



STUDY GUIDE

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# Student SemesterProject

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Vilnius University  
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## Student Semester Project Study Guide

Cycle: First

Study program: Information Technologies

Course unit code: VSPD

Awarding institution: Department of Computer Science II, Faculty of Mathematics and Informatics

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## Table of Contents

Introduction .....	4
1. Choosing topic and supervisor .....	4
2. Project planning .....	4
3. Recommendations to content of the work.....	5
4. Project paper format.....	5
4.1. Title page.....	6
4.2. Table of Contents .....	6
4.3. The list of abbreviations and definitions.....	6
4.4. Abstract / Annotation .....	6
4.5. Summary .....	6
4.6. Introduction.....	6
4.7. The main part .....	7
4.8. Conclusions and recommendations.....	7
4.9. References .....	7
4.10. Appendixes (if needed) .....	8
4.11. Content of an attached CD .....	8
5. Final Defense and evaluation of Student Semester Project .....	8
References .....	10
Appendix 1 (en): example of front page .....	11
Appendix 1 (It): example of front page.....	12
Appendix 2(en): example of work content.....	13
Appendix 2(It): example of work content .....	14
Appendix 3: example of references.....	15

## Introduction

Semester project paper is an important part of the learning process because it shows student abilities to analyze problem and information, apply knowledge in a particular situation, critical, analytical thinking and creativity, ability to collect and process information, to choose needed measures for problem solving. The term paper writing requires a lot of time and effort, so it is advisable to choose an interesting topic and in advance plan your time.

These guidelines were prepared using [VMK, VMK11, VU05] for students to help them with the coursework. The outcomes of coursework are written project work and presentation which must be presented for defense committee. Section 4 sets out the requirements for formatting the project work. All written works must be formatted as described in this guide. Section 5 gives recommendations for preparing presentation for final defense. Students can deviate from recommendations if it is allowed by their supervisor.

### 1. Choosing topic and supervisor

Topics for the project are offered by the department faculty staff. A number of students suggested topics for writing is also recommended. Students can choose the subject and supervisor for their project.

Since project is not compulsory, think about it and choose wisely. **Choose a topic that you are interested in** if needed do some research before, talk to supervisor about possibilities. This project will occupy a lot of your time, so make sure you're like selected subject. When choosing a topic look for a subject that you want to get more knowledge about. Don't forget faculty has a lot of scientist working in different fields for example in CSII department there are scientists working on databases and data-mining, security and identification, mobile technologies, text analysis, geographic information systems, computer aided geometry and animation, mathematical modeling, cloud and distributed computing, computer networks and many more. For full list check suggestion list in CSII department offerings. Since there are so many possibilities, so there is always a possibility to find something that you like or you can always discuss with supervisor about his suggestions and try to find some aspects that can be interesting to you.

Students must meet supervisor after they have chosen subject of their project. Initial work plan must be discussed and deadlines for some assignments may be set. These deadlines are not mandatory, but it can help students to manage their time right. Main literature can be suggested by supervisor on chosen topic. Contributions of each student must be known to supervisor if project is a group work.

### 2. Project planning

**Start early!** If you start your work early, you'll have more time to find, understand and analyze information that you need. Starting early also allows you to change topics if the project isn't working out as you planned. Also you'll have more time to prepare your paper and presentation in an informative and attractive way.

Your semester project is only one of your subjects this semester so divide your time wisely. 5 ECTS credits means that you must do 134 hours of work on this projects and most of this time is individual work. Decide how often you will meet with your supervisor, since only 5 hours are

reserved to get help. Most supervisors are friendly and wish you only good so do not be afraid to ask them any questions even the silly ones and pay attention to what they suggest you.

**Set small goals while working on the project.** For example, if you have 12 weeks to do a project, you may want to assign weekly or biweekly goals. Small goals are easier to accomplish. They will give you more confidence and satisfaction also they'll help you track your progress and finish the project on time.

### 3. Recommendations to content of the work

All the information presented during lectures, all the literature available at Vilnius University library and in the databases on the Internet can be used when writing a project paper. For example if your project work is about creating some great Web application then you should use your knowledge from database, programming, data structures and information technologies courses to provide fully developed project. You can use different information found on the Internet but be careful when choosing literature check everything in few different sources and if needed find original scientific or technical source. You must work ethically - all used literature must be cited and the list of references must be created as specified in subsection 4.9. When developing your own code you might want to use some tools or libraries developed by others for example freecode.com then you should also give credits to code you used in your work. However, students should make their own contribution to the course work and work must not be only review or translation of some literature sources.

Do not forget that project is your own creation and the same topic can be developed in different aspects. Project of one student can analyze only theoretical models and project of other student can be created mostly from practical work from designing and implementing his system. Standard recommendations are that analysis on their subject must be created before starting working on topic selected. After that students can suggest their own model or system and describe all steps needed to implement it. After implementation of results conclusions must be presented. Recommendations for future work can be presented too and work can be later continued.

### 4. Project paper format

Format of project paper is presented in this chapter. Do not forget that electronic version of document you created must be submitted to VU paper work database as described in [VU08].

Student project paper must size must be 15-25 pages (without attachments) if project is written by two students then paper must be twice as big. Paper format requirements:

- work must be printed and bound,
- paper size - A4,
- text written in one column,
- margins: top - 2 cm, bottom - 2 cm, left - 3 cm, right - 1,5 cm,
- intervals between text lines 1 or 1.5,
- paragraph starts with a 0.57 cm indent,
- pages are numbered on the right side at the top or bottom,
- it is recommended to use Times New Roman font with these settings:
  - name - 14 pt bold font style
  - main text - 12 pt font style normal
  - appendixes - 12 pt font style normal
  - references - 12 pt
  - names of tables and graphs - 10 pt bold font style

Work structure:

- Title page
- Table of Contents
- Abbreviations and definitions
- Abstract/Annotation
- Summary
- Introduction
- The main part of a work
- Conclusions and recommendations
- References
- Appendixes (if necessary)

## **4.1. Title page**

Title page layout must be as shown in the example in appendix 1.

## **4.2. Table of Contents**

Titles of chapters, sections, subsections and sub subsections with links to the pages must be provided in the table of contents. Sections, subsections and sub subsections should be numbered in Arabic numerals. Chapter, section, subsection, and sub subsection numbers must be separated by dots from one another. Unnumbered sections of work are list of abbreviations and definitions, annotation, summary, introduction, conclusions and references. Appendixes are numbered separately. Example is presented in appendix 2.

## **4.3. The list of abbreviations and definitions**

Such list must be created if there are more than 10 of such symbols or terms and they repeat more than three times in the text.

## **4.4. Abstract / Annotation**

Shortly in 5-6 sentences describe the essence of the work, write the purpose and the results of your work.

At the end write few keywords describing your work.

## **4.5. Summary**

Summary must be written in other language than whole work. If work is written in Lithuanian then summary must be written in English. . If work is written in English then summary must be written in Lithuanian.

At the beginning title of work must be written. Later student should shortly (on a half of page) describe the main goals of his work, what subjects have been analyzed, researched or created, experiments have been done. Write the results, recommendations and conclusions that have been made.

## **4.6. Introduction**

Introduction is the part of work where you have to present on what subject you are working on and describe work-related topics. Also you must present why this topic is interesting and worth working on also you must show your motivation to work on this subject. The problem and the

objectives of your work must be presented in introduction. Short summary of a work parts can be presented at the end of introduction.

After reading the introduction it should be clear:

- What were objectives of the work;
- What has been created, what kind of problems were solved, which research was made;
- What results have been achieved?

## **4.7. The main part**

The main part must describe the work methodology. In there analysis of material and created system / models / methodologies / technologies / algorithms must be presented. Comparison with other systems, tasks, achieved results and conclusions must be presented in this part.

Depending on the type of work it may include the following parts:

- Motivation and analysis of related work - if introduction was too short, or work requires more detailed description.
- The analysis part – if it is needed this section describes the analysis, comparisons, and evaluations of related systems.
- Creation of your system - detailed description of each step of your invention, improvement or innovation with description about why such decisions were taken and what results are expected.
- Experiments and tests – is the part where student must describe what results he expects, what results were achieved and what conclusions can be made.

These parts are only an example and may be different in real work because the structure of each job depends on the subject and nature of the study. Specific parts of the work should be coordinated with your supervisor.

References to the literature sources must be used in the main text.

## **4.8. Conclusions and recommendations**

“Conclusions and recommendations” is one of the important parts of whole work. After reading this part the reader must have good idea what has been done and what results were achieved. All conclusions must be clearly stated and presented in good easily understandable language. At the end recommendations for expanding and continuing projects must be presented.

## **4.9. References**

References in the paper must be presented in uniform rules for bibliographic description [LST10]. Bibliographic identifiers in references list must be presented in alphabetical order.

References must be coded in the appropriate identifiers in the format [AutYyC]. Identifier is coded using parts of specific literature source:

- Aut - identification of an author:
  - If there is only one author, instead of Aut there must be written first three letters of the author's surname (first letter - capital, the other two small);
  - If there are two authors, then Aut is the first capital letters of author names;
  - If there are three authors, then Aut is the first capital letters of author names;
  - If there are four or more authors, then Aut is the the first capital letters of the first three authors names followed by symbol +;
- Yy - last two digits of publication year;
- C - is the letter "a", "b", "c", and so on. This character is only for uniqueness of

identifier. Used only when AutYyC is not unique (see example in Appendix 3).

Depending on the publication type bibliographic descriptor must include:

**Article in a journal:**

A. Author, B. Author, C. Author. Title of the article. *Journal name*, volume (number), year of publication, p. from page - to the page.

**Article in a work collection (book):**

A. Author, B. Author, C. Author. Title of the article in a book: An author of a book or editor. *Work collection (book) name*. Publisher, city, year of publication, p. from page - to the page.

**Book:**

A. Author, B. Author, C. Author. *Title of book*. Publisher, city, year of publication, number of pages (number of pages can be omitted).

**Electronic publication:**

A. Author, B. Author, C. Author. *Publication name*, URL, publication date (if it is available).

## 4.10. Appendixes (if needed)

Students can provide in appendixes relevant code of their programs, tables, charts, images, and other supplementary material, which can be useful for description of the main work. All information presented in appendixes must be referenced in their main work. If appendixes contain only few small parts of information they must be placed in the main part.

## 4.11. Content of an attached CD

- README.TXT - text file, where is given information about the author and the name of work, also a brief description of the contents of CD;

- Doc / - directory with the digital files of the final version of the work in PDF format and one of the original formats (ps, tex, odt, doc or docx);

- Bin / - directory with a working prototype of the main work compiled for intended platform (if it applies to employment) and instructions to run given prototype. List of remotely used resources and needed credentials to connect to them must be given if some remote resources are used.

- Src / - directory with the source code and the ability to build the reviewer and/or evaluate the work, the structure and volume. Must be given instructions on how the work should compile using tools accessible in MIF servers! (if this applies to work). If you used to work remote resources (eg, database schema) must submit their source code (that is only used in the work described in the resources and source code are protected by a student).

## 5. Final Defense and evaluation of Student Semester Project

Student Semester Project must be defended at the end of autumn/winter session. Students must prepare up to 10 minutes presentation and have additional 5 minutes for questions and discussions. Time for presentation and questions can be changed if department decides so.

Final evaluation consists from two marks – one given by supervisor and the second one by defense committee. Students participating in defense can evaluate their colleagues; their evaluations



can be taken as advisory marks for defense committee. When evaluating project there will be taken into account different aspects of work:

- project planning (by supervisor),
- paper formatting,
- quality of paper,
- final presentation,
- ability to answer related questions

Detailed evaluation table:

Assessment strategy	Weight %	Assessment criteria
Project planning	10%	<ul style="list-style-type: none"> <li>• Creating and following project plan (3 points);</li> <li>• Delivering tasks on time (4 points);</li> <li>• Regular meetings with supervisor (3 points).</li> </ul>
Practical work	20%	<ul style="list-style-type: none"> <li>• Analysis of related work and literature (2 points);</li> <li>• Development of a theoretical model (4 points);</li> <li>• Implementation of the model (4 points).</li> </ul>
Description of the work	20%	<ul style="list-style-type: none"> <li>• Formulation of introduction (1 point);</li> <li>• Analysis of literature and quality of the text (5 points);</li> <li>• Citation of sources (1 point);</li> <li>• Formulation of results and conclusions (2 points);</li> <li>• Design of the work (1 point).</li> </ul>
Final defense.	50%	<ul style="list-style-type: none"> <li>• Preparation of the slides (2 points);</li> <li>• Smooth presentation of the work (4 points);</li> <li>• Ability to respond to the questions (4 points).</li> </ul>

Students can expect positive mark if their work is made independently, meet research requirements, successfully defended theses. Some best works can be published.

Negative mark will be given if work is plagiarized or bad quality. Supervisor can forbid a student to defend coursework if he thinks that work does not meet minimal requirements.

Student semester project paper with supervisor signature must be delivered to the department of computer science II at least 3 days before final defense.

Recommendations for work presentation:

- Do not exceed your time;
- Present novelty and relevance of their work,
- Present what is the aim of the work and what objectives were elevated,
- Present what activities they were carried out and what results were obtained
- Final conclusions and future work.
- If it is a group work then must be stated what is the input of each student.
- Students can use VU templates [VU07] to create their own presentations.

Additional recommendations for preparing slides for final defense can be found in [Büt08].

## References

- [Būt08] Linas Būtėnas. *How to make a good presentation*.  
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[http://www.vu.lt/site\\_files/SD/Studentams/SP/SRD/Rasto\\_darbu\\_DB\\_kaupimo\\_ir\\_naudojimo\\_tvarka.pdf](http://www.vu.lt/site_files/SD/Studentams/SP/SRD/Rasto_darbu_DB_kaupimo_ir_naudojimo_tvarka.pdf), 2008m.
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[http://www.mif.vu.lt/katedros/se/Studentams/KURSINIO%20DARBO%20METODINIAI%20NURODYMAI%202011\\_AL.pdf](http://www.mif.vu.lt/katedros/se/Studentams/KURSINIO%20DARBO%20METODINIAI%20NURODYMAI%202011_AL.pdf), 2011

## **Appendix 1 (en): example of front page**

VILNIUS UNIVERSITY  
FACULTY OF MATHEMATICS AND INFORMATICS  
DEPARTMENT OF COMPUTER SCIENCE II

Student Semester Project

### **Name of Project**

Kursinio darbo pavadinimas

4th year, n group student:

Vardenis Pavardenis (signature)

Supervisor:

dr. Vardinis Pavardinis (signature)

Vilnius  
2012

## **Appendix 1 (lt): example of front page**

VILNIAUS UNIVERSITETAS  
MATEMATIKOS IR INFORMATIKOS FAKULTETAS  
KOMPIUTERIJOS KATEDRA

Kursinis darbas

### **Kursinio darbo pavadinimas**

Name of Project

Atliko: 4 kurso, n grupės studentas

Vardenis Pavardenis (parašas)

Darbo vadovas:

dr. Vardinis Pavardinis (parašas)

Vilnius  
2012

## Appendix 2(en): example of work content

### Content

Abbreviations and definitions	XX
Abstract	XX
Summary	XX
Introduction	XX
1. Name of a Chapter	XX
1.1. Name of a Section	XX
1.2. Name of a Section	XX
1.3. Name of a Section	XX
2. Name of a Chapter	XX
2.1. Name of a Section	XX
2.2. Name of a Section	XX
2.2.1. Name of a Sub Section	XX
2.2.2. Name of a Sub Section	XX
2.2.2.1. Name of a Sub Sub Section	XX
2.2.2.2. Name of a Sub Sub Section	XX
2.2.2.3. Name of a Sub Sub Section	XX
2.2.3. Name of a Sub Section	XX
2.3. Name of a Section	XX
3. Name of a Chapter	XX
3.1. Name of a Section	XX
3.2. Name of a Section	XX
3.2.1. Name of a Sub Section	XX
3.2.2. Name of a Sub Section	XX
Conclusions and recommendations	XX
References	XX
Appendix 1: Name of an appendix	XX
Appendix 2: Name of an appendix	XX
Appendix 3: Name of an appendix	XX

## Appendix 2(lt): example of work content

### Turinys

Santrumpos ir sąvokos	XX
Anotacija	XX
Summary	XX
Įvadas	XX
1. Skyriaus pavadinimas	XX
1.1. Poskyrio pavadinimas	XX
1.2. Poskyrio pavadinimas	XX
1.3. Poskyrio pavadinimas	XX
2. Skyriaus pavadinimas	XX
2.1. Poskyrio pavadinimas	XX
2.2. Poskyrio pavadinimas	XX
2.2.1. Punkto pavadinimas	XX
2.2.2. Punkto pavadinimas	XX
2.2.2.1. Papunkčio pavadinimas	XX
2.2.2.2. Papunkčio pavadinimas	XX
2.2.2.3. Papunkčio pavadinimas	XX
2.2.3. Punkto pavadinimas	XX
2.3. Poskyrio pavadinimas	XX
3. Skyriaus pavadinimas	XX
3.1. Poskyrio pavadinimas	XX
3.2. Poskyrio pavadinimas	XX
3.2.1. Punkto pavadinimas	XX
3.2.2. Punkto pavadinimas	XX
Išvados ir rezultatai	XX
Literatūros sąrašas	XX
Priedas Nr.1 Priedo pavadinimas	XX
Priedas Nr.2 Priedo pavadinimas	XX
Priedas Nr.3 Priedo pavadinimas	XX

### Appendix 3: example of references

#### References

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