DD2380 Artificial Intelligence 6.0 credits

Artificiell intelligens

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

Establishment

Course syllabus for DD2380 valid from Autumn 2017

Grading scale

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

Education cycle

Second cycle

Main field of study

Computer Science and Engineering

Specific prerequisites

Single course students: 90 university credits including 45 university credits in Mathematics and/or Information Technology and the courses SF1604 Linear algebra, SF1625 Calculus in one variable, SF1626 Calculus in several variables, SF1901 Probability theory and statistics, DD1337 Programming and DD1338 Algorithms and Data Structures or equivalent.

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

After completing this course the student should be able to

1. recall and apply basic concepts in artificial intelligence
2. solve problems from the AI domain
3. demonstrate an insight into the risks of AI and its role in society
4. present work

so that the student can

- make use of methods from artificial intelligence in the analysis, design and implementation of computer programs in academic as well as industrial applications
- in an appropriate way present results and solutions.

Course contents

The following areas will be treated in the course: problem solving with search algorithms, heuristics and games, knowledge representation (logic), planning, representing uncertain knowledge and reasoning (Bayesian networks, HMM), decision and utility theory, natural language processing.

Disposition

A series of lectures presents course material. Given the breadth of the course each lecture will not be able to go deep into a topic but rather focus on introducing the material. A couple of tutorials are added to this to provide a bit more in-depth coverage of some topics. The examination in the course consists of quizzes that test the basic concepts in the covered topics in the course, two lab assignments with programing in Java or C++ that go deeper into two areas and test the ability to solve problems in the AI domain and an optional project with research connection for higher grades. A criteria based grading system is used.

Course literature

Artificial Intelligence: A Modern Approach by Stuart J. Russell and Peter Norvig

Examination

- TEN1 - Exam, 2.0 credits, grading scale: P, F
- LAB1 - Labs, 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.

If the course is discontinued, students may request to be examined during the following two academic years.

In this course all the regulations of the code of honor at the School of Computer science and Communication apply, see: http://www.kth.se/csc/student/hederskodex/1.17237?l=en_UK.

Other requirements for final grade

Pass the course components (LAB1; 4 university credits) and (TEN1; 2 university credits).

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.