

APPROVED
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resolution No. 22-15-01

FoIT Chairperson of the Council _____
(M.Ēlerts)

FACULTY OF INFORMATION TECHNOLOGY OF
VENTSPILS UNIVERSITY OF APPLIED SCIENCES

**REGULATIONS ON THE METHODOLOGICAL GUIDELINES FOR
THE PRESENTATION AND DEFENCE OF THE THESIS**

1. GENERAL PROVISIONS

The aim of the methodological guidelines is to familiarize students with the requirements for final theses, the procedure for their elaboration, presentation and defence, as well as the assessment of theses according to common requirements.

The following final theses are planned at the Faculty of Information Technologies of Ventspils University of Applied Sciences: Qualification thesis, Bachelor thesis and Master thesis.

The Bachelor's thesis is an independently implemented project in computer science or electronics, which is defended in the Final or State Examination Commission. The Bachelor's thesis is a proof of the student's competence to obtain a Bachelor's degree.

The Master's thesis is an independently implemented research project in computer science or electronics, which is defended in the Final or State Examination Commission. The Master's thesis is a proof of the student's competence to obtain a Master's degree.

The Qualification thesis is an independently implemented project related to programming, which is defended in the State Examination Commission. The Qualification thesis is a proof of the student's competence for "Programmer" qualification compliance.

The stages of development of the final theses (Qualification, Bachelor's, Master's theses):

- choice of supervisor and topic (see Annex No. 1, No. 2, No. 3);
- formulation of the goal and objectives;
- analysis of the problem and selection of possible solutions;
- realization of tasks using effective solution technologies;
- evaluation and analysis of the results obtained in the final thesis;
- presentation of the work;
- the defence of the final thesis.

2. STRUCTURE, SCOPE AND CONTENT OF THE THESIS

The final thesis has the following structure:

- Front page (see Annex No. 4, No. 5, No. 6);
- Abstract (see Annex No. 7);
- Table of contents (see Annex No. 8);
- Introduction;
- List of abbreviations and conditional designations (if necessary);
- Main part of the work outline;
- Conclusions and proposals;
- List of literature and information sources (see Annex No. 9);
- Annexes;
- Guarantee (see Annex No. 10, No. 11, No. 12);

Recommended amount of work in computer file without annexes:

Qualifications thesis	from 30 to 50 pages;
Bachelor's thesis	up to 60 pages;
Master's thesis	up to 80 pages.

Optimal structure of the final thesis (% of the total amount of work):

introduction	3-5%;
the main part of the work	80-85%;
conclusions and proposals	3-5%.

2.1. Abstract

An abstract in Latvian and English is prepared for the final thesis (up to 1 page each). The abstract gives an overall picture of the study area and briefly summarizes the main results obtained. The abstract must indicate the title of the work, the author, the supervisor, the total number of pages, tables, images and annexes of the thesis. Specifies the target audience of the thesis. The abstract should specify 3-5 keywords – the basic concepts of the thesis, which characterize its theme and essence. If the results of the work have been published or presented at conferences, information about it should be included in the abstract indicating the place where this information can be found. The abstract must be written in such a way that it can be used separately from the rest of the work. (See Annex No. 7)

2.2. Introduction

Introduction is a systematic concept of the work and its content, which gives a general overview of the problem under research. It is like a business card that should interest a potential reader, providing an understanding of the content of the work and the result to be obtained.

The introduction must include:

- justification of the topicality of the topic;
- the aim of the thesis;
- the formulation of the tasks to be performed in order to achieve the aim of the thesis;
- overview of existing solutions to the problem under consideration in the thesis
- description of the thesis structure;

- delineation of the subject and period of the study (if necessary);
- methods of research implementation, technology, etc.

2.3. List of abbreviations and conditional designations

The list of abbreviations and conditional designations used in the thesis is drawn up on a separate page. If there are fewer than ten abbreviations and conditional designations, they may also be explained in the text.

2.4. Main part of the work outline

The task of the main part of the research material is to provide a theoretical and practical justification of the research problem in a systematic manner. The main parts of the work are divided into chapters. In terms of volume, it is more useful to divide large chapters into subchapters. The number of chapters and subchapters is not regulated, it results from the scope and content of the work. To avoid fragmentation of the work, each subchapter should be at least one page long.

The main part of the paper starts with the **theoretical part** – summarizes the comparison of different theories and the factual material on the basis of which the analysis of the problem is carried out. The theoretical part, referring to several literature sources, should carry out a theoretical analysis of the research problem, describe the main theoretical principles that form the theoretical basis of the work, and on which the author's development will be based (theoretical principles, theory formulas, boundaries of development functionality, etc.). In the theoretical part, it is recommended to carry out an explanation of the understanding of terms and concepts used in the work, describing the context. Referring to literature sources, an overview of similar developments by other authors, their parameters, advantages, disadvantages should be provided. When making a theoretical analysis, the author of the work must not only use the thoughts and opinions of other authors, the work must also contain the author's evaluations and conclusions about the problem being studied. The study of literature and information sources plays an important role in the development of the theoretical part. In the development of the qualification paper, it is necessary to describe and justify the technologies used in the practical part, thus including a study of equivalent technologies,

The most important is the **practical part** of the thesis, in which the author, based on the information approved in the theoretical part on the research of the research object, demonstrates the practical implementation of the research object.

When developing a software solution (e.g. information system, mobile app, game, etc.), in the practical part it is necessary to create and describe the developed solution:

- architectural model;
- database model (for example, using Entity Relation Diagrams);
- assessment of quality indicators, which includes, for example, the development of tests and the calculation of test spreads, the results provided by the software quality assessment tools used.

2.5. Conclusions and proposals

Conclusions and proposals are the final part of the thesis, which plays an important role in the defence of the thesis. Each of the conclusions and proposals is written in a new paragraph. Conclusions and proposals should be written in the form of theses.

2.5.1. Conclusions

The conclusions should reflect the most important lessons learned from the research. They must be directly related to the aim and tasks of the thesis. The conclusions should reflect the innovations obtained during the study, as well as the practical significance, showing the author's contribution to the study of a particular research problem. The conclusions must be derived from the content of the work and supported by the most important data and facts mentioned in the work. In the conclusions, the author must show that the aim of the work has been achieved and the tasks have been completed. Quotations from other authors' works are not allowed in the conclusions.

2.5.2. Proposals

They must be reasonable and follow from the research carried out in the work and the conclusions drawn. Proposals must be precise, justified and implementable. They must not contradict each other. Proposals must not be formulated in a vague, generalized manner. Proposals summarize work-based recommendations for solving the problem.

2.6. **List of literature and information sources**

The list of used literature and sources includes all used literature, documents and other sources (including the Internet) used in the development of the thesis. The list of references and sources used shall be formatted according to the IEEE (*The Institute of Electrical and Electronics Engineers*) style for bibliographical indications and references. When compiling it, it is necessary to follow the order of the references accepted in the bibliography – the works of all authors must be arranged according to the order of their mention in the work: the first work mentioned in the work gets the first number, the second – the second, etc.

The data about the book must include the initials of the author's first name, surname, title of the book, place of publication, publishing house, year of publication of the book, and the number of pages (ISBN code, if the book has one). If the work has two or three authors, then their surnames are written in the order specified in the book, separated from each other by a comma. If the work has more than three authors, then it is permissible to indicate the first three and the others in the abbreviation “etc.”. If the book used is a collection of articles or a collective work by several authors, it is listed by the first letter of its title. Next, the title should be followed by: “...in editorial office”. Internet materials, magazines and newspaper articles shall be included in the general list by indicating the author, the title of the article, the journal or newspaper name, the year of publication, the number and the pages on which the article is printed. For Internet materials, indicate the date the information was collected. (See Annex No. 9 for examples)

Books

[Reference number] Initials of the author's name. Author's surname, *Book title*, publication number (if not first). Place of publication: Publisher, Year of publication. Number of pages.

[1] I.A. Glover and P.M. Grant, *Digital Communications*, 3rd ed. Harlow: Prentice Hall, 2009. pp. 192-217.

E-book

[Reference number] Initials of the author's name. Author's surname. (Year,

Month Day). *Author's surname, Book title, publication number (if not first)*. [Online]. Available: URL [Viewed Month. Day, Year]

[3] W. Zeng, H. Yu, C. Lin. (2013, Dec 19). *Multimedia Security Technologies for Digital Rights Management* [Online]. Available at: <http://goo.gl/xQ6doi> [Viewed Nov. 14, 2022]

Note: if the e-book is the direct equivalent of a printed book, e.g. In PDF format, you can refer to it as a regular printed book.

Journal article (including scientific publication indexed in the journal)

[Reference number] Initials of the author's name. Author's surname. "Article title," *Journal title in italics*, volume number, publication number, page numbers, abbreviated month, year.

[4] F. Yan, Y. Gu, Y. Wang, C. M. Wang, X. Y. Hu, H. X. Peng, et al., "Study on the interaction mechanism between laser and rock during perforation," *Optics and Laser Technology*, vol. 54, pp. 303-308, Dec 2013.

Note: The above example article is from a journal that does not use publication numbers, so they are not included in the reference.

Journal article (including scientific publication indexed in the journal)

Note: PDF versions of journal articles are direct copies of the printed edition, so they can be cited as printed journals.

[Reference number] Initials of the author's name. Author's surname. (Month, year). "Article title," *Journal title in italics* [Online]. volume number, publication number, page numbers, if specified. Available: URL [Viewed Month. Day, Year]

[5] M. Semilof. (1996, July). "Driving commerce to the web-corporate intranets and the internet: lines blur". *Communication Week* [Online]. vol. 6, issue 19. Available at: <http://www.techweb.com/se/directlinkcgi?CWK19960715S0005> [Viewed Nov. 14, 2022]

Standards

[Reference number] *Standard name in italics*, Standard number, date.

[9] Shunt power capacitors, IEEE standard 18-2012, 2013.

Internet sources

Note. Include as much key information as you can find about the site in question. If the webpage does not have a personal author, it is allowed to use the site name.

[Reference number] Initials of the author's name. Author's surname. Year, Month. Day). *The name of the online source*. [Online]. Available: URL [Viewed Month. Day, Year]

[13] BBC News. (2013, Nov. 11). *Microwave signals turned into electrical power* [Online]. Available at: <http://www.bbc.co.uk/news/technology-24897584> [Accessed Nov. 14, 2022]

[14] M. Holland. (2002). *Guide to citing internet sources* [Online]. Available at: http://www.bournemouth.ac.uk/library/using/guide_to_citing_internet_sourc.html [Viewed Nov. 14, 2022]

2.7. Annexes

Documents and informative data shall be appended to the annexes if they are too detailed and voluminous to be inserted into the main part of the thesis. Annex documents must be completed. Annexes should include documents that have been used as a research tool, extensive analytical calculations, large tables that are used in calculations made at work, instructions, technical data, and other materials. If the results of the work have been reported at a conference, the annexes must include proof of attendance or a copy. The code developed in the practical part must be stored on one of the repository servers (github.com, gitlab.com, gitlab.venta.lv, etc.) and a hyperlink to the project repository developed by the student on the selected server must be included in the attachment.

3. TECHNICAL PRESENTATION OF THE WORK

Theses must be written in the national language in accordance with Latvian spelling norms. In study programs that are implemented in English, the thesis can be developed and defended in English. The work must be written in computer-aided writing. Page format A4, font size in text 12 (*Times New Roman*), for chapter headings – 16 (**BOLD** – all uppercase letters), for subchapters – 14 (**Bold** – lowercase letters), space between lines 1.5. Page area: the distance from the edges must be – from the top, bottom and the right edge 20 mm, and 35 mm from the left edge. The first line of each paragraph must be indented 1.27 cm.

The thesis can also be presented in the Latex environment, bringing the technical design as close as possible to the above-mentioned requirements.

The thesis must be written in a literary language, considering the following requirements:

- the material presentation must be accurate, clear, logical and specific;
- each new chapter must be started on a new page, in the continuation of the previous outline of the sub-chapter article, separated by one empty line to the next subtitle;
- a serial number with Arabic numerals must be provided for each chapter. Subchapters must include the number and name associated with the chapter number.

The names of chapters and sub-chapters must exactly match the corresponding names in the table of contents. In the text, there are no full stop after headings.

It is not desirable to use the pronoun “I”, for example, the saying “I believe”, “in my opinion” instead of “the author believes” or “let's see”, “let's prove”. The thesis should be written in such a way that it is possible to distinguish the views of the author of the Bachelor's thesis from those of other authors.

All thesis pages are numbered in the bottom right corner of the page with Arabic numerals. The numbers are not placed on the cover page and table of contents pages, but are counted in the total number of pages.

The use of quotes, numerical data, images, formulas, etc. from published works, as well as the use of conclusions and borrowed thoughts of other authors (reciting them) must necessarily be indicated by references.

3.1. Presentation of tables

The information used for transparency in the work can be placed in tables.

Each table must contain a sequence number within the chapter. Tables are numbered with two numbers, using Arabic numerals, the first of which means the chapter number, the second – the sequence number of the table in the chapter. The number is written above the table on the right. Each table must have a title appropriate to its content, which is written above the table below the number.

Table 3.1

Table Name

The table must be placed at work at the first reference to it. The explanation of the contents of the tables and the conclusions to be drawn from them must always be included in the text. Interpretation of the data presented in the table is the task of the author. For tables that are borrowed, indicate the source of the creation of this table. The source reference shall be constructed as a reference.

3.2. Presentation of images

All illustrations – diagrams, charts, cartograms, etc. – are called images. They are placed in the work after the reference to them in the text. Images should be positioned in the text so that they can be easily viewed and read in the text-reading direction or rotated 90° clockwise.

The images shall be numbered in Arabic numerals within the chapter. For example, Figure 3.1, where the first digit indicates the chapter number and the second digit indicates the order number of the image within the chapter. Each image shall be given an appropriate title, which shall be written underneath the image in the same row as the number. For images that are borrowed, indicate the source of the creation of this image. The source reference shall be constructed as a reference.



Fig. 1.1 Image name

3.3. Presentation of formulas

Referring to the formula in the text, indicate its number in brackets, for example: “the formula (3.1) calculates ...”. If necessary, the unit of measure for each symbol shall be indicated in the explanation of the formula. The unit of measure for the same parameter must be constant throughout the work.

For example: The relative frequency or proportion of the feature is calculated according to the formula 3.1 (source):

Mathematically, Newton's law of cooling can be written down

$$\frac{dT}{dt} = -k(T - Ta), \quad (3.1)$$

where

$T = T(t)$ – time-dependent body temperature,

Ta – ambient temperature,

k ($k > 0$) – cooldown coefficient.

3.4. Including the program code in the thesis description

The description of the thesis may include code fragments, the display of which provides more effective visibility of the ideas or implementations mentioned in the description of the work, for example, by describing important algorithms related to the topic of the thesis. The program code can be included in the job description if the code snippet does not take more than ½ of the page, otherwise it should be included in the annex. The program code should be displayed in font size 10 (*Consolas* or *Corier New*). The program code shall be formatted as a code snippet with a 0.5 pt frame around it. Each code snippet shall be numbered in Arabic numerals within the chapter. For example, code snippet 3.1., where the first digit indicates the chapter number and the second digit indicates the sequence number of the code snippet within the chapter. Each code snippet is given a corresponding name, which is written under the code snippet in the middle of the line with the number.

```
@Override
public UserPrincipal login(String username, String password) {
    final UserDetails userDetails =
userDetailsService.loadUserByUsername(username);
    final UsernamePasswordAuthenticationToken
usernamePasswordAuthenticationToken = new UsernamePasswordAuthenticationToken(
        userDetails, password ,userDetails.getAuthorities());
authenticationManager.authenticate(usernamePasswordAuthenticationToken);

    if (usernamePasswordAuthenticationToken.isAuthenticated())
SecurityContextHolder.getContext().setAuthentication(usernamePasswordAuthenticat
ionToken);

    return (UserPrincipal) userDetails;
}
```

3.1. code fragment. User authentication via Spring Security framework

3.5. Creating references

References to the original ideas, judgments, conclusions, mentioned facts, direct or paraphrased quotations used by other authors, whose authors are identifiable, must be made in any research paper. A reference is not required for a generally known idea or expression, the author of which is not identifiable and which may be considered a joint property. In cases where there is doubt about the need for a reference, it should be decided in favor of creating a reference. Quote must be enclosed in quotation marks. If any changes have been made to it, they must be clearly indicated. A separate change of words in the text of another author does not give the right to claim this text as self-created. In cases of indirect quotation, both the direct author of the quoted work (or idea) and the work of the author from which the quotation (or idea) is taken must be indicated. References should also be provided in cases where the author uses his own work.

References are enclosed in square brackets based on the IEEE reference formatting style. The brackets indicate the order number of the source in the literature list, for example, [5]. If reference is made to several sources, each of the sources shall be written in its own square brackets. [5] [8]

Some examples of IEEE style quotes:

“... as shown by A. Brown [4], as indicated above.” “The theory was first put forward in 1987 [1].” “For example, see [7].”

“Several recent studies [3, 4, 15, 16] suggest that...” The above example can also be formatted as follows:

“Several recent studies [3], [4], [15], [16] indicate that...”

If the source is quoted directly or refers to a specific part of the source, then the number of the page must be indicated in square brackets, for example, [1, 15 pp.] or [2, 23-24 pp.].

3.6. Final thesis submission

For the defence of the thesis, 1 copy is submitted, bound in hard covers with a printed title (accordingly Bachelor's or Master's thesis), accompanied by an electronic version of the thesis (in pdf format) and the developed product. If the thesis involves a software solution (e.g. information system, mobile app, game, etc.), the student must create a video demonstration file showing how the solution works. The video file must be submitted at the same time as the electronic version of the thesis.

Students whose thesis contains methods or results related to a trade secret have the right to submit an application for the confidentiality of the thesis to the Faculty of Information Technology at least one week before submitting the thesis, asking to ensure a closed meeting of the Final / State Examination Commission, not to transfer the thesis to the library and not to distribute it to third parties (see Annex No. 19).

4. FINAL THESIS DEFENCE AND EVALUATION

The procedure for defending the theses in accordance with the Regulations of the Final Examination Commission (FEC) or the Regulations of the State Examination Commission (SEC) shall be as follows:

- a report by the graduate on the results of the work carried out;
- feedback from the supervisor of the thesis (see Annexes No. 16-18);
- reviewer's feedback (see Annexes No. 13-15);
- answers to the questions raised by the reviewer;
- answers to the questions of the members of the FEC or the SEC and those present;
- answers to questions from others in attendance.

After all the candidates have defended their work, the commission will meet to evaluate it. The meeting is followed by the announcement of the evaluations.

The defence of the thesis is conducted in Latvian. Students of the professional study programme and bachelor study programme present a 10-minute report, students of the master study programme present a 15-minute report, in which they justify the topicality of the topic, the aim of the work, briefly describe the content of the work, conclusions and proposals. Particular emphasis should be placed on the author's own work and creativity.

In the evaluation of the thesis, the following shall be taken into account:

- the quality of the work: the relevance of the title and the content, the logic of the presentation of the content, the design;
- the student's presentation skills and the author's report (the ability to present the research and formulate conclusions in a scientific, concise and reasoned manner, demonstrating the quality of the illustrative material);
- answers to the commission's questions, the reviewer's comments and the ability to discuss.

EXAMPLE

Ventspils University of Applied
Sciences
Faculty of Information
Technologies
Bachelor's study programmes
"Computer science"
"Electronics Engineering"
3rd year student _____

Ventspils University
of Applied Sciences Faculty of
Information Technology Dean
Asst. Prof. V. Caune

(name, surname)

(personal identity number)

APPLICATION

Application on the topic of the Bachelor's thesis and the assignment of a scientific supervisor

Please confirm the subject of the Bachelor's thesis:

(in Latvian)

(in English)

and assign a Bachelor's thesis supervisor: _____.
(scientific title – degree, name, surname)

Approved: _____
(signature of the Bachelor's thesis supervisor)

(student's signature)

(date)

The topic and scientific supervisor approved at the _____FoIT Council meeting, decision no. _____

Dean of the Faculty **Asst. Prof. V. Caune** _____
(signature)

(date)

EXAMPLE

Ventspils University of Applied
Sciences
Faculty of Information
Technologies
Master's study programmes
"Computer science"
"Electronics"
2nd year student _____

Ventspils University
of Applied Sciences Faculty of
Information Technology Dean
Asst. Prof. V. Caune

(name, surname)

(personal identity number)

APPLICATION

Application on the topic of the Master's thesis and the assignment of a scientific supervisor

Please confirm the subject of the Master's thesis:

(in Latvian)

(in English)

and assign a Master's thesis supervisor: _____.
(scientific title – degree, name, surname)

Approved: _____
(signature of the Master's thesis supervisor)

(student's signature)

(date)

The topic and scientific supervisor approved at the _____ FoIT Council meeting, decision no. _____

Dean of the Faculty **Asst. Prof. V. Caune** _____
(signature)

(date)

EXAMPLE

Ventspils University of Applied
Sciences
Faculty of Information
Technology
First level professional study programmes
“Programming Specialist”
2nd year student _____

Ventspils University
of Applied Sciences Faculty of
Information Technology Dean
Asst. Prof. V. Caune

(name, surname)

(personal identity number)

APPLICATION

Application on the topic of the Qualification’s thesis and the assignment of a scientific supervisor

Please confirm the subject of the Qualification’s thesis:

(in Latvian)

(in English)

and assign the Qualification’s thesis supervisor: _____.
(scientific title – degree, name, surname)

Approved: _____
(signature of the Qualification’s thesis supervisor)

(student's signature)

(date)

The topic and scientific supervisor approved at the _____ FoIT Council meeting, decision no. _____

Dean of the Faculty **Asst. Prof. V. Caune** _____
(signature)

(date)

EXAMPLE

**VENTSPILS UNIVERSITY OF APPLIED SCIENCES
FACULTY OF INFORMATION TECHNOLOGY**

MASTER'S THESIS

TITLE

Author

Ventspils University of Applied Sciences

Faculty of Information Technology

Bachelor study programmes

“Computer Science”

Professional bachelor study programmes

“ Electronics Engineering”

3rd/4th year student

Name Surname

Matr.No. 0000000000

(signature)

Dean of the Faculty

Asst. Prof. Dr.sc.comp. Vairis Caune

(signature)

Scientific supervisor

(position held, scientific title, name, surname)

(signature)

Reviewer

(position held, scientific title, name, surname)

(signature)

Ventspils

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EXAMPLE

**VENTSPILS UNIVERSITY OF APPLIED SCIENCES
FACULTY OF INFORMATION TECHNOLOGY**

MASTER'S THESIS

TITLE

Author

Ventspils University of Applied Sciences

Faculty of Information Technology

Master study programmes

“Computer Science”

Professional master study programmes

„Electronics”

2nd year student

Name Surname

Matr.No. 0000000000

(signature)

Dean of the Faculty

Asst. Prof. Dr.sc.comp. Vairis Caune

(signature)

Scientific supervisor

(position held, scientific title, name, surname)

(signature)

Reviewer

(position held, scientific title, name, surname)

(signature)

Ventspils

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EXAMPLE

**VENTSPILS UNIVERSITY OF APPLIED SCIENCES
FACULTY OF INFORMATION TECHNOLOGY**

MASTER'S THESIS

TITLE

Author

Ventspils University of Applied Sciences
Faculty of Information Technology
First level professional higher education
study programmes "Programming Specialist"
2nd year student

Name Surname

Matr.No. **0000000000**

(signature)

Dean of the Faculty

Asst. Prof. Dr.sc.comp. Vairis Caune

(signature)

Scientific supervisor

(position held, scientific title, name, surname)

(signature)

Reviewer

(position held, scientific title, name, surname)

(signature)

Ventspils

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EXAMPLE

ABSTRACT

Title of the thesis: Development of a new image segmentation method.

Author: Jānis Bērziņš

Supervisor: dr. math. Oskars Jansons

Scope of work: 90 pages, 10 tables, 9 figures, 40 bibliographic references, 6 annexes.

Keywords: IMAGE, SEGMENTATION, ALGORITHMS, IMAGE ENHANCEMENT.

The Bachelor's thesis examines several existing algorithms of image segmentation methods and the shortcomings of these methods. In addition, various image enhancement techniques are described, which may have been used to increase the quality of the image segmentation result.

Several algorithms are proposed for the purpose of developing a novel segmentation method, including segmentation algorithms and image enhancement techniques independently developed by the author. To study the algorithms, a programme has been developed to compare the proposed methods, and an analysis of the algorithms has been carried out.

In this thesis, a new image segmentation method is developed, which uses both image enhancement and developed algorithms. A programme has been developed to study and evaluate the performance of the new method, which greatly facilitates this process.

EXAMPLE**TABLE OF CONTENTS**

List of abbreviations and conditional designations

Introduction.....	X
1. Chapter title (<i>theory and literature review</i>)	X
1.1. Sub-chapter title	X
1.2. Sub-chapter title	X
1.3. Sub-chapter title	X
2. Chapter title (<i>practical part – the author describes the process of creating his own development</i>)	X
2.1. Sub-chapter title	X
2.2. Sub-chapter title	X
2.3. Sub-chapter title	X
3. Chapter title.....	X
3.1. Sub-chapter title	X
3.2. Sub-chapter title	X
3.3. Sub-chapter title (<i>results of testing, trials, parametric verification of the final product developed by the author</i>)	X
Conclusions and proposals.....	X
List of literature and sources	X
Annexes.....	X
Guarantee	X

EXAMPLE**LIST OF LITERATURE AND SOURCES**

- [1] I.A. Glover and P.M. Grant, *Digital Communications*, 3rd ed. Harlow: Prentice Hall, 2009. pp. 192-217.
- [2] W. Zeng, H. Yu, C. Lin. (2013, Dec 19). *Multimedia Security Technologies for Digital Rights Management* [Online]. Available at: <http://goo.gl/xQ6doi> [Viewed Nov. 14, 2022]
- [3] F. Yan, Y. Gu, Y. Wang, C. M. Wang, X. Y. Hu, H. X. Peng, et al., “Study on the interaction mechanism between laser and rock during perforation,” *Optics and Laser Technology*, vol. 54, pp. 303-308, Dec 2013.
- [4] M. Semilof. (1996, July). “Driving commerce to the web-corporate intranets and the internet: lines blur”. *Communication Week* [Online]. vol. 6, issue 19. Available at: <http://www.techweb.com/se/directlinkcgi?CWK19960715S0005> [Accessed Nov. 14, 2022]
- [5] Augucēvičs J., Ozols J., Treiguts E. *Datorzinības: uzd. un to risinājumi*. Rīga: Biznesa augstskola Turība, 2002. 179 lpp. ISBN 9984-609-95-2
- [6] Lieģeniece. D., Nazarova I. *Veseluma pieeja valodas apgūvē 5-7 gadus veciem bērniem*. Rīga : RaKa, 1999. 112 lpp
- [7] Harts M., Selberga I., Stefana M. u.c. *Dabas pasaule*. Tulk. J. Bitenieks; red. M. Kusiņa. Rīga: Zvaigzne ABC, 2003. 193 lpp.
- [8] Karnītis Edvīns. (2002, November). “Informācijas sabiedrība – iespējas ikvienam”. *E-world*[Online]. Also available in the text edition “e-world”. Available: <http://www.dtnet.lv/00602613> [Viewed Mar. 18, 2003].
- [9] BBC News. (2013, Nov. 11). Microwave signals turned into electrical power [Online]. Available at: <http://www.bbc.co.uk/news/technology-24897584> [Viewed Nov. 14, 2022]
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EXAMPLE

GUARANTEE

I hereby guarantee, **Name Surname**, that this Bachelor's thesis is an original work independently executed by me. All sources of information, as well as the data and definitions taken from them, are specified in the work. This paper, in one way or another, has not been submitted to any other examination committee and has not been published anywhere.

I am aware that my Bachelor's thesis will be placed and processed in the Unified Computerized Plagiarism Control System for plagiarism control purposes.

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I, **Name Surname**, authorize Ventspils University of Applied Sciences to place and store my Bachelor's thesis free of charge in the computer network Academia managed by the National Library of Latvia (www.academia.lndb.lv), where the final theses are available both to library users and on the World Wide Web in such a way that everyone can access them at an individually selected time, in an individually selected place.

Agree _____

Disagree _____

202 _____

EXAMPLE

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I hereby guarantee, **Name Surname**, that this Master's thesis is an original work independently executed by me. All sources of information, as well as the data and definitions taken from them, are specified in the work. This paper, in one way or another, has not been submitted to any other examination committee and has not been published anywhere.

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Agree _____

Disagree _____

202 _____

EXAMPLE

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||| I hereby guarantee, **Name Surname**, that this Qualification's thesis is an original work independently executed by me. All sources of information, as well as the data and definitions taken from them, are specified in the work. This paper, in one way or another, has not been submitted to any other examination committee and has not been published anywhere.

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Agree _____

Disagree _____

202 _____

EXAMPLE

FACULTY OF INFORMATION TECHNOLOGY
VENTSPILS UNIVERSITY OF APPLIED SCIENCES

Inženieru iela 101, Ventspils, LV-3601

phone +371 636 29654;

e-mail: ITF@venta.lv

BACHELOR THESIS REVIEW

On the academic Bachelor's study programme "Computer Science"

On the professional Bachelor's study programme "Electronics Engineering"

Student's _____
(surname, name)

Bachelor's thesis: _____

Evaluation of the Bachelor's thesis: _____
(evaluation in numbers and words)

Positive qualities of the Bachelor's thesis: _____

Main shortcomings of the Bachelor's thesis: _____

Overall evaluation of the Bachelor's thesis: _____

Reviewer's questions:

Reviewer:

(position, academic degree, surname, name)

Ventspils,
20__ . ____ . _____

(signature)

EXAMPLE

FACULTY OF INFORMATION TECHNOLOGY
VENTSPILS UNIVERSITY OF APPLIED SCIENCES

Inženieru iela 101, Ventspils, LV-3601

phone +371 636 29654;

e-mail: ITF@venta.lv

MASTER THESIS REVIEW

On the Master's study programme "Computer Science"

On the professional Master's study programme "Electronics"

Student's _____
(surname, name)

Master's thesis: _____

Evaluation of the Master's thesis: _____
(evaluation in numbers and words)

Positive qualities of the Master's thesis: _____

Main shortcomings of the Master's thesis: _____

Overall evaluation of the Master's thesis: _____

Reviewer's questions:

Reviewer:

(position, academic degree, surname, name)

Ventspils,

20__ . ____ . _____

(signature)

EXAMPLE

FACULTY OF INFORMATION TECHNOLOGY
VENTSPILS UNIVERSITY OF APPLIED SCIENCES

Inženieru iela 101, Ventspils, LV-3601

phone +371 636 29654;

e-mail: ITF@venta.lv

REVIEW OF THE QUALIFICATION THESIS

On the first level professional study programme “Programming specialist”

Student's _____
(surname, name)

Qualification thesis: _____

Evaluation of the Qualification's thesis: _____
(evaluation in numbers and words)

Positive qualities of the Qualification thesis: _____

Main shortcomings of the Qualification's thesis: _____

Overall evaluation of the Qualification's thesis: _____

Reviewer's questions:

Reviewer:

(position, academic degree, surname, name)

Ventspils,
20__ . ____ . _____

(signature)

EXAMPLE

FACULTY OF INFORMATION TECHNOLOGY
VENTSPILS UNIVERSITY OF APPLIED SCIENCES

Inženieru iela 101, Ventspils, LV-3601

phone +371 636 29654;

e-mail: ITF@venta.lv

_____ ()

Evaluation: with words (with a mark)

Bachelor study programmes

“Computer Science”

“Electronics Engineering”

3rd/4th year student

Date of defence ____ . ____ . ____

(name, surname)

REVIEW BY THE BACHELOR THESIS SUPERVISOR

Supervisor: _____

Title of Bachelor's thesis: _____

Scope of work: _____ pp. Number of tables ____ . Number of drawings: .
Number of annexes _____ .

Structure and content of the Bachelor thesis:

The good and valuable features of a Bachelor thesis:

Bachelor's thesis disadvantages:

Degree of independence in the development of the Bachelor's thesis:

Degree of achievement of the goal set for the Bachelor's thesis (circle as appropriate):

up to 50%

from 50% to 75%

over 75%

Overall evaluation of the Bachelor's thesis:

Ventspils, 20__ . _____ . _____

(signature)

EXAMPLE

FACULTY OF INFORMATION TECHNOLOGY
VENTSPILS UNIVERSITY OF APPLIED SCIENCES

Inženieru iela 101, Ventspils, LV-3601

phone +371 636 29654;

e-mail: ITF@venta.lv

_____ (____)
Evaluation: with words (with a mark)

**Master's study
programmes "Computer Science"**

**Professional Master's
study programmes "Electronics"**

2nd year student

Date of defence __. __. ____

(name, surname)

REVIEW BY THE MASTER THESIS SUPERVISOR

Supervisor: _____

Title of Master's thesis: _____

Scope of work: _____pp. Number of tables __. Number of drawings: .
Number of annexes _____.

Structure and content of the Master's thesis:

The good and valuable features of a Master's thesis:

Master's thesis disadvantages:

Degree of independence in the development of the Master's thesis:

Degree of achievement of the goal set for the Master's thesis (circle as appropriate):

up to 50%

from 50% to 75%

over 75%

Overall evaluation of the Master's thesis:

Ventspils, 20__ . _____ . _____

(signature)

EXAMPLE

FACULTY OF INFORMATION TECHNOLOGY
VENTSPILS UNIVERSITY OF APPLIED SCIENCES

Inženieru iela 101, Ventspils, LV-3601

phone +371 636 29654;

e-mail: ITF@venta.lv

_____ (____)
Evaluation: with words (with a mark)

**First level professional
study programmes
“Programming Specialist”
2nd year student**

Date of defence ____ . ____ . ____

(name, surname)

**REVIEW BY THE QUALIFICATION THESIS
SUPERVISOR**

Supervisor: _____

Title of Qualification's thesis: _____

Scope of work: _____ pp. Number of tables __. Number of drawings: .
Number of annexes _____.

Structure and content of the Qualification thesis:

The good and valuable features of a Qualification's thesis:

Master's thesis disadvantages:

Degree of independence in the development of the Qualification thesis:

Degree of achievement of the goal set for the Qualification's thesis (circle as appropriate):

up to 50%

from 50% to 75%

over 75%

Overall evaluation of the Qualification's thesis:

Ventspils, 20__ . _____ . _____

(signature)

EXAMPLE

Ventspils University
of Applied Sciences
Faculty of
Information Technology
Dean Asst. Prof.
V. Caune

Ventspils University of Applied Sciences
Faculties of Information Technology
Bachelor's study programmes "Computer
Science"
Professional Bachelor's study programme "Electronics Engineering"
Master's study programmes "Computer Science"
Professional Master's study programmes "Electronics"
First level professional higher education study programmes "Programming specialist"
X. year student

(name, surname)

(personal identity number)

APPLICATION

On the confidentiality of <Qualification's/Bachelor's/Master's> thesis

Due to the fact that methods and results discussed in the
<Qualification's/Bachelor's/Master's thesis> are related to business secret, I request
that
<Qualification's/Bachelor's/Master's thesis> defence is held in a closed Final / State
Examination Commission meeting, not to transfer the thesis to the library and not to
distribute it to third parties.

Approved

(signature of Qualification's/Bachelor's/Master's thesis supervisor)

(student's signature)

(date)

Dean of the Faculty **Asst. Prof. V. Caune** _____
(signature)

(date)