

# UE Multi-agent systems



Level  
Baccalaureate  
+5



ECTS  
3 credits



Component  
UFR IM2AG  
(informatique,  
mathématiques  
et  
mathématiques  
appliquées)



Semester  
Automne

- > **Teaching language(s):** English
- > **Teaching method:** In person
- > **Teaching type:** Lectures
- > **Open to exchange students:** Yes
- > **Code d'export Apogée:** GBX9MO27

## Presentation

### Description

Multi-agent systems (MAS) is a very active field of AI research, with multiple industrial and societal applications. The 2 main fields of application concern Distributed Problem Solving (DPS) and Agent-Based Modelling and Simulation (ABMS). The goal of this course is to understand the concepts of agents, multi-agent systems, models and simulations, and to learn how to design such models.

This course introduces the field of MAS, various theoretical aspects (agent architectures, reasoning, interactions, game theory, social choice, etc), as well as practical applications from recent research. The focus is mostly on agent-based social simulation, and how to integrate psychological aspects in agents (so-called "human factors": emotions, biases...) to make them more human-like and realistic. Applications discussed include epidemics modelling, computational economy, crisis management, urban planning, serious games, etc. The practical part of the course comprises several tutorials with various agent-based modelling platforms (in particular GAMA and Netlogo), scientific papers discussions, and analysis and/or extension of existing models.

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## Course parts

Lectures	Lectures (CM)	18h
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## Recommended prerequisites

Basic programming skills

**Period** : Semester 9

## Useful info

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### Contacts

Program director

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### Place

› Grenoble

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### Campus

› Grenoble - University campus