Postgraduate Certificate
Electrotherapy and Analgesia

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Postgraduate Certificate
Electrotherapy and Analgesia

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

Website: **www.techtitute.com/in/physiotherapy/postgraduate-certificate/electrotherapy-analgesia**

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01

Introduction

Despite its long history, Electrotherapy has experienced its most advanced moments in the last two centuries, becoming a branch of vital importance in Physiotherapy. This evolution has come from the hand of countless investigations that have allowed to know better the physiology of the human being, favoring the application of new techniques and treatments, based on the application of Electromagnetic Fields. For this reason, this program in Electrotherapy and Analgesia has been created, which deals with characteristics and types of pain, nociception, sensitivity, nerve pathways or receptive stimulation, among many other essential topics in this area. All this under a 100% online modality, with the most innovative multimedia content and elaborated by a prestigious teaching team with a great trajectory in this field.

Thanks to this program you will be updated in everything relevant to Electrotherapy and Analgesia"

The possible applications of Electrotherapy in Physiotherapy are multiple and very broad, so that a precise knowledge of the functioning of the human body and the physicochemical bases of this physiotherapeutic treatment becomes indispensable. With the advent of new technologies there have been many advances in all fields, also in the field of Electrotherapy and Analgesia, which have significantly increased the range of possibilities of treatment of injuries and elimination of pain.

The objective of this Postgraduate Certificate in Electrotherapy and Analgesia is to offer students updated, precise and dynamic content and materials, which guarantee the optimal acquisition of skills and the improvement of their competences.
For this purpose, complete and detailed information is available, prepared by renowned experts in this area, covering topics such as pain and nociception, the nervous system, heat and temperature or selective stimulation, among many other concepts.

With this program, also open to health professionals, there is a syllabus and innovative tools, in 100% online mode, with the possibility of accessing it at any time, without limitations or restrictions of any kind. This guarantees the possibility of combining the assimilation of these concepts with the activities and tasks performed by each student, without interfering with them. And, in addition, any device with Internet access, whether Tablet, *computer* or cell phone, can be used to access the content.

This **Postgraduate Certificate in Electrotherapy and Analgesia** 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 electrotherapy. and Analgesia
- 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

Stand out in a booming sector, with great projection and get up to date in Pain Modulation"

Choose this program in Electrotherapy and Analgesia and boost your career as a professional in one of the areas with the greatest present and future"

Deepen your knowledge and become an expert in Analgesia, Pain and Nociception.

Combine your daily work with the improvement of your skills thanks to TECH, without time limits and without having to move anywhere.

The program's teaching staff includes professionals from the field who contribute their work experience to this educational 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 education programmed to learn 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 purpose, the students will be assisted by an innovative interactive video system created by renowned and experienced experts.

02

Objectives

The design of this Postgraduate Certificate in Electrotherapy and Analgesia will allow the student to acquire the necessary skills to be updated in this field and to obtain the required competences to face their present and future, with a preparation according to the demands of this area. In addition, it seeks to delve into the most relevant aspects, so that the student assimilates the information accurately and repeatedly, thanks to the pedagogical methodology of TECH's *Relearning*.

Learn about the latest advances in Electrotherapy and become an expert in the field"

General Objective

- Improve your knowledge of the rehabilitation 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 audiovisual system and the possibility of development through online simulation workshops and/or specific qualification
- Encourage professional stimulation through continuous education and research

Specific Objectives

- Update your knowledge of neurological injury and its rehabilitation by means of electrotherapeutic agents
- Broaden the knowledge of new applications of Electrotherapy in rehabilitation
- Delve into electrotherapy in the field of rehabilitation of patients with musculoskeletal pathology

Learn about the latest advances in Electrotherapy, thanks to the most powerful audiovisual tools and the possibility of accessing real and simulated cases"

03

Course Management

TECH has selected a management and teaching team composed of renowned experts who have an outstanding professional career in the field of Electrotherapy and Analgesia, as well as extensive experience in the field of teaching. In this way, the student will have the best tools and excellent professionals who will be able to transmit all their knowledge and solve any doubts that may arise.

Learn the latest advances in Electrotherapy and Analgesia, with the excellent team of teachers offered by TECH"

Management

Dr. León Hernández, Jose Vicente

- Physiotherapist expert in the Study and Treatment of Pain 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

Coordinators

Mr. Losana Ferrer, Alejandro

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

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. Cuenca - Martínez, Ferrán

- Physiotherapist Expert in Pain Management
- Physiotherapist at FisioCranioClinic
- Physiotherapist at the Institute of Functional Rehabilitation La Salle
- Researcher at the Center for Higher University Studies (CSEU La Salle)
- Researcher at EXINH Research Group
- Researcher in the Motion in Brans Research Group of the Institute of Neuroscience and Movement Sciences (INCIMOV)
- Chief editor of The Journal of Move and Therapeutic Science
- Editor and publisher of NeuroRehab News magazine
- Author of several scientific articles in national and international journals
- PhD in Medicine and Surgery from the Autonomous University of Madrid
- Graduate in Physiotherapy from the University of Valencia
- Master's Degree in Advanced Physiotherapy in Pain Treatment by the UAM

Dr. Gurdiel Álvarez, Francisco

- Physiotherapist at Powerexplosive
- Physiotherapist at Fisad Clinic
- Physiotherapist for Ponferradina Sports Society
- D. in Health Sciences from the Rey Juan Carlos University
- Degree in Physiotherapy by the University of Leon
- Degree in Psychology from UNED
- Master in Advanced Physiotherapy in the Treatment of Musculoskeletal Pain by the Autonomous University of Madrid
- Expert in Orthopedic Manual Therapy and Myofascial Pain Syndrome by the European University

Ms. Merayo Fernández, Lucía

- Physiotherapist Expert in Pain Management
- 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

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Structure and Content

The syllabus of this program in Electrotherapy and Analgesia has been designed based on the requirements of this area of specialization and following the demands proposed by the teaching team. In this way, a syllabus has been established whose single module offers a broad and precise perspective of the subject. The student will see their knowledge broadened, knowing that they have the support of a team of experts at their disposal.

This Postgraduate Certificate in Electrotherapy and Analgesia offers you a curriculum developed by experts, with high quality audiovisual content"

Module 1. Electrotherapy and Analgesia

1.1. Definition of Pain. Concept of Nociception
- 1.1.1. Definition of Pain
  - 1.1.1.1. Characteristics of Pain
  - 1.1.1.2. Other Concepts and Definitions Related to Pain
  - 1.1.1.3. Types of Pain
- 1.1.2. Concept of Nociception
  - 1.1.2.1. Peripheral Part Nociceptive System
  - 1.1.2.2. Central Part Nociceptive System

1.2. Main Nociceptive Receptors
- 1.2.1. Nociceptor Classification
  - 1.2.1.1. According to Driving Speed
  - 1.2.1.2. According to Location
  - 1.2.1.3. According to Stimulation Modality
- 1.2.2. Nociceptor Functioning

1.3. Main Nociceptive Pathways
- 1.3.1. Basic Structure of the Nervous System
- 1.3.2. Ascending Spinal Pathways
  - 1.3.2.1. Spinothalamic Tract (TET)
  - 1.3.2.2. Spinoreticular Tract (SRT)
  - 1.3.2.3. Spinomesencephalic Tract (SMT)
- 1.3.3. Trigeminal Ascending Pathways
  - 1.3.3.1. Trigeminothalamic Tract or Trigeminal Lemniscus
- 1.3.4. Sensitivity and Nerve Pathways
  - 1.3.4.1. Exteroceptive Sensitivity
  - 1.3.4.2. Proprioceptive Sensitivity
  - 1.3.4.3. Interoceptive Sensitivity
  - 1.3.4.4. Other Fascicles Related to Sensory Pathways

1.4. Transmitter Mechanisms of Nociceptive Regulation
- 1.4.1. Transmission at the Spinal Cord Level (PHSC)
- 1.4.2. APME Neuron Characteristics
- 1.4.3. Redex Lamination
- 1.4.4. Biochemistry of Transmission at the PHSC Level
  - 1.4.4.1. Presynaptic and Postsynaptic Channels and Receptors
  - 1.4.4.2. Transmission at the Level of Ascending Spinal Tract
  - 1.4.4.3. Spinothalamic Tract (TET)
  - 1.4.4.4. Transmission at the Level of the Thalamus
  - 1.4.4.5. Ventral Posterior Nucleus (VPN)
  - 1.4.4.6. Medial Dorsal Nucleus (MDN)
  - 1.4.4.7. Intralaminar Nuclei
  - 1.4.4.8. Posterior Region
  - 1.4.4.9. Transmission at the Level of the Cerebral Cortex
  - 1.4.4.10. Primary Somatosensory Area (S1)
  - 1.4.4.11. Secondary Somatosensory or Association Area (S2)
- 1.4.5. *Gate Control*
  - 1.4.5.1. Modulation Segmental Level
  - 1.4.5.2. Suprasegmental Modulation
  - 1.4.5.3. Considerations
  - 1.4.5.4. *Gate Control* Revision Theory
- 1.4.6. Descending Routes
  - 1.4.6.1. Brainstem Modulatory Centers
  - 1.4.6.2. Diffuse Noxious Inhibitory Control (DNIC)

1.5. Modulating Effects of Electrotherapy
- 1.5.1. Pain Modulation Levels
- 1.5.2. Neuronal Plasticity
- 1.5.3. Sensory Pathway Theory of Pain
- 1.5.4. Electrotherapy Models

1.6. High Frequency and Analgesia
  1.6.1. Heat and Temperature
  1.6.2. Effects
  1.6.3. Application Techniques
  1.6.4. Dosage
1.7. Low Frequency and Analgesia
  1.7.1. Selective Stimulation
  1.7.2. TENS and
  1.7.3. Post-Excitatory Depression of the Orthosympathetic Nervous System
  1.7.4. Theory of Endorphin Release
  1.7.5. TENS Dosage
1.8. Other Parameters Related to Analgesia
  1.8.1. Electrotherapy Effects
  1.8.2. Dosage in Electrotherapy

Improve your skills with a specialized program in Transmissive Mechanisms of Nociceptive Regulation"

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:

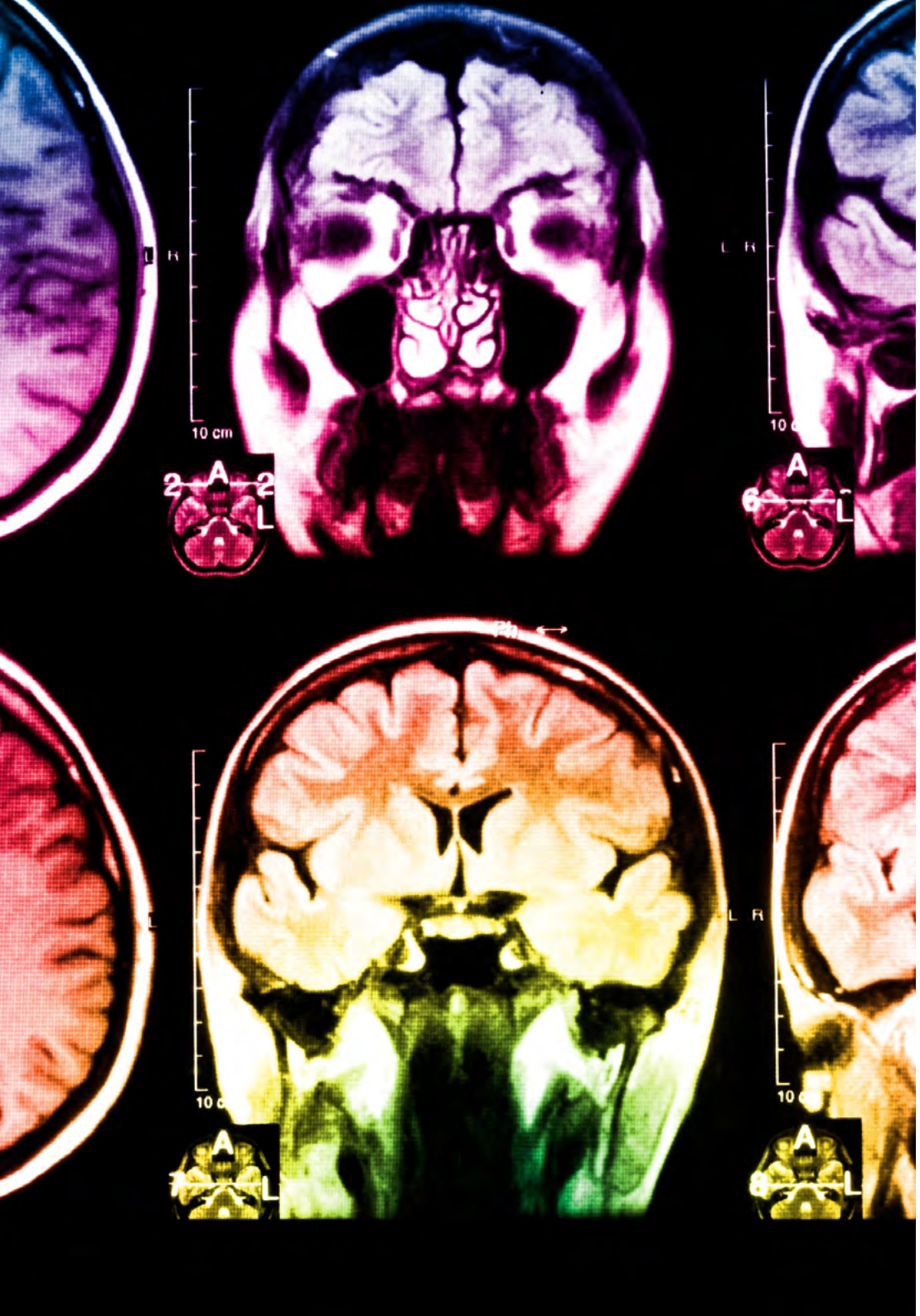
1. Physiotherapists/kinesiologists who follow this method not only grasp concepts, but also develop their mental capacity, by evaluating real situations and applying their knowledge.
2. The learning process has a clear focus on practical skills that allow the physiotherapist/kinesiologist to better integrate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

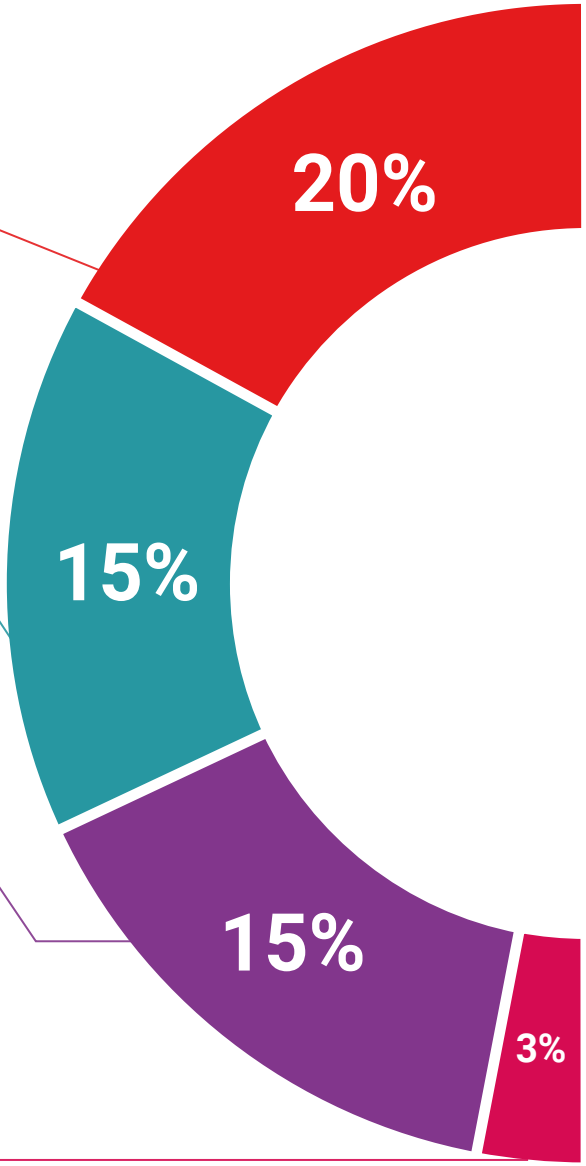
Interactive Summaries

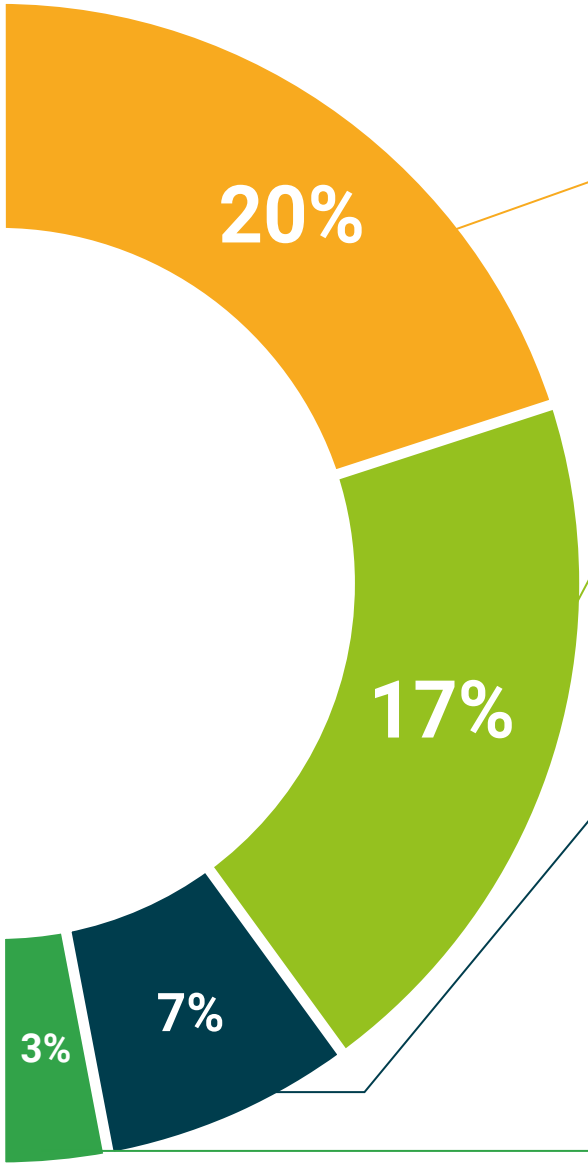
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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 Electrotherapy and Analgesia 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"

This **Postgraduate Certificate in Electrotherapy and Analgesia** 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 Electrotherapy and Analgesia**

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

CERTIFICATE

to

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

For having passed and accredited the following program

POSTGRADUATE CERTIFICATE

in

Electrotherapy and Analgesia

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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