



Module Specification

Architectural Acoustics

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Part 1: Information

Module title: Architectural Acoustics

Module code: UBLL79-15-2

Level: Level 5

For implementation from: 2026-27

UWE credit rating: 15

ECTS credit rating: 7.5

College: College of Arts, Technology and Environment

School: CATE School of Architecture and Environment

Partner institutions: None

Field: Architecture and the Built Environment

Module type: Module

Pre-requisites: None

Excluded combinations: None

Co-requisites: None

Continuing professional development: Yes

Professional, statutory or regulatory body requirements: None

Part 2: Description

Overview: This module provides students with a comprehensive understanding of sound principles, room acoustics, noise control, and acoustical design in buildings. Topics include sound propagation, environmental noise control, acoustic treatment materials, and the design of acoustically optimised spaces for various building types. Students learn to apply mathematical and scientific principles to real-world design challenges, including sound isolation, reverberation, and speech intelligibility. The

module combines theoretical learning with practical workshops and project work, equipping students with the skills to design acoustically efficient buildings.

Features: Not applicable

Educational aims: To equip students with the knowledge and skills to analyse and evaluate acoustic performance in buildings, applying scientific methods and legal standards to recommend design criteria that improves sound quality, noise control, and compliance with regulations.

Outline syllabus: This module provides students with a comprehensive understanding of architectural acoustics, focusing on the principles and applications of sound in buildings.

Introduction to the science behind acoustics

Sound Propagation and Room Acoustics

Noise Control and Isolation

Acoustic Design of Buildings - concert halls, theatres, offices, classrooms, residential spaces.

Architectural Acoustics and Environmental Noise

Acoustic Measurements and Testing

Building Regulations and Standards

Advanced Topics in Architectural Acoustics

Part 3: Teaching and learning methods

Teaching and learning methods: Teaching Strategy for the Module

The subject is taught through a structured and diverse set of activities designed to enhance student understanding and engagement. The strategy includes the following components:

1. Introductory Lectures - A comprehensive set of lectures provides a foundational overview of the subject, establishing key concepts and objectives. These session serves as a starting point for deeper exploration through subsequent activities.

2. Interactive Tutorial - Tutorials are designed to foster engagement by encouraging questions, discussions, and problem-solving. These sessions allow students to clarify concepts and apply their knowledge in a collaborative setting.

3. Laboratory Experimentation - Hands-on learning is facilitated through laboratory-based experiments, where students utilise specialised lab facilities to test and analyse the physical parameters of the subject. This practical approach reinforces theoretical knowledge and develops technical skills.

4. Online Learning Resources - A rich suite of online learning materials supports students in their independent study. These resources include multimedia content, readings, interactive tools, and self-assessment opportunities, enabling students to learn at their own pace and in the manner that suits their individual preferences.

This multi-faceted teaching strategy ensures a well-rounded learning experience, combining theoretical understanding, practical application, and independent exploration to meet diverse learning needs.

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

MO1 Discuss the science behind acoustic performance of buildings and their relevance to legal requirements, building regulations and optimum design.

MO2 Utilise mathematical and scientific methods to evaluate acoustic quality in buildings, reverberation time, room modes and speech intelligibility, providing evidence-based recommendations for improvement.

MO3 Evaluate and implement noise control strategies for both internal and external sources, addressing sound transmission and insulation issues, to reduce noise pollution and enhance occupant comfort.

Hours to be allocated: 150

Contact hours:

Independent study/self-guided study = 114 hours

Face-to-face learning = 36 hours

Reading list: The reading list for this module can be accessed at [readinglists.uwe.ac.uk](https://rl.talis.com/3/uwe/lists/553AF0E0-2F44-5DFD-72C3-5C283C1A7607.html?lang=en-GB&login=1) via the following link <https://rl.talis.com/3/uwe/lists/553AF0E0-2F44-5DFD-72C3-5C283C1A7607.html?lang=en-GB&login=1>

Part 4: Assessment

Assessment strategy: The assessment strategy aims to evaluate students' understanding of acoustics in building design while fostering the development of essential academic skills, including research, analysis, and formal writing. Given the technical nature of the content, the approach also emphasises helping students build confidence in applying scientific methods and addressing complex acoustic challenges.

First Attempt Assessment

Task 1 – Report

Students will submit a comprehensive technical report that involves evaluating the acoustic performance of a case study building, including assessing its noise control strategies, reverberation time, room modes, and speech intelligibility. The report should demonstrate the application of mathematical and scientific methods learned throughout the module, integrating knowledge from all topics. The report will be assessed for clarity, technical accuracy, academic writing, and the depth of analysis, including evidence-based recommendations for improvements.

This piece of academic writing will be targeted with enhanced study skills support as part of the scaffolding for inclusive assessment. If, in spite of this, any weaknesses in information literacy and academic writing are identified in submitted work. Feed-forward advice will be given about further support the student should explore.

Second Attempt Assessment

Task 1 – Report

In the second attempt, students will rework their initial report for a different case study building, refining their analysis and expanding on recommendations to address

any weaknesses identified in the first submission. This revision allows students to demonstrate an advanced understanding of the module content, applying feedback to improve their academic and technical writing.

Feedback Strategy

An opportunity for formative feedback will be provided on a draft of the report prior to the first attempt opportunity, focusing on the structure, content, and application of acoustic principles. Detailed written feedback of marked submissions will highlight areas for improvement in both technical analysis and academic writing.

Assessment tasks:

Written Assignment (First Sit)

Description: Report (2,500 words)

Weighting: 100 %

Final assessment: Yes

Group work: No

Learning outcomes tested: MO1, MO2, MO3

Written Assignment (Resit)

Description: Report (2,500 words)

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:

Architecture and Environmental Engineering [Frenchay] BEng (Hons) 2025-26

Building Services Engineering {Apprenticeship-UWE} [Frenchay] BEng (Hons) 2024-25

