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Proposal for Master Thesis Projects in Computing Science

We would like to guide you how to take the first steps in the process of writing a proposal for a Master's Thesis Project in Computing Science.

The following is a list of expected knowledge a student should acquire by completing a Master's Thesis Project. In the syllabus of the corresponding course this knowledge is formulated as **Learning Outcomes.**

After having completed a Master's Thesis Project the student must be able to:

- demonstrate considerable in-depth knowledge in one area of Computing Science,

- demonstrate her/his ability to identify and formulate complex issues in a critical, independent and creative manner,

- demonstrate her/his ability to plan the work and using adequate methods to accomplish qualified tasks within given time frames and by taking part in research or development thereby contributing to the development of knowledge,

- demonstrate the ability to clearly describe and discuss her/his conclusions and the knowledge and the arguments which are the basies for those, both orally and in writing, in dialog with professionals as well as amateurs,

- demonstrate her/his ablity to integrate knowledge acquired from advanced courses in her/his education and to look for, analyze, synthesize and critically examine scientific literature relevant to the problem,

- demonstrate the ability to rewiev her/his own work as well as other's with respect to relevant scientific, social and ethical aspects in a systematic and critical manner,

- communicate her/his work in English both orally and in writing.

This is of course knowledge and skills you have already acquired during the course of your education and the Thesis Project will supply the finishing touch where you demonstrate your strengths. That's why we demand you are in the end of your education until you are allowed to start working with a Master's Thesis Project. **When you send your initial proposal** to your examiner **you must attach a transcript of record (ToR)** from the Ladok-system to show you are in the end of your education.

The purpose of the proposal, that must be approved by the examiner before you start, is to determine what should be done and how, thereby making it possible for the examiner to decide if all Learning Outcomes (see above) can be reached.
The answers to the following questions must be found in your proposal:

- Is the Project external (with a company or another department as the client) or is it an internal Project (with some researcher/teacher from Comp. Sc. as the client) and what is the background of the Project?

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- What should be accomplished and what methods should be used? For example; literature surveys, simulations, system development, evaluations etc. Try to describe minimal goals to be fulfilled in order for a successful Project.
- Which of your advanced courses are the foundations for your thesis work and in what way?
- What resources are there for the accomplishment and which ones are uncertain? For example; external supervisor, working place, books, computer, interviuees etc.?
- Is some part of the Project secret? If so, how will that influence in report writing and communication with examiner/internal supervisor?
- In what way will scientific depth be guaranteed? Will there be an in-depth study and in what way is that related to the rest of the Project?

In case you already have been in contact with possible and interested supervisors it might be a good idea to write the proposal in cooperation. Note that the proposal might be quite short but must give the examiner the possibility to decide if the overall subject is suitable and that you have suitable prerequisites for solving the problem.
The examiner approves the proposal or decides that some clarifications must be done. When the proposal is approved the next step is to turn to the person acting as course responsible (CR) for Thesis Projects. CR registers you for a suitable course and appoints an internal/University supervisor. For the time being Frank Drewes (*drewes@cs.umu.se*) is the examiner and Per Lindström (*perl@cs.umu.se*) is the CR-person.
The next step is to write the Project plan. That should be done in cooperation with your supervisors. Then you can start working and follow your project plan or revise it if it is needed.

Remember to document your work by writing your Project Diary. The Project Diary is one of the documents that must be handed in to the examiner when your Project is finished and it should contain the following, at least, on a weekly base.

- What did you do during the week?
- What experiences have you learnt during the week? Both positive and negative.
- Are you on schedule according to the time plan? The time plan should be revised when it is obviously not realistic. If the revision implies that parts of the Project must be excluded from the Project the client must agree on the adjustment. If the revision implies that the initial problem is essentially changed, compared to the problem in the proposal, then the examiner must agree on the adjustment too.
- Who have you communicated with during the week, including formal and informal meetings?

You have to hand in your Project Diary when your work is finished and it should be approved by the examiner. Otherwise you will not pass the course.

More information and guidelines you find at
http://www.cs.umu.se/student/examensarbeten/riktlinjer/

NOTE! On the webpage above you also find Assessment criteria which are used by the examiner in the final grading of your Master's Thesis work. It might be a good idea to think about them now and then☺