

# Postgraduate Diploma

Orthopedic Surgery and Traumatology  
of Pelvis, Hip, Femur and Pediatric  
Orthopedics





## Postgraduate Diploma

### Orthopedic Surgery and Traumatology of Pelvis, Hip, Femur and Pediatric Orthopedics

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

Website: [www.techtute.com/in/medicine/postgraduate-diploma/postgraduate-diploma-orthopedic-surgery-traumatology-pelvis-hip-femur-pediatric-orthopedics](http://www.techtute.com/in/medicine/postgraduate-diploma/postgraduate-diploma-orthopedic-surgery-traumatology-pelvis-hip-femur-pediatric-orthopedics)

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# 01

# Introduction

Orthopedic surgery and traumatology have undergone a spectacular development in recent years. Advances in orthopedic surgery and traumatology of the pelvis, hip, femur and pediatric orthopedics offer new possibilities in the management of pathologies. The program of 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 orthopedic surgery and traumatology of the pelvis, hip, femur and pediatric orthopedics”



Pediatric Orthopedic Surgery has undergone a spectacular development in recent years, highlighting the findings related to the materials used in prostheses, such as the new models of porous titanium, or the new osteosynthesis plates for the treatment of fractures.

Similarly, advances in molecular biology, biomaterials, cell culture, diagnostic imaging techniques and minimally invasive access have been integrated to offer new possibilities in the management of patients with pelvis, hip and femur pathologies.

This Postgraduate Diploma allows the specialist to be updated on the latest procedures in orthopedic and trauma surgery of the pelvis, hip, femur and pediatric orthopedics, through an eminently practical program, whose topics have been selected by experts and are accompanied by videos of real surgery showing the most advanced surgical techniques.

The **Postgraduate Diploma in Orthopedic Surgery and Traumatology of Pelvis, Hip, Femur and Pediatric Orthopedics** 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 Pelvis, Hip, Femur and Pediatric Orthopedics*”

“

*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 surgery of pelvis, hip, femur and pediatric orthopedics, you will obtain a Postgraduate Diploma from TECH - Technological University"*

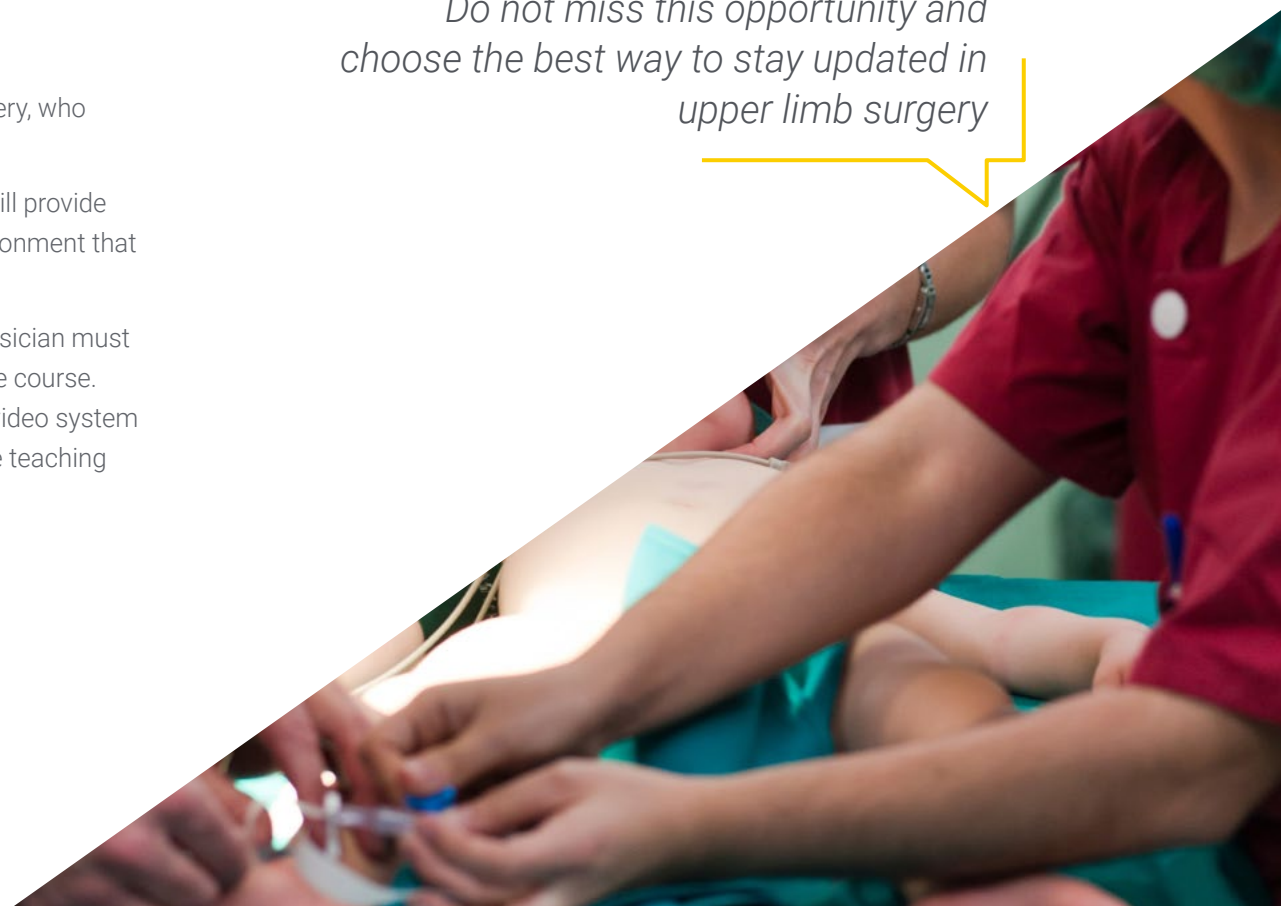
Its teaching staff includes specialists of recognized prestige in trauma surgery, who bring their experience to this training.

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

*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 upper limb surgery*



# 02 Objectives

The main objective of the **Postgraduate Diploma in Orthopedic Surgery and Traumatology of Pelvis, Hip, Femur and Pediatric Orthopedics** is to update the physician's knowledge of the procedures for treating patients with severe trauma, in order to be able to provide adequate medical care in each case, based on the latest scientific evidence.







*This Postgraduate Diploma is designed to help you update your knowledge in orthopedic surgery and traumatology of pelvis, hip, femur and pediatric orthopedics surgery, with the use of the latest educational technology, to contribute with quality and safety to decision making"*



## General Objective

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- Update the physician on the most important surgical procedures in orthopedic surgery and traumatology of the pelvis, hip, femur and pediatric orthopedics, in order to provide care based on quality and safety, minimizing the consequences of osteoarticular pathologies and improving the patient's prognosis.



## Specific Objectives

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- Identify the main changes in orthopedic surgery and traumatology treatments based on the latest scientific evidence.
- Differentiate between the pathologies of the pelvis, hips and femur and implement the correct treatment.
- Compare and contrast the different treatments in orthopedics for children.
- Define the ethical aspects of orthopedic surgery and traumatology
- Apply the criteria of Evidence-Based Medicine for the selection of treatment in orthopedic surgery and traumatology.
- Update knowledge in antibiotic prophylaxis in orthopedic surgery and traumatology.
- Correctly apply 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.
- Recognize and apply appropriate treatment in fractures of the pelvis and acetabulum.
- Recognize and apply appropriate treatment in fractures of the hips.
- Review latest evidence on the hip arthroscopy technique for femoral head fractures.
- Review implementation techniques in hip fractures in osteoporotic patients.
- Recognize and apply the appropriate treatment in diaphyseal fractures of the femur.
- Recognize and apply appropriate treatment in periprosthetic fractures.
- Identify the differences between the minimally invasive approaches to hip arthroplasty.

- ♦ Review total hip replacement in patients with developmental dysplasia of the hip.
- ♦ Interpreting results in painful hip prostheses.
- ♦ Check total hip replacement.
- ♦ Correctly perform the sequence of hip arthrodesis reversion steps in an arthroplasty.
- ♦ Review reconstructive techniques in total hip replacement dislocation.
- ♦ Identify femoroacetabular impingement syndrome.
- ♦ Review the anterior hip approach with mini-open technique in femoroacetabular impingement.
- ♦ Recognize the appropriateness of performing acetabular osteotomies.
- ♦ Recognize the appropriateness of performing femoral neck and pertrochanteric osteotomies.
- ♦ Review percutaneous surgical techniques in tendon friction syndromes around the hip.
- ♦ Identify avascular necrosis of the femoral head.
- ♦ Describe the different treatments in pediatric orthopedics and their indications.





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 about the latest advances in orthopedic surgery and traumatology of the pelvis, hip, femur and pediatric orthopedics from leading professionals”

## 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.

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- 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
- Director of the Orthopedic Traumatology Research Program at Stanford University
- 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

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*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)
- Head researcher in several research projects with competitive funding from public agencies.

## Coordinators

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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 Pelvis, Hip, Femur and Pediatric Orthopedics , contains the most complete and updated scientific program on the market”

## Module 1. Overview

- 1.1. Ethical Aspects of Orthopedic Surgery and Traumatology
- 1.2. Evidence-based Medicine for Treatment Selection 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 Platelet-rich 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. Pelvis, Hip and Femur

- 2.1. Traumatology
  - 2.1.1. Fractures of the Pelvis and Acetabulum
    - 2.1.1.1. Open Reconstruction Techniques.
    - 2.1.1.2. Percutaneous Treatment of Pelvic Ring Fractures.
  - 2.1.2. Hip Fractures
    - 2.1.2.1. Current Criteria for Implant Selection
    - 2.1.2.2. Percutaneous Sliding Nail Plate in Pertrochanteric Fractures
  - 2.1.3. Implementation Techniques in Hip Fractures in Osteoporotic Patients.

- 2.2. Total Hip Prosthesis.
  - 2.2.1. Friction Torques in Total Hip Replacement Surgery
    - 2.2.1.1. Current concepts
    - 2.2.1.2. Criteria for Implant Selection
  - 2.2.2. Total Hip Replacement Surgery with Short Stem and Overlay Prosthetics.
  - 2.2.3. Periprosthetic Fractures.
    - 2.2.3.1. Rescue Techniques.
  - 2.2.4. Minimally Invasive Approaches for Hip Arthroplasty.
  - 2.2.5. Total Hip Replacement in Developmental Dysplasia of the Hip.
  - 2.2.6. Painful Hip Prosthesis
    - 2.2.6.1. Diagnostic and Therapeutic Algorithm.
  - 2.2.7. Total Hip Replacement Surgery Replacement: Management of Cup Defects.
  - 2.2.8. Total Hip Replacement Surgery Replacement: Management of Femoral Bone Defects.
  - 2.2.9. Reconversion of Hip Arthrodesis to Arthroplasty.
- 2.3. Joint Preservation surgery.
  - 2.3.1. Femoroacetabular Impingement Syndrome
    - 2.3.1.1. Pathophysiology.
    - 2.3.1.2. Prognosis.
    - 2.3.1.3. Treatment Management.
    - 2.3.1.4. Hip Arthroscopy in Femoroacetabular Impingement Syndrome.
  - 2.3.2. Avascular Necrosis of the Femoral Head.
    - 2.3.2.1. Vascularized Fibula Graft.
    - 2.3.2.2. Neovascularizing Techniques





### Module 3. Pediatric Orthopedics

- 3.1. Arthroscopic Techniques in Children.
- 3.2. Obstetric Brachial Palsy.
- 3.3. Fractures in Children. General and Current Concepts.
- 3.4. Musculoskeletal Tumors in Children.
- 3.5. Osteotomies and Reconstruction of the Pediatric Hip. Developmental Hip Pathology.
- 3.6. Limb Lengthening Techniques.
- 3.7. Clubfoot and Congenital Foot Pathology.
- 3.8. Spondylolisthesis in Childhood.
- 3.9. Surgery in Childhood Paralysis.
- 3.10. Early Onset Scoliosis.



*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. 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 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

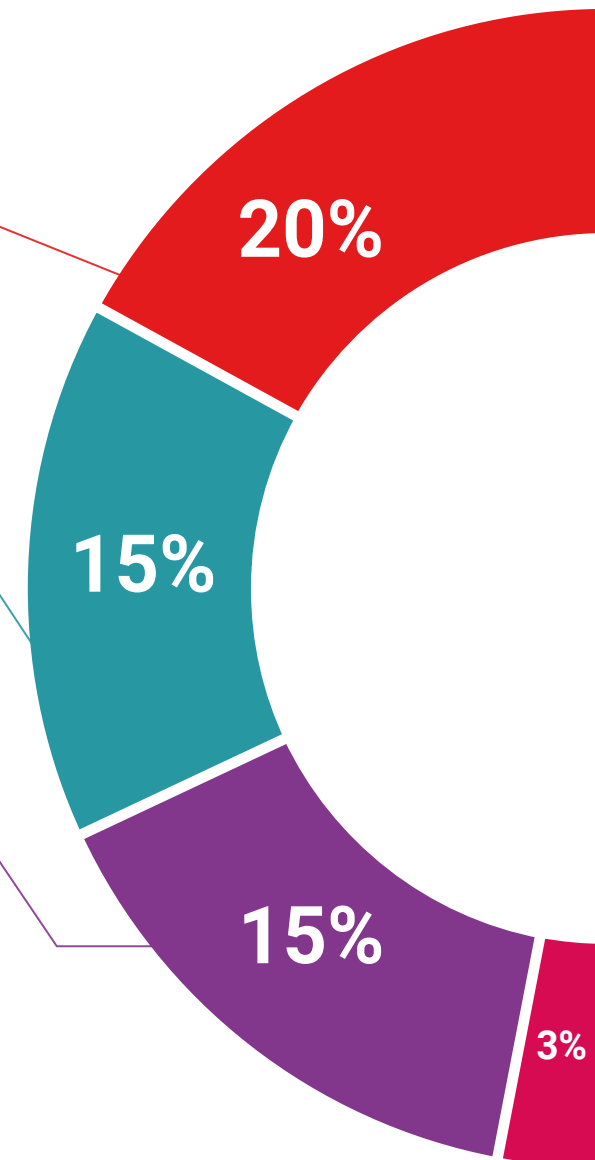
We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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 Pelvis, Hip, Femur and Pediatric Orthopedics** 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 Pelvis, Hip, Femur and Pediatric Orthopedics , contains the most complete and updated scientific program on the market”

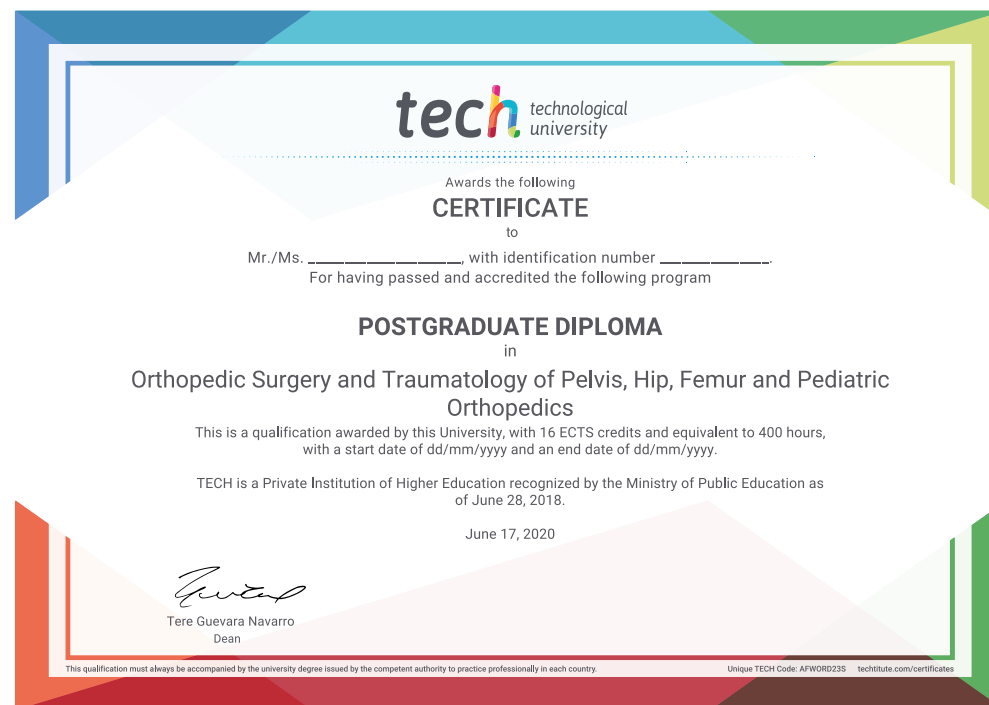
After the student has passed the evaluations,they will receive by mail their corresponding Postgraduate Diploma issued by **TECH - Technological University** via tracked delivery.

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 Pelvis, Hip, Femur and Pediatric Orthopedics**

ECTS: 16

Official Number of Hours: 400



\*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.



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



**Postgraduate Diploma**  
Orthopedic Surgery  
and Traumatology  
of Pelvis, Hip, Femur  
and Pediatric Orthopedics

- » 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 Pelvis, Hip, Femur and Pediatric  
Orthopedics