NTNU – Trondheim
Norwegian University of
Science and Technology

Project and Master Theses

How to write your report?

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Schedule

You must submit the final version of your report by mid-December

Slow and steady wins the race

The Tortoise and the Hare (Esope/Lafontaine)

To whom is your report addressed?

You are writing your report:

1. For yourself.
   - It is an excellent way to **clarify, structure and synthesize your ideas** about your project.
   - → You should **start writing** your report the **very first day** you start working on your project.
2. For your professor(s) and advisor(s).
   - They have to read dozens of similar reports.
   - → Your report must contain all **relevant information**, but just relevant information. Moreover relevant information should be **easy to access**. Remember: elegance is when nothing can be removed.
3. For the world and beyond.
   - Including people who are not fully aware of the context of your project,
   - ...and people who have good tools to detect **plagiarism**.
   - → You will **publish** your master report (no right to oblivion).

The Three Levels of Reading

Level 1: Reading on the lines (literal)

- Readers find meaning directly in the text. They should be able to literally put a finger on information.

→ Importance of **summary & conclusion**

→ Importance of **context diagrams, equations, algorithms, tables of results**…

Level 2: Reading between the lines (inferential)

- Readers interpret what is in the text.

→ Importance of **concise and complete descriptions of experimental protocols**.

inputs → experiment → outputs → interpretation

Level 3: Reading beyond the lines (evaluative)

- Readers move beyond the text to connect to universal meaning.

→ Importance of section(s) on **related works**, **references**…

Writing Process

Your report is a living material:

- Don’t expect to write the final version immediately.
- Define the structure first, but don’t hesitate to reorganize it later.
- Don’t hesitate to put paragraphs, quotes, citations as they come from your readings and discussions.

Your report is a good support for the discussions with your professor(s) and advisor(s):

- Keep track of its successive versions (together with dates).
- Name it so that everyone can know what it is.
- Use different styles or any other trick to classify what is what (parts you are rather confident in, open questions, to-do lists…).

It's better to leave well enough alone:

- Normally, you’ll be awfully short of time…

Some Requirements

The report must be structured and written as a **scientific report**.

→ It must be written in English (either UK or US English – not a mixture).

→ It must be no longer than **60 pages** (including preface, references, and possible annexes).

You should follow the style in **thesis.pdf** (see **RAMS wiki**, https://www.ntnu.no/wiki/display/ross/RAMS++wiki).

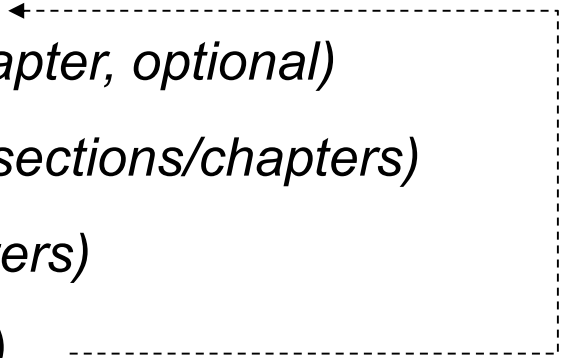
→ A **template** has been made for LATEX users. If you choose to write in Word (or any other word processor), you have to make your own style as similar to thesis.pdf as possible.

→ Guidelines to the various elements of the report are given in the template, so **please read thesis.pdf carefully**.

→ A brief writing guide is provided as part of the RAMS wiki.

Typical Organizations of Scientific Articles

- Summary & Conclusions *(abstract)*
- Introduction *(one section/chapter)*
- Motivating Example *(one section/chapter, optional)*
- Conceptual Developments *(several sections/chapters)*
- Experiments *(several sections/chapters)*
- Related Works *(one section/chapter)*
- Conclusion & Future Works *(one section/chapter)*



Summary & Conclusions

The “Summary & Conclusions” shall give a **brief presentation** of **what you have done** and **what you have found out**.

→ It must be written as an **executive summary.**

→ It must be written in an **“easy” language** without difficult terms and abbreviations.

→ It must be **self-contained** with no references to the main report (and no reference to not absolutely essential documents).

→ It must be **no longer than 2~3 pages**.

Imagine that you have been asked to pitch your work by giving a three-minutes presentation of your work to the rector of NTNU

Introduction

1. Background
   - What is the **problem**? How serious/important it is?
   - Brief survey of **what has been done** previously to solve it.

   → Citations of the most important related works
2. Objectives
   - Brief description of the **particular context** (physical, operational, environmental) of your work
   - Brief description and justification of **your approach**
3. Contributions
   - Brief description of the (main) **contributions** of your work
4. Structure of the report
   - Verbal description (no bullet list) referring to objectives (2) & contributions (3).

Motivating Example

It is often very useful to have a **red-wire example** to illustrate your work and that you can discuss throughout the report.

- It must be **not too small** (otherwise it won't illustrate anything)
- It must be **not too big** (so that the reader can grasp it)
- The description must be as **clear** and as **complete** as possible (ideally the reader should be able to reproduce your experiments on this example).
- The description should avoid technical terms (that will be defined later).
- **Images**, **Drawings** & **tables** are very welcome here

Conceptual Developments

Recall that any scientific work should follow and refer to the

hypothetico-deductive method

Hypotheses → Experiments → Deductions

- Define each and every **technical term** you use.
- Illustrate each definition by means of **examples** (preferably taken from your red-wire example).
- Refer to the **relevant literature**.
- Make what comes from the literature and what comes from you explicit.
- Make your **hypotheses/assumptions** explicit.
- Highlight definitions, hypotheses, theses, theorems…

Experiments

Experimental Protocols

- An experiment, would it be just a mind experiment (such as a literature review), is worth only if its **experimental protocol** is clearly defined.
  - Inputs (tables, drawings…)
  - Experiment (description)
  - Outputs (tables, charts…)
  - Conclusions (discussion on the possible biases)

Volume Elements

- It is of primary importance for the reader to understand how your conclusions **scale** to “real-life”.
  - Number and size of the inputs
  - Resources (time…) consumed

Related Works

The objective of this section/chapter is to **compare** your work with the **state of the art** in the domain.

Citations (**Bibtex** strongly suggested):

- Authors' names (with complete first and middle names)
- Title of the article/book/document
- Book name or journal name (with volume, number, issue), editors (if any)
- Publisher (with address)
- Page numbers
- Month, year of publication
- ISBN (for books), ISSN (for journals), DOI.

[1] Mauricio Abadi and Luca Cardelli. A Theory of Objects. Springer-Verlag. New-York, USA. ISBN 978-0387947754. 1998.

[2] David Harel. Statecharts: a visual approach to complex systems. Science of Computer Programming. 8:3. pp. 231-274. June, 1987. doi:10.1016/0167-6423(87)90035-9.

Conclusion and Future Works

1. Summary
   - Recall what where the objectives of your work and your approach to achieve them (in reference to introduction)
2. Discussion
   - Tell honestly to which degree you have been able to meet your objectives, and why
3. Perspective
   - Put your work and your findings in a broader context.
4. Suggestions for further works.
   - List of topics that could be subject to further works.
   - Must be in relation with the discussion (2)
   - Be as specific as you can!

Text Processing Tools

We recommend strongly to use:

- **LaTeX** to author documents
- **BibTex** to manage references

- If you are using LaTeX and BibTex, don't use too exotic packages. Keep your document as standard as possible.
- If you are using Word, use styles, don't format your document manually (by introducing spaces, lines…)