

# Postgraduate Certificate

## Etiology and Biopathology of Neurodegenerative Diseases





## Postgraduate Certificate Etiology and Biopathology of Neurodegenerative Diseases

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Technological University
- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/in/medicine/postgraduate-certificate/etiology-biopathology-neurodegenerative-diseases](http://www.techtute.com/in/medicine/postgraduate-certificate/etiology-biopathology-neurodegenerative-diseases)

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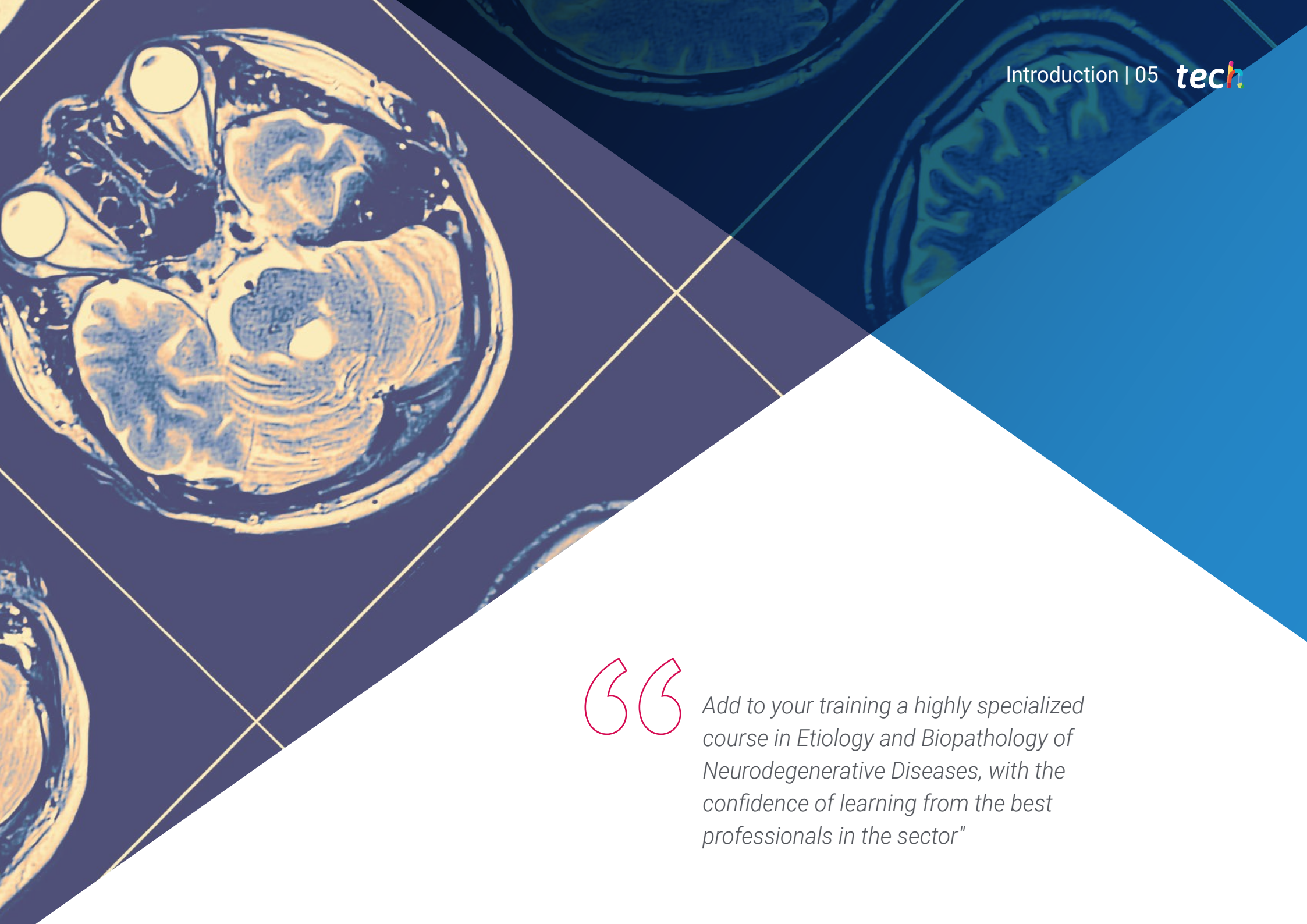
# 01

# Introduction

This course examines neurodegenerative conditions by relating their clinical manifestations to altered proteins. On many occasions an anomalous protein may give different clinical manifestations, and, on other occasions, a clinical manifestation may be produced by the alteration of different proteins.

A highly specialized course that will provide you with the most advanced competencies in the sector.





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*Add to your training a highly specialized course in Etiology and Biopathology of Neurodegenerative Diseases, with the confidence of learning from the best professionals in the sector”*

Neurodegenerative diseases are going to be the true epidemic of the coming years, due, among other factors, to the aging of the population.

This program will focus on the knowledge of the genetic and molecular basis of this group of diseases. Throughout the weeks of this program, the knowledge of Translational Neurology, essential for the adequate knowledge and management of these pathologies, will be covered.

Another aspect that will be looked at is the relationship with inheritance, in order to develop a consultation in that territory to the patient and their relatives, in order to prevent transmission to future generations.

Finally, this complete course will present the new advances in Neuroepidemiology in this group of diseases and will study the impact and the social and personal consequences they produce in the affected people and their environment.

The Postgraduate Diploma in Etiology and Biopathology of Neurodegenerative Diseases aims to train with rigor, teach with precision and provide ways of improvement so that the student is able to lead realistic care and teaching programs in the specific area of their professional competencies.

This **Postgraduate Certificate in Etiology and Biopathology of Neurodegenerative Diseases** contains the most complete and up-to-date scientific program on the market.

The most important features include:

- ◆ Development of a large number of case studies presented by experts
- ◆ Graphic, schematic, and highly practical contents.
- ◆ The latest developments and cutting-edge advances in this area
- ◆ Practical exercises where the self-evaluation process can be carried out to improve learning.
- ◆ Innovative and highly efficient methodologies
- ◆ 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



*This Postgraduate Certificate is the best investment you can make to acquire the best and most up-to-date training in Etiology and Biopathology of Neurodegenerative Diseases"*

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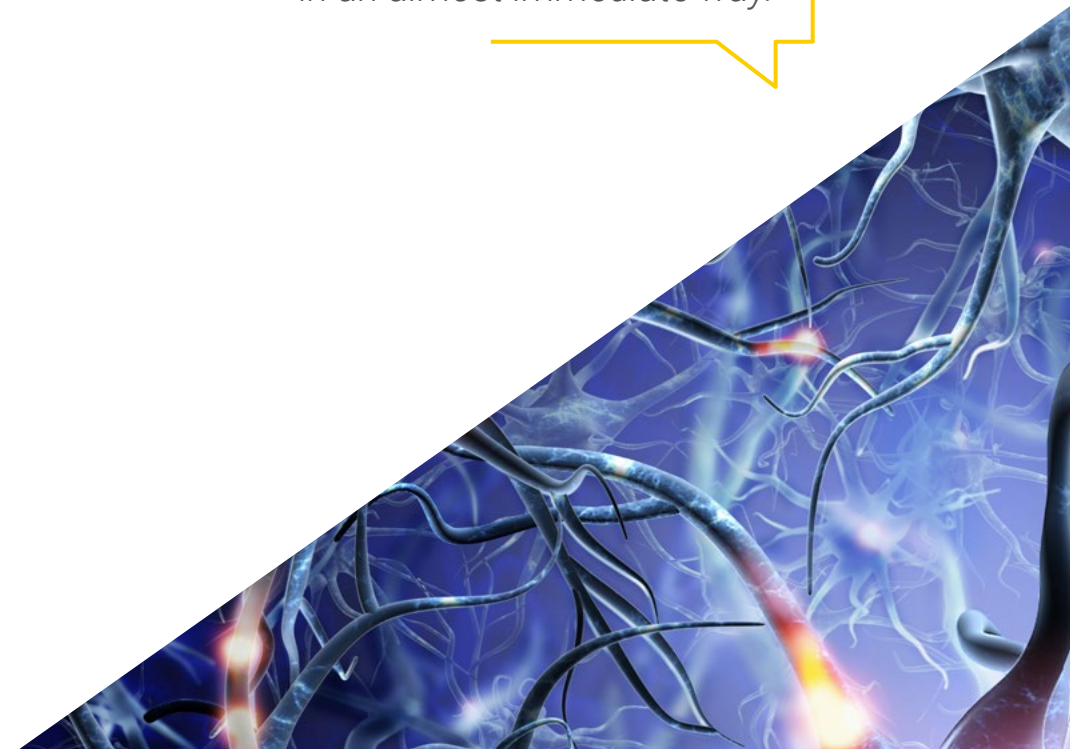
*The latest advances in the area of Clinical Neurology compiled in a Postgraduate Certificate in Etiology and Biopathology of Neurodegenerative Diseases of high formative efficiency, which will optimize your effort with the best results”*

The development of this Course is focused on the practice of the proposed theoretical learning. Through the most effective teaching systems, proven methods imported from the most prestigious universities in the world, you will be able to acquire new knowledge in a practical way. In this way, TECH is committed to turning its efforts into real and immediate competencies.

Our online system is another of the strengths of our training proposal. With an interactive platform that has the advantages of the latest technological developments, we put at your service the most interactive digital tools. In this way, TECH can offer you a way of learning that is totally adaptable to your needs, so that you can perfectly combine this training with your personal or professional life.

*All the necessary methodology for the professional, in a specific and concrete Postgraduate Certificate in Etiology and Biopathology of Neurodegenerative Diseases.*

*A program created to allow you to implement your acquired knowledge into your daily practice in an almost immediate way.*



02

# Objectives

The objective of this program is to offer medical professionals a complete pathway to acquire knowledge, competencies and skills in the area of Neurodegenerative Diseases and to update on the latest advances in this area of intervention. A practical and effective way to keep you at the forefront of a constantly evolving profession.





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*Our goal is simple: to help you get the most complete update on Neurodegenerative Diseases in an Postgraduate Certificate fully compatible with your work and personal obligations"*

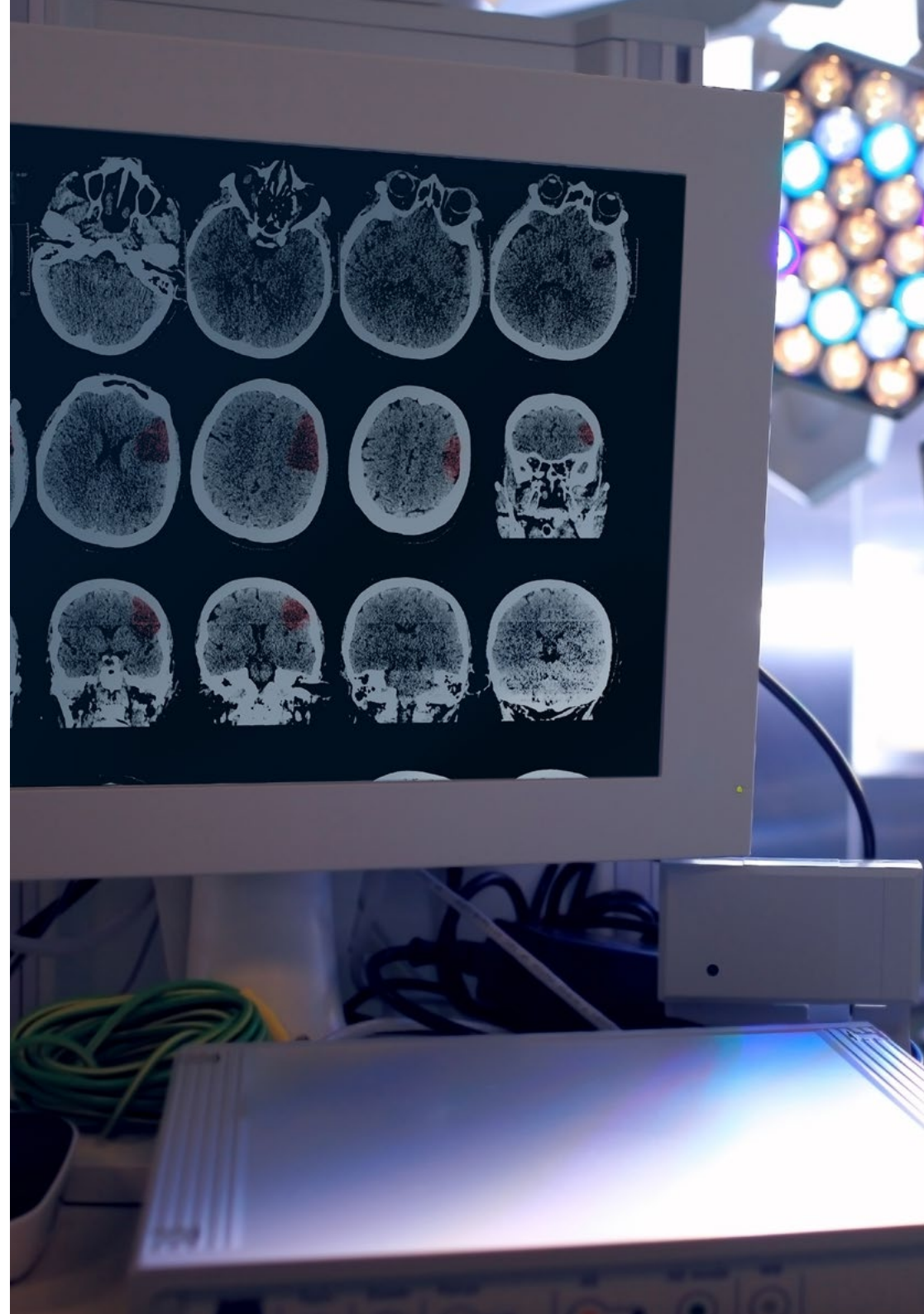


## General Objectives

- ◆ Know the most modern findings in the genetic and proteomic alterations of these diseases, as well as in the translational neurology that have produced these findings
- ◆ Acquire the appropriate and most effective tools to recognize the clinical picture, interpret the findings of complementary tests and appropriately treat patients with neurodegenerative diseases



*An Opportunity Created for Professionals who are looking for an Intensive and Effective Course, with Which to take a Significant Step in the Practice of their Profession"*





## Specific Objectives

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- ◆ 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

03

# Course Management

This comprehensive Postgraduate Certificate in Etiology and Biopathology in Neurodegenerative Diseases is taught by leading specialists in the field. Trained in different fields of clinical care and practice, all of them experienced in teaching and research in different areas of the nervous system and with the necessary management knowledge to provide a broad, systematic and realistic vision within the complexity of this area of Neuroscience, this group of experts will accompany you throughout the training, putting their real and up-to-date experience at your service.





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*An exceptional opportunity to learn  
from the best professionals in the  
sector”*

## International Guest Director

Dr. Adriano Aguzzi is a leading specialist at European and international level, holding the position of director of the Swiss National Reference Center for Prion Diseases. From this institution, he delves into the diagnosis of Transmissible Spongiform Encephalopathies and develops his own therapeutic methods to address these pathologies from the thorough study of the immunological and molecular basis.

Aguzzi's greatest scientific achievements are related to the discovery of the pathways by which prions reach the central nervous system through genetic manipulation of mice *in vivo*. In addition, his laboratory is committed to the development of state-of-the-art tissue clarification technologies with which microscopic images of complete rodent brains are obtained for 3D reconstruction with maximum precision. These techniques are promising for the academic community, allowing the characterization of vascular phenotypes in the context of stroke and neurodegenerative diseases such as Alzheimer's or Parkinson's disease.

Among his many studies, his project Exploring the Locales of Cognitive Decline stands out. In it, Aguzzi proposes the combination of three-dimensional morphology with sophisticated fluorochrome chemistry and molecular methods of genome interrogation/perturbation. Through these revolutionary techniques, he aims to create a detailed atlas of the different cell types causing neurodegenerative damage.

His avant-garde contributions have received a variety of awards. These include the Ernst-Jung Award, the Robert-Koch Award and an honorary medal from the European Molecular Biology Organization.

He was also awarded the NOMIS Distinguished Scientist Award and has received Advanced grants from the European Research Council (ERC) to further his innovations.

In addition, this distinguished neuroscientist is on the editorial board of *Science* and is editor-in-chief of the *Swiss Medical Weekly*. He is also a member of the advisory board of numerous philanthropic foundations and biomedical companies and serves as Director of the Institute of Neuropathology at the University of Zurich.



## Dr. Aguzzi, Adriano

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- Director of the Swiss National Reference Center for Prion Diseases
- Director of the Institute of Neuropathology, Zurich
- Professor at the University of Zurich
- Editor-in-Chief of the Swiss Medical Weekly
- Postdoctoral Fellow at the Research Institute for Molecular Pathology (IMP) in Vienna
- Doctor of Medicine, Faculty of Medicine, University of Freiburg
- Chairman of the Board of the European Brain Research Institute (EBRI) in Italy
- Member of: Scientific Advisory Board of the Italian Institute of Technology in Genoa, Advisory Board of the Giovanni Armenise-Harvard Foundation of Boston, Neurosciences Committee of the Wellcome Trust, London, Supervisory Board of the Roche Research Foundation

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

## Management



### Dr. Yusta Izquierdo, Antonio

- ◆ Degree in medicine and surgery in 1985 from the Faculty of Medicine of the Autonomous University of Madrid Obtained 5 passes, 16 Bs, 7 As, and 4 As with honors during the course of the course
- ◆ Bachelor's degree in medicine and surgery with the grade of outstanding, after the completion of the thesis "Plasmapheresis and immunosuppressants in the treatment of myasthenia gravis," in October 1985
- ◆ Doctor of Medicine and Surgery Degree from the Autonomous Medical School of Madrid with the Doctoral Thesis entitled: "Normal variations in short-, medium-, and long-lasting auditory evoked potentials. Mid- and long-latency evoked potentials in dementia patients" With the qualification of "apto cum laude by unanimous decision" In October 1990
- ◆ Specialty in Neurology at the Neurology Service of the Puerta de Hierro Clinic (Dr. Liaño Martínez) between 1987 and 1991
- ◆ Coordinator of the Neuromuscular Pathology Unit of the Neurology Service of the Puerta de Hierro Clinic in Madrid, between July 1990 and March 1991
- ◆ Specialist in Neurology at the University Hospital of Guadalajara from April 29, 1991 to May 2, 2004.
- ◆ Head of Neurology at the Integrated Care Management of Guadalajara, the University Hospital of Guadalajara and the Brain Injury Unit of the Institute of Neurological Diseases of Castilla La Mancha since May 3, 2004, a position he still holds today
- ◆ Professor of Health Sciences -Profile Neurology- at the Faculty of Medicine of the University of Alcalá, since October 1, 1991, position he currently holds
- ◆ Coordinator of the subject "MEDICAL CLINIC" of the Sixth Year, Faculty of Medicine of Alcalá, at the University Hospital of Guadalajara; from the academic year 1993-94 to the academic year 2010-2011



## Professors

### Dr. Hernandez Cristobal, Jaime

- ◆ Degree in Medicine from the University of Salamanca
- ◆ Neurology Specialist, Fundación Jiménez Díaz Hospital (Madrid)
- ◆ Doctor in Medicine, Autonomous University of Madrid
- ◆ Author of numerous publications specialized in different aspects of Neurology in scientific journals



# 04

# Structure and Content

The structure of the contents has been designed by a team of professionals, aware of the current relevance of training in order to advance in the labor market with security and competitiveness, and to practice the profession with the excellence that only the best education allows.



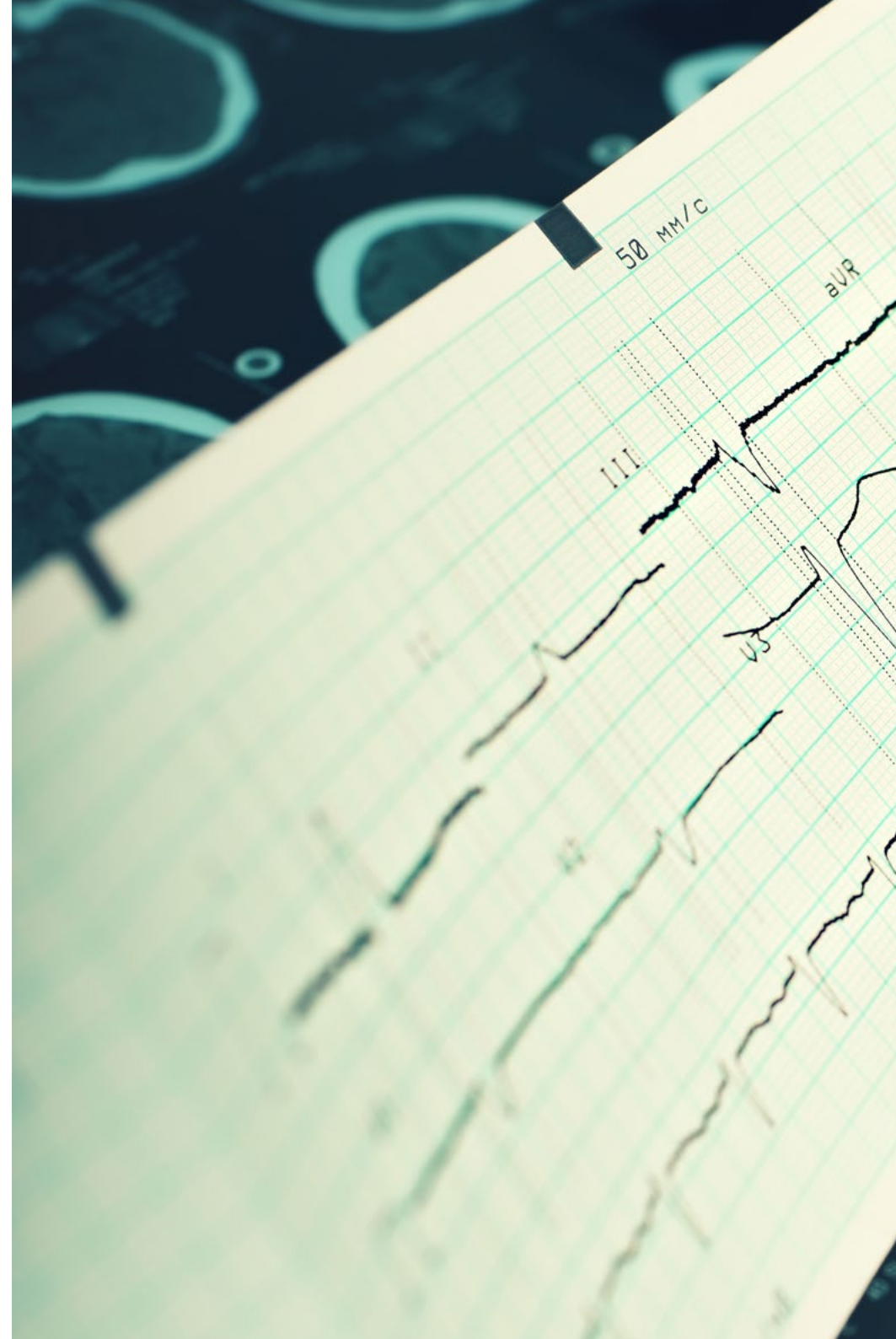


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*This Postgraduate Certificate contains the most complete and up-to-date scientific program on the market”*

## 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





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

05

# Methodology

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

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





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

## At TECH we use the Case Method

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

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



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



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*Did you know that this method was developed in 1912, at Harvard, for law students? The case method consisted of presenting students with real-life, complex situations for them to make decisions and justify their decisions on how to solve them. In 1924, Harvard adopted it as a standard teaching method”*

The effectiveness of the method is justified by four fundamental achievements:

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



## Relearning Methodology

At TECH we enhance the 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.



# 06 Certificate

The Postgraduate Certificate in Etiology and Biopathology of Neurodegenerative Diseases guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Technological University.



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

This Postgraduate Certificate in **Etiology and Biopathology of Neurodegenerative Diseases** contains the most complete and up-to-date scientific program on the market.

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

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

**Title: Postgraduate Certificate in Etiology and Biopathology of Neurodegenerative Diseases**

**No. Official Hours: 150 h.**



\*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.



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

**tech** technological  
university

**Postgraduate Certificate**  
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