MASTER PROJECT

**Work Title**

**Subtitle**

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| Submitted by: | First, Last Name |
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Faculty of Electrical Engineering and Computer Science

Functional Safety Engineering

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# List of abbreviations

|  |  |
| --- | --- |
| CMS | Cash-Management-System |
| DFÜ | Datenfernübertragung |
| dpi | Dots per Inch |
| EU | Europäische Union |
| LIFO | Last In, First Out |
| UN | United Nations |

# List of figures

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1. List of Symbols

|  |  |
| --- | --- |
| a0 | Form factor |
| C | Constant |
| t | Time |
|  |  |
|  |  |
|  |  |

# Introduction

This chapter is an integral part of the thesis. The introductory chapter must contain an introduction to the topic: motivation, aim of the work and structure of the work.

|  |  |
| --- | --- |
| Recommended number of pages | 1 Page |

## Notes on the Scope of the Work

The expected scope of the thesis is to be discussed in detail with the supervisor. In general, the following guidelines apply:

Table 1.1: Recommended Pages of the Work in Detail

|  |  |
| --- | --- |
| Betreffender Bereich  | Pages |
| Recommended number of pages total work | At least 50 |
| Introduction (motivation, goals of the work and structure of the work) | 2-3 |
| Fundamental and necessary for the understanding of the work (theoretical foundations, definitions, technologies, tools, mathematics, etc.) | 15-25 |
| Approach and problem identification | 40-50 |
| Evaluation (summary of results) | 3-5 |
| Conclusion and Outlook | 1-2 |
| Appendix (necessary, otherwise references to books or similar) |  |

For the preparation project work applies:

* Prior to the work, the choice of the topic and the registration take place, i.e. personal and OKA data are to be filled in.
* One printed and one digital copy of the work must be handed in.
* All sources that are available digitally or can be saved as well as source code must also be submitted in digital form with the work.
* Furthermore, in preparation for a colloquium, a PowerPoint presentation of approx. 20 minutes must be available on the digital copy.
* Appointment for the examination with the supervisor.

# Hints

In our experience, most ambiguities arise in the following areas (Source: <https://www.fh-muenster.de/>):

* how, in which order is a practical work proceeded and
* how is a paper structured and written.

# Style and Formatting

Chapter Description

## Notes on formatting

In this part the used format templates are explained, furthermore, however, also in some places general formal requirements are dealt with.

For the creation of your own paper, it can be useful to take over this document and continuously replace the exemplary sections with your own new passages; this way, the structure remains intact and you do not accidentally lose formatting or the like. When creating the outline of your own scientific work, the two criteria *completeness* and *freedom from overlapping* should be observed!

## Stylistic notes

Phrase-like paraphrases, amplifying adverbs or superlatives must also be avoided. Adverbs such as "of course" or "self-evidently" are forbidden in any scientific work; "*probably*," "*almost*," "*somehow*," "*to some extent*" are scare words that are only intended to cover up the author's uncertainties about the content. A gap in thought should not be filled with the famous glue word "*now*", a sentence transition should not be worsened with "*by the way*".

Nested sentences make reading a scientific paper more difficult. Simple sentence constructions with several short sentences are preferable to long sentences that are difficult to understand.

Subjunctive and subjective formulations, such as "*I*," "*we*," "*us*," "*one*," should be avoided throughout the paper, if possible, unless it is an actual statement by the author in the introduction or discussion. If the personal form is unavoidable, the term "author" or "authors" may be used.

Filler words, phrases and journalistic expressions, such as "*it would also be worth mentioning*...", "*one could believe that*...", "*actually*", "*rather not*", " ...*assume*" and double expressions such as "*already*", "*now*" and "*or else*" should be avoided.

### Use of figures and tables

To ensure that the figures and tables appear uniformly large, the default font of the application must be reduced accordingly by scaling in Word.



Figure 3.1: Example Labeling Source: Muster (2010), S. 123.

Table 2.: Reference for Illustration

|  |  |
| --- | --- |
| Example | Comment |
| Source: Becker/Schütte (1996), S. 264. | The illustration has been adopted without changes. |
| Vgl. Becker/Schütte (1996), S. 264. | Changes or additions have been made to the illustration. These changes must be referred to in the text. |
|  | The indication of the "source" is missing, the figure is an own representation. |

#### Images from VISIO[[1]](#footnote-2)

When creating illustrations in Visio, make sure that the generated graphics must be self-similar, i.e. size, font, shading, line type and thickness, as well as the type of arrowheads must be chosen the same in all graphics. When using perspective elements such as shadows or 3D effects, it should be noted that the perspective should be the same in all drawings (e.g. parallel perspective to the bottom right).

The drawing should be scaled to the same size as all other Visio graphics (e.g. to 50%) after insertion via "Format/Graphic".

Drawings should not be overly large, so that the impression is not created that such drawings generate more pages than necessary.

### Formulas

The specification for formulas results from the following table. The formula itself is in the left column of the table. The numbering for the formula is in the right column of the table. When using formulas, the entire table must be copied. When referring to the formula within the text, use cross-references. The numbering adjusts automatically and only needs to be updated with "*F9*".

|  |  |
| --- | --- |
|  | Eq. (‎3.) |

### Source Codes

Source text is to be included in the text using the "*Courier*" font ("*Standard source text*"). A blank line is to be set up before and after the listing.

public string getStarship()

{

return enterprise;

}

### Cross-references

If references are made to other places in the work, each reference must always be realized via cross-references. With new page changes, all references are brought up to date by the automatic update. Via "*Insert/Cross-reference*" some predefined cross-references can be used. If the desired cross-reference is not in the list, a bookmark can be defined at the original position with "*Edit/Bookmark*", the contents of which can then be accessed with a *bookmark cross-reference*.

### Sources

The citation of used literature is thus not done in the footnotes, but in the main text using parentheses. A distinction is made between *direct* quotations (i.e. text is taken over verbatim - in quotation marks -; source reference without 'cf.') and *indirect* quotations (i.e. reproduction of the meaning of the text; source reference with 'cf.').

Table 3.3: Examples of Source References in the Main Text

|  |  |
| --- | --- |
| Source reference in main text | Explanation |
| [BRCb04, S. 45] | Direct quoteReference: a specific page |
| [Vgl. BRCa96, S. 22f.] | Indirect quoteReference: two pages |
| [Vgl. BEC96, S. 24ff.] | Indirect quote *Reference*: *more* than two pagesRepetitions are listed in full. |
| [Vgl. SCH95, S. 403ff.; SEEb94, S. 233ff.] | Several indirect quotationsReference: more than two pages each |

Up to three authors are listed in the main text separated by a slash; for more than three authors, only the first author is noted together with the abbreviation "et al." (in the bibliography, however, *all* authors are named). If several works of an author published in the same year are cited, then in addition to the year number, identifying lowercase letters should be given in alphabetical order. For citations with a length of two pages, the first page and "f." are given; for more than two pages, "ff." is used.

# Evaluation

At the end of the work, a thesis-like summary of the results of the investigation can be given in the last part.

Here, the questions or theses of the introduction must be taken up again and the results of the work must be formulated concisely and succinctly, as well as placed in a larger context. Conclusions should be drawn.

When the result of the work is available and its reliability is clarified, it can be compared with the original objective. Was the objective achieved? If not, why?



Figure 4.2: Example Labeling Source: Muster (2010), S. 123.

# Conclusion and Outlook

Includes further scientific research of subject areas that arise while working on the topic. Should be considered as a recommendation for further scientific work. Therefore, this chapter, the work based on this thesis should roughly specify the goal and purpose.

An outlook on possible consequences or problems still to be solved should be given. Here is also the place for own assessments and suggestions for further scientific work.

Here further conclusions can be presented, which go beyond the direct topic: where can the result still be applied, which problems should be paid more attention to in the future, etc. Likewise, questions can arise regarding the mistakes and where they were made or what can be done better in the future.



Figure 5.3: Example Labeling Source: Muster (2010), S. 123.

1. Appendix

The appendix includes material that serves as evidence or illustration but is not essential to the immediate context of the text, such as extensive models, important documents produced, test results, and measurements. If empirical research has been conducted as part of the thesis, both the data collection means (e.g., interview guidelines or questionnaire samples) and the data collected (e.g., protocols) must be included as appendices. Implemented program code as well as its documentation should usually be provided exclusively in electronic form on a CD-ROM.

* 1. Checklist for the evaluation of scientific work

The following checklist for the evaluation of scientific papers, contains the criteria that must be met, otherwise a failure or massive devaluation in the grade is to be expected.

Table A.4: Evaluation Criteria for Scientific Works

|  |
| --- |
| Style and language rules |
| Correct spelling (new or old throughout) |  |
| Correct grammar and punctuation |  |
| Spellings of terms are used consistently (e.g. not even version control and then version control) |  |
| No first person used, no direct address to the reader |  |
| No colloquial language used |  |
| Expressions composed of several words are connected (as one word or with hyphen) if at least one of the words is German (i.e. software engineering methods, server applications) |  |
| Choice of words and expressions clearly understandable, concise and accurate |  |
| Sentences clear, meaningful in content and logical in themselves |  |
| Sentence links are linguistically and logically correct, reflecting in a seamless form adequate thought processes for the objective of the investigation. |  |
| Representations and directories |
| Representations (figures, tables) correctly numbered and labeled with regard to content |  |
| Required indexes (table of contents, list of abbreviations, list of symbols, list of figures, list of tables, list of references/sources) correctly created and placed at the correct position in the paper in each case |  |
| Formal requirements |
| Cover page, the leading text pages, all text pages and the trailing text pages designed in a correct layout (margin, line spacing) well readable (size, contouring) and numbered in a correct form |  |
| Any specified number of pages adhered to |  |
| Affidavit, if required, correctly written, dated, and signed by hand with first and last name on all copies to be submitted. |  |
| Literature processing and citation |
| Qualitatively appropriate literature used to a due extent |  |
| All source listings in the directory and in the directory only used sources |  |
| Literature correctly evaluated (without falsifications, up to date, primary) |  |
| Critical examination of literature |  |
| Proper citation (clear recognition of adopted and own ideas, consistent evidence method, page numbers for direct quotations) |  |
| Adequate citation (no unnecessary citation, extent of verbatim citation). |  |
| Completeness of the information on the various sources |  |
| Question |
| Question clearly formulated |  |
| The question is appropriate to the topic, i.e. it relates exclusively to the topic. |  |
| Question according to the type of scientific work |  |
| Outline |
| Formally correct outline (consistent outline classification, actual and complete subdivision, correct assignment of headings and subheadings, criteria purity of subdivisions, appropriate depth of outline, etc.). |  |
| Outline comprehensible in terms of content and meaningful in relation to the topic |  |
| Treatment of the question |
| Work does not show off-topic or unnecessary sections |  |
| All relevant points dealt with, i.e. none omitted or only partially dealt with |  |
| Argumentations, chains of evidence and proof (instead of just assertions, conjectures or speculations) |  |
| Chain of evidence well supported, complete and conclusive |  |
| Argumentation convincing and conclusive |  |
| Scientific level, no self-evident or trivialities |  |
| No unjustified repetitions |  |
| Principle of traceability observed |  |
| Results |
| Clear formulation of the results |  |
| Results answer the research question of the work |  |
| Results are internally consistent |  |
| Results are consequential based on reasoning, evidence and proof chains |  |
| Definitions, premises, research designs |
| Definitionspflichtige Begriffe klar und problemstellungsgemäß gefasst, konsequent durchgehalten |  |
| Prämissen und im Laufe der Arbeit vollzogenen Prämissen-Änderungen sind klar angezeigt und Prämissen-Unterschiede bei Literaturbezügen werden beachtet |  |
| Empirische Arbeit: Untersuchungs- und Auswertungsdesign klar und vollständig dargestellt |  |
| Eigenständigkeit |
| Definitions of terms that need to be defined are clear and appropriate to the problem, and are consistently adhered to. |  |
| Literature gaps registered and attempted to close |  |
| Contradictions and questionabilities in the literature elaborated, commented on and attempted to be resolved. |  |
| Independence in terms of problem solving |  |
| Independence in terms of presentation/illustration, condensation and linking of the collected material |  |
| Independence with regard to the reproduction and commentary of the literature |  |

* 1. Heading in the Appendix

Plans, documents, photos, listings, supplier directory, documentation, circuit diagrams, wiring diagrams, user manual. Everything that is important for further work with the work result, but would interrupt the course of the argumentation in the actual work. Thus, a circuit diagram can be included in the actual work, if it is needed for a certain argumentation. All other circuit diagrams, which are perhaps only needed as documentation for later troubleshooting and further development, belong in the appendix.

Bibliography

The bibliography is an integral part of every scientific paper. Precise and meaningful information facilitates research for later readers. The use of quotations or ideas from other works or from other sources without clear indication of their origin constitutes one of the most serious academic offenses. An academic paper in which this mistake is made repeatedly is rightly called plagiarism.

For correct citation, the "general form" and examples that reflect the correct way of citing for different sources are listed below

* 1. Books/Monographs

[ABBREVIATION LETTER[[2]](#footnote-3) YEAR] Name1, V., Name2, V., Title, *subtitle* or journal name or dissertation, x. ed.[[3]](#footnote-4) or x. Jg., Issue y[[4]](#footnote-5) or University name, Place of publication(e)[[5]](#footnote-6), (YEAR), S. From-to

1. Name1, V., Name2, V., Title, subtitle or journal name or dissertation, x. ed. or x. Jg., Issue y or university name, Place of publication(e), (YEAR), S. From-to
	1. Internet Addresses
2. Name, V. (Jahr)[[6]](#footnote-7), Title of the page/Document. http://complete specification of the URL. Stand: Day.Month.Year.
3. Freie Universität Berlin n. d., Richtig zitieren: Zitierregeln für konventionelle und elektronische Medien – Linksammlung, [http://www.ub.fu-berlin.de­/service\_neu/einfuehrung/bookmarks/zitieren.html](http://www.ub.fu-berlin.de/service_neu/einfuehrung/bookmarks/zitieren.html), Stand: 01.08.2010.

[Note] It is NOT referenced to Wikipedia articles! Wikipedia is not considered a sound source for scientific work!

# References

1. Visio achieves a high processing speed, generates only small files and has a high flexibility. For this reason, Visio is preferred to other programs (such as Corel Draw). [↑](#footnote-ref-2)
2. If an author has published several monographs, journals or collective contributions in one year, the sources of the year are additionally marked by a letter. [↑](#footnote-ref-3)
3. From the second edition on, the addition "x. Aufl.", is added to the citation. It is important to specify the edition because the page references of the cited section may have changed with each new edition. [↑](#footnote-ref-4)
4. If no year is known for a journal, this is indicated in the citation by "o. Jg. Jg." in the citation. [↑](#footnote-ref-5)
5. If there are more than three places of publication, not all places are listed individually. The abbreviation "et al." is used. In the case of Anglo-Saxon literature, the abbreviation "et al." is used instead of "et al. [↑](#footnote-ref-6)
6. If the author of a page is not known, one uses the abbreviation "o. V." [↑](#footnote-ref-7)