

GRAP H3203: 3D Graphics

Module Title:			3D Graphics				
Language of Instruction:		on:	English				
Credits: 10		10					
NFQ Level: 7							
Module Delivered In			No Programmes				
Teaching & Learning Strategies:			A blended teaching strategy will be used where traditional lectures are augmented with online resources. The learning will be reinforced and extended using supervised computer lab sessions where the material is applied.				
Module Aim:			To deliver an understanding of the architecture of a contemporary game engine. To deliver an understanding of the principles and mechanisms of real time 3D graphics rendering To provide the practical skills necessary to render interactive, realistic game objects in real-time with advanced lighting & material techniques using a contemporary game engine.				
Learning Outcomes							
On successful completion of this module the learner should be able to:							
LO1	demonstrate an understanding of the theory behind advanced real time 3D graphics techniques;						
LO2	demonstrate an understanding of the architecture and application of a 3D graphics engine;						
LO3	implement advanced graphics techniques to enhance realism;						
LO4	build a real time interactive 3D game using a contemporary game engine						
Pre-requisite	e learning						
Module Recommendations This is prior learning (or a practical skill) that is recommended before enrolment in this module.							
No recomme	ndations lis	ted					
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							
6990	6990 GAME H3		201	Gameplay Programming II			
Requirements This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.							
No requirements listed							



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Module Content & Assessment

Indicative Content										
Game engine architecture Engine subsystems including engine foundation systems, rendering, physics, animation and game world object models.										
Advanced rendering techniques Lighting, post processing, normal maps.Shader programming										
Building a 3D Game using a game engine Animating models, user interaction, physics, UI, audio										
Tools & Assets Game engine content pipeline. Shader & terrain editors										
Basic principles of game art & UX Color theory, proportion, composition & balance.										
Assessment Breakdown		%								
Continuous Assessment		20.00%								
Project		40.00%								
Practical					40.00%					
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Continuous Assessment			T			1				
Assessment Type		Assessment Description	Outcome addressed		% of total	Assessment Date				
Open-book Examination		ame engine architecture 2			10.00	n/a				
Open-book Examination		3D Graphics Theory	1,2		10.00	n/a				
Project			1			1				
Assessment Type		sessment Description	Outcome addressed		% of total	Assessment Date				
Project		ni-Project 1	3,4		15.00	n/a				
Project		ni-Project 2	3,4		25.00	n/a				
Practical			1			1				
Assessment Type Assessmen		escription	Outcome addressed		% of total	Assessment Date				
Practical/Skills Evaluation Laboratory Pa		rticipation, completion of assigned worksheets	1,2,3,4		40.00	Sem 1 End				
No End of Module Formal Examination										

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



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Module Workload

Workload: Full Time					
Workload Type	Frequency	Average Weekly Learner Workload			
Lecture	20 Weeks per Stage	2.00			
Laboratory	20 Weeks per Stage	3.00			
Independent Learning Time	20 Weeks per Stage	0.50			
Independent Learning Time	20 Weeks per Stage	1.00			
Independent Learning Time	20 Weeks per Stage	1.50			
	Total Hours	160.00			