

# Postgraduate Certificate

## Acoustic Testing





## Postgraduate Certificate Acoustic Testing

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

Website: [www.techtitute.com/us/engineering/postgraduate-certificate/acoustic-testing](http://www.techtitute.com/us/engineering/postgraduate-certificate/acoustic-testing)



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01

# Introduction

The growing need for competent professionals in the field of acoustics has become imperative in both research and industry. In this sense, professionals with a thorough preparation are essential to meet this demand. For this reason, TECH offers an innovative study program where the fundamental principles and practical applications of sound engineering will be analyzed. A disruptive academic itinerary, that the student will be able to consult from anywhere in the world with the mobile device of their preference, without hermetic schedules. Additionally, they will be guided by highly experienced experts who will enhance their learning through updated didactic materials in multimedia format.



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*Improve your professional skills in Acoustic Testing through this Postgraduate Certificate"*

In a world where noise constantly threatens the quality of life, contemporary Acoustic Engineering stands as a field of vital importance. With this program, students are offered the opportunity to delve into this intriguing field and explore in depth the fundamentals that underpin it. From understanding how sound propagates to mastering advanced measurement methods, each crucial aspect is examined in detail, with the goal of addressing the challenges in the world of acoustics.

Throughout this syllabus, students will discover how acoustical technical reports become crucial decision-making tools for designing appropriate spaces. Additionally, the practice of measuring and evaluating airborne sound insulation will be addressed. During this stage, they will learn about measurement requirements, accuracy in recording results and effective test reporting. And as they progress through the study, they will gain familiarity with specialized acoustic technologies and equipment, which will further enrich their understanding and skills in this field of study.

To carry out this program, TECH implements the *Relearning* methodology to facilitate this educational process. Being committed to provide the student with the most rigorous and complete preparation possible to become a true expert in the field of acoustics, capable of generating a significant impact in the universe of sound. This study option is a definitive choice for those who seek to excel in their respective sectors and contribute significantly to their professional growth.

This **Postgraduate Certificate in Acoustic Testing** 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 Engineering and Acoustic Physics
- ♦ 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
- ♦ Practical exercises where the self-assessment 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



*You will master the creation of sound spaces and improve the acoustics of any environment"*

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*Discover the art of acoustic engineering in this Postgraduate Certificate in Acoustic Testing, where excellence is part of the process”*

Learn to translate the language of sound into real solutions. At TECH, you will become the sound professional everyone is looking for.

Unlock a world of career opportunities and be the expert who makes the difference in sound quality.

The program includes in its teaching staff professionals of the field who pour into this training the experience of their work, in addition to recognized 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 program provides the essential knowledge necessary to carry out accurate measurements, understand the limitations inherent in these results, and apply scientific principles in a variety of contexts.

As a result, participants acquire the ability to practice with international standards in standardized acoustic measurements. This, in turn, ensures that buildings and facilities perform optimally with the stringent acoustical requirements of the project, which is of critical importance in the field of acoustical engineering and construction.



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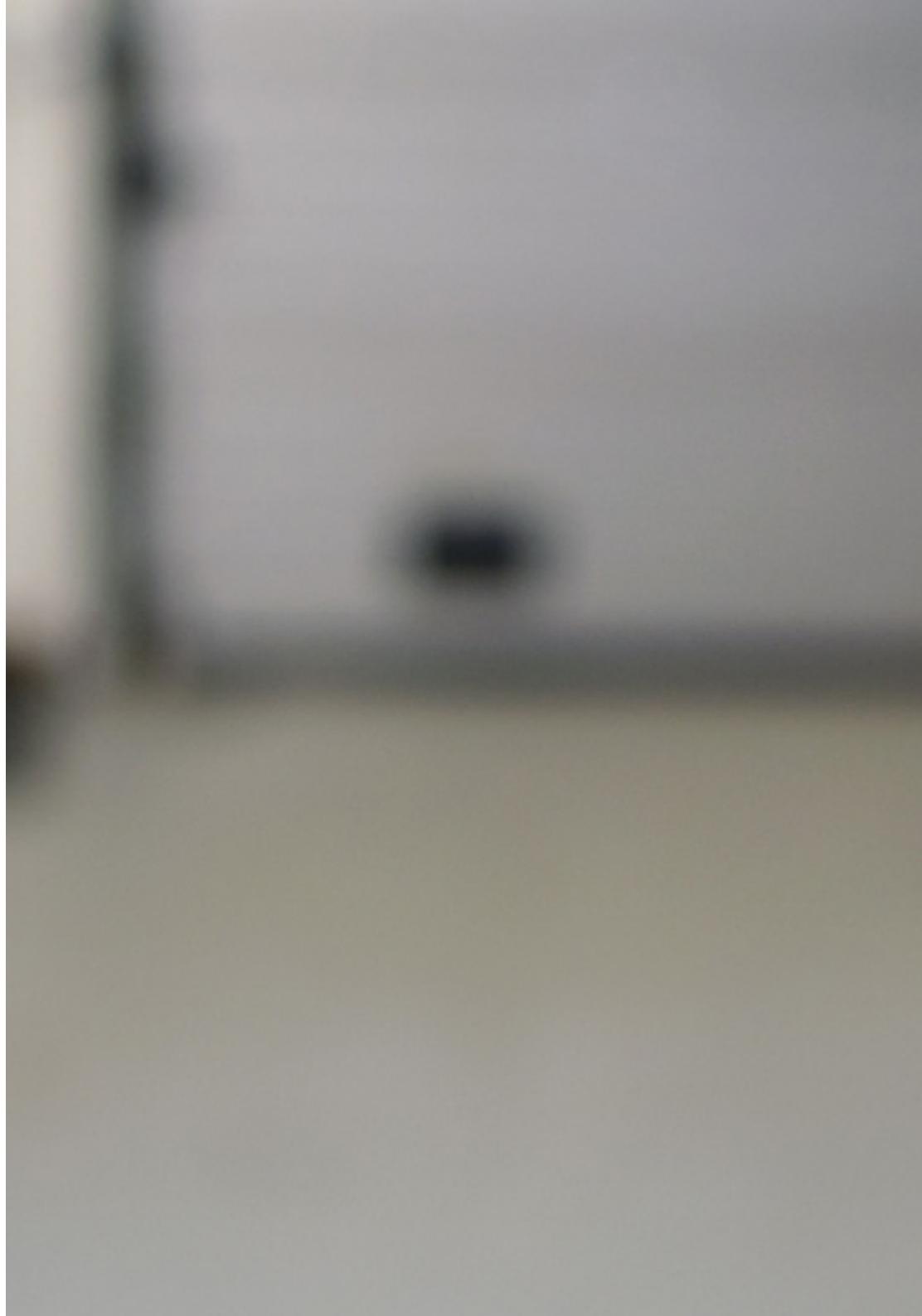
Measure, analyze and transform  
Acoustics like a pro: make sound part  
of your success"



## General Objectives

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- Plan and develop acoustic tests according to the acoustic phenomenon
- Develop the noise control, its limitation and measurement
- Analyze through testing the different acoustic measurement quantities and identify the type of test according to the acoustic measurement to be evaluated
- Plan and develop the different types of tests according to international standards
- Evaluate the results obtained from the measurements made in order to prepare acoustic reports





## Specific Objectives

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- Evaluate the spectral adaptation term C and Ctr in acoustic reports and tests
- Distinguish the planning of various noise tests depending on whether they are airborne or structural transmission in various building elements or environments (facades, impact, etc.) for the choice of measurement equipment and test layout
- Develop the procedures for measuring TRs in various environments
- Analyze the various noise limiting equipment and their application and peripherals
- Define the contents and minimum requirements of acoustic studies and reports and evaluate the results obtained in the tests

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*Delve into the evaluation of magnitudes over 6 weeks of intensive academic training”*

03

# Course Management

This program stands out for its academic excellence thanks to the distinguished faculty members. These experts have vast experience in the essential fundamentals of sound measurement and the advanced application of skills in various contexts are explored under the expert guidance of qualified professors. Thanks to their academic guidance, students have the opportunity to perfect the planning and execution of high-level acoustic testing, therefore consolidating their future success in the professional field.





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Join TECH and make a difference!  
Become an outstanding professional by  
preparing yourself with true experts in  
Acoustics”

## International Guest Director

Recognized for his contribution in the field of **Audio Signal Processing**, Shailesh Sakri is a renowned engineer specialized in the field of **Information Technology** and **Product Management**. With over two decades of experience in the technology industry, he has focused on implementing innovative solutions and process optimization at global institutions such as **Harman International India**.

Among his main achievements, he has filed multiple patents in areas such as **Directional Audio Capture** and **Directional Suppression with Omnidirectional Microphones**. For example, he has developed multiple methods to improve the performance of sound pickup and stereo separation with spherical pickup microphones. In this way, he has contributed to optimizing audio quality in electronic devices such as *smartphones* and thereby improving end-user satisfaction. He has also led projects that integrate hardware and software in audio systems, which has allowed consumers to enjoy a more immersive sound experience.

On the other hand, he has balanced this work with his role as a **researcher**. In this regard, he has published numerous articles in specialized journals on topics such as **voice signal management**, the **Fast Fourier Transform** algorithm or the **Adaptive Filter**. In this way, his work has allowed the design of innovative products through the implementation of **Artificial Intelligence**. One example is that he has used this emerging tool to improve vehicle safety by monitoring driver distraction, which has helped to reduce traffic accidents and raise road safety standards.

He has also actively participated as a speaker at various global **conferences**, where he shares the latest advances in the field of engineering and technology.



## Mr. Sakri, Shailesh

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- Director of Automotive Audio Software at Harman International, Karnataka, India
- Director of Audio Algorithms at Knowles Intelligent Audio in Mountain View, California
- Audio Manager at Amazon Lab126 in Sunnyvale, California
- Technology Architect at Infosys Technologies Ltd in Texas, United States
- Digital Signal Processing Engineer at Aureole Technologies in Karnataka, India
- Technical Manager, Sasken Technologies Limited in Karnataka, India
- Master of Technology in Artificial Intelligence from Birla Institute of Technology & Science, Pilani
- B.Sc. degree in Electronics and Communications from Gulbarga University  
Member of Signal Processing Society of India

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*Thanks to TECH, you will be able to learn with the best professionals in the world”*

## 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

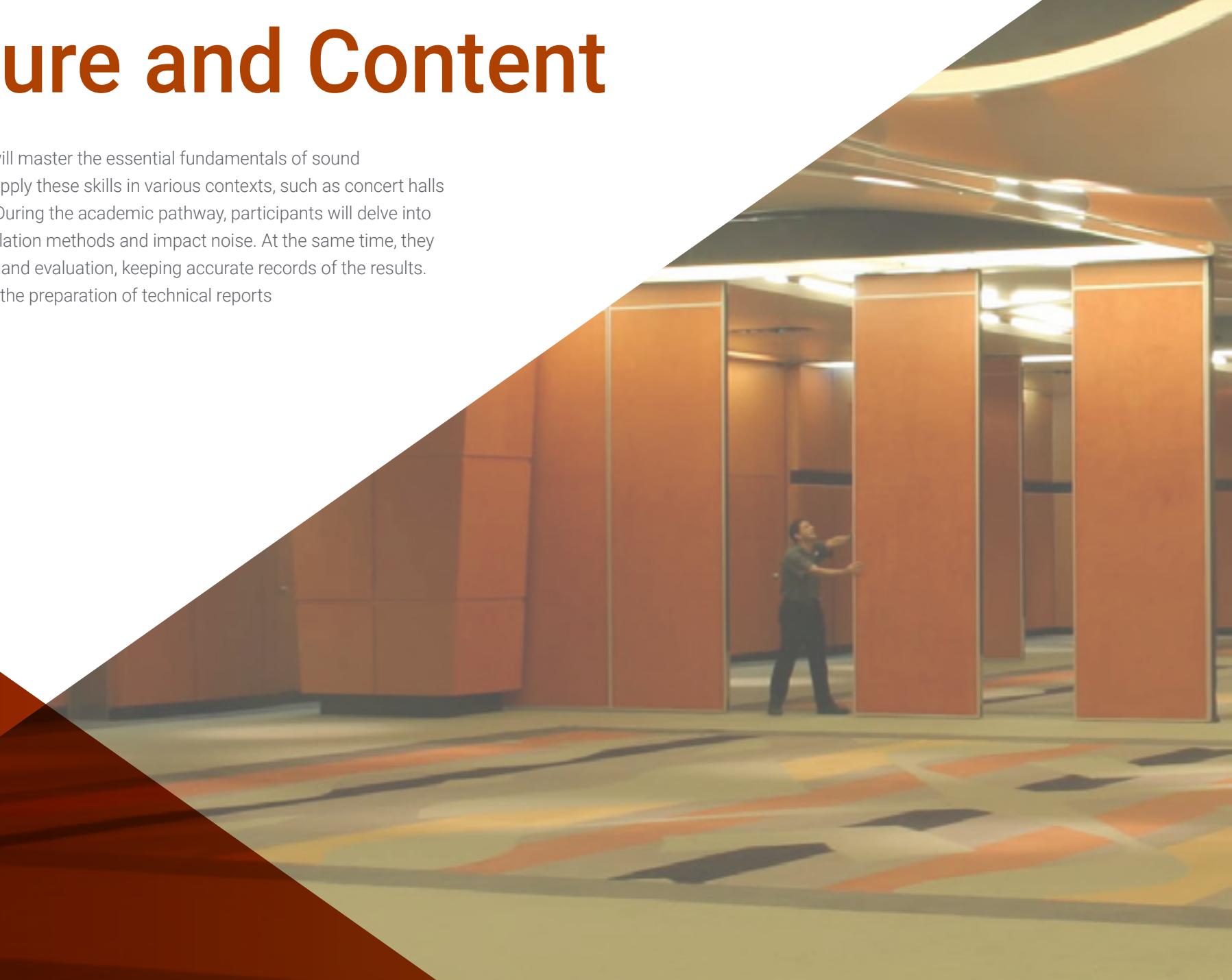
### Dr. Aguilar Aguilera, Antonio

- ◆ Technical Architect Department of Works and Urbanism in the Town Hall of Villanueva del Trabuco
- ◆ 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 Department of Architectural Constructions of the University of Granada in the following subjects of Organization and Programming in Building and Prevention and Safety
- ◆ Professor in the Degree in Physics in the Department of Applied Physics of the University of Granada in the subject of Physics of the Environment
- ◆ 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

With this program, students will master the essential fundamentals of sound measurement. They will also apply these skills in various contexts, such as concert halls and industrial environments. During the academic pathway, participants will delve into different types of testing, insulation methods and impact noise. At the same time, they will delve into sound planning and evaluation, keeping accurate records of the results. Additionally, they will address the preparation of technical reports.

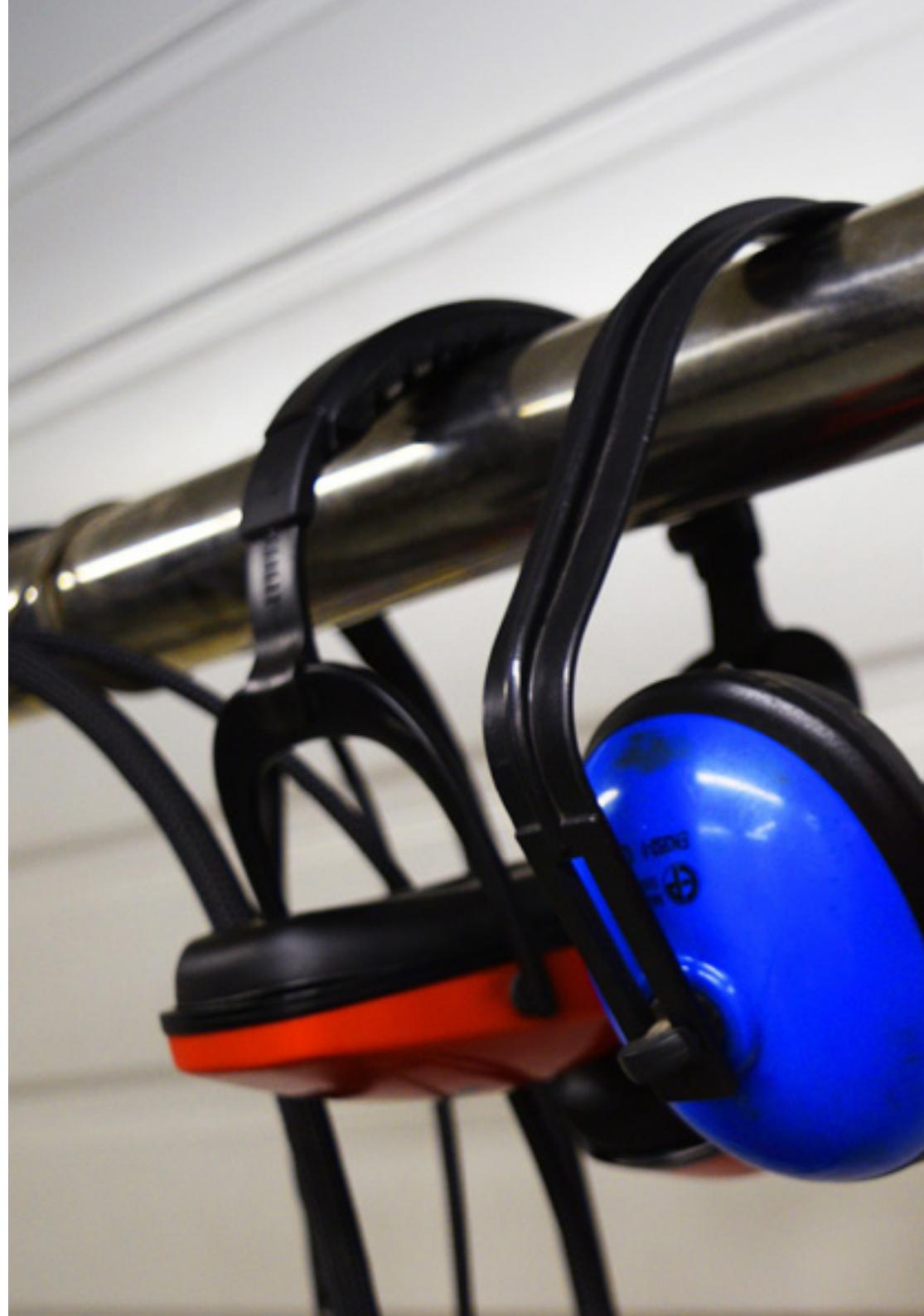


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*TECH offers you the latest advances in acoustics through a disruptive syllabus and complementary materials in multimedia format"*

**Module 1. Acoustic Installations and Testing**

- 1.1. Acoustic Study and Reports
  - 1.1.1. Types of Acoustic Technical Reports
  - 1.1.2. Contents of Studies and Reports
  - 1.1.3. Types of Acoustic Tests
- 1.2. Planning and Development of Airborne Sound Insulation Tests
  - 1.2.1. Measurement Requirements
  - 1.2.2. Recording of Results
  - 1.2.3. Test Report
- 1.3. Evaluation of the Global Magnitudes for Airborne Sound Insulation in Buildings and Building Elements
  - 1.3.1. Procedure for the Evaluation of Global Magnitudes
  - 1.3.2. Comparison Method
  - 1.3.3. Spectral Fitting Terms (C or Ctr)
  - 1.3.4. Results Evaluation
- 1.4. Planning and Development of Impact Sound Insulation Tests
  - 1.4.1. Measurement Requirements
  - 1.4.2. Recording of Results
  - 1.4.3. Test Report
- 1.5. Evaluation of the Global Magnitudes for Impact Sound Insulation in Buildings and Building Elements
  - 1.5.1. Procedure for the Evaluation of Global Magnitudes
  - 1.5.2. Comparison Method
  - 1.5.3. Results Evaluation
- 1.6. Planning and Development of Airborne Sound Insulation Tests facades
  - 1.6.1. Measurement Requirements
  - 1.6.2. Recording of Results
  - 1.6.3. Test Report
- 1.7. Planning and Development of Reverberation Time Tests
  - 1.7.1. Measurement Requirements: Showgrounds
  - 1.7.2. Measurement Requirements: Ordinary Enclosures
  - 1.7.3. Measurement Requirements: Open-plan Offices





- 1.8. Recording of Results
  - 1.8.1 Essay Report
  - 1.8.2 Planning and Development of Speech Transmission Index (STI) Measurement Tests in Enclosures.
  - 1.8.3 Measurement Requirements
  - 1.8.4 Recording of Results
  - 1.8.5 Test Report
- 1.9. Planning and Development of Tests for the Evaluation of the Transmission of Interior to Exterior Noise
  - 1.9.1 Basic Measurement Requirements
  - 1.9.2 Recording of Results
  - 1.9.3 Test Report
- 1.10. Noise Control
  - 1.10.1 Types of Sound Limiters
  - 1.10.2 Sound Limiters
    - 1.10.2.1 Peripherals
  - 1.10.3 Environmental Noise Meter

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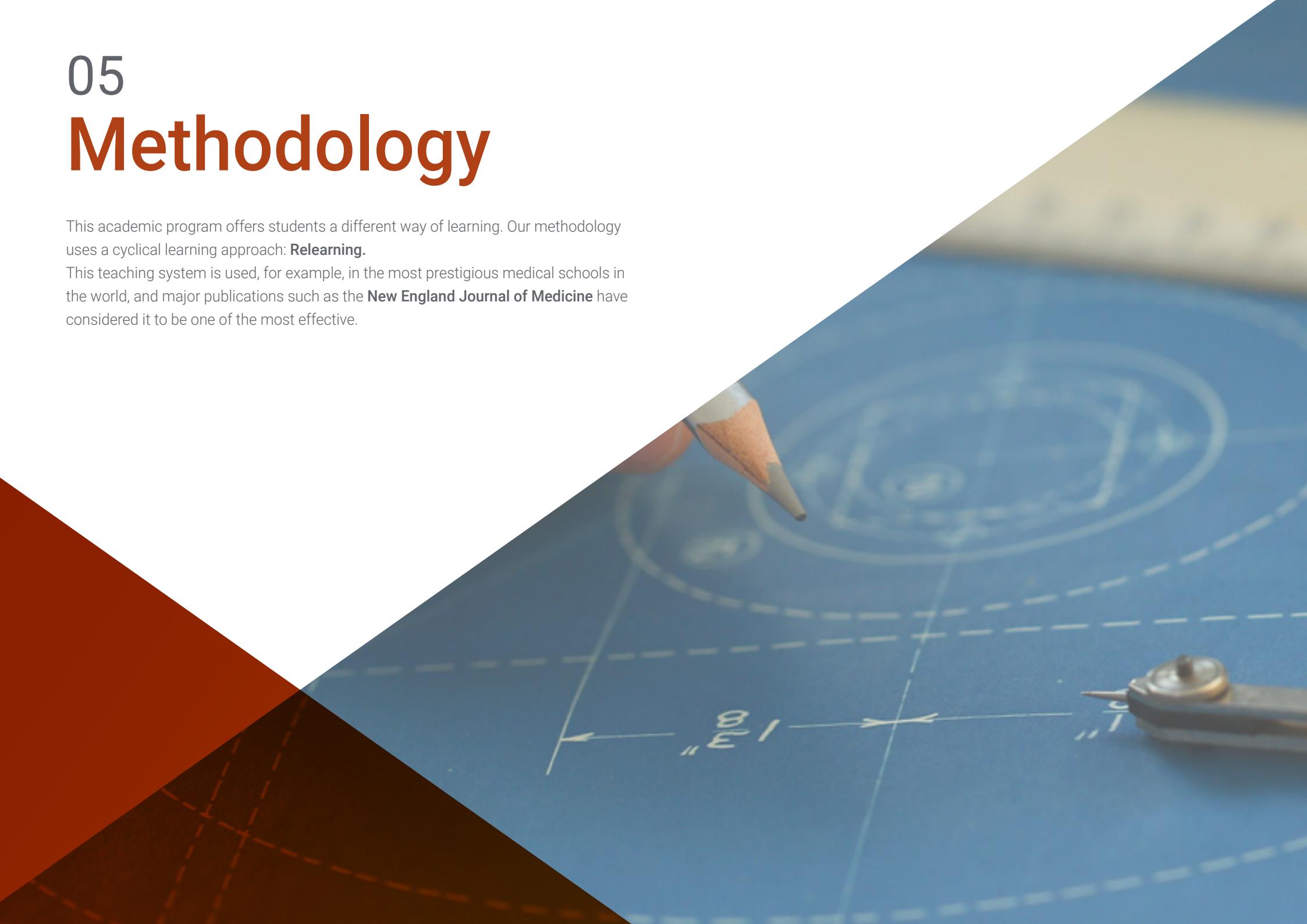
*Enroll in this Postgraduate Certificate and complete your theoretical and practical training through the disruptive Relearning method”*

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

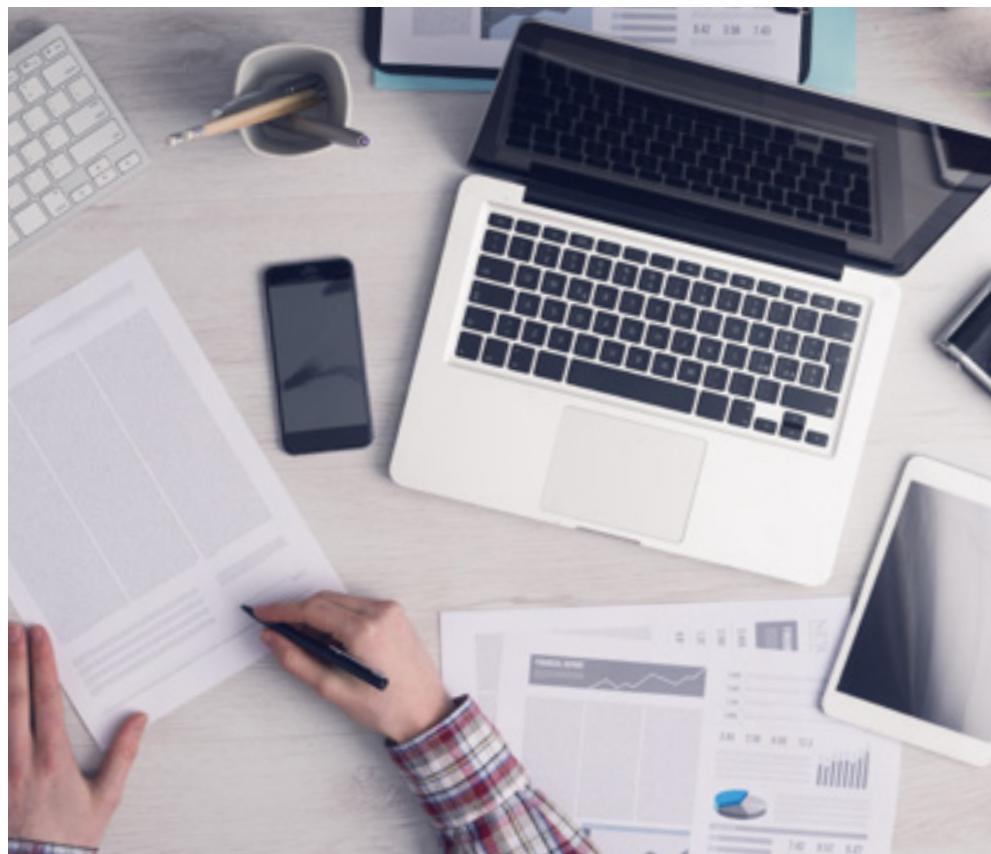
Our program offers a revolutionary approach to developing skills and knowledge. Our goal is to strengthen skills in a changing, competitive, and highly demanding environment.

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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.

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*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

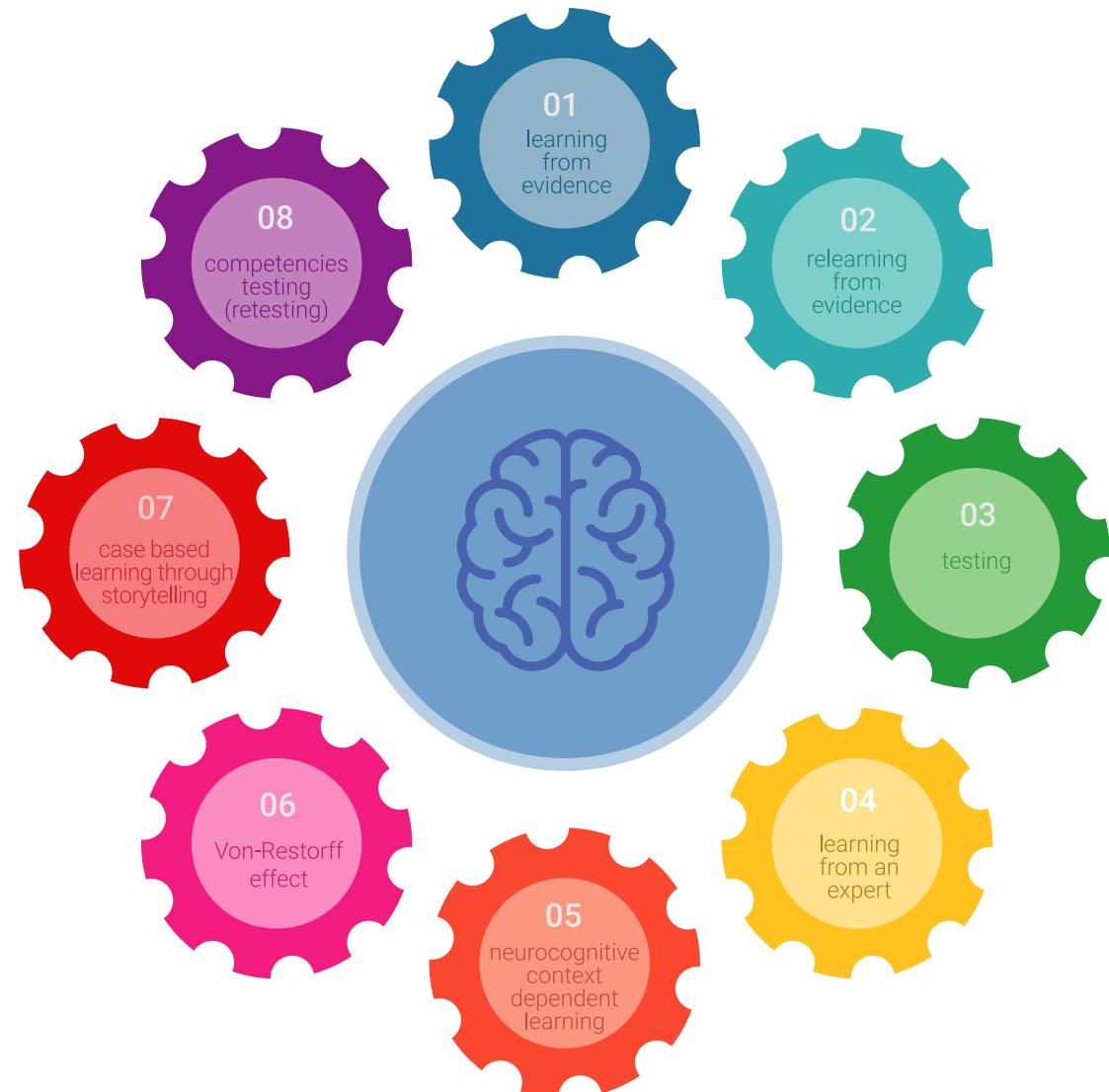
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines 8 different teaching elements in each lesson.

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**

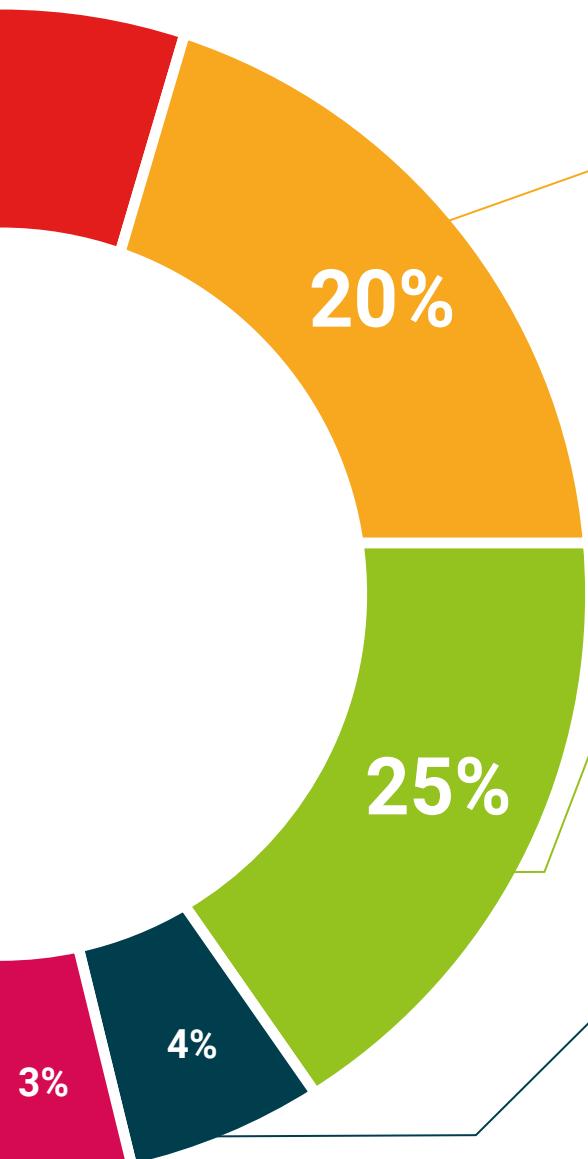
They will carry out activities to develop specific skills and abilities in each subject area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization that we are experiencing.



#### **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.



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# Certificate

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



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

This **Postgraduate Certificate in Acoustic Testing** contains the most complete and up-to-date program on the market.

After the student has passed the assessments, they will receive their corresponding **Postgraduate Certificate** issued by **TECH Technological University** via tracked delivery\*.

The diploma issued by **TECH Technological University** will reflect the qualification obtained in the Postgraduate Certificate, and meets the requirements commonly demanded by labor exchanges, competitive examinations and professional career evaluation committees.

**Title: Postgraduate Certificate in Acoustic Testing**

**Modality: online**

**Duration: 6 weeks**



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



## Postgraduate Certificate Acoustic Testing

- » Modality: online
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# Postgraduate Certificate

## Acoustic Testing

