

IMT3591 Artificial Intelligence - 2012-2013

Course code:

IMT3591

Course name:

Artificial Intelligence

Course level:

Bachelor (syklus 1)

ECTS Credits:

10

Duration:

Vår

Language of instruction:

English

Prerequisite(s):

IMT1031 Fundamental Programming

On the basis of:

IMT2021 Algorithmic Methods

Expected learning outcomes:

On successful completion of the module, students will be able to

- Understand and evaluate various core techniques and algorithms of AI, namely agent technology, informed and uninformed tree and graph search algorithms, various learning techniques including artificial neural networks, decision tree learning and evolutionary algorithms, logic and planning techniques and algorithms, knowledge representation, the meaning of concepts such as intelligence, reasoning, and making inferences.
- Identify different uses and applications of AI techniques and algorithms, from neuroscience, understanding brain to game development, to web technologies and secure system designs.
- Implement several of the algorithms on the mobile robots. The students will also enhance their programming skills in a preferred language of their own and in Java by learning to program a mobile robot.
- Improve programming skills through the programming of mobile robots. Programming mobile robots help with connecting the theory learnt in class with the practical use of it.
- Evaluate the run-time and memory complexity of several AI algorithms, and practice with creating better algorithms.

Topic(s):

- Path finding
- FSM
- Scripts
- Symbolic AI Techniques
- Logic
- Multi agent systems
- State based search
- Goal directed search
- Genetic Algorithms / Programming
- Neural networks
- Reinforcement learning

Teaching Methods:

Lectures

Exercises

Teaching Methods (additional text):

This course will focus on practical implementation of AI concepts. Lectures will introduce a topic area, and students are expected to implement and report on the key concept.

Form(s) of Assessment:

Exercises

Written exam, 4 hours

Form(s) of Assessment (additional text):

- Written exam, 4 hours (60%)
- 4 compulsory assignments (40%). Each of these assignments must be passed individually to be able to take the written exam.

Grading Scale:

Alphabetical Scale, A(best) – F (fail)

External/internal examiner:

External + internal examiner

Re-sit examination:

Ordinary re-sit exam.

Tillatte hjelpemidler:**Examination support:**

- Calculator
- Notes taken by the students during lectures and self study.
- Printed lecture slides
- Course book

Academic responsibility:

Faculty of Computer Science and Media Technology

Course responsibility:

Associate Professor Sule Yildirim

Teaching Materials:

Artificial Intelligence: A Modern Approach, 3rd Edition by Stuart Russell and Peter Norvig, 2010

Additional information:

In case there will be less than 5 students apply for the course the form may change to suit the class size.

Publish:

Yes