STUDENT AND ACADEMIC SERVICES



# MODULE SPECIFICATION

| Part 1:  Information | | | |
|---|---|---|---|
| Module Title | Game Audio Programming | | |
| Module Code | UFCFE5-15-3 | Level | Level 6 |
| 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 | Audio Process Design and Implementation 2019-20 | | |
| Excluded Combinations | None | | |
| Co- requisites | None | | |
| Module Entry requirements | None | | |

| Part 2: Description |
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| **Educational Aims:** See Learning Outcomes<br><br>**Outline Syllabus:** Data structures and algorithms<br>Dynamic arrays, linked lists, look-up tables, multithreading algorithms (including principles of locking and lock-free techniques).<br><br>Audio codecs<br>PCM, DPCM, ADPCM, lossless compression, lossy compression, MPEG compression systems, Ogg Vorbis.<br><br>Console specifications<br>History, context and development of console capabilities, storage specifications, processing specifications, hardware codec availability, general purpose computers, consoles, mobile platforms.<br><br>Middleware systems and game engine integration<br>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 |
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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) |

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| Part 4: Teaching and Learning Methods | |
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| Learning Outcomes | On successful completion of this module students will achieve the following learning outcomes: |

| Module Learning Outcomes | Reference |
| --- | --- |
| Select, implement and apply a range of data structures and algorithms to develop game audio systems including tools and runtime components. | MO1 |
| Utilise game audio middleware APIs to implement game audio systems for sound effects, dialogue and music playback. | MO2 |
| Optimise game audio code both in terms of primary storage, secondary storage and runtime processing requirements to a given specification. | MO3 |
| Compare game audio platforms and audio codec specifications including general-purpose computers, game consoles and mobile systems. | 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:* <br><br> https://uwe.rl.talis.com/modules/ufcfe5-15-3.html | |

| Part 5: Contributes Towards |
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| This module contributes towards the following programmes of study: |