

# Postgraduate Diploma Tumor Pathology and Functional Neurosurgery





## Postgraduate Diploma Tumor Pathology and Functional Neurosurgery

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Global University
- » Credits: 18 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/us/medicine/postgraduate-diploma/postgraduate-diploma-tumor-pathology-functional-neurosurgery](http://www.techtute.com/us/medicine/postgraduate-diploma/postgraduate-diploma-tumor-pathology-functional-neurosurgery)

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# 01

# Introduction

Specialize in Tumor Pathology and Functional Neurosurgery with this complete program taught by professionals with extensive experience in the sector. Throughout these months of training, you will study, in depth, the histological and molecular basis of the classification of glial tumors and the prognostic and therapeutic implications derived from it. Likewise, you will learn the surgical indications in highly prevalent neurological pathologies such as metastases and meningiomas, and you will also learn about the main disorders that present with epilepsy that may benefit from surgical intervention, as well as the procedures that are commonly used in surgical practice, among many other topics that will be addressed during this intensive program.





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*Do not hesitate to take this training with us. You will find the best educational material with virtual lessons”*

In this program you will address the advances that have been adopted in the surgical treatment of glial brain tumors and how their application is decisive in improving patient prognosis. You will also learn the latest developments in Functional Neurosurgery, a branch of Neurosurgery that aims to treat psychological or physiological disorders through a surgical lesion or chronic excitation of a part of the central or peripheral nervous system. This often requires a multidisciplinary approach in which other specialties such as Neurology, Neurophysiology or Psychiatry also participate.

From this perspective, the Postgraduate Diploma in Tumor Pathology and Functional Neurosurgery is an up-to-date compilation of the pathologies that need to be studied and treated by Neurosurgery. The application of diagnostic and therapeutic algorithms enhances student learning and synthesizes the flow of information to help students apply it practically in their environment'.

On the other hand, the multimedia content developed with the latest interactive educational technology, enhances the adoption of problem-solving strategies by students. This way, the student will acquire the skills required to approach the diagnosis and treatment of neurosurgical pathologies.

For this reason, this Postgraduate Diploma is the most intensive and effective educational program on the market in this field. A high quality program that will allow you to become one of the most up-to-date professionals in the sector, in a field with a high demand for professionals.

This **Postgraduate Diploma in Tumor Pathology and Functional Neurosurgery** contains the most complete and up-to-date educational program on the market. The most important features include:

- ◆ Practical cases presented by experts in neurosurgery
- ◆ The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional development
- ◆ The latest developments in neurosurgery
- ◆ Practical exercises where the self-assessment process can be carried out to improve learning
- ◆ Special emphasis on innovative methodologies in neurosurgery
- ◆ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection work
- ◆ Content that is accessible from any fixed or portable device with an internet connection



*Broaden your knowledge through this Postgraduate Diploma that will enable you to achieve excellence in this field"*

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*This Postgraduate Diploma is the best investment you can make in the selection of a refresher program for two reasons: in addition to updating your knowledge in Neurosurgery, you will obtain a qualification endorsed by TECH”*

Its teaching staff includes professionals belonging to the field of Neurosurgery, who bring the experience of their work to this Training, in addition to renowned specialists from leading societies and prestigious universities.

The multimedia content, developed with the latest educational technology, will provide the physician with situated and contextual learning, i.e., a simulated environment that will provide immersive training that is programmed to train students 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 purpose, the neurosurgery specialist will be assisted by an innovative interactive video system created by renowned and experienced experts in the field of Tumor Pathology and Functional Neurosurgery.

*The current importance of Neurosurgery makes this Postgraduate Diploma an essential program for professionals in the sector.*

*A comprehensive program that will help you keep up to date with the latest techniques in the field of Neurosurgery.*



# 02 Objectives

The Tumor Pathology and Functional Neurosurgery program is designed to enhance the professional's performance with the latest advances and most innovative treatments in the sector.





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*Thanks to this Postgraduate Diploma you will be able to train in Neurosurgery and learn about the latest advances in the field"*



## General Objectives

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- ◆ Acquire more in-depth knowledge of the specialty, with a practical approach to help professionals apply the information learned in their clinical practice, focusing on the latest diagnostic and therapeutic guidelines and the most recent scientific evidence
- ◆ Learn the latest surgical techniques that have been implemented in recent years along with the knowledge of technological development in multiple areas of Neurosurgery



*Take the opportunity and take the step to get up to date on the latest developments in Tumor Pathology and Functional Neurosurgery"*





## Specific Objectives

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### Module 1. Tumor Pathology I

- ◆ Fully understand the histological and molecular basis of the classification of glial tumors and the prognostic and therapeutic implications derived from it, as well as learning the differential clinical and radiological characteristics of high-grade and low-grade glial tumors
- ◆ Become familiar with the advances that have been adopted in the surgical treatment of glial brain tumors and how their application is decisive in improving patient prognosis
- ◆ Recognize the importance of preserving neurological function in glial tumor surgery and know the tools available in neurosurgery to achieve this goal
- ◆ Learn the role of other adjuvant therapies (radiotherapy and chemotherapy) in the treatment of brain gliomas and their contribution to improving prognosis

### Module 2. Tumor Pathology II

- ◆ Discuss the surgical indications in highly prevalent pathologies in neurosurgery such as metastases and meningiomas and the role of other alternative treatments
- ◆ Acquire in-depth knowledge of the approaches to the cerebellopontine angle in the treatment of acoustic neuroma and other cerebellopontine angle tumors, discuss the advantages and disadvantages of each approach and its indication according to clinical and anatomical variables
- ◆ Analyze the key points that have determined the success of endoscopic approaches from skull base tumors, as well as their application according to each type of tumor lesion
- ◆ Identify the unique characteristics of tumors in specific locations such as those of the intraventricular and pineal region, which determine highly specific diagnostic processes and surgical approaches

### Module 3. Functional Neurosurgery

- ◆ Manage the need for a multidisciplinary approach to epilepsy surgery in order to achieve excellent results in terms of seizure control and absence of neurological sequelae
- ◆ Learn the main epilepsy conditions that can benefit from surgical treatment and the procedures commonly used in surgical practice
- ◆ Provide the basis for understanding the mechanisms of deep brain stimulation and neuroablative interventions and their indication in the treatment of movement disorders. An important objective of this module is to understand the ongoing evolution of these therapies and to anticipate the direction in which the next advances in this field will be heading
- ◆ Highlight the role of neurosurgical therapies in the treatment of psychiatric illnesses, understanding how advances in other branches of Neurosurgery have been transferred to psychosurgery
- ◆ Specialize in the treatments available in neurosurgery that can be used in the treatment of drug-resistant chronic pain, distinguishing the differences in characteristics and prognosis between neuropathic and nociceptive pain

03

# Course Management

The program's teaching staff includes leading experts in Neurosurgery, who contribute their vast work experience to this program. Additionally, other recognized experts participate in its design and preparation, completing the program in an interdisciplinary manner.



A large, stylized yellow quotation mark icon, consisting of two facing double quotes.

*Leading experts in Neurosurgery have joined forces to share all their knowledge in the field with you"*

## Management



### Dr. Fernández Carballal, Carlos

- ◆ Head of the Spinal Pathology Section. Neurosurgery Service
- ◆ Gregorio Marañón General University Hospital
- ◆ Associate Neurosurgery Professor. Faculty of Medicine. Complutense University of Madrid
- ◆ PhD in Surgery from the Autonomous University of Madrid Faculty of Medicine, obtaining the qualification of outstanding cum laude
- ◆ Member of the Spanish Society of Neurosurgery, Member of the Neurorachis Society, Member of the Spanish Society of Functional Neurosurgery (SENE)
- ◆ Master's Degree in Medical and Clinical Management from the Spanish Distance University (UNED)
- ◆ Degree in Medicine (University of Navarra, 1999)

## Professors

### García Leal, Roberto

- ◆ Head of Service. Department of Neurosurgery. HGU Gregorio Marañón. Madrid
- ◆ Master in Management and Planning of Healthcare Centers and Services. Business Excellence School
- ◆ Academic director of Grupo CTO, an entity dedicated to undergraduate and postgraduate health training in medicine and nursing
- ◆ Degree in Medicine and Surgery from the Autonomous University of Madrid (June 1996)

### Ms. Mateo Sierra, Olga

- ◆ Professor of Neurosurgery. School of Medicine. Complutense University of Madrid
- ◆ Neurosurgery Service. HGU Gregorio Marañón
- ◆ Bachelor of Medicine and Surgery, Autonomous University of Madrid

### Mr. Ruiz Juretschke, Fernando

- ◆ Neurosurgery Professor. Complutense University of Madrid
- ◆ Neurosurgery Department. Gregorio Marañón General University Hospital
- ◆ Degree in Medicine from the Faculty of Medicine at the Complutense University of Madrid
- ◆ Master's Degree in Neurological Oncology

### Mr. Iza Vallejo, Begoña

- ◆ Associate Physician. Neurosurgery Service. HGU Gregorio Marañón. Madrid
- ◆ Bachelor of Medicine Faculty of Medicine of the University of the Basque Country
- ◆ University Master's Degree in Neurological Oncology. CEU Cardenal Herrera University

**Dr. Garbizu Vidorreta, José Manuel**

- ◆ Associate Physician. Neurosurgery Service. HGU Gregorio Marañón. Madrid
- ◆ Bachelor of Medicine at the Faculty of Medicine of the University of Cantabria

**Dr. Vargas López, Antonio José**

- ◆ Associate Physician. Neurosurgery Service. Torrecárdenas University Hospital. Almería
- ◆ Facultative Specialist in Neurosurgery. Vithas Virgen del Mar Hospital in Almería
- ◆ Bachelor of Medicine. Complutense University of Madrid

**Dr. González Quarante, Aláin Hermes**

- ◆ Associate Physician. Neurosurgery Service. University Clinic of Navarra. Pamplona
- ◆ Tutor of residents of the department of Neurosurgery. University of Navarra Clinic
- ◆ Bachelor of Medicine. University of Barcelona

**Dr. Gil de Sagredo del Corral, Óscar Lucas**

- ◆ Associate Physician. Neurosurgery Service. HGU Gregorio Marañón. Madrid
- ◆ Degree in Medicine and Surgery. Complutense University of Madrid
- ◆ Member of the Spanish Society of Neurosurgery (SENEC)

**Dr. Valera Melé, Óscar Marc**

- ◆ Neurosurgery Service. HGU Gregorio Marañón
- ◆ Graduated in Medicine at Hospital Clínic de Barcelona

**Dr. Casitas Hernando, Vicente**

- ◆ Neurosurgery Service. HGU Gregorio Marañón. Madrid
- ◆ Diploma of Specialization in Brain, Spinal and Peripheral Nerve Neuromodulation. University of Granada

**Dr. Hernández Poveda, José Manuel**

- ◆ Neurosurgery Service. HGU Gregorio Marañón
- ◆ Degree in Medicine. Central University of Venezuela

**Dr. García Hernando, Silvia**

- ◆ Neurosurgery Service. HGU Gregorio Marañón
- ◆ Degree in Medicine. University of Navarra, Pamplona

**Dr. Moreno Gutiérrez, Ángela**

- ◆ Associate Physician. Neurosurgery Service. HGU Gregorio Marañón. Madrid
- ◆ Degree in Medicine and Surgery from the Autonomous University of Barcelona
- ◆ Member of the Spanish Society of Pediatric Neurosurgery

**Dr. Darriba Alles, Juan Vicente**

- ◆ Associate Physician. Neurosurgery Service. HGU Gregorio Marañón. Madrid
- ◆ Bachelor of Medicine from the University of Oviedo
- ◆ Specialization in Neurosurgery as Internal Resident Physician at the Central University Hospital of Asturias (Oviedo)
- ◆ UAM PhD candidate since 2018: Virtual planning with CAD/CAM technology and intraoperative navigation in the surgical treatment of craniosynostosis
- ◆ Adherent member of the Spanish Society of Neurosurgery (SENEC)

# 04

# Structure and Content

The structure of the contents has been designed by the best professionals in the Neurosurgery sector, with extensive experience and recognized prestige in the profession, backed by the volume of cases studies reviewed, studied and diagnosed, and with a wide mastery of new technologies applied to teaching.



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*This Postgraduate Diploma in Tumor Pathology and Functional Neurosurgery contains the most complete and up-to-date scientific program on the market"*

## Module 1. Tumor Pathology I

- 1.1. Histological and Molecular Classification of Gliomas
- 1.2. Low-Grade Gliomas
- 1.3. High-Grade Gliomas
- 1.4. Therapeutic Algorithm in the Treatment of Gliomas
- 1.5. Advances in the Surgical Treatment of Gliomas
  - 1.5.1. Fluorescence-Guided Surgery
  - 1.5.2. Surgery in Eloquent Areas
- 1.6. The Role of Radiotherapy in the Treatment of Gliomas
- 1.7. Advances in Chemotherapy Treatment of Gliomas
- 1.8. Ependymal Tumors
- 1.9. Neuronal Tumors

## Module 2. Tumor Pathology II

- 2.1. Cerebral Metastases
  - 2.1.1. Surgical Treatment Indications
  - 2.1.2. The Role of Radiotherapy in the Treatment of Cerebral Metastases
- 2.2. Cerebral Meningiomas. Classification and Treatment
- 2.3. Acoustic Neuroma and Other Pontocerebellar Angle Tumors
- 2.4. Posterior Fossa Tumors in Adults
  - 2.4.1. Hemangioblastoma
  - 2.4.2. Medulloblastoma in Adults
- 2.5. Pituitary Adenomas
  - 2.5.1. Indication of Medical and Surgical Treatment
- 2.6. Craniopharyngiomas and Sellar and Suprasellar Tumors
- 2.7. Endoscopic Approaches to the Base of the Skull
- 2.8. Intraventricular Tumors
  - 2.8.1. Surgical Approaches to Intraventricular Tumors
- 2.9. Pineal Region Tumors: Diagnosis and Treatment Strategy
- 2.10. CNS Lymphoma





### Module 3. Functional Neurosurgery

- 3.1. Surgical Indications in Epileptic Patients
  - 3.1.1. Pre-Surgery Evaluation
- 3.2. Surgical Treatments in Epilepsy Surgery
  - 3.2.1. Resective Treatments
  - 3.2.2. Palliative Treatment
- 3.3. Temporal Epilepsy: Surgical Treatment and Prognosis
- 3.4. Extratemporal Epilepsy: Surgical Treatment and Prognosis
- 3.5. Indication for Movement Disorder Surgery
- 3.6. Deep Brain Stimulation
  - 3.6.1. Surgical Technique
- 3.7. Historical Progression of Injury in Movement Disorder Surgery
  - 3.7.1. Ultrasound Lesion Application
- 3.8. Psychosurgery. Indications for Surgical Treatment in Psychiatric Patients
- 3.9. Neurosurgical Procedures in the Treatment of Pain and Spasticity
- 3.10. Trigeminal Neuralgia
  - 3.10.1. Percutaneous Techniques
  - 3.10.2. Microvascular Decompression



*This will provide key training to advance your career"*

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

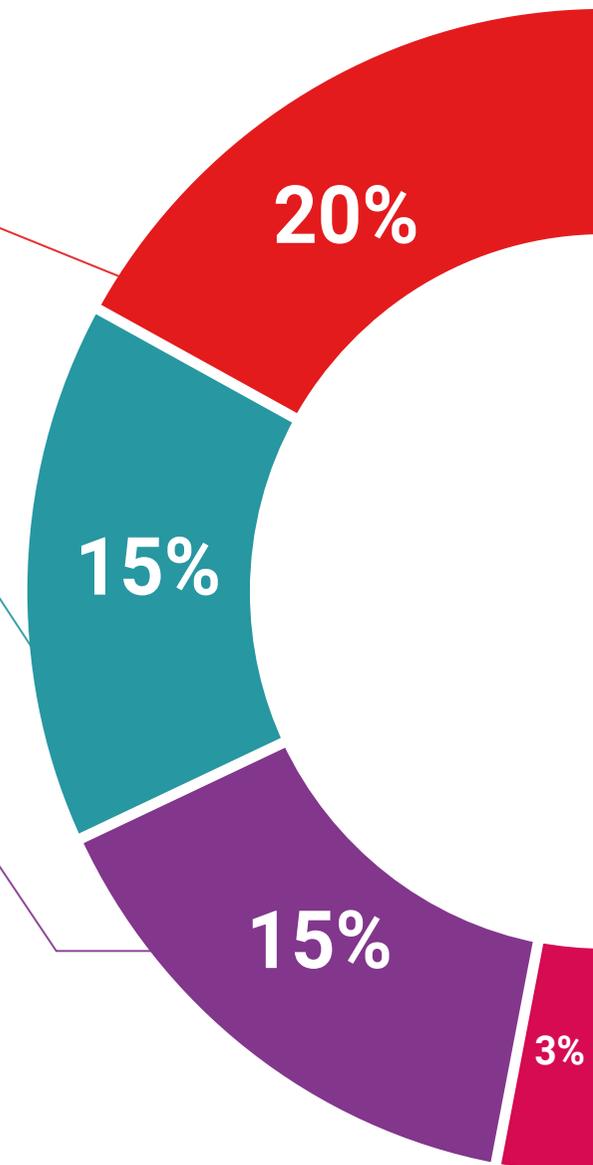
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

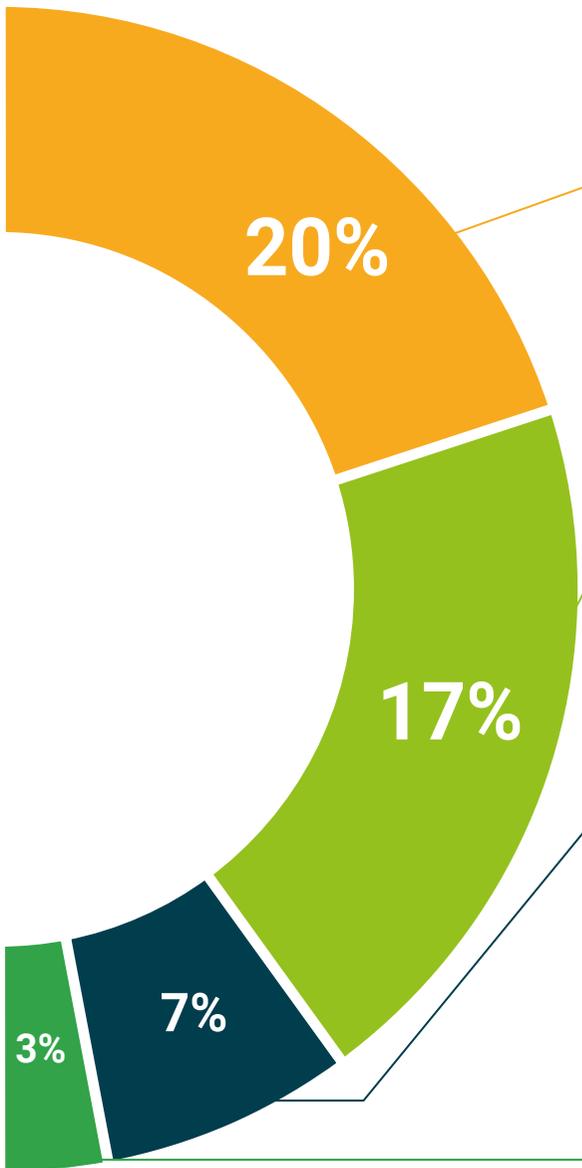
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



#### 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 Diploma in Tumor Pathology and Functional Neurosurgery guarantees students, in addition to the most rigorous and updated education, access to a Postgraduate Diploma issued by TECH Global University.



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

This program will allow you to obtain your **Postgraduate Diploma in Tumor Pathology and Functional Neurosurgery** endorsed by **TECH Global University**, the world's largest online university.

**TECH Global University** is an official European University publicly recognized by the Government of Andorra ([official bulletin](#)). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

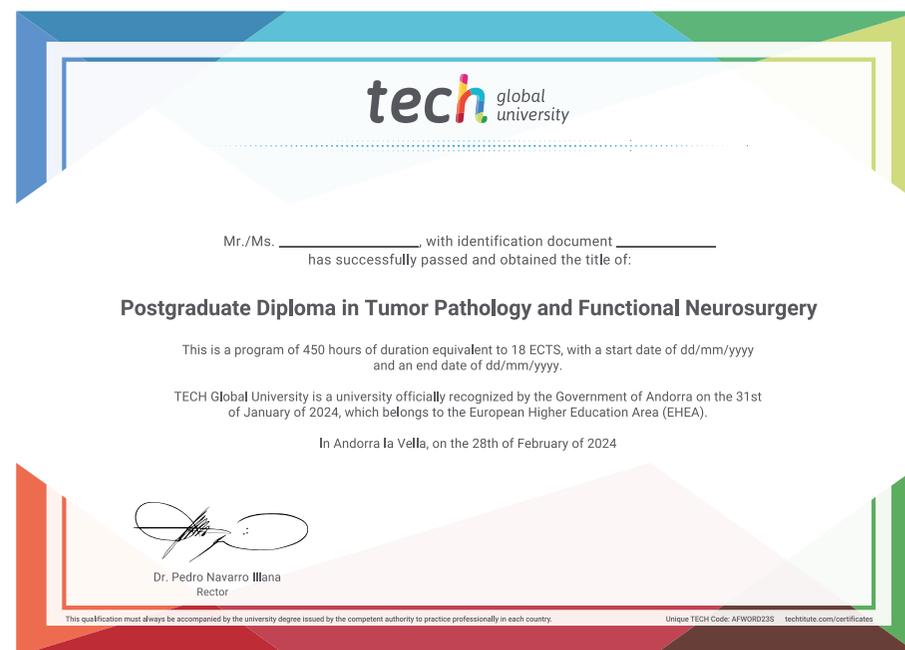
This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Diploma in Tumor Pathology and Functional Neurosurgery**

Modality: **online**

Duration: **6 months**

Accreditation: **18 ECTS**



\*Apostille Convention. In the event that the student wishes to have their paper diploma issued with an apostille, TECH Global University 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  
development language  
virtual classroom



**Postgraduate Diploma**  
Tumor Pathology and  
Functional Neurosurgery

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Global University
- » Credits: 18 ECTS
- » Schedule: at your own pace
- » Exams: online

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