

# Postgraduate Certificate Intramedullary Nailing





## Postgraduate Certificate Intramedullary Nailing

- » Modality: online
- » Duration: 6 weeks
- » Certificate: TECH Global University
- » Credits: 6 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: [www.techtute.com/us/veterinary-medicine/postgraduate-certificate/intramedullary-nailing](http://www.techtute.com/us/veterinary-medicine/postgraduate-certificate/intramedullary-nailing)

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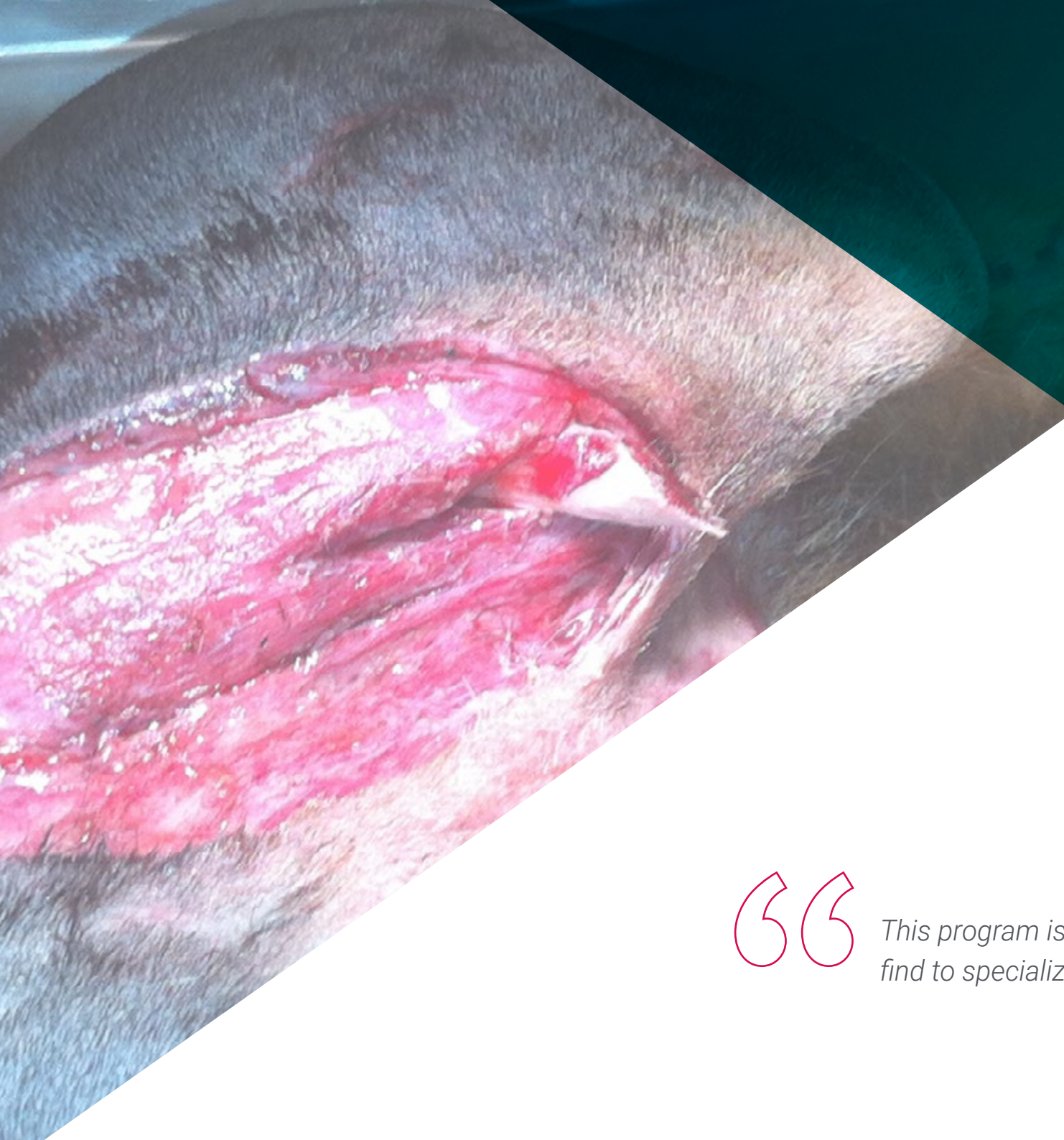
# 01

# Introduction

The intramedullary nail, for a long time, has been the most widely used implant in veterinary medicine because it is placed in the medullary cavity and becomes resistant to bending in all directions. Its strength is related to its diameter and its ability to restrict the movement of the fractured bone fragments. It is the most commonly used fixation system in dogs and cats. In many respects, it is the least sophisticated internal fixation method, but with limitations in some fractures.







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*This program is the best option you can find to specialize in Intramedullary Nailing”*

The teaching team of this Postgraduate Certificate in Intramedullary Nailing has made a careful selection of the different state-of-the-art techniques for experienced professionals working in the veterinary field.

Fracture fixation with intramedullary nails in dogs and cats began in the 1940s. Its popularity increased due to advances in anesthesia, aseptic techniques, antibiotics and the awareness on the part of veterinarians and animal owners that, in most cases treated, there was a satisfactory repair (Piermattei and Flo, 1999).

The use of intramedullary nails is recommended for fractures in any portion of a long bone, however, its use is more appropriate in short oblique or transverse fractures of the middle third or diaphysis.

It is a method used for internal fixation of fractures in humerus, femur, tibia and growth physis fractures of long bones in dogs and cats. Its use is limited in bones without bony protrusions or tuberosities.

The teachers in this training are university professors with between 10 and 50 years of classroom and hospital experience. They are professors from schools on different continents, with different ways of doing surgery and with world-renowned surgical techniques. This makes this Postgraduate Certificate a unique specialization program, different from any other that may be offered at this moment in the rest of the universities.

As it is an online course, the student is not restricted by fixed schedules or the need to move to another physical location, but can access the contents at any time of the day, balancing their work or personal life with their academic life.

This **Postgraduate Certificate in Intramedullary Nailing** contains the most complete and up-to-date educational program on the market. The most important features of the program include:

- Case studies presented by experts in Intramedullary Nailing
- 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
- Practical exercises where the self-assessment process can be carried out to improve learning
- Special emphasis on innovative methodologies in intramedullary nailing
- 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



*Do not miss the opportunity to do this Postgraduate Certificate in Intramedullary Nailing with us. It's the perfect opportunity to advance your career"*



*This Postgraduate Certificate is the best investment you can make when choosing a refresher program to expand your existing knowledge of Intramedullary Nailing”*

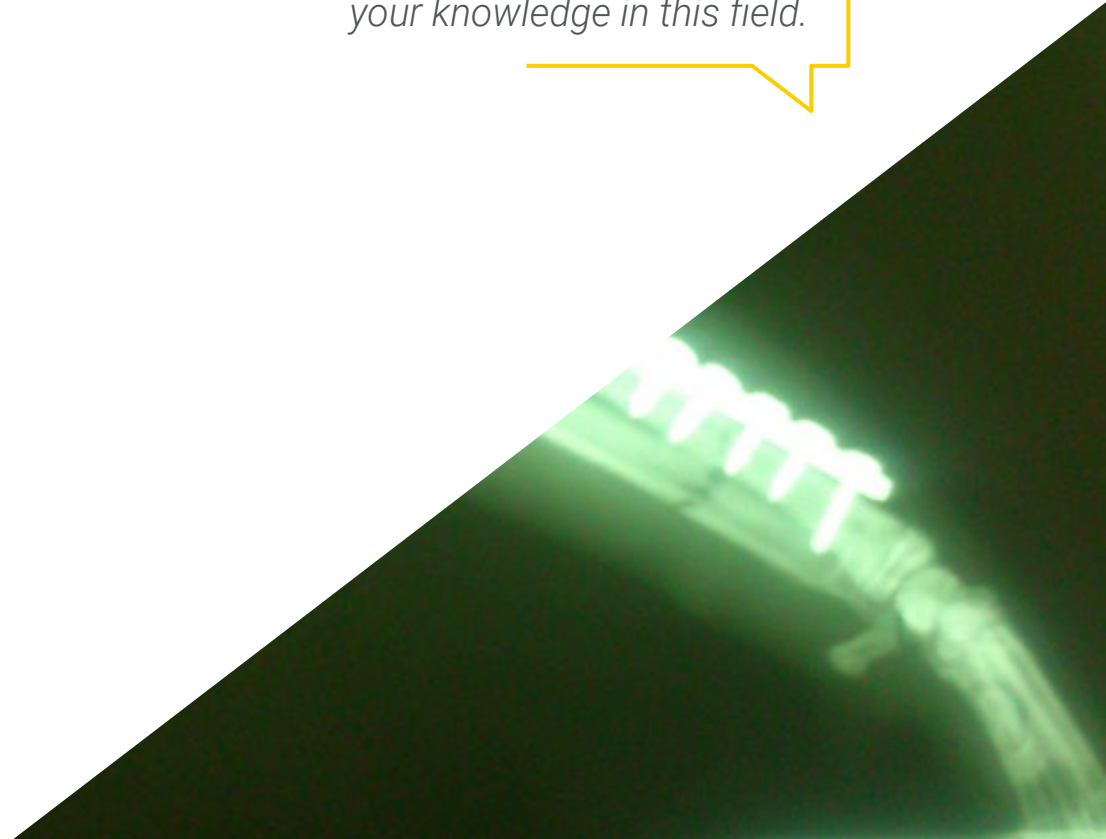
Its teaching staff includes professionals belonging to the veterinary field, who contribute their expertise to this program, as well as renowned specialists from leading societies and prestigious universities.

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 immersive training programmed to train in real situations.

This program is designed around Problem Based Learning, whereby the specialist must try to solve the different professional practice situations that arise during the academic year. For this, the professional will have the help of an innovative interactive video system made by recognized experts in Veterinary Medicine, and with great experience.

*This training comes with the best didactic material, providing you with a contextual approach that will facilitate your learning.*

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





02

# Objectives

The Postgraduate Certificate in Intramedullary Nailing is designed to facilitate the performance of the veterinary professional with the latest advances and most innovative procedures in the sector.







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*It is the best option to learn about the latest advances in Intramedullary Nailing”*



## General objectives

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- ♦ Identify and apply the basic principles in the use of the intramedullary and locked nails used in fractures in dogs and cats
- ♦ Analyse the biomechanics and forces controlling the intramedullary nail in long bone fractures in dogs and cats
- ♦ Establish the methods of insertion, types and sizes of intramedullary nails used in fractures in dogs and cats
- ♦ Identify the advantages, disadvantages and complications of the use of the intramedullary nail in fractures in dogs and cats
- ♦ Analyse and understand the principles and uses of the locking nail in long bone fractures in dogs and cats
- ♦ Identify other uses of the intramedullary nail and ancillary methods applied to bone fractures in dogs and cats



*Make the most of the opportunity and take the step to get up-to-date on the latest developments in Intramedullary Nailing”*





## Specific objectives

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- ◆ Establish the uses of intramedullary and locking nail applications in fractures of the femur, tibia and humerus
- ◆ Define the biomechanics and rotational stability of the intramedullary nail applied to the long bones of the dog and cat
- ◆ Identify the normograde and retrograde insertion forms for intramedullary nailing of long bones in dogs and cats
- ◆ Identify the use of intramedullary nailing and auxiliary fixation as cerclages and external fixators in fractures in dogs and cats
- ◆ Establish fracture repair times, radiographic follow-up and removal of intramedullary nails and ancillary methods used in fractures in dogs and cats
- ◆ Identify the use of the tension band applied to avulsion fractures in dogs and cats
- ◆ Evaluate the use of cross pins in metaphyseal, supracondylar and physal fractures of the long bones of dogs and cats



03

# Course Management

The teaching staff of the program includes leading experts in Veterinary Traumatology and Orthopedic Surgery, who bring their years of experience to this program. They are world-renowned doctors from different countries with proven theoretical and practical professional experience.







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*Our teaching team, will help you achieve success in your profession"*

## Management



### Dr. Soutullo Esperón, Ángel

- Head of the surgery service at the University Hospital of the Alfonso X el Sabio University
- Owner of the veterinary clinic ITECA
- Degree in Veterinary Medicine from the Complutense University of Madrid
- Master's Degree in Surgery and Traumatology the Complutense University of Madrid
- Diploma of Advanced Studies in Veterinary Medicine from the Complutense University of Madrid
- Member of the Scientific Committee of GEVO and AVEPA
- Lecturer at the Alfonso X el Sabio University in the subjects of Radiology, Surgical Pathology and Surgery
- Head of the surgery section on the AEVA Master's Degree in Small Animal Emergencies
- Study of the clinical repercussions of corrective osteotomies TPLO (TFG Meskal Ugatz)
- Study of the clinical repercussions of corrective osteotomies in TPLO (TFG Ana Gandía)
- Studies of biomaterials and xenografts for orthopaedic surgery

## Professors

### Dr. Borja Vega, Alonso

- ♦ Advanced PGCert in Small Animal Orthopedics
- ♦ Postgraduate Course in Veterinary Ophthalmology UAB
- ♦ SETOV practical course on initiation to osteosynthesis
- ♦ Advanced elbow course

### Dr. García Montero, Javier

- ♦ Member of the Official College of Veterinarians of Ciudad Real, Veterinary Hospital Cruz Verde (Alcazar de San Juan)
- ♦ Traumatology and Orthopedics, Surgery and Anesthesia Service Manager
- ♦ El Pinar Veterinary Clinic (Madrid)

### Dr. Guerrero Campuzano, María Luisa

- ♦ Director, exotic animal and small animal veterinarian, Petiberia Veterinary Clinic
- ♦ Zoo veterinarian
- ♦ Member of the Official College of Veterinarians of Madrid

### Dr. Monje Salvador, Carlos Alberto

- ♦ Head of the Outpatient Surgery and Endoscopy Service
- ♦ Head of Surgery and Minimally Invasive Service (endoscopy, laparoscopy, bronchoscopy, rhinoscopy etc.)
- ♦ Head of the Diagnostic Imaging Service (advanced abdominal ultrasound and radiology)

### Dr. Flores Galán, José A

- ♦ Head of the Traumatology, Orthopedics and Neurosurgery Service at Privet Veterinary Hospitals
- ♦ Degree in Veterinary Medicine from the Complutense University of Madrid
- ♦ PhD student at the Complutense University of Madrid in the field of traumatological surgery in the Dept. of Animal Medicine and Surgery of the Faculty of Veterinary Medicine
- ♦ Specialist in Traumatology and Orthopedic Surgery in Companion Animals, Complutense University of Madrid

# 04

# Structure and Content

The structure of the content has been designed by the best professionals in Veterinary Traumatology and Orthopedic Surgery 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 veterinary.



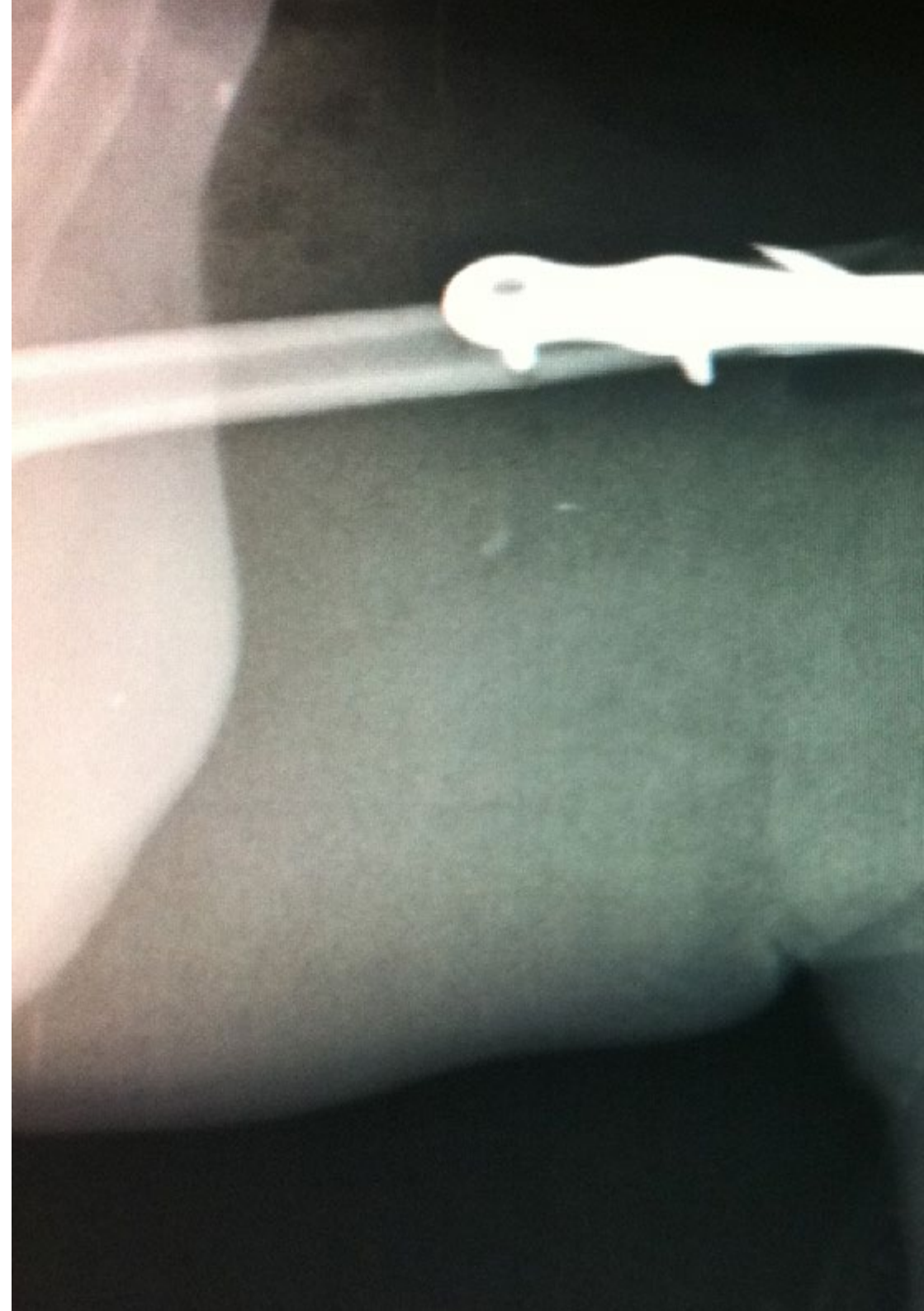


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*We have the most complete and up-to-date academic program in the market. We strive for excellence and we want you to achieve it too"*

## Module 1. Intramedullary Nailing

- 1.1. History
  - 1.1.1. Kuntcher's Nail
  - 1.1.2. The First Canine Patient with an Intramedullary Nail
  - 1.1.3. The Use of the Steinmann Nail in the 1970s
  - 1.1.4. The Use of the Steinmann Nail Today
- 1.2. Principles of Intramedullary Nail Application
  - 1.2.1. Type of Fractures in Which it Can Be Exclusively Placed
  - 1.2.2. Rotational Instability
  - 1.2.3. Length, Tip and Rope
  - 1.2.4. Nail to Medullary Canal Diameter Ratio
  - 1.2.5. Principle of the 3 Points of the Cortex
  - 1.2.6. Behaviour of the Bone and its Irrigation after Intramedullary Nail Fixation
    - 1.2.6.1. The Steinmann Nail and the Radius
- 1.3. The Use of Locks with the Steinmann Intramedullary Nail
  - 1.3.1. Principles of Application of Fastenings and Lashings
  - 1.3.2. Barrel Principle
  - 1.3.3. Type of Fracture Line
- 1.4. Principles of Application of the Tension Band
  - 1.4.1. Pawel's or Brace Principle
  - 1.4.2. Application of Engineering to Orthopedics
  - 1.4.3. Bone Structures where the Tension Band is to Be Applied
- 1.5. Normograde and Retrograde Application Method of the Steinmann Nail
  - 1.5.1. Proximal and Distal Normograde
  - 1.5.2. Proximal and Distal Retrograde
- 1.6. Femur
  - 1.6.1. Proximal Femoral Fractures
  - 1.6.2. Fractures of the Medium Third of the Femur
  - 1.6.3. Fractures of the Distal Third of the Femur





- 1.7. Tibia
  - 1.7.1. Fractures of the Proximal Third
  - 1.7.2. Fractures of the Middle Third of the Tibia
  - 1.7.3. Fractures of the Distal Third of the Tibia
  - 1.7.4. Fractures of the Tibial Malleoli
- 1.8. Anterior Member
  - 1.8.1. Intramedullary Nail in the Humerus
  - 1.8.2. Intramedullary Nail in the Ulna
  - 1.8.3. Steinmann Intramedullary Nail Fixation
  - 1.8.4. Steinmann Intramedullary Nail and Auxiliary Fixation
  - 1.8.5. Acromion
- 1.9. Intramedullary and Proximal Nailing in Exotic Animals
  - 1.9.1. X-ray Monitoring
  - 1.9.2. Bone Callus Formation
  - 1.9.3. Consolidation Behavior of the Different Species
- 1.10. Centromedullary Steel Nail
  - 1.10.1. History
  - 1.10.2. Components
  - 1.10.3. Structure
  - 1.10.4. Application
  - 1.10.5. Advantages and Disadvantages



*This training will allow you to advance in your career comfortably"*



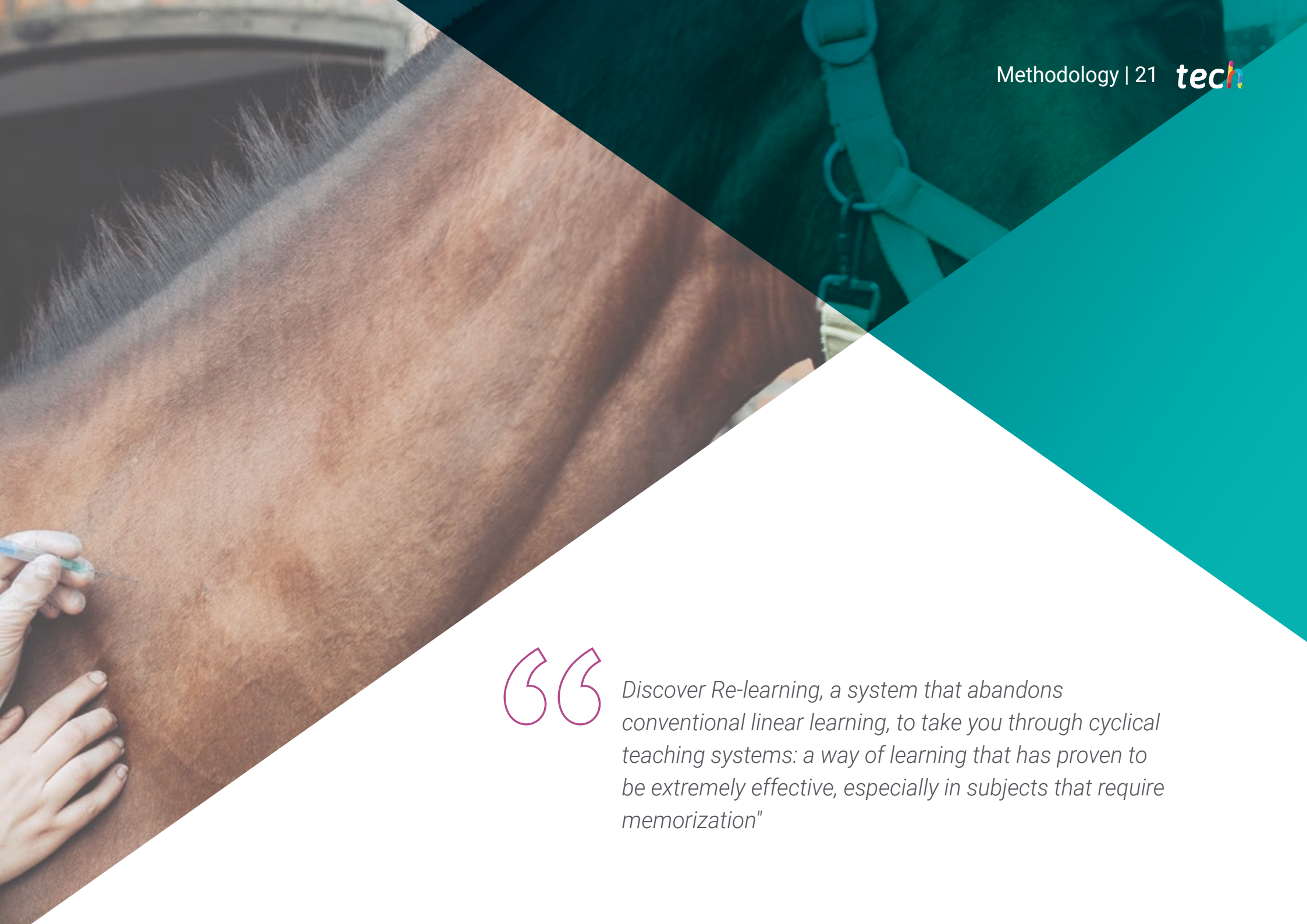
# 05 Methodology

This academic program offers students 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 you will be presented with multiple simulated clinical cases based on real patients, where you will have to investigate, establish hypotheses and, finally, resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Specialists learn better, faster, and more sustainably over time.

*With TECH you will 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 power or because of its uniqueness or rarity. It is essential that the case is based on current professional life, in an attempt to recreate the actual conditions in a veterinarian'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. Veterinarians who follow this method not only manage to assimilate concepts, but also develop their mental capacity through exercises to evaluate real situations and knowledge application
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. The feeling that the effort invested is effective becomes a very important motivation for veterinarians, which translates into a greater interest in learning and an increase in the 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.

*Veterinarians 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 online university (Columbia University).

With this methodology more than 65,000 veterinarians have been trained with unprecedented success in all clinical specialties, regardless of the surgical load. Our teaching method is developed in a highly demanding environment, where the students have a high 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 training, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation for 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.



### Latest Techniques and Procedures on Video

TECH introduces students to the latest techniques, the latest educational advances and to the forefront of current and procedures of veterinary 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 & Retesting

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 suggesting that observing third-party experts can be useful.

Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.



#### 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

The Postgraduate Certificate in Intramedullary Nailing guarantees, in addition to the most rigorous and up-to-date training, access to a Postgraduate Certificate issued by TECH Global University.





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

This program will allow you to obtain your **Postgraduate Certificate in Intramedullary Nailing** endorsed by **TECH Global University**, the world's largest online university.

**TECH Global University** is an official European University publicly recognized by the Government of Andorra ([official bulletin](#)). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Certificate in Intramedullary Nailing**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**



\*Apostille Convention. In the event that the student wishes to have their paper diploma issued with an apostille, TECH Global University will make the necessary arrangements to obtain it, at an additional cost.

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



## Postgraduate Certificate Intramedullary Nailing

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- » Duration: 6 weeks
- » Certificate: TECH Global University
- » Credits: 6 ECTS
- » Schedule: at your own pace
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# Postgraduate Certificate Intramedullary Nailing

