

# GAME: Artificial Intelligence for Games

Module Title:			Artificial Intelligence for Games		
Language of Instruction:		n:	English		
Credite: 5		5			
		<u> </u>			
NFQ Level:		8			
Module Delivered In			1 programme(s)		
Teaching & Learning Strategies:			Traditional lectures are used to convey knowledge from teacher to student, and students are actively encouraged to engage in discussion during class. During the practical sessions, students will undertake various laboratory exercises implementing and exploring a variety of algorithms. Group learning is also utilised via a module group project and also a cross-module group project as possible. A term paper will involve a more in-depth study of the topics raised.		
Module Aim:			To immerse students in the formal theory, and the application of contemporary techniques in Artificial Intelligence for computer games development.		
Learning Ou	itcomes				
On successf	ul completic	on of th	his module the learner should be able to:		
LO1	Compare and contrast a number of search techniques including within adversarial environments				
LO2	Illustrate different techniques for modelling/implementing the Game space				
LO3	LO3 Apply appropriate AI techniques to enhance the Gaming experience				
Pre-requisite	e learning				
Module Recommendations This is prior learning (or a practical skill) that is recommended before enrolment in this module.					
No recommendations listed					
Incompatible Modules These are modules which have learning outcomes that are too similar to the learning outcomes of this module.					
No incompatible modules listed					
Co-requisite Modules					
No Co-requisite modules listed					
<b>Requirements</b> This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.					
No requirements listed					



### GAME: Artificial Intelligence for Games

#### Module Content & Assessment

Indicative Content								
What is Intelligence?								
Turing Test. Chinese Room. Philosophical Implications, AI in Games Context.								
Basic Behaviours Flocking, Swarming, Chasing, Evading.								
Group Behavior Flocking, Swarm	Group Behaviours Flocking, Swarming, Coordinated movements, Squads							
Search Search space, B	Search Search space, Basic search algorithms, Heurisitc Search, A* Search, Advanced A* variants							
Game Search Mini-max search	, alpha-beta search	, search space pruning						
Basic Decision Finite State Mac	Making hines, Decision Tre	es						
Fuzzy Logic								
Fuzzification, Fu	zzy Rule Application	n, Defuzzification, Combs Method						
Assessment Br		%						
Continuous Asse		35.00%						
Project				15.00%				
End of Module F	ormal Examination			50.00%				
Continuous Ass	sessment							
Assessment Assessment De Type		cription	Outcome addressed	% of total	Assessment Date			
Case Studies	Students are req gaming context	uired to implement specific algorithms within a 1,2,3		35.00	n/a			
Project			•					
Assessment Typ	e	Assessment Description	Outcome	% of	Assessment			
Assessment Type			addressed	total	Date			
Project		Intended as a group project	1,2,3	15.00	n/a			
No Practical								
End of Module Formal Examination								
Assessment Assessment Desc Type		ription	Outcome addressed	% of total	Assessment Date			
Formal Exam	A written assessm conceptually apply	ent of student's understanding and ability to the course material appropriately.	1,2,3	50.00	End-of- Semester			

SETU Carlow Campus reserves the right to alter the nature and timings of assessment



## GAME: Artificial Intelligence for Games

#### Module Workload

Workload: Full Time					
Workload Type	Frequency	Average Weekly Learner Workload			
Lecture	12 Weeks per Stage	2.00			
Laboratory	12 Weeks per Stage	2.00			
Estimated Learner Hours	15 Weeks per Stage	5.13			
	Total Hours	125.00			

Module Delivered In								
Programme Code	Programme Ser		Delivery					
CW_KCCGD_B	Bachelor of Science (Honours) in Computer Games Development	7	Mandatory					