



LUND
UNIVERSITY

Faculty of Science

FYSP10, Physics: Advanced Project, 7.5 credits *Fysik: Fördjupningsprojekt, 7,5 högskolepoäng* Second Cycle / Avancerad nivå

Details of approval

The syllabus was approved by Study programmes board, Faculty of Science on 2022-12-14 to be valid from 2022-12-14, autumn semester 2023.

General Information

The course is an elective course for second-cycle studies for a Degree of Master of Science (120 credits) with a specialisation in physics.

Language of instruction: English

Main field of studies

Physics

Depth of study relative to the degree requirements

A1F, Second cycle, has second-cycle course/s as entry requirements

Learning outcomes

The major aim of the course is that the student should plan and carry out a shorter project in physics. The project can be a research project or a project of a theoretical character. The student should understand the process of the project, its potential and limitations, and carry out the project with a high degree of independence.

Knowledge and understanding

On completion of the course, the students shall be able to:

- give an account of basic aspects of the chosen field of physics
- on their own acquire information that is required for the implementation of the project from textbooks, scientific papers and other sources
- give an account of the connection between technology, physics, experiments, models and theories in the field where the advanced assignment has been carried out.

Competence and skills

On completion of the course, the students shall be able to:

- carry out information retrieval in scientific and/or other relevant sources and compile what is relevant for the project
- independently plan a project, write a project plan and, when necessary, a risk analysis of laboratory sessions
- apply acquired knowledge in physics to carry out a project with a high degree of independence in a scientific manner within the planned time frame
- continuously document the practical work during a project
- write a short project report in the form of a scientific paper or in another form depending on the subject of the project
- prepare and perform a brief scientific presentation.

Judgement and approach

On completion of the course, the students shall be able to:

- choose appropriate methods and theories to tackle technical and/or physics problems
- evaluate applicable ethical and safety aspects of a project
- evaluate result in the field of physics where the work takes place from both a scientific and a societal perspective.

Course content

During the course, a short project in physics is planned, carried out and presented. The work includes literature search, planning of the project, theoretical or experimental work, compilation, evaluation and analysis of obtained results, as well as written and oral presentation. The project can for example constitute a pilot study for a degree project or an expansion of a project in an earlier course.

Course design

The student must contact a supervisor well in advance of the start of the course. The project is planned by the student in consultation with the supervisor. The project should contain experimental and/or theoretical work as well as literature studies. The student writes a project plan that includes a time plan and, if applicable, ethical aspects and risk assessment of field and/or laboratory work. The project plan must be accepted by the examiner of the course. The student's effort should correspond to full-time work for approximately five weeks. The practical work should be documented continuously, and after the completion of the project, a project report should be written. This should be written as a scientific report (with introduction, method, results, discussion and list of references) or in other form after consultation with supervisor and examiner. Furthermore, an oral presentation should be prepared and held. Written project plan, implementation of the project, written project report and oral presentation are compulsory.

Assessment

Examination takes place in writing and orally at the end of the course through project report and presentation, and during the course through assessment of the project plan and the implementation of the project. The project report should be delivered to the examiner no later than two weeks after the project has been completed.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

Subcourses that are part of this course can be found in an appendix at the end of this document.

Grades

Marking scale: Fail, Pass.

To pass in the whole course is required passed written project plan completed project passed written project report and passed oral presentation.

Entry requirements

For admission to the course, a degree of Bachelor of Science, 90 credits in physics, including 15 credits at second-cycle level, as well as English 6/B are required.

Further information

This course cannot be included in a degree together with the course FYSP01, Physics: Applied work, 7.5 credits or together with a degree project on 60 credits.

The course is coordinated with PHYSP10, Advanced Project in Physics, 7.5 hp, which is a course given at Lund Institute of Technology, LTH.

Contact should be taken with studierektorn@fysik.lu.se or directly with a project supervisor in good time before start of the course.

The course is offered at the Department of Physics, Lund University.

Subcourses in FYSP10, Physics: Advanced Project

Applies from H23

2301 Practice, 7,5 hp
Grading scale: Fail, Pass