ID1213 Logic Programming, Basic Course 7.5 credits

Logikprogrammering, grundkurs

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

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

Establishment

Course syllabus for ID1213 valid from Autumn 2015

Grading scale

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

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

- ID1018 Programming I
- ID1020 Algorithms and Data Structures
- SF1624 or IX1303 Algebra and Geometry
- SF1610 or IX1500 Discrete Mathematics

Language of instruction

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

Intended learning outcomes

The aim for the course is that the students should master logic programming as a method to develop software. This aim is implemented through the following goal:

- To be able to describe a problem as logical statement, facts and rules.
- To express algorithms as rules and give a formal logical semantics to the logic program.
- To design and/or to choose appropriate data representations in a logic program.
- To independently and creatively be able to handle different problems that occur when translating between different data representations in logic programs.
- To use systematic refinement within software development.
- Show ability to be able to communicate about his work and its results both oral and written.

Course contents

The course presents 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 technologies from functional programming fit in the framework of the logic programming. Finally, the course presents some AI applications, such as simple expert systems, and gives a short overview of current methodological trends.

The course provides knowledge that constitutes prior knowledge to the course DD1350 Logic for Computer Science. Together, the courses give theory and practice for logic-based development methods. In this course students will meet theory and the basic design principles within logic programming while they in the later project courses for example degree projects, can practise the methods.

Course literature

Sterling and Shapiro, The Art of Prolog, 2nd ed. MIT Press 1994.

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.

Home assignments can give bonus point on 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.