



# DD1362 Programming Paradigms 6.0 credits

## Programmeringsparadigm

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 DD1362 valid from Spring 2019

## Grading scale

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

## Education cycle

First cycle

## Main field of study

Technology

## 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 students should be able to:

- apply and explain general concepts in programming: control flow, recursion, interpretation, paradigm,
- apply and explain basic concepts in functional programming: the functions, currying, lazy evaluation, pattern matching, types and classes,
- apply and explain basic concepts in formal languages and syntax analysis: automata, regular expression, grammars, lexical analysis and recursive descent,
- write own client-server programs as well as use protocols and be able to explain how they are interpreted and written

in order to

- obtain a broader perspective on programming
- be able to assess which paradigm and which programming language that is appropriate to solve a certain assignment
- be able to use adequate programming style in chosen programming paradigm
- be able to participate in discussions about programming paradigms, history of programming languages, language definition, properties of type systems, principles of language design, language translation, programming principles and programming concepts actively

## Course contents

Functional programming: the function concept, the functions, currying, evaluation strategies, currents, pattern matching. overloading polymorphism, interpretation, types and classes.

Formal languages and syntax analysis: automata, regular expression, grammars, lexical analysis, recursive descent, classes of languages

Internet programming.

Language translation: interpretation, compilation and linking.

## Specific prerequisites

DD1337 Programming and DD1338 Algorithms and Data Structures or the equivalent courses.

## Examination

- LAB1 - Laboratory work, 3.5 credits, grading scale: A, B, C, D, E, FX, F
- TEN1 - Examination, 2.5 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.

Under exceptional circumstances for students with disabilities and at re-examination of individual students, the examiner has the right to admit other examination format.

Grade raising is not allowed.

## **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.