



LUNDS UNIVERSITET
Lunds Tekniska Högskola

Course syllabus

Modern subatomär fysik Modern Subatomic Physics

FKFN30, 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, F4-axn

Language of instruction: The course will be given in English

Aim

The purpose of the course is to give an introduction to research in subatomic physics and to present current topics of interest in this field.

Learning outcomes

Knowledge and understanding

For a passing grade the student must

- be well acquainted with current research in subatomic physics.
- have sufficient knowledge to present a topic of current interest in the field.

Competences and skills

For a passing grade the student must

- have gained ability to read and understand papers in scientific journals relevant to the field
- have the ability to analyze and explain current research.
- have improved in their ability to explain attained results in writing.

Judgement and approach

For a passing grade the student must

have gained ability to extract relevant information from several scientific papers within a

field and to present this information orally as well as in writing.

Contents

Modern subatomic physics is a broad and active field of research. It encompasses issues spanning from photo-induced reactions to the question of the existence of the quark-gluon plasma.

In order to illustrate the models and nuclear reactions which are used in today's subatomic research we follow a few current projects with connection to the research at the divisions of nuclear physics and high-energy physics in Lund from the planning stage, via the experiment and data analysis to the final interpretation of the result.

Examination details

Grading scale: TH - (U,3,4,5) - (Fail, Three, Four, Five)

Assessment: In order to pass the student should successfully complete the homework assignments, the project report and give a seminar. The grade is a weighted assessment of these three components.

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: FKFN40 Advanced Nuclear Physics.

The number of participants is limited to: No

The course overlaps following course/s: FKF070, FYST16

Reading list

- Krane, K.S.: Introductory Nuclear Physics. John Wiley & Sons, 1988, ISBN: 0-471-80553-X.
- Recent articles and texts distributed at lectures and for the projects.

Contact and other information

Course coordinator: Prof. Joakim Cederkäll, Kärnfysik, joakim.cederkall@nuclear.lu.se

Course homepage: <https://canvas.education.lu.se/courses/10908>

Further information: The course is given by the Faculty of Science and does not follow the study period structure.