

# Professional Master's Degree

## Physiotherapy in the Approach to Acquired Brain Injury

Endorsed by the NBA





## Professional Master's Degree Physiotherapy in the Approach to Acquired Brain Injury

Course Modality: **Online**

Duration: **12 months**

Certificate: **TECH Technological University**

Official N° of hours: **1,500 h.**

Website: [www.techtute.com/in/physiotherapy/professional-master-degree/master-physiotherapy-approach-acquired-brain-injury](http://www.techtute.com/in/physiotherapy/professional-master-degree/master-physiotherapy-approach-acquired-brain-injury)

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# 01

# Introduction

The increase in the incidence of Acquired Brain Injury (ABI), especially stroke, and its survival, make neurorehabilitation and, therefore, physiotherapy, an indispensable element, since stroke is currently a leading cause of disability. This, coupled with the public's awareness of the need for specialized professionals, is leading to an increase in the demand for physiotherapists who are able to understand how the nervous system works after an injury and how to get the most out of it to minimize the after-effects of the injury.



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*This training will generate a sense of confidence in the Physiotherapist's professional practice, which will help them grow both personally and professionally”*

In addition, we are living a time of great advances in the field of Neuroscience, as well as Physiotherapy as a science, which compels TECH to update students' knowledge both about the functioning of the nervous system, as well as how to evaluate and therapeutically approach a person with ABI, since each injury is different and will manifest itself in a different way in each patient.

This Professional Master's Degree in Physiotherapy in the Approach to Acquired Brain Injury aims to be a compendium of the most up-to-date evidence and scientific knowledge of the nervous system and its rehabilitation when it is injured in an unexpected way. Thanks to this, it is presented as a Professional Master's Degree capable of providing specialist training to physiotherapists who have never dealt with people with ABI, but who are interested in steering their professional future towards this type of patient.

Equally, professionals that are already neurological physiotherapists, whether or not they deal with ABI, will find the opportunity to update their knowledge and achieve a more advanced specialization in this type of patients.

In addition, by understanding so much information about Neuroscience and functionality, it can be a useful tool for the physiotherapist whose target patient is not specifically one suffering from an ABI or a neurological pathology, yet needs to know the ins and outs of the nervous system to better understand and address the injury or therapeutic need of the patient.

In this Professional Master's Degree, TECH also covers ABI in the pediatric age group, as this is an even greater challenge for physiotherapists. This is due to the specific characteristics of the nervous system and the body according to the neurodevelopment that has already happened or will happen depending on the age at which the injury occurs.

This **Professional Master's Degree in Physiotherapy in the Approach to Acquired Brain Injury** contains the most complete and up-to-date scientific program on the market. The most important features include:

- More than 75 case studies presented by experts in Physiotherapy in the Approach to Acquired Brain Injury
- 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
- Recent developments on the role of the Physiotherapist
- Practical exercises where the self-evaluation process can be carried out to improve learning
- Algorithm-based interactive learning system for decision-making in the situations that are presented to the student
- With special emphasis on evidence-based Physiotherapy and research methodologies in Physiotherapy in the Approach to Acquired Brain Injury
- All of 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 this Professional Master's Degree in Physiotherapy in the Approach to Acquired Brain Injury"*

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*This Professional Master's Degree may be the best investment you can make when selecting a refresher program, for two reasons: in addition to updating your knowledge of Physiotherapy in the Approach to Acquired Brain Injury, you will obtain a qualification from TECH Technological University”*

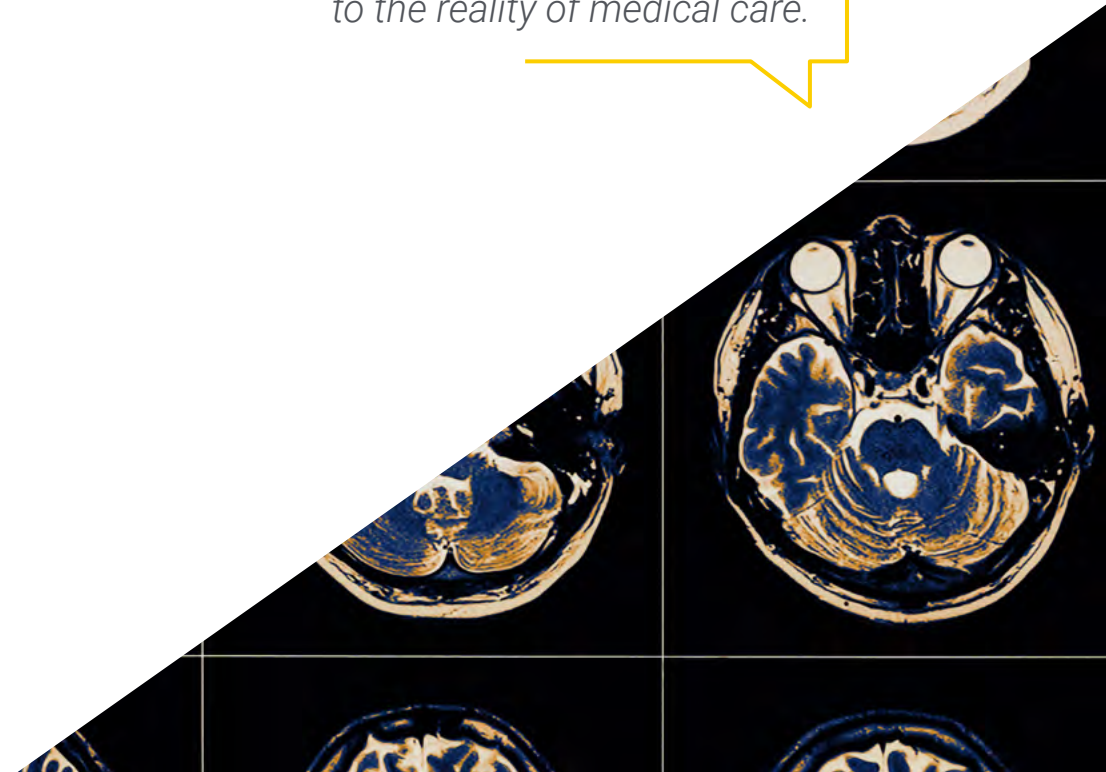
Its teaching staff includes professionals from the field of Physiotherapy in the Approach to Acquired Brain Injury, who bring the experience of their work to this training, as well as renowned specialists belonging to leading scientific societies.

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 an immersive academic experience 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 throughout the program. For this reason, you will be assisted by an innovative, interactive video system created by renowned and experienced experts in the field of Physiotherapy in the Approach to Acquired Brain Injury with extensive teaching experience.

*This Professional Master's Degree offers learning in simulated environments, which provides an immersive learning experience designed to train for real-life situations.*

*It includes clinical cases to bring the program's degree as close as possible to the reality of medical care.*



# 02 Objectives

The program in Physiotherapy in the Approach to Acquired Brain Injury is oriented to facilitate the practice of the physiotherapist in their daily work.







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*This program is designed for you to update your knowledge in Physiotherapy in the Approach to Acquired Brain Injury, with the use of the latest educational technology to contribute with quality and safety to decision making, diagnosis, treatment and patient support”*



## General Objectives

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- Enable specialization of the physiotherapist in the field of neurological rehabilitation
- Update the knowledge of the physiotherapist in Neuroscience applied in the clinic
- Enhance clinical practice that is based on scientific evidence and clinical reasoning
- Facilitate the integral care of the neurological patient in all their complexity



*Make the most of the opportunity and take the step to get up to date on the latest developments in the approach to Physiotherapy in the Approach to Acquired Brain Injury”*





## Specific Objectives

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### Module 1. Neuroanatomy and Neurophysiology

- ◆ Know the structural anatomical bases of the nervous system
- ◆ Know the functional anatomical bases of the nervous system
- ◆ Gain up-to-date knowledge of the physiology of movement
- ◆ Analyze the neurophysiological processes of motor learning
- ◆ Revise the different theories of motor control
- ◆ Gain up-to-date knowledge in the neuroscience applied to neurological injuries

### Module 2. ABI

- ◆ Recognize what is and what is not ABI
- ◆ Gain in-depth understanding of the epidemiology of ABI
- ◆ Know the implications of ABI according to the age of the patient
- ◆ Identify different symptoms and syndromes according to the area affected by the ABI
- ◆ Learn to identify hemineglect and understand its implications for the patient and for the therapeutic approach
- ◆ Learn to recognize the pusher syndrome and gain up-to-date knowledge about it in view of its implications in the therapeutic approach
- ◆ Understand the difference between cerebellar versus basal ganglia symptomatology
- ◆ Distinguish spasticity from other tone disturbances
- ◆ Recognize apraxia and its implications for the patient and for the therapeutic approach
- ◆ Learn to identify alien hand syndrome

### **Module 3. Assessment of a Patient with ABI**

- ♦ Interpret the radiological findings in a CAT scan
- ♦ Interpret the radiological findings in MRI
- ♦ Know the different types of complementary radiodiagnostic tests
- ♦ Learn to carry out a complete neurological examination
- ♦ Plan the therapeutic approach in function with the findings in the neurological examination and physiotherapeutic assessment
- ♦ Learn examination techniques for the differential diagnosis of the different neurological signs and symptoms
- ♦ Know the pathological reflexes and identify them
- ♦ Conduct a review of assessment scales and tests
- ♦ Learn to write physiotherapy reports
- ♦ Learn to interpret medical reports or reports from other specialists in order to extract the relevant information

### **Module 4. Multidisciplinary Intervention in ABI**

- ♦ Know the different methods and concepts used by neurological physiotherapists
- ♦ Carry out a review of the scientific evidence on the different therapeutic methods, concepts and tools
- ♦ Know the therapeutic tools of other professionals from the clinical team
- ♦ Know the competencies of other professionals in the clinical team in order to learn how to refer to them when necessary
- ♦ Review the most useful orthoses and support products for patients with ABI
- ♦ Learn to identify communication disorders in order to refer them to the competent professional and contemplate them in the patient's overall condition
- ♦ Learn to identify swallowing disorders in order to refer them to the competent professional and contemplate them in the overall condition of the patient

- ♦ Know the different cognitive domains
- ♦ Recognize the implication of the different cognitive domains, injured or intact, in movement impairment and their implication in the physiotherapeutic approach
- ♦ Learn to identify behavioral disorders secondary to ABI in order to refer them to the competent professional and contemplate them in the overall condition of the patient
- ♦ Take into account the emotional state of the patient and the family and how it affects the approach and rehabilitation

### **Module 5. Complications in Patients with ABI**

- ♦ Revise the most frequent complication of patients with ABI to prevent them or alleviate them
- ♦ Learn to identify pain and how to approach it
- ♦ Identify the factors which provoke shoulder pain, how to prevent it and how to approach it once it appears
- ♦ Recognize respiratory complications and know their approach from a physiotherapy point of view
- ♦ Learn to identify the signs and symptoms of complications that must be referred to other professionals

### **Module 6. ABI in Pediatrics**

- ♦ Revise the neurodevelopment guidelines in order to identify the prognosis in the rehabilitation of the ABI according to the age of the patient
- ♦ Learn to assess pediatric age for their unique and age-specific characteristics
- ♦ Know the specific approach models of pediatric physiotherapy in ABI
- ♦ Revise the skills of other professionals in the working team in the field of pediatrics
- ♦ Know the implication of the educational field in the rehabilitation of minors with ABI



### Module 7. ABI in Altered States of Consciousness

- ♦ Review the neurophysiology of consciousness
- ♦ Learn to evaluate the grade of alteration of consciousness
- ♦ Learn to estimate a prognosis based on examination and evolution
- ♦ Identify the appearance of pain in people with altered consciousness
- ♦ Learn to program a physiotherapeutic approach protocol
- ♦ Know the work of the rest of the professionals of the team in order to carry out the therapeutic program
- ♦ Carry out a review of the possible complications in an attempt to avoid them or alleviate them

### Module 8. ABI in Geriatrics

- ♦ Know the characteristics specific to geriatric patients with ABI
- ♦ Revise the typical comorbidities in the elderly
- ♦ Learn to create a rehabilitation program in conjunction with the rest of the team
- ♦ Know the discharge options in order to make the best decision for the patient regarding their residence and rehabilitation
- ♦ Learn to appropriately adjust the environment to make it as functional as possible
- ♦ Know the role of the family and legal guardians
- ♦ Carry out a review of the most used technical supports for geriatric patients with ABI

# 03 Skills

After passing the assessments in the Professional Master's Degree in Physiotherapy in the Approach to Acquired Brain Injury, the student will have acquired the necessary professional skills for quality, up-to-date practice based on the most recent scientific evidence.





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*With this program you will be able to master the new diagnostic and therapeutic procedures in Physiotherapy in the Approach to Acquired Brain Injury”*



## General Skills

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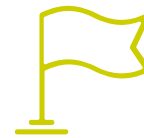
- ♦ Possess and understand knowledge that provides a basis or opportunity to be original in the development and/or application of ideas, often in a research context
- ♦ Apply acquired knowledge and problem-solving skills in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their area of study
- ♦ Integrate knowledge and face the challenge of making judgements based on incomplete or limited information. In addition, include reflections on the social and ethical responsibilities linked to implementing this knowledge and judgement
- ♦ Know how to communicate conclusions, knowledge, and supporting arguments to specialized and non-specialized audiences in a clear and unambiguous way
- ♦ Acquire the learning skills that will enable them to continue studying in a manner that will be largely self-directed or autonomous



*At TECH we are committed to your future and for that reason we make the effort to bring you the most complete program on the market”*







## Specific Skills

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- ♦ Gain in-depth understanding of the epidemiology of ABI
- ♦ Describe the implications of ABI according to the age of the patient
- ♦ Explain the therapeutic tools of other professionals from the clinical team
- ♦ Define the competencies of other professionals in the clinical team in order to learn how to refer to them when necessary
- ♦ Explain the different types of complementary radiodiagnostic tests
- ♦ Learn to carry out a complete neurological examination
- ♦ Plan the therapeutic approach in function with the findings in the neurological examination and physiotherapeutic assessment
- ♦ Explain the work of the rest of the professionals of the team in order to carry out the therapeutic program
- ♦ Carry out a review of the possible complications in an attempt to avoid them or alleviate them
- ♦ Gain up-to-date knowledge of the physiology of movement
- ♦ Analyze the neurophysiological processes of motor learning
- ♦ Explain the characteristics specific to geriatric patients with ABI
- ♦ Revise the typical comorbidities in the elderly
- ♦ Learn to create a rehabilitation program in conjunction with the rest of the team
- ♦ Define the different methods and concepts used by neurological physiotherapists
- ♦ Carry out a review of the scientific evidence on the different therapeutic methods, concepts and tools
- ♦ Define the different cognitive domains
- ♦ Recognize the implication of the different cognitive domains, injured or intact, in movement impairment and their implication in the physiotherapeutic approach

# 04

# Course Management

The program includes in its teaching staff leading specialists in Physiotherapy in the Approach to Acquired Brain Injury, who bring to this training the experience from their work. Additionally, other recognized specialists participate in its design and preparation, which means that the program is developed in an interdisciplinary manner.



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*Learn from leading professionals about the latest advances in the procedures in the field of Physiotherapy in the Approach to Acquired Brain Injury”*

## Management



### Ms. De Andrés Garrido, Berta

- ♦ Physiotherapist in the Center of Neurorehabilitation and Neurodevelopment and in the CAIT of INEURO SCA, province of Seville
- ♦ Degree in Physiotherapy
- ♦ Master's Degree in Neurological Physiotherapy of Adults and Children
- ♦ Master's Degree in Neurological Physiotherapy

## Professors

### Ms. Aguado Caro, Patricia

- ♦ Carries out her work at the Neurological Rehabilitation Center at Neurointegra
- ♦ Neuropsychologist

### Ms. Narbona González, Natividad

- ♦ Carries out her work at the Neurological Rehabilitation Center at Neurointegra
- ♦ Neuropsychologist

### Mr. Ruiz García, Pablo

- ♦ Physiotherapist in ADACEA Alicante
- ♦ Degree in Physiotherapy
- ♦ Master's Degree in Neurorehabilitation

### Mr. Sarrías Arrabal, Esteban

- ♦ Department of Psychology at the University of Seville

### Dr. Rodríguez Sánchez, Augusto Rembrandt

- ♦ Professor en Cardenal Spínola University Center of Studies CEU
- ♦ Degree in Physical Activity and Sports Science
- ♦ PhD from the University of Seville

### Ms. Monís, Estela

- ♦ Neurophysiotherapist
- ♦ Neurointegra

### Mr. Montero Leyva, José Luis

- ♦ Physiotherapy at Beato Fray Leopoldo Residence. Rehabilitation Coordinator

**Dr. Rubiño, José Ángel**

- ♦ Neuropsychologist
- ♦ Collaborating Researcher in the University of the Balearic Islands
- ♦ General Health Psychologist
- ♦ PhD in Neuroscience. University of the Balearic Islands
- ♦ Advanced Studies Certificate in Psychobiology
- ♦ Master's Degree in Neuroscience

**Mr. Díez, Óscar**

- ♦ Clinical Manager in Neurem Functional Recovery SCP
- ♦ Physiotherapist

**Ms. Amor Hernández, Paloma**

- ♦ Psychologist
- ♦ Currently studying a PhD in Health Psychology from the National University of Remote Education

**Ms. Rodríguez Pérez, Mónica**

- ♦ Neuropsychologist in Neurointegra
- ♦ Psychologist
- ♦ Master's Degree in Advanced Studies of the Brain and Behavior
- ♦ Master's Degree in General Health Psychology
- ♦ Specialist in Neuropsychology

**Mr. Lafuente, Ignacio**

- ♦ Self-Employed Physiotherapist

**Mr. Mariño Estelrich, Ignacio**

- ♦ Physiotherapist in Sant Joan de Deú de Martorell Hospital (Barcelona)
- ♦ Degree in Physiotherapy
- ♦ Master's Degree in Neurophysiotherapy
- ♦ Master's Degree in Management, Administration and Entrepreneurship of Health Care Centers and Social Services

**Dr. Vázquez Sánchez, Fernando**

- ♦ Neurologist. Burgos University Hospital

**Mr. Entrena, Álvaro**

- ♦ Uner Rehabilitation Clinic
- ♦ Physiotherapist

**Ms. Bacardit, Laura**

- ♦ Physiotherapist at MIT
- ♦ Diploma in Physiotherapy
- ♦ Master's Degree in Neurorehabilitation in the Guttmann Institute (UAB)
- ♦ Specialist in Neurosciences, Aquatic Therapy and Therapeutic Exercise

**Ms. Ferreiro Pardo, Tatiana**

- ♦ Physiotherapist in the Teresa Herrera Mother and Child Hospital in A Coruña
- ♦ Degree in Physiotherapy
- ♦ Master's Degree in Neuroscience with a major in Medical Neurobiology
- ♦ Specialist in the evaluation and treatment of adult neurological patients
- ♦ Specialist in the treatment and evaluation of pediatric patients with neurological alterations and collaboration with the virtual reality development programs for physical rehabilitation

**Dr. Lerma, Sergio**

- ♦ Professor and Researcher at La Salle University Center
- ♦ Dean of the Faculty of Health Sciences. La Salle Higher Center for University Studies. UAM
- ♦ Researcher in the Biomedical Research Foundation of the Niño Jesús Children's University Hospital
- ♦ Diploma in Physiotherapy
- ♦ PhD in Physiotherapy

**Ms. Moral Saiz, Beatriz**

- ♦ La Salle Functional Rehabilitation Institute
- ♦ Physiotherapist. MSc.

**Ms. Piñel Cabas, Inmaculada**

- ♦ Occupational Neurotherapist
- ♦ Neurointegra

**Ms. Campos, Julia**

- ♦ Neurophysiotherapist in Neurodem Clinic

**Mr. Lozano Lozano, Mario**

- ♦ Teacher Researcher
- ♦ Department of Physiotherapy, Faculty of Health Sciences
- ♦ University of Granada

**Ms. Salgueiro, Carina**

- ♦ Degree in Physiotherapy with specialty in the Bobath Concept in Adults and Onset in Childhood

**Ms. Hurtado de Mendoza Fernández, Alba**

- ♦ Diploma in Occupational Therapy
- ♦ Master's Degree in Neuroscience
- ♦ Specialty in Cognitive Neuroscience
- ♦ Advanced training in Neurorehabilitation

**Ms. Agúndez Leroux, Sandra**

- ♦ Carries out her work at the Neurological Rehabilitation Center at Neurointegra
- ♦ Occupational Therapist

**Ms. Abelleira, Estefanía**

- ♦ Neurophysiotherapist
- ♦ Master's Degree in Neurophysiotherapy
- ♦ Basal Stimulation Training
- ♦ Bobath Training
- ♦ Perfetti Training
- ♦ Neurodynamics Training
- ♦ Studies in Social and Cultural Anthropology

**Mr. Francisco García, Antonio**

- ♦ Home Physiotherapist in Motril
- ♦ Diploma in Physiotherapy from the University of Granada
- ♦ Master's Degree in Neurophysiotherapy from the Pablo Olavide University

**Mr. Abeledo, Juan Luis**

- ♦ Physiotherapist. Upacesur Foundation
- ♦ Diploma in Physiotherapy
- ♦ European specialist in Psychotherapy from the UCLM

**Mr. Calderón Lucena, Antonio**

- ♦ Medical Park Rehabilitation Clinic (Bad Feilnbach)
- ♦ Occupational Therapist

**Dr. Gómez Soriano, Julio**

- ♦ Head of the Research Group in Physiotherapy Toledo (GIFTO) University School of Nursing and Physiotherapy of Toledo University of Castilla La Mancha(UCLM)
- ♦ Sensory-Motor function National Hospital of Paraplegics Toledo
- ♦ Diploma in Physiotherapy
- ♦ Degree in Physical Activity and Sports Sciences from UCLM.
- ♦ Master's Degree in Neurological Pathology and PhD from Rey Juan Carlos University

**Dr. Pérez Nombela, Soraya**

- ♦ Research Group in Physiotherapy Toledo (GIFTO) University of Castilla La Mancha,
- ♦ Diploma in Physiotherapy
- ♦ Master's Degree in Neurological Pathology
- ♦ Specialist in Human Gait Biomechanics, Neurorehabilitation, Robotics and Spinal Cord Injury

**Ms. Alba Soto, Alicia**

- ♦ Neurological Physiotherapist FISUN Physiotherapy Center

**Dr. Ferrand Ferri, Patricia**

- ♦ Specialist in Physical Medicine and Rehabilitation, Virgen del Rocio University Hospital
- ♦ Degree in Medicine and Surgery
- ♦ Postgraduate Diploma in Pediatric Rehabilitation
- ♦ Area of Work: Pediatric Rehabilitation Instrumented Gait Analysis

**Ms. Arjona, María del Rocío**

- ♦ Speech Therapist in San Juan de Dios Hospital, Seville

**Mr. Del Barco Gavala, Alberto**

- ♦ Degree in Psychology from the University of Granada
- ♦ Master's Degree in Clinical Neuropsychology from the Pablo Olavide University
- ♦ Master's Degree in Neurosciences and Behavioral Biology from the Pablo de Olavide University
- ♦ International Master's Degree Neuroscience and Biology of Behavior from the Autonomous University of Barcelona
- ♦ Specialist in Neuropsychology

**Mr. Crespillo, Víctor**

- ♦ Psychologist
- ♦ DomusVi SAD. Seville

**Ms. Aguirre, Arantzazu**

- ♦ Occupational Therapist in Galey and Bionika Health Clinic
- ♦ Occupational Therapist in Bionika Health

**Mr. Moreno Martínez, Alejandro**

- ♦ Physiotherapy in Pediatrics and Early Care Dry Needling in Myofascial Pain Syndrome
- ♦ Specialist in Orthopedic Manual Therapy
- ♦ Master's Degree in Advanced Manual Physiotherapy
- ♦ Postgraduate Diploma Respiratory Physiotherapy

**Dr. De la Fuente, Rebeca**

- ♦ Attending Physician in the Neurology Unit of the Leon University Care Complex
- ♦ Degree in Medicine from the University of Salamanca
- ♦ Neurology Specialist in Salamanca University Hospital
- ♦ Master's Degree in Neuro-immunology from the Autonomous University Madrid

**Dr. Lara, Lidia**

- ♦ Attending Physician in the Neurology Department of León Care Complex
- ♦ Degree in Medicine and Surgery
- ♦ Specialist Degree in Neurology

**Dr. Mendoza González, Lucrecia**

- ♦ Medical Specialist in Physical Medicine and Rehabilitation
- ♦ Master's Degree in Evaluative Medicine and Medical Expertise
- ♦ Specialist Degree in Child Disability
- ♦ Expert in Child Rehabilitation
- ♦ Expert in Musculoskeletal Ultrasound

**Dr. Bravo, Elisabeth**

- ♦ University School of Nursing and Physiotherapy in Toledo University of Castilla La Mancha,
- ♦ Member of the CSIC bioengineering group and completed her thesis at the Sensory-motor function group of the National Hospital of Paraplegics
- ♦ Associate PhD Professor
- ♦ Master's Degree in Study and Treatment of Pain

**Ms. Carrasco Pérez, Ana**

- ♦ Synergia Physiotherapist
- ♦ Child Physiotherapy in the Early Childhood Care Center (CAIT) in Dos Hermanas, Seville

**Mr. Pérez Miralles, José Antonio**

- ♦ Physiotherapist in the New Option Association of Acquired Cerebral Damage Valencia
- ♦ Diploma in Physiotherapy
- ♦ Specialist in Neurological Physiotherapy

**Mr. Arévalo Mora, Óscar**

- ♦ Physiotherapist at Beato Fray Leopoldo Residence(Granada)
- ♦ Physiotherapist in Maria Zayas Residency (Granada)

**Ms. Fernández Muñoz, María**

- ♦ Physiotherapist at Las Sabinas Residence (JCCM)

**Ms. Gallego, Belén**

- ♦ Occupational Therapist

**Ms. Mena, Alba**

- ♦ Social Worker

**Mr. Garrido Gálvez, Álvaro**

- ♦ Occupational Therapist Beato Fray Leopoldo Residence







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*Our teaching team will provide you with all their knowledge so that you are up to date with the latest information on the subject"*

05

# Structure and Content

The structure of the contents has been designed by a team of professionals from the best centers and universities in the country, who are aware of the relevance of up-to-date training to be able to deal with patients with acquired brain injury, and who are committed to quality teaching through new educational technologies.





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*This Professional Master's Degree in  
Physiotherapy in the Approach to Acquired  
Brain Injury contains the most complete and  
up-to-date scientific program on the market”*

## Module 1. Neuroanatomy and Neurophysiology

- 1.1. Anatomy
  - 1.1.1. Introduction to Structural Anatomy
  - 1.1.2. Introduction to Functional Anatomy
  - 1.1.3. Spinal Cord
  - 1.1.4. Brainstem
  - 1.1.5. Frontal
  - 1.1.6. Parietal
  - 1.1.7. Temporal
  - 1.1.8. Occipital
  - 1.1.9. Cerebellum
  - 1.1.10. Basal Ganglia
- 1.2. Physiology
  - 1.2.1. Neuroplasticity
  - 1.2.2. Muscle Tone
- 1.3. Motor Control
  - 1.3.1. Motor Behavior
  - 1.3.2. Motor Control

## Module 2. ABI

- 2.1. What Is It?
  - 2.1.1. ABI in Adults
  - 2.1.2. ABI in Childhood
  - 2.1.3. ABI in Elderly People
- 2.2. Functional Alterations
  - 2.2.1. Tone Alterations
  - 2.2.2. Hemineglect
  - 2.2.3. Pusher Syndrome
  - 2.2.4. Cerebellar Syndrome vs. Basal Ganglia Injury
  - 2.2.5. Alien Hand Syndrome
  - 2.2.6. Apraxia



### Module 3. Assessment of a Patient with ABI

- 3.1. Medical History
- 3.2. Neuroimaging
  - 3.2.1. Structural
  - 3.2.2. Functional Criteria
- 3.3. Neurological Examination
  - 3.3.1. Cranial Nerves
  - 3.3.2. Pathological Reflexes
  - 3.3.3. Muscular
    - 3.3.3.1. Osteotendinous Reflexes
    - 3.3.3.2. Tone
    - 3.3.3.3. Strength
  - 3.3.4. Sensitivity.
    - 3.3.4.1. Sensitivity
    - 3.3.4.2. Gnosias
  - 3.3.5. Coordination
  - 3.3.6. Balance
  - 3.3.7. March
  - 3.3.8. Manipulation
- 3.4. Neurological Assessment Scales
- 3.5. Writing the Report
  - 3.5.1. Writing a Physiotherapy Report
  - 3.5.2. Interpretation of Medical Information

### Module 4. Multidisciplinary Intervention in ABI

- 4.1. Physiotherapy
  - 4.1.1. Ease of Movement
  - 4.1.2. Cognitive Therapeutic Exercise
  - 4.1.3. Neurodynamics
  - 4.1.4. Mirror Therapy
  - 4.1.5. Approach in Context
  - 4.1.6. Approach Oriented to the Task

- 4.1.7. Intensive Treatment
- 4.1.8. Constraint Induced Movement Therapy
- 4.1.9. Dry Needling for Spasticity
- 4.1.10. Therapeutic Exercise
- 4.1.11. Hydrotherapy
- 4.1.12. Electrotherapy
- 4.1.13. Robotics and Virtual Reality
- 4.2. Equipment
  - 4.2.1. Work Models
  - 4.2.2. Medicine
    - 4.2.2.1. Pharmacology
    - 4.2.2.2. Botulinum toxin
  - 4.2.3. Speech Therapy
    - 4.2.3.1. Communication Disorders
    - 4.2.3.2. Swallowing Disorders
  - 4.2.4. Occupational Therapy
    - 4.2.4.1. Autonomy
    - 4.2.4.2. Occupation
  - 4.2.5. Neuropsychology
    - 4.2.5.1. Cognitive Domains
    - 4.2.5.2. Behavioral Disorders
    - 4.2.5.3. Psychological Care for Patients and Their Family
  - 4.2.6. Orthopedics
    - 4.2.6.1. Orthotics and Support Products
    - 4.2.6.2. Low-Cost Material

## Module 5. Complications in Patients with ABI

- 5.1. Pain
  - 5.1.1. Painful Shoulder
  - 5.1.2. Neuropathic Pain
- 5.2. Respiratory System
  - 5.2.1. Respiratory Physiotherapy
- 5.3. Epilepsy
- 5.4. Musculoskeletal Complications
- 5.5. Complications of Spinal Cord Injury

## Module 6. ABI in Pediatrics

- 6.1. Normative Neurodevelopment
- 6.2. Pediatric Examination in Physiotherapy
  - 6.2.1. Exploration
  - 6.2.2. Neurological Assessment Scales
- 6.3. Intervention
  - 6.3.1. Physiotherapy
  - 6.3.2. Rest of the Team
    - 6.3.2.1. Medicine
    - 6.3.2.2. Speech Therapy
    - 6.3.2.3. Occupational Therapy
    - 6.3.2.4. Neuropsychology
    - 6.3.2.5. Educational Team

## Module 7. ABI in Altered States of Consciousness

- 7.1. What is an Altered State of Consciousness?
  - 7.1.1. Arousal and Awareness
  - 7.1.2. Neuroanatomy and Neurophysiology
  - 7.1.3. Neuroplasticity and Prognosis
- 7.2. Evaluation
  - 7.2.1. Physical Exploration
  - 7.2.2. Neurological Assessment Scales
  - 7.2.3. Pain



- 7.3. Intervention
  - 7.3.1. Physiotherapy
    - 7.3.1.1. Stimulation
    - 7.3.1.2. Movement
    - 7.3.1.3. Environment
  - 7.3.2. Equipment

## Module 8. ABI in Geriatrics

- 8.1. Characteristics of ABI in Geriatrics
  - 8.1.1. Pluripathology
  - 8.1.2. Acute, Sub-acute and Chronic Phase in ABI in Geriatrics
  - 8.1.3. Physiotherapeutic Treatment and the Importance of Establishing Team Objectives
- 8.2. Institutionalization vs. Usual Housing
  - 8.2.1. Adaptation to Surroundings
  - 8.2.2. The Role of the Family and Legal Guardians
  - 8.2.3. Technical Aids

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



06

# 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.







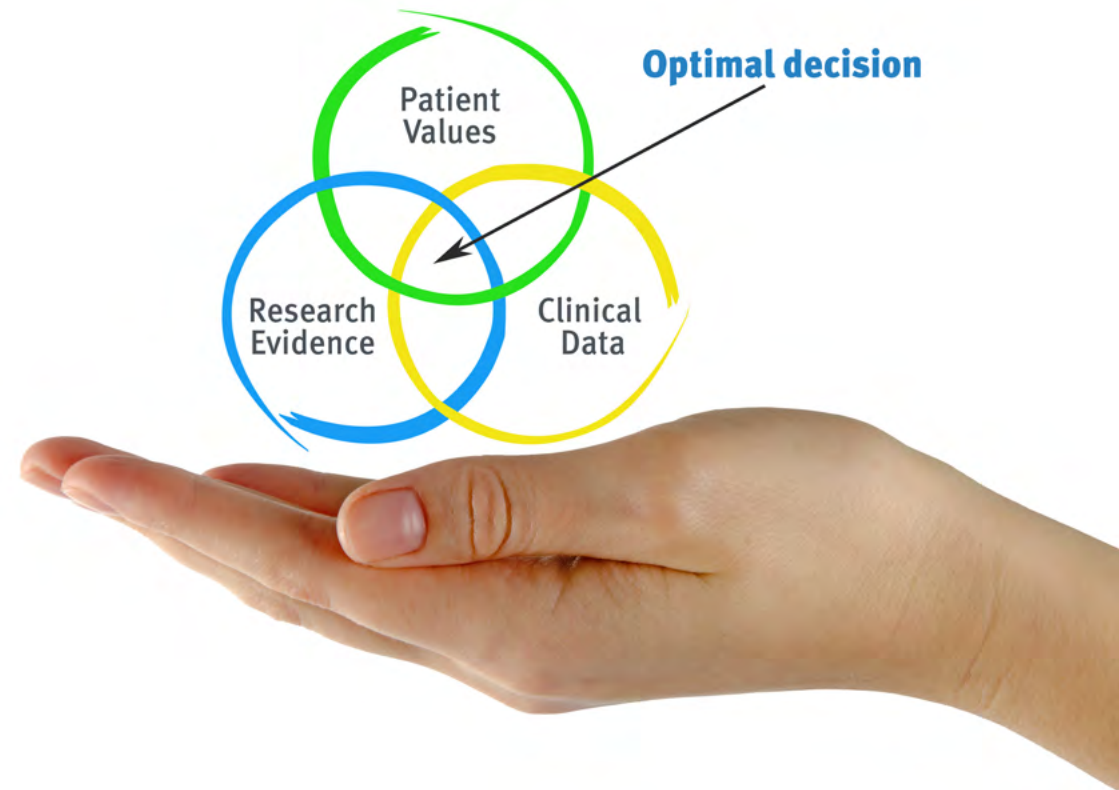
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*Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"*

## 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.*

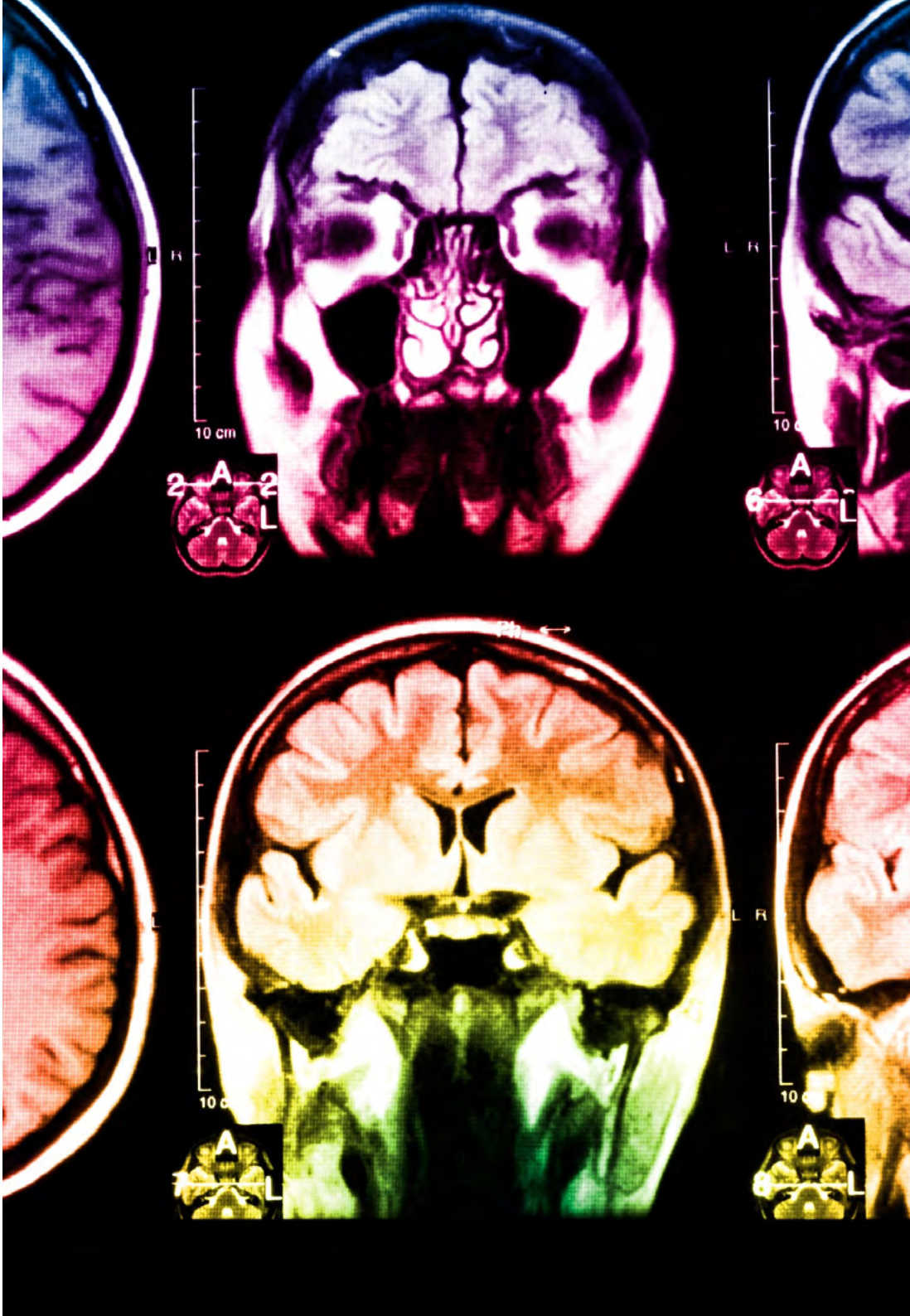
At the forefront of world teaching, the Relearning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best online university (Columbia University).

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.



07

# Certificate

The Professional Master's Degree in Physiotherapy in the Approach to Acquired Brain Injury guarantees students, in addition to the most rigorous and up-to-date education, access to a Professional Master's Degree issued by TECH Technological University.







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*Successfully complete this program  
and receive your university degree  
without travel or laborious paperwork”*

This **Professional Master's Degree in Physiotherapy in the Approach to Acquired Brain Injury** contains the most complete and up-to-date scientific program on the market.

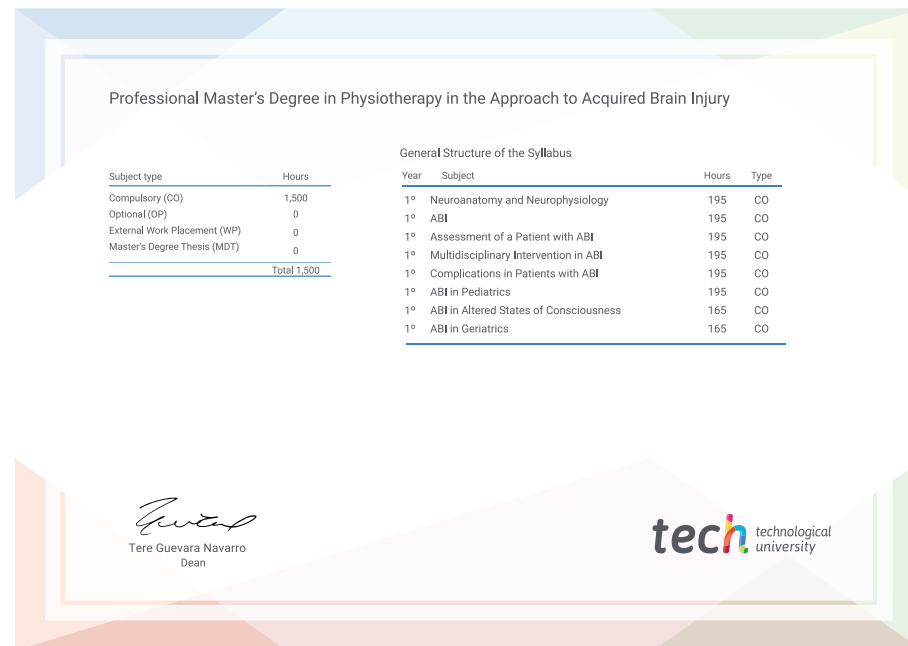
After the student has passed the assessments, they will receive their corresponding **Professional Master's Degree** issued by **TECH Technological University** via tracked delivery\*.

The certificate issued by **TECH Technological University** will reflect the qualification obtained in the Professional Master's Degree, and meets the requirements commonly demanded by labor exchanges, competitive examinations and professional career evaluation committees.

Title: **Professional Master's Degree in Physiotherapy in the Approach to Acquired Brain Injury**

Official N° of hours: **1,500 h.**

**Endorsed by the NBA**



\*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.

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



**Professional Master's  
Degree**

Physiotherapy in the  
Approach to Acquired  
Brain Injury

Course Modality: Online

Duration: 12 months

Certificate: TECH Technological University

Official N° of hours: 1,500 h.

# Professional Master's Degree Physiotherapy in the Approach to Acquired Brain Injury

Endorsed by the NBA

