FDD3372 Automata and Languages 6.0 credits

Automater och språk

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

Establishment

Course syllabus for FDD3372 valid from Autumn 2014

Grading scale

G

Education cycle

Third cycle

Specific prerequisites

Courses equivalent to SF1630 Discrete Mathematics and DD1350 Logic for Computer Science.

Language of instruction

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

Intended learning outcomes

The general the aim of the course is to give the doctoral students a deep understanding of calculation and efficient computability through the abstract concept of automata and the

languages that they know of. At the same time, the doctoral students will get familiar with the important concepts of state, non-determinism and minimization.

Course contents

Finite automata, stack automata and Turing machines, and the important related language classes of regular and context free languages. The relation between automata and language is established by means of different transformations. The language classes are characterised by some classical theorems as Myhill-Nerode's theorem and Chomsky-Schützenberger's theorem.

Course literature

Hopcroft, Motwani and Ullman
Introduction to Automata theory, Languages and Computation

Examination

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

Six home assignments, two laboratory assignments and a written examination.

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.