

Internship Program

Neurosurgery



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Neurosurgery

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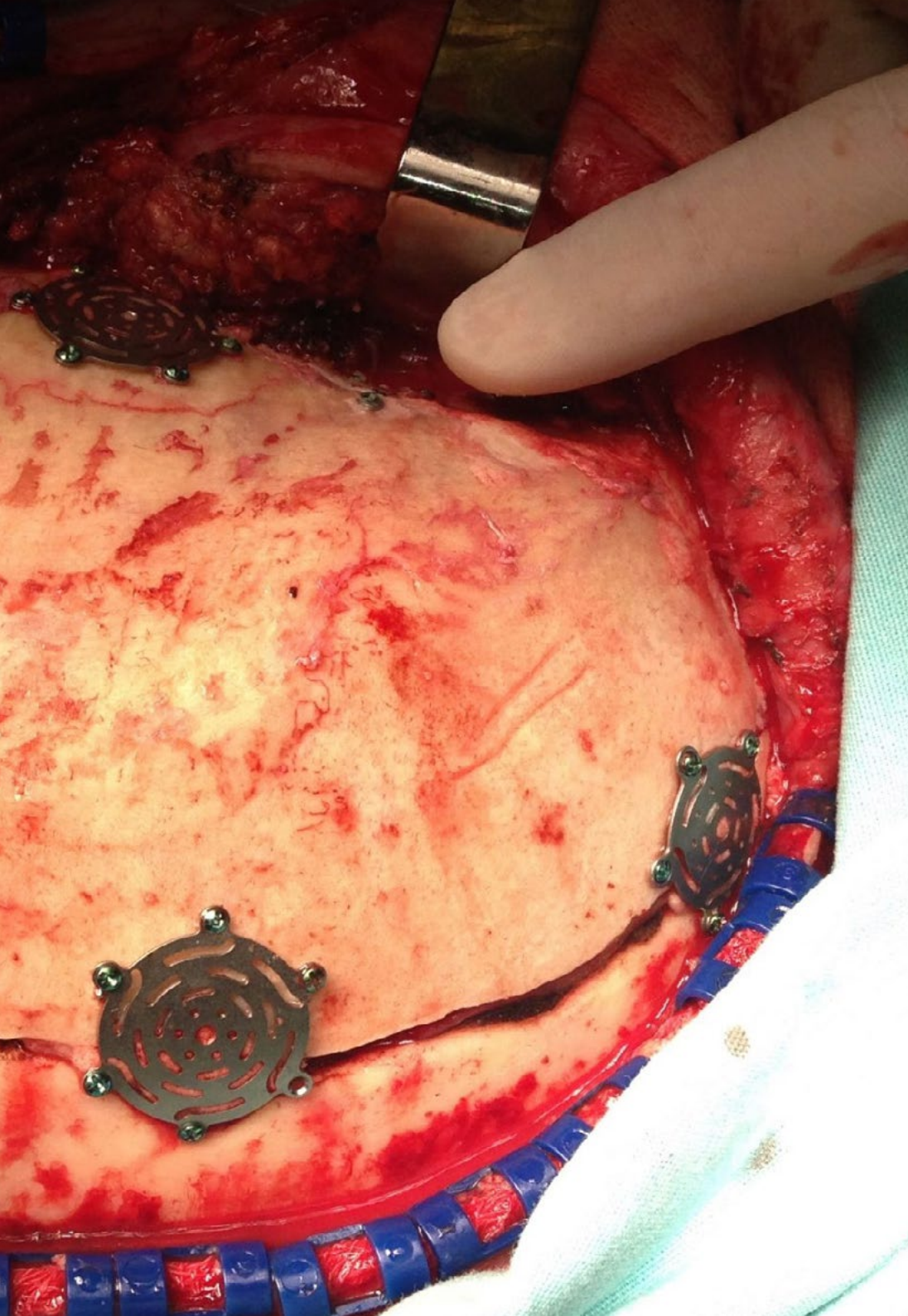
01 Introduction

Neurosciences are advancing by leaps and bounds and with them the development and application of novel neurosurgical techniques. Through them, it is possible to offer a more efficient treatment to pathologies such as brain tumors or epilepsy, among others. At the same time, physicians face the challenge of keeping up to date on these aspects with highly theoretical educational programs. In this context, this degree stands out from its competitors in the educational market by offering a totally practical, face-to-face and intensive preparation. This academic stay will take place for 3 weeks in a prestigious hospital institution, together with renowned experts in the neurosurgical field.



Incorporate the latest procedures for the removal and treatment of neuro-oncological tumors into your daily practice"





Minimally invasive surgical procedures have represented a considerable advance in medical science. In the case of neurosurgical procedures, its advantages are even greater than in other areas. That is why, at present, it is inconceivable that a professional in this specialty would not have a complete mastery of its applications. However, this is not the only subject on which neurosurgeons must remain up to date. In recent years, Neurosurgery has undergone a continuous evolution that is evidenced by the emergence of new strategies to intervene brain tumors, epilepsy, cerebrovascular pathologies, among others. Keeping up to date on these elements is a constant challenge for physicians, since the programs of study available to them pay more attention to the theoretical learning of these methods than to their practical development.

This problem will be solved through this TECH Internship Program that provides the specialist with an intensive and immersive face-to-face stay in a prestigious hospital center. During this educational moment, the graduate will have access to the most advanced technologies in the sector. You will also be able to apply the most modern techniques in the approach to real patients, acquiring the indispensable preparation from the very first moment. In addition, you will have the opportunity to study at Postgraduate Certificates in different cities and countries.

On the other hand, this program is different from others in the market because it consists of 120 hours of learning that are distributed in days from Monday to Friday, until completing 3 weeks. Also during these internships, students will be able to talk with top experts and gain experience from their distinguished careers. Likewise, they will be supported by an assistant tutor who will supervise all the progress necessary to achieve their educational objectives.

02

Why Study an Internship Program?

In the educational market, only TECH offers neurosurgery professionals the practical mastery of the most modern tools and novel surgical procedures in a program that lasts only 3 weeks. This Practical course applies an intensive study modality where, from the very beginning, the specialist will acquire skills and develop them in the clinical care of real patients. At the same time, thanks to the face-to-face and immersive nature of the degree, you will share experiences with highly prestigious experts in the health sector.



With this program, you will acquire advanced management of the most modern interventional diagnostic neurosurgical procedures"

1. Updating from the Latest Technology Available

Minimally invasive surgery is one of the techniques that has gained most ground in recent times in the neurosurgical field. For this reason, TECH offers its graduates direct and immersive learning of its techniques and applications in a 100% practical, face-to-face and immersive learning program that lasts only 3 weeks.

2. Gaining In-depth Knowledge from the Experience of Top Specialists

With this program, TECH wants to ensure health professionals the most modern experiences in Neurosurgery. For this purpose, it offers them a practical and face-to-face stay with the best experts in the field. In addition, it has created the figure of the adjunct tutor, responsible for coordinating the learning and development of new skills during the program.

3. Entering First-Class Clinical Environments

TECH maintains close ties with leading-edge centers around the world. In particular, he has coordinated this Internship Program with several prestigious institutions related to Neurosurgery. These entities will host physicians and provide them with access to the most innovative technologies and highly qualified healthcare personnel.

Although the educational environment has many programs in neurosurgery, none of them emphasizes the updating of the physician in a 100% practical way. Thus, TECH provides a unique educational program, where the direct approach to real patients from the very beginning and the development of complex care skills are the main focus.

TECH has a wide network of agreements and contacts that help you choose, for this Internship Program, the most competitive institutions on the international scene. Thus, the neurosurgeon will complete this first level on-site stay in centers located in different latitudes, where he/she will apply the main procedures and technologies with which the sector innovates today.

“You will have full practical immersion
at the center of your choice”

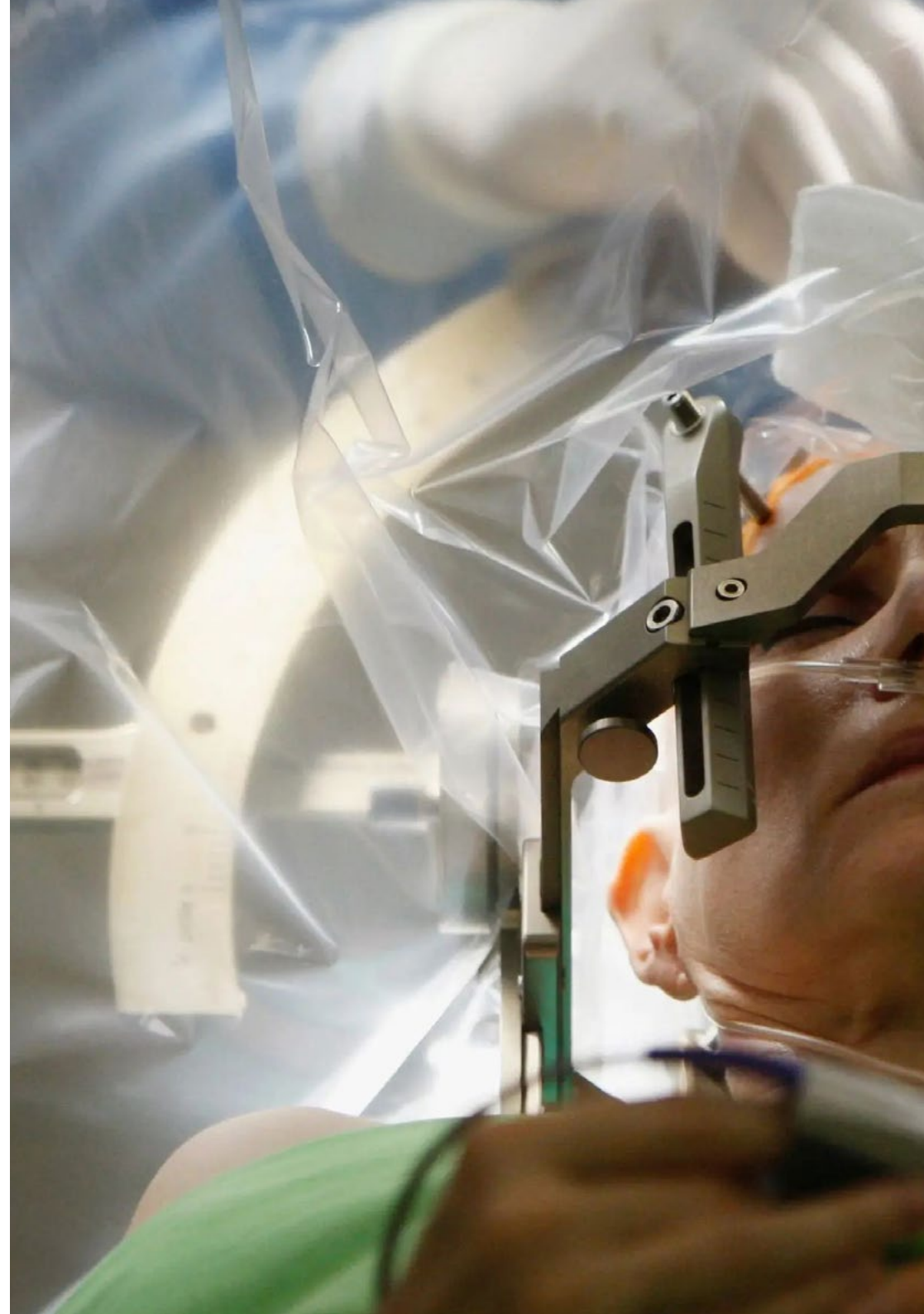
03 Objectives

The main objective of this Internship Program is to update specialists on the latest trends in the surgical approach to brain pathologies. At the same time, this educational process constitutes a unique learning opportunity as it is designed to develop this update in an eminently practical, face-to-face and immersive way.



General Objectives

- ♦ Master the latest diagnostic and therapeutic guidelines, based on the most recent scientific evidence, which have contributed to the practice of Neurosurgery
- ♦ To broaden knowledge related to the specialty, focused from an eminently practical perspective to facilitate the application of the information to clinical practice
- ♦ Learn the latest surgical techniques that have been implemented in recent years along with the knowledge of technological development in multiple areas of Neurosurgery

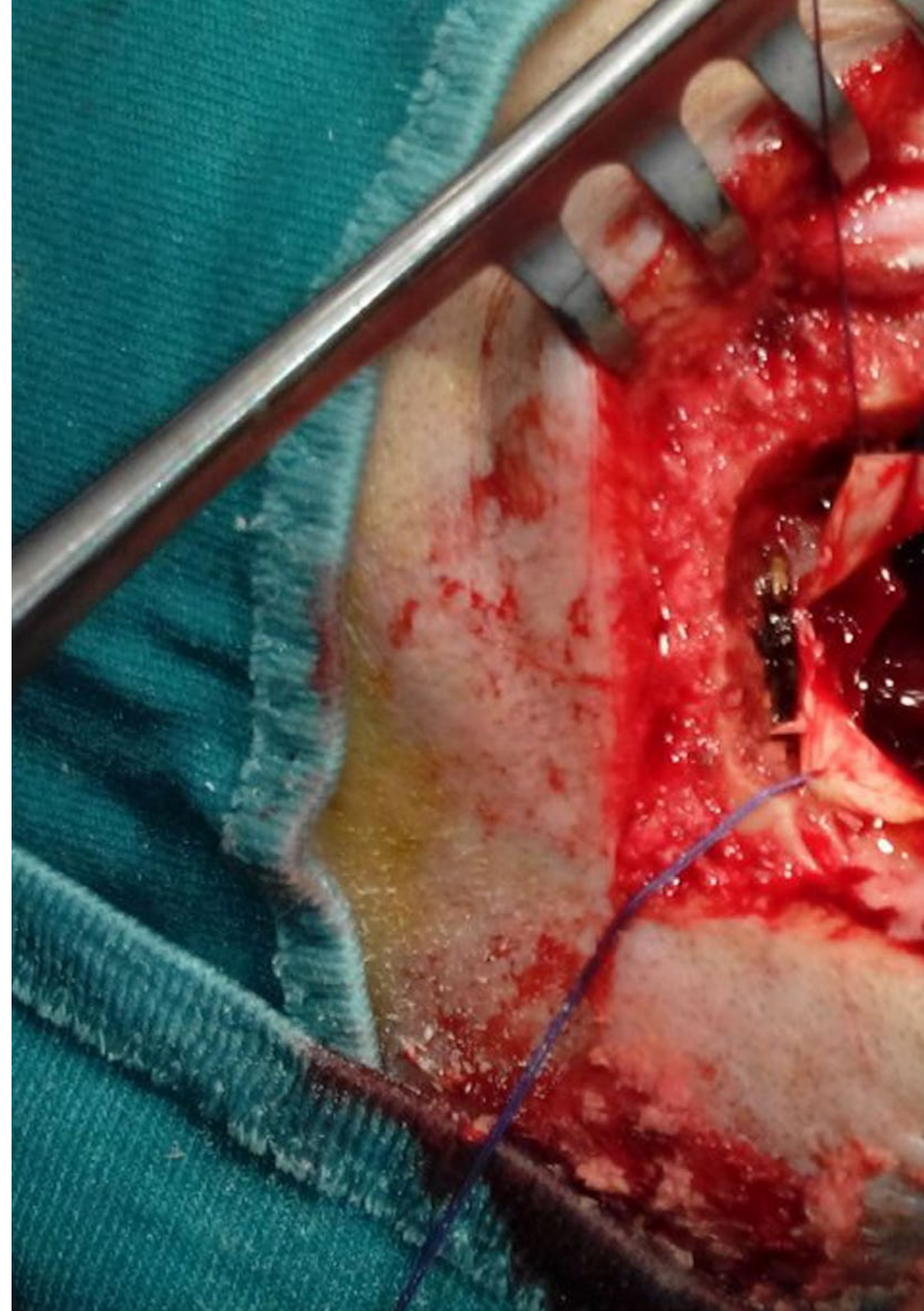


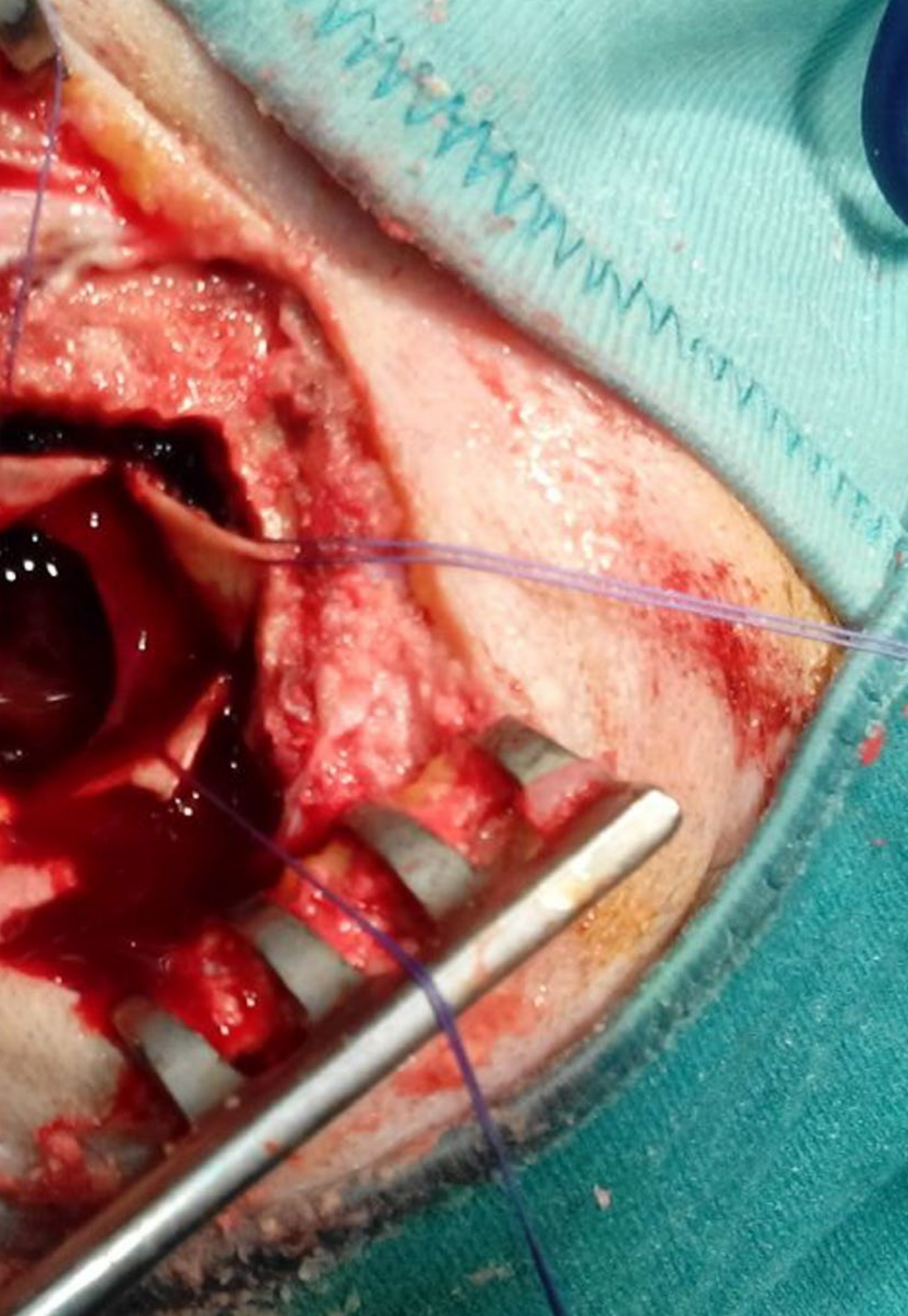


Specific Objectives

- ♦ Understand the importance of positioning the neurosurgical patient and how it can influence the surgery, as well as to know the most frequently used positions
- ♦ Learn how collaboration with other specialties and the interaction of various factors during surgery (neurophysiological monitoring, anesthesia) and in the immediate postoperative period (critical care) can determine the success of the surgery and neurosurgical patient prognosis
- ♦ Rate the impact that technological tools, especially intraoperative localization techniques, have had on neurosurgery, as well as the implications that the application of robotic surgery may have in the coming years
- ♦ Develop an in-depth understanding of the importance of postoperative infection in neurosurgery, to acquire infectious prophylaxis guidelines, as well as the management of brain abscesses
- ♦ Describe and understand the usefulness of neuromonitoring systems in patients with severe TBI, and correlate the information they provide with the therapeutic algorithms applied in intensive care units
- ♦ Acquire in-depth knowledge of the surgical indications in patients with traumatic intracranial lesions, as well as the main prognostic determinants
- ♦ Identify the most important complications, their timeline, and basic tools for preventing and treating them
- ♦ Discuss the advantages and disadvantages of surgical and endovascular treatment in the treatment of cerebral aneurysms, and know the main indications of each of the therapeutic alternatives depending on the location and shape of the aneurysm

- ♦ Define the role of neurosurgery in the treatment of both hemorrhagic and ischemic stroke, providing examples that help to understand the indications for surgery and its role in the overall therapeutic management required for this type of patient
- ♦ 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
- ♦ Examine surgical indications in highly prevalent pathologies in neurosurgery such as metastases and meningiomas and the role of other alternative treatments
- ♦ 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
- ♦ Manage the need for a multidisciplinary approach to epilepsy surgery to achieve excellent results in terms of seizure control and the absence of neurological sequelae
- ♦ 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
- ♦ Apply the differentiating features of vascular and tumor pathology specific to children, identifying the most frequent pathologies in this age group and how the patient's age determines the type of treatment applicable, exemplifying it with relevant clinical cases
- ♦ Describe the types of hydrocephalus and how treatment is selected according to the classification of hydrocephalus, identifying the clinical characteristics of the disorders that most frequently present with hydrocephalus in neurosurgical clinical practice





- ♦ In-depth knowledge of the precise indications for lumbar fusion in spinal generative pathology, in order to avoid over-indication of these techniques
- ♦ Describe the different types of surgical approaches used in the treatment of dorsal disc herniation and how their use is determined in each particular case by the radiological characteristics and clinical manifestations
- ♦ Manage spinal and intrathecal tumor pathology routinely treated in neurosurgery
- ♦ Utilize the various classifications used for the evaluation of the post-traumatic spinal cord injury patient and understand their value in prognosis

“

Don't miss the opportunity to get up to date on the latest advances in Neurosurgery with an innovative program 100% practical, face-to-face and intensive"

04

Educational Plan

This Internship Program in Neurosurgery consists of a face-to-face and intensive stay in a prestigious hospital center. This educational process has 3 weeks for its development, distributed in days of 8 consecutive hours, from Monday to Friday. During this period, the physician will have the personalized guidance of an assistant tutor, who will be in charge of supervising academic progress and incorporating the most modern and holistic work trends into the neurosurgeon's professional practice. At the same time, the specialist will be able to exchange with renowned Postgraduate Diplomas and also assimilate individual experiences.

In this completely practical Internship Program, the activities are aimed at developing and perfecting the skills necessary to provide healthcare in areas and conditions that require highly qualified professionals, and are oriented towards specific expertise for practicing the activity, in a safe environment for the patient and with highly professional performance.

Likewise, by joining a team entirely dedicated to the development of Neurosurgery, the physician will have the opportunity to handle the latest technological resources and apply them to the benefit of the surgical treatment of real patients.

Practical teaching will be carried out with the active participation of the student performing the activities and procedures of each area of competence (learning to learn and learning to do), with the accompaniment and guidance of the professors and other fellow trainees that facilitate teamwork and multidisciplinary integration as transversal competencies for the praxis of Neurosurgery (learning to be and learning to relate).

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



Train in an institution that can offer you all these possibilities, with an innovative academic program and a human team capable of developing you to the maximum"



Module	Practical Activity
Interventional and non-invasive diagnostic neurosurgical procedures	Apply Cerebral Arteriography for the diagnosis of cerebrovascular pathology
	Determine the functionality of the intracranial vessels by means of the Wada test
	To assess the electrical impulses of the brain by means of Electroencephalography, Electromyography and Electroneurography
	Indicate high-resolution magnetic resonance imaging to assess brain tissue status
	Perform PET and SPECT to evaluate neuronal diseases
Minimally invasive neurosurgical techniques	Implement Intracranial Endoscopic Neurosurgery to treat ailments such as Aneurysms, Ankylosing Spondylitis, Arteriovenous and Cavernous malformations, Carotid Occlusive Disease, difficult to access tumors, among others
	Develop endonasal neurosurgery for the management of diseases such as pituitary-pituitary adenomas, meningiomas and chordomas
	Address dorsal and lumbar hernias, chronic pain and compression fractures, among others, by means of Endoscopic Spinal Surgery
	Perform percutaneous lumbar arthrodesis for the treatment of degenerative diseases
Cerebrovascular surgical treatments	Perform endovascular therapy for intracranial vessel lesion occlusion against malformations and arterio-venous fistulas
	Treating cerebral ischemia by Thrombolysis
	Using intracerebral angioplasty to improve blood flow to the brain
	Pre-surgical embolization of different brain tumors
	Implanting pumps for spinal infusion of drugs
More advanced surgical techniques for the treatment of Epilepsy	Perform resective surgery of the temporal lobes in the most severe cases of epilepsy
	Destroying a small portion of damaged brain tissue by interstitial laser thermal therapy
	Permanent intracranial placement of deep brain stimulation devices
	Total or partial removal of the part of the brain that connects the nerves in the right and left hemispheres of the brain through Callosotomy
	Evaluate the use of hemispherectomy and functional hemispherectomy in children with latent evidence of seizures
Trends in Oncologic Neurosurgery	Undertake craniotomy biopsies, directed by neuronavigation
	Perform Radiosurgery procedures, introducing radiation equipment to specific parts of the brain during the surgical procedure
	Dissect and remove brain and spinal tumors through ultrasonic aspiration procedures

05 Where Can I Do the Internship Program?

TECH will broaden the academic horizons of the health professional through this unique academic opportunity. For this purpose, it has made the selection of medical institutions, located in different latitudes, and of the highest caliber in the field of Neurosurgery. These entities will open their doors to the specialist and help them to update their knowledge on the latest surgical trends in this field of medicine.



Become a world-class neurosurgeon with the help of TECH, mastering the latest surgical techniques in an intensive, hands-on, classroom-based program of excellence"





The student will be able to do this program at the following centers:



Medicine

Hospital HM Modelo

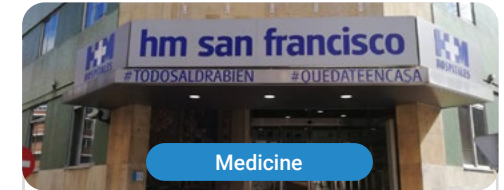
Country	City
Spain	La Coruña

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

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

Related internship programs:

- Anaesthesiology and Resuscitation
- Spine Surgery



Medicine

Hospital HM San Francisco

Country	City
Spain	León

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

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

Related internship programs:

- Update in Anesthesiology and Resuscitation
- Nursing in the Traumatology Department



Medicine

Hospital HM Regla

Country	City
Spain	León

Address: Calle Cardenal Landázuri, 2, 24003, León

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

Related internship programs:

- Psychiatric Treatments Update
- in Minor Patients



Medicine

Hospital HM Nou Delfos

Country	City
Spain	Barcelona

Address: Avinguda de Vallcarca, 151, 08023, Barcelona

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

Related internship programs:

- Aesthetic Medicine
- Clinical Nutrition in Medicine



Hospital HM Madrid

Country City
Spain Madrid

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

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

Related internship programs:

Clinical Analysis
- Anaesthesiology and Resuscitation



Hospital HM Montepíncipe

Country City
Spain Madrid

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

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

Related internship programs:

Child Orthopedics
- Aesthetic Medicine



Hospital HM Torrelodones

Country City
Spain Madrid

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

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

Related internship programs:

- Anaesthesiology and Resuscitation
Hospital Pediatrics



Hospital HM Sanchinarro

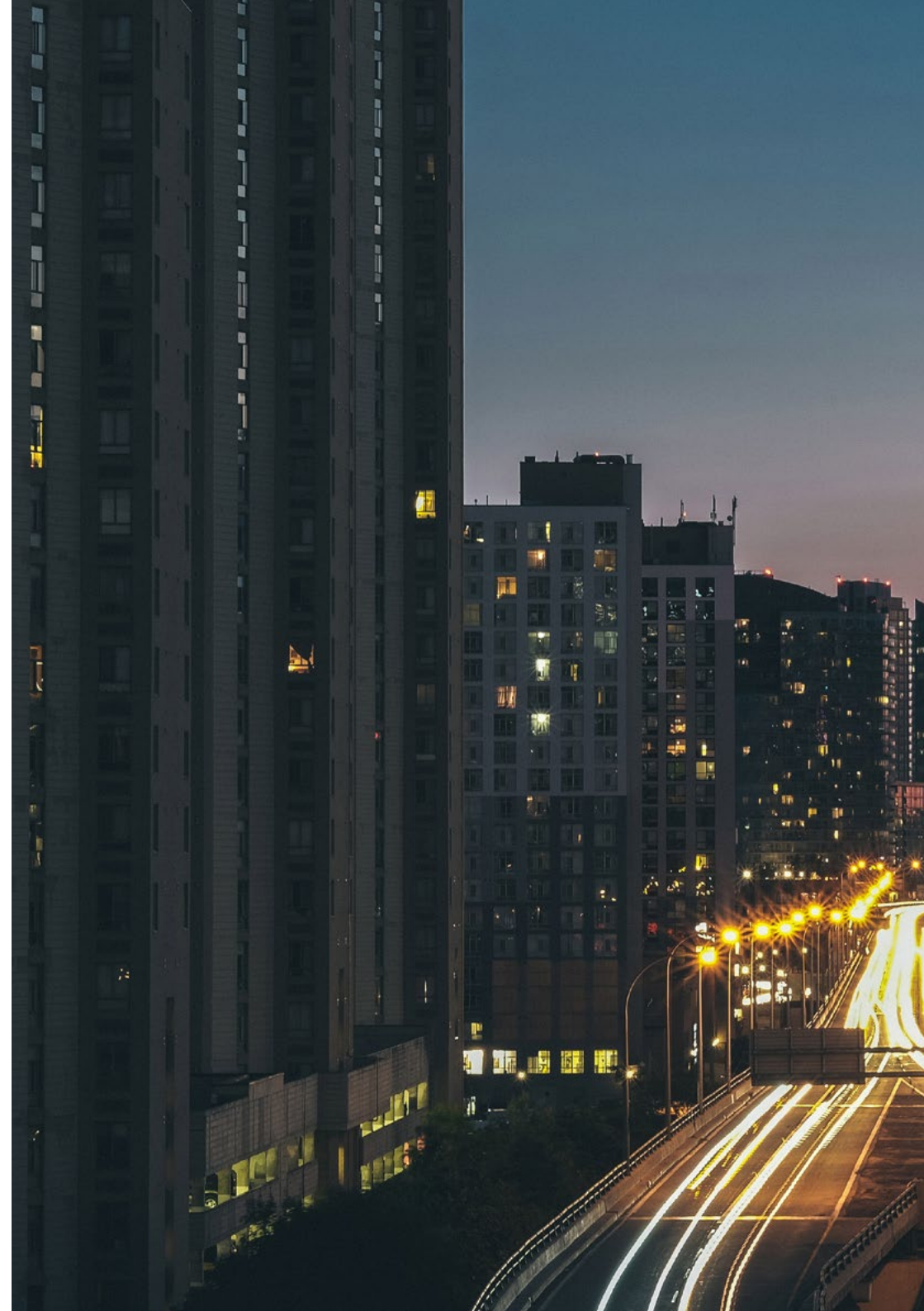
Country City
Spain Madrid

Address: Calle de Oña, 10, 28050, Madrid

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

Related internship programs:

- Anaesthesiology and Resuscitation
Sleep Medicine





Medicine

Hospital HM Puerta del Sur

Country City
Spain Madrid

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

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

Related internship programs:

Pediatric Emergencies
- Clinical Ophthalmology



Medicine

HM CINAC - Centro Integral de Neurociencias

Country City
Spain Madrid

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

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

Related internship programs:

Neurology Nursing
- Update in Neurology



Medicine

HM CINAC Barcelona

Country City
Spain Barcelona

Address: Avenida de Vallcarca, 151,
08023, Barcelona

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

Related internship programs:

Neurodegenerative Diseases
Neurology Nursing



Medicine

Policlínico HM Imi Toledo

Country City
Spain Toledo

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

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

Related internship programs:

- Electrotherapy in Rehabilitation Medicine
- Hair Transplantation

06

General Conditions

Civil Liability Insurance

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

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

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



General Conditions of the Internship Program

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

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

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

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

4. CERTIFICATION: Professionals who pass the Internship Program will receive a certificate accrediting their stay at the center.

5. EMPLOYMENT RELATIONSHIP: The Internship Program shall not constitute an employment relationship of any kind.

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

7. DOES NOT INCLUDE: The Internship Program will not include any element not described in the present conditions. Therefore, it does not include accommodation, transportation to the city where the internship takes place, visas or any other items not listed.

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

07 Certificate

This **Internship Program in Neurosurgery** contains the most comprehensive and up-to-date program in the professional and academic landscape.

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

The certificate issued by TECH will state the score obtained in the test.

Title: **Internship Program in Neurosurgery**

Duration: **3 weeks**

Attendance: **Monday to Friday, 8-hour consecutive shifts**

Total Hours: **120 h. of professional practice**





Internship Program
Neurosurgery

Internship Program Neurosurgery



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