

Liverpool John Moores University

Title: Advanced Topics in AI
Status: Definitive
Code: **6219COMP** (128018)
Version Start Date: 01-08-2021

Owning School/Faculty: Computer Science and Mathematics
Teaching School/Faculty: Computer Science and Mathematics

Team	Leader
Martin Randles	Y
Paul Fergus	

Academic Level: FHEQ6
Credit Value: 20
Total Delivered Hours: 44
Total Learning Hours: 200
Private Study: 156

Delivery Options

Course typically offered: Semester 2

Component	Contact Hours
Lecture	22
Practical	11
Tutorial	11

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	AS1	Research report on state-of-the-art topic in AI	50	
Technology	AS2	AI technology use, production and evaluation	50	

Aims

To equip the student with the tools to tackle complex real-world problems using Artificial Intelligence (AI).

To investigate both the application of rigorous mathematical techniques for production as well as an evaluation and use of intellectual tools and ethical

foundations to use, produce and appraise intelligent machines.

Learning Outcomes

After completing the module the student should be able to:

- 1 Critically evaluate the broad concept of Artificial Intelligence and how to identify systems with Artificial Intelligence
- 2 Identify and reason with ethical concerns around AI and the evolution of intelligent machines
- 3 Deploy appropriate classical Artificial Intelligence techniques to computing problems
- 4 Develop Artificial Intelligence techniques for problem solving

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

Report	1	2
Technology	3	4

Outline Syllabus

Background, philosophy and history of AI
Definition and pathways to producing AI behaviour
AI Ethics
Machine Learning
Techniques for AI
Developing AI systems
Robotics and AI
Biologically Inspired Models of AI
Evolutionary Computing

Learning Activities

In lectures students will be introduced to the major current topics in Artificial Intelligence. Tutorials will cover practical aspects of the development of intelligent systems in the lab. Lab sessions will allow students to put knowledge gained in lectures and tutorials into practice.

Notes

This module will introduce the latest concepts, tools and techniques in Artificial Intelligence and Machine Learning.