

Cooperation between student and professor for bachelor/master thesis

Robert Hek

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1 Introduction

You are heading the phase of writing your final Bachelor or Master thesis and consider getting supervised by the author of this paper (or another Professor)? Here are some guidelines regarding our cooperation from our first meeting to the final colloquium. Depending on whether you do your thesis at the HAW (internal) or in

industry (external) our collaboration will be a bit different which is indicated within the text.

1 Important disclaimer: This document handles no issues regarding formalities towards the faculty service bureau, FSB. It is your responsibility to mind deadlines, to provide required papers and so on!

2 Preparation phase

2.1 First informal meeting

(Internal projects only)

For students who are interested in an internal project for their thesis we meet at the beginning to have a first discussion on possible projects. The student indicates their field of interest, the professor shows one or more possible subjects.

This is an informal meeting and both sides take the time afterwards to decide if they are interested. The next step is to prepare a project assignment:

2.2 Project assignment

The *project assignment* (for internal and external projects) sketches the content of the planned project and is provided by the student, the professor or for external projects by the company. It is typically a single page covering the following three sections:

- Background of the subject
- Mandatory goals
- Optional goals

If you write this one-pager, imagine to explain the subject in a professional way to a fellow student who does not know your field of work.

Imagine this one-pager to be a contract between you and the project principal. By the tasks defined here you will be measured at the end of your project. On the other hand the professor will estimate the degree of challenge which also has an influence on the final grade.

2.3 Project agreement

With the project assignment we then get to an agreement by which we decide if we run the project together. Before you come to your decision you should have read this document and clarified all open questions.

2.4 Companies and their intellectual properties

Companies usually want to protect their intellectual properties and, hence, don't allow to share the thesis created in their context with others. The HAW is aware to this and included this into their regularities:

First, at registration of your thesis at the FSB you have to indicate whether the work will be done in a company. If so the work will not be published and kept closed for anyone except the examiners and some other staff members involved in the process.

Second, when delivering your thesis to the FSB you can refuse publication which again makes sure that only the examiners and some staff members involved in the process have access to your work.

Non-disclosure agreements (NDA), as requested by some companies, do not apply here

and will not be accepted from my side! Please clarify this before starting your project.

2.5 Time management

At the beginning of your project you are asked to do some time planning for your project. First, subdivide your project into major parts e.g.

- Orientation
- Specification/Design
- Implementation
- Verification/Validation
- Documentation

Second, subdivide the major parts into more specific tasks. E.g. for the major part *implementation* you may have:

- circuit diagram
- circuit board layout
- hardware implementation
- software implementation

Each task is planned with the expected workload in multiples of days (each day having app. 8 h). Summing up the workload should be approximately the total time for your thesis as given in the module description (three month for bachelor, six month for master).

An Excel-template for this plan is provided together with this document and may be used as a basis. However, other tools may be more usable for you.

After preparing this document you discuss it with your supervising professor who may give you some advice for a more realistic time planning. After this the time plan is left to you and you decide to what degree you use it as a tool during your project.

3 Running your project

3.1 The project work starts

After all formalities are cleared you start with the project work. Please bear in mind that it is you who is in charge for the progress of the project. It is not a lab as you did several times during your course just on a larger scale. There the assignment was prepared thoroughly and hundredth of students did it before.

Here you work on a new task which is new for you (and the professor) and it is your job to bring it to a successful end. The professor may ask you from time to time about the progress of the project, however, if you get stuck it's your turn to act. First try to overcome it yourself, then you may come and see the professor to find possible solutions.

3.2 Regular meetings

(Internal projects only)

For in-house projects we have regular (typically weekly) project meetings. In order to keep these meetings efficient we want to follow these rules:

- Be prepared, i.e. finish the things agreed on in the previous meeting.
- Come with particular questions.
- If possible suggest possible answers to your questions.
- We limit the time per student to 30 min.
- Make sure your next steps are clear to you at the end of the meeting.

We may arrange some extra one-to-one meetings to dive into more detail. However, this should be the exception and we try to clarify all details during the project meetings.

3.3 Visiting your company

(External projects only)

If the company is not too far away, i.e. within the area of Hamburger Verkehrsverbund, HVV, the professor plans to visit you once during your project. A useful time is typically after app. 50 % of your time within the company.

What happens at such a meeting? The following elements proved to be useful:

- Showing your work environment
- Meeting your supervisor and/or manager
- Presenting your first project achievements
- Discussion of your thesis structure

The duration of the visit is typically two hours. It is initiated either by the professor or by the student.

3.4 Project thesis

Along with this document you find a guideline on how to write the bachelor/master thesis. Please read this document first before discussing the structure of your documentation with the professor.

The thesis should be written in parallel to the project and not only towards the end of the project. The whole documentation acts like an exam paper. Hence, the professor will perform no proof reading before submitting. However, structure and fractions of the thesis may always be discussed.

4 Final phase

4.1 Submission of thesis

When registering your thesis you are given a deadline for submission. Please mind this date since there is hardly an option to shift this

deadline. If you hand in the thesis only one day after you have to redo the thesis with a different or at least modified subject!

Once you handed in the thesis at the FSB keeping all the formal guidelines you can take a deep breath: You concluded the major part of your project. What is left is the colloquium. . .

4.2 The colloquium

The colloquium takes place not more than six weeks after the deadline of submission. A typical time is app. two weeks after thesis submission deadline. For the date of the colloquium all three, first and second examiner and you, have to find a date. It is usually the first examiner who starts this process, however, you may also come up with a suggestion.

For the colloquium you prepare a 20 min, max. 30 min presentation. It proved to be useful to have not more than one slide per minute. The slides shouldn't be packed too much and they should fit to what you say. The content should be as such that a listener who does not know your subject (and your thesis) can still follow your presentation.

The colloquium starts with your presentation followed by 15 to 45 min with questions and discussion. Then you leave the room for app. 10 to 15 min until the examiners call you in and tell the grade for your thesis. (For a bachelor you get a single mark whereas for a master you are given two separate marks for thesis and colloquium.)

4.3 And then. . .

. . .you've done it and you are a BSc/MSc! The first examiner does the formalities typically within one day, hands it to the FSB and you will receive your certificate from the FSB app. two weeks after. You may get in touch to the FSB if you need some certification before.

Your first supervising professor would like to

stay in touch with you and suggests that you create an account at XING.com and link with him via this. If you update your data there every now and then he can follow your career and may contact you.