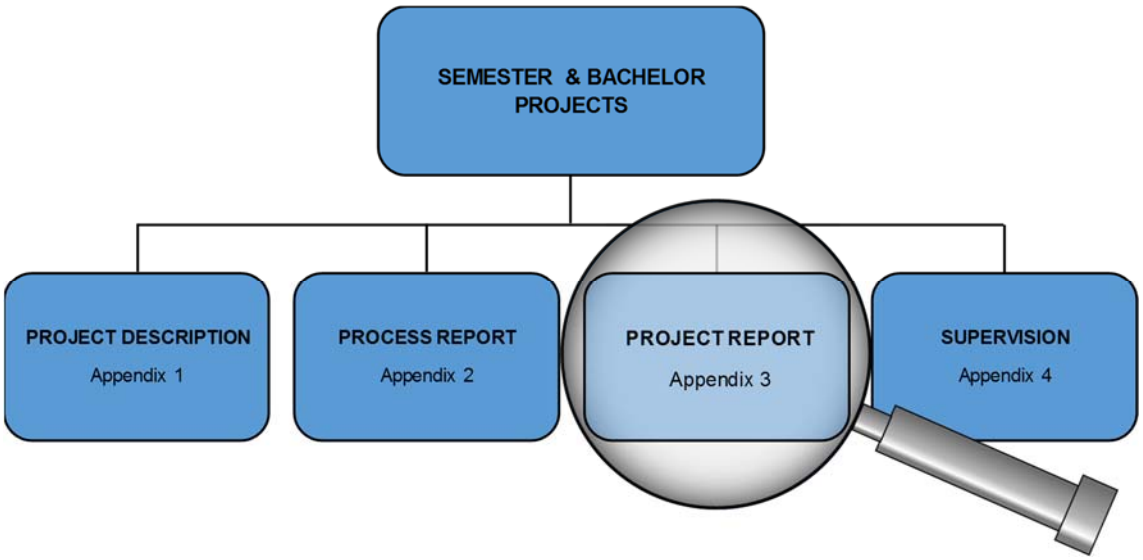
APPENDIX 3
Project Report

VIA ENGINEERING GUIDELINES



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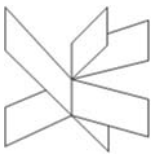

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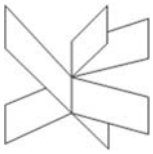


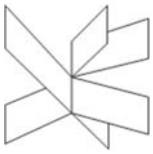
1 Introduction

The overall purpose of a Project Report is to communicate information which has been compiled during a semester project or bachelor project to a target audience. Typically, engineering reports do not undergo rigorous third-party review, are published only locally, and have a limited distribution channel. In this way, engineering reports may be considered “grey literature”.

The guidelines presented here are valid across all of VIA Engineering and describe requirements (indicated by the word “must”) and recommendations for Project Reports. It should be noted that following this guidelines is a necessary, but not sufficient, condition for a project group to receive a high grade for their work. In order to allow for the greatest possible freedom in creating the Project Report, this guideline describes only a minimum of requirements and recommendations.

The Project Report guidelines belong to a set of guidelines for project work in VIA Engineering. More information about this set of guidelines is found in the current version of the master document “Semester & Bachelor Projects – VIA Engineering Guidelines”.

Additional information can be found in /1/ and /2/.



2 General requirements

2.1 Project Report length

The primary purpose for having a Project Report length requirement is to ensure that the length of the Project Report reflects the intended workload of the students. It should be remembered, however, that length is only one element of a good Project Report. The overall principle for good reports is that quality goes before quantity. Thus, a clear, concise text of fewer pages has higher value than a longer report consisting of redundant, incoherent, less relevant content. Unnecessarily long reports may influence the assessment of the project report negatively just as easily as a report which is too short – ultimately to the extent that the project may not be approved.

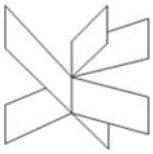
The general length requirement for a Project Report is:

Between 50,000 and 150,000 characters

(This count applies to the entire Project Report excluding appendices,. and includes spaces, as well as 800 characters per self-produced figure)

Factors influencing the length requirement: A narrower length interval (within these general requirements) may be given by the supervisor for a specific project. Factors influencing the length include total ECTS points of the project, number of students in the project group, which engineering field, amount of self-produced parts in appendices, etc. The supervisor has the final word in determining if the length of the Project Report is acceptable.

Standard page length is often cited as 2400 characters. Please note, however, that pages often also include figures, tables and blank lines, and may consist of significantly fewer characters.



2.2 Confidentiality

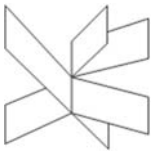
If a Project Report is confidential due to company interests, this must be indicated on the title page and as a water mark on all the report pages. A confidentiality agreement must be made with the company. /3/

2.3 Authorship

During the project examination, students are evaluated individually. A list of sections and authors must therefore be included as an appendix. An appendix to the report must clearly state which student wrote which sections. This placement allows the examiners to judge the written parts without prejudice. It is acceptable to have more than one author on a section, but it is not acceptable to have all project group members on all sections.

2.4 Use of template

A Microsoft Word template for VIA Engineering Project Reports is available electronically for use by the project group. The use of this template optional.



3 Writing style

Writing is a challenging task, no matter what the purpose. Many rules and recommendations are universal for all types of writing, including correct grammar, correct spelling, and identifying the target audience. In addition to these universal aspects, academic writing has a number of specific conventions which contrast with many other types of writing. For the Project Report to obtain a high grade, these conventions must be followed. The following sections discuss the target audience and language conventions for Project Reports.

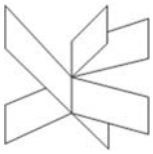
3.1 Target audience

Students often have questions regarding the target audience of the Project Report. In general, the target audience is composed of the project supervisor, the external examiner, and anyone else who may be professionally interested in the subject (such as someone from a company that is involved in the work). Students authors should assume that the target audience is intellegent and has a basic understanding of the field in question. However, the students should not assume that the target audience is familiar with specific aspects of the work carried out by the project group.

3.2 Language conventions

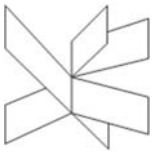
Academic writing is associated with particular choices in grammar and vocabulary. Selected language conventions for Project Reports include the following:

- **Consice style:** Academic language should be concise. This means that the writing should be brief in form, but comprehensive in scope, giving all necessary information with as few words as possible. All unneccesary senteces should be excluded.
- **Professional terminology:** Every profession has some terminology that is specific for the field and may be different from other fields. Project Reports should make use of this terminology.
- **Voice:** In grammar, voice can be active or passive. Academic writing intentionally favours the passive voice since it creates a distance between the author and the



subject matter in order to emphasize objectivity. Examples include changing “the project group designed the software” (active) to “the software was designed” (passive) and “the project group tested the equipment” (active) to “the equipment was tested” (passive).

- **Tense:** For the most part, the text should use past tense for project activities, i.e. “the sample was collected…” (rather than “the sample will be collected” or “the sample has been collected”). Present tense may be used in some instances, for example background information, i.e. “energy optimization is an important issue…”.
- **Person:** Use of first and second person (I, me, we, us, you) should be avoided in project reports. This is done intentionally to focus on the subject matter rather than the persons carrying out the work.
- **Contractions:** Contractions should be avoided. A contraction is the omission of letters in a word or words, i.e. “isn’t”.
- **Colloquial:** Colloquial language should be avoided. Colloquial language is a casual and conversational style of language, i.e. “buzz off” or “go bananas”.
- **Slang:** Slang should be avoided. Slang is non-standard words that imply familiarity, lower dignity, etc., i.e. “my bad”.
- **Emotive language:** Emotive language arouses feelings. It is therefore subjective rather than neutral. To promote objectivity, emotive language must be avoided.



4 Visuals (figures and tables)

The purpose of visuals (such as sketches, graphs, diagrams, photographs, figures and tables) is to assist the reader in understanding the report more clearly. Visuals should be tailored to emphasize the writer's point. If the point is to compare two sets of data, for example, both sets should be included in one graph rather than two separate graphs.

In the following, selected requirements are given.

Numbering: All visuals must be given a number. It is recommended that the word processing program is set up to keep track of this automatically.

Text description: All visuals must have a text description immediately above or below the visual.

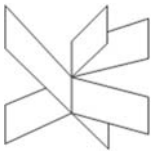
Internal referencing: All visuals in a report must be referred to by number in the text body of the report.

Borrowed visuals: If a visual is borrowed from the literature, this must be referenced in the visual text description and included in the reference section of the Project Report. This is true even if the visual was redrawn with changes from the original. If this is not done, it is considered plagiarism.

Quality: In some cases, visuals included in a project report are captured in pixel format in low resolution. This is especially a problem when a small visual is enlarged. Adequate resolution must be ensured.

Special details: If relevant, visuals should include the following:

- A legend to explain symbols
- Scale, north arrow and publisher for maps
- Labelled axes for graphs



5 Sources of information

In engineering reports in general, many types of information sources or references may be used. These include reports, book chapters, peer reviewed papers in scientific journals, conference proceedings, dissertations, patents, standards and interviews. Due to questions about objectivity, commercial web addresses, newspaper articles and brochures are often used sparingly. The use of information sources allows academic writing to use supported arguments and to avoid personal opinions where possible.

There are two main ways to use an information source:

Paraphrasing: The typical case is to paraphase the source, i.e. rewriting the information in the project group's own words. Here, the source must be referenced.

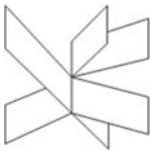
Quoting: When it is important to use the exact words of the previous work, direct quotes may be used. Quotes must always be 100 % accurate, and quotation marks must be used. In addition to quotation marks, the source must be referenced. Quotes are rarely used and generallly for things such as standards or interviews.

Plagiarism is the use of previous work in the form of words, figures, ideas, etc. without crediting the source. It is considered ethically dishonest and is not permitted in project reports at VIA Engineering. The offence is serious and may result in a range of outcomes including re-writing the report, failure of the course or the student(s) being expelled from school. Automatic tools in WISEflow are used by the supervisor to assist in the detection of plagiarism.

A list of the references used in the Project Report must be included as a separate chapter at the end of the report. Each source in the list must be referred to in the text.

For VIA Engineering project reports, the Harward Anglia reference system must be used. This system describes how to reference a source of information in the text as well as how to structure the reference list in the final chapter. A quick guide can be found at: https://libweb.anglia.ac.uk/referencing/files/QuickHarvardGuide2018.pdf.

In general, footnotes should not be used.



6 Project Report Structure

The Project Report consists of three parts:

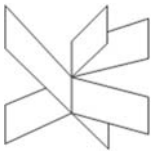
1. **Front matter:** Meta-data ranging from the report cover to the acknowledgements.
2. **Main matter:** The report from the introduction to conclusion, including a summary and the reference list.
3. **Back matter:** Supplemental matter in support of the main matter including appendices, glossary, list of symbols, etc. as needed.

6.1 Project Report front matter

The front matter of a project report may include the following elements:

- **Cover (optional):** A report cover may be formatted as desired.
- **Title page (required):** The design of the title page may be determined by the project group. However, the title page must include the following elements:
  - name and logo of the educational institution
  - the title of the report
  - the name of the study programme and semester
  - the name(s) of the student(s)
  - number of characters in the main text
  - the name of the supervisor.
  - date of completion
  - a declaration with signature(s) of the student(s). Each student must sign a declaration of authorship in the project report stating “I hereby declare that my project group and I prepared this project report and that all sources of information have been duly acknowledged” or something similar.

    In addition, it is recommended to include photographs of the students (to aid the external examiner) and the logo of any company included in the project report.



- **Preface (optional):** A preface may be included if additional comments on context of the report are needed. The relevance of including a preface depends on the type of project. The project group and the supervisor should discuss the need to include a preface.
- **Table of contents (required):** The project report must include a table of contents which outlines the structure of the report and how the information is organized.
- **List of figures and tables (required):** This list must contain a full listing of all figures and tables used in the report.
- **Acknowledgements (optional):** Acknowledgement of persons, companies, institutions, who have provided helpful contributions to the making of the report.
- **Summary (required):** The summary is used for first-glance reading and includes everything from the introduction to the conclusion and may not include things that are not mentioned anywhere else in the report. The summary is the last page of the front matter and is best written upon completion of the report. The summary must be ½-1 page in length and include the purpose, methods, main findings, conclusions and recommendations.

6.2 Project report main matter

The main matter of the project report includes everything from setting the stage in the introduction to describing the perspectives of the conclusions. It should be understandable without reading the appendices.

Header and Footer: The page header of the main matter of the report must include the title of the report, while the page footer of the main matter of the report must include page numbers. Additional information in the header and footer may be included if desired.

The main matter must be divided into two or three levels (chapters, sections and sub-sections, if needed). Additional levels are not recommended. The levels must be numbered using Arabic numbers. The structure of the Project Report main matter should give the reader (and the writer!) a good overview of the project and make it easy to find specific information. Report structure is therefore extremely important.

The main matter a project report is like a fish in that it has a head, a body and a tail (Figure 1). The head includes introductory material and background information. The body covers the various tasks executed in the project including a description of the methods used and a discussion of the results validity. The tail consists of the overall conclusions of the work and suggestions for using the project outcome in future work.

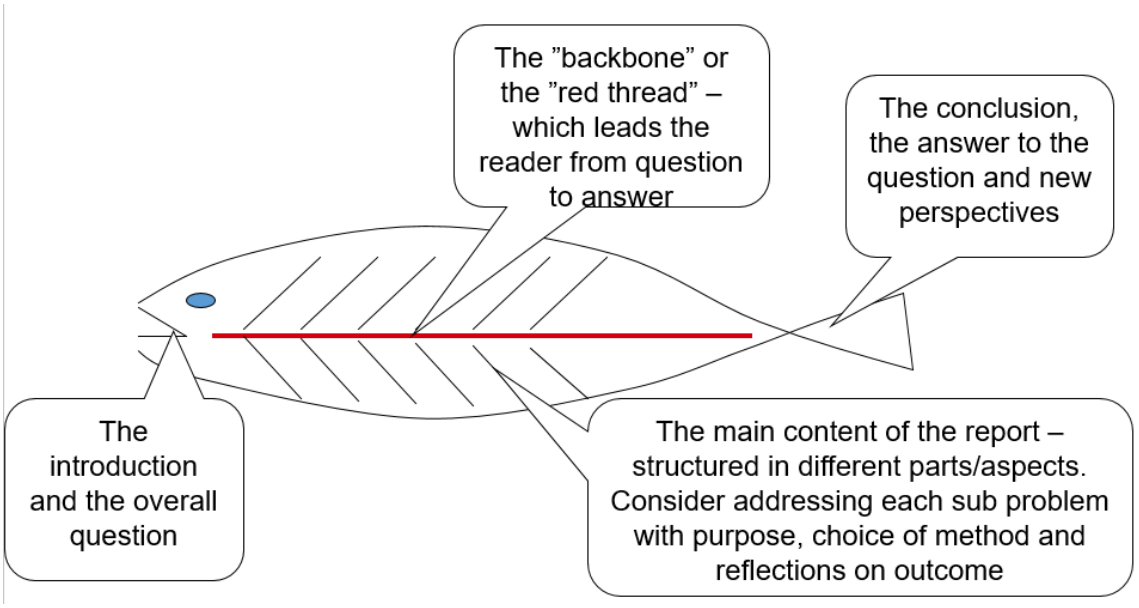
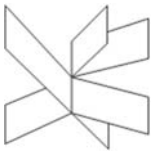


Figure 1 Structuring the main matter of the Project Report - The “Fish” model.

The names of the chapters in the Project Report vary, depending on the field of engineering and the subject matter.

Head: The head may include an introduction and theory/literature survey. Many elements of the Project Description such as the problem statement and background from literature may be re-used in the head of Project Report main matter.

- **Introduction:** The introduction includes background information, the problem statement, a justification of the project, a delimitation, etc.



- **Theory/literature survey:** The literature survey includes an overall information on what is known, what have other people done etc. The purpose with this section is to insure the uniqueness and therefore relevance of the project.

Body: The body of the Project Report main matter may include methods, results and discussion.

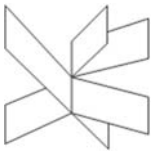
- **Methods:** Methods includes a discription of the methods, field work, laboratory work, instruments and apparatuses. It must be described in enough detail for the reader to repeat your work. The student decides if the used methods are described in an a dedicated section or in conjunction with the various subtasks adressed in the project.
- **Results/findings and Discussion:** Results and discussion are quite different subjects and may be placed in separate chapters if deemed appropriate by the project group. In the discussion, the validity of the results is evaluated and the results are put in context.

Tail: The tail of the Project Report main matter may include conclusions, recommendations, perspectives and the reference list.

- **Conclusions:** The conclusion is a short summary of the main results of the project report and must provide answers to the questions posed in the problem formulation. The section may include recommendations and perspectives. New information may not be presented in the conclusions.
- **Reference list:** The project report must include a complete list of references showing all the sources used. It must be found as the final chapter of the main matter and follow the Harvard Anglia system.

6.3 Project Report back matter

Back matter of a project report may include the following elements:



- **Appendices:** Appendices contain various types of information that support the content of the main matter and are available for the reader but are not central to understanding the project. Appendices may include raw data, calculations, drawings, experiments, surveys etc. Each appendix must be given a number or letter and must be referred to in the project report text. In addition to the numbering, a heading describing the content of each appendix must be included. The page numbers in each appendix should start with page 1. The Project Description and the Process Report are separate documents and are therefore not included in the appendices.
- **Glossary:** A glossary with definitions of difficult words is optional.
- **List of symbols:** A list of symbols used in the report text is optional.

7 References

/1/ NISO, 2010. *Scientific and Technical Reports -,* Baltimore: National Information Standards Oganization.

/2/ Rienecker, L, & PS Jørgensen, 2013. *The good paper. A Handbook for writing papers in higher education.* Frederiksberg: Samfundslitteratur.

/3/ VIA Engineering, in preparation. *Confidential Student Reports,* s.l.: s.n.

Appendix A: Checklist for Project Report formalia

VIA Engineering Guidelines

General requirements

- Author identification of individual sections
- Student names, numbers and photos
- Declaration of authorship with signatures
- Confidentiality clearly stated, if relevant

Language requirements

- Proper language for target audience
- Proper tenses used
- Contractions avoided
- Colloquial language avoided
- Slang avoided
- First person avoided
- Emotive language avoided
- Passive verbs used
- Arguments supported by logic and literature

Visuals requirements

- Figures, tables, etc. numbered
- Figures, tables, etc. referenced in text in the main matter
- Scale, north arrow, publisher included on maps
- Axes on graphs labelled
- Legend used when needed for explaining symbols

Main matter requirements

- Report title included on page header
- Page numbers included on page footer
- Introduction starts with page 1
- Chapters and sections numbered
- Main matter divided into two or three levels
- All paraphrased information referenced
- All quotes given with “ and referenced
- References in the main matter given in Havard/Anglia style
- Reference list in Harvard/Anglia style
- All entries in the reference list referred to in the text

Appendix requirements

- Appendices numbered
- Appendices referred to in the text
- Page numbers start with 1 for each appendix