

# Postgraduate Certificate Electrostimulation in Neurological Patients

Endorsed by the NBA



**tech** global  
university





## Postgraduate Certificate

### Electrostimulation in Neurological Patients

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Global University
- » Accreditation: 8 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/us/sports-science/postgraduate-certificate/electrostimulation-neurological-patients](http://www.techtute.com/us/sports-science/postgraduate-certificate/electrostimulation-neurological-patients)

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01

# Introduction

Electrotherapy is a branch of rehabilitation medicine that involves the application of electromagnetic fields to treat various pathologies. Its application ranges from analgesic effects to the nerve fiber stimulation, including the modulation of the activity of different encephalic areas.





A close-up photograph of a person's neck and shoulder. Two white, rectangular adhesive patches are visible on the skin. The person has dark hair and is wearing a light-colored, possibly white, garment. The background is a solid blue color that transitions diagonally from the top right to the bottom left.

“

*This Postgraduate Certificate in Electrostimulation in Neurological Patients will provide you with a sense of confidence in the performance of your profession, helping you grow both personally and professionally”*

Electromagnetic fields have been used as a therapeutic tool since ancient times. However, since the end of the last century, there have been notable advances in the use of different currents. This progress ran parallel to the ever-increasing knowledge of human physiology, which facilitated the design and development of different types of treatments based on the application of electromagnetic fields.

Electrotherapy has a wide range of applications, so it is essential to possess extensive knowledge of both the physiological functioning of the subject, as well as the most appropriate agent in each case. This content covers everything from muscular contraction mechanisms to somatosensory transmission mechanisms, which makes it essential for the therapist to know both the pathophysiological mechanisms of the subject and the physical/chemical principles of Electrotherapy.

In recent years, the number of research studies related to electrotherapy has increased, mainly those focused on invasive techniques. These include percutaneous analgesic techniques in which needles are used as electrodes as well as transcranial stimulation, either of an electrical nature or by using magnetic fields. Based on latter application, the field of action of Electrotherapy has been widened and can thereby be applied to various types of patients, ranging from subjects with chronic pain to neurological patients.

The objective of the Postgraduate Certificate in Electrostimulation in Neurological Patients is to present the updated applications of electrotherapy in neuromusculoskeletal pathologies, always based on scientific evidence when selecting the most suitable type of current for each case. To this end, the neurophysiological principles of each type of current are presented at the beginning of each module so that learning is complete. Each module is supported by practical applications of each type of current, in order to provide the professional with comprehensive knowledge of the pathology and how it can be treated.

Given the updated content of the Postgraduate Certificate in Electrostimulation in Neurological Patients, its scope extends to healthcare professionals, thereby expanding the application of electrotherapy beyond the field of physical therapy.

This **Postgraduate Certificate in Electrostimulation in Neurological Patients** contains the most complete and up-to-date scientific program on the market.

The most important features include:

- ♦ The development of practical cases presented by experts in Electrostimulation in Neurological Patients
- ♦ Its graphical, schematic, and highly practical content provides scientific and practical information on the essential disciplines for professional practice
- ♦ The latest developments in Electrostimulation in Neurological Patients
- ♦ It contains practical exercises where the process of self-evaluation can be carried out to improve learning
- ♦ The latest developments in Electrostimulation in Neurological Patients
- ♦ All this will be complemented by 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



*Update your knowledge through  
the Postgraduate Certificate  
in Electrostimulation in  
Neurological Patients"*

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*This Postgraduate Certificate could be the best investment you make when selecting an update program for two reasons: in addition to updating your knowledge in Electrostimulation in Neurological Patients, you will earn a diploma for the Postgraduate Certificate from TECH Global University”*

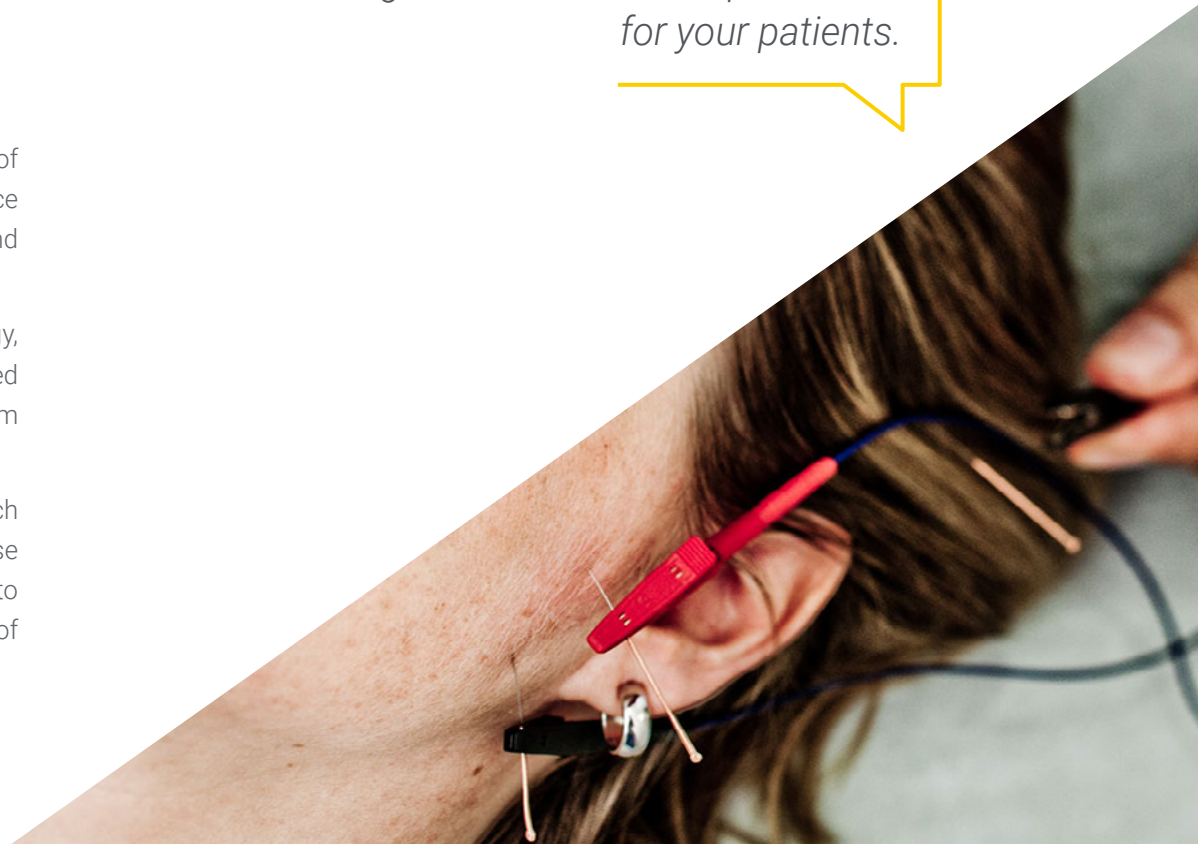
The program includes a teaching staff of professionals from the field of Electrostimulation in Neurological Patients, who bring their professional experience to this training, along with recognized specialists from leading scientific societies and prestigious universities.

Thanks to its multimedia content, developed with the latest educational technology, professionals will benefit from situated and contextual learning—simulated environments designed to provide immersive learning experiences that prepare them for real-life situations.

The design of this program is based on problem-based learning, by means of which the educator must try to solve the different professional practice situations that arise throughout the University Course. To support this, the student will have access to an innovative interactive video system created by renowned experts in the field of Electrostimulation in Neurological Patients, with extensive teaching experience.

*Increase your decision-making confidence by updating your knowledge through this Postgraduate Certificate.*

*Take advantage of the opportunity to learn the latest advances in Electrostimulation in Neurological Patients and improve care for your patients.*



# 02 Objectives

The Postgraduate Certificate in Electrostimulation in Neurological Patients is designed for physiotherapists in their daily practice related to musculoskeletal pathologies and the application of electrotherapy.







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*This Postgraduate Certificate is aimed at helping you update your knowledge in Electrostimulation in Neurological Patients, using the latest educational technology to contribute quality and safety to decision-making and student follow-up”*

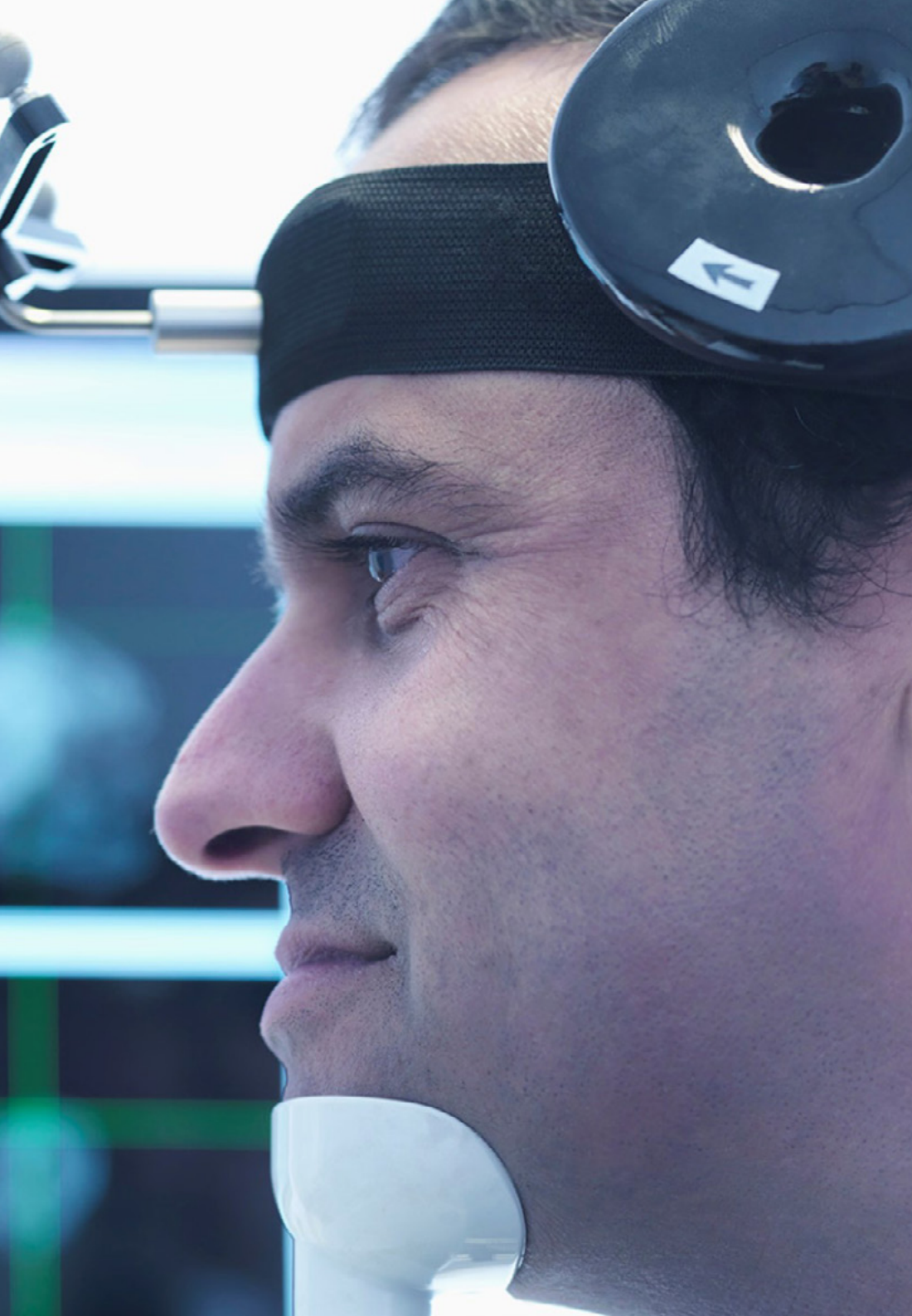


## General Objectives

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- 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
- Support the development of technical skills and abilities through a robust audiovisual system and the opportunity to advance via online simulation workshops and/or specialized training
- Promote professional growth through continuing education and research





### Specific Objectives

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- ♦ Update knowledge on muscle contraction and its rehabilitation through physical means, applying electrotherapy as the primary agent
- ♦ Expand knowledge of new high-frequency applications in the rehabilitation of neuromusculoskeletal pathologies
- ♦ Expand knowledge of new ultrasound therapy applications in the rehabilitation of pathologies



*Update your knowledge through the Postgraduate Certificate in Electrostimulation in Neurological Patients"*



03

# Course Management

The program includes a teaching staff of reference specialists in Electrostimulation in Neurological Patients, who bring their professional experience to this program. In addition, other specialists of recognized prestige participate in its design and elaboration, completing the program in an interdisciplinary manner.





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*Learn from leading professionals about the latest advances in procedures in the field of Electrostimulation in Neurological Patients”*

## Management



### **Dr. León Hernández, Jose Vicente**

- Doctorate in Physiotherapy 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.
- Master's Degree in the Study and Treatment of Pain from the Rey Juan Carlos University



## Coordinators

### **Dr. Cuenca Martínez, Ferrán**

- ♦ Degree in Physiotherapy
- ♦ Master's Degree in "Advanced Physiotherapy in Pain Management"
- ♦ Doctoral Degree

### **Dr. Gurdíel Álvarez, Francisco**

- ♦ Degree in Physiotherapy
- ♦ Expert in Orthopedic Manual Therapy and Myofascial Pain Syndrome
- ♦ Master's Degree in Advanced Physiotherapy in Musculoskeletal Pain Management

### **Dr. Losana Ferrer, Alejandro**

- ♦ Physiotherapist
- ♦ Master's Degree in Advanced Physiotherapy in Musculoskeletal Pain Management
- ♦ Expert in Neuro-Orthopedic Manual Therapy
- ♦ University Advanced Training in Therapeutic Exercise and Invasive Physiotherapy for Musculoskeletal Pain

### **Dr. Merayo Fernández, Lucía**

- ♦ Degree in Physiotherapy
- ♦ Master's Degree in Advanced Physiotherapy in Musculoskeletal Pain Management

### **Dr. Suso Martí, Luis**

- ♦ Degree in Physiotherapy
- ♦ Master's Degree in "Advanced Physiotherapy in Pain Management"
- ♦ Doctoral Degree



# 04

## Structure and Content

The structure of the content has been designed by a team of professionals from the best educational institutions, universities, and companies nationwide, aware of the current relevance of this training to effectively intervene in the education and support of students, and committed to quality teaching through new educational technologies.





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*This Postgraduate Certificate in Electrostimulation in Neurological Patients contains the most complete and up-to-date scientific program on the market”*

## Module 1. Electrostimulation in Neurological Patients

- 1.1. Assessment of Nerve Injury. Principles of Muscle Innervation
- 1.2. Intensity/Time (I/T) and Amplitude/Time (A/T) Curves
- 1.3. Main Trends in Neurological Rehabilitation
- 1.4. Electrotherapy for Motor Rehabilitation in the Neurological Patient
- 1.5. Electrotherapy for Somatosensory Rehabilitation in the Neurologic Patient
- 1.6. Practical Applications
- 1.7. Contraindications

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*A unique, essential, and decisive  
experience to boost your  
professional development”*





## Module 2. Non-Invasive Brain Stimulation

- 2.1. Introduction to Transcranial Neuromodulation
  - 2.1.1. Neurophysiological Principles.
  - 2.1.2. General Information of Non-Invasive Brain Stimulation
- 2.2. Transcranial Magnetic Stimulation
  - 2.2.1. Introduction to Transcranial Magnetic Stimulation
  - 2.2.2. Mechanisms of Action
- 2.3. Stimulation Protocols
  - 2.3.1. Safety
  - 2.3.2. Applications of SOFCs
- 2.4. Transcranial Direct Current
  - 2.4.1. Introduction to Transcranial Direct Current
  - 2.4.2. Mechanism of Action
  - 2.4.3. Safety
- 2.5. Procedures
  - 2.5.1. General Overview
  - 2.5.2. Evidence
  - 2.5.3. Applications of SOFCs
- 2.6. Other Forms of Transcranial Electrical Stimulation
  - 2.6.1. General Overview
  - 2.6.2. Updating of Applications
- 2.7. Transcranial Neuromodulation Combined with other Therapeutic Interventions
  - 2.7.1. Combination Types
  - 2.7.2. Applications of SOFCs
  - 2.7.3. Precautions

# 05 Study Methodology

TECH is the world's first university to combine the **case study** methodology with **Relearning**, a 100% online learning system based on guided repetition.

This disruptive pedagogical strategy has been conceived to offer professionals the opportunity to update their knowledge and develop their skills in an intensive and rigorous way. A learning model that places students at the center of the educational process giving them the leading role, adapting to their needs and leaving aside more conventional methodologies.





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*TECH will prepare you to face new challenges in uncertain environments and achieve success in your career”*

## The student: the priority of all TECH programs

In TECH's study methodology, the student is the main protagonist.

The teaching tools of each program have been selected taking into account the demands of time, availability and academic rigor that, today, not only students demand but also the most competitive positions in the market.

With TECH's asynchronous educational model, it is students who choose the time they dedicate to study, how they decide to establish their routines, and all this from the comfort of the electronic device of their choice. The student will not have to participate in live classes, which in many cases they will not be able to attend. The learning activities will be done when it is convenient for them. They can always decide when and from where they want to study.

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*At TECH you will NOT have live classes  
(which you might not be able to attend)”*



### The most comprehensive study plans at the international level

TECH is distinguished by offering the most complete academic itineraries on the university scene. This comprehensiveness is achieved through the creation of syllabi that not only cover the essential knowledge, but also the most recent innovations in each area.

By being constantly up to date, these programs allow students to keep up with market changes and acquire the skills most valued by employers. In this way, those who complete their studies at TECH receive a comprehensive education that provides them with a notable competitive advantage to further their careers.

And what's more, they will be able to do so from any device, pc, tablet or smartphone.

“*TECH's model is asynchronous, so it allows you to study with your pc, tablet or your smartphone wherever you want, whenever you want and for as long as you want*”



## Case Studies and Case Method

The case method has been the learning system most used by the world's best business schools. Developed in 1912 so that law students would not only learn the law based on theoretical content, its function was also to present them with real complex situations. In this way, they could make informed decisions and value judgments about how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

With this teaching model, it is students themselves who build their professional competence through strategies such as Learning by Doing or Design Thinking, used by other renowned institutions such as Yale or Stanford.

This action-oriented method will be applied throughout the entire academic itinerary that the student undertakes with TECH. Students will be confronted with multiple real-life situations and will have to integrate knowledge, research, discuss and defend their ideas and decisions. All this with the premise of answering the question of how they would act when facing specific events of complexity in their daily work.



## Relearning Methodology

At TECH, case studies are enhanced with the best 100% online teaching method: Relearning.

This method breaks with traditional teaching techniques to put the student at the center of the equation, providing the best content in different formats. In this way, it manages to review and reiterate the key concepts of each subject and learn to apply them in a real context.

In the same line, and according to multiple scientific researches, reiteration is the best way to learn. For this reason, TECH offers between 8 and 16 repetitions of each key concept within the same lesson, presented in a different way, with the objective of ensuring that the knowledge is completely consolidated during the study process.

*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.*



## A 100% online Virtual Campus with the best teaching resources

In order to apply its methodology effectively, TECH focuses on providing graduates with teaching materials in different formats: texts, interactive videos, illustrations and knowledge maps, among others. All of them are designed by qualified teachers who focus their work on combining real cases with the resolution of complex situations through simulation, the study of contexts applied to each professional career and learning based on repetition, through audios, presentations, animations, images, etc.

The latest scientific evidence in the field of Neuroscience points to the importance of taking into account the place and context where the content is accessed before starting a new learning process. Being able to adjust these variables in a personalized way helps people to remember and store knowledge in the hippocampus to retain it in the long term. This is a model called Neurocognitive context-dependent e-learning that is consciously applied in this university qualification.

In order to facilitate tutor-student contact as much as possible, you will have a wide range of communication possibilities, both in real time and delayed (internal messaging, telephone answering service, email contact with the technical secretary, chat and videoconferences).

Likewise, this very complete Virtual Campus will allow TECH students to organize their study schedules according to their personal availability or work obligations. In this way, they will have global control of the academic content and teaching tools, based on their fast-paced professional update.



*The online study mode of this program will allow you to organize your time and learning pace, adapting it to your schedule”*

### 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 assess 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.



### The university methodology top-rated by its students

The results of this innovative teaching model can be seen in the overall satisfaction levels of TECH graduates.

The students' assessment of the teaching quality, the quality of the materials, the structure of the program and its objectives is excellent. Not surprisingly, the institution became the top-rated university by its students according to the global score index, obtaining a 4.9 out of 5.

*Access the study contents from any device with an Internet connection (computer, tablet, smartphone) thanks to the fact that TECH is at the forefront of technology and teaching.*

*You will be able to learn with the advantages that come with having access to simulated learning environments and the learning by observation approach, that is, Learning from an expert.*



As such, the best educational materials, thoroughly prepared, will be available in this program:



#### 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.

This content is then adapted in an audiovisual format that will create our way of working online, with the latest techniques that allow us to offer you high quality in all of the material that we provide you with.



#### Practicing Skills and Abilities

You will carry out activities to develop specific competencies and skills in each thematic field. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop within the framework of the globalization we live in.



#### Interactive Summaries

We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

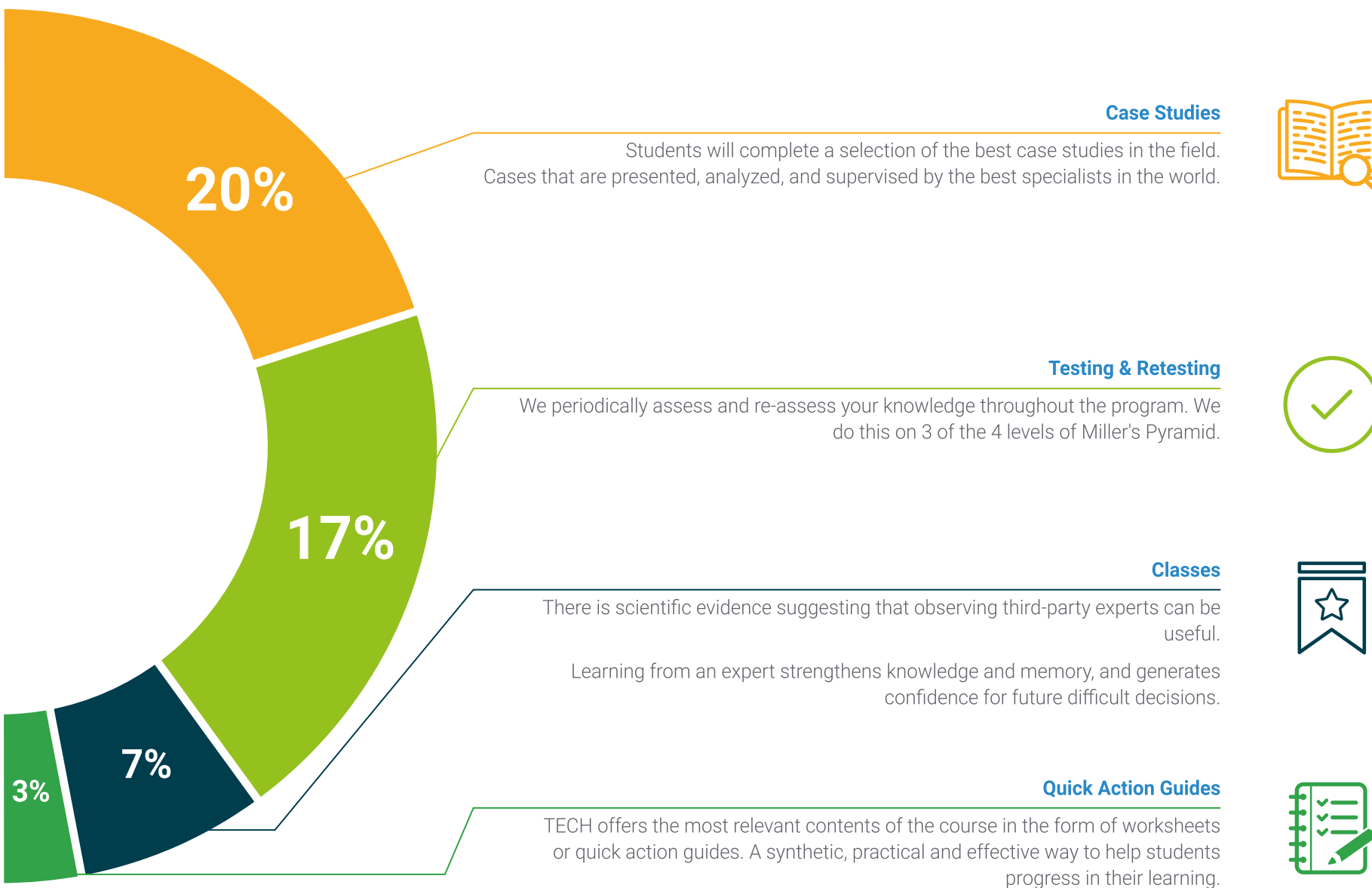
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



#### Additional Reading

Recent articles, consensus documents, international guides... In our virtual library you will have access to everything you need to complete your education.







# 06 Certificate

The Postgraduate Certificate in Electrostimulation in Neurological Patients guarantees students, in addition to the most rigorous and up-to-date education, access to a diploma for the 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 private qualification will allow you to obtain a diploma for the **Postgraduate Certificate in Electrostimulation in Neurological Patients** 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.

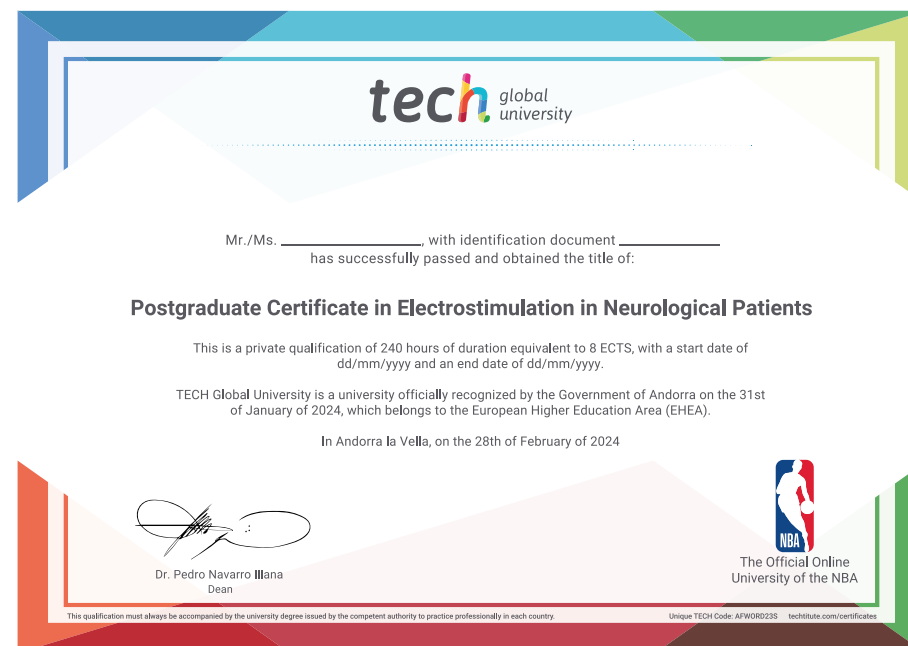
This **TECH Global University** private qualification, is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in Electrostimulation in Neurological Patients**

Modality: **online**

Duration: **6 weeks**

Accreditation: **8 ECTS**





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



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