

Postgraduate Diploma

Functional and Biomechanical Assessment of the Locomotor System

Endorsed by the NBA





Postgraduate Diploma Functional and Biomechanical Assessment of the Locomotor System

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Global University
- » Accreditation: 18 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: www.techtute.com/us/physiotherapy/postgraduate-diploma/postgraduate-diploma-functional-biomechanical-assessment-locomotor-system

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01

Introduction

A thorough fitness, functional and biomechanical assessment is essential for athletes seeking to achieve high performance in a comprehensive manner in their careers. At the same time, these athletes are aware that they need the technical support of highly qualified personnel, who are up to date and handle the most innovative tools to perform these tasks. Therefore, TECH offers physiotherapists who want to enter this field with excellence a comprehensive university program. This unparalleled program has rigorous modules that will enhance the development of competencies in an agile and flexible manner. In addition, through the disruptive Relearning system, graduates will master complex concepts without the need to memorize them.





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TECH will optimize your knowledge and skills for fitness, functional and biomechanical assessment of athletes through its disruptive 100% online methodology”

Distinguishing the different parts of the anatomical structure of the body becomes essential for the physiotherapist specialized in functional rehabilitation and recovery, because they have to know the tissue that is injured or dysfunctional. Thereby, the anatomical position constitutes a first step when starting to work on the subject's readaptation and rehabilitation. The adoption of a standard anatomical position provides a better description of the different tissues, organs, systems and structures of the human body for their evaluation, assessment and study. Likewise, the approach to functional rehabilitation can be approached from two different perspectives: prevention and treatment.

Having updated knowledge on all these aspects is essential for any physiotherapist who aspires to develop a prestigious professional career with multiple results. For this reason, TECH implements this complete Postgraduate Diploma where the most advanced tools and techniques for the recovery of sports injuries are addressed. Therefore, the academic itinerary covers the most frequent pathologies of the locomotor system and in particular the well-known ankle sprains and problems such as plantar fasciitis and hallux valgus.

The inclusion of renowned international lecturers in this university program is a unique opportunity for students. These top NBA faculty members will teach Masterclasses on Functional Assessment and Biomechanics of the highest quality, allowing students to acquire knowledge and skills that will enable them to excel in their careers. Students will be able to learn from experts who have worked with some of the best athletes in the world and who have treated sports injuries of all kinds.

Finally, this program features a disruptive 100% online methodology: Relearning. Through it, graduates will not have to memorize complex concepts. In addition, they will access the contents wherever and whenever they want, without unnecessary travel or tight schedules.

This **Postgraduate Diploma in Functional and Biomechanical Assessment of the Locomotor System** contains the most complete and up-to-date scientific program on the market.

The most important features include:

- ♦ The development of numerous case studies presented by specialists in sports rehabilitation
- ♦ The graphic, schematic and eminently practical contents, with which they are conceived, gather the indispensable information for professional practice
- ♦ It contains exercises where the self-assessment process can be carried out to improve learning
- ♦ The interactive learning system based on algorithms for decision making
- ♦ Its special emphasis on innovative methodologies in fitness, functional and biomechanical assessment
- ♦ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ♦ The availability of access to the contents from any fixed or portable device with an Internet connection



Develop high quality practical and theoretical skills in functional and biomechanical assessment with Masterclasses taught by distinguished international experts"

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A university program that relies on the disruptive Relearning methodology to allow you to assimilate complex concepts without the need to memorize them”

The program's teaching staff includes professionals in the sector 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 professionals with situated and contextual learning, i.e., a simulated environment that will provide immersive specialization, designed for specializing oneself 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 during the course. For this purpose, students will be assisted by an innovative interactive video system created by renowned and experienced experts.

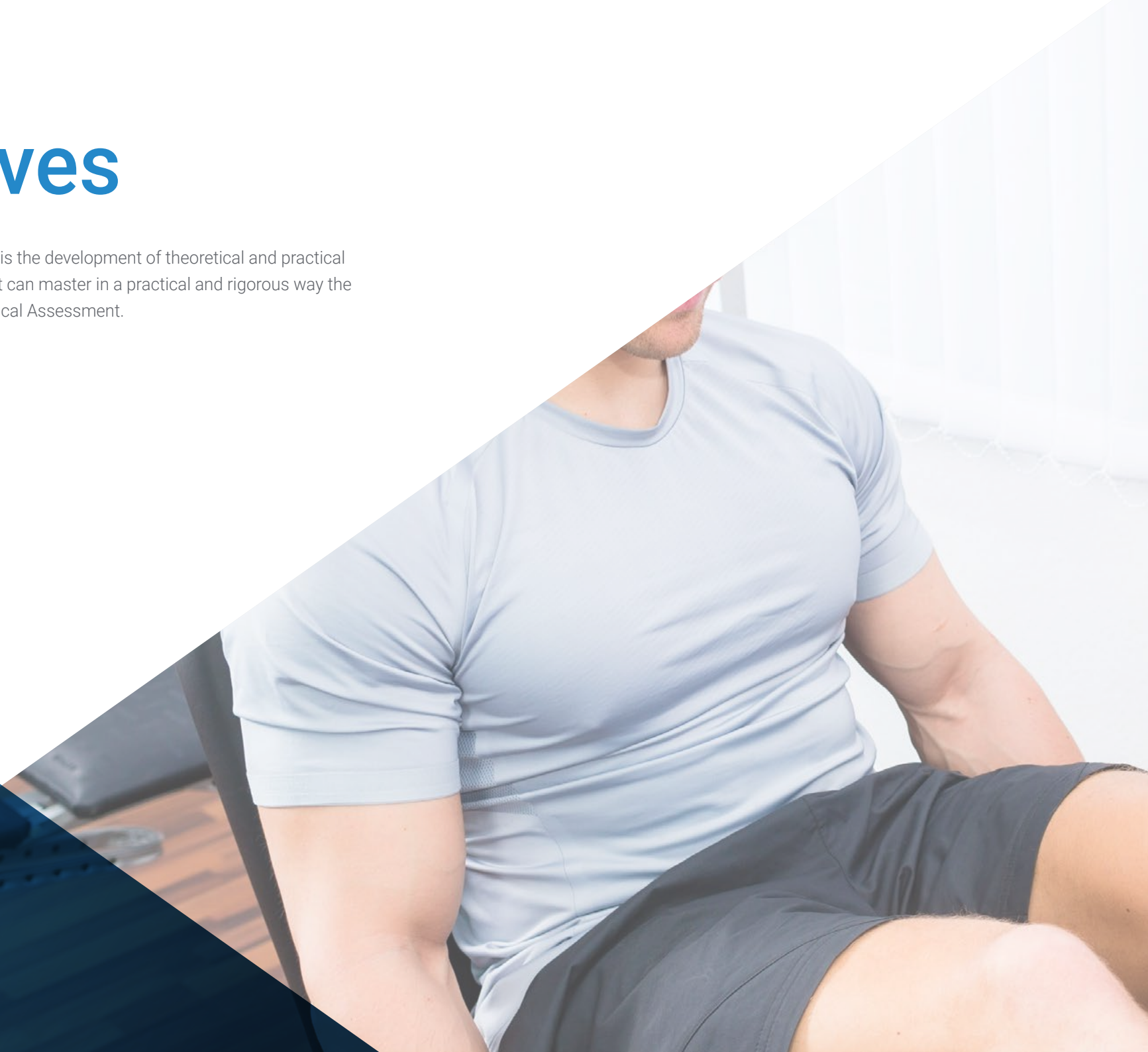
Study at the best online university in the world according to Forbes: TECH will be an unparalleled opportunity for your professional development.

Access the most rigorous and exclusive academic content 24 hours a day, 7 days a week.



02 Objectives

The main objective of this program is the development of theoretical and practical learning, so that the Physiotherapist can master in a practical and rigorous way the Fitness, Functional and Biomechanical Assessment.





Master the main pathologies of the Locomotor System and how to perform a Functional and Biomechanical Assessment of its parts in 6 months”



General Objectives

- ♦ Acquire specialized knowledge in sports rehabilitation, injury prevention and functional recovery
- ♦ Assess the athlete from the point of view of physical, functional and biomechanical condition to detect aspects that hinder recovery or favor relapses in the injury
- ♦ Design both specific readaptation and recovery work, as well as individualized integral work
- ♦ Acquire a specialization in the pathologies of the locomotor system with the highest incidence in the population as a whole
- ♦ Be able to plan prevention, rehabilitation and functional rehabilitation programs
- ♦ Delve in the characteristics of the different types of injuries most frequently suffered by athletes nowadays
- ♦ Assess the subject's nutritional needs and make nutritional recommendations and nutritional supplements to support the recovery process
- ♦ Evaluate and monitor the evolutionary process of recovery and/or rehabilitation of an athlete's or user's injury
- ♦ Acquire skills and abilities in sports readaptation, prevention and recovery
- ♦ Differentiate from an anatomical point of view the different parts and structures of the human body
- ♦ Improve the injured athlete's physical condition as part of the integral work with the objective of achieving a better and more efficient recovery after the injury
- ♦ Use coaching techniques to address general psychological aspects of the athlete or injured subject that favor an effective approach from the personal training work
- ♦ Understanding marketing as a key tool for success in personal training in the field of rehabilitation, prevention and functional recovery



Prepare yourself for professional excellence as a physical therapist through the theoretical and practical competencies that this program will offer you"



Specific Objectives

Module 1. Structure of the Locomotor System

- ◆ Manage the different anatomical concepts: axes, planes and anatomical position
- ◆ Differentiate the different elements that make up the locomotor apparatus
- ◆ See the functioning processes of the integrated active and passive locomotor apparatus
- ◆ Detect anomalies that hinder or prevent a correct recovery/rehabilitation process

Module 2. Frequent Pathologies of the Locomotor System

- ◆ Analyze the severity of ligament pathologies and their assessment for a better and more efficient rehabilitation
- ◆ Focus on the analysis of joint pathologies due to their high incidence in sports
- ◆ Examine the most common pathologies that usually occur in the spine
- ◆ Assess pain as an element to be taken into account in the diagnosis of a greater or lesser degree of injury

Module 3. Fitness, Functional and Biomechanical Assessment

- ◆ Use biomechanics of movement as a key tool in the prevention and rehabilitation process
- ◆ Clarify the importance of nutritional, biochemical, genetic and quality of life assessment from the initial period to the end of the process
- ◆ Evaluate the different parameters related to physical fitness: strength, speed, flexibility, endurance, etc.
- ◆ Detect anomalies that hinder or prevent a correct recovery/rehabilitation process

03

Course Management

This Postgraduate Diploma has true eminences in the field of Physiotherapy and Rehabilitation of Sports Injuries in its faculty. The members of this teaching staff stand out for their international prestige and research results. They have also collaborated with elite equestrians and individual athletes. From their extensive backgrounds, these specialists have put together a comprehensive syllabus that is an unparalleled academic opportunity for physiotherapists who aspire to achieve excellence in their daily practice.





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This TECH faculty is made up of true international eminences in the field of Physiotherapy and Rehabilitation of Sports Injuries”

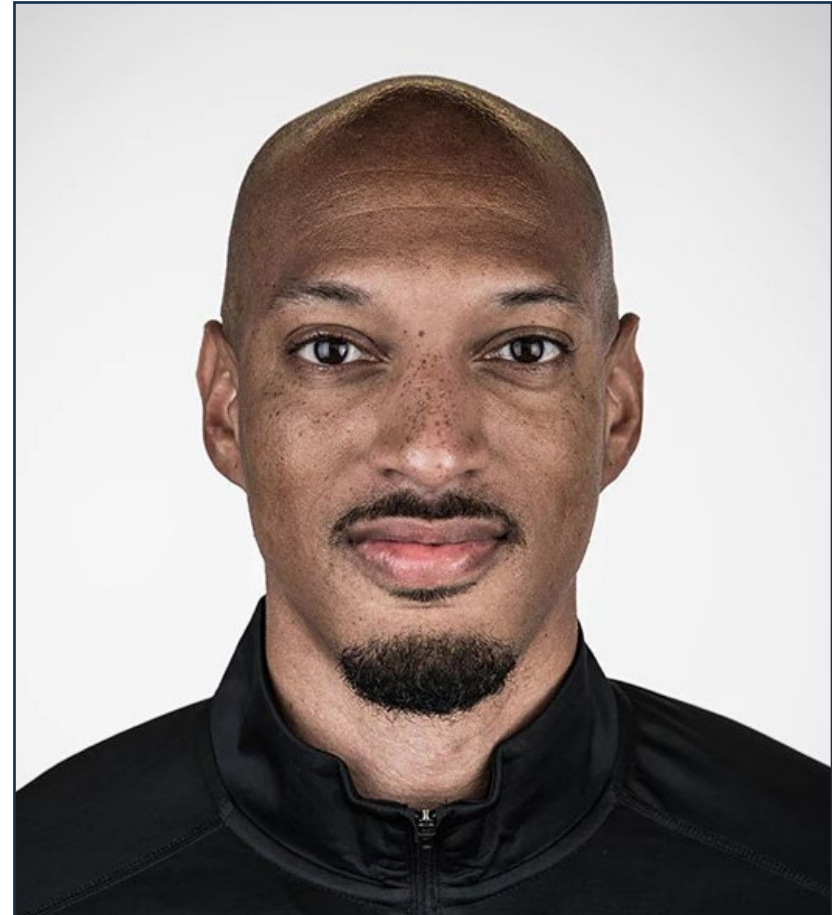
International Guest Director

Dr. Charles Loftis is a renowned specialist who serves as a sports performance therapist for the Portland Trail Blazers in the NBA. His impact on the world's premier basketball league has been significant, bringing distinguished expertise in creating strength and conditioning programs.

Prior to joining the Trail Blazers, he was the head strength and conditioning coach for the Iowa Wolves, implementing and overseeing the development of a comprehensive player program. In fact, his experience in the sports performance field began with the establishment of XCEL Performance and Fitness, of which he was the founder and head coach. There, Dr. Charles Loftis worked with a wide range of athletes to develop strength and conditioning programs, as well as working on the prevention and rehabilitation of sports injuries.

His academic background in the field of chemistry and biology gives him a unique perspective on the science behind sports performance and physical therapy. As such, he holds CSCS and RSCC designations from the National Strength and Conditioning Association (NSCA), which recognise his knowledge and skills in the field. He is also certified in PES (Performance Enhancement Specialist), CES (Corrective Exercise Specialist) and dry needling.

All in all, Dr. Charles Loftis is a vital member of the NBA community, working directly with both the strength and performance of elite athletes as well as the necessary prevention and rehabilitation of various sports injuries.



Dr. Loftis, Charles

- Physical Trainer at the Portland Trail Blazers, Portland, United States
- Head Strength and Conditioning Coach for the Iowa Wolves
- Founder and Head Coach at XCEL Performance and Fitness
- Head Performance Coach for Oklahoma Christian University men's basketball team
- Physical Therapist at Mercy
- PhD in Physical Therapy from Langston University
- Degree in Chemistry and Biology from Langston University

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

International Guest Director

Isaiah Covington is a highly skilled performance coach, with extensive experience in treating and addressing a variety of injuries in elite athletes. In fact, his professional career has been directed towards the NBA, one of the most important sports leagues in the world. He is the performance coach of the Boston Celtics, one of the most important teams in the Eastern Conference and with the greatest projection in the United States.

His work in such a demanding league has made him specialize in maximizing the physical and mental potential of the players. Key to this has been his past experience with other teams, such as the Golden State Warriors and the Santa Cruz Warriors. This has also allowed him to work on sports injuries, focusing on the prevention and rehabilitation of the most common injuries in elite athletes.

In academia, his interests have been in the fields of kinesiology, exercise science and high performance sport. This has led him to excel prolifically in the NBA, working day-to-day with some of the most important basketball players and coaching staffs in the world.



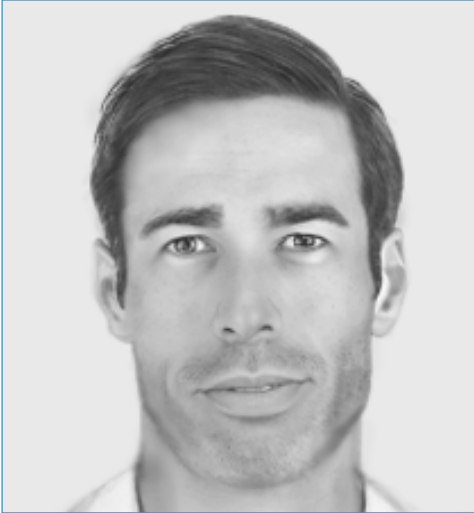
Mr. Covington, Isaiah

- Performance Coach and Fitness Trainer for the Boston Celtics, Boston, USA
- Performance Coach of the Golden State Warriors
- Head Performance Coach, Santa Cruz Warriors, Santa Cruz, USA
- Performance Coach at Pacers Sports & Entertainment
- Degree in Kinesiology and Exercise Science from the University of Delaware
- Specialization in Training Management
- Master's Degree in Kinesiology and Exercise Science from Long Island University
- Master's Degree in Performance Sport from the Australian Catholic University



Take the opportunity to learn about the latest advances in this field in order to apply it to your daily practice"

Management



Dr. González Matarín, Pedro José

- Technical researcher of Health Education in Murcia
- Teacher and researcher at the University of Almeria
- Teacher and researcher at the University of Almeria
- High Performance Coach
- Doctor in Health Sciences
- Degree in Physical Education
- Master's Degree in Functional Recovery in Physical Activity and Sport
- Master's Degree in Regeneration Medicine
- Master's Degree in Physical Activity and Health
- Master's Degree in Dietetics and Diet Therapy
- Member of: SEEDO and AEEM



04

Structure and Content

The study plan of this program is the most comprehensive and exclusive in the academic panorama in the field of Functional Assessment and Biomechanics of the Locomotor System. Through 3 rigorous modules, students will delve into common pathologies that are detected in this system that is integrated into the human body. At the same time, they will approach techniques such as the evaluation of functional movement. All this in a 100% online way, without pre-established schedules and accessing the didactic material at any time of the 24 hours of the day. In addition, students of this university program will have access to exclusive multimedia resources such as explanatory videos, interactive summaries and infographics.



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Don't miss the opportunity to update your skills with rigorous materials such as explanatory videos, self-assessment tests and complementary readings”

Module 1: Structure of the Locomotor System

- 1.1. Anatomical Position, Axes and Planes
- 1.2. Bone
- 1.3. Joints
 - 1.3.1. Etiology
 - 1.3.2. Synarthrosis
 - 1.3.3. Amphiarthrosis
 - 1.3.4. Diarthrosis
- 1.4. Cartilage
- 1.5. Tendons and Ligaments
- 1.6. Skeletal Muscle
- 1.7. Development of the Musculoskeletal System
- 1.8. Components of the Musculoskeletal System
- 1.9. Nervous Control of Skeletal Muscles
- 1.10. Muscle Contraction
 - 1.10.1. Functioning of Muscle Contraction
 - 1.10.2. Type of Muscle Contraction
 - 1.10.2. Muscle Bioenergetics

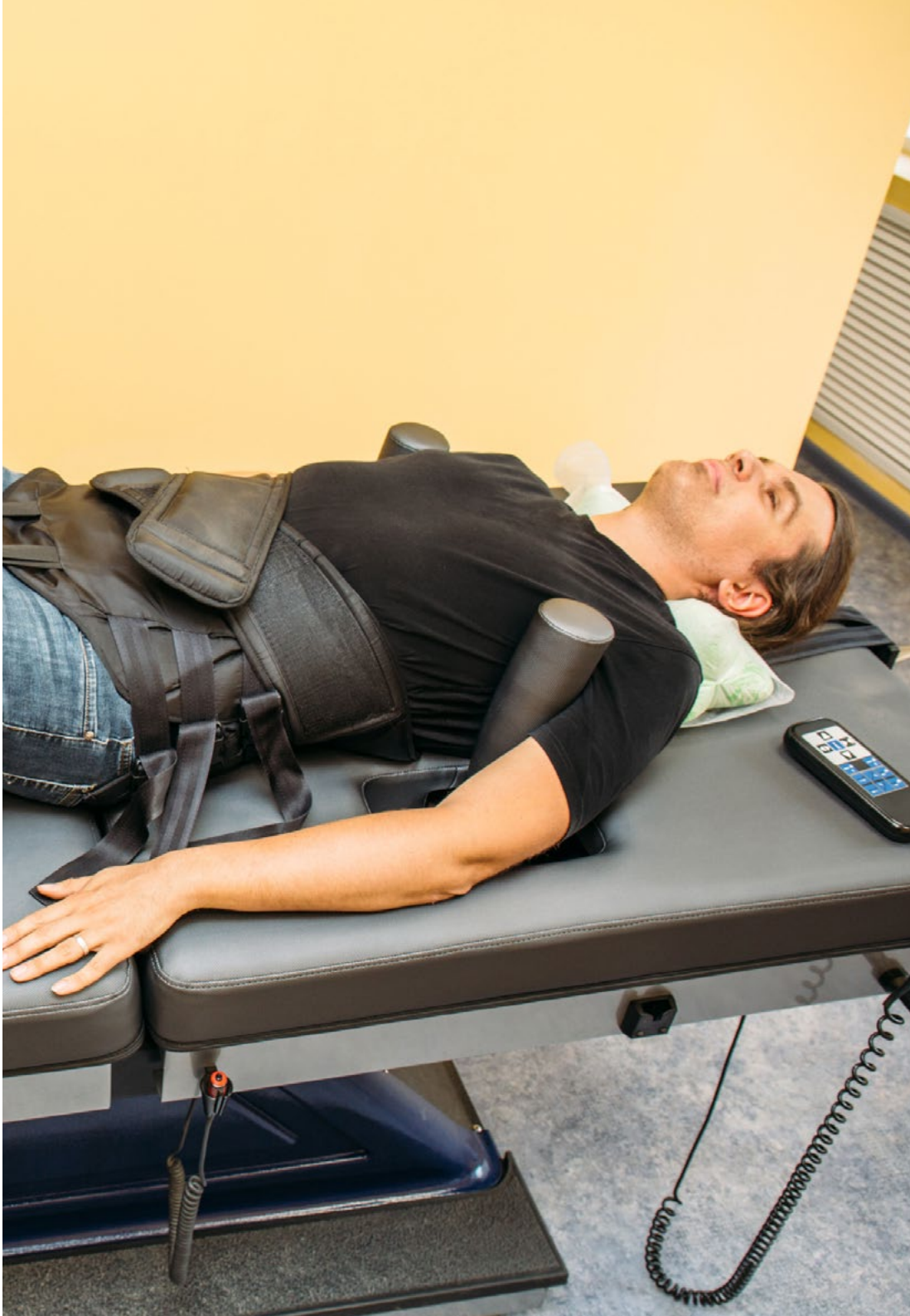
Module 2: Frequent Pathologies of the Locomotor System

- 2.1. Cervical pain, Dorsalgia and Lumbalgia
- 2.2. Scoliosis
- 2.3. Herniated Disc
- 2.4. Shoulder Tendinitis
- 2.5. Epicondylitis
 - 2.5.1. Epidemiology
 - 2.5.2. Pathologic Anatomy
 - 2.5.3. Clinical Symptoms
 - 2.5.4. Diagnosis
 - 2.5.5. Treatment
- 2.6. Hip Osteoarthritis
- 2.7. Gonarthrosis

- 2.8. Plantar Fasciitis
 - 2.8.1. Conceptualization
 - 2.8.2. Risk Factors
 - 2.8.3. Symptoms
 - 2.8.4. Treatment
- 2.9. Hallux Valgus and Flat Feet
- 2.10. Sprained Ankle

Module 3: Fitness, Functional and Biomechanical Assessment

- 3.1. Anatomy and Kinesiology
- 3.2. Human Movement Science
- 3.3. Applied Biomechanics:
- 3.4. Initial Customer Inquiry
- 3.5. Physical Fitness Testing Protocols and Standards
- 3.6. Functional Movement Assessment
 - 3.6.1. Motion Detection, Testing and Assessment
 - 3.6.2. Pantalla de Movimiento Funcional (FMS)
 - 3.6.3. Selective Assessment of Functional Movement
 - 3.6.4. Specific Functional Performance Tests
- 3.7. Nutritional Assessment, Genetic Evaluation, Biochemistry and Quality of Life.
- 3.8. Biomechanics
 - 3.8.1. Biomechanical Fundamentals
 - 3.8.2. Biomechanics of Human Movement
 - 3.8.3. Muscular Control of Movement
 - 3.8.4. Biomechanics of Resistance Exercise
- 3.9. Evaluation of Physical Fitness
- 3.10. Risk Detection and Stratification



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You are just one click away from boosting your professional career through the most rigorous update. Enroll now in this TECH Postgraduate Diploma!”

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. 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, 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.

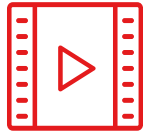
Relearning will allow you to learn with less effort and better performance, involving you more in your training, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation for success.

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

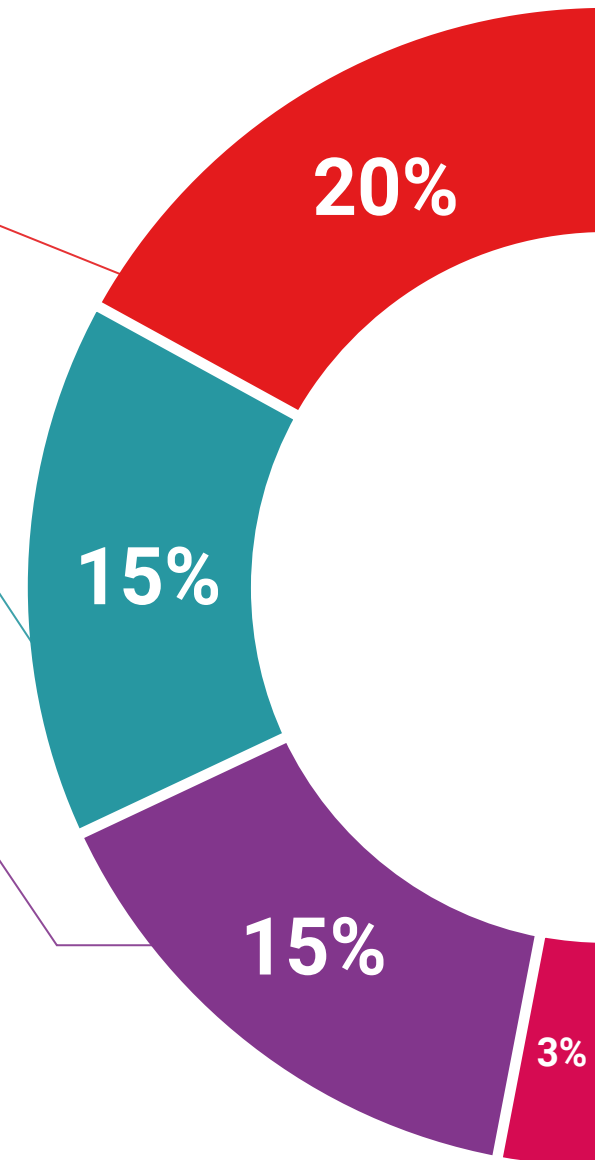
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

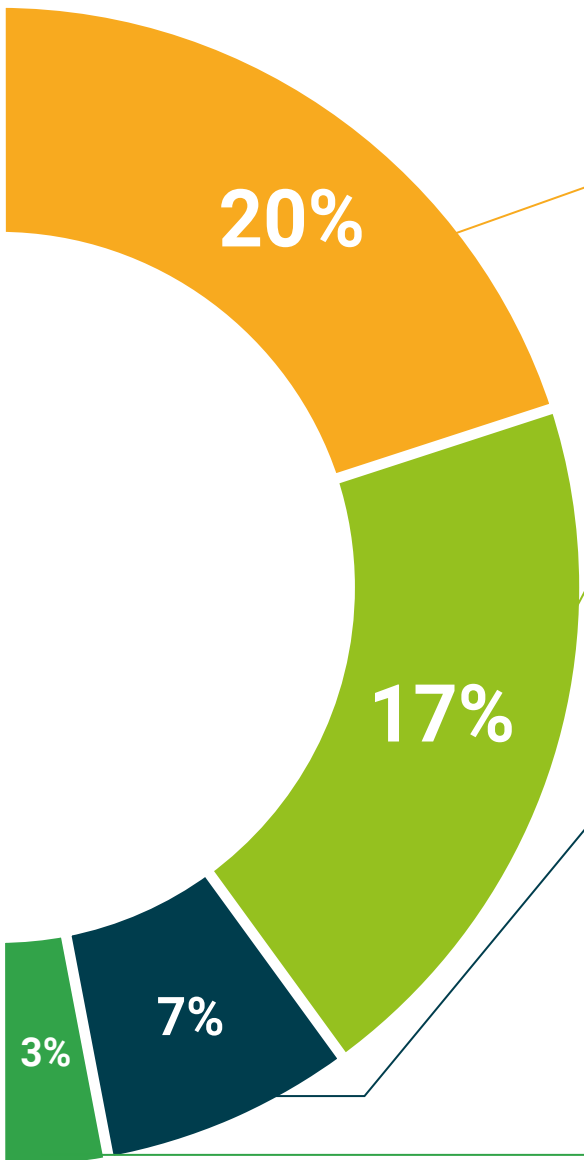
This unique multimedia content presentation training system was awarded by Microsoft as a "European Success Story".



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 Diploma in Functional and Biomechanical Assessment of the Locomotor System guarantees students, in addition to the most rigorous and up to date education, access to a Postgraduate Diploma issued by TECH Global University.



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

This private qualification will allow you to obtain a **Postgraduate Diploma in Functional and Biomechanical Assessment of the Locomotor System** 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.

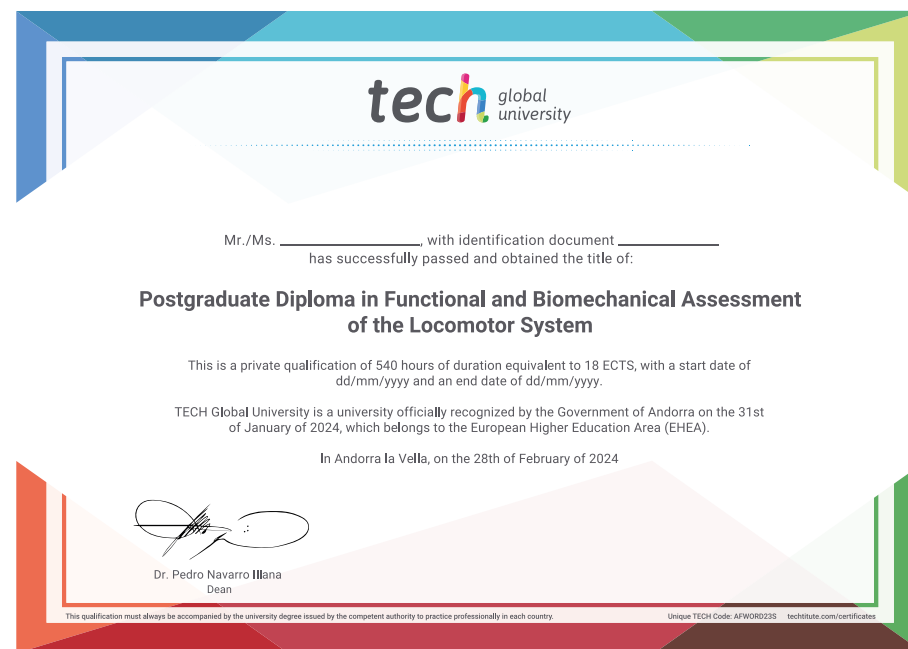
This **TECH Global University** private qualification is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Diploma in Functional and Biomechanical Assessment of the Locomotor System**

Modality: **online**

Duration: **6 months**

Accreditation: **18 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.



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