

MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
National University "Zaporizhzhia Polytechnic"

GUIDELINES

in “Term paper”

of the discipline “Integrated Computer Systems”

for students of specialty 123 "Computer Engineering"
according to the educational program "Specialized Computer Systems"

for all forms of education

2023

Guidelines in “Term paper” of the discipline “Integrated Computer Systems” for students of specialty 123 "Computer Engineering" according to the educational program "Specialized Computer Systems" for all forms of education/ Compl.: M. Tiahunova – Zaporizhzhia: NU "Zaporizhzhia Polytechnic", 2023. – 8 p.

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1 GENERAL PROVISIONS

An term paper is a paper that is carried out over one semester on a specific chosen topic related with Integrated Computer Systems.

The direction of the topic is chosen by the student independently. Further, the department approves the head, according to the chosen direction, and the topic of the term paper, agreed with the head.

An term paper (TP) should be the result of the student's creative thinking and independent work within the specified period on the chosen topic by the teacher's control.

The implementation of the TP aims to solve the following tasks:

- expansion, systematization and consolidation of theoretical knowledge and practical skills in a particular scientific field, their application in solving specific scientific, technical and production problems in the chosen direction;
- development of skills of self-education, independent creative work in the process of performing scientific, theoretical and experimental research;
- formation of readiness of higher education applicants for independent work in a market economy.

The areas in which the student can carry out the paper are provided in Table 1.1.

Table 1.1 - Directions of the term paper

№	Directions of the term paper
1	Greenhouse monitoring system
2	Vehicle performance control system
3	Monitoring system of air parameters in the classroom
4	Monitoring system of air parameters in the house
5	Monitoring system of air parameters outside the premises

Each system must use at least 7 sensors and an Arduino board.

2 REQUIREMENTS FOR THE DESIGN OF THE TERM PAPER

2.1 Content component of the paper

The explanatory note to the term paper should contain:

- title page (1 page);
- abstract (1 page)
- introduction (1 – 3 pages);
- main part;
- conclusions (1-2 pages)
- list of references (at least 5 sources).

The abstract provides keywords (in capital letters), the purpose of the work, the subject of research, a brief extract of what is described in the first, second and third sections, a brief description of the result.

The introduction notes the relevance of the chosen topic, the purpose of the term paper and the tasks that must be completed to achieve the goal.

The main part should usually have the following structure:

- the first section: analytical review of analogues and the formation of requirements for the developed system (5-10 pages);
- second section: system design (up to 10 pages);
- the third section: implementation or simulation, or modeling of the system (up to 12 pages).

Each of the sections of the main part must correspond to one or more of these tasks in the introduction.

The recommended total volume of the TP should be 25 to 40 pages.

System design should describe the structure of the system, the purpose of each element of the system, a description of the functioning of the system as a whole and its individual subsystems. There should also be an algorithm for the operation of the system and a block diagram of the algorithm.

Conclusions must necessarily confirm the fulfilled goal and the objectives of the term paper. To emphasize the logical structure of the conclusions, it is desirable to provide for each task set in the introduction a disclosed confirmation, how exactly the task was completed, in the conclusions. For example, if the task in the introduction was to analyze certain technologies, then in the conclusions it was noted that the

technologies were analyzed with a list of specific technologies considered in the first part.

Requirements for an term paper:

- compliance with the current level of development of computer technology;
- consistency of teaching materials;
- integrity in the implementation of research and system development;
- generalization of the results and validity of the proposed recommendations.

2.2 Paper design

The explanatory note to the term paper is developed in accordance with DSTU 3008: 2015 – Reports in the field of science and technology. Structure and rules of registration [1].

An explanatory page is executed on A4 sheets, with the following indentations:

- on the left side – 25 mm;
- on the right side – 10 mm;
- top and bottom – 20 mm.

The main text is formatted with a size of Times New Roman with a size of 14 points, line spacing – 1.5, alignment – in width. Each paragraph has an indentation of 1.5 cm.

Headings of structural elements (ABSTRACT, INTRODUCTION, TABLE OF CONTENTS, CONCLUSIONS, etc.) and the main sections of the explanatory note are made in capital letters in bold font of 14 points without a dot at the end of the new page, the location – in the middle without indentation.

Headings of subsections, paragraphs and subparagraphs of the explanatory note should be printed from a paragraph indent with a capital letter in bold font of 14 points without a dot at the end.

The distance between the heading of any type and the next or previous non-heading element must be at least two blank lines.

The numbering of sections and subsections is performed in Arabic numerals. And through the dot, the subsection number is

added, then the item number, then the subparagraph. For example, as shown in Fig. 1.1.

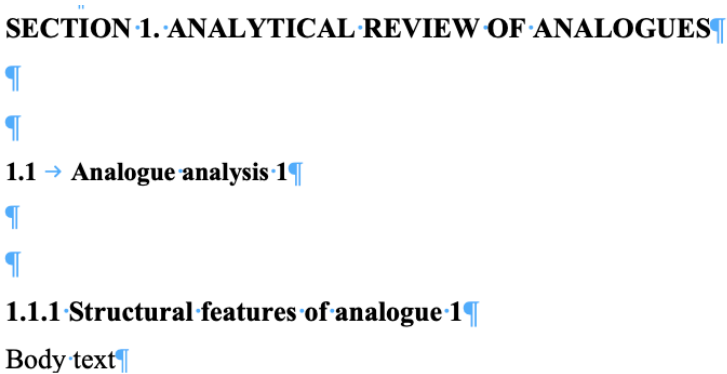


Figure 2.1 – An example of the design of sections and subsections

The picture is signed from the bottom directly after the picture itself and has double numbering. The first digit is the section number, then the period, after the period is the number of the figure in this section. Before and after the picture caption, it's one blank line. Alignment is in the middle without indentation.

The tables are also arranged in the middle without indentation and are numbered similarly to the figures, but the table caption is in front of the table itself with a "Width" alignment.

Reference to the figure and table must be in the text or in parentheses with an abbreviation, for example, (Fig. 2.2, Table 3.1), or without brackets, for example, in Fig. 1.1, in Table 2.1.

Tables allow smaller font and single indentation between rows.

Any program code is formed in listings. Listings must also have a number and name and are drawn up as a table signature. Directly the text of the listing has a alignment "By width" and is drawn up with a size Courier New.

Each item in the list of references should be indicated in the text in square brackets [], immediately after the text from a particular source to the sign in punctuation.

LITERATURE

1. DSTU 3008:2015 Reports in the field of science and technology. Structure and rules of registration. Adopted and entered into force: order of SE "UkrNDNC" dated June 22, 2015. No. 61 of 2017-07-01. – 26 p.
2. Forms of NU "Zaporozhye Polytechnic". URL: <https://zp.edu.ua/novi-blanki-zntu>.