PROG: Visual Effects Programming

Module Title:	Visual Effects Programming
Language of Instruction:	English

Credits:	10

NFQ Level:	8

Module Delivered In	1 programme(s)

Teaching & Learning Strategies:	As well as traditional lectures students will undertake various laboratory exercises implementing visual effect techniques utilising appropriate API. They will be expected to participate in class on the materials covered. 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 design, production of Visual Effects within games and user interfaces. To deliver an understanding of the principles and mechanisms of per-rendered and real time visual effects rendering. To provide the practical skills necessary to render interactive, realistic visual effects incorporating lighting & material techniques

Learning Outcomes	
On successful completion of this module the learner should be able to:	
LO1	Demonstrate an understanding of the theory behind visual effect techniques
LO2	Implement visual effect techniques to enhance realism and fidelity
LO3	Understand and implement visual effects within 2D and 3D space.
LO4	Render scenes (pre-render and real-time) using standard visual effect libraries
LO5	Produce showcase visual effects for digital games and user interfaces

Pre-requisite 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
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
3D Graphics, Synthetic Camera Perspective Projection, Pipeline, Polygon Meshes
Scene Description Mesh Representation, File structures, Scene Graph
Scene Rendering Clipping, HSR, Polygon & Line Filling, Anti-aliasing, texturing
Advanced visual effect techniques Lighting, post processing, normal maps, shader programming
Visual Effects Scripting File processing, conversion and composition techniques, geometry, voxels and particles
Tools & Assets Visual effects content pipeline, shader editors

Assessment Breakdown	%
Project	50.00%
Practical	50.00%

No Continuous Assessment

Project				
Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Project	A creative visual effects project. Students will work in a semi-autonomous fashion, implementing technical visual effects skills.	1,2,3,4,5	50.00	n/a

Practical				
Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Practical/Skills Evaluation	Exercises on visual effect production techniques to support project work	1,2,3,4,5	50.00	n/a

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	12 Weeks per Stage	1.00
Lecturer Supervised Learning	12 Weeks per Stage	7.00
Independent Learning Time	15 Weeks per Stage	10.27
	Total Hours	250.00

Module Delivered In

Programme Code	Programme	Semester	Delivery
CW_KCIAD_B	Bachelor of Science (Honours) in Computing in Interactive Digital Art and Design	7	Mandatory