MODULE SPECIFICATION

Part 1: Information			
Module Title	Principles of 3D Environments		
Module Code	UFCFY4-30-1	Level	Level 4
For implementation from	2018-19		
UWE Credit Rating	30	ECTS Credit Rating	15
Faculty	Faculty of Environment & Technology	Field	Computer Science and Creative Technologies
Department	FET Dept of Computer Sci & Creative Tech		
Contributes towards	Games Technology [Sep][SW][Frenchay][4yrs] BSc (Hons) 2018-19 Games Technology [Sep][FT][Frenchay][3yrs] BSc (Hons) 2018-19		
Module type:	Project		
Pre-requisites	None		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description

Overview: One of the challenges faced by those wishing to build virtual worlds is to shed the expectations of the physical world and to begin to understand the 'abstract' mathematical principles that underpin the creation of virtual environments.

The logic required to deal with interaction between virtual objects demands new ways of thinking about phenomena we take for granted in the physical world.

This module's aim is to introduce these principles so that students understand the demands and limitations these place upon the design of virtual worlds and are able to apply these principles to the creation of interactive 3D environments.

Educational Aims: In addition to the learning outcomes the educational experience may explore, develop, and practise but not formally discretely assess the following:

The development of appropriate workflow strategies for modelling and construction within virtual environments.

Communication and presentation skills.

Outline Syllabus: Key principles used to describe objects and their relationships within virtual space: hierarchies, inheritance, co-ordinate systems, modelling, texturing and lighting techniques.

Introduction to computer modelling and the concepts required for their creation and management.

The use of texture files, texture wrapping and the lighting of virtual objects/scenes.

Animation through the use of key frames and management of data.

The differences between modelling packages and game design packages.

The use of game design packages, importing media and 3D files, the management of hierarchies and transforms to create natural looking behaviours.

Creating camera management systems within interactive environments that address expectations of cinematic views.

Programming and scripting within game design packages.

Teaching and Learning Methods: Students are expected to attend lectures and lab tutorials and to develop this work through self-directed study.

Lab sessions will provide opportunities for immersion in the subject through practise and tutorial support.

Having developed familiarity with the concepts of the module the students will have the opportunity to apply and extend their understanding through individual responses to a brief.

Contact time: 72 hours
Assimilation and development of knowledge: 148 hours
Exam preparation: 20 hours
Coursework preparation: 60 hours
Total study time: 300 hours

Part 3: Assessment

The summative assessment consists of the submission of a portfolio of lab work that asks the student to deliver work addressing the learning outcomes of the module.

Formative assessment is made throughout the module and students are given advice about the development of their on-going portfolio work and the means by which they can improve it. This is recorded and presented to students on request and is available as a part of their summative feedback.

First Sit Components	**Final Assessment**	**Element weighting**	**Description**
Portfolio - Component A	✓	100 %	Portfolio
Resit Components	**Final Assessment**	**Element weighting**	**Description**
Portfolio - Component A	✓	100 %	Portfolio

Part 4: Teaching and Learning Methods

Learning Outcomes

On successful completion of this module students will be able to:

	Module Learning Outcomes
MO1	Critically select and apply techniques for the creation of virtual/interactive environments
MO2	Demonstrate an understanding of the key principles used to describe objects and their relationships within virtual space
MO3	Understand the demands that the use of varied environments places on the handling of cameras and viewports within virtual worlds
MO4	Design and implement strategies to address these constraints
MO5	Extend simple behaviours such as movement through the addition of 'friction' or the speed at which wheels turn in relation to the movement of a virtual car so that movement within virtual environments appears to possess realistic behaviours

Contact Hours

Contact Hours	
Independent Study Hours:	
Independent study/self-guided study	228
Total Independent Study Hours:	228
Scheduled Learning and Teaching Hours:	
Face-to-face learning	72
Total Scheduled Learning and Teaching Hours:	72
Hours to be allocated	300
Allocated Hours	300

Reading List

The reading list for this module can be accessed via the following link:

https://uwe.rl.talis.com/modules/ufcfy4-30-1.html