

Programming and Discrete Mathematics

Single subject and programme course

6 credits

Programmering och diskret matematik

729G04

Valid from:

Determined by

The Quality Board at the Faculty of Arts
and Sciences

Date determined

2007-05-07

Main field of study

Cognitive Science

Course level

First cycle

Advancement level

G2X

Course offered for

- Bachelor's Programme in Cognitive Science

Entry requirements

For admission to the course, the specific entry requirements that apply for admission to the Bachelor's Programme in Cognitive Science must be satisfied.

Intended learning outcomes

On completion of the course, the student should be able to

- design basic computer programs and formal models for simple cognitive science applications
- use concepts and models from basic discrete mathematics,
- explain what an algorithm is and apply basic algorithms,
- use different data types/structures,
- use various types of control structures,
- demonstrate an understanding of what computer modelling is and have the ability to design simple computer programs.

Course content

The course focuses on the following fields

- basic discrete mathematics, e.g. quantities, relations, functions, discrete data structures, definitions and formal languages,
- data types/structures, e.g. numbers, strings, tuples, lists, trees, sequential and hierarchical structures, arrays, linked structures, lookup-based structures,
- control structures, e.g. sequence, selection, iteration, recursion, conditions
- algorithms and data structures, e.g. for searching, selection, remodelling and lookup algorithms
- management of current computer systems,
- general introduction to computer science,
- principles of abstraction,
- the programming language Python,
- troubleshooting.

Teaching and working methods

The course consists of lectures, teaching sessions/exercises and computer exercises in programming. The course requires a large personal effort for proficiency training in addition to the scheduled teaching.

Examination

The course is examined through written tests and computer exercises.

Grades

Three-grade scale, U, G, VG

Other information

Planning and implementation of a course must take its starting point in the wording of the syllabus. The course evaluation included in each course must therefore take up the question how well the course agrees with the syllabus. The course is carried out in such a way that both men's and women's experience and knowledge is made visible and developed.

Department

Institutionen för datavetenskap