

# Postgraduate Diploma

## Brain Tumor Neurosurgery and Radiotherapy Management





## Postgraduate Diploma

### Brain Tumor Neurosurgery and Radiotherapy Management

Course Modality: **Online**

Duration: **6 months.**

Certificate: **TECH Technological University**

**16 ECTS Credits**

Teaching Hours: **400 hours.**

Website: [www.techtitute.com/medicine/postgraduate-diploma/postgraduate-diploma-brain-tumor-neurosurgery-radiotherapy-management](http://www.techtitute.com/medicine/postgraduate-diploma/postgraduate-diploma-brain-tumor-neurosurgery-radiotherapy-management)

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# 01

# Introduction

The field of Neuro-Oncology is evolving rapidly, with promising ongoing research that has the potential to influence clinical management in the short- to medium-term future. Many important advances have been reported recently, and other promising research will substantially impact the field in the coming years, especially in the areas of high-grade gliomas and brain metastases. In this Postgraduate Diploma, we present an overview of the current state of the field, highlighting the most recent key advances that will influence clinical management.



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*Improve your knowledge in Brain Tumor Neurosurgery and Radiotherapy Management through this program, where you will find the best didactic material with real clinical cases. Learn here about the latest advances in the specialty to perform quality medical practice”*

In this way, we analyze the diagnostic and therapeutic management of both primary and metastatic brain tumors. We will discuss current technologies used for the resection of gliomas, such as awake craniotomy, fluorescence-guided surgery, neuronavigation, neuroendoscopy, among many others.

Another advance that we will see extensively comes from the hand of genomics whose advances have made it possible to learn that more than half of pediatric brain tumors have genetic abnormalities that could help in diagnosis or treatment, which is reflected in the recent decision of the World Health Organization to classify such tumors by genetic alterations, rather than by tumor type. Thus, precision medicine for pediatric brain tumors is now a reality, and possibly in the near future also for adult brain tumors.

Finally, another topic that we will analyze in the Postgraduate Diploma, to highlight some relevant ones, and which is gaining ground in other tumors, is immunotherapy. Immunotherapy has shown promise for the treatment of glioblastoma multiforme. This is because glioblastoma multiforme exhibits powerful adaptive capabilities, a relative lack of immunogenicity, an immunosuppressive tumor microenvironment and intratumoral heterogeneity. Therefore, experts agree that immune-targeted therapies are likely to play a central role in improving the durability of treatment. To date, clinical trials of several vaccine therapies using autologous tumor antigens or specific tumor-associated antigenic peptides with adjuvants have been conducted to treat patients with high-grade gliomas. Therefore, immunotherapy, especially combination therapy, may be a promising strategy for the treatment of patients with brain tumors.

In short, many concepts are currently being investigated that we hope will have a positive influence on the therapeutic treatment of metastatic and primary tumors of the central nervous system, and which we will present since many have already been integrated into routine clinical practice and others will soon form the panoply of options in the broad diagnostic or therapeutic arsenal that we have today.

This **Postgraduate Diploma in Brain Tumor Neurosurgery and Radiotherapy Management** contains the most complete and up-to-date scientific program on the market. The most important features of the program include:

- More than 75 clinical cases presented by experts in Brain Tumor Neurosurgery and Radiotherapy Management
- The graphic, schematic, and eminently practical contents of which they are composed provide scientific and practical information on the disciplines that are essential for professional practice
- Latest diagnostic and therapeutic developments on the evaluation, diagnosis and intervention in Brain Tumor Neurosurgery and Radiotherapy Management contains practical exercises to perform the self-assessment process to improve learning.
- Iconography of clinical and diagnostic imaging tests
- Algorithm-based interactive learning system for decision-making in the presented clinical situations
- With special emphasis on evidence-based medicine and research methodologies in Brain Tumor Neurosurgery and Radiotherapy Management
- All this will be complemented by theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- Content that is accessible from any fixed or portable device with an Internet connection



*Update your knowledge through the Postgraduate Diploma in Brain Tumor Neurosurgery and Radiotherapy Management*

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*This Postgraduate may be the best investment you can make in the selection of a refresher program for two reasons: in addition to updating your knowledge of Brain Tumor Neurosurgery and Radiotherapy Management, you will obtain a qualification from TECH Technological University”*

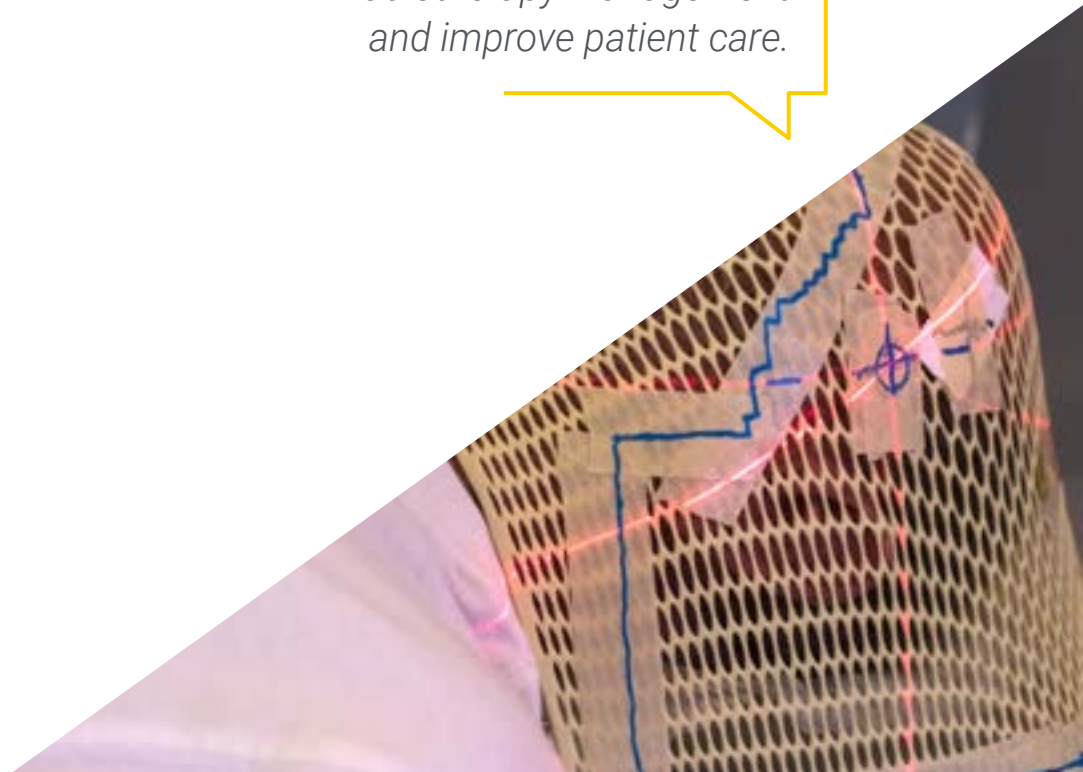
Its teaching staff includes professionals in the field of Brain Tumor Neurosurgery and Radiotherapy Management, who bring to this training the experience of their work, in addition to recognized specialists belonging to leading scientific societies.

The multimedia content developed with the latest educational technology will provide the professional with situated and contextual learning, i.e., a simulated environment that will provide an immersive training program to train in real situations.

This program is designed around Problem Based Learning, whereby the physician must try to solve the different professional practice situations that arise during the course. For this purpose, the physician will be assisted by an innovative interactive video system created by renowned and experienced experts in the field of Brain Tumor Neurosurgery and Radiotherapy Management with extensive teaching experience.

*Increase your decision-making confidence by updating your knowledge through this Postgraduate Diploma.*

*Take the opportunity to learn about the latest advances in Brain Tumor Neurosurgery and Radiotherapy Management and improve patient care.*



# 02 Objectives

The Postgraduate Diploma in Brain Tumor Neurosurgery and Radiotherapy Management is aimed at facilitating physician performance in treating neurological oncological pathologies.





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*This Postgraduate Diploma is designed for you to update your knowledge of Brain Tumor Neurosurgery and Radiotherapy Management, with the use of the latest educational technology, to contribute quality and safety to decision making, diagnosis, treatment and patient support”*



### General Objective

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- Create a global and updated vision of Brain Tumor Neurosurgery and Radiotherapy Management and all its aspects, allowing students to acquire useful knowledge while they generate interest in expanding the information and discovering its application in their daily practice





## Specific Objectives

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- Explain how the development of magnetic resonance imaging technology has improved diagnostic accuracy supported by functional methods such as diffusion, spectroscopy, perfusion and the BOLD technique
- Learn about the utility of multi-tracer PET-MRI imaging in the management of neuro-oncology patients, both in the characterization of primary injuries and during the follow-up of treated tumors
- Describe the utility of nuclear medicine in the diagnosis of neurological complications of oncological treatments that characterize multiple clinical entities and continue to be an important problem, especially in patients with longer life expectancy
- Delve deeper into the functional anatomy of the brain is useful to correlate specific symptoms with the location of injuries in specific areas, being useful for the study of language lateralization, memory and neuroplasticity and important applications in surgery in special locations such as the language area or the supplementary motor area
- Delve into radiotherapy treatment of both primary and metastatic brain tumors
- Understand the new design of personalized clinical trials given the evidence that selective drugs have therapeutic benefits in molecularly defined subgroups of patients
- Clinical trial results and meta-analyses with the greatest impact on clinical practice in brain tumors



*Make the most of the opportunity and take the step to get up to date on the latest developments in Neurologic Oncology”*

# 03

## Course Management

The program's teaching staff includes leading specialists in brain tumor neurosurgery and radiotherapy management and other related areas, who bring their years of work experience to this training program. Additionally, other recognized specialists participate in its design and preparation, which means that the program is developed in an interdisciplinary manner.





“

*Learn from leading professionals about the latest procedure advances in the field of Brain Tumor Neurosurgery and Radiotherapy Management”*

## Management



### Dr. Oruezábal Moreno, Mauro Javier

- ♦ Head of the medical Oncology Service at La Paz University Hospital since 2017.
- ♦ Research Fellow at University of Southampton (2016-present).
- ♦ Professional Master's Degree in Bioinformatics and Biostatistics UOC-UB (2016-present).
- ♦ Professional Master's Degree in Bioinformatics Analysis by the Pablo de Olavide University (2015-2016).
- ♦ Doctor of Medicine from the Complutense University of Madrid. Outstanding Cum Laude Qualification (2002).
- ♦ Member of the Spanish Society of Medical Oncology and GEINO Group (Spanish Research Group in Neuroncology).
- ♦ Specialist (MIR) in Medical Oncology, University Hospital San Carlos of Madrid (2000).
- ♦ Degree in Medicine and Surgery, University of Navarra (1995).

## Management



### Dr. Perez Martínez, David

- ♦ Head of the Neurology Department of the "12 de Octubre" University Hospital.
- ♦ Associated Professor in Medicine at the Complutense University of Madrid.(2012-present).
- ♦ Director of Neurowikia.com portal (2010-present).
- ♦ Director of the Brain Foundation (2010-2016).
- ♦ University Expert in Evidence-Based Medicine by the UNED (2007).
- ♦ University Expert in Probability and Statistics in Medicine, UNED (2003).
- ♦ MIR specialist in Neurology at the "12 de Octubre" University Hospital (1996-2000).
- ♦ Degree in Medicine from the Complutense University Madrid (1989 - 1995).

## Management



### Dr. Lagares Gómez-Abascal, Alfonso

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- ♦ Professional Master's Degree in Medical Management and Clinical Management from the National School of Health (2012- 2013).
- ♦ Doctor of Medicine from the Autonomous University Madrid. Outstanding Doctoral Thesis Award. (2004)
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- ♦ Degree in Medicine and Surgery from the Autonomous University of Madrid, (1996).

## Professors

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**Dr. Yebra Yebra, Miguel**

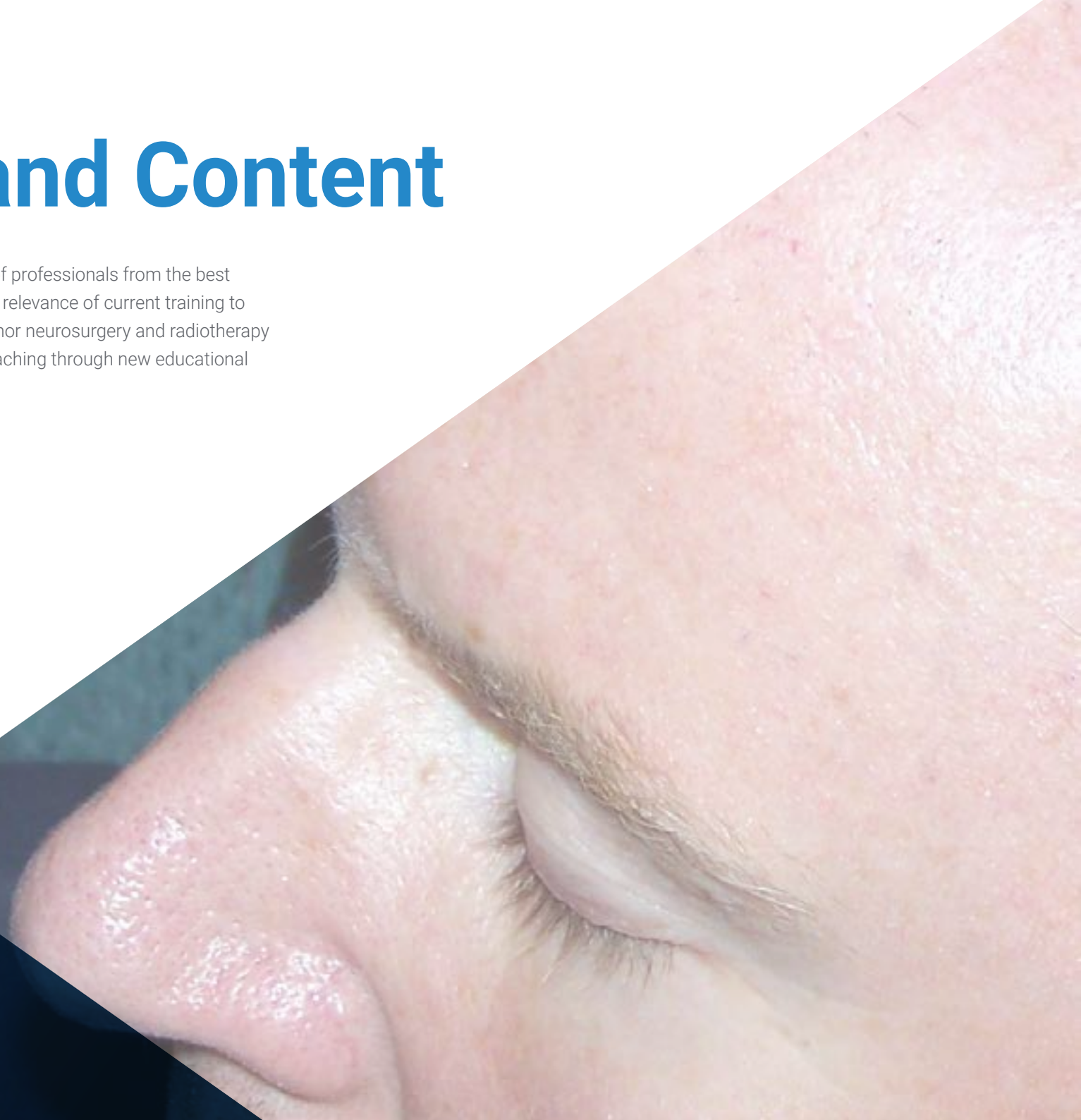
- ◆ Internal Medicine Service
- ◆ Rey Juan Carlos University Hospital



04

# Structure and Content

The content structure has been designed by a team of professionals from the best hospitals and universities in the country, aware of the relevance of current training to intervene in the diagnosis and treatment for brain tumor neurosurgery and radiotherapy management pathology, and committed to quality teaching through new educational technologies.







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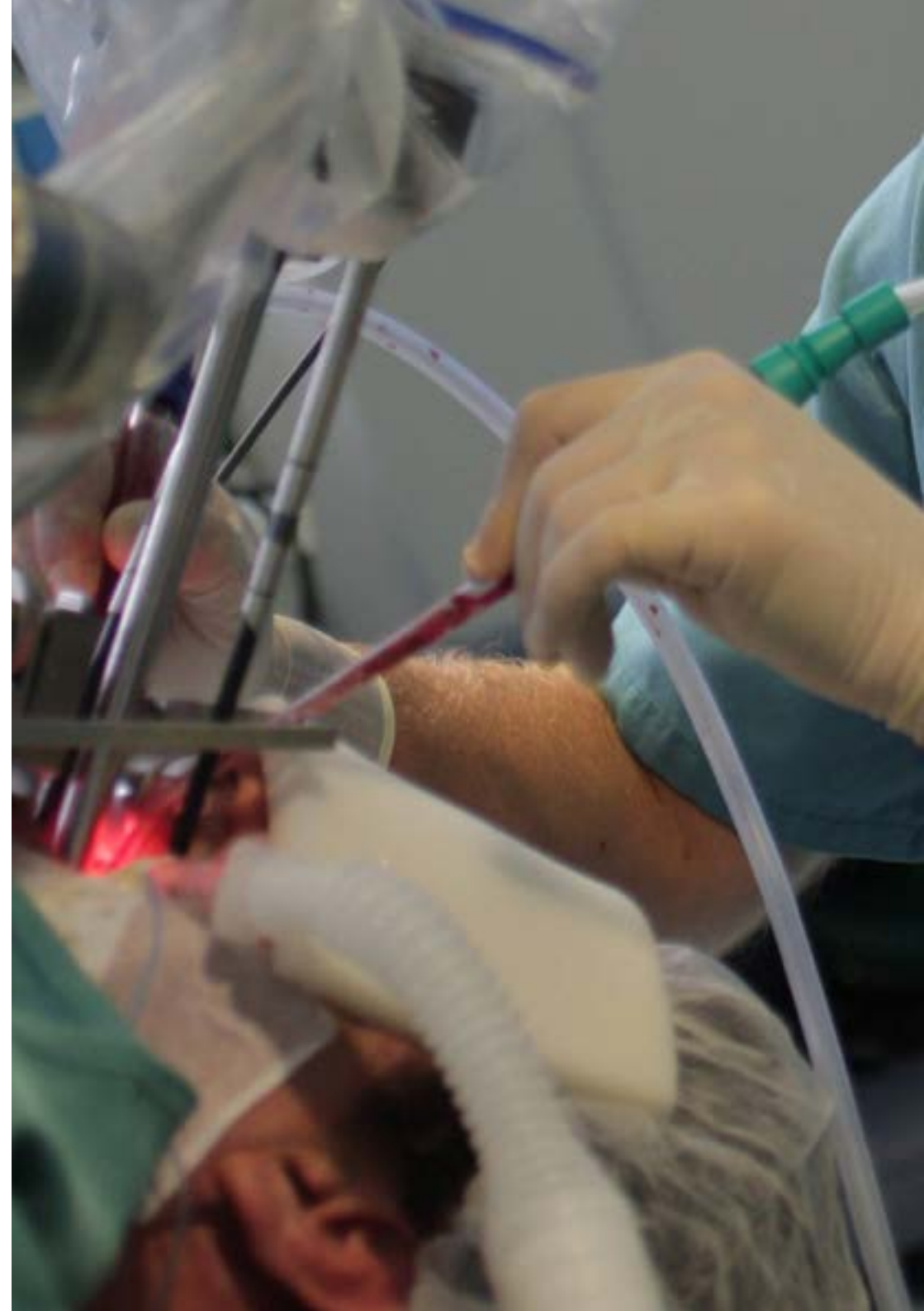
*This Postgraduate Diploma in Brain Tumor Neurosurgery and Radiotherapy Management contains the most complete and up-to-date scientific program on the market”*

## Module 1. Neurosurgery of Brain Tumors

- 1.1. General Surgical Strategy in the Treatment of Patients with Primary Brain Tumors
- 1.2. Neuromonitoring in Primary Brain Tumor Surgery
  - 1.2.1. Neurophysiological Basis
- 1.3. Neuromonitoring in Brainstem and Spinal Cord Tumor Surgery
- 1.4. New Technologies to Aid Surgical Treatment
  - 1.4.1. Neuronavigation.
  - 1.4.2. Intraoperative Imaging
  - 1.4.3. Fluorescence
- 1.5. Awake Patient Surgery
  - 1.5.1. Indications
- 1.6. Awake Patient Surgery
  - 1.6.1. Anesthetic Considerations
- 1.7. Awake Patient Surgery
  - 1.7.1. Neuropsychological Evaluation and Preparation Protocols
- 1.8. Surgery in Special Locations
  - 1.8.1. Supplementary Motor Area
- 1.9. Surgery in Special Locations
  - 1.9.1. Language Preservation

## Module 2. Radiotherapeutic and Pharmacological Management of Brain Tumors

- 2.1. Radiation Therapy Management of Primary Brain Tumors
- 2.2. Radiation Therapy Management of Brain Metastases
- 2.3. Clinical trials: New Concepts Based on Precision Medicine
- 2.4. Clinical trial results and meta-analyses with the greatest impact on clinical practice in brain tumors
- 2.5. Real World Data Studies: Generating Knowledge





### Module 3. Diagnostic and Therapeutic Algorithms for Brain Tumors

- 3.1. Low-Grade Gliomas
  - 3.1.1. Latest Developments in Diagnosis and Treatment
- 3.2. Current Results in Gliomas with Checkpoint Inhibitors
- 3.3. Management of Truncal Gliomas
- 3.4. Management of Spinal Cord Glial Tumors
- 3.5. Treatment Algorithm of Anaplastic Astrocytoma
- 3.6. Treatment Algorithm for Low-Grade Oligodendroglioma
- 3.7. Treatment Algorithm for High-Grade Oligodendroglioma
- 3.8. Treatment Algorithm for Glioblastoma Multiforme
- 3.9. Antiangiogenic Treatment of Glioblastoma Multiforme
- 3.10. Immunotherapy Treatment of Glioblastoma Multiforme
- 3.11. Evaluation of the Efficacy of Immunotherapy in Neuro-Oncology
- 3.12. Monitoring and Management of Immune Related Adverse Events
- 3.13. Treatment of Primary Brain Tumors in Older Adults
  - 3.13.1. What is the Best Strategy?



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

05

# Methodology

This training program provides you with a different way of learning. Our methodology uses a cyclical learning approach: *Re-learning*.

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



“

*Discover Re-learning, 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

In a given situation, what would you do? Throughout the program, you will be presented with multiple simulated clinical cases based on real patients, where you will have to investigate, establish hypotheses and, finally, 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 can experience a way of learning that is shaking the foundations of traditional universities around the world.*



According to Dr. Gervas, 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 potential 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 professional medical practice.

“

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

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

1. Students who follow this method not only grasp concepts, but also develop their mental capacity by evaluating real situations and applying their knowledge.
2. The learning process has a clear focus on practical skills that allow the 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.



## Re-learning Methodology

At TECH we enhance the Harvard case method with the best 100% online teaching methodology available: Re-learning.

Our 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, which represent a real revolution with respect to simply studying and analyzing cases.

*The physician will learn through real cases and by solving complex situations in simulated learning environments. These simulations are developed using state-of-the-art software to facilitate immersive learning.*





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

With this methodology we have trained more than 250,000 physicians with unprecedented success, in all clinical specialties regardless of the surgical load. All this in a highly demanding environment, where the students have a strong socio-economic profile and an average age of 43.5 years.

*Re-learning 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 (we learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

The overall score obtained by our learning system is 8.01, according to the highest international standards.



In this program you will have access to the best educational material, prepared with you in mind:



#### Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is really specific and precise.

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.



#### Latest Techniques and Procedures on Video

We introduce you to the latest techniques, to the latest educational advances, to the forefront of current medical techniques. All this, in first person, with the maximum rigor, explained and detailed for your assimilation and understanding. And best of all, you can watch them as many times as you want.



#### 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 unique multimedia content presentation training system 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 training.





**Expert-Led Case Studies and Case Analysis**

Effective learning ought to be contextual. Therefore, we will present you with real case developments in which the expert will guide you through 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 your knowledge throughout the program, through assessment and self-assessment activities and exercises: so that you can see how you are achieving your goals.



**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 in our difficult future decisions.



**Quick Action Guides**

We offer you the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help you progress in your learning.



06

# Certificate

The **Postgraduate Diploma in Brain Tumor Neurosurgery and Radiotherapy Management** guarantees, in addition to the most rigorous and updated training, access to a qualification issued by **TECH Technological University**.



“

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

This **Postgraduate Diploma in Brain Tumor Neurosurgery and Radiotherapy Management** contains the most complete and up-to-date scientific program on the market.

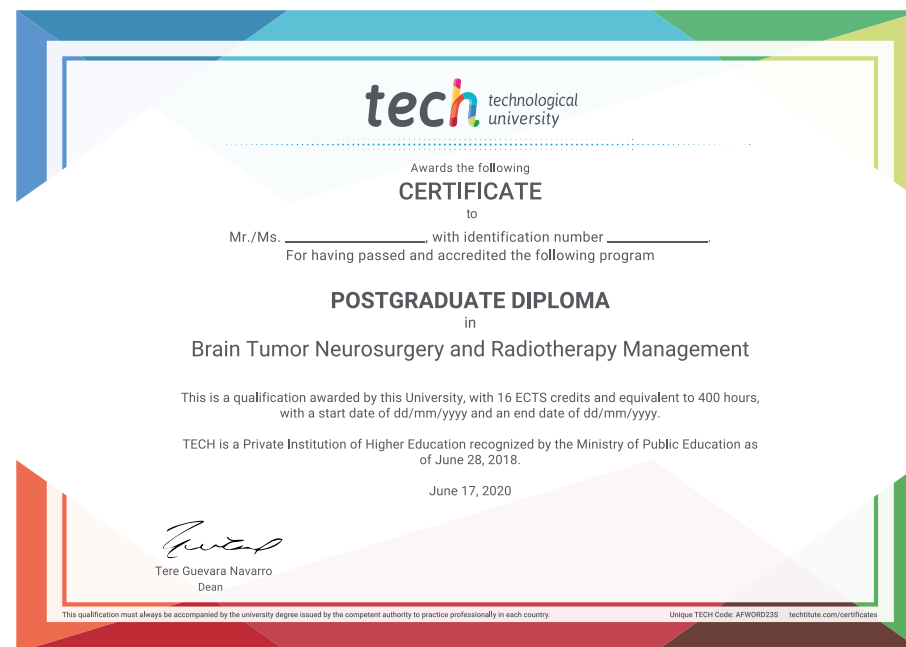
After the student has passed the assessments, they will receive their corresponding certificate issued by **TECH Technological University** via tracked delivery.

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

Title: **Postgraduate Diploma in Brain Tumor Neurosurgery and Radiotherapy Management**

ECTS: **16**

Official Number of Hours: **400 hours**.



\*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.

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



## Postgraduate Diploma

Brain Tumor  
Neurosurgery  
and Radiotherapy  
Management

Course Modality: Online

Duration: 6 months.

Certificate: TECH Technological University

16 ECTS Credits

Teaching Hours: 400 hours.

# Postgraduate Diploma

## Brain Tumor Neurosurgery and Radiotherapy Management

