Multi-Agent Programming

Course level: Master ([M2])   **Track(s):** [CPS2]

ECTS Credits: 5 (CPS2)

Course instructors: Olivier Boissier (Mines Saint-Etienne), Flavien Balbo (Mines Saint-Etienne), Gauthier Picard (Mines Saint-Etienne)

Education period: 1st semester   **Language of instruction:** English

Expected prior-knowledge: Introduction to Artificial Intelligence

Aim and learning outcomes: introduction to the domain of multi-agent system with a clear and strong focus on programming. The objective is to be able to analyze, design and program collective autonomous systems by using multi-agent models and technologies.

Keywords: multi-agent system, agent-oriented programming, agents organisation, agents environment, programming language,

Syllabus:

- Introduction to multi-agent systems
- Concepts and models of multi-agent oriented programming
- Multi-Agent Software Engineering
- Programming Languages and Platforms
- Laboratory sessions programming

Organisation and timetable: Lectures (12h), tutorials (10h) and Lab sessions (12h)

Form(s) of Assessment: written exam (2h, coefficient 2), practical work/project (coefficient 2) - Resit: written exam (2h)

Literature and study materials:

Reference books:
- R.H. Bordini, J.F. Hübner, M. Wooldridge, Programming multi-agent systems in AgentSpeak using Jason, Wiley, 2007
- G. Weiss, Multiagent Systems, MIT Press, 2013
- F.L. Bellifemine, G. Caire, D. Greenwood, Developping multi-agent systems with JADE, Wiley, 2007
- L. Padgham, M. Winikoff, Developing Intelligent Agent Systems : A Practical Guide, Wiley,

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