot \boldsymbol{D} = \rho, \\ \Delta \times \boldsymbol{E} + \frac{\partial \boldsymbol{B}}{\partial t} = 0, \\ \Delta \cdot \boldsymbol{B} = 0, \\ \Delta \times \boldsymbol{H} - \frac{\partial \boldsymbol{D}}{\partial t} = \boldsymbol{J}. \end{array} \right. \quad (1)$$

And to reference it just type Equation 1.

4. Figures, Tables and Algorithms

4.1. Figures

Via the `figure` environment [2], as you would do in LaTeX:



Figure 4.1: Caption in the List of Figures.

However, since Typst does not *natively* support subfigures (see related issue), the packages `smartaref` [3] and `hallon` [4] have been integrated:



(a) Left Polimi logo.



(b) Right Polimi logo.

Figure 4.2: A figure composed of two sub figures, similar to `\subfloat{}`.

You can reference either the main Figure 4.2; or a single subfigure: Figure 4.2a, or Figure 4.2b.

4.2. Tables

	Column 1	Column 2	Column 3
row 1	1	2	3
row 2	α	β	γ
row 3	alpha	beta	gamma

Table 4.1: Caption of the Table to appear in the List of Tables.

As you can see, it could be useful to implement a default style for every table [5].

4.3. Algorithms

For algorithms, there are a lot of packages on Typst universe [6]. The following are my recommendations.

- `lovelace` [7]

Algorithm 4.1: My cool algorithm

```

1 Initial instructions
2 for for – condition do
3   | Some instructions
4   if if – condition then
5   | Some other instructions
6   end if
7 end for
8 while while – condition do
9   | Some further instructions
10 end while
11 Final instructions
```

See Algorithm 4.1.

- `algo` [8]

```
Name of Algorithm
1  Initial instructions
2  for for – condition do
3      Some instructions
4      if if – condition then
5          Some other instructions
6      end if
7  end for
8  while while – condition do
9      Some further instructions
10 end while
11 Final instructions
```

5. Some further useful recommendations

How to insert itemized lists:

- first item;
- second item.

How to insert numbered lists:

1. first item;
2. second item.

6. Use of copyrighted material

Each student is responsible for obtaining copyright permissions, if necessary, to include published material in the thesis. This applies typically to third-party material published by someone else.

7. Plagiarism

You have to be sure to respect the rules on Copyright and avoid an involuntary plagiarism. It is allowed to take other persons' ideas only if the author and his original work are clearly mentioned. As stated in the Code of Ethics and Conduct, Politecnico di Milano *promotes the integrity of research, condemns manipulation and the infringement of intellectual property*, and gives opportunity to all those who carry out research activities to have an adequate training on ethical conduct and integrity while doing research. To be sure to respect the copyright rules, read the guides on Copyright legislation and citation styles available at:

<https://www.biblio.polimi.it/en/tools/courses-and-tutorials>

You can also attend the courses which are periodically organized on 'Bibliographic citations and bibliography management'.

8. Conclusions

A final section containing the main conclusions of your research/study have to be inserted here.

9. Bibliography and citations

Your thesis must contain a suitable Bibliography which lists all the sources consulted on developing the work. The list of references is placed at the end of the manuscript after the chapter containing the conclusions. It is suggested to use the BibTeX package and save the bibliographic references in the file `Thesis_bibliography.bib`.

Bibliography

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- [2] “Typst Figure Documentation.” [Online]. Available: <https://typst.app/docs/reference/model/figure/>
- [3] “Smartref Documentation.” [Online]. Available: <https://typst.app/universe/package/smartaref>
- [4] “Hallon Documentation.” [Online]. Available: <https://typst.app/universe/package/hallon>
- [5] “Typst Table Guide.” [Online]. Available: <https://typst.app/docs/guides/table-guide/>
- [6] “Typst Universe.” [Online]. Available: <https://typst.app/universe>
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A. Appendix A

If you need to include an appendix to support the research in your thesis, you can place it at the end of the manuscript. An appendix contains supplementary material (figures, tables, data, codes,

mathematical proofs, surveys, ...) which supplement the main results contained in the previous sections.

B. Appendix B

It may be necessary to include another appendix to better organize the presentation of supplementary material.

Abstract in lingua italiana

Qui va l'Abstract in lingua italiana della tesi seguito dalla lista di parole chiave.

Parole chiave: qui, le parole chiave, della tesi, in italiano

Acknowledgements

Here you might want to acknowledge someone.