

Warsaw University of Technology

FACULTY OF
MATHEMATICS AND INFORMATION SCIENCE



Bachelor's diploma thesis

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Abstract

ENGLISH TITLE

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Keywords: keyword1, keyword2, ...

Streszczenie

POLISH TITLE

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Słowa kluczowe: slowo1, slowo2, ...

Contents

Introduction **11**

1. Example chapter **12**

 1.1. Example section 12

 1.1.1. Example subsection 12

 1.2. Floats – tables and figures 13

2. The next chapter **15**

 2.1. Matrices 15

Introduction

What is the thesis about? What is the content of it? What is the Author's contribution to it?

WARNING! In a diploma thesis which is a team project: Description of the work division in the team, including the scope of each co-author's contribution to the practical part (Team Programming Project) and the descriptive part of the diploma thesis.

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1. Example chapter

This T_EX file is to be compiled with pdfLaTeX (it's just quick build in TeXMaker).

1.1. Example section

Definition 1.1 (Definition). A *definition* is a statement of the meaning of a term (a word, phrase, or other set of symbols).

1.1.1. Example subsection

It's the deepest deph of sectioning allowed by rector.

Definition 1.2 (Equation). In mathematics, an *equation* is a statement of an equality containing one or more variables.

Example 1.3. This is an example of an equation:

$$2 + 2 = 4. \tag{1.1}$$

Equation without a number:

$$2 + 2 = 4,$$

or:

$$2 + 2 = 4.$$

It is worthwhile to peruse other mathematical environments like *multline*, *align* and their versions with a star (, i.e. without numeration). The description of their use can be found at <https://texdoc.org/serve/amsldoc.pdf/0> starting from the end of the third page.

Equation (1.2) is false. References (and some other things) work properly after compiling T_EX file twice.

$$\int_0^1 x \, dx = \frac{3}{2}. \tag{1.2}$$

Theorem 1.4 is a very interesting result.

Theorem 1.4 (Pythagoras’ Theorem). Let c represent the length of the hypotenuse and a and b the lengths of the triangle’s other two sides. Then:

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

Proof. The proof has been presented in [1] and [2]. We can write then [1, 2]. □

Corollary 1.5. The use of the term *corollary*, rather than *proposition* or *theorem*, is intrinsically subjective.

Remark 1.6. You can find a rather comprehensive list of available symbols at https://www3.nd.edu/~nmark/UsefulFacts/LaTeX_symbols.pdf.

If you want to find a symbol by its shape, you can use the following site: <https://detexify.kirelabs.org/classify.html>.

Lemma 1.7 (Someone’s Lemma). Ten lemat jest nie na temat.

Proof. Dowód przez indukcję. □

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1.2. Floats – tables and figures

Place labels after captions or you get the wrong labelling.

In Table 1.1 there are additional options for `table` and `figure` environments.

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Table 1.1: Additional options

symbol	effect
h	Place the float here, i.e., approximately at the same point it occurs in the source text (however, not exactly at the spot)
t	Position at the top of the page
b	Position at the bottom of the page
p	Put on a special page for floats only
!	Override internal parameters LaTeX uses for determining "good" float positions
H	Places the float at precisely the location in the <code>L^AT_EX</code> code. Requires the float package,[1] i.e., <code>\usepackage{float}</code> . This is somewhat equivalent to <code>!ht</code> .

Figure 1.1: Example figure – it has been drawn by `LATEX` default tools

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2. The next chapter

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2.1. Matrices

Simple matrix:

$$\begin{array}{cccc} a & b & c & d \\ d & e & f & g \\ 1 & 1 & 1 & 1 \end{array}$$

Matrix with parentheses:

$$A = \begin{pmatrix} a & b & c & d \\ d & e & f & g \\ 1 & 1 & 1 & 1 \end{pmatrix}$$

Matrix with brackets:

$$\begin{bmatrix} a & b & c & d \\ d & e & f & g \\ 1 & 1 & 1 & 1 \end{bmatrix}$$

You can also use more general environment:

$$\begin{array}{ccc} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{array}$$

Matrix with braces:

$$\begin{pmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{pmatrix}$$

Definition 2.1. Let $A \neq \emptyset$, $n \in \mathbb{N}$. Every function $f: A^n \rightarrow A$ is called an *n-ary operation* or *działaniem* określonym na A . 0-ary operations are constant functions.

Definition 2.2 (Algebra). The ordered pair (A, F) , where $A \neq \emptyset$ is a set and F is a family of operations defined on A , shall be called an *algebra* (or *F-algebra*). The set A is called *the set of elements, support* or *universe* of an algebra (A, F) and F is called *the set of elementary operations*.

Proposition 2.3. I state that, having passed to the limit, the only thing left me me is to camp at said limit or return, or, maybe, search for a pass or an exit to other areas.

Bibliography

- [1] A. Author, *Title of a book*, Publisher, year, page–page.
- [2] J. Bobkowski, S. Dobkowski, Title of an article, *Magazine X*, No. 7, year, PAGE–PAGE.
- [3] C. Brink, Power structures, *Algebra Universalis* 30(2), 1993, 177–216.
- [4] F. Burris, H. P. Sankappanavar, *A Course of Universal Algebra*, Springer-Verlag, New York, 1981.

List of symbols and abbreviations

nzw. nadzwyczajny

* star operator

~ tilde

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List of Figures

1.1	Example figure – it has been drawn by \LaTeX default tools	14
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Spis tabel

1.1 Short caption 14

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List of appendices

1. Appendix 1
2. Appendix 2
3. In case of no appendices, delete this part.