

# Hybrid Professional Master's Degree

## Neurodegenerative Diseases





## Hybrid Professional Master's Degree Neurodegenerative Diseases

Course Modality: Hybrid (Online + Clinical Internship)

Duration: 12 months

Certificate: TECH Technological University

Teaching Hours: 1,620 h.

Website: [www.techtute.com/us/medicine/hybrid-professional-master-degree/hybrid-professional-master-degree-neurodegenerative-diseases](http://www.techtute.com/us/medicine/hybrid-professional-master-degree/hybrid-professional-master-degree-neurodegenerative-diseases)

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# 01

# Introduction

Neurodegenerative diseases are some of the most complex pathologies to diagnose and treat. In addition, the progressive aging of the population means that they are becoming more frequent, which is why they will become one of the main battle fronts in the medicine of the future. For this reason, this program offers its students specialized knowledge in the field so that they can update and deepen their knowledge in this area, in order to achieve significant professional progress. In addition, this program includes an intensive 3-week stay in a reference center where students will be able to come into contact with 100% real cases, always under the guidance of experts in this type of pathology, which will enhance the learning experience thanks to its practical approach.





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*Update yourself and turn your professional career around thanks to this Hybrid Professional Master's Degree”*

Today's medicine is advancing rapidly. Every year new pathologies are discovered and new specialized treatments are developed in very complex areas such as neurology. Because of this, Neurodegenerative Diseases are one of the major current concerns in the health field. These affect a large percentage of the population, especially the elderly, so harming vulnerable people and their family environments.

For this reason, it is important to keep up to date in this area in order to offer the best treatments and care to these patients. This Hybrid Professional Master's Degree in Neurodegenerative Diseases is the perfect program for medical professionals to deepen their knowledge of the subject and become renowned doctors specialized in this discipline. Thanks to its innovative online teaching methodology, based on the resolution of practical cases, and its on-site stay, students will be prepared to face all the challenges of the profession.

Have the possibility to have access to a practical stay in a reference center where you can be in contact with real patients suffering from this type of pathology is a great opportunity to progress. This program includes a 3-week stay in a renowned institution specialized in this type of pathology. It will be carried out intensively, from Monday to Friday, for 8 hours a day.

This ensures that the students of this program can develop new skills thanks to the continuous and fluid nature of this stay, which will allow students to enjoy numerous clinical cases with which to continue learning. It combines, therefore, an online learning process in which students can obtain a series of new knowledge on Neurodegenerative Diseases with a face-to-face stay where they can put into practice the new tools and skills acquired.

This **Hybrid Professional Master's Degree in Neurodegenerative Diseases** contains the most complete and up-to-date scientific program on the market. The most important features include:

- Development of more than 100 clinical cases presented by medical professionals specialized in Neurodegenerative Diseases
- 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
- Acquisition of differential diagnostic methods applied to Neurodegenerative Diseases
- Algorithm-based interactive learning system for decision making in clinical situations
- Practical clinical guides on approaching different pathologies
- All this will be complemented with theoretical lessons, questions to the expert, discussion forums on controversial issues and individual reflection work
- Availability of content from any fixed or portable device with an Internet connection
- In addition, you will be able to carry out a clinical internship in one of the best hospitals in the world



*Go deeper into the field of Neurodegenerative Diseases and spend a face-to-face stay in a reference center with this Hybrid Professional Master's Degree"*

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*Advance professionally. The 3-week intensive stay at a prestigious healthcare institution will make you a highly reputable physician”*

In this Hybrid Professional Master's Degree proposal, of a professionalizing nature and blended learning modality, the program is aimed at updating medical professionals who perform their functions in neurology units, and who require a high level of qualification. The contents are based on the latest scientific evidence, and oriented in a didactic way to integrate theoretical knowledge into medical practice, and the theoretical-practical elements will facilitate the updating of knowledge and will allow decision making in patient management.

Thanks to its multimedia content developed with the latest educational technology, they will allow the medical professional a situated and contextual learning, that is to say, a simulated environment that will provide an immersive learning programmed to train in real situations. The design of this program is focused on Problem-Based Learning, by means of which students must try to solve the different professional practice situations that arise during the program. For this purpose, the student will be assisted by an innovative interactive video system created by renowned experts.

*Learn the latest developments in the field of Neurodegenerative Diseases and become a prestigious physician.*

*This Hybrid Professional Master's Degree is what you were looking for: enroll now and reach all your goals.*

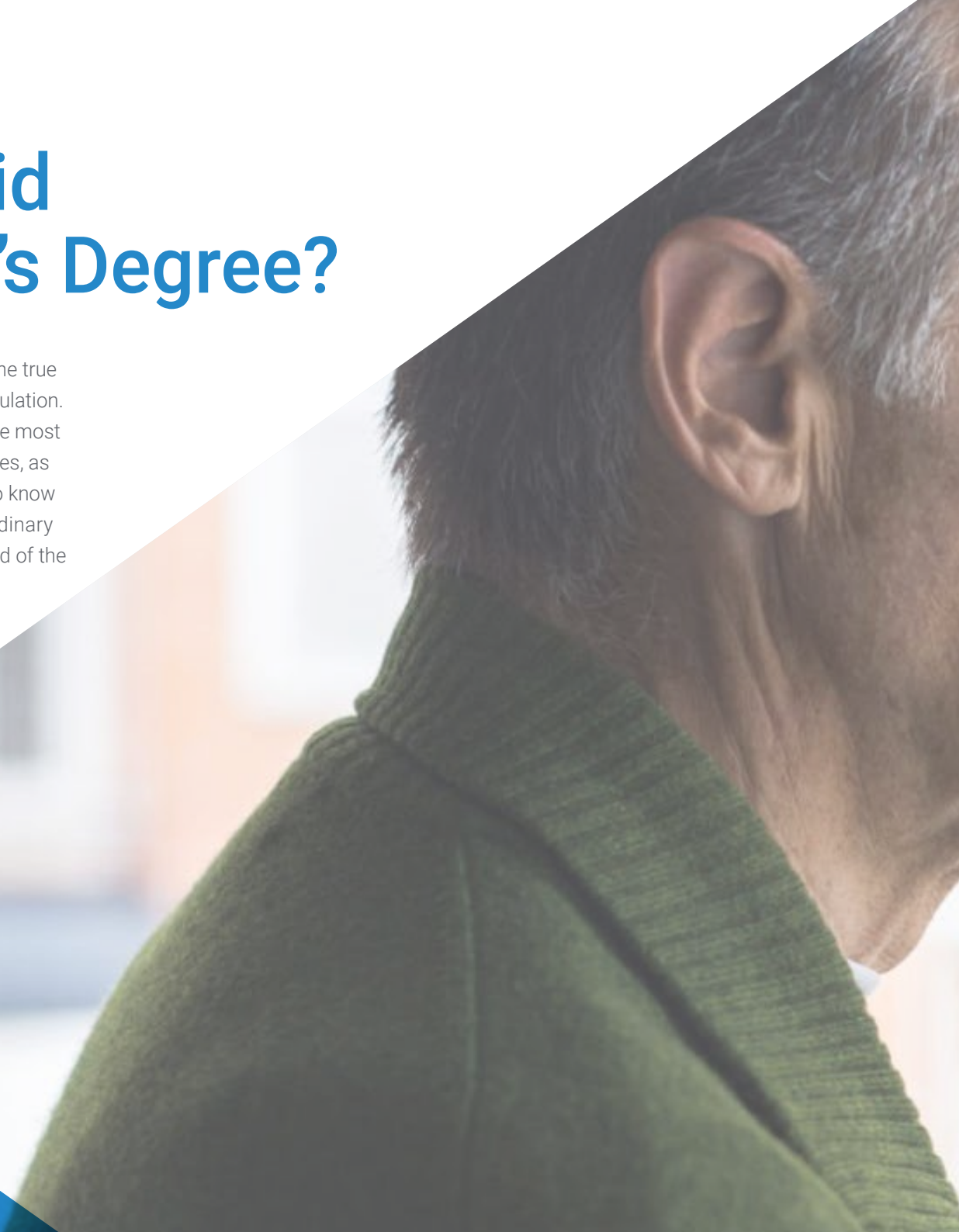




02

# Why Study this Hybrid Professional Master's Degree?

Scientists are working to prevent Neurodegenerative Diseases from becoming the true epidemic of the coming years, due, among other factors, to the aging of the population. For this reason, physicians specializing in this area must keep up to date with the most recent evidence and studies on the subject, from the genetic and proteomic bases, as well as inheritance patterns and their differential symptoms. This will allow us to know how to diagnose and manage them. A compendium of knowledge of extraordinary importance that the student of this program will be able to acquire from the hand of the most recognized professionals in this sector.





Why Study this Hybrid Professional | 09  
Master's Degree?



*You will face real clinical cases from professionals who will guide you in the process of theoretical-practical updating, in this exclusive TECH program"*

### **1. Updating from the latest technology available**

Electromagnetic waves, recombinant technology or genetic engineering methods are some of the examples of technological and scientific advances for the evaluation and treatment of patients with Neurodegenerative Diseases. For this reason, and with the aim of bringing the specialist closer to these advances, TECH presents this program that combines the theoretical part with practical training with which the professional will enter a cutting-edge clinical environment, accessing state-of-the-art technology in the field of Neurodegenerative Diseases.

### **2. Gaining In-Depth Knowledge from the Experience of Top Specialists**

The physician who seeks to update themselves in the field of Neurodegenerative Diseases will find in this program, a team of experts at their disposal. As a result, you will enjoy an enriching experience with a first-class endorsement and a guarantee of professional improvement. You will have a designated tutor who will accompany you in the observation of patients and real cases of different types of pathologies and dementias. Upon completion, you will be able to incorporate the most effective procedures and treatments into your daily practice.

### **3. Entering First-Class Clinical Environments**

TECH carefully selects all available centers for Internship Programs. Thanks to this, the specialist will have guaranteed access to a prestigious clinical environment in the area of Neurodegenerative Diseases. In this way, you will be able to see the day-to-day work of a demanding, rigorous and exhaustive sector, always applying the latest theses and scientific postulates in its work methodology.



#### 4. Combining the Best Theory with State-of-the-Art Practice

The professional will not find another training program like this one. TECH, at the forefront of digital education in the world, has experimented with different methods that have allowed it to design advanced solutions such as this one, for the updating of professionals who wish to advance in their careers. You will benefit from a period of theoretical study and a practical space in one of the most renowned clinical centers, which in 12 months will allow you to perfect your knowledge and daily clinical practice.

#### 5. Expanding the Boundaries of Knowledge

This program offers the possibility of a practical internship in an internationally recognized center, which results in further deepening and verification of the knowledge acquired in the academic experience. That is why this program stands out with a professional approach, bringing the physician up to date on the treatments and novelties regarding Neurodegenerative Diseases, allowing them the configuration of a distinctive professional background.

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*You will have full hands-on immersion  
at the center of your choice”*



# 03 Objectives

The main objective of this Hybrid Professional Master's Degree in Neurodegenerative Diseases is to offer its students an update of knowledge in this field. To this end, it offers them a two-step learning process, starting with an in-depth teaching following an online methodology, and ending with a practical stay in a reference clinical institution where they can apply everything they have learned. So, at the end of this program, students will have obtained new competencies with which they will be able to develop their work effectively.







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*Your goal is to become the best specialist in Neurodegenerative Diseases in your environment and you will achieve it with this program”*



## General Objective

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- The general objectives of this program are to gain in-depth knowledge of the neurological diseases that affect a large percentage of the world's population and to learn the most effective treatments to counteract their effects or slow them down, thus improving the patient's quality of life

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*Update yourself in Neurodegenerative Diseases thanks to this Hybrid Professional Master's Degree with which you will be able to incorporate the latest scientific advances in the field to your professional work”*





## Specific Objectives

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### Module 1. Etiology and Biopathology of Neurodegenerative Diseases

- ♦ Update knowledge on the genetic and molecular basis of neurodegenerative diseases
- ♦ Understand the basic mechanisms of neuronal death involved in these diseases
- ♦ Broaden knowledge of translational Neurology focused on Neurodegenerative Diseases
- ♦ Recognize the type of inheritance and its implication in genetic counseling to patients and their families
- ♦ Provide knowledge on the neuroepidemiology of these disorders and their impact on the caregiver, family and society

### Module 2. Neurodegenerative Dementias

- ♦ Be able to make a clinical differential diagnosis between the different degenerative dementias
- ♦ Associate molecular alterations of specific proteins with specific clinical syndromes
- ♦ Update on the knowledge of biomarkers in blood and CSF of the different types of neurodegenerative dementias
- ♦ Know how to differentiate the different phenotypes of frontotemporal dementias and their different genetic and molecular alterations
- ♦ Update knowledge on current and clinical trial treatments for degenerative dementias and symptomatic management

### Module 3. Neurodegeneration and Parkinsonism

- ♦ Be able to make an adequate diagnosis in the early stages of Parkinson's disease
- ♦ Know how to recognize clinically the types of parkinsonisms, their differences and their therapeutic implications and prognosis
- ♦ Recognize early signs and symptoms in neurodegenerative movement disorders
- ♦ Update knowledge on sleep disorders associated with neurodegenerative diseases and specifically Parkinson's disease and parkinsonisms

### Module 4. Neurodegenerative Motor Neuron Diseases and Hereditary Spastic Paraparesis

- ♦ Update knowledge on the classification of Neurodegenerative Motor Neuron Diseases
- ♦ Increase knowledge of therapeutic tools undergoing clinical trials and their future prospects
- ♦ Improve symptomatic management of patients with neurodegenerative motor neuron disorders
- ♦ Know how to recognize variants of Amyotrophic Lateral Sclerosis

### Module 5. Neurodegenerative Epilepsy Syndromes

- ♦ Broaden knowledge of the underlying mechanisms of epilepsy in neurodegenerative diseases
- ♦ Know how to recognize and diagnose epileptic syndromes with a neurodegenerative basis, to understand their pathophysiology and their inheritance mechanisms
- ♦ Recognize the different clinical patterns of this type of epileptic syndromes
- ♦ Update knowledge on the symptomatic management and treatment of these patients



### Module 6. Neurodegenerative Ataxias

- ♦ Update knowledge of the genetic basis of neurodegenerative ataxias and its implication for classification
- ♦ Recognize the specific clinical markers of neurodegenerative ataxias
- ♦ Recognize inheritance patterns of these ataxias in order to provide better genetic counseling
- ♦ Know how to recognize ataxic syndromes with other clinical and genetic load components
- ♦ Update the clinical management of these patients

### Module 7. Diagnostic Methods of Neurodegenerative Diseases

- ♦ Update the knowledge of the different diagnostic methods of neurodegenerative diseases
- ♦ Know how to evaluate the specificity and sensitivity of the different diagnostic tests for Neurodegenerative Diseases
- ♦ Recognize in neuroimaging tests, the most specific markers of neurodegenerative diseases
- ♦ Know which type of patients to order these tests for in order to improve test efficiency

### Module 8. Neuroectodermal Neurodegenerative Disorders

- ♦ Recognize the most frequent neuroectodermal disorders, their different genetic and proteomic bases
- ♦ Update the treatment of its different clinical manifestations
- ♦ Know how to recognize other less frequent neuroectodermal disorders
- ♦ Evaluate the prognosis of these pathologies according to the appearance of their alterations







### **Module 9. Neurodegenerative Disorders Caused by Prions**

- ◆ Expand the diagnostic capacity of Spongiform Encephalopathies and recognize the different clinical manifestations of these diseases
- ◆ Update the genetic basis of these diseases and their implications for possible future treatments
- ◆ Know how to manage the symptoms of these diseases to improve the quality of life of patients
- ◆ Improve the knowledge of the different diagnostic tools for prion diseases

### **Module 10. Other Neurodegenerative Disorders**

- ◆ Know other Neurodegenerative Diseases difficult to classify
- ◆ Know the mechanisms of neurodegeneration caused by alterations in the metabolism of copper and iron
- ◆ Update on the relationship between neurodegeneration and inflammatory and vascular diseases

# 04 Skills

Throughout this Hybrid Professional Master's Degree in Neurodegenerative Diseases, students will be able to acquire a series of competencies and skills that will turn them into renowned physicians specialized in this field. In this way, they will learn about the most important neurodegenerative pathologies, their diagnostic methods and the most effective treatments, focusing on the latest innovations in the discipline so that students can apply the most modern techniques in their professional environments.



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*Renew your skills and knowledge  
in Neurodegenerative Diseases and  
continue to offer the best diagnoses  
to your patients”*



## General Skills

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- Understand the anatomy of the nervous system and its role in this type of pathology
- In-depth knowledge of Neurodegenerative Diseases
- Perform patient assessment and offer the most appropriate treatments
- Obtain the indispensable knowledge to be able to differentiate Neurodegenerative Diseases from the symptoms
- Update knowledge of this discipline



*Acquire the skills that will make you a highly regarded physician once you complete this program with the guidance of the best teachers”*







## Specific Skills

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- Update knowledge the genetic and molecular basis of neurodegenerative diseases
- Broaden knowledge of translational Neurology focused on Neurodegenerative Diseases
- Adequately counsel the patient and family members regarding genetic inheritance
- Perform a clinical differential diagnosis between the different degenerative dementias
- Know the best current treatments for degenerative dementias, as well as symptomatic management
- Be able to make an adequate diagnosis in the early stages of Parkinson's disease
- Recognize early signs and symptoms in neurodegenerative movement disorders

05

# Course Management

TECH has ensured that the best specialists in Neurodegenerative Diseases teach this program. Because of this, students will be able to learn from the hand of great experts in this field, which will ensure that everything they study is drawn from the professional experience of these renowned physicians. For that reason, students will be able to put into practice all the knowledge and skills obtained with the assurance that they are the most innovative and effective techniques.



A close-up photograph of a person's hands, likely a scientist or technician, holding a small, dark, cylindrical object. The hands are wrinkled, suggesting an older individual. The background is a solid blue color. The image is partially obscured by a white diagonal shape that contains text.

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*The best teachers transmit all their knowledge  
in the area of Neurodegenerative Diseases.  
Don't miss this opportunity and enroll”*



## Management



### Dr. Antonio Yusta Izquierdo

- ♦ Head of the Neurology Section of the University Hospital of Guadalajara and of the Institute of Neurological Diseases of Castilla La Mancha
- ♦ Specialist in Neurology at the University Hospital of Guadalajara
- ♦ Coordinator of the Neuromuscular Pathology Unit of the Neurology Department of the Clínica Puerta de Hierro, Madrid
- ♦ PhD in Medicine and Surgery from the Autonomous University of Madrid
- ♦ Specialty in Neurology at the Neurology Service of the Clínica Puerta de Hierro
- ♦ Bachelor in Medicine and Surgery from the Autonomous University of Madrid
- ♦ Professor of Health Sciences (Neurology Profile) at the Faculty of Medicine of the University of Alcalá
- ♦ Member of the Expert Commission of the Spanish Federation of Acquired Brain Injury

## Professors

### Dr. Miguel Mas Serrano

- ♦ Medical Specialist in Neurology
- ♦ Specialist in Neurology at the Guadalajara University Hospital
- ♦ Author of various specialized publications
- ♦ External Rotation in the Multiple Sclerosis Center
- ♦ Degree in Medicine and Surgery
- ♦ Master's Degree in Clinical Medicine

### Dr. Jaime Hernandez Cristobal

- ♦ In Neurology Specialist, University Hospital of Guadalajara
- ♦ Specialist in Neurology. Jiménez Díaz Foundation Hospital
- ♦ Degree in Medicine. University of Salamanca
- ♦ Doctor of Medicine. Autonomous University of Madrid
- ♦ Author of numerous publications specialized in different aspects of Neurology in scientific journals

**Dr. Fernando Romero Delgado**

- ♦ Faculty In Neurology Specialist, University Hospital of Guadalajara
- ♦ Consultant Neurologist, Multiple Sclerosis and Other Demyelinating Diseases Monographic Consultation; and Neurology on-call at Sanitas La Moraleja University Hospital
- ♦ Assistant Neurology Specialist at San Carlos Clinical Hospital
- ♦ Integrated Researcher at the Multiple Sclerosis Unit of the San Carlos Clinical Hospital, through the Foundation for Biomedical Research
- ♦ Integrated Researcher in the Multiple Sclerosis and Others Demyelinating Diseases Unit at the General University Hospital Gregorio Marañón, through the Foundation for Biomedical Research
- ♦ Master's Degree in Neuro-immunology from the Autonomous University Madrid
- ♦ Trained by the Spanish Society of Neurology to perform neurosonological studies by the Spanish Society of Neurology

**Dr. Ignacio López-Zuazo Aroca**

- ♦ Neurologist at Clínica Sastre
- ♦ Neurologist at HM Hospitales
- ♦ Neurologist at Centro Médico Ibesur Pinto and Valdemoro
- ♦ Area Specialist in Neurology at University Hospital of Guadalajara
- ♦ Area Specialist in Neurology at Grupo Hospitales Madrid, Madrid Norte Sanchinarro
- ♦ Area Specialist in Neurology at the La Mancha-Centro Hospital Complex
- ♦ Degree in Medicine and General Surgery from the Faculty of Medicine of the Complutense University of Madrid
- ♦ Neurology Specialist of the Neurology Service of the Puerta de Hierro University Clinic
- ♦ Specialist in Neurology, Neuroscience, Complutense University of Madrid

**Dr. Emilio Orts Castro**

- ♦ Specialist in the Pain Unit of Madder Medical Center
- ♦ Adjunct of Hospital 12 de Octubre Anesthesiology and Resuscitation Department
- ♦ Adjunct: Hospital Infanta Leonor, Madrid
- ♦ Adjunct with a permanent position at Doce de Octubre Hospital
- ♦ Partner of Pain Consultants in different national hospitals
- ♦ Specialist in Anesthesiology and Resuscitation via MIR at the Hospital 12 de Octubre in Madrid
- ♦ Degree in Medicine and Surgery from the Complutense University of Madrid
- ♦ Diploma of the European Society of Anesthesiology and Intensive Care
- ♦ Collaborator in training programs, product development, market studies and expert groups with various laboratories (Grünenthal, Jansen Cilag, Pfizer)
- ♦ Member of SEDAR

**Dr. Guilherme Carvalho Monteiro**

- ♦ Neurologist at the Campoamor Medical Clinic
- ♦ Specialist in Neurology at the University Hospital of Salamanca
- ♦ Neurology Department, Guadalajara University Hospital
- ♦ Physician at the Salamanca University Hospital Clinic
- ♦ Master's Degree in Neuroimmunology at the Autonomous University of Barcelona
- ♦ Master's Degree in Clinical Case Resolution and Clinical Reasoning from the University of Alcalá, Spain
- ♦ Specialty of Neurology via MIR at the University Hospital of Guadalajara (HUG)
- ♦ Degree in Medicine from the University of Salamanca

# 06

## Educational Plan

The syllabus of this Hybrid Professional Master's Degree in Neurodegenerative Diseases has been designed by great specialists in the field, and they know perfectly the day to day of the profession, so all the contents of this program will be useful to students in their professional practice. For that reason, this curriculum is the best possible, as it is focused on the workplace. In this way, this syllabus is designed to be taught with a practical approach.





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*You won't find a better curriculum to delve deeper into Neurodegenerative Diseases. Enroll now and get up to date”*

### Module 1. Etiology and Biopathology of Neurodegenerative Diseases

- 1.1. Concepts and Classification of Neurodegenerative Diseases
- 1.2. Pathophysiology and Classification of Neurodegenerative Diseases
  - 1.2.1. Neurodegenerative Dementias
  - 1.2.2. Neurodegenerative Diseases Expressed by Movement Disorders
- 1.3. Genetics in Neurodegenerative Diseases and Human Aging
  - 1.3.1. Patterns of Genetic Alteration in Neurodegenerative Disorders
  - 1.3.1. Genetics of Human Aging
- 1.4. Animal Models in Neurodegenerative Diseases
- 1.5. Mechanisms of Cell Loss in Neurodegenerative Diseases
- 1.6. Inheritance in Neurodegenerative Diseases
- 1.7. Genetic Counseling in Neurodegenerative Diseases
- 1.8. Proteomics and Neurodegenerative Diseases
  - 1.8.1. Classification of Neurodegenerative Disorders According to Their Protein Disruption
- 1.9. Epidemiology of Neurodegenerative Diseases
- 1.10. Social and Economic Burden of Neurodegenerative Diseases

### Module 2. Neurodegenerative Dementias

- 2.1. Alzheimer's Disease
- 2.2. Clinical Variants of Alzheimer's Disease
- 2.3. Familial Alzheimer's Disease
- 2.4. Fronto-Temporal Dementia
- 2.5. Dementia Lobar Degeneration with Immunoreactive Inclusions for FUS
- 2.6. Pick Disease
- 2.7. Biomarkers of Neurodegenerative Dementias
- 2.8. Progressive Subcortical Gliosis
- 2.9. Treatment of Dementias
  - 2.9.1. Medical treatment
  - 2.9.2. Symptomatic Treatment
  - 2.9.3. New Perspectives in the Treatment of Neurodegenerative Dementias
- 2.10. Socio-Sanitary Problems and Palliative Treatment of Neurodegenerative Dementias

### Module 3. Neurodegeneration and parkinsonism

- 3.1. Parkinson's Disease
- 3.2. Differential Diagnosis of Parkinsonism
- 3.3. Lewy Body Dementia
- 3.4. Progressive Supranuclear Palsy
- 3.5. Cortico-Basal Degeneration
- 3.6. Tauopathias
- 3.7. Multisystem Atrophies
  - 3.7.1. Shy-Drager Syndrome
  - 3.7.2. Oliponto-Cerebellar Atrophy
  - 3.7.3. Striato-Nigric Degeneration
- 3.8. Parkinson-Dementia Syndromes
- 3.9. Huntington's Disease
  - 3.9.1. Clinical Manifestations
  - 3.9.2. Pharmacological Management
- 3.10. Hyposmia in Neurodegenerative Disorders

### Module 4. Neurodegenerative Motor Neuron Diseases and Hereditary Spastic Paraparesis

- 4.1. Upper Motor Neuron Diseases Primary Lateral Sclerosis
- 4.2. Hereditary Spastic Paraparesis
- 4.3. Chronic Spinal Muscular Atrophy
- 4.4. Oras Spinal and Bulbar Muscular Atrophies
- 4.5. Sporadic Amyotrophic Lateral Sclerosis
- 4.6. Familial Amyotrophic Lateral Sclerosis
- 4.7. Treatment of Amyotrophic Lateral Sclerosis
  - 4.7.1. Multidisciplinary Team in the Treatment of ALS Patients
  - 4.7.2. Pharmacological Management of the ALS Patient New Perspectives
- 4.8. Gene Therapy for Chronic Spinal Muscular Atrophy
- 4.9. Post-Polio Syndrome
- 4.10. ALS-Parkinson's-Dementia Complex

### Module 5. Neurodegenerative Epilepsy Syndromes

- 5.1. Epilepsy in Adult Neurodegenerative Diseases
- 5.2. Neurodegeneration in Epilepsy
- 5.3. Neurodegeneration and Epilepsy Excitotoxicity
- 5.4. Progressive Myoclonic Epilepsy
  - 5.4.1. Genetic Disorders in Myoclonic Epilepsies
- 5.5. Lafora Disease
- 5.6. Unverricht-Lundborg Disease
- 5.7. Epilepsy with Progressive Mental Retardation
- 5.8. Hemiconvulsion-Epilepsy-Hemiplegia-Epilepsy Syndrome
- 5.9. Parkinsonisms and Epilepsy
- 5.10. Treatment of Epilepsy in Neurodegenerative Diseases

### Module 6. Neurodegenerative Ataxias

- 6.1. Clinical Approach and Classification of Progressive Cerebellar Ataxias
- 6.2. Autosomal-Dominant Ataxias Genetic Mutations and Genotype-Phenotype Correlation
- 6.3. Autosomal Recessive Ataxias
- 6.4. Episodic Ataxias
  - 6.4.1. Episodic Ataxia Type 1
  - 6.4.2. Episodic Ataxia Type 2
- 6.5. Heredoataxias Associated with Genetic Alterations of Metabolism
- 6.6. Friedreich's Ataxia
- 6.7. Ataxias Secondary to Mutations in Mitochondrial ADN
- 6.8. Sporadic Progressive Ataxias
- 6.9. Fragile X Syndrome, Tremor, and Ataxia
- 6.10. Neurological Alterations Secondary to Vitamin E Deficiency

### Module 7. Diagnostic Methods of Neurodegenerative Diseases

- 7.1. Use of Genetic Analysis for Clustering and Separation of Neurodegenerative Diseases
- 7.2. Neuroimaging in Neurodegenerative Dementias
- 7.3. Neuroimaging in Neurodegenerative Parkinsonisms
- 7.4. Clinical Utility of Markers in Blood and Cerebrospinal Fluid
- 7.5. Positron Emission Tomography in Neurodegenerative Disorders
- 7.6. Utility of Biopsy in Neurodegenerative Diseases
- 7.7. Neuropsychological Tests in Neurodegenerative Dementias

### Module 8. Neuroectodermal Neurodegenerative Disorders

- 8.1. Neurofibromatosis
- 8.2. Tuberous Sclerosis of Bourneville
- 8.3. Sturge-Weber Disease
- 8.4. Von Hippel-Lindau Disease
- 8.5. Ataxia-Telangiectasia
- 8.6. Neurocutaneous Melanosis
- 8.7. Xeroderma Pigmentosum
- 8.8. Cerebrotendinous Xanthomatosis
- 8.9. Hypomelanosis of Ito
- 8.10. Menkes Disease



### Module 9. Neurodegenerative Disorders Caused by Prions

- 9.1. Introduction to the Neurodegenerative Pathology Caused by Prions
- 9.2. Sporadic Creutzfeldt-Jakob Disease
  - 9.2.1. Incidence
  - 9.2.2. Symptomatic Treatment of Creutzfeldt-Jakob Disease
- 9.3. Cve Variant Creutzfeldt-Jakob Disease ("Mad Cow disease")
- 9.4. Creutzfeldt-Jakob Disease Genetics
- 9.5. Iatrogenic Creutzfeldt-Jakob Disease
- 9.6. Fatal Family Insomnia
- 9.7. Gerstmann-Sträussler-Scheinker Disease
- 9.8. Kuru Disease
- 9.9. Protease-Sensitive Prionopathy

### Module 10. Other Neurodegenerative Disorders

- 10.1. Hereditary Amyloidosis and Neurodegeneration
- 10.2. Neurodegeneration with Iron Accumulation in the Brain
- 10.3. Familial Encephalopathy Due to Neuroserpin Inclusion Bodies
- 10.4. Hereditary Ferritinopathies
- 10.5. Neurodegenerative Disease Due to Copper Metabolism Disorder
- 10.6. Cadasil
- 10.7. Amyloid Angiopathy
- 10.8. Neurodegenerative Dystonia
- 10.9. Neurodegeneration in Multiple Sclerosis





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*It delves into the most relevant theory in this field, subsequently applying it in a real work environment”*



07

# Clinical Internship

At the end of the online training, students will be able to enjoy an on-site stay in a reference health institution specialized in Neurodegenerative Diseases. Thus, this program is a great opportunity for all those medical professionals who wish to update their knowledge and be able to put it into practice in a prestigious center under the guidance of highly reputed professionals, to later use it in their own medical practices.







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*Do your clinical internship in a prestigious center and complete your update in the area of Neurodegenerative Diseases”*

The clinical practices included in this Hybrid Professional Master's Degree in Neurodegenerative Diseases have a duration of 3 weeks, period in which students will follow a schedule from Monday to Friday, completing 8 hours each day. This ensures that students have an intensive learning process in which they will be able to develop all the knowledge they have learned.

TECH has developed this exclusive training program, completely practical in nature, where the activities are aimed at developing and perfecting the necessary skills of the specialist in the detection, assessment, treatment and application of specialized health techniques in the care of Neurodegenerative Diseases. So, the professional will observe first-hand the updated praxis from the hands of prestigious professionals, in a renowned hospital center and with the most advanced technical equipment.

It is a powerful opportunity for healthcare service delivery in areas and conditions that require a high level of qualification. Therefore, this program condenses a broad agenda with a practical training space that will allow the practice of the activity in an effective way, in a safe environment for the patient and a high professional performance.

The practical part will be carried out with the active participation of the student performing the activities and procedures of each area of competence (learning to learn and learning to do), with the accompaniment and guidance of teachers and other fellow trainees that facilitate teamwork and multidisciplinary integration as transversal competencies for the praxis of medicine in Neurodegenerative Diseases (learning to be and learning to relate).

The procedures described below will form the basis of the practical part of the training, and their completion is subject to both the suitability of the patients and the availability of the center and its workload, with the proposed activities being as follows:



*The teaching materials of this program, elaborated by these specialists, have contents that are completely applicable to your professional experiences”*



Module	Practical Activity
<b>Etiology and Biopathology of Neurodegenerative Diseases</b>	Perform examination of mechanisms of cell loss in Neurodegenerative Diseases
	Applying biomarkers for the detection of neurodegenerative dementias
	Perform the Progressive Subcortical Gliosis test
	Address the analysis, through specific studies, of sleep disorders in Neurodegenerative Diseases
<b>Assessment and approach to neurodegenerative motor neuron diseases and hereditary spastic paraparesis</b>	Diagnose and assess upper motor neuron diseases
	Perform genetic testing for chronic spinal muscular atrophy and other spinal and bulbar muscular atrophies
	Diagnose Spinal Muscular Atrophy by Electromyography, muscle biopsies and nerve conduction studies
	Diagnose Amyotrophic Lateral Sclerosis and establish a care plan for the patient with the disease
<b>Assessment of neurodegenerative Ataxias</b>	Perform post-polio syndrome and ALS-Parkinson's-dementia complex analysis
	Perform the autosomal recessive ataxias and episodic ataxias test
	Evaluate cases of Heredoataxias associated with genetic alterations of metabolism
	Conduct specific analysis of Friedreich's Ataxia, secondary ataxias with mitochondrial DNA mutations
<b>Diagnostic Methods of Neurodegenerative Diseases</b>	Perform fragile x syndrome, tremor and ataxia testing
	Identify in the patient the secondary neurological alterations associated with Vitamin E deficiency
	Perform genetic analysis to identify the patient's neurodegenerative disease
	Apply neuroimaging analysis to diagnose and monitor neurodegenerative dementias
	Perform neuroimaging examination for diagnosis and follow-up in neurodegenerative parkinsonisms
<b>Assessment of neurodegenerative disorders caused by prions and other disorders</b>	Perform positron emission tomography for monitoring neurodegenerative disorders
	Perform biopsies in the approach to Neurodegenerative Diseases
	Identification of symptoms and indicators in patients with variant Creutzfeldt-Jakob disease (mad cow disease) and sporadic Creutzfeldt-Jakob disease
	Diagnose and evaluate patients with protease-sensitive Prionopathy, Kuru disease, Gerstmann-Sträussler-Scheinker disease, genetic and iatrogenic Creutzfeldt-Jakob disease
	Assess other disorders such as hereditary amyloidosis and neurodegeneration, familial neuroserpin inclusion body encephalopathy, hereditary ferritinopathies, neurodegenerative disease due to copper metabolism disorder, cadasil, amyloid angiopathy, neurodegenerative dystonia and neurodegeneration in multiple sclerosis



## Civil Liability Insurance

This institution's main concern is to guarantee the safety of the trainees and other collaborating agents involved in the internship process at the company. Among the measures dedicated to achieve this is the response to any incident that may occur during the entire teaching-learning process.

To this end, this entity commits to purchasing a civil liability insurance policy to cover any eventuality that may arise during the course of the internship at the center.

This liability policy for trainees will have broad coverage and will be taken out prior to the start of the practical training period. That way professionals will not have to worry in case of having to face an unexpected situation and will be covered until the end of the internship program at the center.





## General Conditions of the Internship Program

The general terms and conditions of the internship agreement for the program are as follows:

**1. TUTOR:** During the Hybrid Professional Master's Degree, students will be assigned with two tutors who will accompany them throughout the process, answering any doubts and questions that may arise. On the one hand, there will be a professional tutor belonging to the internship center who will have the purpose of guiding and supporting the student at all times. On the other hand, they will also be assigned with an academic tutor whose mission will be to coordinate and help the students during the whole process, solving doubts and facilitating everything they may need. In this way, the student will be accompanied and will be able to discuss any doubts that may arise, both clinical and academic.

**2. DURATION:** The internship program will have a duration of three continuous weeks, in 8-hour days, 5 days a week. The days of attendance and the schedule will be the responsibility of the center and the professional will be informed well in advance so that they can make the appropriate arrangements.

**3. ABSENCE:** If the students does not show up on the start date of the Hybrid Professional Master's Degree, they will lose the right to it, without the possibility of reimbursement or change of dates. Absence for more than two days from the internship, without justification or a medical reason, will result in the professional's withdrawal from the internship, therefore, automatic termination of the internship. Any problems that may arise during the course of the internship must be urgently reported to the academic tutor.

**4. CERTIFICATION:** Professionals who pass the Hybrid Professional Master's Degree will receive a certificate accrediting their stay at the center.

**5. EMPLOYMENT RELATIONSHIP:** the Hybrid Professional Master's Degree shall not constitute an employment relationship of any kind.

**6. PRIOR EDUCATION:** Some centers may require a certificate of prior education for the Hybrid Professional Master's Degree. In these cases, it will be necessary to submit it to the TECH internship department so that the assignment of the chosen center can be confirmed.

**7. DOES NOT INCLUDE:** The Hybrid Professional Master's Degree will not include any element not described in the present conditions. Therefore, it does not include accommodation, transportation to the city where the internship takes place, visas or any other items not listed.

However, students may consult with their academic tutor for any questions or recommendations in this regard. The academic tutor will provide the student with all the necessary information to facilitate the procedures in any case.

# 08

## Where Can I Do the Clinical Internship?

The clinical practices of this Hybrid Professional Master's Degree in Neurodegenerative Diseases are carried out in an important center specialized in this type of pathologies where students will be able to learn, throughout their stay, a series of knowledge and skills necessary for current medical practice. In addition, they will be in contact with 100% real cases, always accompanied by experts from the clinical institution, which will enrich the learning experience.



“

*These clinical internships will  
make you a better professional.  
Don't waste the opportunity”*





The student will be able to take the practical part of this Hybrid Professional Master's Degree in the following centers:



Medicine

### ASPAYM Principado de Asturias

Country	City
Spain	Asturias

Address: Av. Roma, 4, 33011 Oviedo, Asturias

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Neurological Physiotherapy
- Neurodegenerative Diseases



Medicine

### Hospital HM Modelo

Country	City
Spain	La Coruña

Address: Rúa Virrey Osorio, 30, 15011, A Coruña

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Anaesthesiology and Resuscitation
- Palliative Care



Medicine

### Hospital Maternidad HM Belén

Country	City
Spain	La Coruña

Address: R. Filantropía, 3, 15011 A Coruña

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Update in Assisted Reproduction
- Hospitals and Health Services Management



Medicine

### Hospital HM Rosaleda

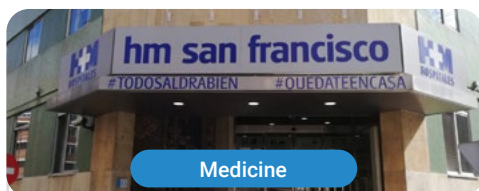
Country	City
Spain	La Coruña

Address: Rúa de Santiago León de Caracas, 1, 15701, Santiago de Compostela, A Coruña

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Hair Transplantation
- Orthodontics and Dentofacial Orthopedics



Medicine

### Hospital HM San Francisco

Country	City
Spain	León

Address: C. Marqueses de San Isidro, 11, 24004, León

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Update in Anesthesiology and Resuscitation
- Trauma Nursing



Medicine

### Hospital HM Regla

Country	City
Spain	León

Address: Calle Cardenal Landázuri, 2, 24003, León

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Update on Psychiatric Treatment in Minor Patients



Medicine

### Hospital HM Nou Delfos

Country	City
Spain	Barcelona

Address: Avinguda de Vallcarca, 151, 08023 Barcelona

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Aesthetic Medicine
- Clinical Nutrition in Medicine



Medicine

### Hospital HM Madrid

Country	City
Spain	Madrid

Address: Pl. del Conde del Valle de Súchil, 16, 28015 Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Palliative Care
- Anaesthesiology and Resuscitation





Medicine

### Hospital HM Montepríncipe

Country: Spain City: Madrid

Address: Av. de Montepríncipe, 25 28660 Boadilla del Monte, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

- Related internship programs:**
- Palliative Care
  - Aesthetic Medicine



Medicine

### Hospital HM Torrelodones

Country: Spain City: Madrid

Address: Av. Castillo Olivares, s/n, 28250 Torrelodones, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

- Related internship programs:**
- Anaesthesiology and Resuscitation
  - Palliative Care



Medicine

### Hospital HM Sanchinarro

Country: Spain City: Madrid

Address: Calle de Oña, 10, 28050, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

- Related internship programs:**
- Anaesthesiology and Resuscitation
  - Palliative Care



Medicine

### Hospital HM Nuevo Belén

Country: Spain City: Madrid

Address: Calle José Silva, 7, 28043, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

- Related internship programs:**
- General and Digestive System Surgery
  - Clinical Nutrition in Medicine



Medicine

### Hospital HM Puerta del Sur

Country: Spain City: Madrid

Address: Av. Carlos V, 70, 28938 Móstoles, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

- Related internship programs:**
- Palliative Care
  - Clinical Ophthalmology



Medicine

### Hospital HM Vallés

Country: Spain City: Madrid

Address: Calle Santiago, 14, 28801 Alcalá de Henares, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

- Related internship programs:**
- Gynecologic Oncology
  - Clinical Ophthalmology



Medicine

### HM CINAC - Centro Integral de Neurociencias

Country: Spain City: Madrid

Address: Avenida Carlos V, 70, 28938, Móstoles, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

- Related internship programs:**
- Neurological Physiotherapy



Medicine

### HM CINAC Barcelona

Country: Spain City: Barcelona

Address: Avenida de Vallcarca, 151, 08023, Barcelona

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

- Related internship programs:**
- Neurodegenerative Diseases
  - Neurology Nursing



Medicine

### Policlínico HM Arapiles

Country	City
Spain	Madrid

Address: C. de Arapiles, 8, 28015, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Anaesthesiology and Resuscitation
- Pediatric Dentistry



Medicine

### Policlínico HM Cruz Verde

Country	City
Spain	Madrid

Address: Plaza de la Cruz Verde, 1-3, 28807, Alcalá de Henares, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Advanced Clinical Podiatry
- Optical Technologies and Clinical Optometry



Medicine

### Policlínico HM Distrito Telefónica

Country	City
Spain	Madrid

Address: Ronda de la Comunicación, 28050, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Optical Technologies and Clinical Optometry
- General and Digestive System Surgery







### Policlínico HM Matogrande

Country	City
Spain	La Coruña

Address: R. Enrique Mariñas Romero, 32G, 2º,  
15009, A Coruña

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Sports Physiotherapy
- Neurodegenerative Diseases



### Policlínico HM Rosaleda Lalín

Country	City
Spain	Pontevedra

Address: Av. Buenos Aires, 102, 36500,  
Lalín, Pontevedra

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Advances in Hematology and Hemotherapy
- Neurological Physiotherapy



### Policlínico HM Imi Toledo

Country	City
Spain	Toledo

Address: Av. de Irlanda, 21, 45005, Toledo

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

**Related internship programs:**

- Electrotherapy in Rehabilitation Medicine
- Hair Transplantation

09

# Methodology

This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: **Relearning**.

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







“

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

## At TECH we use the Case Method

What should a professional do in a given situation? Throughout the program, students will face multiple simulated clinical cases, based on real patients, in which they will have to do research, establish hypotheses, and ultimately resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. 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.

“

*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 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 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 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 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 educational system for presenting multimedia content 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.



# 10 Certificate

This Hybrid Professional Master's Degree in Neurodegenerative Diseases guarantees students, in addition to the most rigorous and up-to-date education, access to a Hybrid Professional Master's Degree diploma issued by TECH Technological University.



“

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



This **Hybrid Professional Master's Degree in Neurodegenerative Diseases** contains the most complete and up-to-date program on the professional and educational field.

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

In addition to the diploma, students will be able to obtain an academic transcript, as well as a certificate outlining the contents of the program. In order to do so, students should contact their academic advisor, who will provide them with all the necessary information.

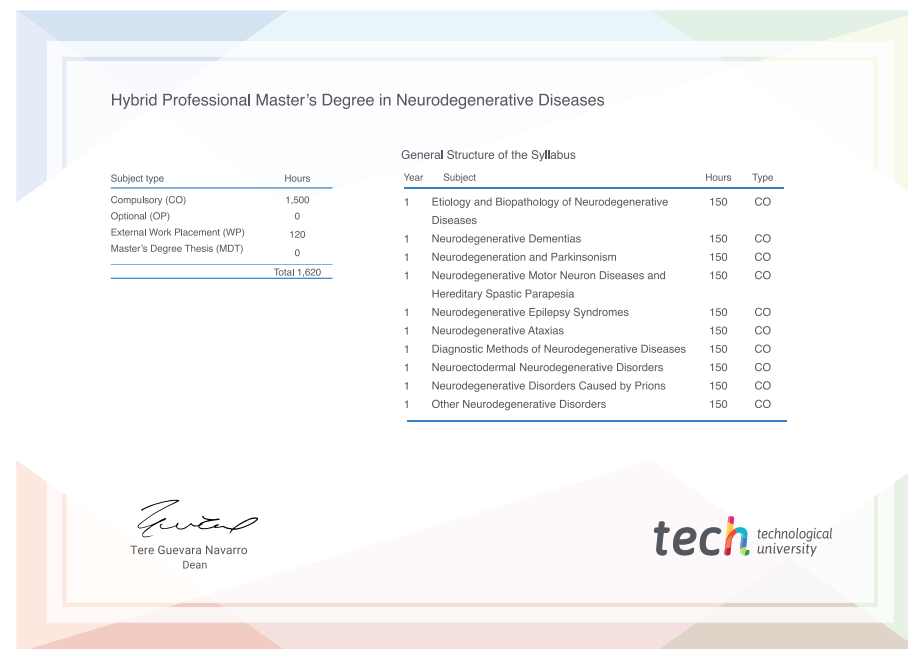
Title: **Hybrid Professional Master's Degree in Neurodegenerative Diseases**

Modality: **Hybrid (Online + Clinical Internship)**

Duration: **12 months**

Certificate: **TECH Technological University**

Teaching Hours: **1,620 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  
health confidence people  
education information tutors  
guarantee accreditation teaching  
institutions technology learning  
community commitment  
personalized service information  
knowledge present quality  
online learning  
development languages  
virtual classroom



## Hybrid Professional Master's Degree

### Neurodegenerative Diseases

Course Modality: Hybrid (Online + Clinical Internship)

Duration: 12 months

Certificate: TECH Technological University

Teaching Hours: 1,620 h.

# Hybrid Professional Master's Degree

## Neurodegenerative Diseases

