LINKÖPINGS TEKNISKA HÖGSKOLA
Tekniska fakultetskansliet

FÖRSLAG TILL PROGRAMNÄMND INFÖR ÅR   2017

NÄMND/NÄMNDER: | DM

Förslagsställare (Namn, funktion, Inst/Enhet)

Fredrik Heintz, IDA/AIICS

FÖRSLAGET GÄLLER:

a) EXISTERANDE KURS (Ange kurskod och kursnamn)

b) NY KURS (Ange kursnamn, årskurs, önskad läsperiod, schemablocksplacering. Bifoga utkast till kursplan.)

Multiagent Systems 6hp, avancerad nivå, Period: HT2, Block 2

c) ÄNDRING I EXISTERANDE PROFIL/INRIKTNING (Ange Program och Profil/Inriktning. Bifoga beskrivning över vad förslaget går ut på.)

d) NY PROFIL/INRIKTNING (Ange Program och Profilnamn. Bifoga utkast till Profilbeskrivning.)

e) ÖVRIGT (Bifoga beskrivning över vad förslaget går ut på.)

PROGRAMNÄMNDENS BESKED:

Aim:
The overall aim of the course is to give an overview of multiagent systems and in depth knowledge of some areas of multiagent systems. After the course students should be able to:
- List and explain important problems and techniques in the area of multiagent systems.
- Explain how central algorithms in the area of multiagent systems work.
- Be able to implement some central algorithm in the area of multiagent systems.
- Evaluate and apply different game theoretic approaches.
- Design and use auctions for allocating resources in a multiagent system.
- Model relevant aspects of multiagent system decision making using markov decision processes and logics.

Prerequisites:
An introductory AI course, knowledge of programming, probabilities, and logic.

Organization:
Lectures, seminars and labs. Lab assignments will be used to learn more about the practical aspects of multiagent systems and explore some techniques in more detail. The examination will mainly be homework exercises.

Course content:
- Architectures for multiagent systems
- Distributed AI, including distributed constraint satisfaction and optimization
- Game theory, including normal form and extensive form games
- Communication, including speech acts
- Aggregated preferences, including voting
- Auctions for multiagent resource allocation
- Logics for multiagent systems
- Multiagent decision-making, including task allocation

Course literature:
Main book: Shoham, Yoav and Leyton-Brown, Kevin (2009) Multiagent systems - Algorithmic, Game-Theoretic and Logical Foundations. Cambridge University Press. ISBN 978-0-521-89943-7.