

# Postgraduate Certificate Neurophysiology of Pain and Neurorehabilitation



## Postgraduate Certificate Neurophysiology of Pain and Neurorehabilitation

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

Website: [www.techtitute.com/us/physiotherapy/postgraduate-certificate/neurophysiology-pain-neurorehabilitation](http://www.techtitute.com/us/physiotherapy/postgraduate-certificate/neurophysiology-pain-neurorehabilitation)

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# 01

# Introduction

This highly scientific program will address the fundamental theoretical aspects to understand the nature and transmission of pain, which will allow for a greater and more rigorous justification of the use of therapies that seek to control or alleviate it. It will provide students with anatomical knowledge of the nervous system, as well as a deep dive into neurological dysfunctions treated with physiotherapy in the field of primary care, applying specific assessment protocols according to the type of pathology.





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*A complete and practical program that will allow you to learn everything you need to work as a physiotherapist in a real and direct way”*

Primary care is the most elementary health care and, at the same time, the most important area for health promotion, disease prevention and control in early stages.

Physiotherapists are part of a multidisciplinary team made up of a wide variety of professionals, so they must know how the system works in order to adapt quickly to it. It is important, in turn, to master the theoretical and practical content of their specialty in order to deliver effective and quality work.

Each of our professors has a different specialty and training, which coupled with their experience in the sector, will make the content more varied, considering different points of view and always oriented toward students expanding their knowledge regardless of their background.

What makes this Postgraduate Certificate different from the rest is the collaborative work put into the different specialties that make up the theoretical and practical content, including up-to-date studies and analyses in Primary Care.

This Postgraduate Certificate seeks to guide physiotherapists through the functions required in Primary Care, as well as to provide them with therapeutic tools and essential knowledge useful for professional work.

This **Postgraduate Certificate in Neurophysiology of Pain and Neurorehabilitation** offers the characteristics of a high-level scientific, teaching, and technological program.

These are some of its most notable features:

- ◆ The latest technology in online teaching software
- ◆ A highly visual teaching system, supported by graphic and schematic contents that are easy to assimilate and understand
- ◆ Practical cases presented by practicing experts
- ◆ State-of-the-art interactive video systems
- ◆ Teaching supported by telepractice
- ◆ Continuous updating and recycling systems
- ◆ Autonomous learning: full compatibility with other occupations
- ◆ Practical exercises for self-evaluation and learning verification
- ◆ Support groups and educational synergies: questions to the expert, debate and knowledge forums
- ◆ Communication with the teacher and individual reflection work
- ◆ Content that is accessible from any fixed or portable device with an Internet connection
- ◆ Supplementary documentation databases are permanently available, even after the program



*A comprehensive program created for physiotherapy professionals, which will allow you to balance it with other responsibilities and access it from any location with total flexibility”*

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*An effective and reliable Postgraduate Certificate that will take you through an interesting and efficient learning process, so you acquire all the knowledge of an expert in the field”*

Our teaching staff is made up of working professionals. That way, we can be sure to offer students the update we aim to provide. A multidisciplinary team of doctors who are trained and experienced in different environments, who will impart the theoretical knowledge in an efficient way, but above all, who will bring their practical knowledge from their own experience to the course: one of the differential qualities of this specialization.

This mastery of the subject is complemented by the effectiveness of the methodology used in the design of this course. Developed by a multidisciplinary team of e-learning experts, it integrates the latest advances in educational technology. This way, you will be able to study with a range of comfortable and versatile multimedia tools that will give you the operability you need in your training.

The design of this program is based on Problem-Based Learning: an approach that conceives learning as a highly practical process. To achieve this remotely, we will use telepractice learning: with the help of an innovative, interactive video system and *Learning from an Expert*, students will be able to acquire the knowledge as if they were actually dealing with the scenario they are learning about. A concept that will allow you to integrate and fix learning in a more realistic and permanent way.

*With a methodological design based on proven teaching techniques, this program will take you through different teaching approaches to allow you to learn in a dynamic and effective way.*

*Our innovative telepractice concept will give you the opportunity to learn through an immersive experience, which will provide you with a faster integration and a much more realistic view of the contents: “Learning from an expert”.*



02

# Objectives

This comprehensive Postgraduate Certificate has been created from start to finish to become a tool for personal and professional growth for physiotherapists. Its objective is to take students through a specialization course that will allow them to acquire the most up-to-date knowledge and techniques for the most advanced and competitive practice in this field.





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*With a real practical objective, this Postgraduate Certificate will allow you to achieve your pedagogical goals while boosting your professional profile to a higher level of excellence”*



## General Objectives

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- ◆ Know how to frame the physiotherapist in Primary Care
- ◆ Accumulate the necessary knowledge for good professional practice within the Health System
- ◆ Broaden the necessary tools to face the demands faced in physiotherapy room and take a holistic approach to treatment
- ◆ Design preventive work to improve patient quality of life and promote a correct use of the Health System





## Specific Objectives

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- ◆ Understand the fundamental characteristics of the nervous system
- ◆ Unravel the concept of pain at a physiological level
- ◆ Describe the different impulses and fiber types
- ◆ Explain the different neurological pathologies treated in primary care
- ◆ Know the different specific neurological assessment protocols, including validated scales applicable in primary care
- ◆ Explain different active and passive treatments from the most prominent neurological schools to date
- ◆ Take a deeper look into the specific pharmacology topics to prescribe medication through patient diagnosis



*Highly specialized objectives in a qualification created to train the best professionals in Physiotherapy in Primary Care”*

03

# Course Management

This academic program includes the most specialized teaching staff in the current educational market. They are specialists selected by TECH to develop the whole syllabus. In this way, starting from their own existence and the latest evidence, they have designed the most



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*TECH offers the most specialized teaching staff in the field of study. Enroll now and enjoy the quality you deserve”*

## International Guest Director

Internationally recognized for her experience and commitment to improving Physiotherapy care, Dr. Susan Linder specializes in the field of Physical Medicine and Rehabilitation. With more than 20 years of professional experience, she has worked in leading health institutions such as the Cleveland Clinic in the United States.

Among her main contributions, she has implemented the most innovative approaches to neurological rehabilitation, including neurodevelopmental techniques such as the Bobat method. In this way, she has helped numerous patients with hemiplegia to recover the maximum possible independence in their daily activities and thereby significantly improve their quality of life. He has also developed sports rehabilitation programs that have helped numerous athletes to recover from their injuries integrally and improve their performance significantly.

In addition, she balances this work with her facet as a Clinical Researcher. In this sense, she has led meticulous studies that have made possible advances in therapeutic interventions for patients with neurological disorders such as Brain Injuries, Cardiovascular Accidents and Neurodegenerative Diseases. It has also developed sophisticated methods to optimize resources in rehabilitation treatment. Thanks to this, professionals have improved both their clinical outcomes and financial sustainability in the field of physiotherapy.

Its work has been recognized on several occasions in the form of awards, such as the "Customer Service" award from CCF Health Care Ventures. Committed to providing excellent quality care to users, she adopts an integrative vision that allows her to tailor treatments according to the specific needs of each patient, especially in the context of sports physiotherapy. This has enabled individuals to experience faster recovery and avoid secondary complications ranging from muscle imbalances or spasticity to joint stiffness.



## Dr. Linder, Susan

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- Director of Physical Medicine and Rehabilitation at Cleveland Clinic, Ohio, United States
- Project Scientist at Cleveland Clinic's Lerner Research Institute
- Clinical Supervisor in Physical Medicine and Rehabilitation at Cleveland Clinic
- Staff Physiotherapist in Physical Medicine and Rehabilitation Cleveland Clinic
- Doctorate in Physical Therapy from D'Youville College
- Doctorate in Health Sciences from Youngstown State University
- Master of Science in Health Sciences, University of Indianapolis
- B.S. in Physical Therapy from Cleveland State University
- Member of:
  - American Physical Therapy Association
  - American Heart Association
  - American Academy of Neurology

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

# 04

# Structure and Content

The contents of this program have been developed by the different professors on the course with a clear purpose: to ensure our students acquire each and every one of the necessary skills to become true experts in this field. A complete and well-structured program that will take you to the highest standards of quality and success.





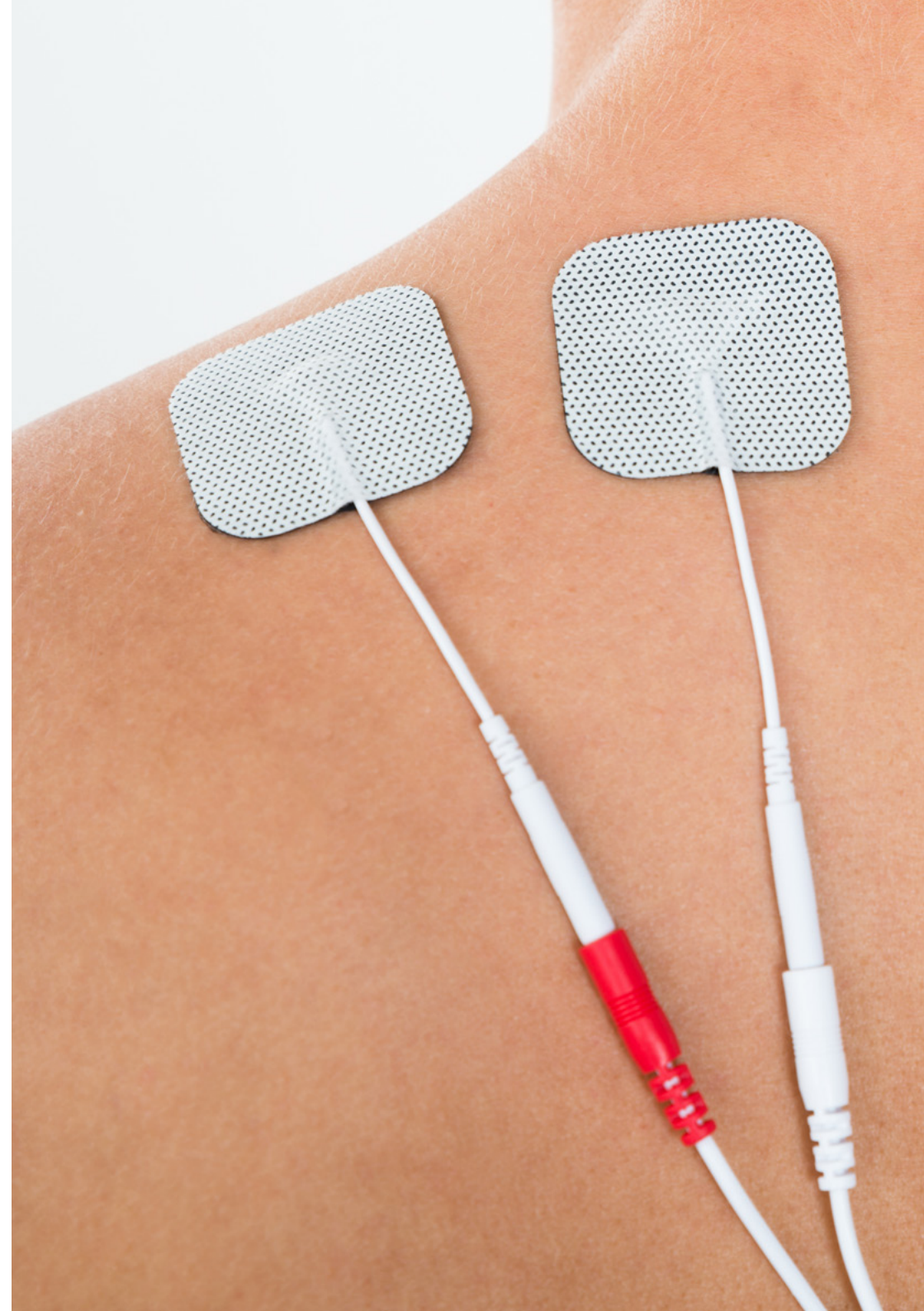


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*A comprehensive syllabus that will take you gradually through each and every one of the lessons that the professional sports physiotherapist needs. With a bonus: The commitment to excellence that characterizes us.*

## Module 1. Neurophysiology of Pain and Neurorehabilitation

- 1.1. Organization of the Nervous System
- 1.2. Transmission and Fibers
  - 1.2.1. Afferent Pathway
  - 1.2.2. Efferent Pathway
- 1.3. Types of Pain
  - 1.3.1. Visceral Pain
  - 1.3.2. Somatic Pain
  - 1.3.3. Neuropathic Pain
  - 1.3.4. Features of Acute and Chronic Pain
- 1.4. Neurological Involvement
- 1.5. Assessing Neurological Involvement
- 1.6. Physiotherapy in Central Nervous System Disorders
- 1.7. Physiotherapy in Peripheral Nervous System Disorders
- 1.8. Active Therapy Treatment
- 1.9. Manual Therapy Treatment
- 1.10. Frequent Pathology Pharmacology





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*A comprehensive teaching program,  
structured in well-developed units,  
oriented toward a high impact learning  
and instructive experience”*

# 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"*

## 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.

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*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

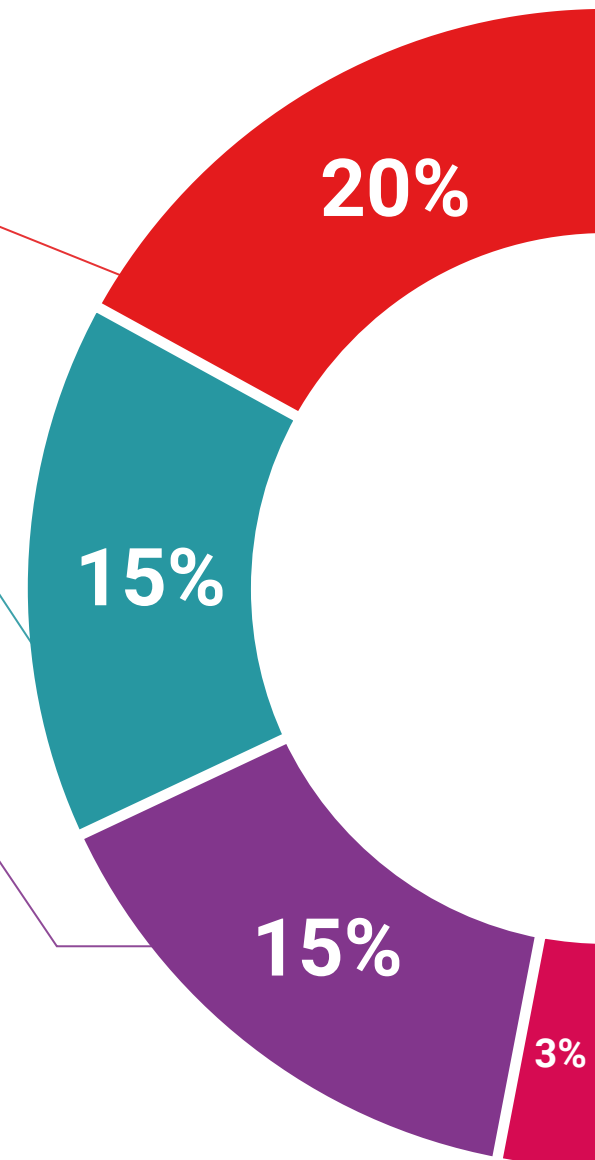
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

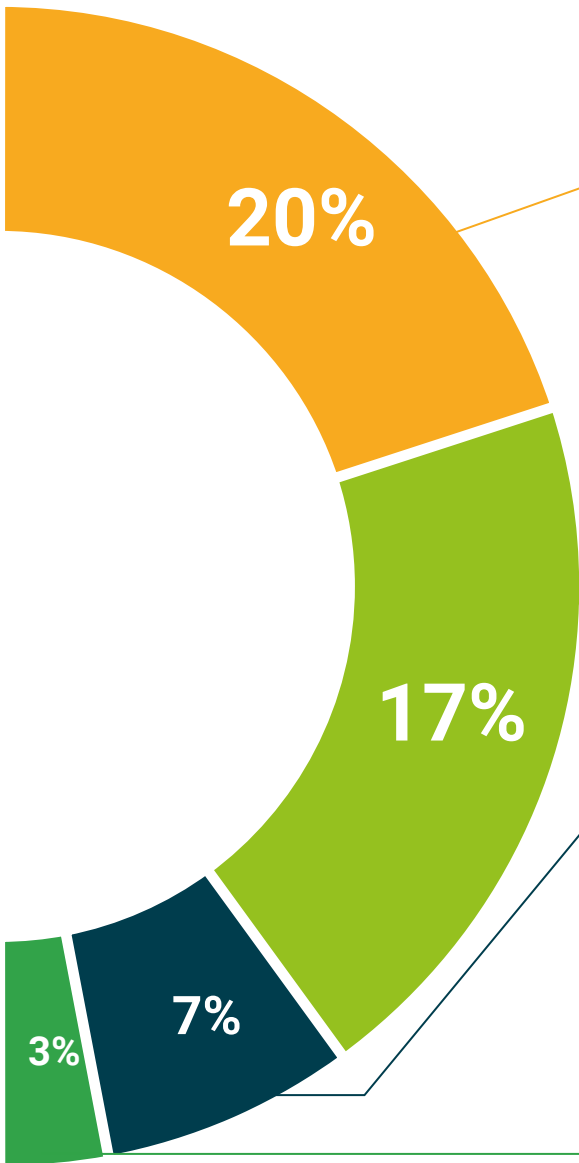
This unique multimedia content presentation training system was awarded by Microsoft as a "European Success Story".



#### 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 Neurophysiology of Pain and Neurorehabilitation guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Global University.





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

This program will allow you to obtain your **Postgraduate Certificate in Neurophysiology of Pain and Neurorehabilitation** endorsed by **TECH Global University**, the world's largest online university.

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

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

Title: **Postgraduate Certificate in Neurophysiology of Pain and Neurorehabilitation**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**



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

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



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