TALLINN UNIVERSITY OF TECHNOLOGY
School of Information Technologies

Guidelines for writing and formatting a thesis

Tallinn 2025

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1 Requirements for the preparation and formatting of the thesis

The guideline establishes the formatting requirements for bachelor's and master's theses (hereinafter referred to as "thesis") submitted by graduates of the School of Information Technologies at Tallinn University of Technology. We recommend following similar formatting principles for other written assignments as well.

1.1 General formatting requirements

The formatting style of the thesis elements must be consistent throughout the entire document. The general formatting requirements are as follows:

- The thesis is formatted in A4 format (210 x 297 mm).
- Page margins: 2,5 cm at the top and bottom, 3,0 cm on the left and right.
- Text font is Times New Roman. Main text font size 12 pt[1], line spacing 1,5.
- Block style is used when writing text, where paragraphs are separated by additional free space. Spacing after each paragraph 12 pt.
- Justified alignment is used for text paragraphs. The text must not contain unnecessary gaps or stretched spacing; hyphenation should be used when needed.
- Words or sentences that require emphasis may be written in **bold**. *Italics* must be used for foreign-language text and foreign-language terms.
- Footnotes font size 10 pt and line spacing 1,0.
- Page numbering is continuous and covers all thesis pages from the title page to the last page of the appendices. No page number is displayed on the title page, but it is counted as the first page. Page numbers must be centred at the bottom of the page, 1.5 cm from the bottom edge, text font Times New Roman and font size 12 pt.

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[1] pt or point, which is an absolute unit equal to 1/72 of an inch.

Chapters and other independent sections of the thesis (such as the table of contents, introduction, etc.) must begin on a new page. The division of the thesis into chapters and subchapters must be reasonable – situations where a subchapter consists of only a single paragraph must be avoided. A three-level heading structure should be used, the use of fourth-level headings is discouraged. It is not allowed to begin a new subheading, figure, or table immediately after a heading – the line following a heading must always contain body text.

All headings begin with a capital letter. Hyphenation and abbreviations are generally not used in headings, and no period is placed at the end of headings.

The formatting of thesis headings must follow the principles outlined in Table 1.

Table 1. Formatting rules for different level headings.

Document part	Specifications
Level I heading	• Begins on a new page, space before 60 pt, after 18 pt. • Bold, 16 pt, left alignment. • Headings (from introduction to summary) are numbered with Arabic numerals (1, 2, etc.). There is a space between the number and the heading text. • Numbers are not placed before the following headings: author's declaration of originality, abstract, list of abbreviations and terms, table of contents, list of figures, list of tables, references, appendices.
Level II heading	• Begins on the current page, space before 24 pt, after 12 pt. • Bold, 14 pt, left alignment. • Numbered with Arabic numerals (1.1, 1.2, etc.).
Level III heading	• Begins on the current page, space before and after 12 pt. • Bold, 12 pt, left alignment. • Numbered with Arabic numerals (1.1.1, 1.1.2 etc.).

1.2 Thesis length

The main part of a bachelor's thesis generally ranges between 25 and 35 pages. The main part of a master's thesis generally ranges between 30 and 60 pages. The main part includes the introduction, chapters of the thesis, and the conclusion.

Despite the suggested page ranges, the length of the main part should be as long as necessary and as short as possible. The thesis may exceed or fall short of the recommended length if this is justified by the nature of the task and approved by the supervisor.

1.3 Thesis structure

Table 2 presents the required components of the thesis in their order of placement.

Table 2. Thesis components in their order of placement and conditions for their presentation.

Document part	Condition
Title page	Mandatory One title page for thesis written in Estonian, two for thesis written in a foreign language.
Author's declaration of originality	Mandatory
Abstract in the main language of the thesis	Mandatory
Abstract in English/Estonian (depending on the thesis language)	Mandatory. Exception in paragraph 1.5.
List of abbreviations and terms	Included if necessary
Table of contents	Mandatory
List of figures	Included if necessary
List of tables	Included if necessary
Introduction	Mandatory
Thesis chapters	Mandatory
Summary	Mandatory
References	Mandatory
Non-exclusive licence as appendix	Mandatory
Appendices	Included if necessary

1.4 Title page

A thesis written in Estonian must have one title page, formatted in the main language of the thesis. A thesis written in a foreign language must have two title pages: the first in the main language of the thesis, and the second in Estonian. Words must not be hyphenated on the title page. A sample title page is provided in Appendix 1.

Elements of the title page:

- name of the university;
- name of the faculty;
- author's first and last name;
- student code;
- thesis title;
- thesis type: Bachelor's thesis or Master's thesis;
- supervisor's fist and last name, and academic degree;
- co-supervisor's first and last name (if applicable);
- thesis defence location (city) and year.

1.5 Abstract

The abstract (*Lühikokkuvõte*) is a summary of the thesis content written in the present tense. It provides the reader with an overview of the objectives, the main problems addressed, the methods used, and the key results and conclusions. The abstract must be presented in both Estonian and English, as follows:

- an abstract in the main language of the thesis with a length of half (½) an A4 page, and an abstract in the second language (Estonian or English) with a length of at least one (1) full A4 page;
- if the abstract is written in a language different from the main language of the thesis, the thesis title in the foreign language must be included;
- Exception: theses written in English and submitted within an English-language curriculum are not required to include an abstract in Estonian.

Mandatory wording of the final paragraph of the Estonian-language abstract:

Lõputöö on kirjutatud [keel] keeles ning sisaldab teksti [lehekülgede arv töö põhiosas] leheküljel, [peatükkide arv] peatükki, [jooniste arv] joonist, [tabelite arv] tabelit.

Mandatory wording of the final paragraph of the English-language abstract:

The thesis is in [language] and contains [pages] pages of text, [chapters] chapters, [figures] figures, [tables] tables.

1.6 List of abbreviations and terms

The list must include all new and ambiguous terms used in the main body of the thesis, listed in alphabetical order. An example of proper formatting for the list is provided in Appendix 3.

All abbreviations must be explained upon first mention in the main text. For example, when the abbreviation PC is used for the first time, it should be explained as follows: PC (Personal Computer). Foreign-language terms used in explanations must be written in *italics*.

1.7 Table of contents, list of figures and tables

The table of contents includes a list of headings from the introduction to the appendices (inclusive), along with the page numbers on which they begin. If the thesis includes a list of figures and tables, those headings must also be included in the table of contents. The following elements are not included in the table of contents: the title page, author's declaration of originality, abstract, list of abbreviations and terms, and the table of contents itself.

The following principles must be followed when formatting the table of contents:

- Table of contents text – Times New Roman 12 pt, line spacing 1,5.
- First level headings – left alignment.
- Second level and lower-level headings – alignment form left edge with indentation (e.g. indent of 0,42 cm, 0,5 cm, etc.).
- If a heading extends to a second line, the indentation of the second line must align with the beginning of the text on the first line.

The lists of figures and tables include only figures and tables presented in the main part of the thesis. Figures and tables presented in the appendices are not reflected in these lists. Examples of lists are shown in Appendices 4 and 5.

1.8 Main parts of the thesis

Introduction provides an overview of the thesis topic, including its relevance and novelty, the main objective, and the research problem (hypotheses, research questions, issues to be solved, underlying assumptions, and specific conditions applied in defining or solving the task). The introduction also describes the structure of the thesis, the subtasks, and, if necessary, any additional requirements.

Background including literature review presents relevant theories, concepts, and definitions related to the field. The review must include an analytical discussion, not just summaries, linking different authors' perspectives, comparing and contrasting sources, and synthesizing viewpoints. It should also explain the prerequisites for carrying out the work and how they influenced the chosen approach.

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Methodology explains which methods were used to conduct the work (e.g., qualitative or quantitative analysis). It describes how and from where the data were collected and outlines the steps taken in solving the task, including the tools used and work phases.

Results and analysis explain how the collected data were analysed. This section presents the key findings, highlighting important conclusions and patterns. The results are linked back to the problems posed in the introduction.

Synthesis (author's solution) combines the analysed data into a coherent whole and presents the author's proposed solutions. If the goal of the thesis is practical, then applicable recommendations are provided. If the goal is theoretical, the section explains how the results contribute to knowledge in the field.

Future directions (not always required) outline unresolved questions that need to be solved in the future. If the work results are practical, their potential applications are described.

Conclusion summarizes the main objective(s), provides answers to the questions posed in the introduction, and highlights the most important findings and conclusions of the thesis.

1.9   Other parts of thesis

The list of **references** must include all sources cited in the thesis, with each source listed only once. For more detailed instructions, refer to the School of Information Technologies' guide to using sources.

The non-exclusive licence is part of the thesis, in which the student grants permission for the reproduction and electronic publication of the thesis. The non-exclusive license (see Appendix 6) must be submitted as Appendix 1 in one file together with the electronic version of the thesis (in PDF format) and this is one of the prerequisites for the student to be allowed to defend the thesis. The non-exclusive licence does not need to be signed.

Appendices may be used to include additional or more extensive material that supports the topics covered in the main body of the thesis, helps the reader better understand the

issues discussed, or provides further detail on the subject matter. All appendices (except Appendix 1 – Non-exclusive licence) must be referenced in the main text.

The use of appendices is optional. Appendices must be numbered and given clear titles. The appendix number is indicated in the heading after the word "Appendix" (e.g., Appendix 1 – Non-exclusive Licence). When possible, it is recommended to format the appendices according to the same formatting rules used in the main part of the thesis.

2　Formatting of figures, tables, program code and equations

This chapter focuses on the formatting of figures, tables, program code and equations.

2.1　Figures and tables

The following principles must be followed when formatting figures and tables:

- All figures and tables in the thesis must be consistently numbered and accompanied by explanatory text.
- Every figure and table must be referenced in the main text. The reference must appear before the corresponding figure or table.
- Explanatory text is added to tables as a title (above), to figures as a caption (below). The caption or title must end with a period. The explanatory text (title or caption) must appear on the same page as the figure or table it refers to.
- Figures and tables must be separated from the surrounding text, with text placed above and below, not around them.
- Figures and tables must be center aligned on the page.
- Table titles and figure captions must also be center aligned, in Times New Roman, font size 10 pt, with 6 pt spacing before and after.

The font for symbols, numbers, and text inside the table must be Times New Roman, 11 pt, with 1,0 line spacing.

If a table extends over multiple pages, the table header must be repeated on each page. However, it is recommended to avoid multi-page tables when possible.

For an example of a correctly formatted table, see Table 1 and Table 2 in this document.

Figure 1 presents an example of a correctly formatted figure along with a brief explanation.

Figure 1. Example: The main logo of Tallinn University of Technology.

2.2 Formatting program code

The following principles must be followed when formatting program code:

- Program code should be presented on a single page when possible and must be correctly indented.
- Program code should be presented using fixed-width font, e.g., *Courier New* or *Consolas*, font size 10 pt, line spacing 1,0, space before and after 2 pt, and left alignment.
- Program code should be captioned as a figure: caption should be center aligned, in Times New Roman, font size 10 pt, space before and after 6 pt.

Figure 2 presents an example of correctly formatted program code.

```
Public Function computeSomething()
    Dim i, j As Integer

    For i = 1 To 10
        For j = 1 To 10
            ' Do something in loop
        Next j
    Next i

    Return i + j
End Function
```

Figure 2. Example of correctly formatted and indented program code.

2.3 Mathematical expressions and equations

Numbering equations in the thesis is mandatory if they are referenced in the text. In other cases, numbering is recommended. The number accompanying the equation must be placed on the same line, right aligned, and in parentheses. Equation (1) provides an example of correct formatting and referencing. Note: If the equation is part of a sentence, the sentence must always end with a period.

$$(x + a)^n = \sum_{k=0}^{n} \binom{n}{k} x^k a^{n-k}. \tag{1}$$

Additional examples can be found here: IEEE Mathematics Style Guide for Authors.

3 Referencing and using template

All print and electronic sources used in the thesis must be properly cited. The referencing style must be consistent throughout the entire thesis. The requirements related to referencing are described in the School of Information Technologies' guide to using sources[2].

The thesis must be formatted according to the guidelines for writing and formatting a thesis and must use the provided template. When writing the thesis using the template, all document elements are already preformatted according to the requirements. It is recommended to begin the thesis writing process by downloading the template and applying the formatting from the beginning.

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[2] School of Information Technologies' guide to using sources:
https://haldus.taltech.ee/sites/default/files/2024-04/Allikate%20kasutamise%20juhend%2016042024.pdf

Appendix 1 – Title page design

TALLINN UNIVERSITY OF TECHNOLOGY
School of Information Technologies

[First name Middle name Last name Student code]

[Thesis title]

[Thesis type: Bachelor's thesis / Master's thesis]

Supervisor: [Supervisor's name]

[Academic degree]

Tallinn 2025

Appendix 2 – Example Author's declaration of originality

Author's declaration of originality

I hereby certify that I am the sole author of this thesis. All the used materials, references to the literature and the work of others have been referred to. This thesis has not been presented for examination anywhere else.

Author: [First name Middle name Last name]

[dd.mm.yyyy]

Appendix 3 – Example of the List of abbreviations and terms

List of abbreviations and terms

DPI	Dots per inch
TalTech	Tallinn University of Technology

Appendix 4 – Example of the list of figures

List of figures

Appendix 5 – Example of the list of tables

List of tables

Appendix 6 – Non-exclusive licence for reproduction and publication of a graduation thesis[3]

I, [First name Middle name Last name]

1   grant Tallinn University of Technology free licence (non-exclusive licence) for my thesis "[Thesis title]" , supervised by [Supervisor's name]

    1.1 to be reproduced for the purposes of preservation and electronic publication of the graduation thesis, incl. to be entered in the digital collection of the library of Tallinn University of Technology until expiry of the term of copyright;

    1.2 to be published via the web of Tallinn University of Technology, incl. to be entered in the digital collection of the library of Tallinn University of Technology until expiry of the term of copyright.

2   I am aware that the author also retains the rights specified in clause 1 of the non-exclusive licence.

3   I confirm that granting the non-exclusive licence does not infringe other persons' intellectual property rights, the rights arising from the Personal Data Protection Act or rights arising from other legislation.

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