Tips for Organizing, Writing and Presenting Your Master Thesis[1]

1 Tips for Organizing and Writing Your Master Thesis

The thesis is organized into the following parts, and some of them are optional.

Except for the title page and abstract, *all pages are numbered in sequence, with arabic numerals in center of bottom margin.* Except for the references, abstract, tables, and figure legends (which should all be single-spaced), *the text should be double-spaced.* Leave 3 cm for the left margin and 2,5 cm for top, right, and bottom margins.

1.1 Title Page

A title page must follow the format of Appendix 1 and Appendix 2 (for students enrolled from A.Y. 2017/18) exactly without omitting any parts. The title of the thesis, usually no longer than two lines, must contain precise lexical references to the content, "To facilitate the elaboration of lists of titles, indexing and retrieval of information" (UNI ISO 7144, par. 7.3.1).

1.2 Abstract

Write this last! The abstract is a very important part of the thesis which will be certainly read by the members of the examination board and by anyone who will read the thesis: it aims to present the work done and the results obtained in order to allow the potential reader to decide whether to read at least the introductory chapter. It should be placed in the middle of the second page and should not exceed 20 lines.

1.3 Table of Contents

The table of contents includes the chapters, sections and appendices headings of the text, references and the pages on which they can be found. The table of contents organization should reflect that of the text, also in a spatial sense: so if in the text the Section 1.2 is a breakdown of Chapter 1, this will be evident also in terms of alignment. An example is given in Appendix 3.

[1] Edited by Antonio Albano.

1.4 Introduction

Write this second to last! The introduction leads the reader into the subject. It is the part of the paper read with curiosity and attention by all those who have found the abstract interesting. It is usually organized into three sections:

1. **Presentation of the problem**, which introduces the reader to the problem faced by describing clearly the context in which it appears and states its relevance to the thesis.

2. **Literature review**, which explains and summarizes the most significant works consulted and outlines their specific contributions to the solution of the problem issues that will be examined in the thesis.

3. **Thesis content**, which presents the objectives of the thesis and, in a few lines, the content of the chapters with the aim of anticipating, clearly and concisely, what was done, why and with what results. In this way, it provides a 'road map' of the work ahead.

If the introduction is brief, the division into sections may be omitted.

1.5 Body of the thesis

The body of the thesis must be organized into chapters, sections and subsections (with the numbering that does not end with a dot) each with its own title flush left, in the following formats:

1 FOR CHAPTERS USE CAPITAL LETTERS IN BOLD

1.1 For the main sections to use lowercase letters in bold

1.1.1 For secondary sections use lowercase letters bold

For unnumbered sections, use lowercase letters in bold

All the sections shown above are not necessary.

1.5.1 Writing Suggestions

A chapter should start with a brief summary of its content and end with a concluding section that summarizes the issues addressed. The text should be typed double space. A section is a collection of paragraphs. A paragraph is a collection of related sentences dealing with a single topic.

> *A first-line indent is the most common way to signal the start of a new paragraph, different from the first one. The other common way is with space between paragraphs. Using both is a mistake: once you have made a choice comply with this.*

The text should be typed double space. Make a discreet use of styles; in particular avoid extremes like colorful characters, edged and shaded, which usually make the text unreadable, and use few sources: one for the text (e.g. Times) and another for the mathematical symbols.

The basic rule of thumb with paragraphing is to keep one idea to one paragraph. You can also have several points in a single paragraph as long as they relate to the overall topic of the paragraph. it's like talking to a certain point and then we stop to say "Got it? Agree? Well, then we continue". Once everyone agrees, your new ideas will start in new paragraphs.

Some suggestions for writing a well-organized text:[2]

- "The thesis is a work that for occasional reasons is directed only to the supervisor or co-supervisor, but it is supposed to be read by others, even not familiar with the topic area. ... So, as a general rule, define all technical terms used as key categories of our discourse, unless they are not canonical and undisputed terms of the discipline in question."

- "*You are not Proust.* Do not write long sentences. If they come into your head, write them, but then break them down. Do not be afraid to repeat the subject twice, and stay away from too many pronouns and subordinate clauses."

- "*Begin new paragraphs often.* Do so when logically necessary, and when the pace of the text requires it, but the more you do it, the better."

- "*Write down everything that comes into your head, but only in the first draft.* After you will find that the emphasis took your hand and you moved away from the center of your subject. Then subtract the parenthetical parts, digressions, and include them in a *footnote* or *appendix*. The thesis has to prove a hypothesis that you have worked out from the beginning, not to show that you know everything."

[2] U. Eco, *Come si fa una tesi di laurea. Le materie umanistiche*, Tascabile Bompiani, Milano, 1977. English edition (translated by Caterina Mongiat Farina and Geoff Farina): *How to Write a Thesis*, MIT Press, London, 2015.

- "*Use the supervisor as a guinea pig.* You have to make sure that the supervisor read the first chapters (and then gradually throughout the rest) very early on the elaborate delivery. His reactions will serve you. If the supervisor is busy (or lazy) use a friend. Check whether someone understands what you write. Do not play at solitary genius.

- "*Do not persist to start with the first chapter*"

- "*Do not explain where Rome is without then explain where Timbuctu is*".

- "*Should we use "I" or "we"?* Should our own opinions be introduced using the first person in a thesis? Must be said "I think that..."? Some think that it is more honest to do that than to use the *magisterial plural*. But I don't think so. The form "we" is used because we presume that what we are saying is shared by our readers...".

No plagiarism
Do not make the work of others look like your own. Give credit where it is due.

Abbreviations
Abbreviations should generally be avoided. However, it is appropriate to use standard abbreviations sometimes in scientific writing. For the first reference to a term in the text, the term should be used in full with the abbreviation included in brackets. For the remainder of the text the abbreviation should be used. However, abbreviations should not be used in the abstract or in the title.

Chapter and section are not abbreviated as 'ch.' and 'sect.', and they are capitalized, if they are accompanied by the number to which they refer (e.g.: see Chapter 3, or Section 3.4).

'For example' may shorten to 'e.g.' only in parentheses, never in the course of the text.

The abbreviations of measures are considered to be symbols and do not require the end point (m = meter, km = kilometer, Kbyte, and *not* Kbytes, Mbyte).

Italics
There are three common instances where italics should be used: a) words in a foreign language, b) when a new term is introduced in a scientific essay, it

is common practice to write the word in italics upon first use. When readers see a term in italics, they automatically know this is the first time the word has been used and should therefore pay attention to its meaning. c) when measures of quantity or a mathematical constant are written.

Numerals
Numbers can be written either as words (e.g., one hundred) or numerals (e.g., 100). The basic rule is to use words for numbers from zero through nine, and then numbers from 10 onwards. However, there are some exceptions: for example, use words for any number that is used to start a sentence, with the exception of years; use numerals for numbers from zero to nine that are followed by a precise unit of measurement.

Punctuation
A footnote reference goes after the full stop or comma. Do not leave space **before** a punctuation mark, **before** a closing parenthesis or **after** an opening parenthesis, but leave the space **after** a punctuation mark.

Figures and tables
Figures and tables have header and distinct double numbering (the first number represents the chapter) such as: Figure 5.12 Caption or Table 4.15 Table title. In the text they must **always** be recalled capitalized, such as: "... as shown in Figure 5.12.", not "as shown in figure 5.12.". Abbreviations are allowed only in brackets, but capitalized. such as: "... as shown in the graph (Fig. 3.5) ..."

1.6 Conclusions

This is a very important section. Carefully review what you have done, and what your results have been. Possibly give indications on the parts that deserve further investigation.

1.7 Acknowledgements (Optional)

If funds were provided which allowed you to carry out your work include the sentence: "The work described was sponsored by ...".

Also, if you received a significant amount of help from someone, you may mention his name here, and if you want, you can express your appreciation for the support of your family and friends.

1.8 Appendices (Optional)

1.9 Bibliography

You have to supply a *complete* reference list at the end of the thesis, **in alphabetical order of first author's surname**. Do not provide references in footnotes or endnotes. There must be a reference for every citation in the text; and the spelling of the author's name and the publication year must match between the text citation and the reference entry. Multiple citations between parentheses must be in either chronological or alphabetical order.

> *In the following examples of references*, it **is in italics** *what must go in italic*, it **is in quotes** *what must go in quotes*, **there is a comma** *where a comma is needed* and **there is a parenthesis** *where a parenthesis is needed.*

- **Reference to a book**

> Author, *Title of book*, Edition number if different from the first, Editor, Place of publication, Year of publication.

For authors write the last name first and then the initials of the name. When the authors are two, you show both in the order they appear on the book, separated by commas; when they are more than two you may show all or only the first, followed by the words "and others".

[Goldberg 83] Goldberg A., and Robson D., *Smalltalk80: The Language and its Implementation*, Addison-Wesley, New York, 1983.

[Gatto 87] Gatto A., and others, *History of Thai Literature*, Garzanti, Milano, 1987.

- **Reference to a journal article**

> Author, Title of article, *Name of Journal*, Volume, Number, Year, Pages containing the article.

[Atkinson 83] Atkinson M.P., Bailey P.J., Chisholm K.J., Cockshott W.P., and Morrison R., An Approach to Persistent Programming, *Computer Journal*, Vol. 26, N. 4, 1983, pp. 360-365.

[Borgida 85] Borgida A., Features of Languages for the Development of Information Systems at the Conceptual Level, *IEEE Software*, Vol. 2, N. 1, 1985, pp. 63-73.

- **Reference to a book chapter, conference proceedings**

  Author, Title of article, in: *Title of book or conference*, Volume editor (ed.), Volume (if any), Place of publication, Publisher (if any), Year of publication, Pages containing the quoted part.

[Copeland 84] Copeland G., and Maier D., Making Smalltalk a Database System, in: *Proc. ACM SIGMOD Intl. Conf. on the Management of Data*, New York, ACM, 1984, pp. 316-325.

[Nierstrasz 87] Nierstrasz O.M., What is the 'Object' in Objectoriented Programming, in: *Objects and Things*, D.C. Tsichritzis (ed.), Centre Universitarie d'Informatique, University of Geneva, 1987, pp. 1-13.

[O'Brien 86] O'Brien P., Bullis B., and Schaffert C., Persistent and Shared Objects in Trellis/Owl, in: *Proc. International Workshop on Object-Oriented Database Systems*, K. Dittrich and U. Dayal (eds.), Asilomar, Pacific Grove, California, September 23-26, 1986, pp. 113-123.

- **Reference to a technical report**

  Author, Title of report, Code (if any), Place, Year of production.

[Smith 81] Smith D., Fox S., and Landers T., Reference Manual for ADAPLEX, CCA-81-02, Computer Corporation of America, January, 1981.

- **Reference to a lecture notes**

  Author, Title, Lectures notes of ..., University, Year.

[Albano 09] Albano A., Lectures notes of Databases, University of Pisa, 2009.

- **Reference to a web page**

  Author (if any), *Web page title*, Year of the web page creation (if any), <URL>, Date of the visit.

Avoid typing the URL over several lines. If not possible, split it after a " / ".

[HDI 07] *History – Dipartimento di Informatica*, <http://www.di.unipi.it/Faedo/>, 25 Giugno 2007.

[Smith 97] Smith M. K., Lord Shaftesbury and Ragged Schooling, 1997, <http://www.infed.org/walking/wa-shaft.htm>, 14 Giugno 2007.

The works cited in the bibliography are all cited in the text, using the name of the first author and the work date, in square brackets. If two works by the same author have the same date it goes like this: [Author 99a] [Author 99b].

2 Tips for Presenting Your Master Thesis

The presentation usually lasts 15-20 minutes. By estimating that the maximum number of slides is equivalent to the number of minutes of the presentation, in the time available you can present about 15-20 slides, maximum. It is suggested to prepare a few more, but you must then be prepared to "skip them" when the chairman of the examination board note that a few minutes are missing at the end of the presentation, and then allow time for some questions from the examiners.

The presentation of the thesis should be organized keeping in mind that some examiners may not necessarily be experts on the problem being addressed. Therefore, they may not be able to follow parts of the presentation on specific topics, but *the candidate should let them understand the problem and the approach to solve it.*

For this reason it is suggested to start the presentation of the thesis with a **first slide** that contains:

1. the title of the thesis,
2. the name of the candidate,
3. the list of the chapter titles.

The purpose of this slide is to present, through the title, the content of the thesis (as if you read his summary that, if it has been prepared well, is the best debut) and, using the list of chapters, their contents in a nutshell, an indication of whether the work was carried out at external structures or during an internship at a company, recalling the name, the profile and the functional area. After the presentation of this first slide, because you usually do not have time to present the content of each chapter, the candidate's precise on what aspects of the thesis will focus the rest of the presentation.

Remember that to make a pleasing presentation, it must be done talking slowly, thus preventing the illusion of being able to tell more things about the work done. The presentation is more successful providing it is understandable and focused on only some of the issues addressed, do not overdo it with details that interested parties will find in the thesis itself.

The **second slide** should be a summary of the introductory chapter of the thesis, which should be a short presentation (a) the importance of the problem addressed, (b) the references to the main work of other authors on the subject, (c) of the candidate's contributions.

As in the text of the thesis it is important the summary and the introductory chapter to give an idea of the work done, so in the presentation of

these two slides you must first make clear to all present the idea of the work done and the reasons for his interest, also using about a third of the time available.

The **next slides** must present some of the points developed in the thesis and deemed significant by the candidate, without pretending to go into details, but dwelling on ideas and why they are interesting, challenging, useful and so on.

If in the work has been used a different technology than that used in the current study, it is interesting to give a brief presentation.

One or more slides is well worth taking the conclusions, with which they remember the main points of the work, the time required, the eventual implementation activities and the status of implementation, the aspects worthy of study. Remember that, as it happens at conferences, usually those present remember of the presentation the introduction, the reasons for the work, and the conclusions. On this basis then decide whether to read the rest of the work.

The task of the chairman of the examination board is to check that the presentation does not last too long, so that the examiners may ask questions, very useful to give a more complete assessment of the candidate, based on the answers received.

2.1 What to do

First of all it is good to prepare a printed version of the slides for the examiners, which is essential to make the presentation in case of malfunction of the technology you want to use.

Then consider the following tips:

- If you use your laptop, remember to turn it on before the start of the presentation.
- To improve the readability of the slides use characters of 18 points or never below 14. Highlight (boldface, italicize) important points.
- Give a short title to each slide.
- Put few points per slide. Do not show something on your slides which you will not refer to or explain verbally.
- Use at most three colors per slide: too many colors can become confusing, and a lack of contrast between text and background can render a presentation unreadable.

- Speek freely and do not read from notes.
- Always look at the audience. Hint: select some few persons, distributed in the room you look to "in a circle", one after the other and starting from the beginning again.
- Foresee some slides after the final one with details about the most important activities in order to answer examiners' questions.
- Make home a *rehearsal* a few days before the presentation to simulate and control the required time.
- In the discussion answer questions as precisely as possible. While answering look at the person raising the question.
- If you do not understand the question kindly ask for a repetition.
- If you do not know an answer at all, do not speak about something else, simply say that you do not have an answer for that question.
- In case an answer can be supported by one of your slides: select that slide for presentation before you give the answer.

2.2 What to avoid

The following list, which does not claim to be exhaustive, gives examples of presentation mistakes to avoid...

- Use of too many slides presented in rapid succession.
- Speak quickly.
- Dwell on too many details.
- Make a presentation without a clear structure.
- Use of too many animations.
- Use of too small or too much text on each slide.
- Use of complex examples to show some important concepts.
- Examples given on the spot.
- Go back and forth through your slides multiple times.
- Wrong presentation time: better short than too long, and so that the presentation will be interrupted.

Appendix 1: Example of Thesis Title Page for Students Enrolled up to A.Y. 2016/17

UNIVERSITY OF PISA
Department of Computer Science
Corso di Laurea Magistrale in Informatica per l'economia e per l'azienda
(Business Informatics)

MASTER THESIS

TITLE

SUPERVISOR
Prof. Name SURNAME

CANDIDATE
Name SURNAME

ACADEMIC YEAR 2013-14

Appendix 2: Example of Thesis Title Page for Students Enrolled from A.Y. 2017/18

UNIVERSITY OF PISA
Department of Computer Science
Master Degree Programme in Data Science and Business Informatics

MASTER THESIS

TITLE

SUPERVISOR
Prof. Name SURNAME

CANDIDATE
Name SURNAME

ACADEMIC YEAR 2018-19

Appendix 3: Example of Table of Contents Page

CONTENTS

Note that titles do not end with a point and page numbers are aligned to the right and not the left.