

# Postgraduate Certificate Functional Anatomy





## Postgraduate Certificate

### Functional Anatomy

Course Modality: Online

Duration: 12 weeks

Certificate: TECH Technological University

Official N° of hours: 150 h.

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

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# 01

# Introduction

The field of Functional Anatomy has experienced enormous growth in recent years, currently representing a clinical specialty widely demanded by owners, riders and other equestrian professionals. One of its main pillars is an exhaustive and meticulous knowledge of the horse's anatomy, both from a functional point of view as well as its biomechanical behavior. Joining this community of learners will allow students to develop the professional skills needed to deal with these animals.







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*Society demands veterinary professionals who are experienced in working with equines and with extensive knowledge of functional anatomy. Don't think twice and study with us”*

The movement of the horse is developed fundamentally in three gaits: walk, trot and canter. However, as in human sport, each equestrian discipline requires specific biomechanics and therefore has specific locomotor requirements. Understanding this, professionals can facilitate appropriate movement patterns or, on the contrary, identify possible limiters of sports performance. All this has a very important implications for the clinical interpretation of numerous pathologies of the musculoskeletal apparatus of the horse.

Consequently, this Postgraduate Certificate studies the most significant aspects of functional anatomy and biomechanical features in the main locomotor units of the horse: thoracic limb, pelvic limb and dorsal line. On the other hand, natural movements are analyzed, as well as the technical demands of specific exercises in the disciplines of jumping and dressage, fundamentally. The possible locomotive modifications caused by the frame, type of track and sports equipment are also detailed.

In short, detailed knowledge of the functional anatomy of the horse facilitates the clinical recognition of multiple skeletal pathologies that must be addressed with different forms of treatment through physiotherapy and rehabilitation.

This Postgraduate Certificate provides students with specialist tools and skills to enhance their professional practice, and key competencies such as knowledge of the day-to-day work of the veterinary professional, and responsibility in the monitoring and supervision of their work, as well as communication skills for effective 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 Functional Anatomy** contains the most complete and up-to-date scientific program on the market. The most important features include:

- ♦ Practical cases presented by experts in Functional Anatomy
- ♦ Graphic, schematic, and practical contents which provide scientific and practical information on the disciplines that are essential for professional practice
- ♦ Practical exercises where self-assessment can be used to improve learning
- ♦ Special emphasis on innovative methodologies in functional anatomy
- ♦ 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 in Functional Anatomy. 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 Functional Anatomy”*

Its teaching staff includes veterinary professionals 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 education programmed to learn in real situations.

This program is designed around Problem-Based Learning, whereby the professional 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 Functional Anatomy.

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

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





# 02 Objectives

This Postgraduate Certificate in Functional Anatomy is aimed at facilitating the practice of veterinary medicine with the latest advances and newest treatments in the sector.





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





## General objectives

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- ♦ Examine the different methods used for objective measurement of the locomotor pattern of horses by means of biomechanical studies
- ♦ Analyze the functional anatomy and biomechanics of the main locomotor units of the horse
- ♦ Define movement patterns in the horse's natural gaits
- ♦ Examine the locomotor demands and specific exercises for the main equestrian sports disciplines



*A professional development and growth path that will propel you towards a greater level of competitiveness in the employment market"*







## Specific objectives

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- ♦ Characterize the gaits of walk, trot and canter from a kinetic and kinematic point of view
- ♦ Examine the influence of neck position on the biomechanics of the dorsum and pelvis
- ♦ Analyze the biomechanical characteristics of the pelvic limb and its relation to gait, trot and canter quality
- ♦ Analyze locomotor modifications associated with speed and training in horses
- ♦ Characterize the biomechanical alterations found in claudication
- ♦ Develop variations in movement quality induced by patient age and genetics
- ♦ Evaluate the influence of the morphological characteristics of the hoof on the biomechanics of the thoracic limb
- ♦ Analyze the different types of shoeing and their effect on the biomechanical characteristics of horse hooves
- ♦ Establish the interaction of the saddle and rider on the horse's locomotor pattern
- ♦ Evaluate the effect of different embouchures and performance systems on the characteristics of horse movement



03

# Course Management

The faculty includes leading experts in Functional Anatomy, who will share their professional experience throughout this program. 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 on the academic market”*

## Management



### Dr. Hernández Fernández, Tatiana

- ♦ Diploma in Physiotherapy at the URJC
- ♦ Degree in Veterinary Medicine from the UCM
- ♦ Resident in the field 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

### Dr. Gómez Lucas, Raquel

- ♦ Degree in Veterinary Medicine from the Complutense University Madrid
- ♦ Graduate of the American College of Veterinary Sports Medicine and Rehabilitation (ACVSMR)
- ♦ Head of the Sports Medicine and Diagnostic Imaging Service of the Large Animal Area of the Clinical Veterinary Hospital of the Alfonso X El Sabio University







# 04

# Structure and Content

The content has been structured and designed by leading professionals in Functional Anatomy, who have extensive experience and excellent standing within the profession, backed by a large volume of cases reviewed, studied, and diagnosed, and extensive knowledge of new technologies applied to veterinary medicine.



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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. Applied Anatomy and Biomechanics of Horses

- 1.1. Introduction to the Biomechanics of Horses
  - 1.1.1. Kinematic Analysis
  - 1.1.2. Kinetic Analysis
  - 1.1.3. Other Methods of Analysis
- 1.2. Biomechanics of Natural Gaits
  - 1.2.1. Step
  - 1.2.2. Trot
  - 1.2.3. Gallop
- 1.3. Thoracic Limb
  - 1.3.1. Functional Anatomy
  - 1.3.2. Biomechanics of the Proximal Third
  - 1.3.3. Biomechanics of the Distal Third and the Digit
- 1.4. Pelvic Limb
  - 1.4.1. Functional Anatomy
  - 1.4.2. Reciprocal Apparatus
  - 1.4.3. Biomechanical Considerations
- 1.5. Head, Neck, Dorsum and Pelvis
  - 1.5.1. Functional Anatomy of the Head and Neck
  - 1.5.2. Functional Anatomy of the Dorsum and Pelvis
  - 1.5.3. Position of the Neck and Influence on the Mobility of the Dorsum
- 1.6. Variations of the Locomotor Pattern I
  - 1.6.1. Age
  - 1.6.2. Speed
  - 1.6.3. Training
  - 1.6.4. Genetics







- 1.7. Variations of the Locomotor Pattern II
  - 1.7.1. Thoracic Limb Claudication
  - 1.7.2. Pelvic Limb Claudication
  - 1.7.3. Compensatory Clauses
  - 1.7.4. Modifications Associated With Neck and Dorsal Pathologies
- 1.8. Variations of the Locomotor Pattern III
  - 1.8.1. Trimming and Rebalancing of the Hoof
  - 1.8.2. Horseshoeing
- 1.9. Biomechanical Considerations Associated With Equestrian Disciplines
  - 1.9.1. Jumping
  - 1.9.2. Dressage
  - 1.9.3. Races and Speed
- 1.10. Applied Biomechanics
  - 1.10.1. Rider Influence
  - 1.10.2. Effect of the Frame
  - 1.10.3. Working Tracks and Floors
  - 1.10.4. Auxiliary Aids: Mouthpieces and Yields



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



# 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.







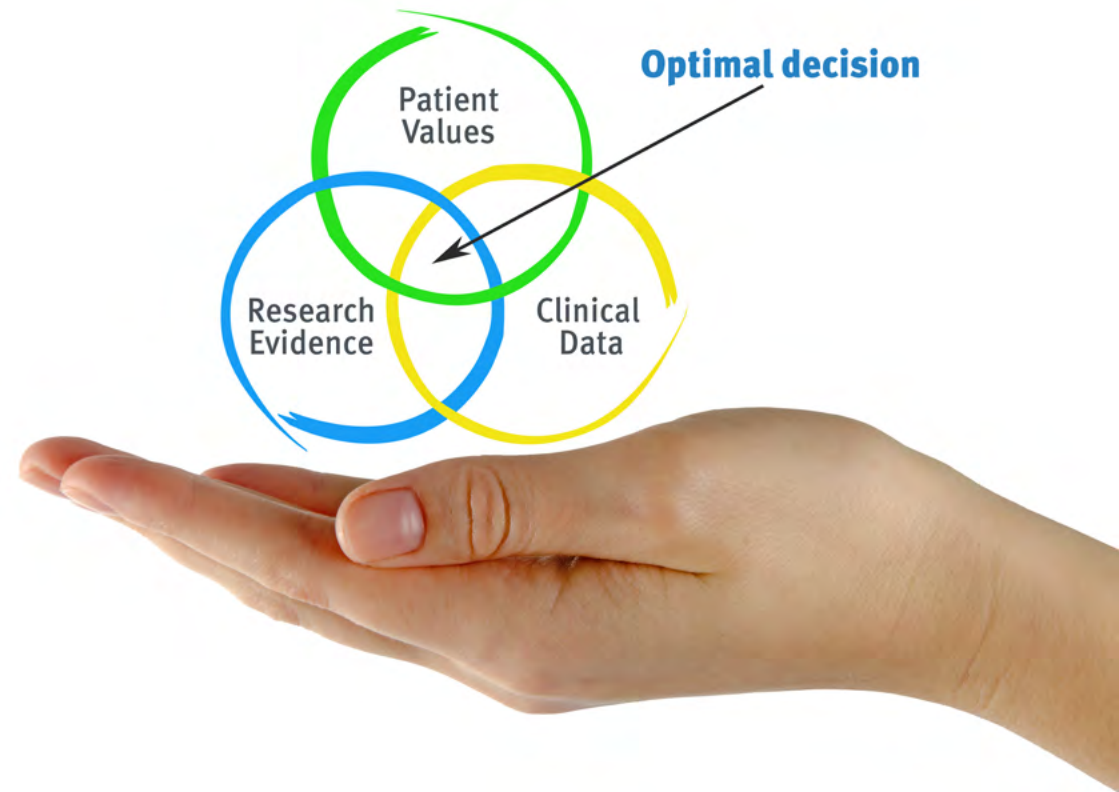
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*Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"*

## At TECH we use the Case Method

What should a professional do in a given situation? Throughout the program 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.





## 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.



*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 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 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.

*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 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 educational system for presenting multimedia content 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 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 Functional Anatomy guarantees you, in addition to the most rigorous and updated training, access to a Postgraduate Certificate issued by TECH Technological University.





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



This **Postgraduate Certificate in Functional Anatomy** 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 diploma issued by **TECH Technological University** will reflect the qualification obtained in the Postgraduate Certificate, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **Postgraduate Certificate in Functional Anatomy**

Official N° of hours: **150 h.**



\*Apostille Convention. In the event that the student wishes to have their paper diploma issued with an apostille, TECH EDUCATION 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  
development language  
classroom



**Postgraduate Certificate**  
**Functional Anatomy**

Course Modality: Online

Duration: 12 weeks

Certificate: TECH Technological University

Official N° of hours: 150 h.



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