SH1700 Nuclear Engineering 7.5 credits

Kärnkraftsteknologi

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

Establishment

Course syllabus for SH1700 valid from Autumn 2011

Grading scale

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

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

The course is mandatory for the Bachelor's program in Nuclear Engineering within Mechanical Engineering

Language of instruction

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

Intended learning outcomes

The objective of the course is to give an overview of nuclear engineering topics that have significant influence on safety, economy and environment.

After completing of the course you will be able to:

1) Describe how a nuclear power plant operates

2) Specify the usually employed technical solutions in the existing and future nuclear power plants

3) Perform a simple thermal-hydraulic and mechanical design of a nuclear power plant

Course contents

1) Reactor systems in boiling and pressurized water reactors

2) Reactor internals

3) Main circulation loop

4) Steam and feedwater system

5) Chemical and control volume system

6) Blow-off system

7) Cooling system of shut-down reactor

8) Emergency core cooling system

9) Thermal-hydraulic design

10) Mechanical design

11) Safety

12) Economy and environment

Course literature

Compendium, course notes.

Examination

- INL1 - Home Assignments, 3.5 credits, grading scale: P, F
- TEN1 - Examination, 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.

Home assignment, Written exam

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.