



MF229X Degree Project in Machine Design, Second Cycle 30.0 credits

Examensarbete inom inbyggda styrsystem, avancerad nivå

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

Establishment

Course syllabus for MF229X valid from Autumn 2015

Grading scale

P, F

Education cycle

Second cycle

Main field of study

Mechanical Engineering, Electrical Engineering

Specific prerequisites

Requirements established by the Master's programme, for starting a degree project. These requirements are found in the programme syllabus.

Language of instruction

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

Intended learning outcomes

From KTH's established objectives for degree projects for Master's degree (120 credits) the student should be able to:

1. demonstrate knowledge of the chosen topic's disciplinary foundation and proven experience, advanced insight into current research and development, as well as in-depth knowledge of methodology
2. holistically, critically and systematically search, collect and integrate knowledge, and identify one's need for further knowledge
3. identify, analyse, assess and handle complex phenomena, issues and situations, even with limited information
4. plan and with adequate methods carry out advanced tasks within given time frames, and to evaluate this work
5. orally and in writing in dialogue with different groups clearly present and discuss the conclusions and the underlying arguments
6. make judgements considering relevant scientific, social and ethical aspects
7. demonstrate the skills required to participate in research and development work, or to work independently in other advanced activities

Course contents

The main contents are adapted to the degree project; the in-depth topic study, application area, academic or industrial environment, in Sweden or internationally, etc.

With a high degree of initiative and independence, formulate and solve an engineering problem by using a wide range of skills. The subject for the degree project can vary, but it must contain significant technical contents and include a clear application of embedded control systems.

Course literature

It is expected that the student uses modern search tools and databases to find relevant scientific literature and in supplementary ways find other documentation that strengthens learning and problem-solving.

Examination

- XUPP - Thesis Project, 30.0 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.

Other requirements for final grade

KTH's established criteria for a pass in a degree project course for Master's degree (120 credits) are:

The literature study is well executed. Current research and development relevant to the study is presented in a clear manner. The selected method is well justified, based on science or proven experience and evaluated against other methods. Relevant knowledge from previous courses is adequately used.

The thesis task is handled autonomously and systematically, based on critical analysis and synthesis of relevant literature. The work demonstrates a holistic view. Appropriate databases and search tools are used. The need for further knowledge is discussed.

Relevant complex phenomena, issues and situations are identified in the degree project. The work clearly shows that these are well managed and analysed, even if available information is limited. Adequate judgements related to the research questions and results are implemented.

The project plan was followed. An advanced project is carried out within the agreed time and with the methodology agreed upon. Any changes to the plan or the have been agreed, between student and supervisor. Resources and limitations in the study are clearly presented.

The report is well organized and well-written, in a coherent language. The discussion on the conclusions is well motivated. The citations are relevant, phrased in the student's own wording, and well integrated. The oral presentation and the review, as well as the communication during the work, demonstrate the ability to present and sensitively discuss the work and its conclusions with different parties, such as employers, supervisors, teachers, researchers and students.

The degree project demonstrates judgement abilities, for example to explain, justify, criticize and recommend. Relevant topic-specific assessments based on science or proven experience have been made in the degree project. The degree project reflects on social and ethical aspects, unless this is shown to be irrelevant.

The student familiarizes him/herself with the task and demonstrates the ability to be a part of the working environment where the study was performed. The student demonstrates an ability to test, evaluate and also reject ideas and solutions in the discussions on the task. The student shows initiative and is open for supervision and criticism. The degree project is carried out largely independently.

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.