INFS 3003 ARTIFICIAL INTELLIGENCE

Credit Points 10

Legacy Code 301174

Coordinator Vernon Asuncion (https://directory.westernsydney.edu.au/search/name/Vernon Asuncion/)

Description This unit provides basic studies in the major areas of artificial intelligence: search, knowledge representation, logic programming, machine learning and knowledge based systems, agent planning and learning. The first part of this unit will focus on the foundation of artificial intelligence: search algorithms and their implementations, game playing, logics and knowledge representation, and inference in reasoning systems. The second part will cover the principles of knowledge based systems (intelligent systems), planning, and machine learning.

School Computer, Data & Math Sciences

Discipline Information Systems

Student Contribution Band HECS Band 2 10cp

Check your HECS Band contribution amount via the Fees (https://www.westernsydney.edu.au/currentstudents/current_students/fees/) page.

Level Undergraduate Level 3 subject

Pre-requisite(s) MATH 1006 AND
COMP 2009

Equivalent Subjects LGYA 5740 Artificial Intelligence LGYA 5781 Knowledge Based Systems INFS 3013 Intelligent Systems

Assumed Knowledge

Basic understanding of data structures and algorithms and basic programming skills in Pascal C/C++ or Java etc.

Learning Outcomes

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

1. Articulate the major concepts of artificial intelligence and knowledge based systems and their historical context
2. Implement well designed and various search algorithms for problem solving
3. Implement a well designed proper two-person game playing programs for specific tasks
4. Devise first order logics to formalise proper real world domains
5. Apply proper first order inference procedures to solve reasoning problems
6. Analyse the process of agent planning
7. Implement the Decision Tree Learning algorithm

Subject Content

Introduction to Artificial Intelligence and Knowledge Based Systems
Search I: Solving Problems by Search
Search II: Informed Search (A* Search)
Search III: Game Playing
Reasoning and Logic
First Order Logic
Development of Intelligent Systems
Planning and Acting
Learning Decision Trees
Decision Making

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
Report	20% each. Each assignment will require about 12 hours work.	40	N	Individual
Practical	5% for each lab practice demonstratior Each practical will require about 4 hours work.	10	N	Individual
Final Exam	2 hours	50	Y	Individual

Teaching Periods

Spring

Penrith (Kingswood)

Day

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

View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=INFS3003_22-SPR_KW_D#subjects)