ID1214 Artificial Intelligence and Applied Methods 7.5 credits

Artificiell intelligens och tillämpningar

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

Establishment

The official course syllabus is valid from the autumn semester 2024 in accordance with the director of first and second cycle education decision J-2024-1103.Decision date: 2024-04-15

Grading scale

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

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

- Knowledge in Calculus in One Variable, 5 credits, equivalent to completed course IX1303/SF1685/HF1006
- Knowledge in linear algebra, 5 credits, equivalent to completed course IX1304/SF1684/HF1006

- Knowledge in Discrete Mathematics, 7,5 credits, equivalent to completed course IX1500/SF1610/CM1000
- Knowledge in Probability Theory and Statistics, 6 credits, equivalent to completed course IX1501/SF1900/HF1012
- Knowledge and skills in programming, 6 credits, equivalent to completed course ID1018/HI1024
- Knowledge in Algorithms and Data Structures, 6 credits, equivalent to completed course ID1021/HI1029
- Additional skills in independent software development, 12 credits, from completed courses in computer science, computer technology or numerical methods with laboratory elements that are not carried out in groups larger than two people. These courses are in addition to the above mentioned courses.

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

Registering for a course is counted 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 students should be able to:

- give an account of artificial intelligence and its application areas
- know and account for artificial intelligence methods and technologies
- formulate and carry out a well delimited and qualified assignment that applies artificial intelligence techniques.

Course contents

The following fields are treated within the scope of the course:

- Fundamental AI problems and solutions including search algorithms and planning, knowledge representation forms and knowledge including reasoning strategies, decision support and heuristics.
- Intelligent agents and multi-agent systems
- Automatic analysis and generation of natural language.
- Machine learning and neural networks.

Focus is on artificial intelligence for knowledge-based systems, agent system and strategies.

Examination

- INL1 - Written assignment, 4.0 credits, grading scale: P, F
- TEN1 - Examination, 3.5 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. Written assignment that is reported in groups.

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.