

Artificial Intelligence

Programme course

6 credits

Artificiell intelligens

TDDC17

Valid from:

Determined by

Board of Studies for Computer Science and
Media Technology

Date determined

2017-01-25

Main field of study

Computer Science and Engineering, Computer Science

Course level

First cycle

Advancement level

G2X

Course offered for

- Computer Science, Master's Programme
- Computer Science and Software Engineering, M Sc in Engineering
- Computer Engineering, B Sc in Engineering
- Programming
- Mathematics
- Computer Science and Engineering, M Sc in Engineering
- Industrial Engineering and Management - International, M Sc in Engineering
- Industrial Engineering and Management, M Sc in Engineering
- Information Technology, M Sc in Engineering
- Applied Physics and Electrical Engineering - International, M Sc in Engineering
- Applied Physics and Electrical Engineering, M Sc in Engineering

Entry requirements

Note: Admission requirements for non-programme students usually also include admission requirements for the programme and threshold requirements for progression within the programme, or corresponding.

Prerequisites

Programming in a functional, imperative or object oriented programming language. Knowledge of data structures and algorithms. Knowledge in logic and discrete mathematics is useful.

Intended learning outcomes

The aim of the course is to introduce concepts and applications of artificial intelligence (AI). Focus is on developing intelligent agent systems that can decide what to do and do it. This requires techniques for problem solving, knowledge and reasoning, learning, communication, perceiving and acting. After the course the student will be able to:

- explain and discuss artificial intelligence concepts
- apply well known artificial intelligence techniques

Course content

Overview of AI and its applications. Search as a problem-solving method. Logic as a means of representing knowledge. Reasoning with incomplete information; nonmonotonic and probabilistic reasoning. Structured knowledge representation. Action planning and robotics. Strategies for automatic learning. Orientation in architectures for AI.

Teaching and working methods

The course consists of a series of lectures devoted to theory and laboratory work where different AI techniques are practised using Common Lisp or Java.

Examination

| | | | |
|------|---------------------|------------|-----------|
| TEN1 | Written examination | U, 3, 4, 5 | 3 credits |
| LAB1 | Laboration | U, G | 3 credits |

Grades

Four-grade scale, LiU, U, 3, 4, 5

Other information

AI Programming

Department

Institutionen för datavetenskap

Director of Studies or equivalent

Peter Dalenius

Examiner

Patrick Doherty

Course website and other links

Education components

Preliminary scheduled hours: 52 h

Recommended self-study hours: 108 h

Course literature

Russell, S. & Norvig, P. (2002) Artificial Intelligence: A Modern Approach, Prentice Hall.
ISBN 0137903952 (mb) 0130803022 (hft).

Laborationskompendium från Institutionen för datavetenskap.

Referenslitteratur: Shapiro, C. (1992) Encyclopedia of Artificial Intelligence, Vol. 1-2,
Wiley Interscience.

Common rules

Regulations (apply to LiU in its entirety)

The university is a government agency whose operations are regulated by legislation and ordinances, which include the Higher Education Act and the Higher Education Ordinance. In addition to legislation and ordinances, operations are subject to several policy documents. The Linköping University rule book collects currently valid decisions of a regulatory nature taken by the university board, the vice-chancellor and faculty/department boards.

LiU's rule book for education at first-cycle and second-cycle levels is available at http://styrdokument.liu.se/Regelsamling/Innehall/Utbildning_pa_grund-_och_avancerad_niva.