ID1213 Logic Programming, Basic Course 7.5 credits

Logikprogrammering, grundkurs

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

Establishment

The official course syllabus is valid from the autumn semester 2021 in accordance with Head of School decision: J-2021-0883.Decision date: April 15th 2021

Grading scale

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

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

- Completed course ID1018 Programming I or DD1393 Software Engineering, or the equivalent.
- Completed course ID1020 or DD1338 Algorithms and Data Structures, or the equivalent.
- Completed course SF1624 or IX1303 Algebra and Geometry, or the equivalent.
- Completed course SF1610 or IX1500 Discrete Mathematics, or the equivalent.

Language of instruction

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

Intended learning outcomes

After passing the course, the student shall be able to

- describe a problem as logical statements, facts and rules
- express algorithms as rules in Prolog
- design and/or choose appropriate data representations in a logic program
- use Prolog's mechanisms to streamline search in execution of a logic program

in order to

- master logic programming as method to develop software.

Course contents

The course presents logic and logic programming for software development. The course presents algorithms over lists and tree, and also search algorithms over graphs. Various more efficient data structures, such as difference structures, are introduced. We show how techniques from functional programming fit in the framework of logic programming and can be expressed in the programming language Prolog. Finally, the course presents some AI applications, such as simple expert systems, and gives a short overview of current methodological trends. In this course students will meet theory and the basic design principles within logic programming while they in later project course, for example in the degree project, can practise the methods.

Examination

- TEN1 - Examination, 7.5 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.

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.