Anglia Ruskin University

Module Definition Form (MDF)

Module code: MOD005444	Version: 1 Date Amended: 04/May/2016

1. Module Title
Artificial Intelligence Programming

2a. Module Leader
Chris Jakeman

2b. Department
Department of Computing and Technology

2c. Faculty
Faculty of Science and Technology

3a. Level
6

3b. Module Type
Standard (fine graded)

4a. Credits
15

4b. Study Hours
150

5. Restrictions			
Type	**Module Code**	**Module Name**	**Condition**
Pre-requisite:	MOD005437	Object-Oriented Programming Development	Compulsory
Co-requisites:	None		
Exclusions:	None		
Courses to which this module is restricted:			

LEARNING, TEACHING AND ASSESSMENT INFORMATION

6a. Module Description

Artificial Intelligence (AI) covers a broad range of disciplines ranging from cognitive science to more pragmatic engineering subjects. It takes its inspiration from human and other biological behaviour that exhibit intelligence, such as problem solving, planning, decision making and optimization, and seeks to create systems that can perform similar intelligent tasks.

The students will explore the main areas of AI such as behaviour, genetic algorithms, neural networks and fuzzy logic. The module is quite practical with an emphasis on implementing techniques in code. Some topics will extend over several weeks to allow in-depth study.

The module assumes a basic level of mathematical ability and requires students to be familiar with a high-level programming language, such as C#.

In the assignment the student will apply AI techniques to a given scenario to demonstrate intelligent behaviour such as decision making, machine learning and optimisation.

6b. Outline Content

Research into types of AI and their application

State Machines

Textual Analysis

Expert Systems and Prolog

Path-finding

Bayesian Uncertainty and Fuzzy Logic

Artificial Neural Networks

Genetic algorithms

6c. Key Texts/Literature

The reading list to support this module is available at: http://readinglists.anglia.ac.uk/modules/mod005444

6d. Specialist Learning Resources
None

7. Learning Outcomes (threshold standards)		
No.	**Type**	**On successful completion of this module the student will be expected to be able to:**
1	Knowledge and Understanding	Understand the concepts of artificial intelligence and how these are implemented to provide intelligent behaviour.
2	Knowledge and Understanding	Choose appropriate AI techniques to enhance behaviour of interactive systems.
3	Intellectual, practical, affective and transferrable skills	Apply AI techniques to enhance a program which meets a client's brief.
4	Intellectual, practical, affective and transferrable skills	Implement and develop AI based techniques to solve problems.

8a. Module Occurrence to which this MDF Refers				
Year	**Occurrence**	**Period**	**Location**	**Mode of Delivery**
2017/8	F01UCP	Semester 1	University Centre, Peterborough	Face to Face

8b. Learning Activities for the above Module Occurrence			
Learning Activities	**Hours**	**Learning Outcomes**	**Details of Duration, frequency and other comments**
Lectures	12	1,2,3,4	Lecture 1 hr x 12 weeks
Other teacher managed learning	24	1,2,3,4	Practical 2 hr x 12 weeks
Student managed learning	114	1,2,3,4	reading, research, skills practice, assignment
TOTAL:	150		

9. Assessment for the above Module Occurrence					
Assessment No.	**Assessment Method**	**Learning Outcomes**	**Weighting (%)**	**Fine Grade or Pass/Fail**	**Qualifying Mark (%)**
010	Practical	3,4	0 (%)	Pass/Fail	100 (%)
Demonstration of program 15 minutes (1,000 words equivalent)					
Assessment No.	**Assessment Method**	**Learning Outcomes**	**Weighting (%)**	**Fine Grade or Pass/Fail**	**Qualifying Mark (%)**
011	Coursework	1,2	100 (%)	Fine Grade	30 (%)
Report on design, implementation and evaluation (2,000 words)					

In order to pass this module, students are required to achieve an overall mark of 40%.
In addition, students are required to:
(a) achieve the qualifying mark for each element of fine graded assessment of as specified above
(b) pass any pass/fail elements