DD2438 Artificial Intelligence and Multi Agent Systems 15.0 credits

Artificiell intelligens och multiagentsystem

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

The official course syllabus is valid from the spring semester 2025 in accordance with the decision from the director of first and second cycle education: J-2024-2385.Decision date: 2024-10-15

Grading scale

P, F

Education cycle

Second cycle

Main field of study

Computer Science and Engineering,Information Technology,Information and Communication Technology

Specific prerequisites

Knowledge in introduction to robotics, 7,5 credits, corresponding to completed course DD2410

or

knowledge in artificial intelligence, 4 credits, corresponding to completed course DD2380/ID1214 or completed module LAB2 in DD2380 or completed module INL1 in ID1214.

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 should be able to

- use a number of important tools and technologies used in artificial intelligence and multi-agent systems
- develop multi-agent systems
- assess the value of, and to a suitable extent utilize, existing solutions as a part of a programming project
- plan and lead the work in a larger project
- present their work and results, both orally and in writing
- write a basic scientific paper in English.

Course contents

The students will in project form design and implement a multi-agent team performing a task. The actual course content can vary based on which solutions the students choose to use.
The following areas will to a smaller or greater extent, dependent on the students' choices, be treated in the course:

- Cooperative path planning
- Cooperative task assignment
- Formation keeping
- Motion coordination

The course will also train the ability to manage, plan and participate in larger projects, assess existing solutions and their possible use, and work with existing code.

Examination

- INL1 - Hand-in Assignment, 3.0 credits, grading scale: P, F

- PRO1 - Software Engineering Project, 4.0 credits, grading scale: P, F
- PRO2 - Software Engineering Project, 4.0 credits, grading scale: P, F
- PRO3 - Software Engineering Project, 4.0 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.

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.