Module Specification

Introductory Audio Programming

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Contents

Part 1: Information

Module title: Introductory Audio Programming

Module code: UFCFF4-30-1

Level: Level 4

For implementation from: 2025-26

UWE credit rating: 30

ECTS credit rating: 15

College: College of Arts, Technology and Environment

School: CATE School of Computing and Creative Technologies

Partner institutions: None

Field: Computer Science and Creative Technologies

Module type: Module

Pre-requisites: None

Excluded combinations: None

Co-requisites: None

Continuing professional development: No

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: The module introduces problem solving techniques to break down audio/music related problems using methodical process. Mathematical processes and operations fundamental to audio/music signal generation and control protocols will also be explored. Software development tools and associated environments will be used to maintain, edit, build, test, and debug computer programs. Students will develop and present for assessment an individual portfolio of work consisting of individual responses to exercise briefs.

Features: Not applicable

Educational aims: The module is designed to introduce problem solving techniques to break down audio/music related problems using a methodical process. Whilst studying on the module, students will use software development tools and associated environments to maintain, edit, build, test, and debug computer programs using accurate and appropriate language syntax. Learners will also become familiar with and learn to apply mathematical processes and operations which are fundamental to audio/music signal generation and control protocols.

Students will develop and present an individual portfolio of work consisting of individual responses to exercise briefs which will assessed. The development of this portfolio provides an opportunity to demonstrate 'programatic thinking' in the context of music and audio systems and within the module learning outcomes.

Outline syllabus: Fundamentals of traditional software development and engineering
The application of programming to audio and music systems
Audio control fundamentals and protocols
Common algorithmic methods and the development of appropriate solutions in context
Fundamentals of signal generation and processing components
Appropriate mathematical methods, including use of formulae for audio, scaling and shifting and implementation in code
Techniques by which programming problems are tackled, and how to design, express and document suitable solutions
Introduction to event-driven software architectures and their utility within audio systems

Part 3: Teaching and learning methods

Teaching and learning methods: Weekly lectures will introduce theoretical and conceptual aspects of the module. Where appropriate these will be contextualised with practical demonstrations. Reading material and sections from the course text

should be read in preparation for each lecture. On average this will require a total of 3 hours study each week.

Weekly practical sessions will allow learners to apply the conceptual elements of taught material. Problem solving, software engineering, program design and implementation will be developed during practical sessions. Learners will be required to complete exercises, extend ideas, and develop further understanding independently of practical sessions, On average this will require a total of 4 hours independent study each week, including attendance at Peer Assisted Learning sessions.

Learners will develop portfolio of work throughout the year, with feedback on this provided during timetabled practical sessions. Students will be required to complete additional unsupervised learning to implement, debug, and document their portfolio. Typically this will require 4 hours study each week on average, a bias of more time spent toward the assignment deadline is anticipated.

Additional teaching and learning support may be provided via email and virtual learning environments.

Contact hours:

Contact time: 72
Assimilation and development of knowledge: 148
Portfolio preparation: 80
Total study time: 300

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

MO1 Apply problem solving techniques to breakdown audio/music related problems using a methodical process.

MO2 Operate development tools and associated environments to maintain, edit, build, test, and debug systems.

MO3 Use appropriate methods and operations for audio/music signal generation and control.

Hours to be allocated: 300

Contact hours:

Independent study/self-guided study = 228 hours

Face-to-face learning = 72 hours

Reading list: The reading list for this module can be accessed at readinglists.uwe.ac.uk via the following link https://uwe.rl.talis.com/modules/ufcff4-30-1.html

Part 4: Assessment

Assessment strategy: Each learner will develop and present a portfolio of individual work, the content of which will be assessed against the module learning outcomes to establish the degree of understanding of computer programming in application to music and audio systems.

Learners will develop, debug, and test solutions to a series of set exercises (with detailed assessment criteria supplied in an assignment specification document). The complexity of set exercises will be gradually staged in order to allow progressive development of skills and understanding. Formative assessment and feedback will be provided during practical sessions.

100% of the module marks will be assessed by this portfolio work.

Resit students do not overtly benefit from extended timeframe as tasks are equivalent to (but diverge from) mainsit requirements.

Assessment tasks:

Portfolio (First Sit)
Description: Portfolio of individual work (5-10 set exercises + one extended exercise)

Weighting: 100 %
Final assessment: Yes
Group work: No
Learning outcomes tested: MO1, MO2, MO3

Portfolio (Resit)
Description: Portfolio of individual work (5-10 set exercises + one extended exercise)
Weighting: 100 %
Final assessment: Yes
Group work: No
Learning outcomes tested: MO1, MO2, MO3

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Audio and Music Technology [Frenchay] BSc (Hons) 2025-26

Creative Music Technology [Frenchay] BSc (Hons) 2025-26

Creative Music Technology [Frenchay] BSc (Hons) 2025-26

Audio and Music Technology [Frenchay] BSc (Hons) 2025-26