Universiteit Utrecht
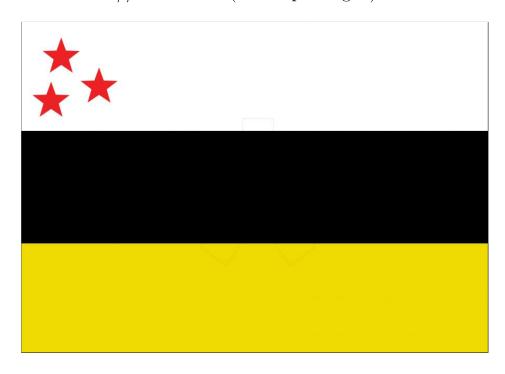
Your title

BACHELOR THESIS

Your name

Natuur- en Sterrenkunde // Wiskunde (en Toepassingen)

Supervisors:

Dr. First SUPERVISOR
First supervisor's Institute

Prof. Dr. Second SUPERVISOR
Second supervisor's Institute

Your Date

Abstract

This is a summary of what's happening here. Basically nothing, as this is a template. However; this is the place you would normally place your abstract. So that's nice.

Contents

The first text of the subfile.

1 First section

Like you can see, everything here is perfectly copied into the master file.

Subfiles are pasted right below each other, without any page-break. However, subfile 2 starts with a 'newpage', so we still see a page-break here.

2 Theorems and proofs

2.1 Not my theorem

Theorem 2.1.1 (Theorem of Someone Else)**.** *The unit sphere is not compact in l^2.*

Proof. The sequence $(1, 0, 0, 0, ...), (0, 1, 0, 0, ...), (0, 0, 1, 0, ...), ...$ does not have a converging subsequence so it is not sequentially compact hence not compact. □

Theorem 2.1.2. *This is a shorter theorem.*

Proof. Look at the source code. □

Theorem 2.1.3. *Adding a [title] is not necessary.*

Proof. Proof by lack of contradicition. □

Lemma 2.1.4. *This lemma keeps the same numbering as the theorems.*

Proof. Proof by picture: look at the number. □

Lemma 2.1.5. *The proof of this lemma will come later.*

2.2 More numbering

Lemma 2.2.1. *We now see that the 2nd number increased but the last number went back to 1.*

Proof.

Claim 1. The 2nd number increased.
We use a claim here, using the '\clm' command.

Claim 2. The last number went back to one.

□

Theorem 2.2.2. *This Theorem is very important!*

Proof. Although the equation

$$\boxed{E = mc^2}$$

is very important, this Theorem is even more important because it has a bigger box and more space around it! □

Remark 2.2.3. Whenever we make a claim in a proof, the claim counter starts back at one.

Proof. Proof by picture:

Claim 1. Here we see an one.

□

Claim 1. This is a maintext claim. Now the next claim after this will start with a two.

Remark 2.2.4. As a test, we do a proof with claim:

Proof. Proof by picture:

Claim 2. Here we see a two.

□

Remark 2.2.5. The effect only works for one proof:

Proof. Proof by picture:

Claim 1. Here we see a one.

$\square$

We did not prove the earlier lemma yet, so let's do that now.

Proof of lemma 2.1.5. Here be the proof of thy lemma. $\square$

3   A sample section with many citations

3.1   Here I refer to some stuff

Here I first cite an inbook [**inbook**]. I can also cite in a different matter[1], e.g. **inbook**. I will now cite an master thesis [**mastersthesis**], and even though the citation command is the same, the style might change (depending on your cite settings). Just look at all these mad citations referring to a booklet [**booklet**] and its author [**booklet**], a conference [**conference**] and an article [**article**]. You can do even more that this!

3.2   Here I refer to some other stuff

For in a collection [**incollection**] you can refer to a manual [**manual**] or a book [**book**] or a thesis written by a PhD student [**phdthesis**] or a master student [**mastersthesis**] and if that is not enough for you, then you can even cite some miscellaneous stuff [**misc**]. A technical report on something irrelevant [**techreport**] can also be cited, just like the proceeding for citations [**proceedings**] and if you are still unpublished [**unpublished**] you can even refer to that stuff.
Finally I refer multiple things at once: like this [**misc**, **phdthesis**] or this [**incollection**, **conference**, **techreport**] or, if you are introducing many new refs at once, like this [**inbook**, **mastersthesis**, **booklet**, **conference**] . As a final thing, I refer to the previous section, section 2.
Also remark that the autocite (which will change to what it thinks is best) [**reference**] and footcite[2] commands exist.

And if you really want to show everything? Use '\fullcite':
article

4   Tips & Tricks

If at a later time you run into some difficulties then we have some tips for you:

- The IBA has some very nice blogs in wich some usefull things are explained. You can find these blogs here or by clicking this link: `https://iba.a-eskwadraat.nl/`[3]. We explain how pictures are placed in LaTeX and what you can do if jou want to force it to be at a certain place. We have also talked about how you can make your own commands (very usefull!!!) and, if you happend to need pictures with a lot of boxes or arrows, then tikz can be very usefull for you.

- You have probably heard of the label command and probably used it a lot for equations and pictures, but you can also use it for sections!

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[1]Disclaimer: this only works for certain citing styles, see the preamble.
[2]**reference**.
[3]Unless this is printed, in which case you should stop trying right now

- If you want to define text like commands for the math environment then DeclareMathOperator is the command for you. You already know this structure from the sine and cosine commands, but you can also use this for things like $\arg(z)$ for a complex number inside the math environment. This command makes sure that 'arg' will be written straight and not in *itallic*. Check the code comment if you want to see how it works. The first argument is the command that you will type inside your math environment and the second command is the word you want to use like log or sin etc.

- We have already loaded the hyperref package for you. Hyperref won't do anything on paper, but is incredibly useful in your pdf, as it allows you to click any reference to immediately jump to the referred place. It is good practice to label every main section (labelsec:tipstricks) so you can refer to them.

- Use can use the listings package to display code, in your appendix for instance. Listings actually uses code files as input and displays them nicely. Listings isn't loaded in this file, but you can find and uncomment it in the preamble.tex file.

- Google is your best friend, be kind to it, and it will be kind to you.

A   First appendix

Appendix A test.
If you want the next appendix to start on a new page, use \newpage or \clearpage.

B   Second appendix

Appendix B works as well, as you can see. Note that using the appendix commando causes your sections to be lettered instead of being numbered. This is nice, unless you need more then 26 appendices; but if you need 26 appendices you have probably grown out of this template.

Some people prefer it if the pages for the appendices are numbered in Roman capitals instead; if you (or your supervisors) think so as well, move the 'backmatter' command in the thesis-file to the line above the 'appendix' command.