LUNDS UNIVERSITET
Lunds Tekniska Högskola

Course syllabus

Fördjupningsprojekt i fysik
Advanced Project in Physics

PHYP10, 7,5 credits, A (Second Cycle)

Valid for: 2023/24
Faculty: Faculty of Engineering, LTH
Decided by: PLED F/Pi
Date of Decision: 2023-04-18

General Information

Elective for: F4, MFOT1, MNAV1, N4
Language of instruction: The course will be given in English

Aim

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.

Learning outcomes

Knowledge and understanding
For a passing grade the student must

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

Competences and skills
For a passing grade the student must

- be able to carry out information retrieval in scientific and/or other relevant sources and compile what is relevant for the project
- be able to independently plan a project, write a project plan and, when necessary, a risk analysis of laboratory sessions

- be able to 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
- be able to continuously document the theoretical or practical work during a project
- be able to write a short project report in the form of a scientific paper or in another form depending on the subject of the project
- be able to prepare and perform a brief scientific presentation.

Judgement and approach
For a passing grade the student must

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

Contents

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.

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.

Examination details

Grading scale: UG - (U,G) - (Fail, Pass)
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.

Admission

Assumed prior knowledge: At least two courses at an advanced level in areas relevant to the project. Contact should be made with the department well in advance of the start of the course, to agree on an appropriate focus and scope of the project.
The number of participants is limited to: No

Contact and other information

Course homepage: http:// https://canvas.education.lu.se
Further information: Contact studierektorn@fysik.lu.se, or with a project tutor directly, well in advance of the start of the course.