

# Postgraduate Certificate

## Spine Pathology.

### Degenerative Spine





## Postgraduate Certificate Spine Pathology. Degenerative Spine

Course Modality: Online

Duration: 6 weeks

Certificate: TECH Technological University

6 ECTS Credits

Teaching Hours: 150 hours

Website: [www.techtitute.com/medicine/postgraduate-certificate/spine-pathology-degenerative-spine](http://www.techtitute.com/medicine/postgraduate-certificate/spine-pathology-degenerative-spine)

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# 01

# Introduction

The surgical treatment of spinal pathology currently represents a very important volume of care activity in neurosurgery departments. Although it is an area in which other specialists can also participate (traumatologists, rehabilitators, specialists in Chronic Pain Unit...), the neurosurgical approach to spinal pathology benefits from the technical skills or technological advances (microsurgery, minimally invasive surgery, neuro navigation) applied in other areas of Neurosurgery.

With this high-level training you will learn the latest techniques in the sector from professionals with extensive experience in the industry.



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

This Postgraduate Certificate in Spine Pathology. Degenerative Spine is an updated compilation of the pathologies that are subject to study and treatment with Neurosurgery. The application of diagnostic and therapeutic algorithms enhances student learning and synthesizes the flow of information to facilitate its practical application in the student's environment.

The increase in the age of the population and the improvement in the quality of life of elderly patients, as well as the high prevalence of degenerative disc disease in imaging tests, have led to a high demand for care and surgical procedures. It is essential to know the surgical indications for lumbar disc herniation and lumbar canal stenosis due to their high incidence in clinical practice, not only from the neurosurgical perspective but also from other specialties. Although with a lower prevalence, lumbar spondylolisthesis represents a pathology in constant evolution with the updating of classifications that determine the type of treatment. Parallel to the increase in degenerative pathology, there has been an exponential increase in lumbar fusion surgeries and in the cost derived from them, so it is essential to clarify the indications for lumbar fusion in any of the previous pathologies, as well as the different techniques and approaches used in lumbar fusion, including new anterior or lateral approaches that are alternative and complementary to the classic posterior approach.

In recent years, minimally invasive approaches in spine surgery (*MISS/Minimally invasive spine surgery*) have partially replaced open approaches due to the reduction in postoperative stay and complications, so it is essential to know the main minimally invasive techniques applied to spine surgery. On the other hand, the increased knowledge of the sagittal balance of the spine and its impact on spinal surgery has modified the diagnostic evaluation and, secondarily, the surgical indications for spinal surgery.

Surgical treatment of cervical herniated discs is less frequent than at the lumbar level. However, the surgical approach has been modified with the advent of cervical disc prostheses and studies comparing their efficacy with more traditional treatments.

This **Postgraduate Certificate in Spine Pathology. Degenerative Spine** contains the most complete and up-to-date Educational program on the market. The most important features include:

- ◆ The development of case studies presented by experts in international cooperation of the peoples of the world.
- ◆ The graphic, schematic, and eminently practical contents with which they are created provide scientific and practical information on the disciplines that are essential for professional practice.
- ◆ New developments in Spine Pathology. Degenerative Spine
- ◆ Practical exercises where the self-assessment process can be carried out to improve learning
- ◆ Emphasis on innovative methodologies in International Cooperation
- ◆ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection work.
- ◆ Content that is accessible from any fixed or portable device with an Internet connection.



*Expand your knowledge through this Postgraduate Certificate that will allow you to specialize with a view to achieving excellence in this field"*

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*This Postgraduate Certificate is the best investment you can make when selecting a refresher program for two reasons: in addition to updating your knowledge of Neurosurgery, you will obtain a qualification endorsed by TECH Technological University"*

The teaching staff includes professionals from the International Cooperation sector, who bring their experience to this training program, as well as renowned specialists from leading 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 training experience designed to train for real-life situations.

The design of this program is centered around Problem-Based Learning, in which the medical professional will resolve professional practice situations that may arise throughout the program. For this purpose, the specialist will be assisted by an innovative interactive video system created by renowned and experienced Spine Pathology experts. Degenerative Spine, and with great experience.

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

*This Postgraduate Certificate 100% online course will allow you to combine your studies with your professional work while increasing your knowledge in this field.*



# 02 Objectives

Postgraduate Certificate in Spine Pathology. Degenerative Spine is aimed at aiding the professional's performance with the latest advances and most innovative treatments in the sector.



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*Thanks to this Postgraduate Certificate you will be able to specialize in Neurosurgery and learn about the latest advances in the field”*



## General Objectives

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



*Take the opportunity and take the step to get up-to-date on the latest developments in Spine Pathology. Degenerative Spine"*





## Specific Objectives

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- ◆ Use the recommendations of the consensus guidelines published in the medical literature regarding the indications for surgery in the most frequent degenerative lumbar pathology, such as degenerative disc disease, disc herniation, and canal stenosis with or without spondylolisthesis.
- ◆ In-depth knowledge of the precise indications for lumbar fusion in spinal generative pathology, in order to avoid over-indication of these techniques. Become familiar with the new lumbar fusion techniques as an alternative to the classic posterior approaches
- ◆ Apply the revolution brought about by the use of minimally invasive techniques in spine surgery and the knowledge of sagittal balance and its impact on surgical indications
- ◆ Develop an in-depth understanding of the importance of the choice of surgery in cervical pathology, both in relation to the type of surgery (fusion versus disc prosthesis) in cervical disc herniations and the approach (posterior versus anterior or combined) in cervical spondyloarthritic myelopathy.
- ◆ 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

03

# Course Management

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





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

## Management



### Dr. Fernández Carballal, Carlos

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

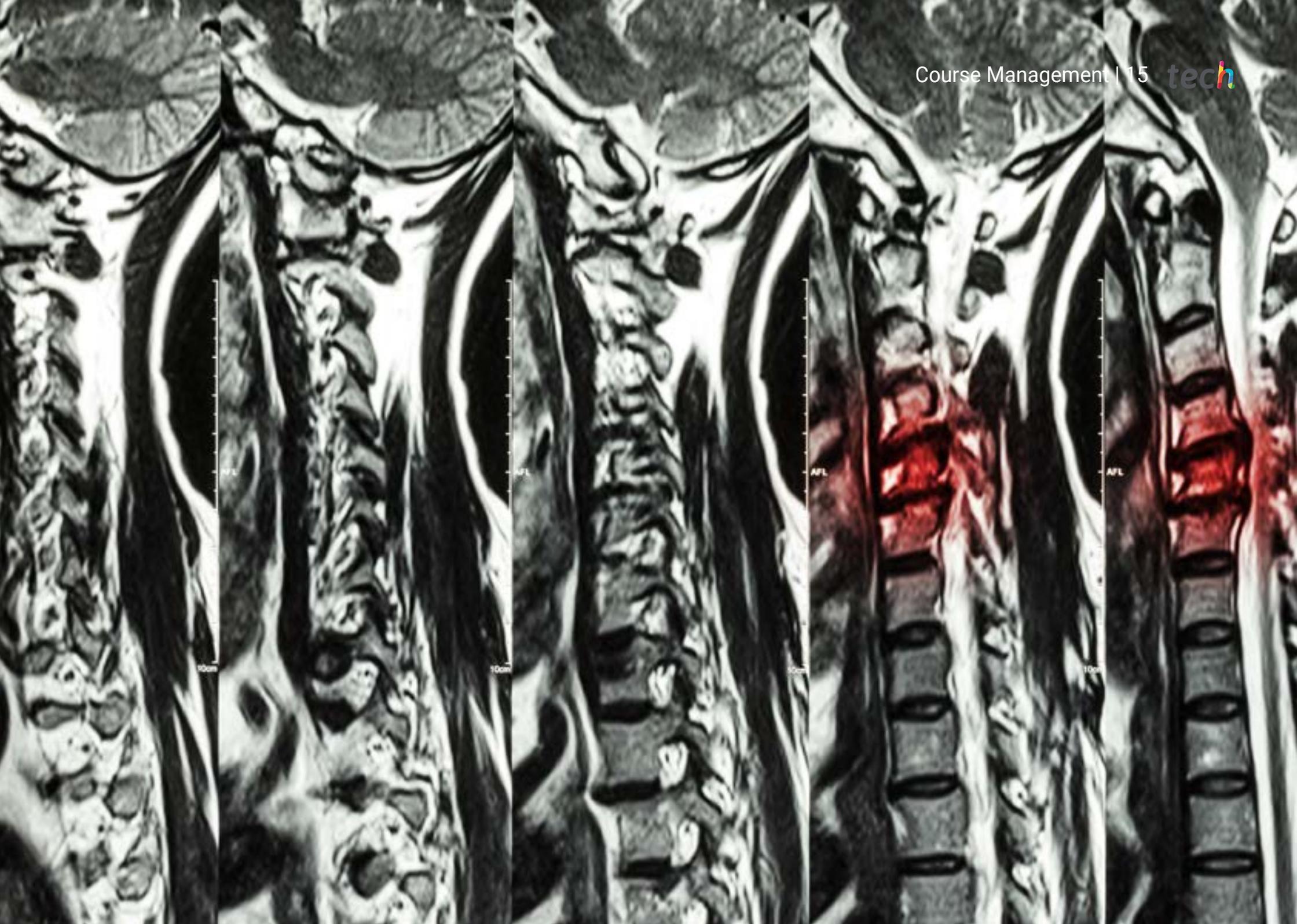
## Professors

### Dr. Garbizu Vidorreta, José Manuel

- ♦ Neurosurgery Department. Gregorio Marañón General University Hospital
- ♦ Degree in Medicine from the Faculty of Medicine at the University of Cantabria.

### Mrs. García Hernando, Silvia

- ♦ Neurosurgery Department. Gregorio Marañón General University Hospital
- ♦ Degree in Medicine. Navarra University, Pamplona



# 04

# Structure and Content

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





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*This Postgraduate Certificate in Spine Pathology. Degenerative Spine contains the most complete and up-to-date scientific program on the market”*

## Module 1. Spinal Pathology. Degenerative Spine Conditions

- 1.1. Lumbar Degenerative Disc Disease
- 1.2. Surgical Indication in Lumbar Disc Herniation and Lumbar Spinal Stenosis
- 1.3. Classification and Treatment of Lumbar Spondylolisthesis
- 1.4. Indications for Lumbar Fusion in Lumbar Degenerative Pathology
- 1.5. Lumbar Fusion Surgical Techniques
- 1.6. Principles of Sagittal Balance and Application to Spine Surgery
- 1.7. Application of Minimally Invasive Surgery in Lumbar Pathology
- 1.8. Herniated Cervical Disc. Surgical Techniques.
- 1.9. Cervical Canal Stenosis and Cervical Myelopathy
  - 1.9.1. Criteria for Choosing the Surgical Approach
- 1.10. Herniated Thoracic Disc
  - 1.10.1. Surgical Techniques in the Treatment of Herniated Thoracic Disc





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



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*Discover 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

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

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



According to Dr. 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 power or because of its uniqueness or rarity. It is essential that the case is based on current professional life, trying to recreate the real conditions in the physician's professional practice.

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

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

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



## Re-Learning Methodology

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

This university is the first in the world to combine the study of clinical cases with a 100% online learning system based on repetition, combining a minimum of 8 different elements in each lesson, a real revolution with respect to the mere study and analysis of cases.



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

At the forefront of world teaching, the 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, more than 250,000 physicians have been trained with unprecedented success in all clinical specialties regardless of surgical load. Our pedagogical methodology is developed in a highly competitive environment, with a university student body with a high socioeconomic profile and an average age of 43.5 years old.

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

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



This program offers the best educational material, prepared with professionals in mind:



#### Study Material

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

These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.



#### Surgical Techniques and Procedures on Video

TECH introduces students to the latest techniques, the latest educational advances and to the forefront of current medical techniques. All of this in direct contact with students and explained in detail so as to aid their assimilation and understanding. And best of all, you can watch the videos as many times as you like.



#### Interactive Summaries

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

This exclusive multimedia content presentation training Exclusive system was awarded by Microsoft as a "European Success Story".



#### Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.





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

Effective learning ought to be contextual. Therefore, TECH presents real cases in which the expert will guide students, focusing on and solving the different situations: a clear and direct way to achieve the highest degree of understanding.



**Testing & Re-testing**

We periodically evaluate and re-evaluate students' knowledge throughout the program, through assessment and self-assessment activities and exercises: so that they can see how they are achieving your goals.



**Classes**

There is scientific evidence on the usefulness of learning by observing experts: The system termed Learning from an Expert strengthens knowledge and recall capacity, and generates confidence in the face of difficult decisions in the future.



**Quick Action Guides**

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help students progress in their learning.



# 06 Certificate

This **Postgraduate Certificate in Spine Pathology. Degenerative Spine** guarantees, in addition to the most rigorous and up-to-date training, access to a Postgraduate Certificate issued by **TECH Technological University**.



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*Successfully complete this training program and receive your university diploma without travel or laborious paperwork"*

This **Postgraduate Certificate in Spine Pathology. Degenerative Spine** contains the most complete and up-to-date scientific program on the market.

After passing the evaluation, the student will receive acknowledgement their corresponding Postgraduate Certificate issued by **TECH Technological University** via tracked delivery.

This diploma contributes to the academic development of the professional and adds a high university curricular value to their training. It is 100% valid in all competitive examinations, labour exchanges and professional career evaluation committees.

Title: **Postgraduate Certificate in Spine Pathology. Degenerative Spine**

ECTS: **6**

Official N° of Hours: **150 hours.**



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

**tech** technological  
university

**Postgraduate  
Certificate**  
Spine Pathology.  
Degenerative Spine

Course Modality: Online

Duration: 6 weeks

Certificate: TECH Technological University

6 ECTS Credits

Teaching Hours: 150 hours.

# Postgraduate Certificate

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