Postgraduate Certificate
Transcutaneous Electrical Stimulation in Physiotherapy

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Postgraduate Certificate

Transcutaneous Electrical Stimulation in Physiotherapy

- Modality:**Online**
- Duration: **6 weeks**
- Certificate: **TECH Technological University**
- Dedication: **16h/week**
- Schedule: **at your own pace**
- Exams: **online**

Website: **www.techtitute.com/pk/physiotherapy/postgraduate-certificate/transcutaneous-electrical-stimulation-physiotherapy**

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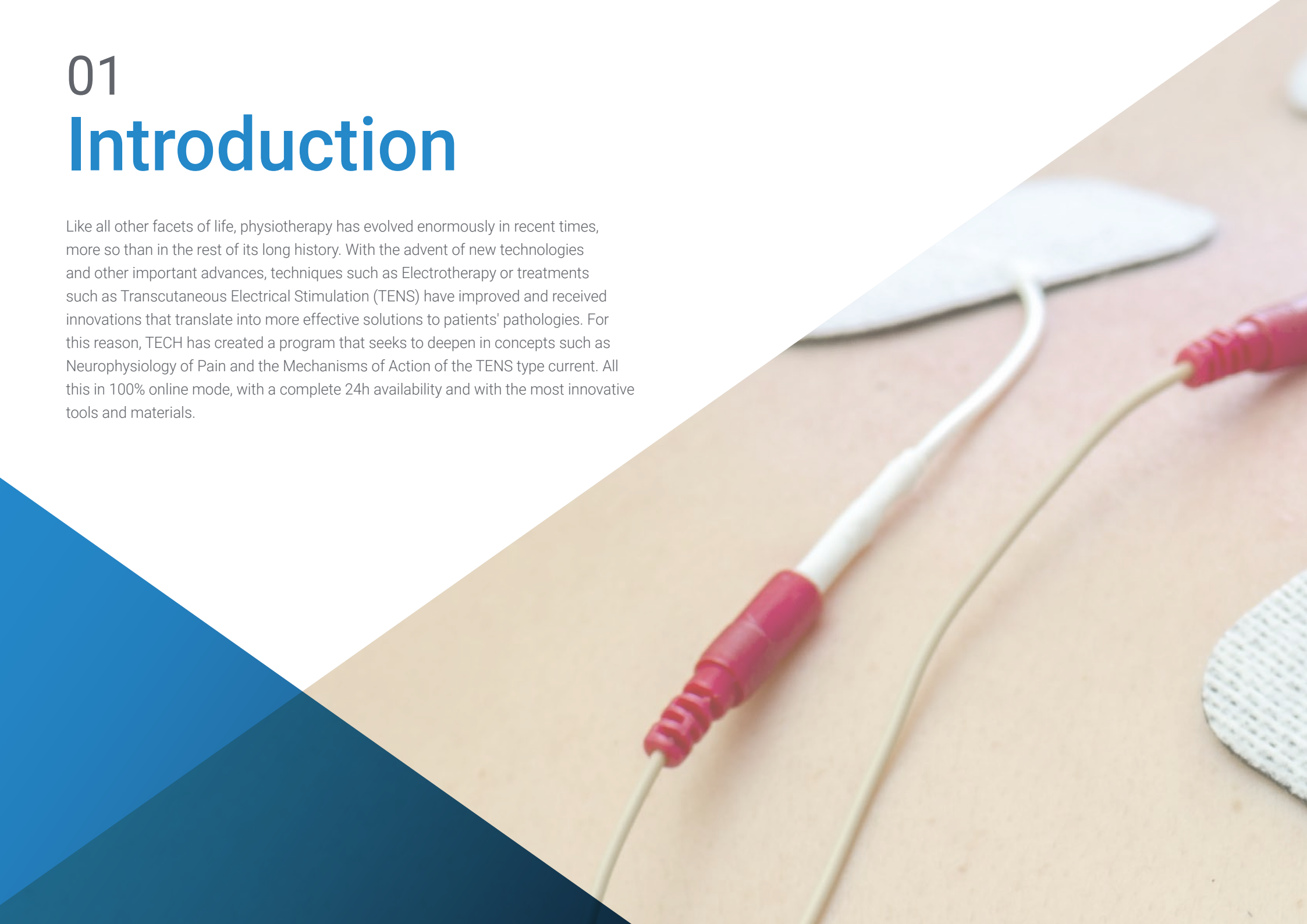
01

Introduction

Like all other facets of life, physiotherapy has evolved enormously in recent times, more so than in the rest of its long history. With the advent of new technologies and other important advances, techniques such as Electrotherapy or treatments such as Transcutaneous Electrical Stimulation (TENS) have improved and received innovations that translate into more effective solutions to patients' pathologies. For this reason, TECH has created a program that seeks to deepen in concepts such as Neurophysiology of Pain and the Mechanisms of Action of the TENS type current. All this in 100% online mode, with a complete 24h availability and with the most innovative tools and materials.



You will discover all the advances and updates in Transcutaneous Electrical Stimulation"

Thanks to the important advances and new technologies, areas and pathologies in which Electrotherapy can be applied have increased and have received relevant updates that are decisive for the Physiotherapy field. An essential technique in this field is Transcutaneous Electrical Stimulation, which uses low voltage electric current to relieve pain in countless pathologies.

Thanks to this treatment and the need to deepen in its fundamentals, effects and characteristics, this Postgraduate Certificate in Transcutaneous Electrical Stimulation in Physiotherapy arises, in order to provide an updated, accurate and complete content, so that students can face the reality of Electrotherapy without any limitations. This program has been designed by experts in the field, dealing with a wide variety of topics such as Types of TENS Current Classification, its possible applications, analgesic effects of low frequency TENS, importance of pulse width or contraindications in use of this type of therapy, among many other relevant concepts.

This content is 100% online and is accessible from any device with internet connection, giving complete freedom to the student to organize themselves as they prefer, without displacement, without any kind of time limitation and with the most dynamic, complete and updated materials at their disposal.

This **Postgraduate Certificate in Transcutaneous Electrical Stimulation in Physiotherapy** contains the most complete and up-to-date scientific program on the market. The most important features include:

- The development of case studies presented by experts in Transcutaneous Electrical Stimulation
- The graphic, schematic and eminently practical contents with which it is conceived provide practical information on those disciplines that are essential for professional practice
- Practical exercises where to perform self-assessment process 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 in a sector with great projection and become an expert in TENS current"

Improve your skills in Pain Neurophysiology and Antinociceptive System in this program"

Delve into the latest scientific knowledge and learn about the latest advances in practical applications of TENS current type.

With TECH you will be able to access teaching materials and resources at any time of the day, without limits and from any device.

The program's teaching staff includes professionals from the sector who contribute their work experience to this training program, as well as renowned specialists from leading 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 education programmed to prepare for real situations.

The program design focuses on Problem-Based Learning, by means of which the professional must try to solve the different professional practice situations that are presented throughout the academic course. This , will be done with the help of an innovative interactive video system developed by renowned experts.

02

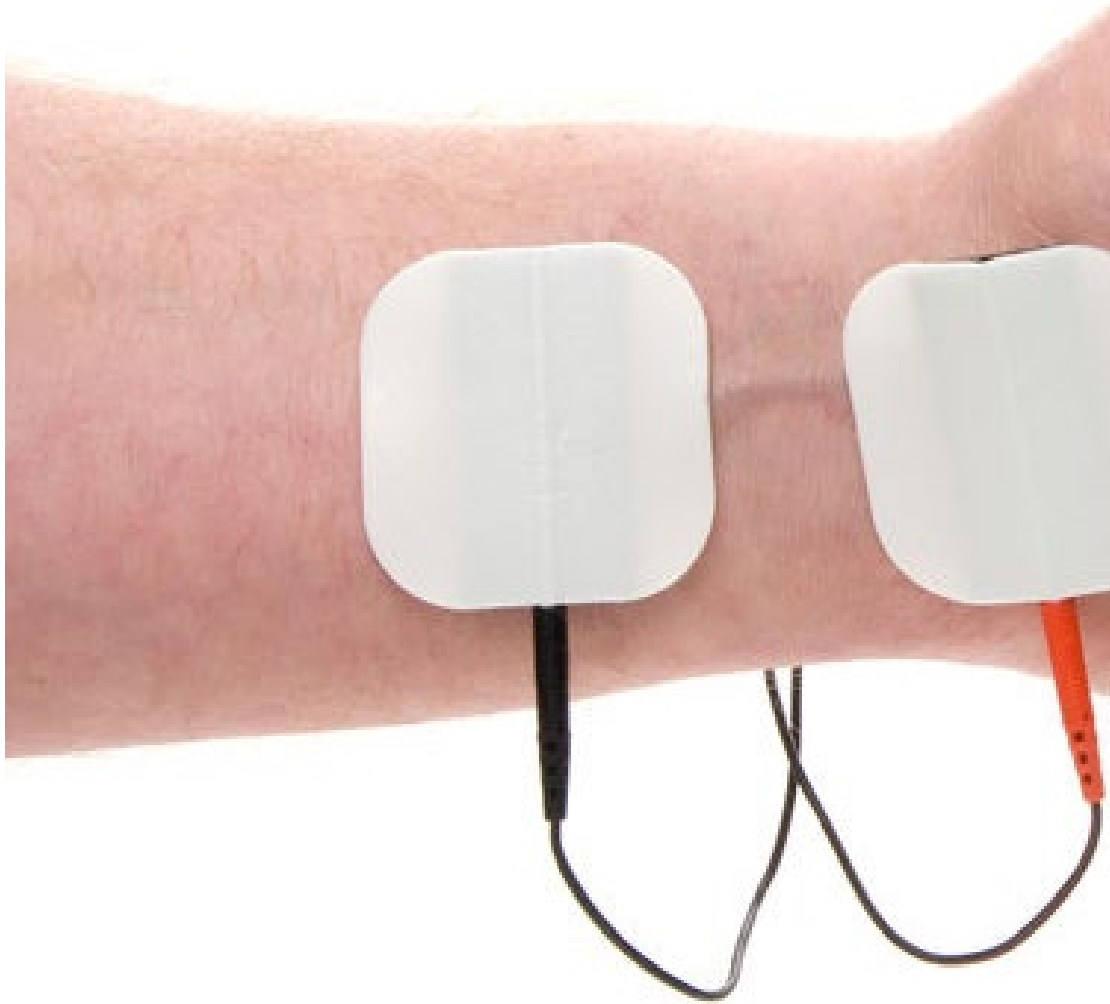
Objectives

This program is designed by leading experts in Transcutaneous Electrical Stimulation, with the objective of guaranteeing precise, complete, updated and reiterative contents, thanks to the pedagogical methodology of TECH *Relearning*, to ensure optimal learning and a correct improvement of the students' competencies. This way, they will be able to assume a promising present and future in this profession, with the constant support of the teaching staff and the best didactic and multimedia materials.

TECH is all about you: give your career the boost it needs and update yourself in Transcutaneous Electrical Stimulation"

General Objectives

- Update rehabilitation professional's knowledge in electrotherapy field
- Promote work strategies based on integral approach to the patient as a reference model in the achievement of healthcare excellence
- Encourage acquisition of technical skills and abilities, through a powerful audiovisual system, and the development possibility through online simulation workshops and/or specific education
- Encourage professional stimulation through continuing education and research



Specific Objectives

- Analyze transcutaneous electrical stimulation (TENS)
- Ge to know the analgesic effects of high frequency TENS

You will achieve your goals thanks to TECH's innovative tools and the best teaching team of experts in TENS Neurophysiology"

03

Course Management

In its commitment to offer an elite education for all, TECH has an excellent team of renowned professionals, who impart knowledge so that the student acquires a solid learning in their specialty. This Postgraduate Certificate in Transcutaneous Electrical Stimulation, has experts in the field, who have forged an outstanding professional and teaching career, being able to guarantee materials quality and the certainty that they will be at disposal of participants, to answer with solvency any questions or doubts.

Learn from the best experts in TENS current and acquire skills you need to ensure a better present and future"

Management

Dr. León Hernández, Jose Vicente

- Expert Physiotherapist in the Study and Pain Treatment and Manual Therapy
- Doctorate in Physiotherapy from the Rey Juan Carlos University
- Master's Degree in the Study and Treatment of Pain from the Rey Juan Carlos University
- Degree in Chemical Sciences from the Complutense University of Madrid, specializing in Biochemistry
- Diploma in Physiotherapy from the Alfonso X el Sabio University
- Member and training coordinator at the Institute of Neuroscience and Movement Sciences

Professors

Mr. Gurdiel Álvarez, Francisco

- Physiotherapist at Powerexplosive
- Physiotherapist at Clínica Fisad
- Physiotherapist for Sociedad Deportiva Ponferradina
- D. in Health Sciences from the Universidad Rey Juan Carlos, Spain
- Degree in Physiotherapy by the University of Leon
- Degree in Psychology from UNED
- Professional Master's Degree in Advanced Physiotherapy in Treatment of Musculoskeletal Pain from the Universidad Autónoma de Madrid
- Expert in Orthopedic Manual Therapy and Myofascial Pain Syndrome by the Universidad Europea

Mr. Suso Martí, Luis

- Physiotherapist
- Researcher at the Institute for Neurosciences and Movement Sciences
- Contributor to the popular science magazine NeuroRhab News
- Physiotherapy Degree: University of Valencia
- Doctorate, Autonomous University of Madrid
- Degree in Psychology. Open University of Catalonia
- Master's Degree in "Advanced Physiotherapy in Pain Management"

Dr. Martínez, Ferrán

- Expert Physiotherapist in Pain Treatment
- Physiotherapist at FisioCranioClinic
- Physiotherapist at the Institute of Functional Rehabilitation La Salle
- Researcher at the Centro Superior de Estudios Universitarios CSEU La Salle
- Researcher at EXINH Research Group
- Researcher in Motion in Brans Research Group of the Institute of Neuroscience and Movement Sciences (INCIMOV)
- Editor-in-Chief of The Journal of Move and Therapeutic Science
- Editor and publisher of NeuroRehab News magazine
- Author of Multiple articles Scientific in national and international journals
- PhD in Medicine and Surgery from the Autonomous University of Madrid
- Graduate in Physiotherapy from University of Valencia
- Professional Master's Degree in Advanced Physiotherapy in the Treatment of Pain by UAM

Ms. Merayo Fernández, Lucía

- Expert Physiotherapist in Pain Treatment
- Physiotherapist in the Navarra Health Service
- Physiotherapist. Doctor San Martin Ambulatory
- Degree in Physiotherapy
- Professional Master's Degree in Advanced Physiotherapy in Musculoskeletal Pain Management

Mr. Losana Ferrer, Alejandro

- Clinical Physiotherapist and New Rehabilitation Technologies Trainer at Rebiotex
- Physiotherapist at Clínica CEMTRO
- Professional Master's Degree in Advanced Physiotherapy in Musculoskeletal Pain Management
- Expert in Neuroorthopedic Manual Therapy
- Higher University Education in Therapeutic Exercise and Invasive Physiotherapy for Musculoskeletal Pain
- Graduate in Physiotherapy at La Salle

A unique, key, and decisive educational experience to boost your professional development"

04

Structure and Content

The syllabus of this Postgraduate Certificate in Transcutaneous Electrical Stimulation in Physiotherapy has been designed based on principles and the latest updates in this subject. The expert teaching team in TENS current has designed contents according to their outstanding experience and under requirements of this area of specialization, in order to guarantee an extensive and adequate perspective of materials. This way, students will be able to deepen their concepts knowledge and improve their skills, under teachers' unconditional support.

A syllabus designed by experts, adapted to you, with the highest quality content and no time restrictions"

Module 1. Transcutaneous Electrical Nerve Stimulation (TENS)

1.1. Fundamentals of Current Type used in TENS
- 1.1.1. Introduction
  - 1.1.1.1. Theoretical Framework: Neurophysiology of Pain
    - 1.1.1.1.1. Introduction and Classification of Nociceptive Fibers
    - 1.1.1.1.2. Characteristics of Nociceptive Fibers
    - 1.1.1.1.3. Stages of the Nociceptive Process
- 1.1.2. Antinociceptive System: Gate Theory
  - 1.1.2.1. Introduction to Current Type used in TENS
  - 1.1.2.2. Basic Characteristics of TENS Type of Current (Pulse Shape, Duration, Frequency and Intensity)

1.2. Classification of Current Type used in TENS
- 1.2.1. Introduction
  - 1.2.1.1. Types of Electrical Current Classification
  - 1.2.1.2. According to Frequency (Number of Pulses Emitted per Second)
- 1.2.2. Classification of Current Type used in TENS
  - 1.2.2.1. Conventional TENS
  - 1.2.2.2. TENS-Acupuncture
  - 1.2.2.3. Low-Rate Burst TENS (*Low-Rate Burst*)
  - 1.2.2.4. *Brief or Intense* TENS
- 1.2.3. Mechanisms of Action of the TENS Current Type
  - 1.2.3.1. Change in peripheral receptor thresholds

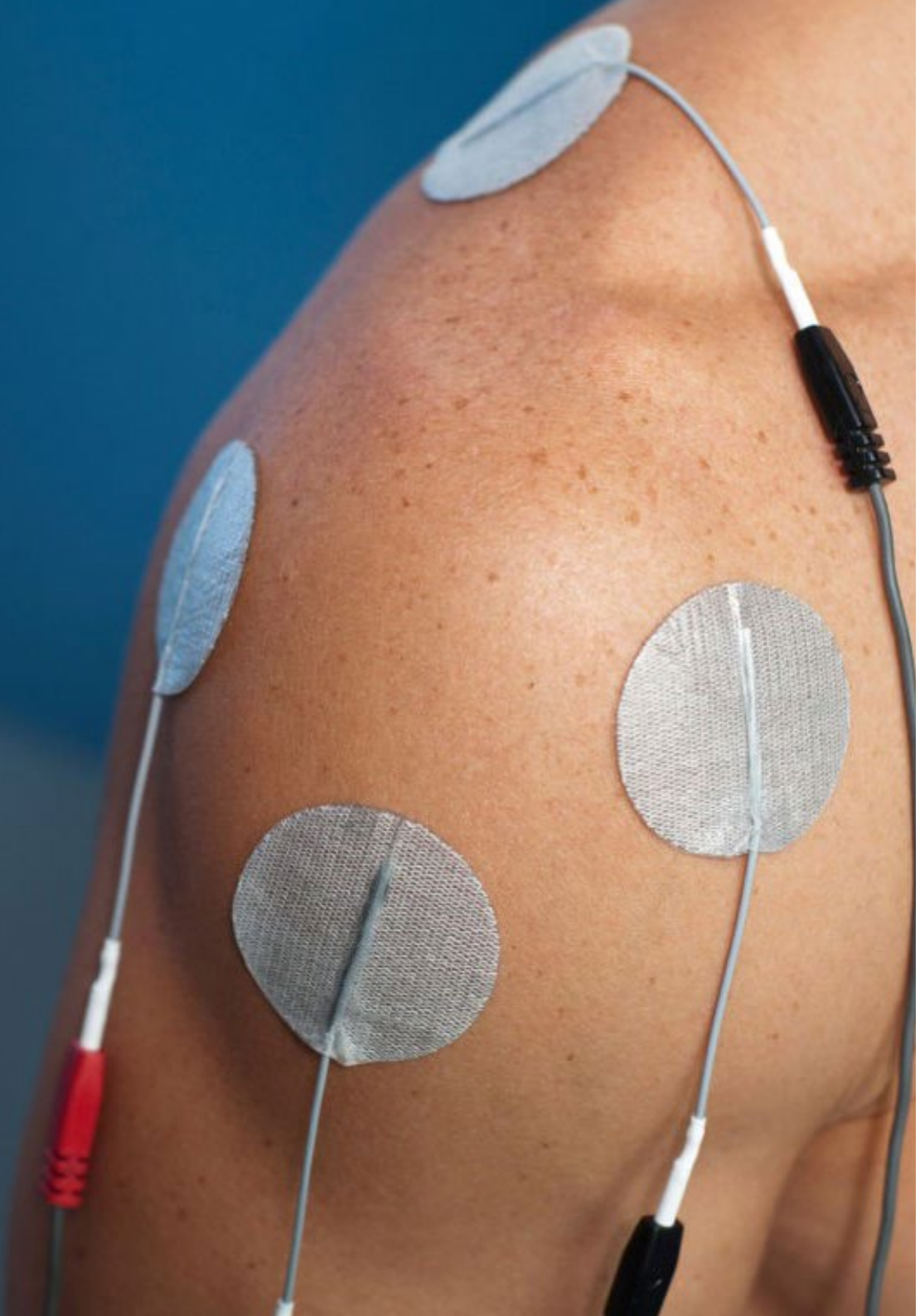
1.3. Transcutaneous Electrical Nerve Stimulation (TENS)

1.4. Analgesic Effects of High-Frequency TENS
- 1.4.1. Introduction
  - 1.4.1.1. Main reasons for the wide clinical application of conventional TENS
- 1.4.2. Hypoalgesia Derived from Conventional/High Frequency TENS
  - 1.4.2.1. Mechanism of Action
- 1.4.3. Neurophysiology of Conventional TENS
  - 1.4.3.1. *Gate Control*
  - 1.4.3.2. The Metaphor
- 1.4.4. Failure to Achieve Analgesic Effects
  - 1.4.4.1. Main Mistakes
  - 1.4.4.2. Main Problem of Hypoalgesia by Conventional TENS

1.5. Analgesic Effects of Low-Frequency TENS
- 1.5.1. Introduction
- 1.5.2. Mechanisms of Action of TENS-mediated Hypoalgesia Acupuncture: Endogenous Opioid System
- 1.5.3. Mechanism of Action
- 1.5.4. High-Intensity and Low-Frequency
  - 1.5.4.1. Parameters
  - 1.5.4.2. Fundamental Differences from Conventional TENS Current

1.6. Analgesic Effects of *Burst-Type* TENS
- 1.6.1. Introduction
- 1.6.2. Description
  - 1.6.2.1. *Burst-Type* TENS Current Details
  - 1.6.2.2. Physical Parameters
  - 1.6.2.3. Sjölund and Eriksson
- 1.6.3. Summary so far of the Physiological Mechanisms of both Central and Peripheral Analgesia

1.7. Importance of Pulse Width
- 1.7.1. Introduction
  - 1.7.1.1. Physical Characteristics of Waves
    - 1.7.1.1.1. Definition of a Wave
    - 1.7.1.1.2. Other General Characteristics and Properties of a Wave
- 1.7.2. Impulse Shape



1.8. Electrodes. Types and Application
- 1.8.1. Introduction
  - 1.8.1.1. The TENS Current Device
- 1.8.2. Electrodes
  - 1.8.2.1. General Characteristics
  - 1.8.2.2. Skin Care
  - 1.8.2.3. Other Types of Electrodes

1.9. Practical Applications
- 1.9.1. TENS Applications
- 1.9.2. Impulse Duration
- 1.9.3. Impulse Shape
- 1.9.4. Intensity
- 1.9.5. Frequency (F)
- 1.9.6. Electrode Type and Placement

1.10. Contraindications
- 1.10.1. Contraindications to the use of TENS Therapy
- 1.10.2. Recommendations for Safe TENS Practice

Learn about main applications and the most important contraindications in use of TENS therapy and become a leading expert"

05

Methodology

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

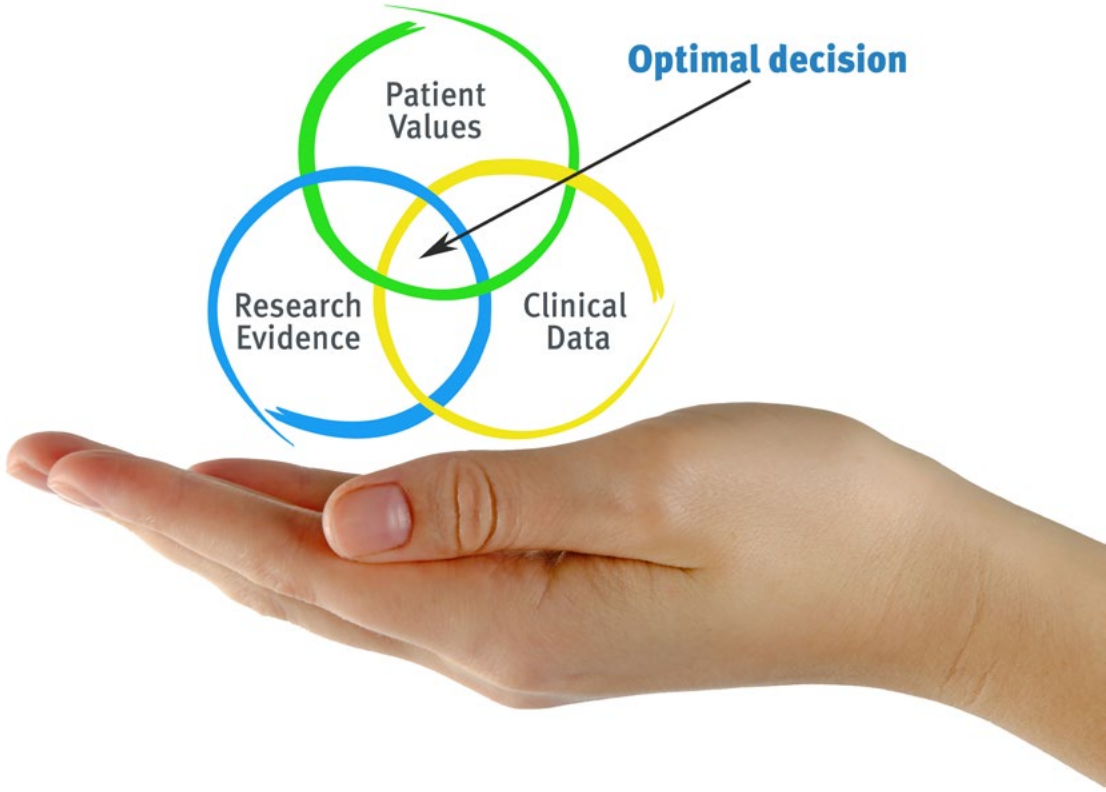
This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.

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. Physiotherapists/kinesiologists 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 of professional physiotherapy 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:

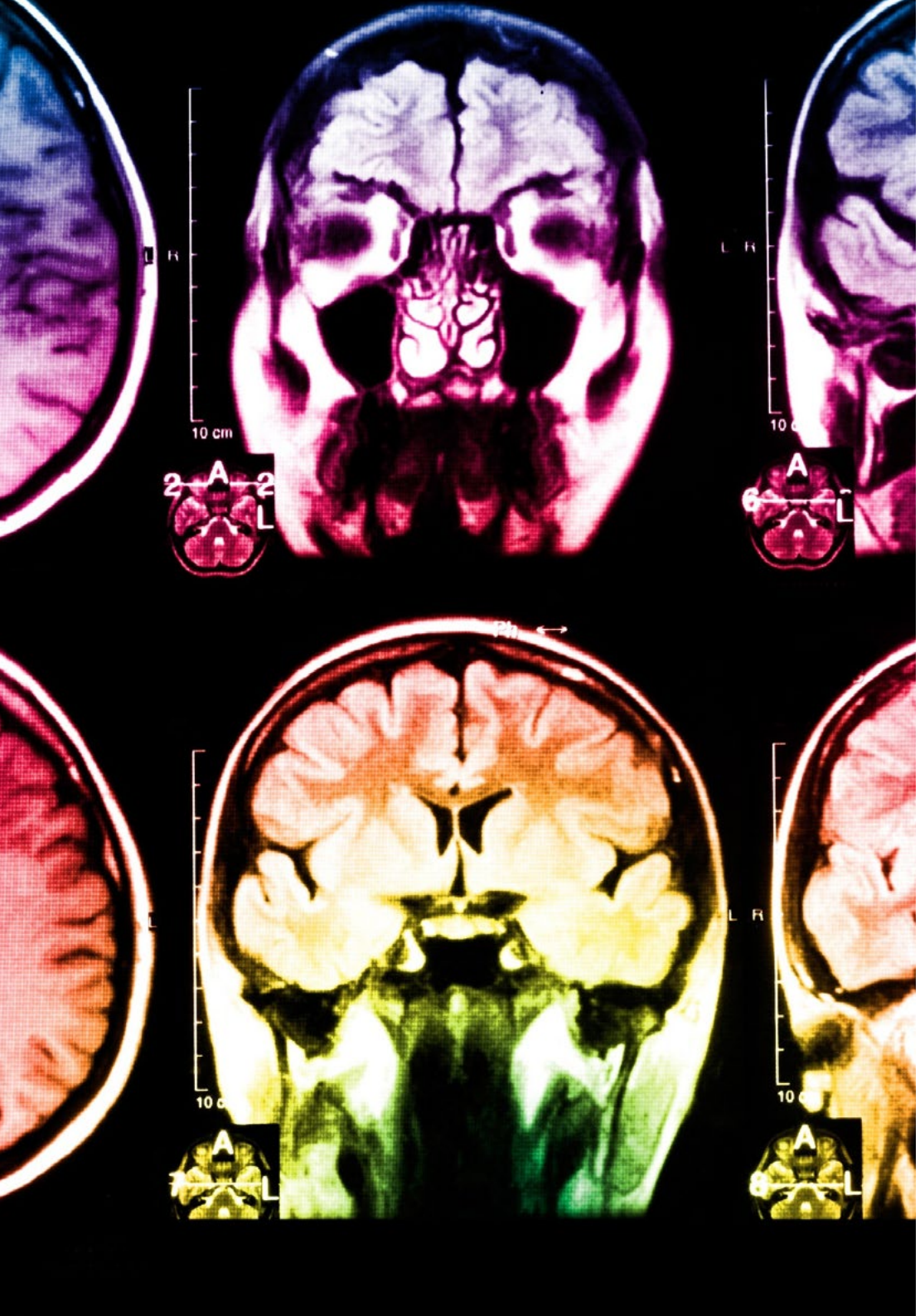
1. Physiotherapists/kinesiologists who follow this method not only grasp concepts, but also develop their mental capacity, by evaluating real situations and applying their knowledge.
2. The learning process has a clear focus on practical skills that allow the physiotherapist/kinesiologist to better integrate 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 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.

The physiotherapist/kinesiologist will learn through real cases and by solving 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 we trained more than 65,000 physiotherapists/kinesiologists with unprecedented success in all clinical specialties, regardless of the workload. 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 training, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation for 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 our 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 really 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.

Physiotherapy Techniques and Procedures on Video

TECH brings students closer to the latest techniques, the latest educational advances and to the forefront of current Physiotherapy techniques and procedures. 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 them as many times as you want.

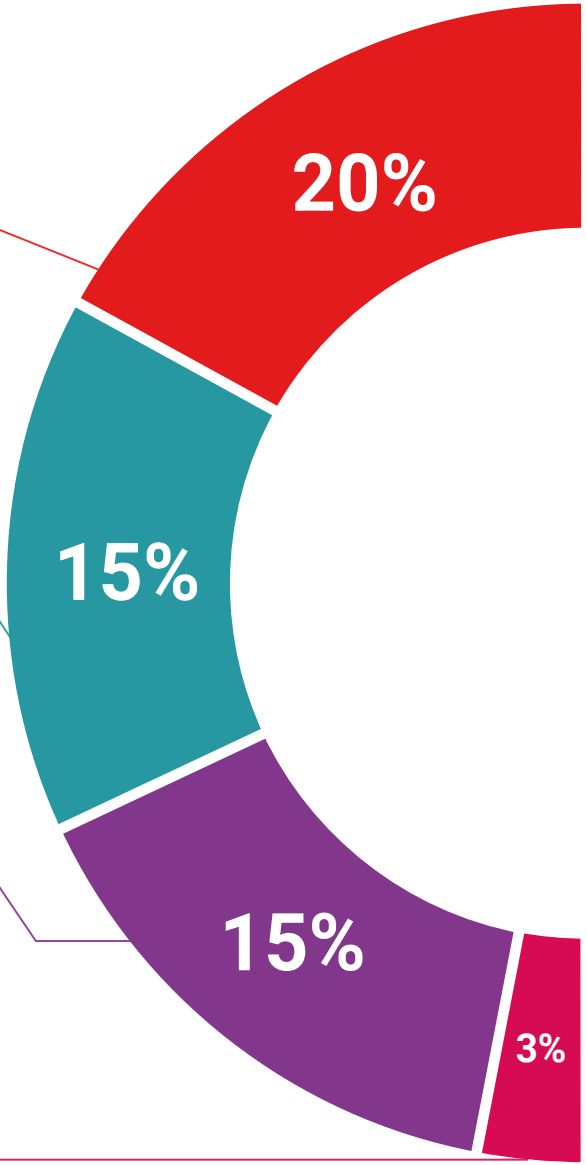
Interactive Summaries

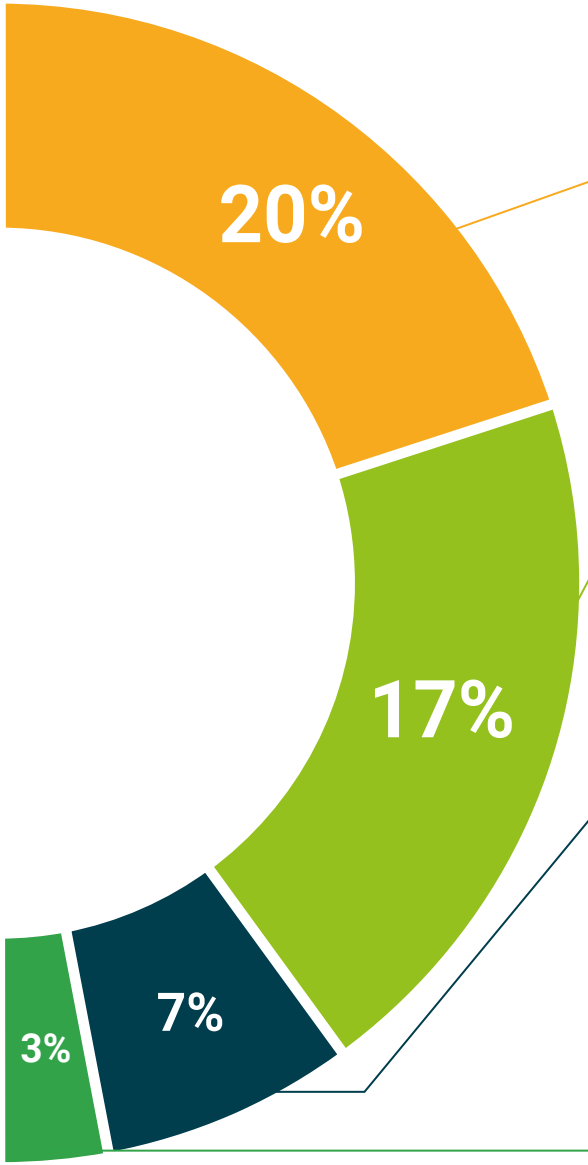
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

This unique multimedia content presentation training 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 their goals.

Classes

There is scientific evidence on the usefulness of learning by observing experts. The system known as Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.

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 Transcutaneous Electrical Stimulation in Physiotherapy guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Technological University.

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

The **Postgraduate Certificate in Transcutaneous Electrical Stimulation in Physiotherapy** contains the most complete and up-to-date scientific 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 certificate 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 Transcutaneous Electrical Stimulation in Physiotherapy**

Official Number of Hours: **150 h.**


tech technological university

Awards the following

CERTIFICATE

to

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

For having passed and accredited the following program

POSTGRADUATE CERTIFICATE

in

Transcutaneous Electrical Stimulation in Physiotherapy

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 certificate issued with an apostille, TECH EDUCATION will make the necessary arrangements to obtain it, at an additional cost.

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Postgraduate Certificate

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