

# Postgraduate Diploma Advances in Electrotherapy





## Postgraduate Diploma Advances in Electrotherapy

Course Modality: Online

Duration: 6 months

Certificate: TECH Technological University

Official N° of hours: 450 h.

Website: [www.techtute.com/medicine/postgraduate-diploma/postgraduate-diploma-advances-electrotherapy](http://www.techtute.com/medicine/postgraduate-diploma/postgraduate-diploma-advances-electrotherapy)

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# 01

# Introduction

Scientific and medical research offer rehabilitative medicine new answers in the form of technical advances and new ways of approaching situations. This learning process proposes to the professional the specialized learning of applications in various contexts and fields of intervention. A compendium of the most up-to-date knowledge and techniques, with innovation and new therapeutic proposals, through a flexible but intensive approach that will allow the student to grow in their skills quickly and easily.





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*Advance in medical rehabilitation intervention through Electrotherapy with the benefits of the latest approaches and innovations and give a boost to your professional success"*

In recent years, the number of research studies related to electrotherapy has grown, 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 through the use of magnetic fields.

Based on these latest applications, the field of action of electrotherapy is widening and can be applied to various types of population, ranging from subjects with chronic pain to neurological patients.

The objective of the Postgraduate Diploma Advances in Electrotherapy is to present in an updated way the applications of electrotherapy in neuromusculoskeletal pathologies, always based on scientific evidence when selecting the most appropriate type of current in each case.

To this end, the neurophysiological bases are always presented at the beginning of each module, so that learning is complete. Each module is supported by practical applications of each type of current, so that the integration of the knowledge of the pathology and its treatment is complete.

This **Postgraduate Diploma in Advances in Electrotherapy** contains the most complete and up-to-date scientific program on the market. The most important features of the program include:

- ◆ More than 75 practical cases presented by experts in electrotherapy
- ◆ The graphic, schematic, and eminently practical contents with which they are created provide scientific and practical information on the disciplines that are essential for professional.
- ◆ New developments on the role of the rehabilitation physician in the application of electrotherapy
- ◆ Practical exercises where self-assessment can be used to improve learning.
- ◆ Algorithm-based interactive learning system for decision-making in the situations that are presented to the student.
- ◆ Its special emphasis on research methodologies on electrotherapy applied to Rehabilitation Medicine
- ◆ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ◆ Content that is accessible from any fixed or portable device with an Internet connection



*The best online training in the market on Advances in Electrotherapy and its specific use in different pathologies"*

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*With a planning aimed at efficiency, this program puts in your hands the most innovative theoretical knowledge and the most interesting working protocols of the moment in Electrotherapy"*

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

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

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

*Focused on practical learning, this Postgraduate Diploma will teach you the most innovative techniques and their effective and safe application.*

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



# 02 Objectives

A deep knowledge of the Advances in Electrotherapy allows the professional to advance in his clinical practice, incorporating the most current and relevant knowledge and techniques that have arrived in the sector, in relation to the Advances in Electrotherapy. Through an approach focused on efficiency, it will allow you to bring your knowledge to the highest level of updating, allowing you to act as a specialist in this field.







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*New techniques, new possibilities and a better prognosis for your patients, thanks to the knowledge you will acquire in this Postgraduate Diploma"*



## General Objectives

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



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





## Specific Objectives

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### Module 1. Neuromuscular Electrostimulation

- ◆ Learning about the principles of muscle contraction
- ◆ Identify the main neuromuscular injuries
- ◆ Study the main excitomotor currents and interferential currents
- ◆ Identify the described benefits of electrostimulation training

### Module 2. Shock Waves

- ◆ Discuss the recommendations of the scientific societies on shock waves
- ◆ Know the physical and biological principles of shock waves
- ◆ You identify the types of generators and focal applicators
- ◆ Know the indications, recommendations, contraindications and side effects of shock waves

### Module 3. CNS and PNS electrotherapy

- ◆ Establish criteria for nerve injury assessment
- ◆ Know the main trends in neurological rehabilitation
- ◆ Learn the application of electrotherapy in cases of motor rehabilitation
- ◆ Know the basics of non-invasive brain stimulation

03

# Course Management

You will have the direct help and guidance of specialists with long experience in the application of the different systems and techniques of Electrotherapy, professionals chosen for their wide prestige in the profession. All of them have an excellent background in rehabilitation medicine and are professionals with years of teaching experience that offer the student of the Postgraduate Diploma, the most complete, direct and real vision of the work with electrotherapy in rehabilitation medicine.





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

## Management



### Dr. del Villar Belzunce, Ignacio

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

## Professors

### Dr. Aguirre Sánchez, Irene

- ♦ F.E.A. of Physical Medicine and Rehabilitation in the Physical Medicine and Rehabilitation Service of the Regional Hospital García Orcoyen of Estella. Navarra, Spain
- ♦ Echoguided interventional rehabilitation. Meixoeiro Hospital Vigo, Spain
- ♦ Spinal cord injury unit National Hospital of Paraplegics. Toledo, Spain
- ♦ Degree in Medicine from the University of Navarra, Spain
- ♦ Specialist in Physical Medicine and Rehabilitation at the Navarra Hospital Complex, Spain.
- ♦ University Expert "Musculoskeletal Ultrasound", Francisco de Vitoria Online University
- ♦ University expert "Prescription of physical exercise", UPNA. Face-to-Face

### Dr. Torres Noriega, Daniel

- ♦ Rehabilitation Physician. Rehavitalis Clinic Madrid- Spain
- ♦ Emergency and primary care physician. Manises Hospital. Valencia, Spain
- ♦ Prehospital Medical Assistance. Vallada Ambulances Valencia, Spain
- ♦ Medical Surgeon Central University of Venezuela
- ♦ Physical medicine and rehabilitation. Ramón y Cajal University Hospital Spain
- ♦ Master's Degree in Integration and Clinical Problem Solving in Medicine. University of Alcalá, Spain
- ♦ Theoretical and practical course for the treatment of spasticity in stroke.

**Dr. Sánchez Gómez, Gema**

- ◆ Attending Physician in the specialty of Physical Medicine and Rehabilitation at the Rey Juan Carlos de Móstoles University Hospital, Madrid
- ◆ Medical Specialist in Physical Medicine and Rehabilitation at Jaca Clinic, Madrid
- ◆ Specialist Physical Medicine and Rehabilitation. Rey Juan Carlos Hospital, Móstoles, Madrid
- ◆ Degree in Medicine from the Complutense University of Madrid

**Dr. Salmerón Celi, Miguel Bernardo**

- ◆ Specialist Physician/Physical Medicine and Rehabilitation (General Rehabilitation and Pelvic Floor Unit). Rey Juan Carlos University Hospital. Móstoles, Madrid
- ◆ Specialist Physician/Physical Medicine and Rehabilitation (General Rehabilitation and Shock Waves Unit). Rey Juan Carlos University Hospital. Móstoles, Madrid
- ◆ Specialist Physician/Traumatology Service. Rey Juan Carlos University Hospital. Móstoles, Madrid
- ◆ Medical Surgeon Degree, San Martin de Porres, Lima-Peru Private University
- ◆ Specialist in Physical Medicine and Rehabilitation, University Hospital La Fe, Valencia.
- ◆ Doctorate, Research Work: "Effects of Nitric Oxide in the Treatment of Rotator Cuff Tendinitis". In the Applied Sports Sciences program
- ◆ Diploma of Advanced Studies (DAS): Applied Sports Sciences, Faculty of Physiology. University of Valencia

- ◆ Assistant Physician, Rehabilitation Service, Hospital Rey Juan Carlos
- ◆ Resident Physician of Physical Medicine and Rehabilitation, Fundación Jiménez Díaz University Hospital, Madrid.
- ◆ Surgeon from Universidad Nacional Mayor de San Marcos Lima-Peru, with homologation to Medical Degree in Spain.
- ◆ Specialist in Family and Community Medicine at the ADM Sureste of Madrid.
- ◆ D. courses in Biomedical Sciences at the Complutense University of Madrid Presentation of work as research proficiency: "Anemia as a prevalent factor in Heart Failure", with the qualification of outstanding in obtaining the diploma of advanced studies (DEA).

**Dr. Pulido Poma, Rosa Mercedes**

- ◆ Physician specializing in Physical Medicine and Rehabilitation in the Rehabilitation Service of the Hospital Universitario Rey Juan Carlos Móstoles, Madrid
- ◆ Physician specializing in Physical Medicine and Rehabilitation At Santa Rosa Hospital, Lima, Peru
- ◆ Physician specializing in Physical Medicine and Rehabilitation Alberto L. Barton Hospital Callao, Peru
- ◆ Surgeon, San Fernando School of Medicine - Universidad Nacional Mayor de San Marcos, Lima, Peru.
- ◆ Surgeon, San Fernando School of Medicine - Universidad Nacional Mayor de San Marcos, Lima, Peru

**Dr. López Hermoza, Jenny Gladys**

# 04

## Structure and Content

This program is designed to convert the student's work and dedication to learning into real, measurable achievements that maintain stimulation and motivation throughout the process. Throughout the modules that make up the Postgraduate Diploma, students will study each and every one of the aspects that the rehabilitation physician must master to ensure their competence in this type of intervention. In this way, future graduates will be able to learn about the principles of muscle contraction and discuss the recommendations of scientific societies on shock waves.







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

## Module 1. Neuromuscular Electrostimulation

- 1.1. Principles of Muscular Contraction
- 1.2. Main Neuromuscular Injuries
- 1.3. Electric Currents
- 1.4. Principles of Electromyography
- 1.5. Main Excitomotor Currents Neo-faradic Currents
- 1.6. Main Interferential Currents Kotz's Currents
- 1.7. Clinical Applications of Electrostimulation
- 1.8. Described Benefits of Electrostimulation Training
- 1.9. Body Map of the Location of the Electrostimulation Electrodes
- 1.10. Contraindications and Precautions of Electrostimulation

## Module 2. Shock Waves

- 2.1. Recommendations from Scientific Societies
- 2.2. Physical Principles of Shock Waves
- 2.3. Biological Effects of Shock Waves
- 2.4. Types of Generators and Focal Applicators
- 2.5. Pressure Wave Generator and Applicators
- 2.6. Indications and Recommendations
- 2.7. Contraindications and Secondary Effects
- 2.8. Types of Indications I: Standard Approved Indications
- 2.9. Types of Indicators II: Indications Empirically Proven Common Clinical Uses
- 2.10. Types of Indications III: Exceptional and Experimental Indications





### Module 3. CNS and PNS electrotherapy

- 3.1. Assessment of Nerve Injury Principles of Innervation
- 3.2. Main Trends in Neurological Rehabilitation
- 3.3. Electrotherapy for Motor Rehabilitation in the Patient
- 3.4. Electrotherapy for Somatosensory Rehabilitation in Neurological Patients
- 3.5. Electromodulation
- 3.6. Non-Invasive Brain Stimulation: Introduction
- 3.7. Transcranial Magnetic Stimulation
- 3.8. Transcranial Direct Current
- 3.9. Practical Applications
- 3.10. Contraindications



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

05

# Methodology

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

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



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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 abundant scientific evidence on the effectiveness of the method. Specialists learn better, faster, and more sustainably over time.

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



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

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



## Relearning Methodology

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

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



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



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

With this methodology, more than 250,000 physicians have been trained with unprecedented success in all clinical specialties regardless of surgical load. Our pedagogical methodology is developed in a highly competitive environment, with a university student body with a high socioeconomic profile and an average age of 43.5 years old.

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

In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

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



This program offers the best educational material, prepared with professionals in mind:



#### Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise.

These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.



#### Surgical Techniques and Procedures on Video

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



#### Interactive Summaries

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

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



#### Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.





#### Expert-Led Case Studies and Case Analysis

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



#### Testing & Re-testing

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises: So that they can see how they are achieving your goals.



#### Classes

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



#### Quick Action Guides

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



# 06 Certificate

The Postgraduate Diploma in Advances in Electrotherapy guarantees you, in addition to the most accurate and up-to-date training, access to a Postgraduate Diploma issued by TECH - Technological University.



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

This **Postgraduate Diploma in Advances in Electrotherapy** contains the most complete and up-to-date scientific program on the market.

After the student has passed the assessments, they will receive their corresponding **Postgraduate Diploma** issued by **TECH Technological University** via tracked delivery\*.

The diploma issued by **TECH Technological University** will reflect the qualification obtained in the Postgraduate Diploma, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional from career evaluation committees.

Title: **Postgraduate Diploma in Advances in Electrotherapy**

Official N° of Hours: **450 h.**



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

future  
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guarantee accreditation teaching  
institutions technology learning  
community commitment  
personalized service innovation  
knowledge present quality  
online training  
development language  
virtual classroom



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Course Modality: Online

Duration: 6 months

Certificate: TECH Technological University

Official N° of hours: 450 h.

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