

# Postgraduate Certificate

## Diagnostic Imaging in Musculoskeletal Pathologies





## Postgraduate Certificate Diagnostic Imaging in Musculoskeletal Pathologies

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

Website: [www.techtitute.com/in/physiotherapy/postgraduate-certificate/diagnostic-imaging-musculoskeletal-pathologies](http://www.techtitute.com/in/physiotherapy/postgraduate-certificate/diagnostic-imaging-musculoskeletal-pathologies)

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Certificate

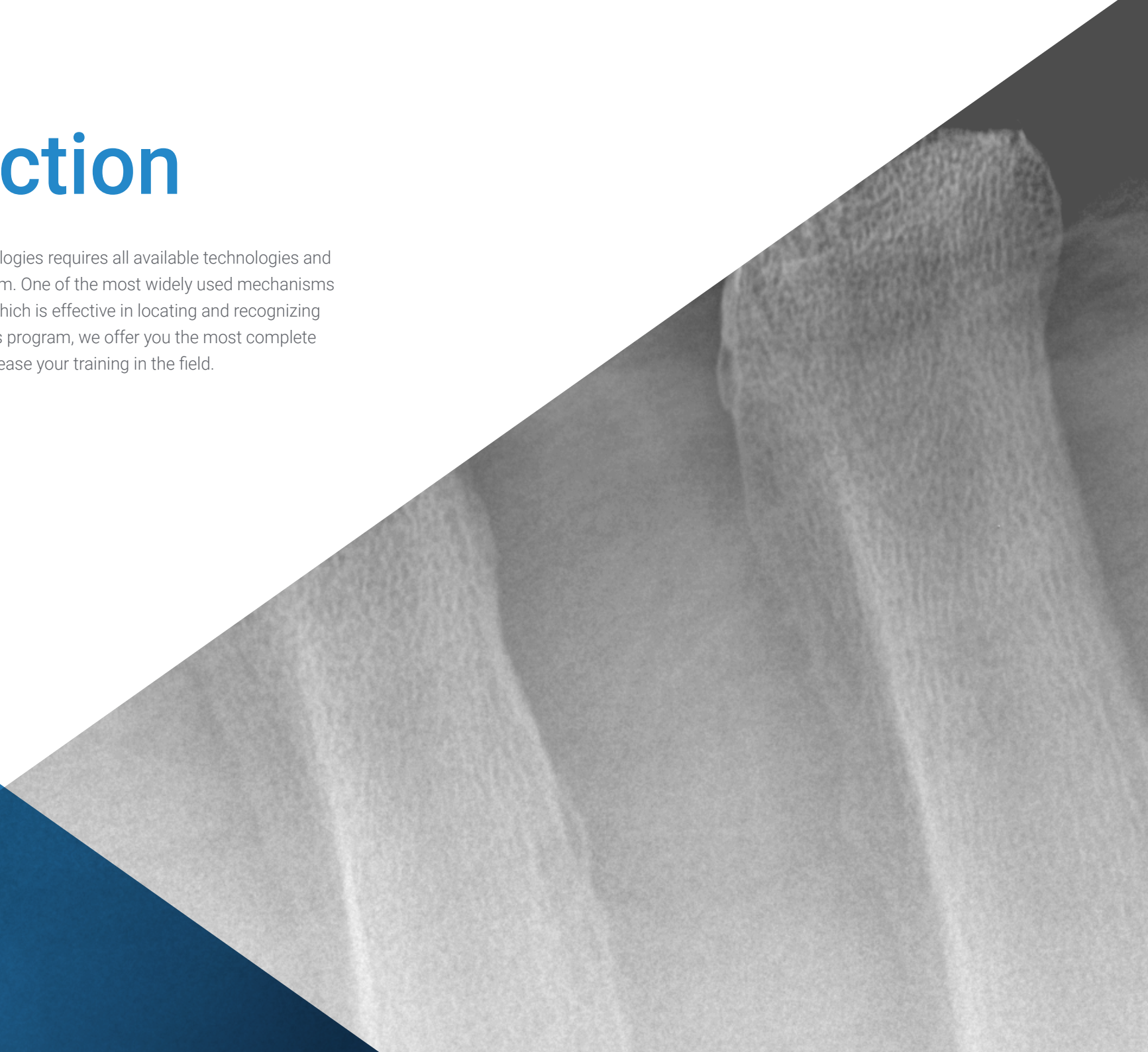
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01

# Introduction

Accurate diagnosis of equine pathologies requires all available technologies and adequate training in how to use them. One of the most widely used mechanisms in this field is diagnostic imaging, which is effective in locating and recognizing musculoskeletal pathologies. In this program, we offer you the most complete specialization on the market to increase your training in the field.





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*Learn the latest innovations in diagnostic imaging and give your career a boost. You will improve your professional level and will achieve faster recovery in your horse patients”*

This Postgraduate Certificate in Diagnostic Imaging in Musculoskeletal Pathologies addresses the most relevant and most appropriate diagnostic methods of the musculoskeletal system from the point of view of an equine physiotherapist.

Specifically, each topic describes the radiographic technique of the anatomical region to be treated, reviewing the standard procedures and the special procedures of each area to be examined. It also describes the individual anatomical variations that can be observed, as well as incidental findings and their interpretation. One of the most important sections of this training is related to ultrasound, since it teaches the ultrasound technique, normal images and the most significant alterations in injuries of the musculoskeletal system.

This Postgraduate Certificate provides students with specialized tools and skills to successfully develop their professional activity, work on key competencies such as knowledge of the reality and daily practice of the veterinary professional, and develop responsibility in the monitoring and supervision of their work, as well as communication skills within the essential teamwork.

In addition, as it is an online course, the student is not conditioned 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 Diagnostic Imaging in Musculoskeletal Pathologies** contains the most complete and up to date educational program on the market. The most important features include:

- ♦ Case studies presented by experts in equine rehabilitation
- ♦ The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional development
- ♦ Practical exercises where self assessment can be used to improve learning
- ♦ Special emphasis on innovative methodologies in exercise physiology
- ♦ 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



*Don't miss the opportunity to study this Postgraduate Certificate with us. It's the perfect opportunity to advance in your career"*

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*This Postgraduate Certificate is the best investment you can make in selecting a refresher program to update your knowledge in Diagnostic Imaging in Musculoskeletal Pathologies”*

Its teaching staff includes professionals from the field of physiotherapy, who contribute their work experience 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 an immersive training program designed 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 throughout the program. For this purpose, the professional will be assisted by an innovative interactive video system developed by renowned and experienced experts in Diagnostic Imaging in Musculoskeletal Pathologies.

*This renewal has the best didactic material, which will allow you a contextual study 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

This Postgraduate Certificate in Diagnostic Imaging in Musculoskeletal Pathologies is aimed at facilitating the performance of the professional with the latest advances and newest treatments in the sector.





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*Our goal is to offer quality specialization so that our students become the best in their profession”*



## General Objectives

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- Establish the basis for obtaining and reading diagnostic images
- Acquire knowledge of the diagnostic technique and its clinical application
- Assess the different pathologies and their clinical significance
- Provide the basis on which to establish an adequate physiotherapeutic treatment



*Our goal is to achieve  
academic excellence and  
to help you achieve it too"*





## Specific Objectives

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- ◆ Establish a protocol for diagnostic imaging screening
- ◆ Identify which technique is necessary in each case
- ◆ Generate specialized knowledge in each anatomical area
- ◆ Establish a diagnosis that helps to better treat the patient
- ◆ Determine the various diagnostic techniques and the contributions each makes to the examination
- ◆ Examine the normal anatomy of the different areas to be explored in the different imaging modalities
- ◆ Recognize individual anatomical variations
- ◆ Assess incidental findings and their possible clinical impact
- ◆ Establish the significant alterations in the different diagnostic modalities and their interpretation
- ◆ Determine an accurate diagnosis to assist in the establishment of an appropriate treatment

03

# Course Management

The program includes in its teaching staff leading experts in Equine Physiotherapy and Rehabilitation who bring to this training the experience of their work. They are world renowned professionals from different countries with proven theoretical and practical professional experience.





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*We have the most complete and successful teaching team in the educational scene"*

## Management



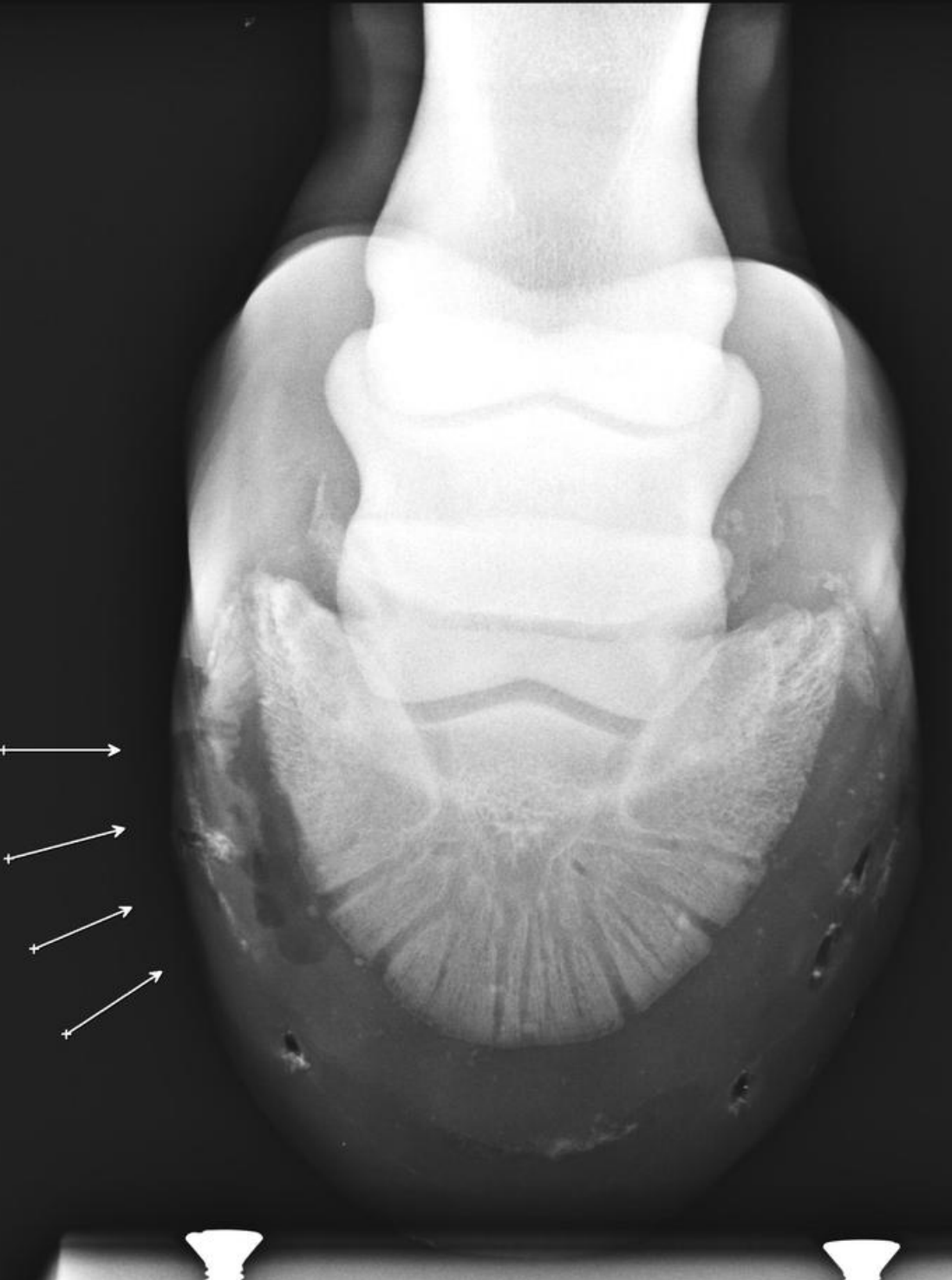
### Dr. Hernández Fernández, Tatiana

- ♦ PhD in Veterinary Medicine from the UCM
- ♦ Diploma in Physiotherapy at the URJC
- ♦ Degree in Veterinary Medicine from the UCM
- ♦ Professor at the Complutense University of Madrid of: Expert in Equine Physiotherapy and Rehabilitation, Expert in Bases of Animal Rehabilitation and Physiotherapy, Expert in Physiotherapy and Rehabilitation of Small Animals, Training Diploma in Podiatry and Shoeing
- ♦ Resident in the area of Equidae at the Clinical Veterinary Hospital of the UCM
- ♦ Practical experience of more than 500 hours in hospitals, sports centers, primary care centers and human physical therapy clinics
- ♦ More than 10 years working as a specialist in rehabilitation and physiotherapy

## Professors

### Degree in Goyoaga Elizalde, Jaime

- ♦ Graduated in Veterinary Medicine in 1986
- ♦ Associate Professor in the Department of Animal Medicine and Surgery. Faculty of Veterinary Sciences. U.C.M. Since 1989
- ♦ Stays abroad at the University of Bern, Germany (veterinary clinic Dr. Cronau) and the United States (University of Georgia)
- ♦ Spanish Certificate in Equine Clinic.
- ♦ Assistance work at the HCV Faculty of Veterinary Medicine of Madrid UCM since 1989
- ♦ Chief of the Large Animal Surgery Service of said institution
- ♦ Professor attached to the Diagnostic Imaging Service of the HCV Faculty of Veterinary Medicine of Madrid UCM



## Professors

### Mr. Goyoaga Elizalde, Jaime

- ◆ Head of the Equine Surgery Service of the Complutense Clinical Veterinary Hospital (UCM)
- ◆ Graduated in Veterinary Medicine in 1986
- ◆ At the University of Bern, Germany (veterinary clinic "Dr. Cronau") and the United States (University of Georgia)
- ◆ Professor in the Professional Master's Degree in Animal Medicine, Health and Improvement. Diagnostic Imaging. Cordoba
- ◆ Teacher in the Postgraduate Diploma in Bases of Physiotherapy and Animal Rehabilitation. UCM.
- ◆ Co-director and Teacher of the Master's Degree in Equine Medicine and Surgery Improve International
- ◆ Associate Professor since 1989 in the Department of Animal Medicine and Surgery, Faculty of Veterinary Medicine, Complutense University of Madrid
- ◆ Teacher since 1989, giving classes, among other subjects, in Medical Pathology and Nutrition, Large Animal Special Surgery, Equine Pathology and Clinical Management, Hospitalization, Emergencies and Intensive Care of Equidae, Radiology and Diagnostic Imaging

04

# Structure and Content

The structure of the content has been designed by the best professionals in the Equine Rehabilitation 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.





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

**Module 1. Diagnostic Imaging Oriented to the Diagnosis of Problems Susceptible to Physiotherapy Treatment**

- 1.1. Radiology. Radiology of the Phalanges I
  - 1.1.1. Introduction
  - 1.1.2. Radiographic Technique
  - 1.1.3. Radiology of the Phalanges I
    - 1.1.3.1. Radiographic Technique and Normal Anatomy
    - 1.1.3.2. Incidental Findings
    - 1.1.3.3. Significant Findings
- 1.2. Radiology of the Phalanges II. Navicular Disease and Laminitis
  - 1.2.1. Radiology of the Third Phalanx in Cases of Navicular
    - 1.2.1.1. Radiologic Changes in Navicular Disease
  - 1.2.2. Radiology of the Third Phalanx in Cases of Laminitis
    - 1.2.2.1. How to Measure Changes in the Third Phalanx with Good Radiographs
    - 1.2.2.2. Evaluation of Radiographic Alterations
    - 1.2.2.3. Assessment of Corrective Hardware
- 1.3. Radiology of the Fetlock and Metacarpus/Metatarsus
  - 1.3.1. Radiology the Fetlock
    - 1.3.1.1. Radiographic Technique and Normal Anatomy
    - 1.3.1.2. Incidental Findings
    - 1.3.1.3. Significant Findings
  - 1.3.2. Radiology of the Metacarpus/Metatarsus
    - 1.3.2.1. Radiographic Technique and Normal Anatomy
    - 1.3.2.2. Incidental Findings
    - 1.3.2.3. Significant Findings
- 1.4. Radiology of the Carpus and Proximal Area (Elbow and Shoulder)
  - 1.4.1. Radiology the Carpus
    - 1.4.1.1. Radiographic Technique and Normal Anatomy
    - 1.4.1.2. Incidental Findings
    - 1.4.1.3. Significant Findings
  - 1.4.2. Radiology of the Proximal Area (Elbow and Shoulder)
    - 1.4.2.1. Radiographic Technique and Normal Anatomy
    - 1.4.2.2. Incidental Findings
    - 1.4.2.3. Significant Findings
- 1.5. Radiology the Hock and Stifle
  - 1.5.1. Radiology of the Hock
    - 1.5.1.1. Radiographic Technique and Normal Anatomy
    - 1.5.1.2. Incidental Findings
    - 1.5.1.3. Significant Findings
  - 1.5.2. Radiology of the Stifle
    - 1.5.2.1. Radiographic Technique and Normal Anatomy
    - 1.5.2.2. Incidental Findings
    - 1.5.2.3. Significant Findings
- 1.6. Radiology of the Spine
  - 1.6.1. Radiology the Neck
    - 1.6.1.1. Radiographic Technique and Normal Anatomy
    - 1.6.1.2. Incidental Findings
    - 1.6.1.3. Significant Findings
  - 1.6.2. Radiology the Dorsum
    - 1.6.2.1. Radiographic Technique and Normal Anatomy
    - 1.6.2.2. Incidental Findings
    - 1.6.2.3. Significant Findings
- 1.7. Musculoskeletal Ultrasound. General Aspects
  - 1.7.1. Obtaining and Interpretation of Ultrasound Images
  - 1.7.2. Ultrasound of Tendons and Ligaments
  - 1.7.3. Ultrasound of Joints, Muscles and Bone Surfaces

- 1.8. Thoracic Limb Ultrasound
  - 1.8.1. Normal and Pathologic Images in the Thoracic Limb
    - 1.8.1.1. Hoof, Pastern and Fetlock
    - 1.8.1.2. Metacarpus
    - 1.8.1.3. Carpus, Elbow and Shoulder
- 1.9. Ultrasound of the Pelvic Limb, Neck and Dorsum
  - 1.9.1. Normal and Pathological Images in the Pelvic Limb and Axial Skeleton
    - 1.9.1.1. Metatarsus and Tarsus
    - 1.9.1.2. Stifle, Thigh and Hip
    - 1.9.1.3 Neck, Dorsum and Pelvis
- 1.10. Other Imaging Diagnostic Techniques: Magnetic Resonance, Computed Axial Tomography (CT), Gammagraphy and PET scans
  - 1.10.1. Description and Uses of Different Techniques
  - 1.10.2. Magnetic Resonance
    - 1.10.2.1. Acquisition Technique Cuts and Sequences
    - 1.10.2.2. Image Interpretation
    - 1.10.2.3. Artifacts in Interpretation
    - 1.10.2.4. Significant Findings
  - 1.10.3. CAT
    - 1.10.3.1. Uses of CT in the Diagnosis of Musculoskeletal System Injuries
  - 1.10.4. Gammagraphy
    - 1.10.4.1. Uses Gammagraphy in the Diagnosis of Musculoskeletal System Injuries
  - 1.10.5. Gammagraphy
    - 1.10.5.1. Uses Gammagraphy in the Diagnosis of Musculoskeletal System Injuries



*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: **Relearning**.

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 Relearning, 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 an abundance of scientific evidence on the effectiveness of the method. Physiotherapists/kinesiologists 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 of professional physiotherapy 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. Physiotherapists/kinesiologists 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 physiotherapist/kinesiologist 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.



## Relearning Methodology

At TECH we enhance the case method with the best 100% online teaching methodology available: Relearning.

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.



*The physiotherapist/kinesiologist 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 Relearning 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 we trained more than 65,000 physiotherapists/kinesiologists with unprecedented success in all clinical specialties, regardless of the workload. Our pedagogical methodology is developed in a highly competitive environment, with a university student body with a strong socioeconomic profile and an average age of 43.5 years old.

*Relearning 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 our 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 really 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.



#### Physiotherapy Techniques and Procedures on Video

TECH brings students closer to the latest techniques, the latest educational advances and to the forefront of current Physiotherapy techniques and procedures. 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 them as many times as you want.



#### 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.

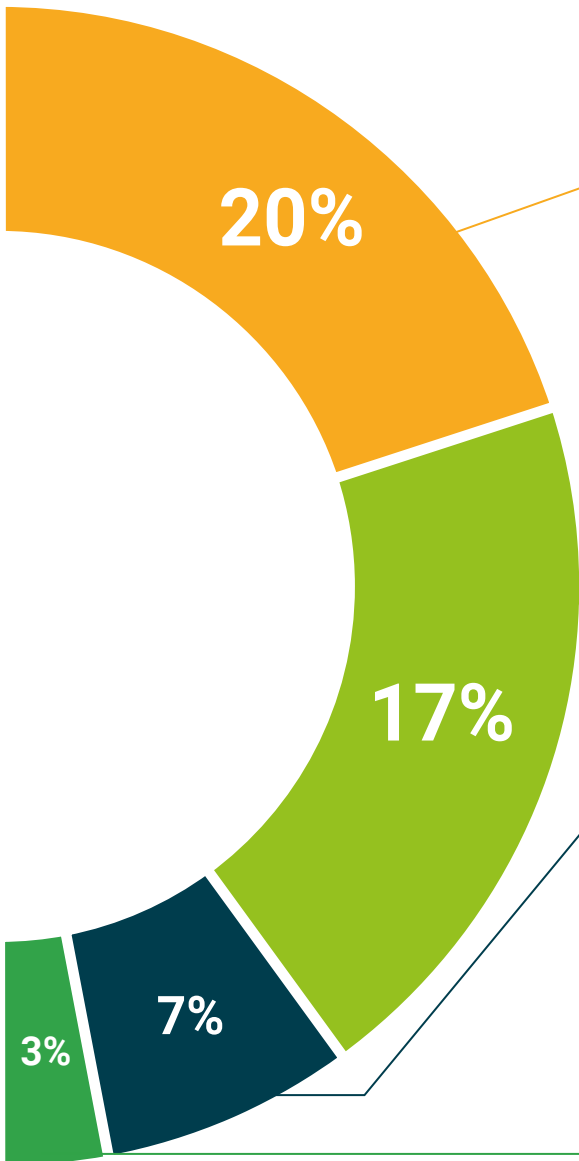
This unique multimedia content presentation training system was awarded by Microsoft as a "European Success Story".



#### 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 their goals.



#### Classes

There is scientific evidence on the usefulness of learning by observing experts. The system known as 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 Diagnostic Imaging in Musculoskeletal Pathologies guarantees you, in addition to the most rigorous and up to date education, access to a Postgraduate Certificate issued by TECH Technological University.





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*Successfully complete this program and receive your university qualification without having to travel or fill out laborious paperwork”*

This **Postgraduate Certificate in Diagnostic Imaging in Musculoskeletal Pathologies** contains the most complete and up to date scientific program on the market.

After the student has passed the assessments, they will receive their corresponding **Postgraduate Certificate** issued by **TECH Technological University** via tracked delivery\*.

The certificate issued by **TECH Technological University** will reflect the qualification obtained in the **Postgraduate Certificate**, and meets the requirements commonly demanded by labor markets, competitive examinations and professional career evaluation committees.

Title: **Postgraduate Certificate in Diagnostic Imaging in Musculoskeletal Pathologies**  
Official N° of hours: **150 h.**



\*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 training  
development languages  
virtual classroom

**tech** technological  
university

## Postgraduate Certificate

Diagnostic Imaging  
in Musculoskeletal  
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