MODULE SPECIFICATION

Part 1: Information			
Module Title	Game Engine Architecture		
Module Code	UFCFAM-15-2	Level	Level 5
For implementation from	2019-20		
UWE Credit Rating	15	ECTS Credit Rating	7.5
Faculty	Faculty of Environment & Technology	Field	Computer Science and Creative Technologies
Department	FET Dept of Computer Sci & Creative Tech		
Module type:	Standard		
Pre-requisites	Entertainment Software Development 2019-20		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description

Overview: Game engines, and the tools contained within them, are intricately crafted software solutions. Designed to allow creativity, flexibility and productivity in the game development process, they must also ensure quality and performance of the game produced. Game developers require an understanding of the design principles and decisions that dictate a game engine's architecture, and the impact of these on the development pipeline and eventual game performance.

Educational Aims: See Learning Outcomes

Outline Syllabus: Within this module you will cover:

Game engines / frameworks, rationale and examples.

Game engine software requirements and how they relate to 'traditional' software engineering.

Typical game engine architectures, components, and interrelationships

Scripting tools and languages, and provisioning for these within game engine design

Software design roots, tools and considerations.

Multi-platform development and implications

The creation of a small-scale game using an existing game engine.

Teaching and Learning Methods: Teaching and learning will be split over lectures, to introduce concepts and theoretical underpinnings of engines / frameworks; and studio sessions to encourage practical exploration and provide a vehicle for formative feedback on work for the module.

Part 3: Assessment

Summative assessment:
A theoretical understanding of game engine design and architecture, and a practical understanding of their use, are both of importance within this module and the wider programme. Assessment addresses this, as follows;

Students will be given a brief, typically with a technical twist, to develop a small-scale game, using a game engine appropriate to the context. This game and an accompanying technical implementation report forms component B for this module.

A viva presentation, followed by Q and A, forms the controlled conditions (component A) of this module. Within this presentation, students should provide an overview of the technical implementation of their game, key engine features used, and important underlying software design concepts.

Formative assessment:
Progress sessions will be scheduled within the teaching block to review, and provide feedback and guidance on work in progress.

First Sit Components	**Final Assessment**	**Element weighting**	**Description**
Set Exercise - Component B		75 %	Small-scale game implementation and documentation
Presentation - Component A	✓	25 %	Viva presentation (10 mins) and Q and A
Resit Components	**Final Assessment**	**Element weighting**	**Description**
Set Exercise - Component B		75 %	Small-scale game implementation and documentation
Presentation - Component A	✓	25 %	Viva presentation (10 mins) plus Q and A

Part 4: Teaching and Learning Methods

Learning Outcomes

On successful completion of this module students will achieve the following learning outcomes:

Module Learning Outcomes	**Reference**
Understand the specific software and hardware requirements of game software, and how game engines / frameworks enables productivity within this context	MO1
Analyse the architecture and features of typical game engines, and critically evaluate the suitability of a particular engine in a given game development scenario	MO2

	Examine fundamental aspects of game engines from a software design perspective, in terms of user and system requirements, design principles and use of established patterns and data-structures	MO3
	Effectively implement a small-scale game to a given brief using an existing game engine, utilising components and methods appropriate to the engine and context	MO4

Contact Hours	**Independent Study Hours:**	
	Independent study/self-guided study	114
	Total Independent Study Hours:	114
	Scheduled Learning and Teaching Hours:	
	Face-to-face learning	36
	Total Scheduled Learning and Teaching Hours:	36
	Hours to be allocated	150
	Allocated Hours	150
Reading List	*The reading list for this module can be accessed via the following link:* https://uwe.rl.talis.com/modules/ufcfam-15-2.html	

Part 5: Contributes Towards
This module contributes towards the following programmes of study: Games Technology [Sep][SW][Frenchay][4yrs] BSc (Hons) 2018-19 Games Technology [Sep][FT][Frenchay][3yrs] BSc (Hons) 2018-19