



Soundscape Design

Applied Acoustics for Architecture and Interior Design

Edition 1

Scientific Director: Lorenzo Palmeri

Programme Start Date: April 20th 2027

Programme End Date: June 5th 2027

Total Duration: 48 hours

Delivery Format: Online (36 hours) and in person (12 hours)

Language of Instruction: English

Edition: 1st Edition

Location: POLI.design and online

Weekly Commitment: Online sessions of up to 3 hours each; final in-person workshop on Friday and Saturday morning

Tuition Fee: €2,400

INTRODUCTION

The acoustic quality of spaces directly affects well-being, concentration, social interaction, and the identity of places. Despite its importance, acoustics is often addressed late in the design process, typically as a technical verification or a problem to be corrected.

This course is designed to integrate the sonic dimension from the earliest stages of design. Its objective is to provide designers and professionals with the cultural, technical, and practical tools needed to understand and shape space through the behaviour of sound.

Participants will explore the fundamentals of architectural acoustics, the role of materials and geometries in sound propagation, and the relationship between acoustic environments and human perception. The programme also examines how sound design extends into digital environments and the metaverse.

Special attention is devoted to musical instruments as constructive models. Concepts such as the soundboard, resonance, and the relationship between form and timbre become interpretative tools for understanding how architectural volumes can generate acoustic quality.

The course also integrates perspectives from perceptual psychology and neuroscience, providing insights into how sound influences behaviour, attention, and emotion.

The programme offers an advanced learning environment for professionals seeking to design spaces with a conscious and informed approach to acoustics, bridging the gap between formal design and sonic performance.

OBJECTIVES

Remember

Recall the fundamental principles of acoustics as applied to architecture and design, including sound propagation and the acoustic behaviour of materials.



Understand

Understand how acoustic quality influences perception, comfort, attention, communication, and the overall experience of space, integrating technical, sensory, and design-related perspectives.

Apply

Apply listening, analysis, and simulation practices to interpret the acoustic behaviour of environments and surfaces, assessing their impact on well-being and the identity of places.

Analyze

Analyze the relationship between sound, form, geometry, and built space, developing the ability to interpret environments through their acoustic dimension.

Evaluate

Evaluate design decisions in which sound is considered an active component of architecture and design, in both physical and digital contexts.

Create

Develop original design proposals for physical and contemporary digital environments in which the sonic dimension is fully integrated into the design process.

PREREQUISITES AND REQUIRED SOFTWARE

A university-level education or professional experience in a design-related field is required. No advanced technical knowledge of acoustics is necessary.

TARGET

This course is designed for:

- Architects and interior designers
- Product designers
- Civil and environmental engineers
- Sound designers
- Professionals in the contract, hospitality, and retail sectors

COURSE STRUCTURE (48 HOURS)

6 online theoretical modules of 6 hours each (2 sessions of 3 hours) + 1 in-person design workshop of 12 hours (Friday + Saturday morning).



THEORETICAL MODULE – Fundamentals of Acoustics for Design

Hours: 6 hours

Delivery mode: Online (max 3 hours per session, 2 sessions)

Description:

This module introduces the fundamental principles of acoustics applied to architecture and design, providing the necessary tools to understand sound behaviour in built environments and its design implications.

Main topics:

Sound propagation, reflection, absorption, diffusion

Reverberation time, speech intelligibility, acoustic comfort

Case study analysis

THEORETICAL MODULE – Psychology of Sound Perception

Hours: 6 hours

Delivery mode: Online (max 3 hours per session, 2 sessions)

Description:

This module explores the relationship between sound, perception, and emotional experience, analysing how acoustic environments affect behaviour, well-being, and the quality of human interaction.

Main topics:

Auditory perception

Relationship between sound environment and emotion

Impact of noise on attention and behaviour

THEORETICAL MODULE – Material, Surface and Sonic Mass

Hours: 6 hours

Delivery mode: Online (max 3 hours per session, 2 sessions)

Description:

This module investigates the relationship between matter and sound perception, analysing how surfaces, density, and construction systems influence acoustic quality and spatial identity.

Main topics:

Acoustic behaviour of materials

Texture, density, micro-perforations, sound-absorbing systems

Design applications

THEORETICAL MODULE – Musical Instruments and Architecture

Hours: 6 hours

Delivery mode: Online (max 3 hours per session, 2 sessions)

Description:

This module explores musical instruments as models of acoustic design, relating form, material, and resonance in order to transfer these principles to the architectural scale.

Main topics:

Musical instruments as spatial models

Soundbox, resonance, timbre

Transfer of construction principles to architecture



THEORETICAL MODULE – Soundscape and Public Space

Hours: 6 hours

Delivery mode: Online (max 3 hours per session, 2 sessions)

Description:

This module analyses the sonic landscape of cities and collective spaces, developing tools to interpret and design urban environments through their acoustic dimension.

Main topics:

Urban soundscape

Environmental quality and acoustic identity

Case studies and applications

THEORETICAL MODULE – Technology, Simulation and the Metaverse

Hours: 6 hours

Delivery mode: Online (max 3 hours per session, 2 sessions)

Description:

This module introduces digital tools for acoustic simulation and design, extending sound design into virtual, immersive environments and new forms of digital spatial experience.

Main topics:

Simulation software

Sound design in virtual environments

Presence, orientation, and sonic coherence in the metaverse

DESIGN WORKSHOP – Designing Listening

Hours: 12 hours

Delivery mode: In person — Friday 09:00–18:00 + Saturday 09:00–13:00

Description:

The workshop is the applied component of the programme and translates the knowledge acquired in the theoretical modules into a concrete design experience. Participants will observe, listen to, and interpret a real space, developing a proposal in which the sonic dimension becomes an integral part of architectural or design practice.

The activity combines perceptual analysis, acoustic reading of environments, and design experimentation, leading students to engage with materials, geometries, sonic behaviour, and the relationship between space and experience.

Main topics:

Acoustic analysis of an existing space

Listening and perceptual mapping

Evaluation of surface and volume acoustic behaviour

Relationship between function, atmosphere, and sound quality

Development of design scenarios

Construction of an integrated proposal

Final presentation and discussion

ASSESSMENT METHODS

At the end of the course, a learning assessment is required to verify the acquisition of competencies.

Assessment may be based on:

Quantitative evaluation (a grade)



Qualitative evaluation (e.g., achieved, partially achieved, not achieved)

CAREER OUTCOMES AND EXIT PROFILE / COMPETENCIES

This programme enhances the skills of architects, designers, and professionals involved in spatial design, strengthening capabilities applicable in architecture, interior design, retail, cultural spaces, exhibition design, and interactive digital environments.

The competencies developed are aligned with ESCO-related professional profiles such as Architect, Interior Designer, Industrial Designer, Acoustic Engineer, and Multimedia Designer, with a particular focus on integrating perceptual quality, environmental comfort, and sound design.

Upon completion of the programme, participants will be able to contribute to the design of both physical and digital environments by considering sound as an active component of spatial experience, supporting the analysis, development, and evaluation of acoustic and perceptual qualities in design projects.

COURSE TIMETABLE STRUCTURE

The course lasts 48 hours, for a total of 14 teaching sessions.

Structure:

12 online sessions of 3 hours each (6 theoretical modules × 2 sessions), for a total of 36 online hours.

Schedule of online sessions: to be defined.

1 final in-person workshop over 2 days (Friday 09:00–18:00 + Saturday 09:00–13:00), for a total of 12 in-person hours.

Assessment Methods

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The assessment may be based on:

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Course Schedule Structure

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Delivery method	Date	Teaching	Week's day	Time	Hours
online	20/04/2027	Fundamentals of Acoustics for Design	Tuesday	5:00 PM–8:00 PM	3
online	22/04/2027	Fundamentals of Acoustics for Design	Thursday	5:00 PM–8:00 PM	3
online	27/04/2027	Material, Surface and Sonic Mass	Tuesday	5:00 PM–8:00 PM	3
online	29/04/2027	Material, Surface and Sonic Mass	Thursday	5:00 PM–8:00 PM	3
online	04/05/2027	Musical Instruments and Architecture	Tuesday	5:00 PM–8:00 PM	3
online	06/05/2027	Musical Instruments and Architecture	Thursday	5:00 PM–8:00 PM	3
online	11/05/2027	Psychology of Sound Perception	Tuesday	5:00 PM–8:00 PM	3
online	13/05/2027	Psychology of Sound Perception	Thursday	5:00 PM–8:00 PM	3
online	18/05/2027	Soundscape and Public Space	Tuesday	5:00 PM–8:00 PM	3
online	20/05/2027	Soundscape and Public Space	Thursday	5:00 PM–8:00 PM	3
online	25/05/2027	Technology, Simulation and the Metaverse	Tuesday	5:00 PM–8:00 PM	3
online	27/05/2027	Technology, Simulation and the Metaverse	Thursday	5:00 PM–8:00 PM	3
IN PERSON	04/06/2027	Workshop – Designing Listening	Friday	9:00AM–6:00 PM	8
IN PERSON	05/06/2027	Workshop – Designing Listening	Saturday	09:00AM – 1:00 PM	4

Payment

You may complete the payment using one of the following methods:

Bank Transfer

POLI.design
Società consortile
a responsabilità limitata

Campus Bovisa
Via Don Giovanni Verità, 25
20158 – Milano

+39 02 2399 7206
info@polidesign.net
www.polidesign.net

P.I./C.F. 12878090153
REA 1593683



When making the payment via bank transfer, please use the following bank details:

POLI.design Srl
C/O BANCA INTESA SANPAOLO
Branch: Piazza Paolo Ferrari, 10 – 20121 Milan, Italy
BIC / SWIFT: BCITITMM
IBAN: IT28M0306909606100000176368

Payment reference: Course name and participant's full name.

A copy of the payment receipt must be sent to: iscrizioni@polidesign.net

Online Payment by Credit Card

Payment by credit card is available through the POLI.design reserved area on the website, upon request at: iscrizioni@polidesign.net

Tuition Fee

The total course fee is €2,400 per student.

Certification Awarded

At the end of the course, participants will receive an Open Badge for the Executive Course in “Soundscape Design - Applied Acoustics for Architecture and Interior Design” issued by POLI.design.

Attendance is mandatory for at least 80% of the course in order to obtain the certification.

Information and Contacts

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