SH2615 Neutron Transport Theory 6.0 credits

Neutrontransportteori

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

Establishment

Course syllabus for SH2615 valid from Autumn 2019

Grading scale

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

Education cycle

Second cycle

Main field of study

Engineering Physics

Specific prerequisites

Completed course in reactor physics course or equivalent.

Language of instruction

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

Intended learning outcomes

To solve neutron transport equation within the context of reactor physics.

Course contents

Derivation of the neutron transport equation (NTE), fundamental properties of NTE, solution methodology for NTE, including approximations. Sn-method for numerical solution of NTE. Derivation of the kinetic equation, its properties and solution methods.

Course literature

- Lecture notes on reactor physics by W. Gudowski.
- J. Duderstadt and W.R. Martin: Transport Theory.
- G. I. Bell and S. Glasstone: Nuclear Reactor Theory.
- M. Ash: Nuclear Reactor Kinetics.

Examination

- INL1 - Home assignments, 2.0 credits, grading scale: P, F
- PRO1 - Project report, 4.0 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.

If the course is discontinued, students may request to be examined during the following two academic years.

The examiner, in consultation with the KTH Disability Coordinator (Funka), decides on any adapted examination for students with documented permanent impairment. The examiner may grant another examination form for reexamination of single students

Other requirements for final grade

Pass grade on all parts.

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.