

INFO 7002 ADVANCED TOPICS IN ARTIFICIAL INTELLIGENCE

Credit Points 10

Legacy Code 301196

Coordinator Vernon Asuncion ([https://directory.westernsydney.edu.au/search/name/Vernon Asuncion/](https://directory.westernsydney.edu.au/search/name/Vernon%20Asuncion/))

Description This unit introduces the most fundamental techniques of artificial intelligence (AI), including knowledge representation, searching, machine learning and intelligent agents. Students will learn the basic theories and algorithms that are essential in the design and development of intelligent systems. The unit will focus on two typical AI applications: game playing and e-trading. Students will have the chance of using existing multiagent system platforms to design and develop intelligent software for game playing and automated trading in e-markets.

School Computer, Data & Math Sciences

Discipline Information Technology, Not Elsewhere Classified.

Student Contribution Band HECS Band 2 10cp

Level Postgraduate Coursework Level 7 subject

Incompatible Subjects LGYA 5875 Intelligent Agents LGYA 5991 Automated Negotiation and e-Trading INFO 7006 Intelligent Agents for eMarkets

Restrictions

Students must be enrolled in a postgraduate program.

Assumed Knowledge

This subject requires basic skills in programming with either JAVA or C ++ as the programming language.

Learning Outcomes

On successful completion of this subject, students should be able to:

1. Explain the background and principles of typical artificial intelligence techniques;
2. Describe the algorithms and their applications of typical artificial intelligence techniques;
3. Describe the architectures and models of intelligent agents and robots;
4. Explain the general economic model of electronic markets;
5. Design and implement computer game players and trading agents based on provided system development environment.

Subject Content

Problem solving techniques

Knowledge representation and reasoning techniques

Machine learning techniques

Intelligent agents and multiagent systems

Advanced Topic 1: Special intelligence and general intelligence

Advanced Topic 2: Intelligent agents for game playing

Advanced Topic 3: Robot programming

Advanced Topic 4: Agent-mediated e-Markets

Advanced Topic 5: Intelligent agents for e-trading

Case study

Assessment

The following table summarises the standard assessment tasks for this subject. Please note this is a guide only. Assessment tasks are regularly updated, where there is a difference your Learning Guide takes precedence.

Item	Length	Percent	Threshold	Individual/Group Task
Assignment 1	15 hours of work offline.	20	N	Individual
Assignment 2	15 hours of work offline.	20	N	Individual
Final examination	2 hours (open book)	60	N	Individual

Teaching Periods

Spring

Parramatta - Victoria Rd

Evening

Subject Contact Vernon Asuncion ([https://directory.westernsydney.edu.au/search/name/Vernon Asuncion/](https://directory.westernsydney.edu.au/search/name/Vernon%20Asuncion/))

View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=INFO7002_22-SPR_PS_E#subjects)