SA104X Degree Project in Engineering Physics, First Cycle 15.0 credits

Examensarbete inom teknisk fysik, grundnivå

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

Establishment

Course syllabus for SA104X valid from Autumn 2007

Grading scale

A, B, C, D, E, FX, F

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

Entry requirements for admission to the course:

In general, the major portion of the studies, at least 108 credits of the 120 credits including the compulsory courses in Master of Science in Engineering Physics, must be completed before thesis work may begin. It is the examiner's responsibility to ensure the student has adequate depth and substance and that the student has done a sufficient part of their studies

before the exam begins. Waivers can be granted after review of undergraduate studies. The thesis shall normally be conducted during the last term.

Language of instruction

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

Intended learning outcomes

After the course, students should be able to:

- apply relevant knowledge and skills acquired in the main field to a given problem,
- within a given framework, independently analyze and discuss issues and solve major problems at the first level in the main field,
- document and present their work requirements on structure, formality and language management
- reflect upon and critically review their own and others' scientific achievements,
- identify the need for further knowledge and take responsibility for their knowledge.

Course contents

The thesis consists of an independent project in an area determined by the examiner. Normally, thesis work should be part of a subject in the undergraduate level. The thesis should be 10 weeks of full time study. The work will be reported in a written report and presented orally at an open seminar.

Course literature

Independent literature and literary studies in the given problem area are expected. Reading can also be proposed by the examiner or supervisor.

Examination

- XUPP - Examination Question, 15.0 credits, grading scale: A, B, C, D, E, FX, 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.

The work can be carried out individually or together with another student. In the latter case, the examiner should ensure that each student's effort meets the requirements for individual master thesis. The work will be reported in writing and orally in English or Swedish. Depending on the student's degree work, they can have their thesis be opposed and participate in the opposition of another thesis as required for completion of the course.

The thesis will be assessed according to the following criteria in the assessment: process, engineering and scientific content, and presentation. The grade is determined by the examiner as a whole after the final thesis report has been reviewed for plagiarism. To pass, the thesis must read as a whole and not as one of the three assessment criteria. The grading criteria should be seen as a tool to support students in working towards a high goal through clarifying the demands and expectations.

Students who do not finish their work within eight months are likely to fail the course. Decisions are made where appropriate after consultation with the examiner and the program director.

Process

Excellent

Independently plan and execute work within agreed timeframes, show good initiative and open to coaching and criticism, independently identify their own needs for new knowledge and to obtain these skills, and demonstrate an ability to get acquainted with new work and formulate appropriate and constructive criticism.

Good

Plan and execute work within agreed deadlines, show initiative and be open to coaching and criticism, ability to acquire new skills, and demonstrate an ability to get acquainted with new work and formulate relevant criticism.

Sufficient

Carry out work within agreed timeframes, show some initiative and be open to coaching and criticism, show some ability to acquire new skills, and show some ability to familiarize themselves with new work and formulate criticism.

Fail

Lack of respect for agreements, significant dependent component, or disobedience of the instruction. Inability or unwillingness to acquire new skills.

Engineering and scientific content

Excellent

Based on the research problem and methodology, show very good ability to systematically apply engineering and scientific skills to the problem definition, modeling, analysis, development and evaluation. Where relevant to the task, demonstrate an awareness of social and ethical aspects, including economically, socially and ecologically sustainable development.

Good

Based on the research problem and methodology, demonstrate the ability to systematically apply engineering and scientific skills to the problem definition, modeling, analysis, development and evaluation. Where relevant to the task, demonstrate an awareness of social and ethical aspects, including economically, socially and ecologically sustainable development.

Sufficient

Based on the research problem and methodology, show some ability to apply engineering and scientific skills such as modeling, analysis, development and evaluation. Where relevant to the task, show some awareness of social and ethical aspects, including economically, socially and ecologically sustainable development.

Fail

Major deficiencies in engineering or scientific skills, and significant remaining gaps in methodology, despite requests.

Presentation

Excellent

Demonstrate a well set report with the explicit statement of work, results, analysis, and reasoned arguments, as well as good language processing and formal and scientific accuracy. Show the ability to orally present with clear arguments and analysis and the ability to discuss work.

Good

Demonstrate a well set report with the explicit statement of work, results, analysis, and argumentation, as well as good language processing and formal accuracy. Show the ability to orally present and discuss work.

Sufficient

Present a written report with an acceptable structure, formality and language analysis. Show ability to orally present work.

Fail

Remaining gaps in the written report, despite requests, or substantial inability to orally present and discuss work.

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.