

Guide on writing your Bachelor's or Master's thesis

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Contents

| | | |
|----------|---|----------|
| 1 | Formalities | 2 |
| 1.1 | Registration of the thesis | 2 |
| 1.2 | Requirements and optional matter | 2 |
| 2 | Important things to know | 2 |
| 2.1 | How many pages do i need to write? | 2 |
| 2.2 | Referencing the literature | 3 |
| 2.3 | Non Disclosure Agreements (NDAs) | 3 |
| 2.4 | What should i focus on? | 3 |
| 2.4.1 | Font, font size and other matters of appearance | 3 |
| 2.4.2 | Pictures and diagrams | 4 |
| 3 | Example Thesis | 4 |

1 Formalities

1.1 Registration of the thesis

The following steps have to be completed to register your Bachelor's- or Master's thesis:

1. Download the form for registration of the thesis from the homepage of the examination office.
2. Fill the form with your personal data. Do not provide data concerning topic, company and supervising professor yet.
3. Take the form to the examination office and let them confirm that you are entitled to start your thesis.
4. Decide on a topic either in corporation with a company or a professor.
5. Meet your supervising professor (first examiner) and continue filling the form.
6. Submit the form to the head of your course of studies.
7. The head of your course of studies forwards the form to the dean of the faculty. Your registration process is complete.

1.2 Requirements and optional matter

The following things need to be present in your thesis:

- Table of contents
- Statement of authorship, signed personally
- Abstract
- Conclusion and outlook
- Bibliography

The following things are optional:

- Acknowledgments
- Index/list of abbreviations: Can be very useful if you are using lots of uncommon terms and/or abbreviations
- List of figures
- List of equations

2 Important things to know

2.1 How many pages do i need to write?

This is the most often asked question by students, but unfortunately there is no adequate answer. This is due to the fact that the amount of pages is no indicator to the quality of a work and also largely depends on the topic itself you are working on.

That being said, try to stick to the rule: "As much as needed, as less as possible". For example, there is no need to explain Ohm's law or Newton's equations of motion.

Try to start making explanations from a point onwards, where generally technically involved people might need those explanations. Do not take professionals working in that field as a reference for choosing that point. Rather, try to imagine yourself, what information would be needed in order to understand the matters. It is not easy because you are involved in the topic, so try to go back some stairs, but not too many.

2.2 Referencing the literature

This is very important! You have to cite every foreign idea and text passage that you adopt in your work. If you fail to do so, especially multiple times, this will likely result in a failed thesis, in which case you can repeat it once, just like with every other examination.

Be especially careful with quoting whole passages of text. These have to be enclosed in quotation marks and the reference needs to be in close proximity. Be advised that it is usually very easy for the examiner to spot copied text passages. The deviation in writing style is more striking than you might think. And we are able to use Google as well.

2.3 Non Disclosure Agreements (NDAs)

Sometimes companies ask for the signature of such documents whose purpose is to regulate treatment of confidential material. Never sign such contracts without prior discussion with your supervisor. Many professors refuse to sign company imposed NDAs. There is a generic NDA available from Hochschule Ravensburg-Weingarten upon which the company and the supervisors might agree.

2.4 What should i focus on?

The following recommendations are largely influenced by my flavor, so it is usually a good idea to talk to your professor/supervisor about their own preferences. I encourage you to use L^AT_EX as a typesetting tool for your work, but the ultimate choice is left to you.

2.4.1 Font, font size and other matters of appearance

Not much preference here, so just take something usual. The properties of this document are:

- Font: Computer Modern which is similar to Times New Roman
- Font size is 12
- Line skip is 1,0
- Margins are 3 cm each direction, leaving approx. 15 cm text width

You might be tempted to increase the number of pages by increasing fontsize and/or line skip or reducing text width. But as i told you, the number of pages is not a quality feature for the thesis. And it is a cheap trick for everyone to see immediately.

2.4.2 Pictures and diagrams

These are very important for two reasons:

- They are the eyecatchers. Anyone browsing through your work will notice the pictures first. If they are looking nice, so will that person's attitude be towards your work. Very favorable.
- They convey a lot of information if done properly. Remember the saying "A picture is worth more than a thousand words"? Simply said, it is true.

As a rule of thumb, the time taken to prepare a picture or a diagram should be at least equal to the time taken by writing text occupying the same amount of space. In the case of nice diagrams, the time taken can be even a lot more than that. Pictures and diagrams are no cheap and fast way of filling up space in your thesis!

Another rule of thumb: Always use vector graphic based pictures if possible. The obvious reasons for that are grain-free display due to lossless resizeability and consumption of disk space. It is very annoying to have to look at pictures whose graininess almost avoids readability. If you have access to only bad raw material, try to redraw such pictures with a vector drawing program. Inkscape is an excellent choice for this.

One obvious exception is photographs, which cannot be vectorized. In that case you have to adjust the resolution to a value, which both prevents graininess and consumption of abundant disc space. Give it a try with 150-300 dpi in case of color images.

3 Example Thesis