DD2380 Artificial Intelligence 6.0 credits

Artificiell intelligens

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

Establishment

The official course syllabus is valid from the autumn semester 2022 in accordance with the decision from the head of school: J-2022-0553.Decision date: 2022-03-28.

Grading scale

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

Education cycle

Second cycle

Main field of study

Computer Science and Engineering

Specific prerequisites

- Knowledge in algebra and geometry, 7.5 higher education credits, equivalent to completed course SF1624.
- Knowledge in one variable calculus, 7.5 higher education credits, equivalent to completed course SF1625.
- Knowledge and skills in programming, 6 higher education credits, equivalent to completed course DD1337/DD1310/DD1311/DD1312/DD1314/DD1315/DD1316/DD1318/DD1321/DD1331/DD100N/II

- Knowledge in algorithms and data structures, at least
  6 higher education credits, equivalent to completed course
  DD1320/DD1321/DD1325/DD1327/DD1338/DD2325/ID1020/ID1021.

Active participation in a course offering where the final examination is not yet reported in LADOK is considered equivalent to completion of the course.

Being registered for a course counts as active participation.

The term 'final examination' encompasses both the regular examination and the first re-examination.

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

1. apply different principles of Artificial Intelligence (AI)

2. choose appropriate tools and implement efficient solutions to problems in AI

3. integrate tools to design computer programs that show different properties that are expected by an intelligent system

4. present, analyse, and entitle an own solution to an AI problem

5. reflect on and discuss current social and ethical aspects of AI

in order to be able to

- draw use of methods of artificial intelligence in analysis, design and implementation of computer programs

- contribute to design of an intelligent system in both academic and industrial applications.

Course contents

The following fields are treated within the scope of the course: problem-solving with search algorithms, heuristics, knowledge representations (logic), planning, representation of uncertainty and inference (Bayesian networks, HMM), decision theory and utility theory, diction (NLP).

Examination

- TEN2 - Written exam, 1.5 credits, grading scale: P, F

- RAP1 - Report, 0.5 credits, grading scale: P, F

- LAB2 - Laboratory work, 4.0 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.

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.