

# Postgraduate Certificate Environmental Acoustics





## Postgraduate Certificate Environmental Acoustics

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Global University
- » Credits: 6 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/us/engineering/postgraduate-certificate/environmental-acoustics](http://www.techtute.com/us/engineering/postgraduate-certificate/environmental-acoustics)

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Certificate

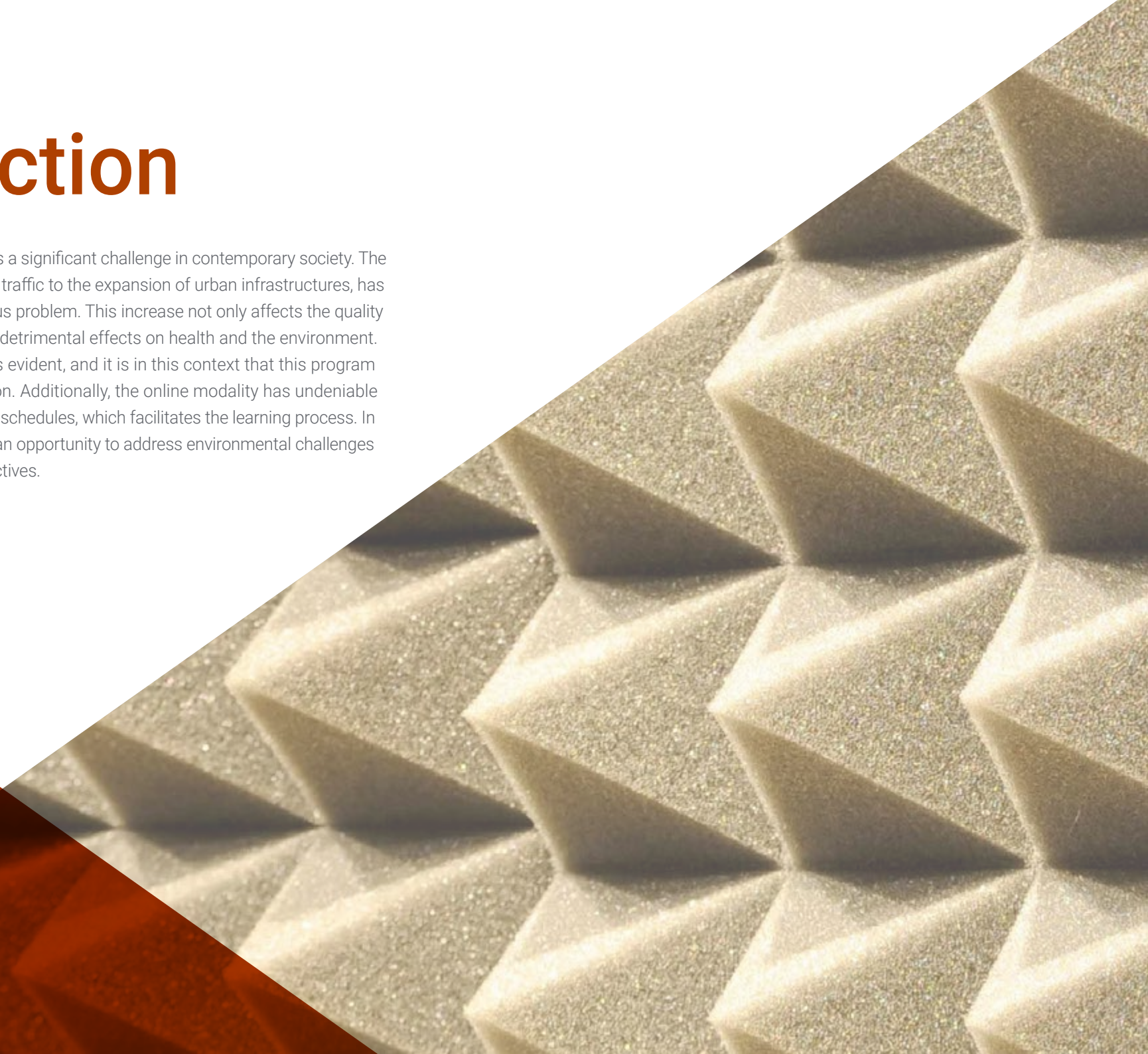
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01

# Introduction

Environmental noise has emerged as a significant challenge in contemporary society. The proliferation of sound sources, from traffic to the expansion of urban infrastructures, has given rise to an increasingly notorious problem. This increase not only affects the quality of life of communities, but also has detrimental effects on health and the environment. The need to address this problem is evident, and it is in this context that this program is positioned as a necessary solution. Additionally, the online modality has undeniable advantages, such as the flexibility of schedules, which facilitates the learning process. In this sense, this program represents an opportunity to address environmental challenges and create new professional perspectives.



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*Thanks to this Postgraduate Certificate, you will be prepared to improve sound environments and recover the balance of spaces for everyone”*

The constant increase of the noise level in the environment, resulting from various sources, such as buildings or automobiles, has become a major problem in contemporary society. The detrimental effects of this phenomenon on human health and ecological balance highlight the need to address this issue effectively from the field of Engineering.

This is the reason for the creation of this Postgraduate Certificate, which stands as an essential solution to this challenge. Its approach allows students to obtain an integral education in the field of Environmental Acoustics, together with the elaboration of specific Action Plans. This enables students to be trained with the necessary skills to understand, assess and effectively manage environmental noise. Likewise, the teaching team, composed of recognized experts in this field, guarantees a highly enriching educational experience.

Additionally, TECH's virtual mode adds an element of flexibility to this academic option, allowing graduates to access knowledge from any location and at any time of the day. A pedagogical alternative that facilitates the learning process by adapting to the individual schedules of students. Students will be able to benefit from the *Relearning* methodology, a highly effective experience that reduces the long hours of study and by reducing the long hours of study and memorization.

This **Postgraduate Certificate in Environmental Acoustics** contains the most complete and up-to-date program on the market. The most important features include:

- ♦ Development of case studies presented by experts in Acoustics engineering
- ♦ The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice
- ♦ The practical exercises where the self-evaluation process can be carried out to improve learning
- ♦ Its special emphasis on innovative methodologies
- ♦ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ♦ Content that is accessible from any fixed or portable device with an Internet connection



*Stand out as the professional engineer of the future by being prepared in the field of Acoustics"*

“

*In the field of Environmental Acoustics, protecting the environment is a challenge. Prepare yourself with TECH and propel your career to success”*

*Delve into the methods of sound measurement and existing regulations through the most innovative teaching materials.*

*Learn how to sustainably manage resources in the field of Environmental Acoustics and contribute to social progress.*

The program includes in its teaching staff professionals of the sector who pour into this training the experience of their work, as well as renowned specialists from reference societies and prestigious universities.

Its multimedia content, developed with the latest educational technology, will allow the professional a situated and contextual learning, that is, a simulated environment that will provide an immersive training programmed to train in real situations.

The design of this program focuses on Problem-Based Learning, in which the professional will have to try to solve the different professional practice situations that will arise throughout the academic course. For this purpose, the student will be assisted by an innovative interactive video system created by renowned experts.



# 02

# Objectives

This university program focuses on equipping professionals with the essential skills to effectively analyze and manage noise pollution. Through the understanding of noise sources, accurate measurement, design of control strategies, and evaluation of health impacts, students will acquire the skills necessary to meet real-world challenges in this area. In this way, they gain a comprehensive preparation, enabling them to successfully address the challenges inherent in noise impact reduction and the planning of concomitant action strategies.







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*At TECH becoming the best professional in the field of acoustics is a reality. Enroll now!"*



## General Objectives

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- ♦ Analyze and classify the main sources of environmental noise and their consequences
- ♦ Measure environmental noise using appropriate acoustic indicators
- ♦ Develop noise action and control plans based on noise type analysis
- ♦ Evaluate the potential health effects of exposure to noise and vibration depending on the nature and level of the source

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*In only 6 weeks, analyze and project solutions to the growing problem of environmental noise in urban areas”*





## Specific Objectives

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- Analyze environmental noise indicators Lden and Ldn and define standards, protocols and environmental noise measurement procedures
- Develop other indicators such as traffic noise TNI or sound exposure SEL
- Establish the measurement of traffic, railroad, aircraft or activity noise
- Design noise barriers, noise mapping or human noise exposure limitation techniques

03

# Course Management

The faculty of this program, made up of recognized experts in environmental acoustics, presents a rigorously structured academic program that provides a thorough and applicable understanding of the discipline. Throughout this Postgraduate Certificate, students will benefit from the extensive experience of specialists in the accurate measurement of noise and the implementation of sound control strategies. A unique opportunity for world-class learning through the world's largest digital university.



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*Succeed by preparing yourself at  
The World's Best Digital University  
according to Forbes and learn with  
the real experts in Acoustics"*

## Management



### D. Espinosa Corbellini, Daniel

- ♦ Expert Consultant in Audio Equipment and Room Acoustics
- ♦ Professor at the School of Engineering of Puerto Real from the University of Cadiz
- ♦ Design Engineer at Coelan Electrical Installations Company
- ♦ Audio Technician in Sales and Installations in the Daniel Sonido company
- ♦ Industrial Technical Engineer in Industrial Electronics at the University of Cadiz
- ♦ Industrial Engineer in Industrial Organization by the University of Cadiz
- ♦ Official Master's Degree in Evaluation and Management of Noise Pollution by the University of Cadiz
- ♦ Official Master's Degree in Acoustic Engineering from the University of Cadiz and the University of Granada
- ♦ Diploma of Advanced Studies by the University of Cadiz



## Professors

### Dr. Aguilar Aguilera, Antonio

- ♦ Technical Architect Villanueva del Trabuco Town Hall's Department of Works and Urbanism
- ♦ Teaching and Research Staff at the University of Granada
- ♦ Researcher of the group TEP-968 Technologies for the Circular Economy (TEC)
- ♦ Professor in the Degree in Building Engineering, in the subjects of Organization and Programming in Building and Prevention and Safety in the Department of Architectural Constructions of the University of Granada
- ♦ Professor in the Degree in Physics in the subject of Physics of the Environment the Department of Applied Physics of the University of Granada
- ♦ Andrés Lara Prize, awarded by the Spanish Society of Acoustics (SEA), for the best paper in the field of Environmental Physics
- ♦ PhD in the Civil Engineering Program at the University of Granada
- ♦ Degree in Technical Architecture from the University of Granada
- ♦ Master's Degree in Management and Integral Safety in Building by the University of Granada
- ♦ Master's Degree in Acoustics Engineering from the University of Granada
- ♦ Professor in the Applied Physics Department of the Telecommunications Technology Engineering Degree in the Applied Physics to Telecommunications course

# 04

## Structure and Content

This academic program is presented in a structured and coherent manner, delving into various crucial aspects in the field of Environmental Acoustics and the corresponding action plans. Therefore, it explores the sources of noise in the environment, its temporal variation and impacts on human health and the environment. Additionally, it provides a vision on the evaluation of noise exposure in work environments, as well as exposure to mechanical vibrations transmitted to the human body. All this, with numerous educational resources, available 24 hours a day, 7 days a week.





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*You have a virtual library, accessible  
7 days a week from any electronic  
device with Internet connection"*

## Module 1. Environmental Acoustics and Action Plans

- 1.1. Analysis of Environmental Acoustics
  - 1.1.1. Sources of Environmental Noise
  - 1.1.2. Types of Environmental Noise According to their Temporal Evolution
  - 1.1.3. Effects of Environmental Noise on Human Health and Environment
- 1.2. Indicators and Magnitudes of Environmental Noise
  - 1.2.1. Aspects that Influence the Measurement of Environmental Noise
  - 1.2.2. Environmental Noise Indicators
    - 1.2.2.1. Day-evening-night Level (Lden)
    - 1.2.2.2. Day-night Level (Ldn)
  - 1.2.3. Other Environmental Noise Indicators
    - 1.2.3.1. Traffic Noise Index (TNI)
    - 1.2.3.2. Noise Pollution Level (NPL)
    - 1.2.3.3. SEL Level
- 1.3. Environmental Noise Measurement
  - 1.3.1. International Measurement Standards and Protocols
  - 1.3.2. Measurement Procedures
  - 1.3.3. Environmental Noise Assessment Report
- 1.4. Noise Maps and Action Plans
  - 1.4.1. Acoustic Measures
  - 1.4.2. General Noise Mapping Process
  - 1.4.3. Noise Control Action Plans
- 1.5. Sources of Environmental Noise: Types
  - 1.5.1. Traffic Noise
  - 1.5.2. Railroad Noise
  - 1.5.3. Aircraft Noise
  - 1.5.4. Activity Noise
- 1.6. Noise Sources: Control Measures
  - 1.6.1. Control at the Source
  - 1.6.2. Propagation Control
  - 1.6.3. Receiver Control



- 1.7. Traffic Noise Prediction Models
  - 1.7.1. Traffic Noise Prediction Methods
  - 1.7.2. Theories of Generation and Propagation
  - 1.7.3. Factors Influencing Noise Generation
  - 1.7.4. Factors Affecting Propagation
- 1.8. Acoustic Barriers
  - 1.8.1. Functioning of an Acoustic Barrier Principles
  - 1.8.2. Types of Acoustic Barriers
  - 1.8.3. Design of Acoustic Barriers
- 1.9. Evaluation of Noise Exposure in the Work Environment
  - 1.9.1. Identification of the Consequences of Exposure to High Noise Levels
  - 1.9.2. Methods for Measuring and Assessing Noise Exposure (ISO 9612:2009)
  - 1.9.3. Exposure Rates and Maximum Exposure Values
  - 1.9.4. Technical Measures to Limit Exposure
- 1.10. Assessment of Exposure to Mechanical Vibration Transmitted to the Human Body
  - 1.10.1. Identification of the Consequences of Exposure to Whole-Body Vibration
  - 1.10.2. Measurement and Assessment Methods
  - 1.10.3. Exposure Rates and Maximum Exposure Values
  - 1.10.4. Technical Measures to Limit Exposure



*The Relearning methodology, based on the reiteration of key content, will allow you to learn efficiently and in less time"*

05

# Methodology

This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: **Relearning**.

This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.





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*Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"*

## Case Study to contextualize all content

Our program offers a revolutionary approach to developing skills and knowledge. Our goal is to strengthen skills in a changing, competitive, and highly demanding environment.

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*At TECH, you will experience a learning methodology that is shaking the foundations of traditional universities around the world”*



*You will have access to a learning system based on repetition, with natural and progressive teaching throughout the entire syllabus.*



*The student will learn to solve complex situations in real business environments through collaborative activities and real cases.*

### A learning method that is different and innovative

This TECH program is an intensive educational program, created from scratch, which presents the most demanding challenges and decisions in this field, both nationally and internationally. This methodology promotes personal and professional growth, representing a significant step towards success. The case method, a technique that lays the foundation for this content, ensures that the most current economic, social and professional reality is taken into account.

“*Our program prepares you to face new challenges in uncertain environments and achieve success in your career”*

The case method is the most widely used learning system in the best faculties in the world. The case method was developed in 1912 so that law students would not only learn the law based on theoretical content. It consisted of presenting students with real-life, complex situations for them to make informed decisions and value judgments on how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

What should a professional do in a given situation? This is the question that you are presented with in the case method, an action-oriented learning method. Throughout the program, the studies will be presented with multiple real cases. They will have to combine all their knowledge and research, and argue and defend their ideas and decisions.

## Relearning Methodology

TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines 8 different teaching elements in each lesson.

We enhance the Case Study with the best 100% online teaching method: Relearning.

*In 2019, we obtained the best learning results of all online universities in the world.*

At TECH, you will learn using a cutting-edge methodology designed to train the executives of the future. This method, at the forefront of international teaching, is called Relearning.

Our university is the only one in the world authorized to employ this successful method. In 2019, we managed to improve our students' overall satisfaction levels (teaching quality, quality of materials, course structure, objectives...) based on the best online university indicators.





In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

This methodology has trained more than 650,000 university graduates with unprecedented success in fields as diverse as biochemistry, genetics, surgery, international law, management skills, sports science, philosophy, law, engineering, journalism, history, and financial markets and instruments. All this in a highly demanding environment, where the students have a strong socio-economic profile and an average age of 43.5 years.

*Relearning will allow you to learn with less effort and better performance, involving you more in your training, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation for success.*

From the latest scientific evidence in the field of neuroscience, not only do we know how to organize information, ideas, images and memories, but we know that the place and context where we have learned something is fundamental for us to be able to remember it and store it in the hippocampus, to retain it in our long-term memory.

In this way, and in what is called neurocognitive context-dependent e-learning, the different elements in our program are connected to the context where the individual carries out their professional activity.



This program offers the best educational material, prepared with professionals in mind:



### Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise.

These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.



### Classes

There is scientific evidence suggesting that observing third-party experts can be useful.

Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.



### Practising Skills and Abilities

They will carry out activities to develop specific skills and abilities in each subject area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization that we are experiencing.



### Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.





**Case Studies**

Students will complete a selection of the best case studies chosen specifically for this program. Cases that are presented, analyzed, and supervised by the best specialists in the world.



**Interactive Summaries**

The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



**Testing & Retesting**

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.



06

# Certificate

The Postgraduate Certificate in Environmental Acoustics guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Global University.





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*Successfully complete this program and receive your university qualification without having to travel or fill out laborious paperwork”*

This program will allow you to obtain your **Postgraduate Certificate in Environmental Acoustics** endorsed by **TECH Global University**, the world's largest online university.

**TECH Global University** is an official European University publicly recognized by the Government of Andorra ([official bulletin](#)). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in Environmental Acoustics**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**



\*Apostille Convention. In the event that the student wishes to have their paper certificate issued with an apostille, TECH Global University will make the necessary arrangements to obtain it, at an additional cost.

future  
health confidence people  
education information tutors  
guarantee accreditation teaching  
institutions technology learning  
community commitment  
personalized service innovation  
knowledge present quality  
development lang  
virtual classroom



## Postgraduate Certificate Environmental Acoustics

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