




Practices to create and write exercise work reports etc.

Learning outcomes: how to use MTG or MTWI (Master's Thesis Guide, Master's Thesis Guidelines or Master's Thesis Writing Instruction) and **Template** to create and write exercise work reports, and how to use references AND how to study

TIMO KOKKONEN


timo.kokkonen@oulu.fi



For Example: Wireless Communications I Laboratory work 2019



- You MUST follow the **Master's (Diploma) Thesis Writing Instructions = MASTER'S THESIS GUIDELINES (GUIDE)**
 - <http://www.oulu.fi/eeng/node/6987>
 - www.oulu.fi/cwc/node/16411
- Concentrate especially:
 - If you have a figure or a table, use numbering, and all of these need to be referenced to in the text body also
 - Every equation must have a number and it should be a part of complete sentence (such as figures and tables also)



For Example:

Wireless Communications I

Laboratory work 2019



- **References markings (citations) inside the text body must be used (this is important), as that is one of the most fundamental principles of scientific writing**
- Other important aspect is the completeness of your report, i.e. it should be possible to read and understand your report as such without reading the instruction paper
- **The extent of your report will naturally be narrower than thesis, but practicing before real Diploma (Master) thesis writing is important**

For Example:

Wireless Communications I

Laboratory work 2019



- Evaluation (2019)
 - A report will be evaluated on scale 1 to 5 or Fail. In the final grade of the course, the weight for the examination is 0.6 and that for the design work report 0.4.
 - 5 = A report needs to demonstrate (= you have written **excellent** theory enough and explain to results through the theory **clearly**), that you have understood **all** of the mechanisms behind the result, and you have **answered all the tasks** (= questions) **right**. You have followed MTWI (= used Template given in Moodle) **exactly**. All group members have given **excellent** self-evaluation and feedback.
 - 4 = A report needs to demonstrate (= you have written **good** theory enough and explain to results through the theory), that you have understood **the most of** the mechanisms behind the result, and you have **answered all the tasks** (= questions) right (**1 or 2 minor mistakes are allowed**). You have followed MTWI (= used Template given in Moodle) **almost exactly**. All group members have given **good** self-evaluation and feedback.

For Example:

Wireless Communications I

Laboratory work 2019



- Evaluation (2019)

- **3** = A report needs to demonstrate (= you have **written theory** enough and explain to results through the theory), that you have understood **almost the most of** the mechanisms behind the result, and you have **answered all the tasks** (= questions) right (**2 or 3 mistakes are allowed**). You have followed MTWI (= used Template given in Moodle) precise enough. All group members have given self-evaluation and feedback.
- **2–1** = A report needs to demonstrate (= you have written **some theory** and **tried to explain** to results through the theory), that you have understood **the some of** the mechanisms behind the result, and you have answered **almost all the tasks** (= questions) right (**4 or 5 mistakes or are allowed**). You have followed MTWI more or less. All group members have given **only short** self-evaluation and feedback.
- **Fail:** If your report **fails to answer** the required tasks and questions (**6 or more** mistakes) of instruction paper, there are **significant misunderstandings**, or you **have not followed MTWI** at all or there are **no self-evaluation and feedback**. In this case, a failed project (report) needs to be corrected.
- **ALL REPORTS MUST BE “UNIQUE”**, if there are plagiarism => **FAIL** and some other consequence!



Practice makes perfect!

- More or less every Report has to be written by using the same rules (MTWI)
- And finally you will write your **REAL Thesis** by using the same rules
 - Of course the instructions must be followed even more closely then
- → You need to know **how to use (correct) Template** and you need to **READ and UNDERSTAND Master's Thesis Guide before that**
- And may be you want the continue as a researcher
 - you need to know how to write technical articles and so on

Master's Thesis Guide – some of the most important issues



- [Master thesis guidelines](#)
- [Master Thesis Word template](#)



List of abbreviations and symbols

- All abbreviations and symbols used in the thesis have to be listed on this page
- You also have to **explain all abbreviations and symbols when they first appear in the text**
- You should first explain all abbreviations, then mathematical (and other similar) symbols, so that Latin, Greek, etc. letters are all grouped separately



The Linguistic Style

- The aim is a clear and well-structured thesis, without unnecessary excessive use of words – **a thesis** usually has 40-100 pages
- The language (**English/Finnish/Swedish**) should be fluent and readable, and it should adhere to the conventions and recommendations applied in a particular language



Typography

- A lot of rules → **USE TEMPLATE**
- Heading (chapter title) numbering without a point at the end
For example: 1. → 1 or 2.1. → 2.1
 - Then Font, Paragraph settings, Spacing, and so on will be right
 - On the other hand: **DO NOT change anything!**
 - Font: Times New Roman
 - Paragraph settings:
 - Left indentation: 2,5 cm
 - Right indentation: 2,5 cm
 - Right indentation: 2,5 cm
 - Lower margin: 3,0 cm
 - Spacing:
 - Before a heading: 2 empty rows
 - After a heading: 1 empty row
 - Between two headings: 1 empty row



Typography

- Line spacing: the default value for each font size, which is usually the font size + 2 pts
- 1 empty row should be left between chapters. The 1st paragraph after a heading should not be indented
- Subsequent paragraphs should be indented **by 0.5 cm**
- 1 empty row should be left between text and caption text
- Table structure and the different fonts used in different instances are explained in Table 1
- **In tables, the table heading has to be placed above the table**
- **The table heading should not end in a full stop**
- **The figure caption text is situated underneath the **figure** and the caption text ends in a full stop**
- There should be no references in a caption text
- The first page number to be printed on the page is after the title Introduction
 - Numbering is by Arabic numerals, page numbers are placed at the top right hand corner of the page
- AND some other rules (look at the Guide)



Formatting the figure captions

- Figures, tables and appendices are a part of the written presentation
- All these need to be referenced to in the text body, preferably before the figure is placed in the text – i.e., first the referring text, then the figure or table
- Figures and tables have a running number through the document – or chapter wise, if there are plenty of figures
- According to the copyright enactments, you must always have the permission of the publisher to display a figure from its origin
 - The writer should grow towards to mainly using figures of his own **in the thesis**
 - **In the Report this is not critical (it will be seen only the Teacher)**



Write simply

- The first sentence of a paragraph should define its contents
 - The following sentences clarify the issue
- **Reports:**
 - Answer all the questions
 - Write only the theory you will need and use (or it is asked)
 - Use your own words!
 - Less is more!
 - But if you have to calculate something, just an equation and final answer is not enough
 - ➔ you should mark “your thinking visible”



Write simply

- However, you should avoid unnecessary writing-up, i.e., the theory you present should be closely linked to the focus of your thesis (or the tasks of the Report).
- You should also notice that many thesis do not have a separate theory section at all
- **Hence you do not have to include a theory in your thesis, unless the theory fits directly into your overall research goal(s) or is needed in the work**



Equations

- There are a lot of instructions in the Guide (read those at least before real Thesis)
 - For example: The mathematic variables and symbols used in equations should be italicized. Vectors should be italicized in bold. Numbers, units, and sub-indices or subscripts should not be italicized (sub-indices or subscripts that include symbols of equations should all be italicized). Greek letters should not be italicized.
- **Every equation should be a part of complete sentence**
- Equations should be numbered by applying **running numbering, from the beginning to the end** of the thesis
- The numbering should take place at the right side of the equation in parentheses (= round brackets)



Equations

- You should refer to the equation in the text by referring to the number of the equation, e.g.: "As seen in Equation (1), the..."
- An example: In steady movement, speed v is

$$v = \frac{s}{t}, \tag{1}$$

where s is the distance and t the time travelled [x].

- Remember also reference markings, unless you have derived the equation yourself



References

- The literature survey should be close to exhaustive, and this means that **most of the information you present is taken from references**
- **If a piece of information is not derived or devised by you, it is borrowed, and the origin of the information must be stated**
- Presenting somebody else's finding as your own is a scientific theft (plagiarism) that has serious consequences
- You should refer to original sources of the data – for example, to a book and not the handouts made based on the book
 - It is not so important in Reports – you are just practicing
- Be careful when referencing: the things you state really need to be found from the reference



References

- The references are **mostly cited in your own words**, and **direct quoting is used only if you want to emphasize the source**
- **In this case you place the quote in hyphens**, for example saying that the exact phrasing of Moore's law is of form
 - “The complexity for minimum component costs has increased at a rate of roughly a factor of two per year.” [x].
- You should apply a running numbering for referencing and present your reference sources in your bibliography **in the order in which they appear in the text**



References

- The last name of the author should be written first, followed by the initials of the author's first names
- **Reference in the text should be indicated with a reference number, e.g., [1] or [1, 2, 5]**
- **When a reference or quote applies to the single sentence, the reference is placed at the end of the sentence before the full stop**
- **If the reference supports the entire paragraph, the cite is placed at the end of the paragraph, after the last full stop**
- Acronyms should be written in capital letters, irrespective of how it is written in full
- Abbreviations should be indicated with a full stop at the end
- Names of publications in the bibliography should be written out in the language of the publication
- The way in which you present your references in the bibliography can best be exemplified by the examples which you can find from the Guide



Example: BPSK

X. REFERENCES

[1] Wikipedia (read 6.10.2016) Phase-shift keying. URL:
https://en.wikipedia.org/wiki/Phase-shift_keying.

[2] Sklar B. (2001) Digital Communications, Fundamentals and Applications. Prentice Hall PTR, New Jersey, USA, 1079 p.

- Write only the theory you will need (or it is asked)
- **DO NOT USE COPY and PASTE!**
- **Write what you need (and only that) by using your own words**
 - **YOU WILL LEARN!**
- Don't copy and paste equations; if you really need one, write it for yourself
 - Remember that you have to **explain all the symbols when they first appear in the text AND**
 - All symbols used have to be listed and explained on the page "List of Abbreviations and Symbols"
- Mark the reference in the Text [X] and the References page (look at slide 18 and the top of the this slide)
 - [Template](#)



WHAT SHOULD YOU DO TO LEARN?

- Be prepared well in advance!
 - check out the material **AND** instructions in advance
 - read and practice
 - follow teaching, make notes
 - read and practice
 - read and **practice**
 - use the help of your friends (study together)
- **Be on time at right place!**
- **Plan your time!**
 - How many hours per week you have to study?
- **DO LEARNING THINKS!** <= what is this?
 - www oulu fi /forstudents/studyskills-and-competences
 - [Improving Study Skills and Competences](#)