SYLLABUS

Computer Game AI 7.5 credits S0006D

Datorspels AI

Course syllabus admitted: Autumn 2016 Sp 1 - Present

DECISION DATE
2016-02-15

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LULEÅ TEKNISKA UNIVERSITET

Computer Game AI 7.5 credits S0006D

Datorspels AI

First cycle, S0006D

Education level	Grade scale	Subject	Subject group (SCB)
First cycle	G U 3 4 5	Medieteknik	Computer Technology

Entry requirements

In order to meet the general entry requirements for first cycle studies you must have successfully completed upper secondary education and documented skills in English language and Courses equivalent to 22.5 points mathematics and 22.5 points Programming of which 7.5 credits Object-Oriented Programming

Selection

The selection is based on 1-165 credits.

Examiner

Patrik Holmlund

Course Aim

The course aims to give basic knowledge of artificial intelligence, concepts, methods and applications, and to provide general knowledge to apply a selection techniques developed in artificial intelligence. The context for this is artificial intelligence applications in computer games.

The student should be able to:

- With broad knowledge in the field of computer game AI understand relationships at the system level, and apply knowledge of mathematics and science for specific issues. As shown through the presentation of concepts of artificial intelligence in computer games.
- Model, simulate, predict, and evaluate methods and algorithms of artificial intelligence in computer games. As shown through the simulation labs.
- Identify the need for further knowledge and to continuously upgrade their skills. As shown through the presentation of in-depth study of the identification of further work.
- Understand, implement, and develop algorithms for artificial intelligence in computer games.
- Understand and implement artificial intelligence at the system level in a game engine.
- Have insight into the role of artificial intelligence in computer games as well as insight into the development process.

Contents

In this course following topics are covered:

- Path Finding
- Autonomous agents
- Flocking behavior
- Decision making and strategies
- Learning
- AI-systems architecture
- Different types of games and their effect on AI-building
- Debugging and optimization of AI in the game

Realization

Each course occasion´s language and form is stated and appear on the course page on Luleå University of Technology's website.

The course consists of lectures, project work and assignments. Participation in laboratory and project work.

Examination

If there is a decision on special educational support, in accordance with the Guideline Student's rights and obligations at Luleå University of Technology, an adapted or alternative form of examination can be provided.

Compulsory assignments or project reports may occur.
Each assignment is graded, after which the final grade for the course is a combination of these grades. In each assignment specifies what is required for each grade.

Overlap

The course S0006D is equal to ISI735

Literature. Valid from Autumn 2011 Sp 1

Programming Game AI by example, Mat Buckland, ISBN: 1-55622-078-2

Course offered by

Department of Computer Science, Electrical and Space Engineering

Items/credits

Number	Type	Credits	Grade
0006	Assignment report 1	1	G U 3 4 5
0007	Assignment report 2	2	G U 3 4 5
0008	Assignment report 3	2.5	G U 3 4 5
0009	Assignment report 4	2	G U 3 4 5

Study guidance

Study guidance for the course is to be found in our learning platform Canvas before the course starts. Students applying for single subject courses get more information in the Welcome letter. You will find the learning platform via My LTU.

Last revised

by Jonny Johansson, HUL SRT 2016-02-15

Syllabus established

by institutionen i Skellefteå 2007-02-28