MODULE SPECIFICATION

Part 1: Information			
Module Title	Game Audio Programming		
Module Code	UFCFE5-15-3	Level	Level 6
For implementation from	2018-19		
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		
Contributes towards			
Module type:	Standard		

Pre-requisites	Applied Audio Systems 2018-19, Audio Process Design and Implementation 2018-19
Excluded Combinations	None
Co- requisites	None
Module Entry requirements	None

Part 2: Description

Educational Aims: See Learning Outcomes

Outline Syllabus: Data structures and algorithms
Dynamic arrays, linked lists, look-up tables, multithreading algorithms (including principles of locking and lock-free techniques).

Audio codecs
PCM, DPCM, ADPCM, lossless compression, lossy compression, MPEG compression systems, Ogg Vorbis.

Console specifications
History, context and development of console capabilities, storage specifications, processing specifications, hardware codec availability, general purpose computers, consoles, mobile platforms.

Middleware systems and game engine integration

Comparison of game audio middleware, audio engine architectures, tools development, libraries and APIs, game engine integration.

Managing processing and memory resources
Optimising, profiling, trading-off audio quality with system capabilities.

Teaching and Learning Methods: Hours
Contact time 36
Assimilation and development of knowledge 74
Exam preparation 10
Coursework preparation 30
Total study time 150

Theoretical and conceptual aspects of the module will be introduced by lecture on a weekly basis and, where appropriate, contextualised with practical demonstrations of application. Relevant reading material and sections from the course text should be read in preparation for each lecture. On average this will require a total of 1.5 hours study each week.

Learners will apply the conceptual elements of taught material in weekly practical sessions where abilities in problem solving and implementation surrounding audio technology concepts will be developed. Learners are required to complete exercises, extend ideas, and develop further understanding independently of the timetabled sessions. On average this will require a total of 2 hours study each week.

Assignments will be staged throughout the year which will require students to complete additional unsupervised learning. Typically this will require 2 hours study each week although it should be anticipated that the majority of this time will be biased towards the assignment deadlines.

Part 3: Assessment

The examination will be used to establish learners' understanding of the module content as described in lectures and reading materials.

The assignment will be used to assess learners' practical skills in the application of music and audio technology systems. This will involve demonstrating an ability to create an extended piece of work beyond the examples seen in lectures and practicals. The assignment activity will be staged in order to allow progressive development of skills and understanding.

Formative assessment will be provided as part of the practical sessions. Individual feedback will be provided on the assignment and group (generic) feedback on the exam.

Assessment criteria will be supplied with the assignment specification and in example exam papers.

First Sit Components	**Final Assessment**	**Element weighting**	**Description**
Practical Skills Assessment - Component B	✓	75 %	Practical assignment and write up
Examination - Component A		25 %	Exam (120 mins)
Resit Components	**Final Assessment**	**Element weighting**	**Description**
Practical Skills Assessment - Component B	✓	75 %	Practical assignment and write up
Examination - Component A		25 %	Exam (120 mins)

Part 4: Teaching and Learning Methods

Learning Outcomes

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

	Module Learning Outcomes
MO1	Select, implement and apply a range of data structures and algorithms to develop game audio systems including tools and runtime components.
MO2	Utilise game audio middleware APIs to implement game audio systems for sound effects, dialogue and music playback.
MO3	Optimise game audio code both in terms of primary storage, secondary storage and runtime processing requirements to a given specification.
MO4	Compare game audio platforms and audio codec specifications including general-purpose computers, game consoles and mobile systems.

Contact Hours

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/ufcfe5-15-3.html