SH2608 Neutron Transport Theory and Reactor Kinetics 6.0 credits

Neutrontransportteori och reaktorkinetik

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

Establishment

Course syllabus for SH2608 valid from Autumn 2008

Grading scale

P, F

Education cycle

Second cycle

Main field of study

Specific prerequisites

Knowledge and examples from a basic reactor physics course such as SH2600, multidimensional calculus, vector analysis, complex analysis, linear differential operators.

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. Derivation of the kinetic equation, its properties and solution methods.

Course literature

[1] Lecture notes on Reactor Physics by W. Gudowski. [2] J. Duderstadt and W.R. Martin: Transport Theory. [3] G.I. Bell and S. Glasstone: Nuclear Reactor Theory.[4] M. Ash: Nuclear Reactor Kinetics.

Examination

- INL1 - Assignment, 0.5 credits, grading scale: P, F
- INL2 - Assignment, 0.5 credits, grading scale: P, F
- TEN1 - Examination, 4.0 credits, grading scale: P, F
- INL3 - Assignment, 0.5 credits, grading scale: P, F
- INL4 - Assignment, 0.5 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.

Home assignments and a computational project.

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.