



# SH2006 Project Work in Physics

## 30.0 credits

### Projektarbete i fysik

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 SH2006 valid from Spring 2012

### Grading scale

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

### Education cycle

Second cycle

### Main field of study

Engineering Physics, Physics

### Specific prerequisites

As a general rule, the majority of the study programme should be finished before the project work is started. The examiner should make sure that the individual student has a suitable subject background and that the student has finished a sufficient part of the study programme before starting the project.

## Language of instruction

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

## Intended learning outcomes

After finishing the course, the students should be able to:

- apply knowledge and skills acquired in the subject area in order to solve a specified project task.
- within the given framework, independently analyze and discuss complex questions and handle larger problems at an advanced level within the subject area.
- reflect on, evaluate, and critically review and compare his/her own others scientific results.
- document and present the work, for a given audience, with high demands on structure, form, and language, both orally and in writing.
- Identify the need for acquiring additional knowledge and continuously develop his/her skill set.

## Course contents

The project work consists of an independent work focusing on a specific problem, decided by the examiner. The project should normally be a focused study within the chosen subject area, at advanced level, The project work should correspond to 20 weeks of full time study. The work should be presented in a written report as well as orally at an open seminar.

## Course literature

Självständig litteratursökning och litteraturstudier inom det givna problemområdet förväntas. Kurslitteraturen kan även föreslås av examinator eller handledare.

## Examination

- PRO1 - Project, 30.0 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.

The project work should be performed individually or, in exceptional cases, together with another student. In the case with two students, separate individual tasks within the project should be well defined and the examiner should make sure that the partition and interface between the students is realistic, and that the work for each student corresponds to the proper requirements. The work should be presented individually, both orally and in writing,

in English or Swedish. Depending on the study programme of the student, opposition of another project work could be required to fulfill the criteria for passing the project course.

The project work will be evaluated according to the criteria below, within the evaluation areas **process**, **scientific content**, and **presentation**. The grade is decided by the examiner as an overall assessment after a check for plagiarism has been performed of the written report. For passing the project work course, none of the three evaluation areas can be failed. The criteria for grading can also be seen as a tool for supporting the student in working towards a high target, through a clarification of requirements and expectations.

A student who has not finished the project work within eight months runs the risk of failing the course. Such a decision is taken in consultation between the examiner and the programme coordinator.

## **Process**

### **Excellent:**

Independently plan and implement the work within the agreed time frames, show a good power of initiative, be open for supervision and criticism, independently identify his/her own need of new knowledge, be able to acquire that knowledge, show good ability in understanding other's work, and formulate relevant and constructive criticism.

### **Good**

Plan and implement the work within the agreed time frames, show power of initiative, be open for supervision and criticism, be able to acquire new knowledge, show ability in understanding other's work, and formulate relevant criticism.

### **Sufficient**

Implement the work within the agreed time frames, show some power of initiative, be open for supervision and criticism, be able to acquire new knowledge, show some ability in understanding other's work, and formulate criticism.

### **Failed**

Lacking respect for agreements, considerable lack of independence or disobedience in supervision. Inability or unwillingness to acquire new knowledge.

## **Scientific content**

### **Excellent**

From the problem at hand, and with a relevant methodology, show a very good ability to, in a systematic way, apply engineering- and scientific skills in formulating the problem, modelling, analysis, development, and evaluation. When it is relevant for the problem at hand show awareness of social and ethical aspects, including economical-, social-, and ecologically sustainable development.

### **Good**

From the problem at hand, and with a relevant methodology, show a good ability to, in a systematic way, apply engineering- and scientific skills in formulating the problem, modelling, analysis, development, and evaluation. When it is relevant for the problem at hand show awareness of social and ethical aspects, including economical-, social-, and ecologically sustainable development.

**Sufficient**

From the problem at hand, and with a relevant methodology, show some ability to apply engineering- and scientific skills in modelling, analysis, development, and evaluation. When it is relevant for the problem at hand show awareness of social and ethical aspects, including economical-, social-, and ecologically sustainable development.

**Failed**

Major shortcomings in engineering- and scientific skills, or considerably lacking methodology despite requests.

**Presentation****Excellent**

Present a well disposed report, with a clear presentation of the work and the results, a clear analysis and substantiated argumentation, as well as good language, form, and scientific accuracy. Show a good ability to orally present the project with clear argumentation and analysis, and good ability to discuss the work.

**Good**

Present a well disposed report, with a clear presentation of the work and the results, an analysis and argumentation, as well as good language and form. Show a good ability to orally present and discuss the work.

**Sufficient**

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

**Failed**

Remaining shortcomings in the written report despite requests, or considerable inability to orally present or discuss the 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.