

# CM30174 + CM50206

## Intelligent Agents

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East building: x5053, x6971

Outline / version 0.4



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# Organisation

- Lecturers: Marina De Vos and Julian Padget
  - 10 × 2hr lectures, Tuesday: 15:15–17:05 6E2.2
  - 2 × revision classes, before + after Christmas
- Tutors: Jeehang (Felix) Lee, Qi (Tommy) Wu
  - 6 × 2hr labs, Wed: 11:15–13:05 2E1.14
  - 4 × 2hr (mandatory) tutorials, as above
    - **Week 3:** Protégé
    - **Week 4:** Game theory
    - **Week 5:** Agentscape
    - **Week 6:** Answer Set Programming

# Assessment

- Undergraduate
  - 2 × coursework (50%). Note: plagiarism guidelines
    - Trading agent competition (pairs)
    - Virtual world exploration (individual)
  - Exam: 3 questions, no choice; assessing material from
    - Lectures + discussions
    - Directed reading
    - The textbook
- Masters
  - 3 × coursework (60%). Note: plagiarism guidelines
    - Trading agent competition
    - Virtual world exploration
    - Seminar program (Msc): presentation and critical analysis of research papers
  - Exam: as above

# Aims and Objectives

## Aims:

- To introduce the principles of agents, agency, institutions and agent software development.

## Objectives:

- To know the factors that differentiate agents from other software systems and be able to classify agents according to their competencies.
- To describe and to contrast different agent architectures, platforms and approaches to agent development.
- To develop simple agent-based software systems.
- To deploy tools for the construction of agent systems
- To construct a simple ontology
- To construct agents that communicate using an ontology
- To construct a simple reasoning agent to work with other

# Content

- 1 Outline (MDV); Introduction to intelligent agents (JAP)
- 2 Reasoning Agents (MDV)
- 3 Communications and Ontologies (JAP)
- 4 Game theory (MDV)
- 5 Reaching Agreements (JAP)
- 6 Reputation (JAP)
- 7 Logics for multiagent systems (MDV)
- 8 Institutions and norms (JAP)
- 9 Modelling Institutions (MDV)
- 10 Agent-based Simulation (JAP)

## Supporting materials

- Wooldridge: An Introduction to Multi-Agent Systems (2nd Edition)
- Moodle
- Papers for directed reading (linked from Moodle)
- Software:
  - The Trading Agent Competition software  
<http://www.sics.se/tac/>
  - The Protégé ontology editor  
<http://protege.stanford.edu/>
  - The Agentscape platform  
<http://www.agentscape.org>