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NATIONAL RESEARCH
TOMSK STATE UNIVERSITY
Faculty of Innovative Technologies (FIT)

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**Methodological guidelines for designing
Graduation papers (theses),
Research papers, and
Reports on practical experience**

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INTRODUCTION

These guidelines describe common requirements for the structure and design of graduation papers (thesis), students' research papers, and reports on practical experience at the Faculty of Innovative Technologies of National Research Tomsk State University.

Guidelines were developed based on GOST 7.32-2017 dated July 01, 2018.

The author of the written paper is responsible for the compliance of his/her paper with the requirements described in the guidelines.

Any written paper drawn up in accordance with all the GOST requirements and the rules specified in this document, will demonstrate your attentiveness and responsible attitude to work, which will be highly appreciated by teachers, scientific advisors, or members of the state examination committee.

This document corresponds to all the requirements for written papers at the Faculty of Innovative Technologies of the National Research Tomsk State University and can be used as an etalon.

It is impossible to describe all the options for presenting the text. Therefore, if these guidelines do not contain recommendations for the design of a particular element of your written paper, you can design it as you think is appropriate. In this case, please, remember that this element should be designed identically throughout your work.

1 General rules

The paper must be printed on one side of A4 sheet of white paper. The main text parameters:

-font color - black,

-font size - 12 pt,

-font type - TimesNewRoman (bold font is used only for structural elements, section headings, and subsections; the use of *italics* is allowed to highlight terms or notations and focus on a specific part of a text (to the discretion of the author)).

-margins: left - 30 mm, right - 15 mm, upper and lower - 20 mm.

-page orientation - portrait,

-binding position - left,

-alignment justified

-no hyphenation.

-distance to footer and header is 1 cm (need to distinguish headers of the first page).

- paragraph indent should be 1.25 cm throughout the text (exceptions: headings of structural elements, figures, tables, formulas, notes),

- line spacing - 1.5 pt.

- intersection interval - 0 pt.

All pages of the paper including appendices are numbered in Arabic numerals. The page number is stamped without a dot in the middle of the page footer.

The title page must be included in the general numbering, but the page number is not stamped on the title page. Numbering font: TimesNewRoman, 12 pt,.

1.1 Design of text elements

Possible titles of structural text elements include: “CONTENTS”, “TERMS AND DEFINITIONS”, “LIST OF ABBREVIATIONS AND SYMBOLS”, “INTRODUCTION”, “CONCLUSION”, “REFERENCES”, “APPENDIX”. Each type of paper a certain list of structural elements (for more details, see section 2).

The headings of such structural elements must be in capital letters, highlighted in bold, centered without punctuation at the end and without underlining,.

Each structural element of the paper must begin with a new page. Structural elements are not numbered. Before and after the title of the structural element, it is necessary to add an interval of 10 pt.

1.2 Headings of the main part of the paper

The main part of the paper should be divided into sections, subsections and paragraphs. If necessary, paragraphs can be divided into subparagraphs. Sections and subsections should have headings. The headings of sections and subsections must be left-edged with indentation of 1.25 cm after the serial number, typed in capital letters, bold, with no underlining and no punctuation marks at the end. Before and after the titles of sections and subsections, it is necessary to add an interval of 10 pt.

Each section of the paper must begin from a new page (by inserting “Page break” in the appropriate place). Subsections do not begin from a new page.

Sections must have a serial number throughout the work, without a dot after the serial number. Subsections should be numbered within each section. The subsection number consists of the section and subsection numbers separated by a dot. There is no dot at the end of the subsection number. Sections and subsections contain one or several paragraphs.

1.3 Enumerations and lists

Paragraphs and subparagraphs may include enumerations. Before each element of enumeration, you must put a dash, or small letters of Latin alphabet starting with the letter “a” followed by a bracket, or numbers followed by a bracket. Enumerations must be separated by a semicolon. Enumerations are indented in a column with a small letter.

Example 1

The information and reference service includes the following modules:

- remote order;
- virtual reference service;
- virtual reading room

Example 2

An electronic (digital) fund is a collection of electronic copies of documents from the archive fund recorded on digital media and intended for use instead of original documents. The digitization work included the following steps:

- a) initial inspection;
- b) documents scanning;
- c) processing and verification of the received samples;
- d) structuring of the digitized array.

Example 3

There are various types risks:

- 1) technological risks;
- 2) natural risks;
- 3) mixed risks.

1.4 Illustrations

Illustrations (figures, drawings, graphs, diagrams) should be placed after the text where they are mentioned for the first time, or on the next page (as close as possible to the corresponding parts of the text). All illustrations in the paper must be referenced. You need to write the word “drawing” and its number, for example: “in accordance with Figure 2”, “Thus, engineering and research activities are connected in a cycle (Figure 10), and in each research or engineering project it is usually necessary to repeat this cycle many times ...”etc.

Volumetric illustrations must be presented in appendices. All illustrations, except for those given in appendices, should be numbered in Arabic numerals with continuous numbering. If there is one picture, then it is indicated as Figure 1.

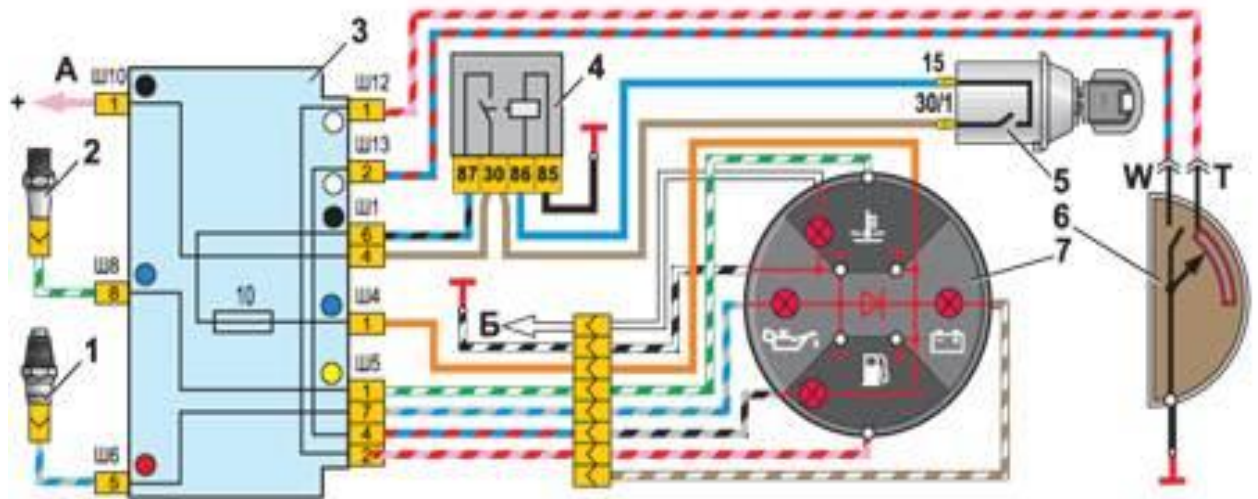
Illustrations in each appendix are numbered separately with the addition of the appendix symbol before the number.

Numbering of illustrations within the section is allowed. In this case, the illustration number will consist of the section number and the serial number of the illustration separated by a dot.

The title of the figure must be centered under the figure. The title of the figure is capitalized without a dot at the end. Before and after the drawing, it is necessary to add an interval of 10 pt. If the title of the figure consists of several lines, then it should be written at one line spacing.

If necessary, illustrations may have a title and explanatory data (figure text). The word “Figure”, its number and the title (through the dash) are placed after the explanatory data in the center under the figure without a dot at the end.

Example 4



1 – oil pressure warning lamp sensor; 2 – coolant temperature sensor; 3 – mounting block; 4 – ignition relay; 5 – ignition switch; 6 – fuel sensor; 7 – instrument cluster; A – to the generator lead “30”; B – to the instrument lighting switch

Figure 1 – Instrument circuit

Example 5



Figure A.1 – Table design

Example 6



Figure 2.1 – Wind tunnel layout

1.5 Tables

Figures and numbers should be presented in the form of a table. Tables should be placed after the text where they are mentioned for the first time or on the next page. All tables in the text should be referenced. You should write the word “table” indicating its number. The title of the table must be placed above the table on the left without indentation in the following form: e.g. Table Table number – Title of the table (Figure 1). The title of the table must start with the capital letter without a dot at the end.



Figure 1 – Table design

If the title of the table takes two lines or more, then it must be written in one line spacing. A table with a large number of rows can be transferred to another page. When transferring a part of a table to another page, write the phrase “Continuation of the table” and indicate the table number on the left above this part. Above the last part of the table, you need to write “End of the table” and put the number of the table. Tables are numbered with continuous numbering throughout the text. The table of each appendix is numbered separately with the addition of the appendix symbol before the number (e.g. Table A.1).

In tables, it is allowed to use a smaller font size than in the text of the paper; no indentation; font type - TimesNewRoman.

In case of a large volume of your paper, it is allowed to number tables within a section. In this case, the table number consists of the section number and the serial number of the table separated by a dot: e.g. Table 2.3.

The headings of table columns and rows should be printed with a capital letter, but the column headings should be printed with a small letter if they form one sentence with a heading or with a capital letter if they have an independent meaning. There are no dots at the end of the table headings and subheadings. The titles of the table headings and subheadings are indicated in the singular.

The tables on the left, right, top and bottom are limited by lines. Separating the headings and subheadings of a sidebar and a graph with diagonal lines is not allowed. The column headers are centered, and the row headers are left-justified. Horizontal and vertical lines delimiting the rows of the table may not be drawn if their absence does not impede the use of the table.

Text repeated in lines of the same column and consisting of single words is replaced by quotation marks. Using quotation marks instead of repeating numbers, alphanumeric characters, signs and symbols is not allowed. If the text is repeated, then at the first repetition it is replaced with the words “the same”, and then with quotation marks.

1.7 Notes and Footnotes

Notes are given in the paper if the text, graphic material, or tables require explanations or reference data. The word “Note” should be capitalized without indentation, in italics, without underlining. Notes should be placed after the text, graphic material or table, to which these notes relate. If there is one note, then a dash is placed after the word “Note” and the text of the note starts with a capital letter. One note is not numbered. Several notes are numbered in order in Arabic numerals without a dot.

Example 7

Note - The use of locally entered codes provides a certain level of flexibility, which makes it possible to carry out improvements or changes, while maintaining compatibility with the main set of data elements.

If an additional explanation is required in the paper, it is allowed to use a note in the form of a footnote. Footnotes are placed without a space after the word, number, symbol, or sentence to which an explanation is given. The footnote sign is indicated in superscript Arabic numerals. It is allowed to use an asterisk – * instead of numbers. A footnote is placed with indentation at the end of the page on which the explained word (phrase or data) is given. The footnote is separated from the text by a short solid thin horizontal line on the left side of the page.

1.8 Formulas and Equations

Formulas and equations must be selected from the text in a separate line. Before and after formulas and equations there should be an interval of 10 pt. If the equation does not fit on one line, it should be shifted after the equal sign (=) or after the plus signs (+), minus (-), multiplication (×), division (:) or other mathematical signs. On a new line, the sign is repeated.

The meaning of the symbols and numerical coefficients must be explained under the formula in the same sequence, in which they are presented in the formula. The value of each symbol and numeric coefficient must be given from a new line or in a line through a semicolon.

The first line of explanation must begin with the word "where" without a colon and without indentation.

Formulas should be placed in the middle of the line. Throughout the paper, formulas must have serial numbering in parentheses in the rightmost position on the line. References in the text to the serial number of the formula are given in parentheses: e.g. in formula (1). The formulas in the appendices are numbered within each application with the addition of the symbol of the appendix before each number: e.g. (B.1). Numbering of formulas within the section is allowed.

Example 8

$$\begin{pmatrix} 1 & \bar{x} \\ \bar{x} & \bar{x}^2 \end{pmatrix} \begin{pmatrix} a \\ b \end{pmatrix} = \begin{pmatrix} \bar{y} \\ \overline{xy} \end{pmatrix}, \quad (6)$$

where x is average or maximum processor temperature; y is the temperature at the outlet of the tank; xy is the arithmetic mean of the elements in the series.

1.9 References

In the text of your paper, you must provide references to the sources used. The serial number of the reference is given in square brackets at the end of the referenced text. The serial number of the bibliographic description of the source in the list of sources should correspond to the serial number of the reference. Reference can be made to the whole document or to its sections and appendices. When referencing standards and specifications, you should indicate their designation. It is allowed not to indicate the year of their approval if the standard and specifications are fully described in the list of sources used. For example: "... is given in [1]-[4].", "... in accordance with GOST 29029.", "... in [9], section 5".

2 Description of the structure of certain types of papers

2.1 Graduation paper (thesis)

The structural elements of the graduation paper include:

- title page;
- abstract;
- content;
- terms and definitions;
- a list of abbreviations and symbols;
- introduction;
- the main part (the structure of the main part is determined by your academic program);
- conclusion;
- references;
- appendices.

2.2 Student's research paper

The structural elements of the research paper include:

- title page;
- abstract;
- content;
- terms and definitions;
- a list of abbreviations and symbols;
- introduction;
- the main part (the structure of the main part is determined by your academic program);
- conclusion;
- references;
- appendices.

2.3 Report on practical experience

The structural elements of the report include:

- title page;
- content;
- terms and definitions;
- a list of abbreviations and symbols;

- introduction;
- the main part (the structure of the main part is determined by your academic program);
- conclusion;
- references;
- appendices.

CONCLUSION

These Methodological Guidelines are based on the requirements of relevant state standards and contain information about the requirements for the execution of written papers at the Faculty of Innovative Technologies of Tomsk State University.

This refers to such types of papers as graduation papers, research papers and reports on practical experience. When preparing this document, the authors tried to include all relevant rules and requirements, so the document can be used as an example of correct design. However, no one can avoid mistakes, and if you find any inconsistencies in these guidelines, please, let us know by e-mailing to general@tic.tsu.ru

When preparing your papers, please, remember that these requirements are mandatory. The ability to design a written work is an element of the general professional culture. Deficiencies in the design of the written work significantly reduce its quality and academic grade. For the final graduation paper, the assessment of its design is one of the mandatory points of your supervisor's review and your reviewers' reference letters.

You should pay special attention not only to the text of the paper, but also to the design of bibliographic references.

REFERENCES

Example 1. Internet resources

Title title title [Electronic resource]. – URL: <http://www.hi-edu.ru> (access date: 06.01.2007).

Example 2. Papers from journals

Paper of one author

Surname C. I. Title title title // Journal. – 2000. – № 5. – P. 25–29.

Rappoport Z. The rapid steps in nucleophilic vinilic substitution. Recent developments // Acc. Chem. Res. – 1992. – № 25. – P. 474–479.

Paper of two authors

Surname1 A. Title title title / A. Surname1, C. Surname2 // Journal. – 2000. – № 3–4. – P. 18–35.

Paper of three authors

Surname1 A. Title title title / A. Surname1, C. Surname2, I. Surname3 // Journal. – 2000. – № 1. – P. 51–59.

Paper of four and more authors

Title / H. G. Surname1 [and others] // Journal. – 1985. – Vol. 55, No. 2. – P. 326–344.

Example 3. Books

Books of one author

Surname H. P. Title title title / H. P. Surname. – Publishing house, 1975. – 160 p.

Books of two authors

Surname1 A. Title title title / A. Surname1, T. Surname2. – Publishing house, 2004. – 157 p.

Books of three authors

Surname1 A. Title title title / A. Surname1, T. Surname2, G. Surname3. – Publishing house, 1989. – 60 p.

Books of more than three authors

Title title title / B. B. Surname1 [and others]. – Publishing house, 1989. – 311 p.

Example 4. Journals

Journal. – Publishing house, 1945–1947.

Example 5. Author's abstract (of thesis)

Surname L. G. Title title title: Author's abstract of thesis for doctoral degree) /
L. G. Surname. – City., 2004. – 46 p.

Example 6. Thesis

Surname M. H. Title title title : thesis for PhD degree / M. H. Surname. – M., 2002. –
227 p.

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MASTER'S THESIS

TITLE

under the basic academic Master's degree program
specialty 09.04.02 – Information systems and technologies

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