



Module Specification

Architectural Acoustics

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Part 1: Information

Module title: Architectural Acoustics

Module code: UFCFTJ-15-3

Level: Level 6

For implementation from: 2023-24

UWE credit rating: 15

ECTS credit rating: 7.5

Faculty: Faculty of Environment & Technology

Department: FET Dept of Computer Sci & Creative Tech

Partner institutions: None

Delivery locations: Not in use for Modules

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: Not applicable

Features: Not applicable

Educational aims: See Learning Outcomes.

Outline syllabus: The syllabus includes:

Fundamental acoustical concepts, sources and receivers, sound propagation, diffraction, refraction, reflection, scattering, transmission, absorption, damping, insulation, isolation, diffuse and free field conditions, Sabine and non-Sabine spaces, Helmholtz resonator.

Signal processing concepts and tools for acoustics, simple harmonics motion, spectral analysis, impulse responses, excitation and resonance, echoes, reverberation, comb filtering, noise metrics.

Quantifying the characteristics of acoustic environments, standardised measures, their benefits and limitations; properties of acoustic treatments within enclosed spaces; porous and resonant absorbers; diffusers; parallel and non-parallel surfaces; curved surfaces.

Practical approach to interior performance environments associated with speech and music, design, acoustic adjustment, measurement, assessment and comparison.

Part 3: Teaching and learning methods

Teaching and learning methods: Teaching sessions will comprise a series of lectures and practicals based on the syllabus content. The lectures will introduce the underlying concepts and explore their application in typical situations. The practicals will involve the students revising theory and exercising in the applications. These techniques will also be directly relevant to the portfolio.

Support will also be provided via email and virtual learning environments.

Contact Hours:

Activity

Contact time: 36 hours

Assimilation and development of knowledge: 74 hours

Coursework preparation: 40 hours

Total study time: 150 hours

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

MO1 Demonstrate the command of scientific terminology and basic numerical tasks in the field of acoustics.

MO2 Specify suitable architectural acoustic requirements and remedial treatments for buildings and spaces using standardised measures and techniques.

MO3 Measure and analyse acoustic signals and systems.

MO4 Compare, evaluate and define signal processing techniques that support research in the field of acoustics.

Hours to be allocated: 150

Contact hours:

Independent study/self-guided study = 114 hours

Face-to-face learning = 36 hours

Total = 150

Reading list: The reading list for this module can be accessed at [readinglists.uwe.ac.uk](https://uwe.rl.talis.com/modules/ufcftj-15-3.html) via the following link <https://uwe.rl.talis.com/modules/ufcftj-15-3.html>

Part 4: Assessment

Assessment strategy: The learning outcomes of the module are broad and include acquisition of theoretical understanding and practical skills. The portfolio of different acoustic measurements allows to develop and demonstrate these skills during the course of the module. This strategy assures feedback for students' portfolio before the final submission making sure that the improvements are considered and made early on. There are thus multiple formative feedback opportunities that help students

achieve high quality submissions by attempting multiple iterations of the practical tasks, and achieve a more objective reflection.

The resit for the portfolio requires students to submit content that was missing or insufficient in the initial portfolio. Therefore the successful elements will not need to be resubmitted.

Assessment components:

Portfolio (First Sit)

Description: A portfolio of practical assignments incorporating acoustic measurements, prediction and reflection.

Weighting: 100 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4

Portfolio (Resit)

Description: A portfolio of practical assignments incorporating acoustic measurements, prediction and reflection.

Weighting: 100 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3, MO4

Part 5: Contributes towards

This module contributes towards the following programmes of study:

Audio and Music Technology [Sep][FT][Frenchay][3yrs] BSc (Hons) 2021-22

Creative Music Technology [Sep][FT][Frenchay][3yrs] BSc (Hons) 2021-22

Audio and Music Technology [Sep][SW][Frenchay][4yrs] BSc (Hons) 2020-21

Audio and Music Technology {Foundation} [Sep][FT][Frenchay][4yrs] BSc (Hons)
2020-21

Creative Music Technology [Sep][SW][Frenchay][4yrs] BSc (Hons) 2020-21

Audio and Music Technology {Foundation} [Sep][SW][Frenchay][5yrs] BSc (Hons)
2019-20