SH2303 Atomic Nuclei - Radiation - Energy 7.5 credits

Atomkärnan - strålning - energi

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

Establishment

Course syllabus for SH2303 valid from Autumn 2007

Grading scale

P, F

Education cycle

Second cycle

Main field of study

Physics

Specific prerequisites

Language of instruction

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

Intended learning outcomes

To give students and engineers a general introduction to nuclear physics and its recent applications.

Course contents

- Introduction to basic quantum mechanics
- Binding energy and the nuclear shell model
- Alpha, beta and gamma radiation
- Fusion and fission
- Nuclear power of the future and transmutation of waste
- Detection techniques
- Applications in medicine and industry
- Neutron diffraction.

Course literature

Patel, S. B., Nuclear Physics, John Wiley&Sons.

Examination

- INL1 - Assignments, 4.5 credits, grading scale: P, F
- LAB1 - Laboratory Work, 3.0 credits, grading scale: P, 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.

Other requirements for final grade

Home assignments (INL1; 4,5 cr).
Laboratory reports, study visits (LAB1; 3 cr).

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.