IA249X Degree Project in Engineering Physics, specialising in Nanotechnology, Second Cycle 30.0 credits

Examensarbete inom teknisk fysik med inriktning mot nanoteknik, avancerad nivå

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

Establishment

On 2019-10-15, the Head of School of EECS has decided to establish this official course syllabus to apply from the spring semester 2020 (registration number J-2019-2565).

Grading scale

P, F

Education cycle

Second cycle

Main field of study

Engineering Physics

Specific prerequisites

Passed courses at second cycle level of at least 60 credits, including courses that are relevant for the degree project including a course in theory of knowledge and research methodology.

If the student is registered on an engineering programme should all courses that are required for issuing of Degree of Bachelor be completed.

Language of instruction

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

Intended learning outcomes

After passing the degree project course, the student should be able to:

- show advanced knowledge within the main field of study/the specialisation for the education, including advanced insight into current research and development work
- show methodological knowledge within the main field of study/the specialisation for the education
- participate in research and development work and thereby contribute to the knowledge development
- with a holistic approach, critically, independently and creatively identify, formulate, analyse, assess and deal with complex phenomena and issues, even with limited information
- plan and with adequate methods carry out qualified assignments within given frames, and evaluate this work
- integrate knowledge critically and systematically and identify the need of additional knowledge
- in Swedish or in English, in speech and writing clearly report and discuss their conclusions and the knowledge and arguments on which they are based
- within the frames of the degree project identify the role of the scholarship and the engineer in the society
- within the frame of the specific degree project identify which issues that need to be answered in order to observe relevant dimensions of sustainable development
- within the frames of the degree project assess and show awareness of ethical aspects of research and development work, with respect to methods, working methods and results of the degree project

in order to be able to participate in research and development or work independently in other qualified activities according to the national aims for a Degree of Master of Science in Engineering and Degree of Master of Science in Higher Education Ordinance.

Course contents

Before the degree project course is started, the student should identify an appropriate degree project assignment and formulate a project proposal, so that this can be approved by the

examiner. 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 writes 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 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 independently carries out a degree 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 second-cycle degree project.
- 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-evaluation of the degree project according to established model.

Examination

- PRO1 - 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.

In PRO1 is included

- individual plan for the degree project
- pre-study, discussion of method choice and literature study
- written report with summary/abstract in both swedish and english
- self-assessment report
- an oral presentation
- a written and oral review (public discussion) of another student's second-cycle degree project
- the final version of the report.

Other requirements for final grade

Active attendance at two oral presentations of degree projects for second-cycle studies.

All examination part 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.