Postgraduate Diploma

Orthopedic Surgery and Traumatology of the Spine and Tumors and Infections of the Locomotor System

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Postgraduate Diploma

Orthopedic Surgery and Traumatology of the Spine and Tumors and Infections of the Locomotor System

- Modality: **online**
- Duration: **6 months**
- Certificate: **TECH Technological University**
- Dedication: **16h/week**
- Schedule: **at your own pace**
- Exams: **online**

Website: www.techtitute.com/pk/medicine/postgraduate-diploma/postgraduate-diploma-orthopedic-surgery-traumatology-spine-tumors-infections-locomotor-system

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01

Introduction

Orthopedic surgery and traumatology have undergone a spectacular development in recent years. Advances in spine and the approach to tumors and infections in the locomotor system offer new possibilities in the management of pathologies and improvements in patient prognosis. This Postgraduate Diploma is aimed at updating the specialist so that they can incorporate these advances in the daily surgical practice with their patients.

Scientific evidence increases the quality of trauma surgery. Keeping up-to-date is key to providing better care to our patients

The new scenarios in traumatology push us to propose new training programs that fit the real needs of experienced professionals, so that they can incorporate advances in spine and locomotor system tumors and infections into their daily practice"

Orthopedic surgery and traumatology is constantly evolving. The volume of information increases exponentially every year and it is impossible to be updated in all areas of the specialty, unless you have a team of experts in different sub-areas that performs this work for the specialist, making an intelligent discrimination of information.

In addition, the current tendency to sub-specialize in a specific anatomical area or surgical technique makes it more difficult to keep up to date in those areas that are less commonly treated and, at times, makes it difficult and costly to keep up to date with the latest developments. It should also be noted that the increase in the average life expectancy is leading to a higher number of degenerative and disabling osteoarticular injuries.

This Postgraduate Diploma allows the specialist to be updated in the latest procedures in spine surgery and in the approach to tumors and infections of the locomotor system to improve the quality of surgical practice with their patients.

The **Postgraduate Diploma in Orthopedic Surgery and Traumatology of the Spine and Tumors and Infections of the Locomotor System** contains the most complete and updated scientific program on the market. The most important features of the program include:

- Development of clinical cases presented by experts in trauma surgery. The graphic, schematic, and eminently practical contents with which they are created contain information that is indispensable for professional practice.
- It contains exercises where the self-assessment process can be carried out to improve learning.
- Interactive learning system based on algorithms for decision making in surgical patients with osteoarticular pathology and oncological and infectious processes.
- Clinical practice guidelines on the different pathologies.
- All of 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 with the Postgraduate Diploma in Orthopedic Surgery and Traumatology of the Spine and Tumors and Infections of the Locomotor System"

This Postgraduate Diploma may be the best investment you can make in the selection of an updated program for two reasons: in addition to updating your knowledge in spine surgery and tumors and infections of the locomotor system, you will obtain a Postgraduate Diploma from TECH - Technological University"

Increase your decision-making confidence by updating your knowledge with this Postgraduate Diploma course

Do not miss this opportunity and choose the best way to stay updated in spine surgery and tumors and infections of the locomotor system

Its teaching staff includes specialists of recognized prestige in trauma surgery, who bring their experience to this training.

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 surgeon 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 developed by renowned experts in the field of trauma surgery with extensive teaching experience.

02

Objectives

This program aims to provide the specialist with updated knowledge on new surgical techniques, indicated for the surgical patient with osteoarticular pathology of the spine and oncological and infectious processes. To this end, it proposes a review of the different pathologies and their medical-surgical management in the light of the latest scientific evidence.

This Postgraduate Diploma is designed for you to update your knowledge in spine surgery and osteoarticular tumors and infections, with the use of the latest educational technology, to contribute with quality and safety to decision making"

General Objective

- Update the physician on the most important surgical procedures in orthopedic and trauma surgery of the spine, as well as to incorporate advances in the approach to oncological and infectious processes of the locomotor system, in order to provide care based on quality and safety, which will minimize the consequences of these pathologies and improve the patient's prognosis.

Specific Objectives

- Identify the signs and symptoms of spinal pathologies and select the appropriate therapeutic indication based on the latest scientific evidence.
- Interpret and justify the best treatment choice for tumors of the locomotor system.
- Determine the causes of the main infections in the locomotor system and the first choice treatment.
- Define the ethical aspects of orthopedic surgery and traumatology
- Apply the criteria of EvidenceBased Medicine when choosing the correct treatment in orthopedic surgery and traumatology.
- Update the indications for antibiotic prophylaxis in Orthopedic Surgery and Traumatology procedures.
- Correctly Determine the thromboprophylaxis guidelines in orthopedic and traumatologic surgery.
- Update knowledge of blood-saving policies used in orthopedic and traumatologic surgery.
- Distinguish the different applications of cell cultures in Orthopedics and Traumatology.
- Explain in which cases it is correct to use BMPs in Orthopedics and Traumatology.
- Interpret the clinical evidence on platelet-rich plasma in tendon and joint pathology.
- Recognize the biopsychosocial model in musculoskeletal pathology.
- Classify and update performance measurement systems in Orthopedic Surgery and Traumatology.
- Interpret the results correctly in Interventional Radiology in musculoskeletal pathology.
- Recognize the current concepts of Neurophysiology in Orthopedic Surgery.
- Confirm that the information we have on the treatment of herniated discs is up to date.
- Identify and recognize cervical myelopathy.
- Explain the steps to be followed in an anterior cervical corporectomy.
- List the steps to be followed for posterior fixation with pedicle screws and lateral masses.
- Compare the different types of cervical disc prostheses.
- Update the accepted classification of cervical spine fractures.
- Recognize and classify a lumbar disc hernia and lumbar spinal stenosis.
- Examine the anterior access to the thoracic spine by thoracoscopy.
- Evaluate the extraforaminal lumbar disc herniation, from the paravertebral access.
- Examine the posterior approach for a thoracolumbar corporectomy.
- Describe the current diagnostic and therapeutic procedures for scoliosis.
- Distinguish between ponte osteotomies and arthrodesis in Scheuermann's disease.
- Classify and evaluate sagittal spinal alterations.
- Recognize the different degrees of spondylolisthesis.
- Establish the updated surgical procedures for minimally invasive TLIF lumbar interbody arthrodesis.
- Recognize and classify the different degrees of disc degeneration.

- Review and update knowledge on the management of vertebral tumors.
- Recognize spondylodiscitis and vertebral infections.
- Apply percutaneous treatment of thoracolumbar vertebral fractures according to , the latest recommendations.
- Assess and interpret the main essential signs and symptoms of tumors in the osteoarticular system.
- Perform correct imaging diagnosis of locomotor system tumors.
- Determine the differential diagnosis of benign and potentially aggressive tumors.
- Distinguish in which pathological cases of the locomotor system the radiofrequency ablation technique should be used.
- Identify malignant tumors of bone and cartilage origin.
- Recognize round cell lesions.
- Adapt the basics of surgical treatment of musculoskeletal tumors of the locomotor system to the specific needs of each patient.
- Establish a correct diagnostic and therapeutic approach to bone metastases.
- Adapt the basics for diagnosing infections of the locomotor system to the specific needs of each patient.
- Review the pathophysiology, clinical management and approach to acute and chronic osteomyelitis.
- Review the pathophysiology, clinical and therapeutic management of septic arthritis.
- Identify the main signs and symptoms of spondylodiscitis and vertebral infections.
- Address the current status of surgical procedures in PTC and PTR infections.
- Determine advances in the antibiotic management of patients with osteoarticular infection.

03

Course Management

The creation of the materials has been carried out by a team of professionals of reference in the field of trauma surgery, who perform their professional activity in prestigious hospitals. 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 the latest advances in spine surgery and in tumors and infections of the locomotor system"

International Guest Director

Dr. Michael Gardner is a leading international leader in the field of **Orthopedic Traumatology,** with an exceptional track record in both **practice** and **clinical research**. He is recognized for his expertise in the treatment of **fractures** of the **upper and lower limbs**, as well as the **pelvis**, the management of **pseudarthrosis** and **malunions**.

Of particular note is his work as **co-founder** and **CEO** of the **National Scoliosis Clinic**, a center that leverages **Artificial Intelligence** and **Telehealth** to transform the way **Scoliosis** is detected and managed. In addition, he has worked as an **Orthopedic Trauma surgeon** at the University of Washington and, since joining the staff at Stanford University, has held key roles, including **Head** of the **Orthopedic Trauma** Service and **Deputy Chairman** of the **Department of Orthopedic Surgery**.

He has also been internationally recognized for his **innovative research** and leadership in the development of **advanced surgical techniques**. In this way, he has patented **Systems and Methods for the Detection of Musculoskeletal Anomalies and Fractures; Bone Stabilizing Implants and Methods of Placement through the Joints; and Grafts for the Repair of Segmental Bone Defects.**

He has also been invited to participate in numerous national and international activities and has played important roles in various organizations, such as the **Orthopedic Trauma Association**. In addition, he has been honored with multiple **awards** and **recognitions** for his **excellence in research** and **service to the medical community**. In this regard, his research program has been recognized for its efficient and productive approach, with more than 100 published scientific articles, 38 book chapters and the edition of 5 textbooks.

Dr. Gardner, Michael J.

- Co-founder and CEO of National Scoliosis Clinic
- Orthopedic Traumatology Physician
- Deputy Chairman of the Department of Orthopedic Surgery at Stanford University
- Head of the Orthopedic Trauma Service at Stanford University
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- Surgeon of Orthopedic Traumatology at Washington University
- M.D., Drexel University
- B.S. in Chemistry from Williams College
- Member of: Association of Orthopedic Traumatology , AO Trauma ,American Orthopedic Association , Orthopedic Trauma Foundation ,Orthopedic Research Society , Western Orthopedic Association , California Orthopedic Association

Thanks to TECH you will be able to learn with the best professionals in the world"

Management

Dr. Doménech Fernández, Julio

- Degree in Medicine from the University of Navarra
- PhD in Medicine from the University of Valencia
- Specialist in Orthopedic Surgery and Traumatology at the Ramón y Cajal Hospital in Madrid
- Professor in the Faculty of Medicine at Cardenal Herrera University CEU, Valencia
- Master's Degree in Healthcare from the University of Valencia
- Head of Service of the Arnau de Vilanova Hospital in Valencia and Liria Hospital
- Pro Academia Award of the European Society of NMR
- Two-time winner of the Best Paper Award from the Spine Society of Europe Two-time winner of the Spanish Spine Society Award (GEER)
- 2nd Prize Ángel Herrera Research Award from the San Pablo CEU Foundation, member of the Board of Directors of the Spanish Society for Research in Orthopedic Surgery (INVESCOT)
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04

Structure and Content

The structure of the curriculum has been designed by a team of professionals knowledgeable about the implications of training in orthopedic surgery traumatology, aware of the relevance of current training and committed to quality teaching through new educational technologies.

The Postgraduate Diploma in Orthopedic Surgery and Traumatology of the Spine and Tumors and Infections of the Locomotor System, contains the most complete and updated scientific program on the market"

Module 1. General aspects

1.1. Ethical Aspects of Orthopedic Surgery and Traumatology
1.2. Evidence-Based Medicine for Choosing the Correct Treatment in Orthopedic Surgery and Traumatology.
1.3. Bone Bank
  1.3.1. Bone Substitute
  1.3.2. Current concepts
1.4. Update on Antibiotic Prophylaxis in Orthopedic Surgery and Traumatology.
1.5. Thromboprophylaxis in Orthopedic Surgery and Traumatology.
  1.5.1. Evidence on Physical Measurements.
  1.5.2. New Oral Anticoagulants .
1.6. Update on Blood-Saving Policies Used in Orthopedic Surgery and Traumatology.
1.7. Applications of Cell Cultures in Orthopedics and Traumatology.
1.8. Use of BMP in Orthopedics and Traumatology.
1.9. Clinical Evidence on Plateletrich Plasma in Tendon and Joint Pathology.
1.10. Biopsychosocial Model in Musculoskeletal Pathology.
  1.10.1. Fear-avoidance Model in Musculoskeletal Pain.
1.11. Update on Results Measurement in Orthopedic Surgery and Traumatology.
  1.11.1. Pain, Health and Quality of Life.
1.12. Interventional Radiology in Musculoskeletal Pathology.
1.13. Current Concepts of Neurophysiology in Orthopedic Surgery.

Module 2. Spinal Column

Section: Cervical Spine

2.1. Herniated Disc.
  2.1.1. Anterior and Posterior Cervical Microdiscectomy
2.2. Cervical Myelopathy.
  2.2.1. Cervical Laminoplasty.
2.3. Anterior Cervical Corporectomy.
  2.3.1. Reconstruction Techniques.
  2.3.2. Osteosynthesis
2.4. Posterior Fixation with Pedicle Screws and in Lateral Masses.
  2.4.1. Occipitocervical Arthrodesis.
2.5. Cervical Disc Prosthesis
2.6. Cervical Column Fractures
  2.6.1. Management Osteosynthesis with Odontoid Screw.

Section: Thoracolumbar Spine

2.7. Osteoporotic Fractures
  2.7.1. Vertebroplasty
  2.7.2. Kyphoplasty
2.8. Lumbar Disc Hernia and Lumbar Spinal Stenosis
  2.8.1. Endoscopic Lumbar Discectomy/Lumbar Disc Release.
2.9. Anterior Access to the Thoracic Spine by Thoracoscopy.
2.10. Extraforaminal Lumbar Disc Herniation, Paravertebral Access.
2.11. Posterior Access Thoracolumbar Corporectomy.
2.12. Scoliosis
  2.12.1. Correction of Scoliosis with Coplanar Technique.
2.13. Ponto Osteotomies and Arthrodesis in Scheuermann's Disease.
2.14. Sagittal Alterations of the Spine Pedicle Subtraction Osteotomies.
  2.14.1. Smith Pedersen and Burgos.
2.15. Spondylolisthesis Minimally Invasive TLIF Lumbar Arthrodesis.
2.16. Disc Degeneration. XLIF Lumbar Arthrodesis.
2.17. Update on the Management of Vertebral Tumors.
2.18. Spondylodiscitis and Vertebral Infections.
2.19. Percutaneous Treatment of Thoracolumbar Vertebral Fractures.

Module 3. Infections

3.1. Basics of Diagnoses of Locomotor System Infections.
3.2. Acute and Chronic Osteomyelitis.
  3.2.1. Pathophysiology.
  3.2.2. Clinical Presentation.
  3.2.3. Therapeutic Approach.
3.3. Septic Arthritis.
  3.3.1. Pathophysiology.
  3.3.2. Diagnostic Management.
3.3. Treatment Management.
3.4. Spondylodiscitis and Vertebral Infections.
3.5. Current Status of the Surgical Approach to PTC and PTR Infections.
3.6. Antibiotic Management of a Patient With an Osteoarticular Infection.

Module 4. Tumors of the Locomotor System

4.1. General Aspects.
4.2. Diagnostic Imaging of Tumors.
4.3. Benign and Potentially Aggressive Tumors.
4.4. Malignant Tumors of Bone and Cartilage Origin.
4.5. Round Cell Lesions.
4.6. Basics of Surgical Treatment of Locomotor System Tumors.
4.7. Diagnostic and Therapeutic Approach to Bone Metastases.

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

05

Methodology

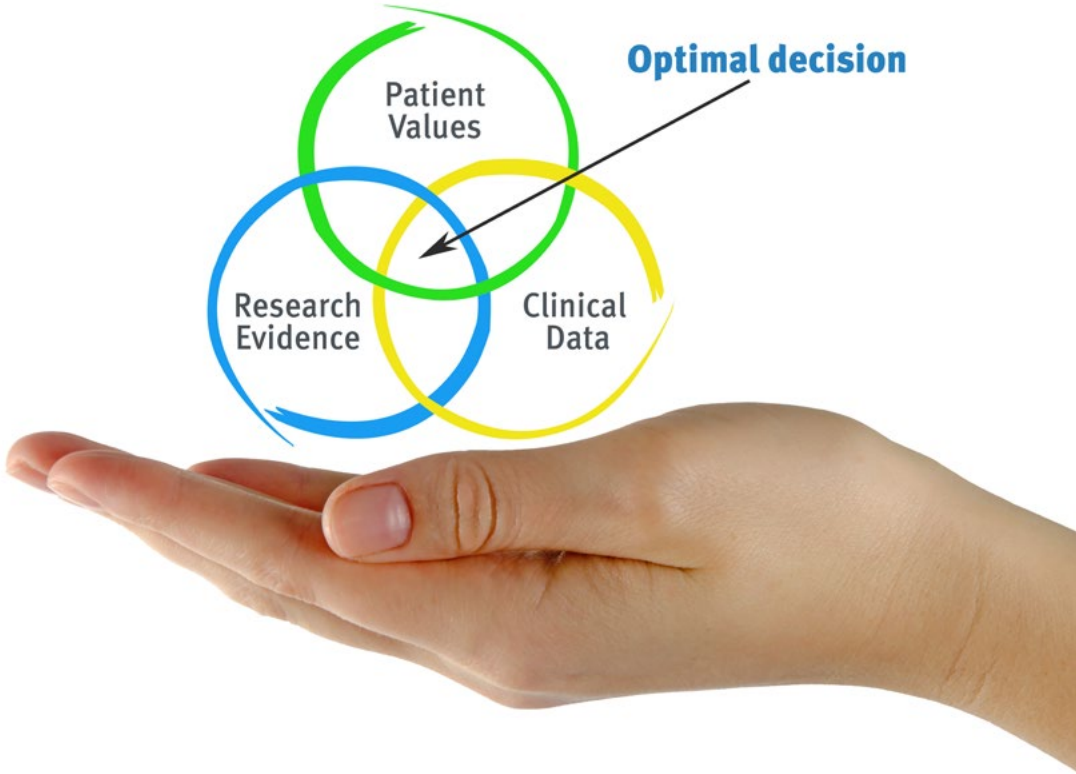
This training program provides you with a different way of learning. Our methodology uses a cyclical learning approach: ***Re-learning***.
This teaching system is used in the most prestigious medical schools in the world, and major publications such as the ***New England Journal of Medicine*** have considered 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 abundant 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. Gérvas, the clinical case is the annotated presentation of a patient, or group of patients, which becomes a "case", an example or model that illustrates some peculiar clinical component, either because of its teaching 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:

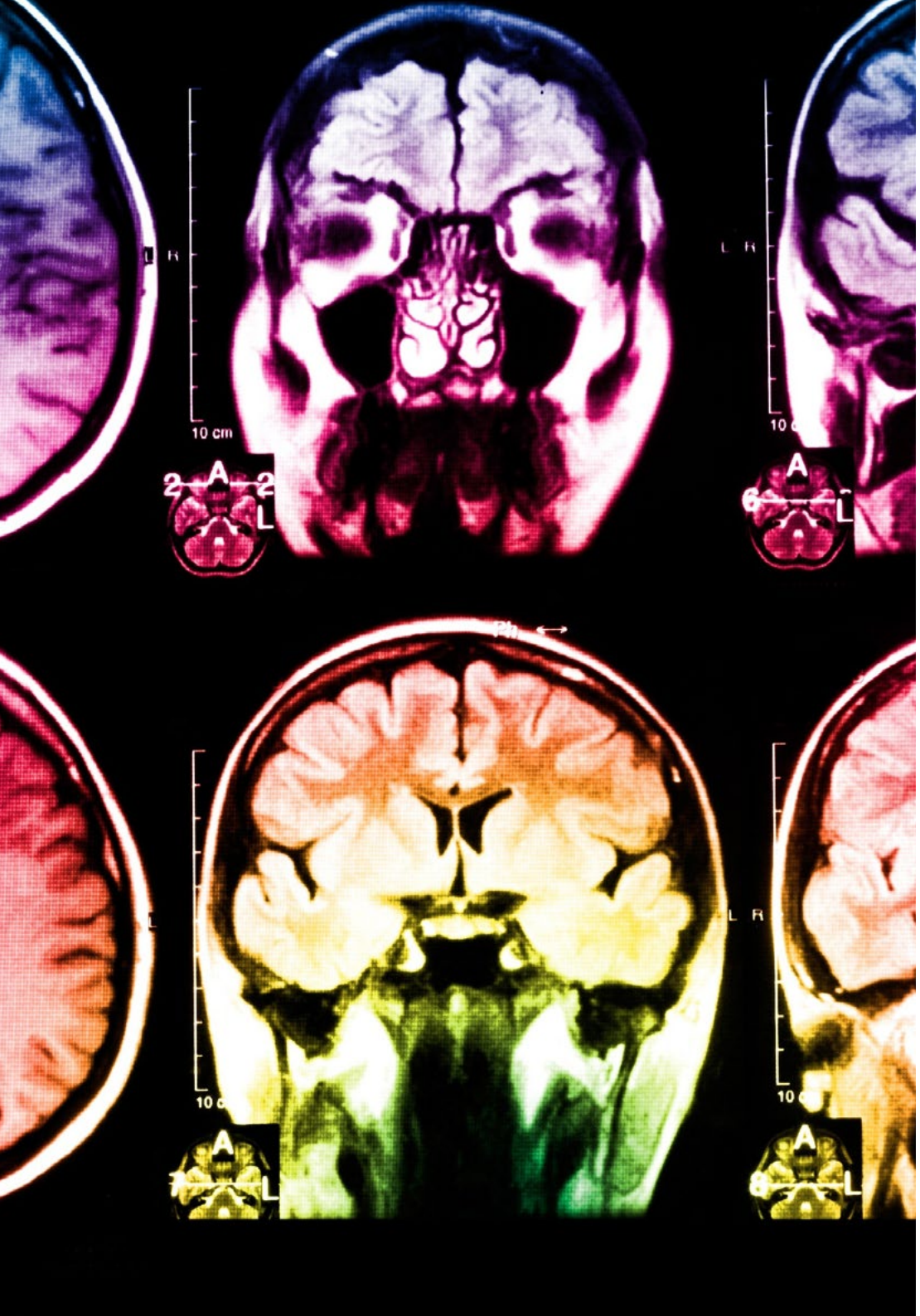
1. Students who follow this method not only grasp concepts, but also develop their mental capacity by evaluating real situations and applying their knowledge.
2. The learning process has a clear focus on practical skills that allow the student to better integrate into the real world.
3. Ideas and concepts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

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.

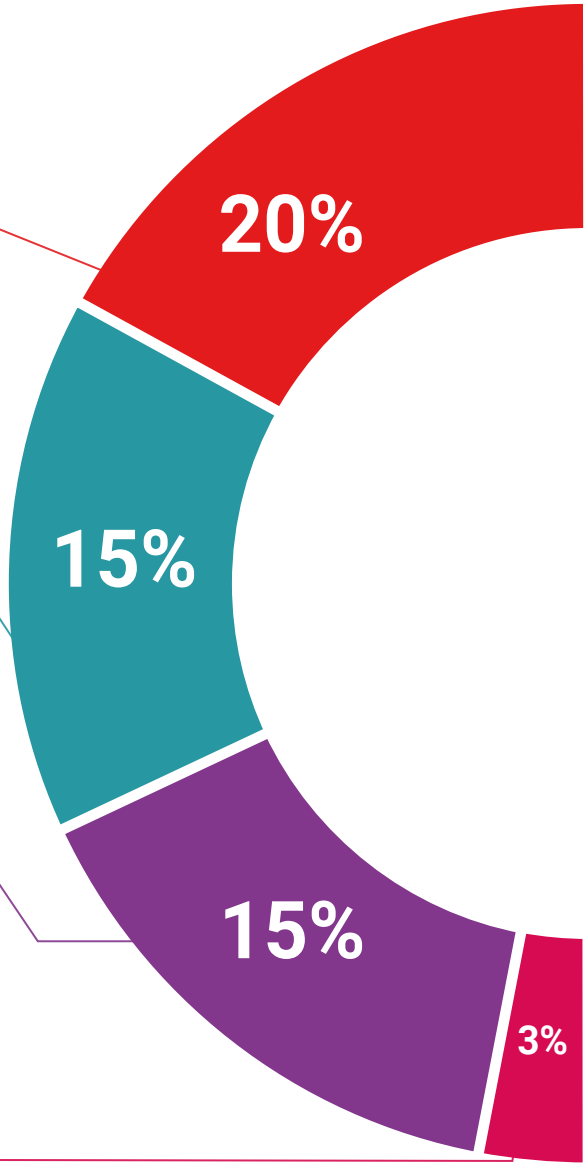
Interactive Summaries

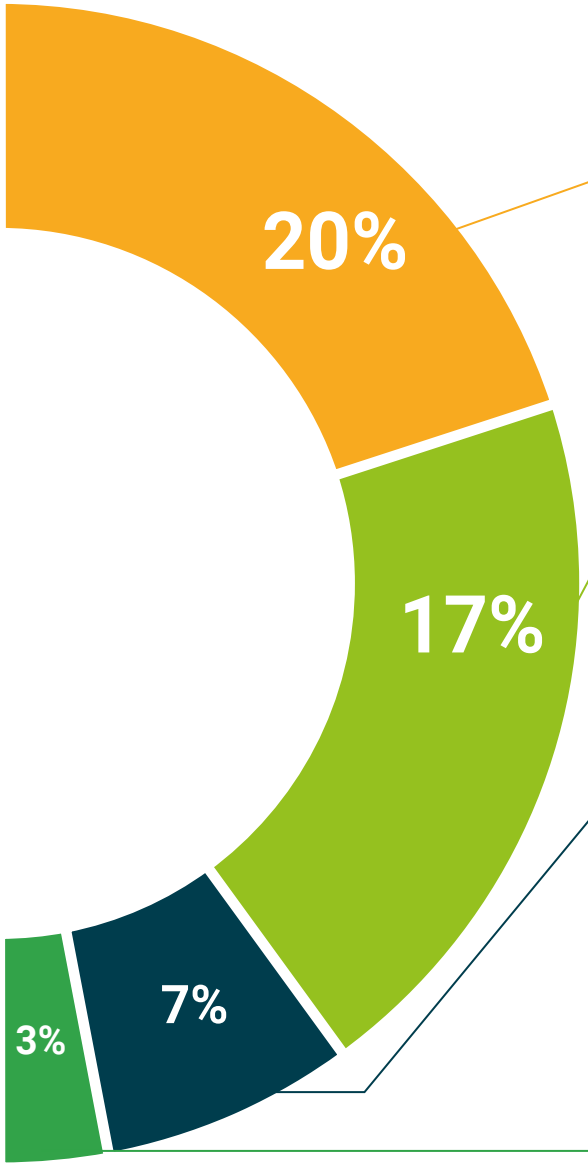
We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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 & Re-testing

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 future difficult 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 Orthopedic Surgery and Traumatology of the Spine and Tumors and Infections of the Locomotor System** guarantees you, in addition to the most accurate and up-to-date training, access to a Postgraduate Diploma issued by TECH - Technological University.

Successfully complete this training and receive your Postgraduate Diploma without travel or laborious paperwork"

The **Postgraduate Diploma in Orthopedic Surgery and Traumatology of the Spine and Tumors and Infections of the Locomotor System**contains the most complete and updated scientific program on the market.

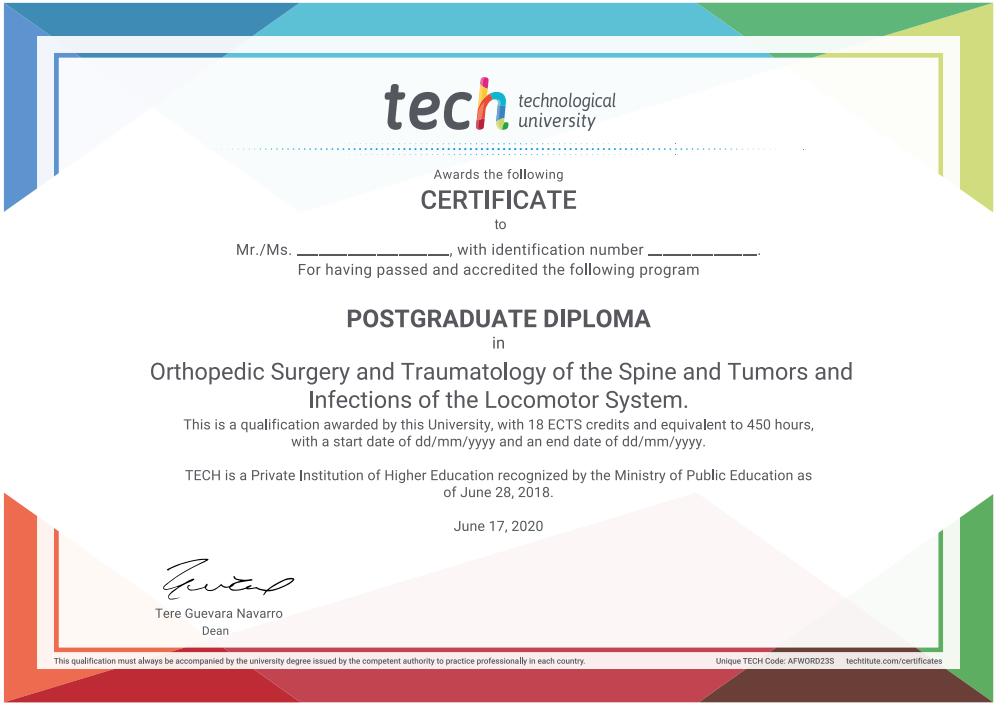
After the student has passed the evaluations,they will receive by mail their corresponding Postgraduate Diploma issued by **TECH - Technological University** via tracked delivery.

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

Title: Postgraduate Diploma in Orthopedic Surgery and Traumatology of the Spine and Tumors and Infections of the Locomotor System.

ECTS: 18

Official Number of Hours: 450


tech technological university

Awards the following

CERTIFICATE

to

Mr./Ms. _____, with identification number _____.

For having passed and accredited the following program

POSTGRADUATE DIPLOMA

in

Orthopedic Surgery and Traumatology of the Spine and Tumors and Infections of the Locomotor System.

This is a qualification awarded by this University, with 18 ECTS credits and equivalent to 450 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH is a Private Institution of Higher Education recognized by the Ministry of Public Education as of June 28, 2018.

June 17, 2020

Tere Guevara Navarro
Dean

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country. Unique TECH Code: AFWORD23S techtitute.com/certificates

tech technological university

Postgraduate Diploma

Orthopedic Surgery and Traumatology of the Spine and Tumors and Infections of the Locomotor System

- Modality: **online**
- Duration: **6 months**
- Certificate: **TECH Technological University**
- Dedication: **16h/week**
- Schedule: **at your own pace**
- Exams: **online**

Postgraduate Diploma

Orthopedic Surgery and Traumatology of the Spine and Tumors and Infections of the Locomotor System

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