# Postgraduate Certificate
## Ultrasound Therapy

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# Postgraduate Certificate
## Ultrasound Therapy

Course Modality: **Online**
Duration: **6 weeks**
Certificate: **TECH Technological University**
Official Nº of hours: **150 h.**
Website: www.techtitute.com/medicine/postgraduate-certificate/ultrasound-therapy

# Index

01

# Introduction

Scientific and medical research is providing rehabilitation medicine with new answers in the form of technical advances and new procedures and approaches. This Postgraduate Certificate will deepen in the use of ultrasound in therapeutic contexts, favoring the learning of its use and benefits based on the latest scientific developments. A compendium of the most updated knowledge and techniques, with innovation and new therapeutic proposals, through a flexible but intensive approach that will allow the student to grow in their skills quickly and easily.

*A professional development program on the benefits of the latest approaches and innovations in ultrasound therapy that will give a boost to your professional success"*

Ultrasound therapy treats lesions through the application of ultrasound, i.e., sound vibrations greater than 20,000 Hz. The physical characteristics of sound, formed by mechanical vibrations, compressions and periodic dilatations of matter, and its propagation through waves, offer rehabilitation a field of action of great security and notable benefits.

In this field there are three types of waves, depending on their characteristics: infrasound, with vibrations of frequency lower than 20Hz, audible sounds, with vibrations of frequency between 20 and 20,000Hz and ultrasound, with vibrations higher than 20,000Hz, where ultrasound therapy would be included. It is in this range where the therapeutic effects of this technique are found, based on the capacity of ultrasound as mechanical energy to exert a thermal and a mechanical effect on the organism.

This Postgraduate Certificate covers the theoretical and practical foundations of this technique and presents the neurophysiological bases, so that the learning process is complete. Each module is supported by practical applications of each type of current, so that the integration of the knowledge of the pathology and its treatment is complete.

This **Postgraduate Certificate in Ultrasound Therapy** contains the most complete and up to date scientific program on the market. The most important features of the program include:

- More than 75 practical cases presented by experts in electrotherapy
- The graphic, schematic, and eminently practical contents with which they are created provide scientific and practical information on the disciplines that are essential for professional.
- New developments on the role of the rehabilitation physician in the application of electrotherapy
- Practical exercises where self assessment can be used to improve learning.
- Algorithm based interactive learning system for decision making in the situations that are presented to the student.
- Its special emphasis on research methodologies on electrotherapy applied to Rehabilitation Medicine
- 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

*Aimed at efficiency, this training puts in your hands the most innovative theoretical knowledge and the most interesting working protocols in ultrasound therapy"*

*Acquires the skills of a specialist in the specific use of ultrasound therapy in the various pathologies and contexts of rehabilitative medicine"*

*This Postgraduate Certificate is a complete process that will teach you the most innovative techniques and their effective and safe application.*

*This Postgraduate Certificate will allow you to learn about simulated environments and cases, providing you with an integrated, more efficient vision of real situations.*

The teaching staff includes professionals from the field of medicine, who bring their experience to this training program, as well as renowned specialists from leading societies and prestigious universities.

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

This program is designed around Problem Based Learning, whereby the professional must try to solve the different professional practice situations that arise during the academic year. For this, the professional will have the help of an innovative interactive video system made by recognized experts in Electrotherapy in Rehabilitation Medicine, with great experience.

02

# Objectives

A program designed to take the professional through a high training process, incorporating the most current and relevant knowledge and techniques available in the sector, in relation to individual intervention through ultrasound therapy. Through an approach focused on efficiency, it will allow you to take your knowledge to the highest level of updating, enabling you to act as a specialist in this field. For this reason, a series of general and specific objectives have been established to guide learning throughout the program.

*Offer the most complete possibilities in rehabilitation medicine to your patients, thanks to the knowledge you will acquire in this complete program"*

## General Objectives

- Update the knowledge of the Rehabilitation Medicine professional in the field of Electrotherapy
- Promote work strategies based on a comprehensive approach to the patient as a standard model for achieving excellent care
- Encourage the acquisition of technical skills and abilities, through a powerful audio visual system, and the possibility of development through online simulation workshops and or specific training
- Encourage professional stimulation through continuing education and research

## Specific Objectives

- Identify the physical principles of ultrasound therapy, as well as the physiological effects
- Analyze the parameters and methodologies of ultrasound therapy
- Study the applications of ultrasound therapy in tendon and muscle pathologies
- Analyze the use of ultrasound therapy in peripheral nerve disorders

*A comprehensive study of appropriate applications, their safe approach and contraindications"*

03

# Course Management

We put at your service the competence and direction of specialists with long experience in the application of the different systems and techniques of Electrotherapy, professionals chosen for their wide prestige in the profession. All of them have an excellent background in rehabilitation medicine and are professionals with years of teaching experience that offer the student of the program, the most complete, direct and real vision of the work with Electrotherapy in rehabilitation medicine.

*You will learn with the realistic vision and comprehensive guidance of specialists in this field advancing unstoppably towards the highest professional competitiveness"*

## Management

### Dr. del Villar Belzunce, Ignacio

- Head of the Rehabilitation and Physical Medicine Department of the Rey Juan Carlos I Hospital in Móstoles Madrid
- Specialist in Physical Medicine and Rehabilitation, University Hospital La Paz, Madrid
- Head of the Rehabilitation and Physical Medicine Associate Department of the Rey Juan Carlos I Hospital in Móstoles
- Specialist Physician in the Rehabilitation and Physical Medicine Service of the Rey Juan Carlos I Hospital in Móstoles
- Professor of ultrasound Quierón Salud guided interventional techniques in the locomotor system
- Degree in Medicine and Surgery from the University of Zaragoza
- Specialist in Physical Medicine and Rehabilitation, University Hospital La Paz, Madrid

## Professors

### Dr. Castaño Pérez, Iker

- Specialist in the Rey Juan Carlos University Hospital
- Experience in MIR Physical Medicine and Rehabilitation at the Clinical Hospital San Carlos
- Rehabilitation Service Hospital Infantil University Children's Hospital Niño Jesús
- Degree in Medicine at University de Navarra, Spain
- Course of Musculoskeletal Ultrasound
- Expert in Ultrasound Diagnosis of Locomotor System Lesions San Carlos Clinical Hospital
- Clinical Collaborator at Teachers Complutense University of Madrid

### Dr. Ortiz de Urbina, Marta Galván

- Department of Physical Medicine and Rehabilitation, University Hospital Rey Juan Carlos, Madrid
- Department of Physical Medicine and Rehabilitation, Fundación Jiménez Díaz, Madrid
- Degree in Medicine and Surgery from the Complutense University of Madrid
- Master's Degree in Medical Assessment of Disability and Bodily Injury for Social Protection
- Master's Degree in Clinical Phoniatrics
- Course of Musculoskeletal Ultrasound
- Expert in Ultrasound Diagnosis of Locomotor System Injuries

04

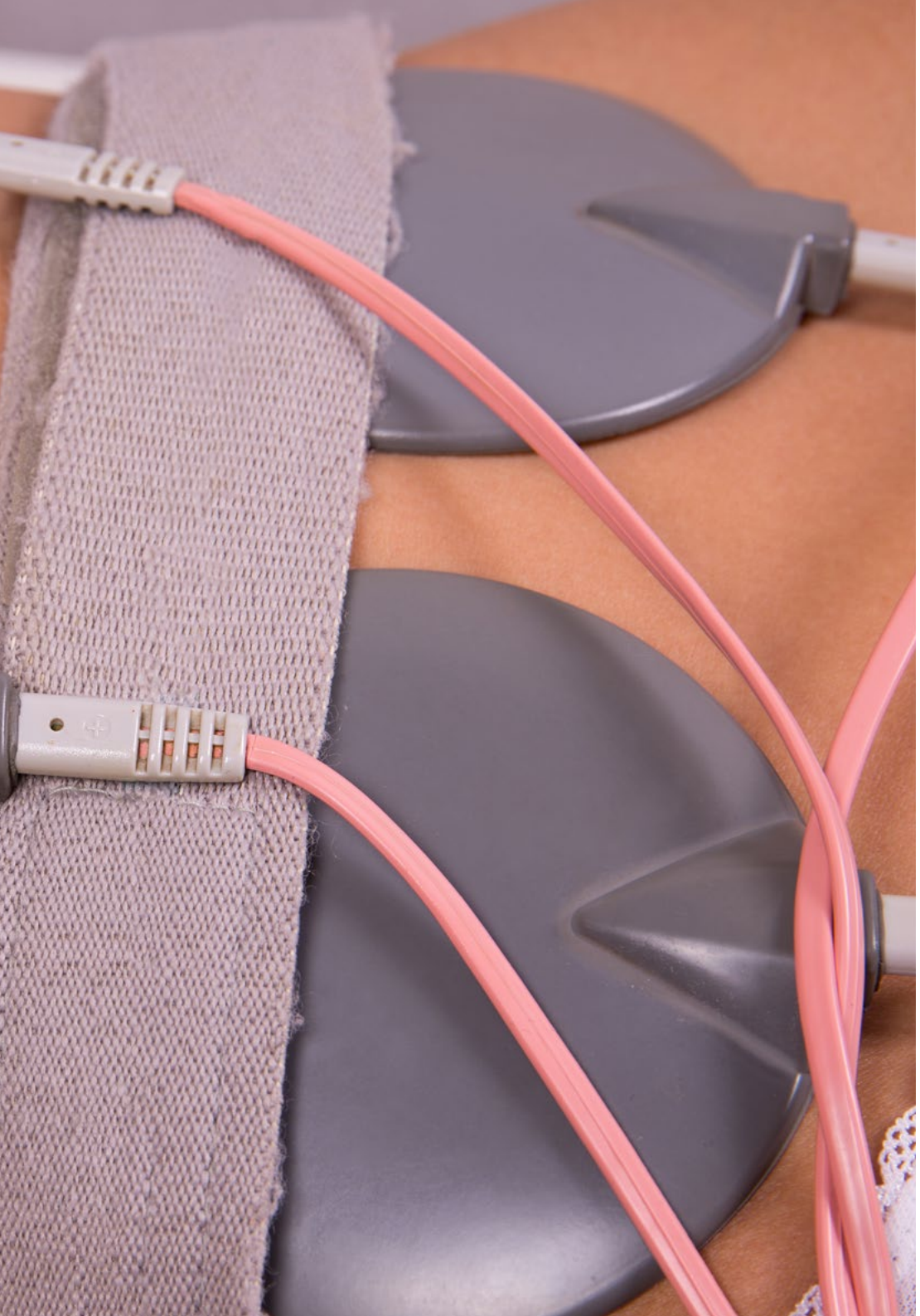
# Structure and Content

This program is designed to convert the student's work and dedication to learning into real, measurable achievements that maintain stimulation and motivation throughout the process. Throughout the modules that make up the Postgraduate Diploma, students will study each and every one of the aspects that the rehabilitation physician must master to ensure their competence in this type of intervention.

*A comprehensive and highly topical agenda structured as a high training process, of exceptional quality"*

## **Module 1.** Ultrasound Therapy

1.1. Physical Principles of Ultrasound Therapy
1.2. Physiological Effects of Ultrasound Therapy
1.3. Parameters and Methodologies of Ultrasound Therapy
1.4. Shoulder and Elbow Ultrasound Therapy (US)
1.5. Hands and Wrist Ultrasound Therapy (US)
1.6. Hip and Knee Ultrasound Therapy (US)
1.7. Ankle and Foot Ultrasound Therapy (US)
1.8. Ultrasound Therapy (US) in Lumbar Region
1.9. Ultrasonophoresis
1.10. High Frequency Ultrasound Therapy. OPAF Practical Applications and Contraindications



*Acquire all the knowledge you need to be up to date in this subject"*

05

# Methodology

This training program provides you with a different way of learning. Our methodology uses a cyclical learning approach: **Relearning.**

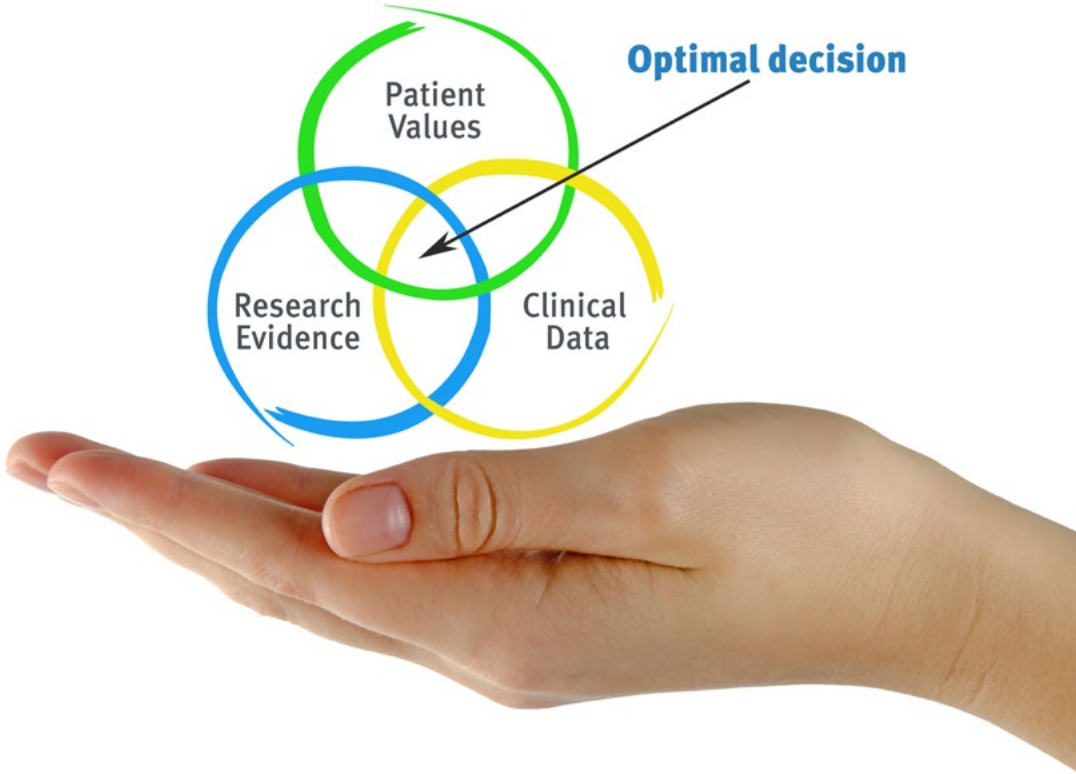
This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.

*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"*

## At TECH we use the Case Method

What should a professional do in a given situation? Throughout the program, students will face multiple simulated clinical cases, based on real patients, in which they will have to do research, establish hypotheses, and ultimately resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Specialists learn better, faster, and more sustainably over time.

*With TECH you will experience a way of learning that is shaking the foundations of traditional universities around the world.*




According to Dr. Gérvas, the clinical case is the annotated presentation of a patient, or group of patients, which becomes a "case", an example or model that illustrates some peculiar clinical component, either because of its teaching power or because of its uniqueness or rarity. It is essential that the case is based on current professional life, trying to recreate the real conditions in the physician's professional practice.

*Did you know that this method was developed in 1912, at Harvard, for law students? The case method consisted of presenting students with real-life, complex situations for them to make decisions and justify their decisions on how to solve them. In 1924, Harvard adopted it as a standard teaching method"*

**The effectiveness of the method is justified by four fundamental achievements:**

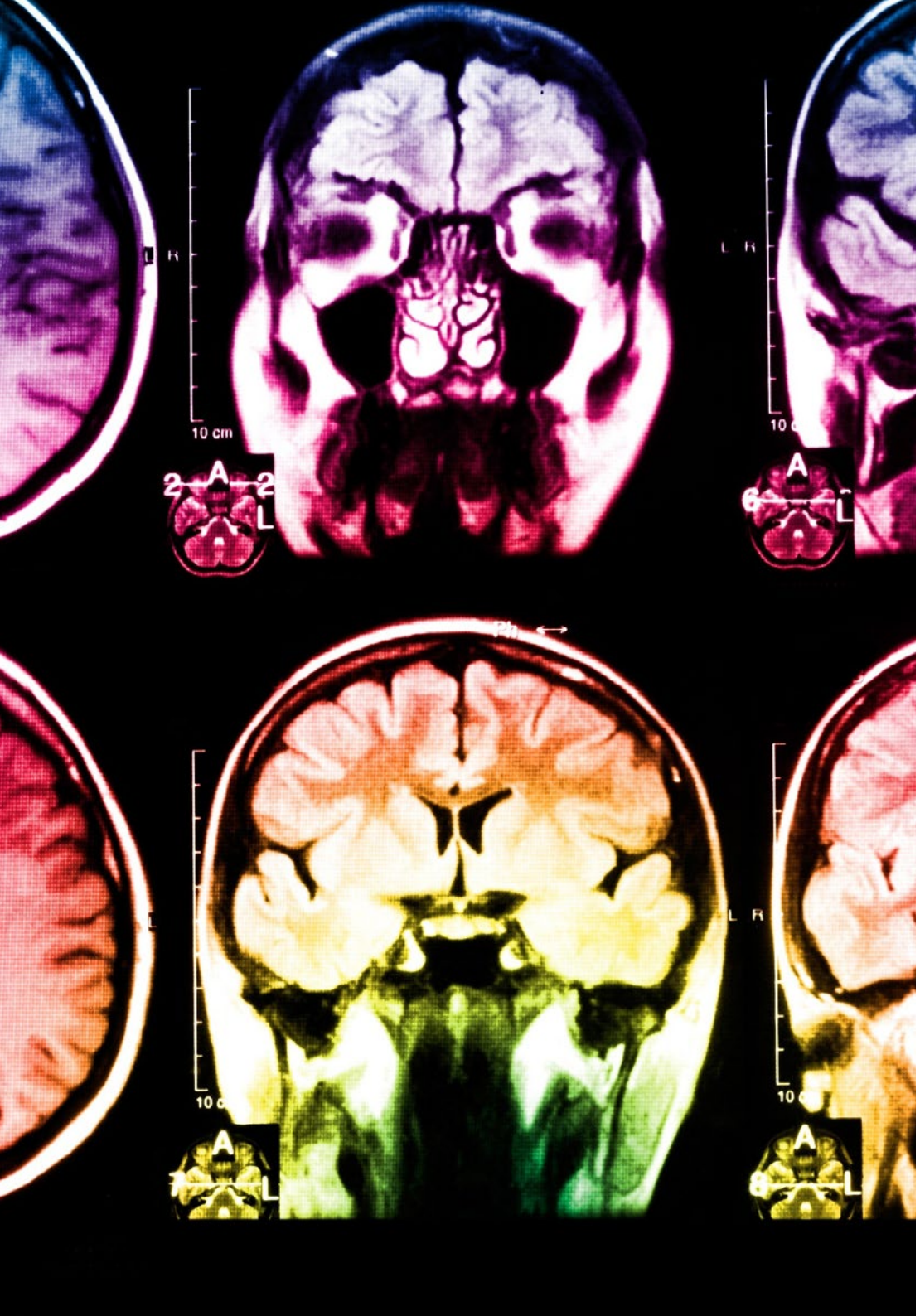
1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that evaluate real situations and the application of knowledge.
2. Learning is solidly translated into practical skills that allow the student to better integrate into the real world.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.

## Relearning Methodology

At TECH we enhance the Harvard case method with the best 100% online teaching methodology available: Relearning.

This university is the first in the world to combine the study of clinical cases with a 100% online learning system based on repetition, combining a minimum of 8 different elements in each lesson, a real revolution with respect to the mere study and analysis of cases.

*Professionals will learn through real cases and by resolving complex situations in simulated learning environments. These simulations are developed using state-of-the-art software to facilitate immersive learning.*



At the forefront of world teaching, the Relearning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best online university (Columbia University).

With this methodology, more than 250.000 physicians have been trained with unprecedented success in all clinical specialties regardless of surgical load. Our pedagogical methodology is developed in a highly competitive environment, with a university student body with a strong socioeconomic profile and an average age of 43.5 years old.

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

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.

The overall score obtained by TECH's learning system is 8.01, according to the highest international standards.

**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.

### Surgical Techniques and Procedures on Video

TECH introduces students to the latest techniques, the latest educational advances and to the forefront of current medical techniques. All of this in direct contact with students and explained in detail so as to aid their assimilation and understanding. And best of all, you can watch the videos as many times as you like.

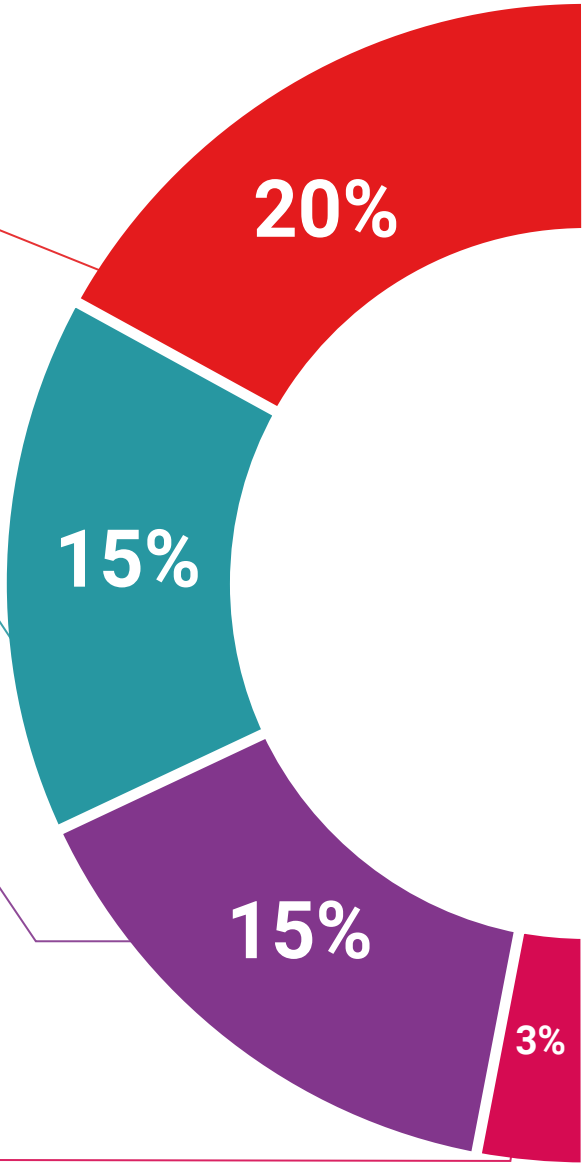
### Interactive Summaries

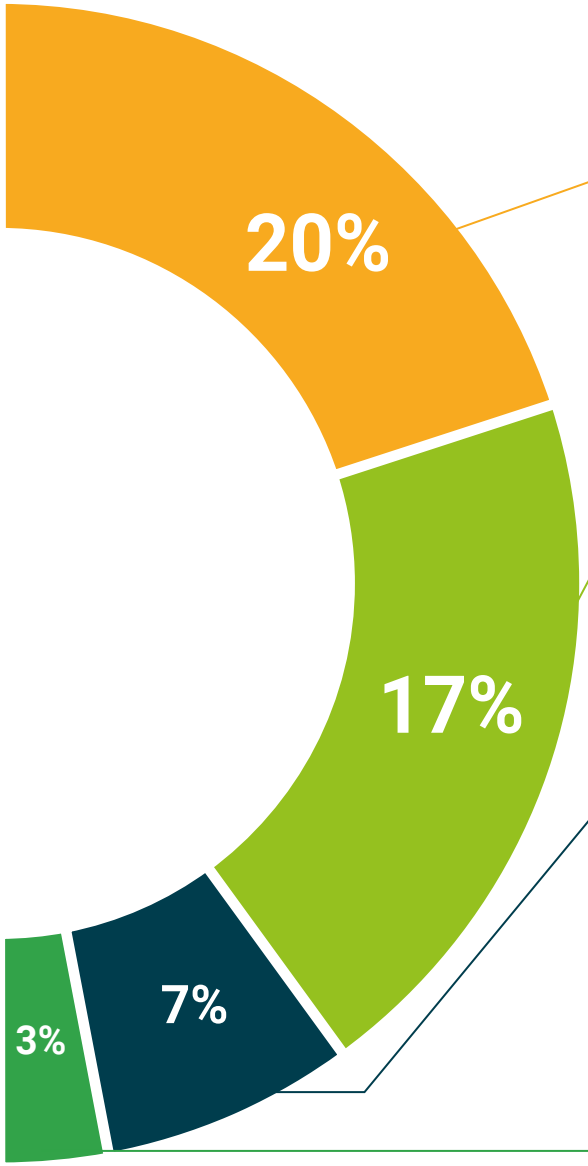
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

This exclusive multimedia content presentation training Exclusive system was awarded by Microsoft as a "European Success Story".

### 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.






### Expert-Led Case Studies and Case Analysis

Effective learning ought to be contextual. Therefore, TECH presents real cases in which the expert will guide students, focusing on and solving the different situations: a clear and direct way to achieve the highest degree of understanding.

### 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 your goals.

### Classes

There is scientific evidence on the usefulness of learning by observing experts: The system termed Learning from an Expert strengthens knowledge and recall capacity, and generates confidence in the face of difficult decisions in the future.

### Quick Action Guides

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help students progress in their learning.

06

# Certificate

The Postgraduate Certificate in Ultrasound Therapy, in addition to the most rigorous and up to date training, access to a Postgraduate Certificate issued by TECH Technological University.

*Successfully complete this training program and receive your diploma without travel or laborious paperwork"*

This **Postgraduate Certificate in Ultrasound Therapy** contains the most complete and up to date scientific 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 Ultrasound Therapy**

Official Nº of hours: **150 h.**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Awards the following

**DIPLOMA**

to

Mr./Ms. _____, with identification number _____.

For having passed and accredited the following program

**POSTGRADUATE CERTIFICATE**

in

Ultrasound Therapy

This is a qualification awarded by this University, equivalent to 150 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH is a Private Institution of Higher Education recognized by the Ministry of Public Education as of June 28, 2018.

June 17, 2020

Tere Guevara Navarro

Dean

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country. Unique TECH Code: AFWORD23S techtitute.com/certificates

*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.

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