

# Professional Master's Degree Neurosurgery





## Professional Master's Degree Neurosurgery

- » Modality: online
- » Duration: 12 months
- » Certificate: TECH Global University
- » Accreditation: 60 ECTS
- » Schedule: at your own pace
- » Exams: online

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

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# 01

# Introduction to the Program

Neurosurgery is one of the most complex and rapidly evolving medical specialties in recent years. With advances in technology and new surgical techniques, the demand for highly skilled specialists continues to grow. According to the World Federation of Neurosurgical Societies (WFNS), access to neurosurgeons remains limited in many regions worldwide, highlighting the urgent need for more professionals trained in the latest scientific advancements. In this context, TECH offers an innovative 100% online degree designed for physicians to deepen their expertise in this specialty without interrupting their professional practice, acquiring up-to-date knowledge applicable to real clinical settings.





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*Enhance your expertise in Neurosurgery with a fully online program that covers everything from advanced surgical techniques to Neuro-Oncology, Vascular Surgery, and Spinal Surgery”*

Neurosurgery is one of the most demanding and continuously evolving medical specialties. The development of new technologies such as Robot-Assisted Surgery, Neuronavigation, and Artificial Intelligence applied to Diagnosis has transformed the approach to Complex Neurological Pathologies. However, to fully leverage these advances, specialists require continuing education that enables them to integrate the latest knowledge into their daily practice. This academic program addresses that need by providing access to cutting-edge information in Neurosurgery, ensuring rigorous and applicable learning.

The program in Neurosurgery is designed to offer an in-depth understanding of the most advanced surgical techniques, ranging from spinal surgery to the treatment of brain tumors and functional disorders. Thanks to its practical, evidence-based approach, students will acquire key tools for decision-making in highly complex clinical scenarios. Moreover, specializing in this field not only broadens professional opportunities but also allows for more precise and safer patient care, significantly improving surgical outcomes.

One of the program's greatest advantages is its fully online format, which allows physicians to specialize without interrupting their professional activities. Through an intuitive virtual campus featuring video lectures, interactive materials, and clinical case analyses, graduates can progress at their own pace, optimizing their study time. This modality facilitates access to updated knowledge without the need for travel, adapting to the demands of a medical schedule.

TECH has developed an innovative degree that responds to the current needs of Neurosurgery, combining academic excellence with the flexibility of the digital environment. A university program designed to advance the careers of specialists in a field where constant updating is essential.

This **Professional Master's Degree in Neurosurgery** contains the most complete and up-to-date university program on the market. Its most notable features are:

- ♦ The development of practical case studies presented by experts in Medicine
- ♦ 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
- ♦ Practical exercises where the self-assessment process can be carried out to improve learning
- ♦ Special emphasis on innovative methodologies in Medicine
- ♦ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ♦ Content that is accessible from any fixed or portable device with an Internet connection



*Master the most advanced techniques in spinal surgery with a 100% online program. Learn to address degenerative, traumatic and tumor pathologies with the latest advances”*

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*Become skilled in the management of aneurysms, arteriovenous malformations and cerebrovascular accidents with an updated approach in microsurgical techniques”*

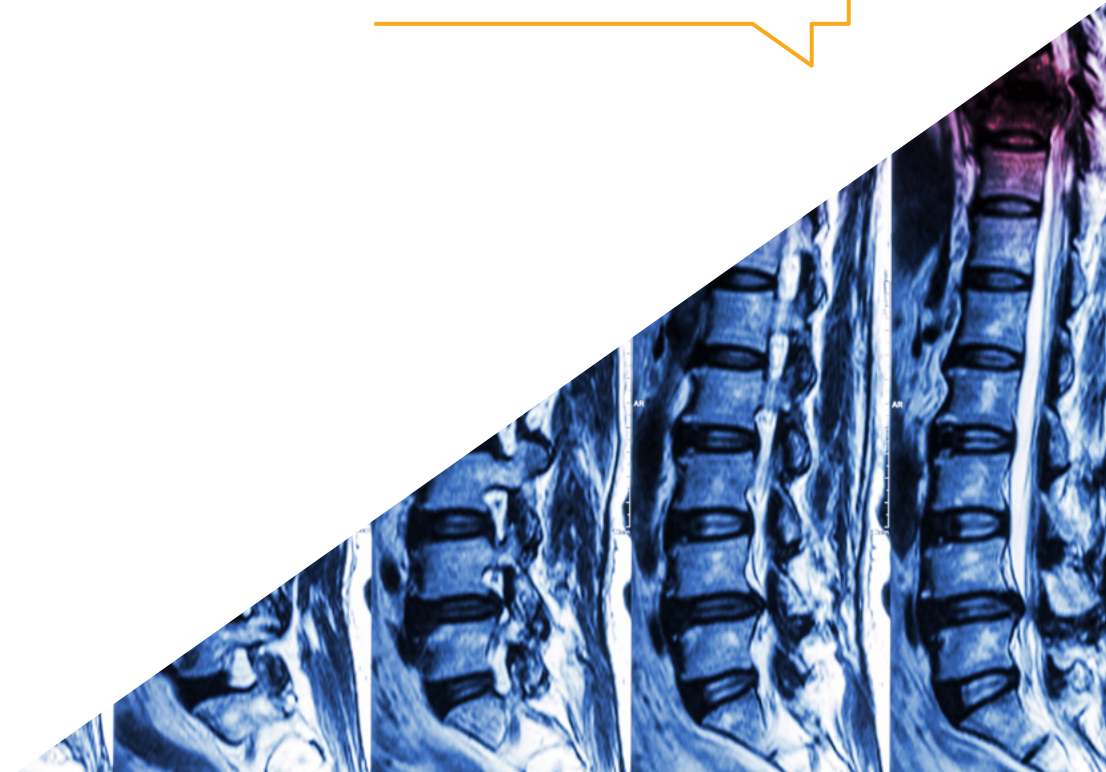
The teaching staff includes professionals belonging to the field of medicine, who contribute their work experience to this program, as well as renowned specialists from reference societies and prestigious universities.

The multimedia content, developed with the latest educational technology, will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide an immersive learning experience designed to prepare for real-life situations.

This program is designed around Problem-Based Learning, whereby the student must try to solve the different professional practice situations that arise throughout the program. For this purpose, the professional will be assisted by an innovative interactive video system created by renowned and experienced experts.

*Specialize in the latest surgical techniques for the treatment of refractory epilepsy, Parkinson's disease and movement disorders.*

*Delve into image-guided surgery, minimally invasive approaches and advances in neuro-oncology to optimize outcomes.*



02

# Why Study at TECH?

TECH is the world's largest online university. With an impressive catalog of more than 14,000 university programs available in 11 languages, it is positioned as a leader in employability, with a 99% job placement rate. In addition, it relies on an enormous faculty of more than 6,000 professors of the highest international renown.





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*Study at the world's largest online university  
and guarantee your professional success.  
The future starts at TECH”*

**The world's best online university, according to FORBES**

The prestigious Forbes magazine, specialized in business and finance, has highlighted TECH as "the best online university in the world" This is what they have recently stated in an article in their digital edition in which they echo the success story of this institution, "thanks to the academic offer it provides, the selection of its teaching staff, and an innovative learning method oriented to form the professionals of the future".

**Forbes**

The best online university in the world

The most complete syllabus

**The most complete syllabuses on the university scene**

TECH offers the most complete syllabuses on the university scene, with programs that cover fundamental concepts and, at the same time, the main scientific advances in their specific scientific areas. In addition, these programs are continuously updated to guarantee students the academic vanguard and the most demanded professional skills. and the most in-demand professional competencies. In this way, the university's qualifications provide its graduates with a significant advantage to propel their careers to success.

**The best top international faculty**

TECH's faculty is made up of more than 6,000 professors of the highest international prestige. Professors, researchers and top executives of multinational companies, including Isaiah Covington, performance coach of the Boston Celtics; Magda Romanska, principal investigator at Harvard MetaLAB; Ignacio Wistumba, chairman of the department of translational molecular pathology at MD Anderson Cancer Center; and D.W. Pine, creative director of TIME magazine, among others.

**TOP**  
international faculty

The most effective methodology

**A unique learning method**

TECH is the first university to use Relearning in all its programs. This is the best online learning methodology, accredited with international teaching quality certifications, provided by prestigious educational agencies. In addition, this innovative academic model is complemented by the "Case Method", thereby configuring a unique online teaching strategy. Innovative teaching resources are also implemented, including detailed videos, infographics and interactive summaries.

**The world's largest online university**

TECH is the world's largest online university. We are the largest educational institution, with the best and widest digital educational catalog, one hundred percent online and covering most areas of knowledge. We offer the largest selection of our own degrees and accredited online undergraduate and postgraduate degrees. In total, more than 14,000 university programs, in ten different languages, making us the largest educational institution in the world.

**World's No.1**  
The World's largest online university

**The official online university of the NBA**

TECH is the official online university of the NBA. Thanks to our agreement with the biggest league in basketball, we offer our students exclusive university programs, as well as a wide variety of educational resources focused on the business of the league and other areas of the sports industry. Each program is made up of a uniquely designed syllabus and features exceptional guest hosts: professionals with a distinguished sports background who will offer their expertise on the most relevant topics.

**Leaders in employability**

TECH has become the leading university in employability. Ninety-nine percent of its students obtain jobs in the academic field they have studied within one year of completing any of the university's programs. A similar number achieve immediate career enhancement. All this thanks to a study methodology that bases its effectiveness on the acquisition of practical skills, which are absolutely necessary for professional development.



**Google Premier Partner**

The American technology giant has awarded TECH the Google Premier Partner badge. This award, which is only available to 3% of the world's companies, highlights the efficient, flexible and tailored experience that this university provides to students. The recognition not only accredits the maximum rigor, performance and investment in TECH's digital infrastructures, but also places this university as one of the world's leading technology companies.

**The top-rated university by its students**

Students have positioned TECH as the world's top-rated university on the main review websites, with a highest rating of 4.9 out of 5, obtained from more than 1,000 reviews. These results consolidate TECH as the benchmark university institution at an international level, reflecting the excellence and positive impact of its educational model.

# 03 Syllabus

Neurosurgery requires up-to-date and specialized knowledge to accurately address complex pathologies. This syllabus combines theory, scientific evidence, and practical application, delving into minimally invasive surgery, advanced neuroimaging, and innovative surgical techniques. It also covers the treatment of brain tumors, vascular diseases, trauma and functional disorders. Thanks to its 100% online modality, it allows access to updated content, video classes and real clinical cases without interrupting professional activity. An academic structure designed to enhance professional development and improve surgical precision in a field where constant updating is key.





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*Acquire the key competencies for the diagnosis and surgical management of traumatic injuries of the Central Nervous System”*

### Module 1. General Concepts in Neurosurgery. Intracranial Infectious Disease

- 1.1. Neurosurgical Patient Positioning
- 1.2. Neuroanesthesia
- 1.3. Neurophysiological Monitoring in Neurosurgery
- 1.4. Neurosurgical Patient Intensive Care
  - 1.4.1. Anti-Seizure Prophylaxis for Neurosurgical Patients
- 1.5. Brain Localization System. Stereotaxy
- 1.6. Brain Localization System. Neuronavigation
- 1.7. Application of Robotics in Neurosurgery
- 1.8. Cost-Effectiveness in Neurosurgery
- 1.9. Postoperative Infections in Neurosurgery
- 1.10. Preventing Infection in Neurosurgical Procedures
- 1.11. Cerebral Abscesses. Diagnosis and Treatment

### Module 2. Traumatic Brain Injury. Peripheral Nerve Pathology

- 2.1. TBI Classification
  - 2.1.1. Mild TBI Evaluation
- 2.2. Neuromonitoring
- 2.3. Treatment of Intracranial Hypertension in Patients with TBI
- 2.4. Indications for Surgery in Cerebral Contusions and Post-Traumatic Cerebral Edema
- 2.5. Acute Epidural Hematoma
  - 2.5.1. Cranial Fractures
- 2.6. Post-Traumatic Subdural Hemorrhage
  - 2.6.1. Acute Subdural Hematoma
  - 2.6.2. Chronic Subdural Hematoma
- 2.7. TBI in Anticoagulated Patients
- 2.8. Traumatic Brain Injury in Children
- 2.9. Peripheral Nerve Pathology. Brachial Plexus Injuries
- 2.10. Peripheral Nerve Pathology. Peripheral Nerve Entrapment Syndromes

### Module 3. Vascular Pathology I. Subarachnoid Hemorrhage and Intracranial Aneurysmal Disease

- 3.1. Subarachnoid Hemorrhage: Clinical, Diagnostic, and Neurological Prognosis
- 3.2. Subarachnoid Hemorrhage Complications
- 3.3. Treating and Managing Patients with Subarachnoid Hemorrhage
- 3.4. Non-Aneurysmal Subarachnoid Hemorrhage
- 3.5. Anterior Circulation Aneurysms
- 3.6. Posterior Circulation Aneurysms
- 3.7. Natural History and Treatment of Unruptured Brain Aneurysm
- 3.8. Surgical Treatment of Intracranial Aneurysms
- 3.9. Endovascular Treatment of Intracranial Aneurysms
- 3.10. Mycotic and Traumatic Aneurysms

### Module 4. Vascular Pathology II. Vascular Malformations and Neurosurgical Stroke Treatment

- 4.1. Arteriovenous Malformations: Clinical Features, Natural History, and Classification
- 4.2. Therapeutic Approaches in the Treatment of Arteriovenous Malformations
  - 4.2.1. Surgery
  - 4.2.2. Radiosurgery
  - 4.2.3. Endovascular Treatment
- 4.3. Cavernomatous Malformations
- 4.4. Venous Angiomas and Telangiectasias
- 4.5. Classification and Management of Intracranial Dural Arteriovenous Fistulas
- 4.6. Spinal Dural Arteriovenous Fistulas Classifications and Treatment
- 4.7. Carotid-Cavernous Fistulas
  - 4.7.1. Treatment Options in Carotid-Cavernous Fistulas
- 4.8. Surgical Indication for Hemorrhagic
- 4.9. Current Status of Neurosurgical Treatment in Ischemic Stroke
  - 4.9.1. Indications for Decompressive Craniectomy in Ischemic Stroke

**Module 5. Tumor Pathology I**

- 5.1. Histological and Molecular Classification of Gliomas
- 5.2. Low-Grade Gliomas
- 5.3. High-Grade Gliomas
- 5.4. Therapeutic Algorithm in the Treatment of Gliomas
- 5.5. Advances in the Surgical Treatment of Gliomas
  - 5.5.1. Fluorescence-Guided Surgery
  - 5.5.2. Surgery in Eloquent Areas
- 5.6. The Role of Radiotherapy in the Treatment of Gliomas
- 5.7. Advances in Chemotherapy Treatment of Gliomas
- 5.8. Ependymal Tumors
- 5.9. Neuronal Tumors

**Module 6. Tumor Pathology II**

- 6.1. Cerebral Metastases
  - 6.1.1. Surgical Treatment Indications
  - 6.1.2. The Role of Radiotherapy in the Treatment of Cerebral Metastases
- 6.2. Cerebral Meningiomas. Classification and Treatment
- 6.3. Acoustic Neuroma and Other Pontocerebellar Angle Tumors
- 6.4. Posterior Fossa Tumors in Adults
  - 6.4.1. Hemangioblastoma
  - 6.4.2. Medulloblastoma in Adults
- 6.5. Pituitary Adenomas
  - 6.5.1. Indication of Medical and Surgical Treatment
- 6.6. Craniopharyngiomas and Sellar and Suprasellar Tumors
- 6.7. Endoscopic Approaches to the Base of the Skull
- 6.8. Intraventricular Tumors
  - 6.8.1. Surgical Approaches to Intraventricular Tumors
- 6.9. Pineal Region Tumors: Diagnosis and Treatment Strategy
- 6.10. CNS Lymphoma

**Module 7. Functional Neurosurgery**

- 7.1. Surgical Indications in Epileptic Patients
  - 7.1.1. Pre-Surgery Evaluation
- 7.2. Surgical Treatments in Epilepsy Surgery
  - 7.2.1. Resective Treatments
  - 7.2.2. Palliative Treatment
- 7.3. Temporal Epilepsy: Surgical Treatment and Prognosis
- 7.4. Extratemporal Epilepsy: Surgical Treatment and Prognosis
- 7.5. Indication for Movement Disorder Surgery
- 7.6. Deep Brain Stimulation
  - 7.6.1. Surgical Technique
- 7.7. Historical Progression of Injury in Movement Disorder Surgery
  - 7.7.1. Ultrasound Lesion Application
- 7.8. Psychosurgery. Indications for Surgical Treatment in Psychiatric Patients
- 7.9. Neurosurgical Procedures in the Treatment of Pain and Spasticity
- 7.10. Trigeminal Neuralgia
  - 7.10.1. Percutaneous Techniques
  - 7.10.2. Microvascular Decompression

**Module 8. Pediatric Neurosurgery and Cerebrospinal Fluid (CSF) Pathology**

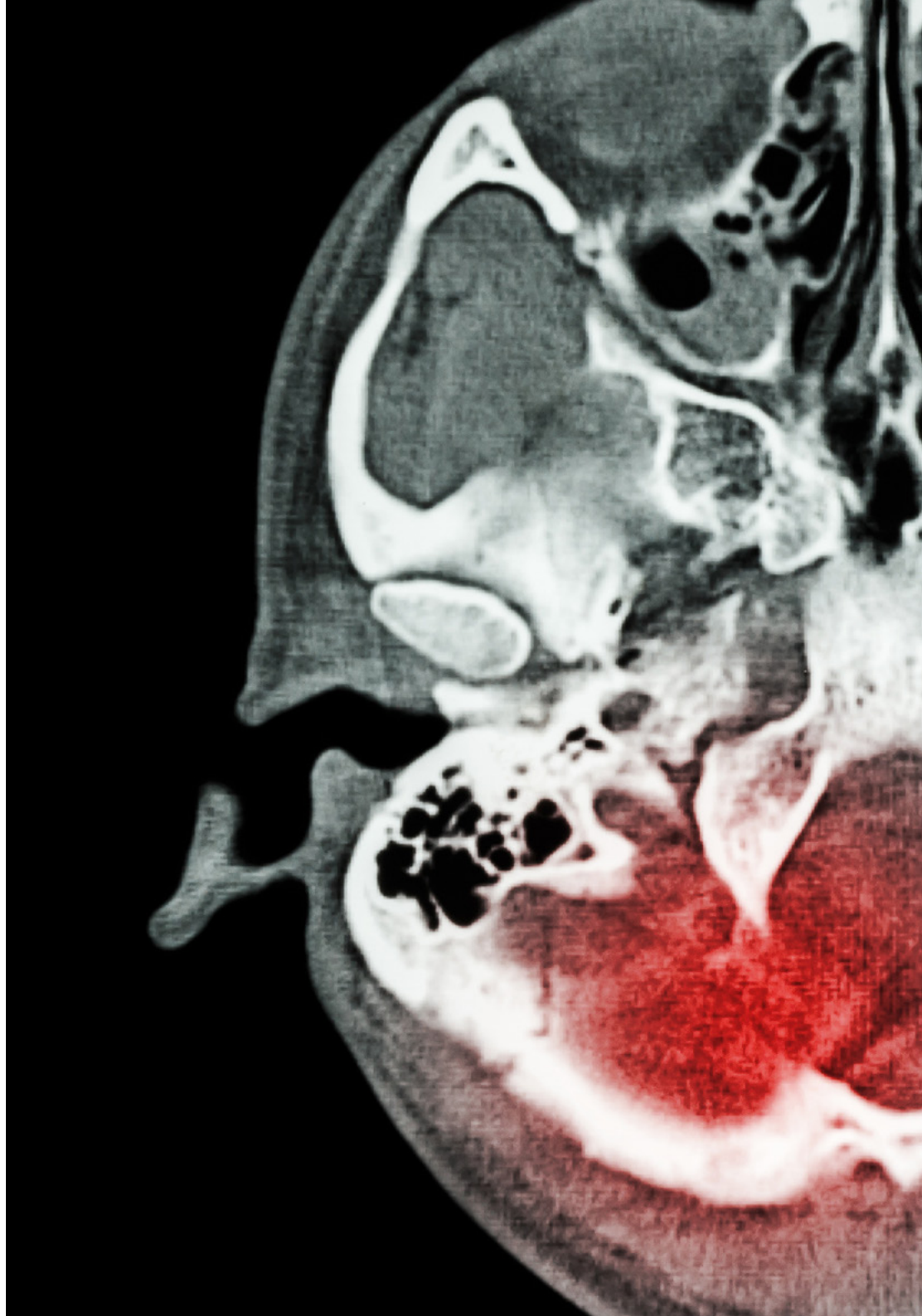
- 8.1. Congenital Brain Malformations
  - 8.1.1. Chiari Malformation
- 8.2. Open Spina Bifida. Myelomeningocele
- 8.3. Closed Spinal Dysraphisms
- 8.4. Simple Craniosynostosis
  - 8.4.1. Positional Skull Deformity
- 8.5. Syndromic Craniosynostosis
- 8.6. Vascular Pathology in Children
- 8.7. Supratentorial Tumors in Pediatric Patients
- 8.8. Infratentorial Tumors in Pediatric Patients
- 8.9. Hydrocephalus. Diagnosis and Classification
  - 8.9.1. Posthemorrhagic Hydrocephalus of Prematurity
  - 8.9.2. Chronic Adult Hydrocephalus
- 8.10. Hydrocephalus Treatment

### Module 9. Spinal Pathology. Degenerative Spine

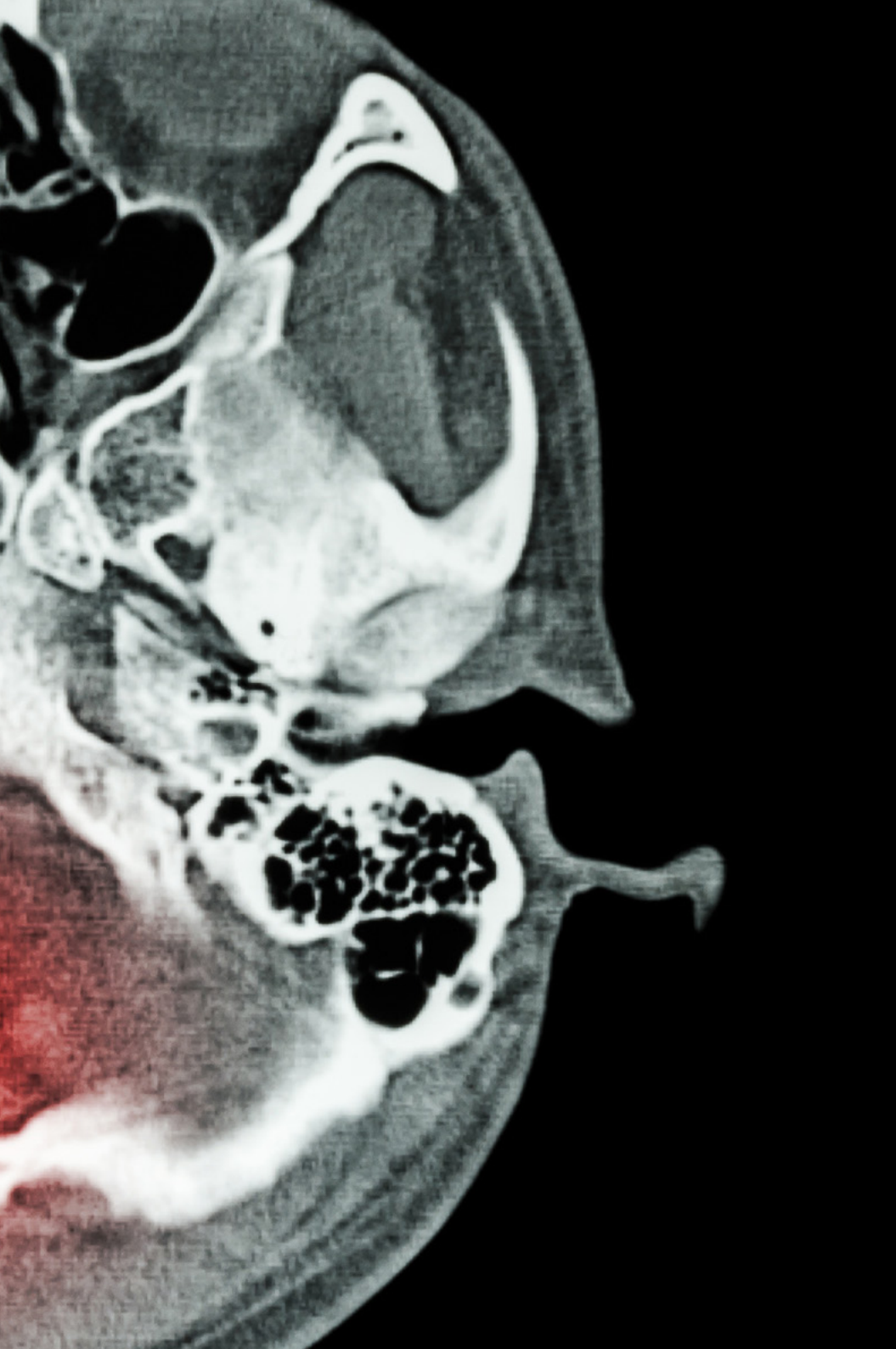
- 9.1. Lumbar Degenerative Disc Disease
- 9.2. Surgical Indication in Lumbar Disc Herniation and Lumbar Spinal Stenosis
- 9.3. Classification and Treatment of Lumbar Spondylolisthesis
- 9.4. Indications for Lumbar Fusion in Lumbar Degenerative Pathology
- 9.5. Lumbar Fusion Surgical Techniques
- 9.6. Principles of Sagittal Balance and Application to Spine Surgery
- 9.7. Application of Minimally Invasive Surgery in Lumbar Pathology
- 9.8. Herniated Cervical Disc. Surgical Techniques
- 9.9. Cervical Canal Stenosis and Cervical Myelopathy
  - 9.9.1. Criteria for Choosing the Surgical Approach
- 9.10. Herniated Thoracic Disc
  - 9.10.1. Surgical Techniques in the Treatment of Herniated Thoracic Disc

### Module 10. Spinal Pathology. Tumor, Fracture, and Infection

- 10.1. Evaluation of Patients with Post-Traumatic Spinal Cord Injury
- 10.2. Treatment of Patients with Post-Traumatic Spinal Cord Injury
- 10.3. Atlas and Axis Fractures
- 10.4. Classifications and Treatment Indications for Subaxial Cervical Fractures
- 10.5. Classifications and Surgical Indications for Dorso-Lumbar Fractures
- 10.6. Primary Spinal Tumors
- 10.7. Metastatic Spinal Tumors
- 10.8. Extramedullary Intradural Spinal Tumors
- 10.9. Intramedullary Spinal Tumors
- 10.10. Infectious Spondylodiscitis
  - 10.10.1. Surgical Treatment Indications
  - 10.10.2. Postoperative Discitis







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*Specialize in the surgical approach to Congenital Malformations, Hydrocephalus, Brain Tumors and Refractory Epilepsy in children”*

04

# Teaching Objectives

This program is designed to equip specialists with the knowledge and skills necessary to meet the challenges of today's Neurosurgery. Through an evidence-based approach, it delves into advanced surgical techniques, minimally invasive surgery and the use of cutting-edge technology. In addition, it promotes safe clinical decision-making and the development of sound surgical judgment. Thanks to this constant updating, students will be able to optimize their professional practice, improve surgical outcomes and provide more precise care, ensuring a positive impact on the quality of life of their patients.



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*Acquire in-depth knowledge in the approach to tumors and vascular diseases in one of the most complex regions of the nervous system”*



## General Objectives

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- ♦ Gain a deeper understanding of the principles and advanced techniques of neurosurgery for managing complex nervous system disorders
- ♦ Analyze the latest advancements in neuroimaging, neuronavigation, and minimally invasive surgery applied to neurosurgical practice
- ♦ Develop skills for evidence-based clinical decision-making through the analysis of real cases
- ♦ Examine the most effective surgical treatment strategies for brain tumors, vascular diseases, and traumatic brain injuries
- ♦ Explore comprehensive management of functional disorders and the application of innovative techniques such as deep brain stimulation
- ♦ Identify updated protocols for pediatric neurosurgery, addressing congenital malformations and neurological pathologies in children
- ♦ Evaluate specialized surgical techniques in skull base surgery and peripheral nerve procedures
- ♦ Integrate cutting-edge technological tools to optimize precision and safety in neurosurgical procedures
- ♦ Strengthen the development of solid surgical judgment to improve the planning and execution of complex interventions
- ♦ Promote continuous updating and specialization in a field where innovation is key to professional excellence





## Specific Objectives

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### Module 1. General Concepts in Neurosurgery

- ♦ Understand the anatomical and physiological principles of the central and peripheral nervous systems
- ♦ Identify the fundamentals of modern neurosurgery and its technological evolution
- ♦ Analyze the main diagnostic methods and neuroimaging tools used in neurosurgical practice
- ♦ Explore the selection criteria for different neurosurgical interventions

### Module 2. Traumatic Brain Injury and Peripheral Nerve Pathology

- ♦ Evaluate the different types of traumatic brain injury and their clinical implications
- ♦ Apply advanced strategies for neurosurgical management of cranial trauma and its complications
- ♦ Examine peripheral nerve pathologies and surgical treatment options
- ♦ Differentiate the most effective microsurgical approaches for nerve injury repair

### Module 3. Vascular Pathology I. Subarachnoid Hemorrhage and Aneurysmal Disease

- ♦ Analyze the pathophysiology and risk factors associated with subarachnoid hemorrhage
- ♦ Explore various surgical and endovascular approaches in the treatment of cerebral aneurysms
- ♦ Identify perioperative management protocols for patients with subarachnoid hemorrhage
- ♦ Evaluate common complications and their impact on patient outcomes

### Module 4. Vascular Pathology II. Vascular Malformations and Neurosurgical Stroke Treatment

- ♦ Differentiate types of vascular malformations and their therapeutic implications
- ♦ Examine surgical and endovascular treatment options for arteriovenous malformations
- ♦ Address neurosurgical management of ischemic and hemorrhagic stroke
- ♦ Evaluate the role of neurosurgery in preventing and treating cerebrovascular complications

### Module 5. Intracranial Tumor Pathology I

- ♦ Identify different types of intracranial tumors and their histopathological classification
- ♦ Analyze surgical indications and the latest therapeutic approaches in neuro-oncology
- ♦ Explore image-guided surgical techniques to enhance tumor resection precision
- ♦ Evaluate adjuvant treatments such as radiotherapy and chemotherapy in brain tumor management

### Module 6. Intracranial Tumor Pathology II

- ♦ Deepen the surgical approach to high-grade brain tumors and complex lesions
- ♦ Explore functional preservation techniques in intracranial tumor surgery
- ♦ Evaluate advances in personalized therapies for cerebral neoplasms
- ♦ Analyze postoperative follow-up and rehabilitation in neuro-oncology patients

### Module 7. Functional Neurosurgery

- ♦ Examine surgical indications for treatment of refractory epilepsy and movement disorders
- ♦ Explore the principles and applications of deep brain stimulation
- ♦ Evaluate neurosurgical procedures for chronic pain and spasticity management
- ♦ Analyze the impact of functional neurosurgery on patient quality of life

### Module 8. Pediatric Neurosurgery and Cerebrospinal Fluid (CSF) Pathology

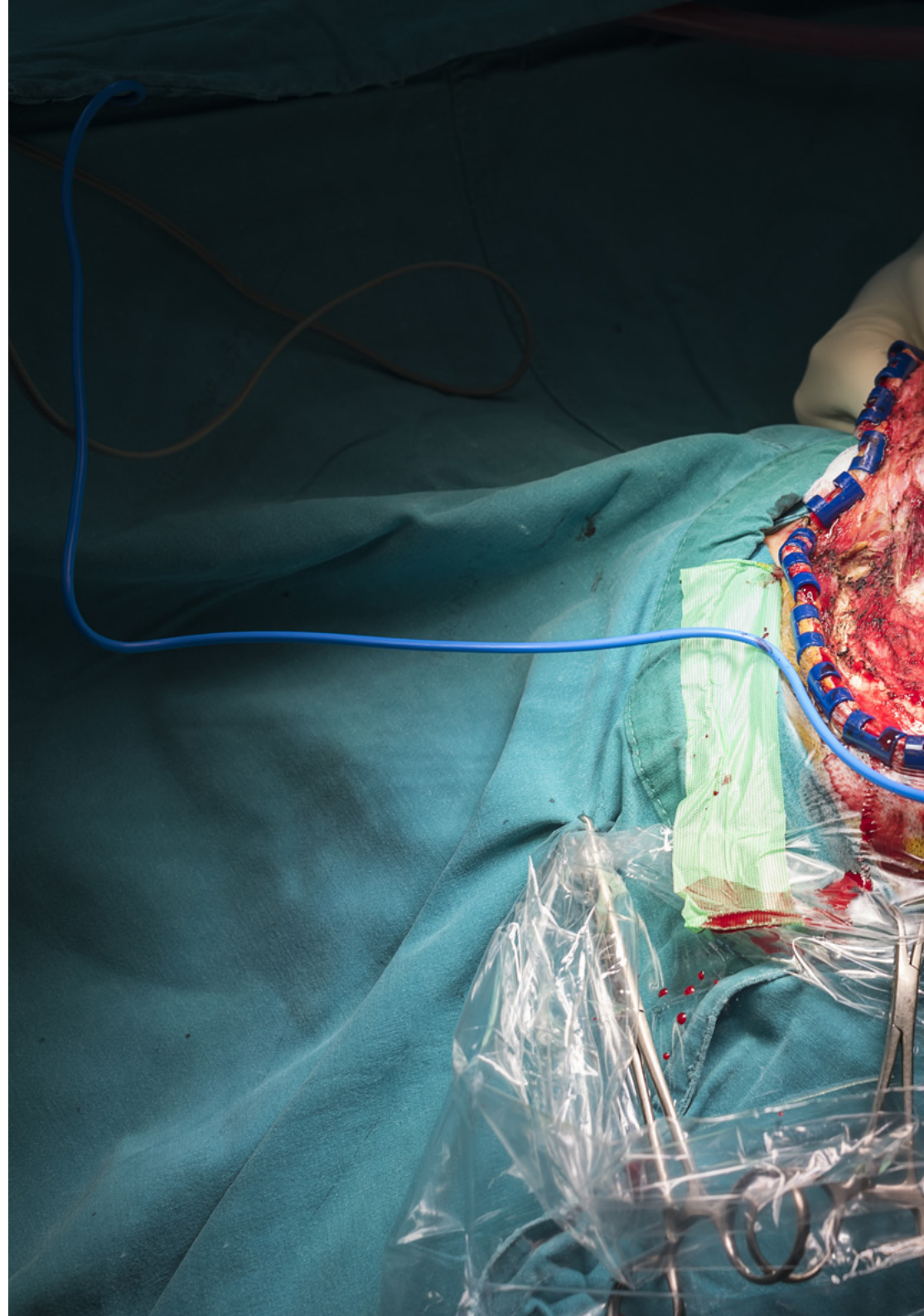
- ♦ Identify key neurosurgical pathologies in the pediatric population and their treatments
- ♦ Examine surgical approaches to correcting congenital nervous system malformations
- ♦ Analyze hydrocephalus management and advances in ventricular shunting
- ♦ Explore the impact of neurosurgical treatment on child neurological development

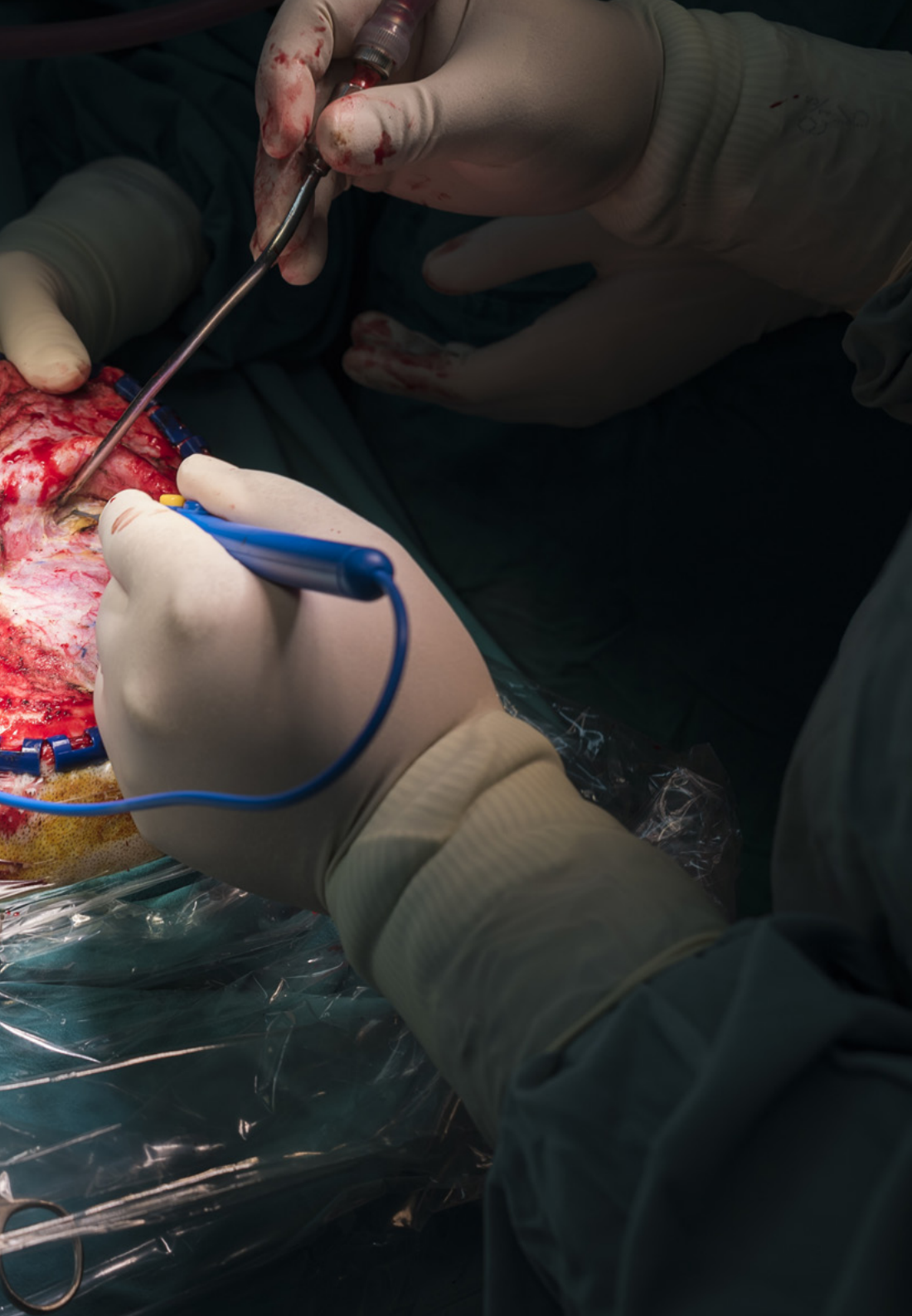
### Module 9. Degenerative Spinal Pathology

- ♦ Differentiate major degenerative spinal diseases and their clinical progression
- ♦ Explore the most effective surgical approaches for treating disc herniations and spinal stenosis
- ♦ Evaluate advances in minimally invasive surgery for degenerative spinal conditions
- ♦ Analyze rehabilitation strategies and pain management in spinal pathology patients

### Module 10. Traumatic, Tumoral, and Infectious Spinal Pathology

- ♦ Examine different types of spinal cord traumatic injuries and their surgical management
- ♦ Identify the most common spinal tumors and surgical treatment strategies
- ♦ Explore neurosurgical approaches to spinal infections and their impact on neurological function
- ♦ Evaluate the role of surgery in restoring spinal stability and functionality





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*Study advanced surgical strategies for treating patients with Drug-Resistant Epilepsy”*

# 05

# Study Methodology

TECH is the world's first university to combine the **case study** methodology with **Relearning**, a 100% online learning system based on guided repetition.

This disruptive pedagogical strategy has been conceived to offer professionals the opportunity to update their knowledge and develop their skills in an intensive and rigorous way. A learning model that places students at the center of the educational process giving them the leading role, adapting to their needs and leaving aside more conventional methodologies.





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*TECH will prepare you to face new challenges in uncertain environments and achieve success in your career”*

## The student: the priority of all TECH programs

In TECH's study methodology, the student is the main protagonist.

The teaching tools of each program have been selected taking into account the demands of time, availability and academic rigor that, today, not only students demand but also the most competitive positions in the market.

With TECH's asynchronous educational model, it is students who choose the time they dedicate to study, how they decide to establish their routines, and all this from the comfort of the electronic device of their choice. The student will not have to participate in live classes, which in many cases they will not be able to attend. The learning activities will be done when it is convenient for them. They can always decide when and from where they want to study.

“

*At TECH you will NOT have live classes  
(which you might not be able to attend)”*



### The most comprehensive study plans at the international level

TECH is distinguished by offering the most complete academic itineraries on the university scene. This comprehensiveness is achieved through the creation of syllabi that not only cover the essential knowledge, but also the most recent innovations in each area.

By being constantly up to date, these programs allow students to keep up with market changes and acquire the skills most valued by employers. In this way, those who complete their studies at TECH receive a comprehensive education that provides them with a notable competitive advantage to further their careers.

And what's more, they will be able to do so from any device, pc, tablet or smartphone.

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*TECH's model is asynchronous, so it allows you to study with your pc, tablet or your smartphone wherever you want, whenever you want and for as long as you want”*

## Case Studies and Case Method

The case method has been the learning system most used by the world's best business schools. Developed in 1912 so that law students would not only learn the law based on theoretical content, its function was also to present them with real complex situations. In this way, they could make informed decisions and value judgments about how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

With this teaching model, it is students themselves who build their professional competence through strategies such as Learning by Doing or Design Thinking, used by other renowned institutions such as Yale or Stanford.

This action-oriented method will be applied throughout the entire academic itinerary that the student undertakes with TECH. Students will be confronted with multiple real-life situations and will have to integrate knowledge, research, discuss and defend their ideas and decisions. All this with the premise of answering the question of how they would act when facing specific events of complexity in their daily work.



## Relearning Methodology

At TECH, case studies are enhanced with the best 100% online teaching method: Relearning.

This method breaks with traditional teaching techniques to put the student at the center of the equation, providing the best content in different formats. In this way, it manages to review and reiterate the key concepts of each subject and learn to apply them in a real context.

In the same line, and according to multiple scientific researches, reiteration is the best way to learn. For this reason, TECH offers between 8 and 16 repetitions of each key concept within the same lesson, presented in a different way, with the objective of ensuring that the knowledge is completely consolidated during the study process.

*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.*



## A 100% online Virtual Campus with the best teaching resources

In order to apply its methodology effectively, TECH focuses on providing graduates with teaching materials in different formats: texts, interactive videos, illustrations and knowledge maps, among others. All of them are designed by qualified teachers who focus their work on combining real cases with the resolution of complex situations through simulation, the study of contexts applied to each professional career and learning based on repetition, through audios, presentations, animations, images, etc.

The latest scientific evidence in the field of Neuroscience points to the importance of taking into account the place and context where the content is accessed before starting a new learning process. Being able to adjust these variables in a personalized way helps people to remember and store knowledge in the hippocampus to retain it in the long term. This is a model called Neurocognitive context-dependent e-learning that is consciously applied in this university qualification.

In order to facilitate tutor-student contact as much as possible, you will have a wide range of communication possibilities, both in real time and delayed (internal messaging, telephone answering service, email contact with the technical secretary, chat and videoconferences).

Likewise, this very complete Virtual Campus will allow TECH students to organize their study schedules according to their personal availability or work obligations. In this way, they will have global control of the academic content and teaching tools, based on their fast-paced professional update.



*The online study mode of this program will allow you to organize your time and learning pace, adapting it to your schedule”*

### 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 assess 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.

## The university methodology top-rated by its students

The results of this innovative teaching model can be seen in the overall satisfaction levels of TECH graduates.

The students' assessment of the teaching quality, the quality of the materials, the structure of the program and its objectives is excellent. Not surprisingly, the institution became the top-rated university by its students according to the global score index, obtaining a 4.9 out of 5.

*Access the study contents from any device with an Internet connection (computer, tablet, smartphone) thanks to the fact that TECH is at the forefront of technology and teaching.*

*You will be able to learn with the advantages that come with having access to simulated learning environments and the learning by observation approach, that is, Learning from an expert.*



As such, the best educational materials, thoroughly prepared, will be available in this program:



#### 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.

This content is then adapted in an audiovisual format that will create our way of working online, with the latest techniques that allow us to offer you high quality in all of the material that we provide you with.



#### Practicing Skills and Abilities

You will carry out activities to develop specific competencies and skills in each thematic field. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop within the framework of the globalization we live in.



#### Interactive Summaries

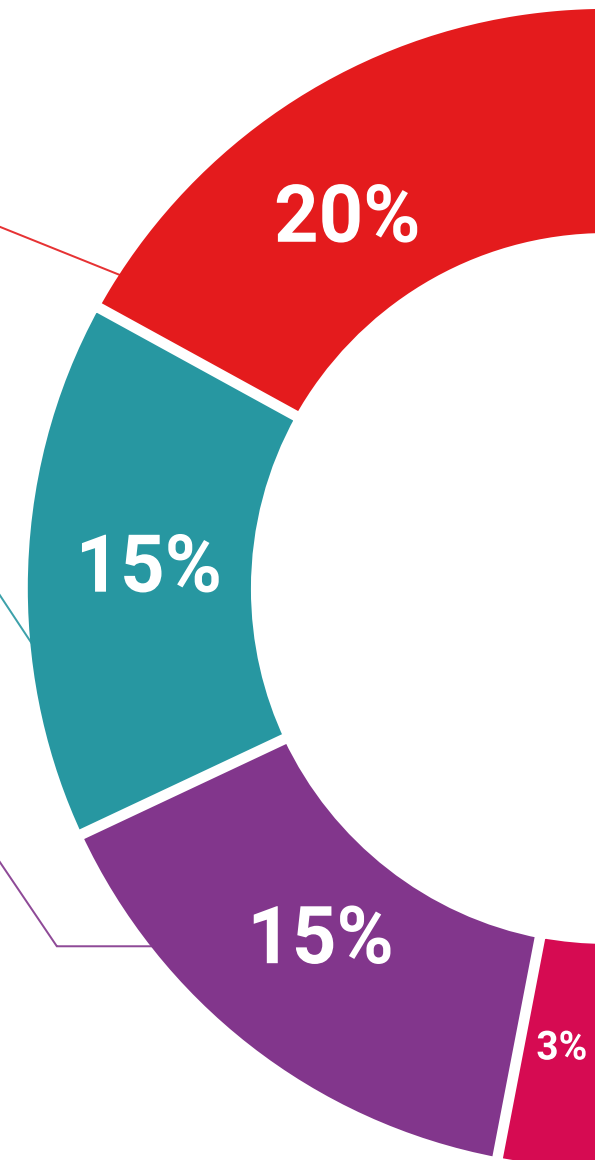
We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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

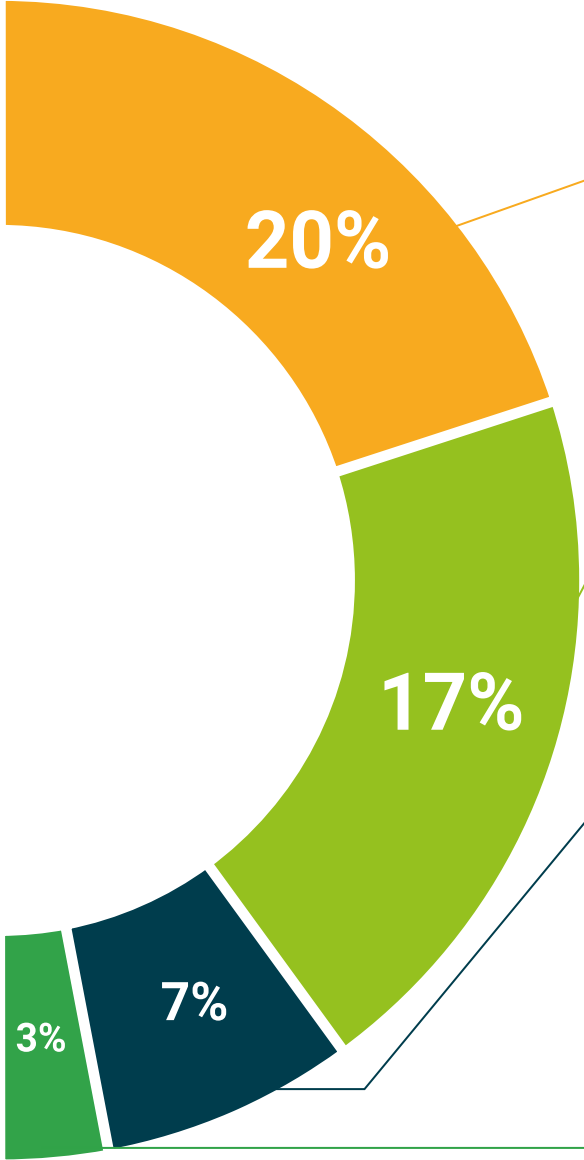


#### Additional Reading

Recent articles, consensus documents, international guides... In our virtual library you will have access to everything you need to complete your education.







**Case Studies**

Students will complete a selection of the best case studies in the field. Cases that are presented, analyzed, and supervised by the best specialists in the world.



**Testing & Retesting**

We periodically assess and re-assess your knowledge throughout the program. We do this on 3 of the 4 levels of Miller's Pyramid.



**Classes**

There is scientific evidence suggesting that observing third-party experts can be useful.  
Learning from an expert strengthens knowledge and memory, and generates confidence for 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

## Teaching Staff

The faculty of this academic program is made up of renowned specialists with extensive clinical and research experience. Their interdisciplinary and up-to-date approach ensures a solid and cutting-edge preparation in Neurosurgery. As such, faculty members combine their expertise with a constant commitment to innovation, providing students with practical and applicable knowledge in the professional setting. In addition, their experience in various medical environments and their participation in international projects enrich the educational perspective, offering a global and up-to-date vision of modern Neurosurgery.



“

*TECH trains you with the best! A teaching team composed of high-level professionals, leaders in Neurosurgery, with clinical and research experience”*

## Management



### Dr. Fernández Carballal, Carlos

- ♦ Head of Neurosurgery Section of the Spine Area of the Gregorio Marañón University General Hospital
  - ♦ Specialist Area Physician at Gregorio Marañón University General Hospital
  - ♦ Neurosurgeon at Beata María Ana Hospital
  - ♦ Neurosurgeon at Nuestra Señora del Rosario Clinic
  - ♦ Neurosurgeon in centers of Madrid Hospital Group
  - ♦ Doctor of Surgery from the Autonomous University of Madrid
  - ♦ Degree in Medicine from the University of Navarra
- Member of: SENE, NEURORAQUIS, SENFE and REIDE

## Professors

### Dr. García Leal, Roberto

- ♦ Head of Department. Department of Neurosurgery. General University Hospital Gregorio Marañón Madrid
- ♦ Master's Degree in Management and Planning of Health Care Centers and Services". Business Excellence School
- ♦ Academic Director of "Grupo CTO", an entity dedicated to Undergraduate and Postgraduate Health Education in Medicine and Nursing
- ♦ Bachelor's Degree in Medicine and Surgery from the Autonomous University of Madrid

### Dr. Mateo Sierra, Olga

- ♦ Specialist of the Neurosurgery Service at the Gregorio Marañón General University Hospital
- ♦ Professor of Neurosurgery from the Complutense University of Madrid
- ♦ Researcher specialized in Brain Tumors, Neuroanatomy and Microsurgery
- ♦ Degree in Medicine and Surgery from the Autonomous University of Madrid
- ♦ Member of: Society of Neurosurgery at the Autonomous Community of Madrid

**Dr. Ruiz Juretschke, Fernando**

- ♦ Specialist in Oncologic Neurosurgery
- ♦ specializing in Neurosurgery-oncology at the Ruber Internacional Hospital
- ♦ Specialist of the Neurosurgery Service at the Gregorio Marañón General University Hospital
- ♦ Teaching collaborator of the Faculty of Medicine at the Complutense University of Madrid
- ♦ Associate researcher in multiple national and international research projects across various fields of Neurosurgery
- ♦ Author of numerous national and international publications in the specialty
- ♦ Author of several book chapters of the specialty
- ♦ Completed training internships at: Universitätsklinikum Bonn, Universitätsklinikum Frankfurt, Mayo Clinic Rochester
- ♦ Doctor of Medicine, Cum Laude, from the Complutense University of Madrid
- ♦ Degree in Medicine from the Faculty of Medicine at the Autonomous University of Madrid
- ♦ Master's Degree in Neurological Oncology
- ♦ Member of: Spanish Society of Neurosurgery, Spanish Society of Skull Base Pathology and European Association of Neurosurgical Societies

**Dr. Iza Vallejo, Begoña**

- ♦ Assistant Physician of the Neurosurgery Service at the General University Hospital Gregorio Marañón
- ♦ Resident tutor at the Neurosurgery Service of the Gregorio Marañón General University Hospital
- ♦ Degree Medicine in the Faculty of Medicine from the University of the Basque Country/Euskal Herriko Unibertsitatea (UPV/EHU)
- ♦ Master's Degree in Neurological Oncology from the CEU Cardenal Herrera University
- ♦ University Expert in Diagnostic Management of Brain Tumors
- ♦ University Expert in Neurosurgery and Radiotherapeutic Management of Brain Tumors
- ♦ University Expert in Management of Brain Metastases, Comorbidities and Complications in Cancer with Neurological Affection, CEU Cardenal Herrera University

**Dr. Garbizu Vidorreta, José Manuel**

- ♦ Neurosurgeon of the Clavel Institute at the San Francisco de Asís Hospital
- ♦ Neurosurgeon Specialist in Complex Pathology of the Spine and Functional Neurosurgery at the Gregorio Marañón General University Hospital
- ♦ Doctorate in Neurosurgery from the Autonomous University of Madrid
- ♦ Degree in Medicine from the University of Cantabria
- ♦ Rotation in Pediatric Neurosurgery at Necker-Enfants Malades Hospital Paris, France
- ♦ Rotation in Oncological Neurosurgery at the Centre Hospitalier Universitaire Gui de Chauliac

**Dr. Vargas López, Antonio José**

- ◆ Neurosurgeon at the Torrecárdenas University Hospital
- ◆ Neurosurgeon at SegurCaixa Adeslas
- ◆ Neurosurgeon at Vithas Almeria Hospital
- ◆ Service in the Department of Neurology at the University of Pittsburgh. United States
- ◆ Service in the Department of Neurosurgery at the University of California. San Francisco, United States
- ◆ Specialist in Neurosurgery at the Gregorio Marañón General University Hospital
- ◆ Teaching collaborator of the Degree in Medicine at the Complutense University of Madrid
- ◆ Degree in Medicine from the Complutense University of Madrid
- ◆ Member of: SENECA, SOANNE, Neurorraquis and SENEPE

**Dr. González Quarante, Laín Hermes**

- ◆ Neurosurgeon at the University Clinic of Navarra
- ◆ Attending Physician specializing in Neurosurgery at Madrid Hospitals Group
- ◆ Rotating external physician in Vascular Neurosurgery at Teishinkai Hospital, Japan
- ◆ Fellow in Minimally Invasive Neurosurgery and Neuro-Oncology at Prince of Wales Private Hospital, Sydney
- ◆ Resident Physician in the Department of Pediatric Neurosurgery at 12 de Octubre Hospital
- ◆ Resident physician in the Department of Neurosurgery at the General University Hospital Gregorio Marañón
- ◆ Clinical Research Fellow in the Department of Neurosurgery and Neurosciences at National Taiwan University Hospital, Taipei
- ◆ Degree in Medicine and Surgery from the University of Barcelona

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

- ◆ Medical Specialist in Neurology and Neurosurgery
- ◆ Assistant Physician of the Neurosurgery Service at the General University Hospital Gregorio Marañón
- ◆ Degree in Medicine and Surgery from the Complutense University of Madrid
- ◆ Member of: Spanish Society of Neurosurgery

**Dr. Valera Melé, Marc**

- ◆ Neurosurgeon at the San Carlos Clinical Hospital
- ◆ Physician at the General University Hospital Gregorio Marañón
- ◆ Specialist in Pediatric Neurosurgery at Necker-Enfants Malades Hospital. Paris
- ◆ Degree in Medicine from the Hospital Clínic de Barcelona
- ◆ Master's in Neurological Oncology from the CEU Cardenal Herrera University

**Dr. Hernández Poveda, José Manuel**

- ◆ Specialist in Neurosurgery at the Gregorio Marañón General University Hospital
- ◆ Author of several scientific articles in specialized journals
- ◆ Author of communications for Neurosurgery congresses

**Dr. García Martín, Silvia**

- ◆ Resident Medical Intern in Neurosurgery at the Gregorio Marañón General University Hospital
- ◆ Internship in the Area of Intensive Care Medicine at the Viamed Santa Ángela de la Cruz Hospital
- ◆ Degree in Medicine from the University of Navarra Pamplona, Spain

**Dr. Moreno Gutiérrez, Ángela**

- ◆ Specialist of the Neurosurgery Service at the Gregorio Marañón General University Hospital
- ◆ Neurologist at the Creciendo Medical Center
- ◆ Neurologist at the University Hospital La Moraleja
- ◆ Neurologist at Milenium Medical Center Costa Rica
- ◆ Degree in Medicine and Surgery from the Autonomous University of Barcelona
- ◆ Member of: Spanish Society of Pediatric Neurosurgery, Madrid Society of Neurosurgery and Spanish Society of Pediatric Neurosurgery

**Dr. Darriba Alles, Juan Vicente**

- ◆ Assistant Physician of the Neurosurgery Service at the General University Hospital Gregorio Marañón
- ◆ Specialization in Neurosurgery at the Central University Hospital of Asturias
- ◆ Degree in Medicine from the University of Oviedo
- ◆ Member of: Spanish Society of Neurosurgery

**Dr. Casitas Hernando, Vicente**

- ◆ Neurosurgeon at the Ruber Internacional Hospital
- ◆ Neurosurgeon at the Gregorio Marañón General University Hospital
- ◆ Resident in Neurosurgery at the Gregorio Marañón General University Hospital
- ◆ Fellowship in Neuroanatomy at Athens Microneurosurgery Laboratory. Greece
- ◆ Degree in Medicine from the Complutense University of Madrid
- ◆ Master's in Neurological Oncology from the CEU Cardenal Herrera University
- ◆ University Expert in Diagnostic Management of Brain Tumors by CEU Cardenal Herrera University

07

# Certificate

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





“

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

This private qualification will allow you to obtain a diploma for the **Professional Master's Degree in 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.

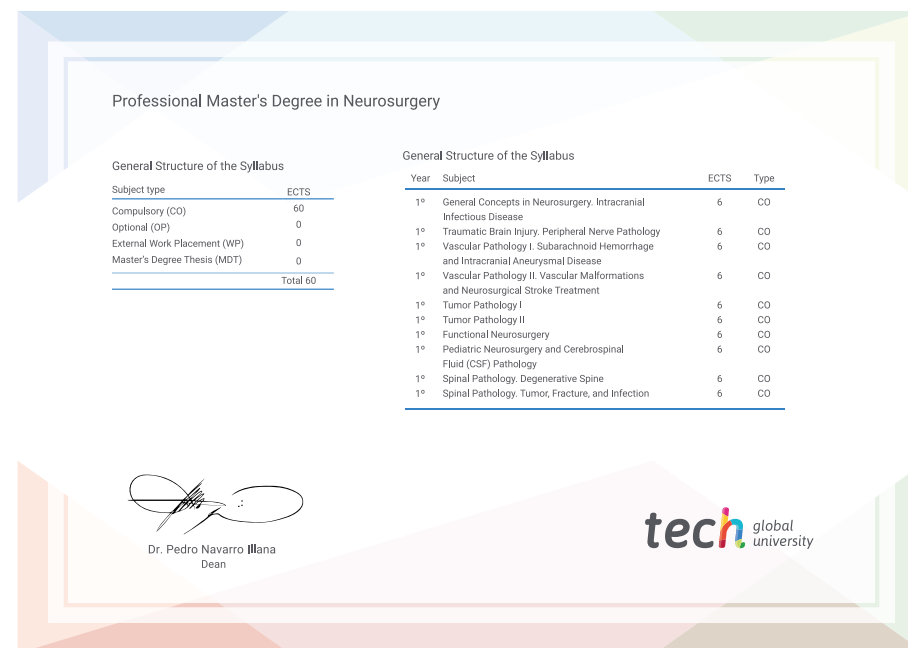
This **TECH Global University** private qualification, is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Professional Master's Degree in Neurosurgery**

Modality: **online**

Duration: **12 months**

Accreditation: **60 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 quality  
development language  
virtual classroom



## Professional Master's Degree

### Neurosurgery

- » Modality: online
- » Duration: 12 months
- » Certificate: TECH Global University
- » Accreditation: 60 ECTS
- » Schedule: at your own pace
- » Exams: online

# Professional Master's Degree Neurosurgery

