UNIVERSITY of BRADFORD

Module Descriptor

AI for Games

Module Code:	COS6017-B
Academic Year:	2018-19
Credit Rating:	20
School:	Department of Computer Science
Subject Area:	Computer Science
FHEQ Level:	FHEQ Level 6
Module Leader:	Professor Rami Qahwaji

Additional Tutors:

Pre-requisites:

Co-requisites:

Contact Hours

Type	Hours
Lectures	10
Tutorials	20
Laboratory	24
Directed Study	146

Availability Periods

Occurrence	Location/Period
MSA	Management Development Institute of Singapore (MDIS) / Semester 2
NLA	Namal College / Semester 2 (Feb - May)
BDA	University of Bradford / Semester 2 (Feb - May)

Module Aims

To provide knowledge and experience of the creation of artificial opponents for a variety of games, using Artificial Intelligence techniques.

Outline Syllabus

Introduction to AI, applications of AI, history of games and consoles, AI in games, machines learning and games develoopment, neural netowks and games, finite state machines and path planning algorithms, game trees, MiniMax algorithm, NegaMax Algorthm, Alpha-Beta Pruning and Branching, Monte-Carlo simulation, games and real-time AI, the games industry.

Module Learning Outcomes

On successful completion of this module, students will be able to...

1 Critically review a range of AI approaches and their application to designing computerised game opponents.
Demonstrate critical understanding of game strategies and of the psychology of human game players.

2 Design computer game opponents. Analyse, design and implement AI software applicable to games, and also to finance and decision support.

3 Seek information from appropriate sources. Demonstrate problem solving techniques and preparation for further research in the area.

Learning, Teaching and Assessment Strategy

Practical work of an independent but supervised nature, with support through VLE and/or meetings as appropriate.
The delivery of the module will consist of lectures and lab classes supplemented by students own lab work and directed study. The coursework will involve students in the design of a AI game playing opponent. Supplementary assessment is by examination, based on the original assignment.

Mode of Assessment

Type	Method	Description	Length	Weighting	Final Assess'
Referral	Examination - closed book	Supplementary closed book examination	0 hours	100%	No
Summative	Coursework	A coursework involving the creation of an AI opponent	0 hours	60%	Yes
Summative	Coursework	A coursework involving the creation of an AI opponent	0 hours	40%	No

Legacy Code (if applicable)

CM-0328D

Reading List

To view Reading List, please go to **rebus:list**.