DA235X Degree Project in Computer Science and Engineering, specializing in Industrial Management, Second Cycle 30.0 credits

Examensarbete i datalogi och datateknik med inriktning mot industriell ekonomi, avancerad nivå

This is a translation of the Swedish, legally binding, course syllabus.

Establishment

Course syllabus for DA235X valid from Autumn 2018

Grading scale

P, F

Education cycle

Second cycle

Main field of study

Computer Science and Engineering

Specific prerequisites

All courses that are required for issuing the Degree of Bachelor and at least 60 credits of courses for second-cycle studies should be fully completed. These 60 credits should include all courses in the programme(s) [1] relevant to the degree project and a course in the philosophy of science and research methodology. This course should be reported with a pass mark.

[1] In the case that the student is enrolled both on a Master of Science in Engineering and a Master's programme.

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

After completed degree project, the student should show such proficiency that is required to participate in research and development work or to work independently in other qualified activities according to the national qualitative targets for the Degree of Master of Science in the Higher Education Ordinance. These include:

- considerably advanced knowledge within the main field of study/the specialisation for the education, including advanced insight into current research and development work,
- specialised methodological knowledge within the main field of study/the specialisation for the education,
- ability to participate in research and development work and so contribute to the formation of knowledge
- ability to critically and independently and creatively identify, formulate, analyse, assess and deal with complex phenomena, issues and situations even with limited information,
- ability to plan and with adequate methods undertake advanced tasks within predetermined time frames as well as the ability to evaluate this work
- ability to critically and systematically integrate knowledge and ability to identify the need of additional knowledge
- ability to in English in speech and writing clearly report and discuss his or her conclusions and the knowledge and arguments on which they are based
- ability to within the frames of the degree project identify the role of the scholarship and the engineer in the society
- ability to within the frame of the specific degree project be able to identify which issues that need to be answered in order to observe relevant dimensions of sustainable development, and
- ability to within the frames of the degree project assess and show awareness of ethical aspects on research and development work with respect to methods, working method and results of the degree project.

Course contents

Before the degree project course starts, the student shall identify an appropriate degree project task and formulate a project proposal that can be presented to the examiner for approval. The assignment should be chosen, so that it implies a natural progression of the knowledge and skills that have been acquired within the education and in a possible specialisation within the education.

The student must write an individual plan for the degree project in which the problem description/assignment and the preconditions for the implementation of the work are specified. The individual plan for the degree project should contain background including problem description and scientific issues, purpose, objective, demarcations, the project's relevance [1], methods and time plan for the implementation of the degree project. The plan should also contain a brief self-reflection, where the student accounts for his or her prior knowledge for carrying out the assignment and planning for how possible remaining courses that are required for higher education qualification should be completed [2]. The individual plan, for the degree project, shall be approved by the examiner.

The student carries out an in-depth pre-study including discussions of method choice and theoretical background with a literature study that is reported as part of a draft to a preliminary version of the written degree project report.

The student carries out an individual independent project where knowledge and methods, from the education, are applied.

The student plans and carries out an oral presentation and defence of his or her degree project.

The student carries out an oral and written review of another degree project of the same cycle.

The student writes and presents a written degree project report, where the student clearly accounts for and discusses own conclusions in the degree project and the knowledge and the arguments that underpin them.

The student carries out a self-assessment of the degree project according to the model for â€Assessment of quality of degree project for Degree of Master of Science of Engineering and Degree of Master of Science (120 credits)â€•

[1] With relevance we mean relevance in relation to the education, current research and development in relation to the specialisation that the student is studying and relevance for stakeholders and society.

[2] A draft of this part can preferably be handed in together with the initial project proposition, before the student is admitted to the degree project course. Remaining courses within the education should be planned be completed latest in connection with conclusion of the degree project.

Disposition

- The degree project is an individual independent project that is carried out by one student. Although several students are working within the same project, it shall result in individual reports, where each report has to satisfy the requirements for a degree project.
- The student shall contact an appropriate examiner before the work starts. Alternatively, the director of studies for degree projects or the programme director may propose an examiner.
- The student shall prepare a brief written project proposal describing the work. This description shall be enclosed with the registration forms. The description shall contain background, purpose, objective and method.
- The examiner ensures, that the students satisfy the general and specific prerequisites for the degree project and that the suggested degree project will satisfy the expected learning outcomes of a degree project. The examiner verifies that the degree project falls within the subject area(s) of the study programme(s), and that the questions at issue indicate an appropriate progression within the education. The examiner will sign the basis of the registration [1].
- The examiner will appoint a supervisor at KTH and approve a possible industry supervisor in consultation with the director of studies for degree project.
- The degree project will be registered, when the examiner has approved the project proposal [2].
- The student should write a detailed individual plan for the degree project [3] that should be delivered to the examiner for approval.
- The student carries out a pre-study, an investigation of choices of methods, as well as a literature study, which are delivered to the supervisor at KTH for approval.
- During the implementation of the degree project, the student shall regularly (at least every second week) report how the work progresses to the supervisor at KTH.
- The student shall continuously, during the degree project, document the work in writing and work on the preliminary version of the written report.
- When the supervisor at KTH assesses that the student has reached the aims according to the plan for the degree project and that the quality of the preliminary written report holds high quality, the student writes a self-assessment of the degree project according to the model for â€Assessment of quality of degree project for Degree of Master of Science of Engineering and Degree of Master of Science (120 credits)â€• The supervisor will give feedback on the self-assessment, and the student will be given the opportunity to remedy possible deficiencies.
- The report and self-assessment be delivered together with a summary of the supervisor at KTH Assessment of the thesis according to the model for â€Assessment of the quality of degree projectâ€•to examiner for a preliminary approval.
- For opposition, the student is assigned another student's degree project report, who is working on a second-cycle degree project, to publicly discuss his or her report. Date for opposition [4] and choice of degree project report to publicly discuss should be approved by the examiner. The student shall carry out an oral and written review of the other student's project presentation of his or her degree. The opposition is assessed by the examiner of the other student.
- The student shall carry out an oral presentation and defence of his or her own report.
- After the presentation, and no later than two weeks after presentation, the student shall deliver a final report to examiner. To the report, the student encloses an updated

self-reflection based on the model for â€Assessment of quality of degree project for Degree of Master of Science of Engineering and Degree of Master of Science (120 credits)â€•

- The examiner is responsible for checking plagiarism of the degree project report.
- Examiner fills in the model for â€Assessment of quality of degree project for Degree of Master of Science of Engineering and Degree of Master of Science (120 credits)â€•
- The grade shall be determined by a teacher (examiner), especially appointed by the higher education institution.
- For grading, the examiner shall acquire support from at least one other teacher on KTH, competent in the subject area, (who constitutes reviewer for the degree project).
- The directions for public access at KTH, apply for the implementation of the degree project and for publication of the report. The degree project report should be published electronically in DiVA, according to the rules that apply to electronic publication of degree projects at KTH.

[1] The basis of registration is the basis that constitutes the basis for course registration.

[2] is normally carried out by the administration.

[3] See the heading Learning activities.

[4] The public discussion cannot be carried out before the student is admitted to the course.

Examination

- PRO2 - Project, 15.0 credits, grading scale: P, F
- PRO1 - Project, 7.5 credits, grading scale: P, F
- PRO3 - Project, 7.5 credits, grading scale: P, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

If the course is discontinued, students may request to be examined during the following two academic years.

Individual plan for degree project

- Active attendance at two oral presentations of second-cycle degree projects [1]
- Pre-study, discussion of method choice and literature study
- Self-assessment report
- Oral presentation
- Written and oral opposition of another student's second-cycle degree project
- Written report with abstract in both Swedish and English

[1] It is recommended that the active attendance at oral presentations takes place early in the process. The item may be given credit for if it has been included in earlier courses. The

attendance can also take place on the student's own initiative before the course is started; then there need to exist written documentation on the active attendance.

Other requirements for final grade

Requirements according to KTH's regulatory framework for degree projects, and all examination parts as above should be approved within a year from the start of the degree project. Otherwise, the degree project will be ended with a failed grade, unless special circumstances apply.

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.