DA236X Degree Project in Computer Science and Engineering, specializing in Systems, Control and Robotics, Second Cycle 30.0 credits

Examensarbete i datalogi och datateknik med inriktning mot systemteknik och robotik, avancerad nivå

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

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

Establishment

Course syllabus for DA236X valid from Spring 2019

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 ”Assessment of quality of degree project for Degree of Master of Science of Engineering and Degree of Master of Science (120 credits)”.

[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 as well as 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.

Examination

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

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.

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.

The examiner decides, in consultation with KTH's coordinator for disabilities (Funka), about possible adapted examination for students with documented, permanent disabilities.

[1] It is recommended that the active attendance at oral presentations takes place early in the process. The attendance 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.

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.