

# Postgraduate Certificate Strength Training in Medium and Long Duration and Endurance Sports

Endorsed by the NBA





## Postgraduate Certificate Strength Training in Medium and Long Duration and Endurance Sports

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

Website: [www.techtute.com/us/physiotherapy/postgraduate-certificate/strength-training-medium-long-duration-endurance-sports](http://www.techtute.com/us/physiotherapy/postgraduate-certificate/strength-training-medium-long-duration-endurance-sports)

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# 01

# Introduction

In this high-level program, the physiotherapist will specialize in strength training for athletes performing medium and long duration physical activities. A unique opportunity to train with the best and to acquire advanced knowledge in the field, with which you will achieve academic excellence and stand out in a sector characterized by its high professional competence.







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*Immerse yourself in this Postgraduate Certificate of high scientific rigor and improve your physiotherapeutic skills in strength training for high performance sports"*

More and more often we see elite events such as Tour de France stages, Olympic Distance Triathlon, where first place is settled by a *sprint* finish. This requires adequate levels of strength to sustain the length of the stride, stroke, paddle, etc., during the race and to have the neuromuscular development to sprint over the finish. This is why the work of physiotherapists is essential for athletes who wish to achieve optimal performance.

Strength training for athletes is a fundamental element in the prevention and treatment of chronic non-communicable diseases. Clinical training supervised by a physiotherapist decreases muscle weakness and injury risk, as it is an effective method to increase muscle mass and strength.

Students of this Postgraduate Certificate will have a differentiating qualification with respect to their professional colleagues, being able to perform in all areas of sport as a specialist in Strength Training.

The faculty of this Postgraduate Certificate in Strength Training in Medium and Long Duration and Endurance Sports has made a careful selection of each of the topics of this program to offer the student an educational opportunity as complete as possible and always linked to current events.

Thus, TECH has set out to create contents of the highest teaching and educational quality that will turn students into successful professionals, following the highest quality standards in teaching at an international level. Therefore, we offer you this Postgraduate Certificate with extensive content that will help you reach the elite in physiotherapy. 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 Strength Training in Medium and Long Duration and Endurance Sports** 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 personal training
- ◆ The graphic, schematic and practical contents of the course are designed to provide all the essential information required for professional practice
- ◆ Exercises where the self-assessment process can be carried out to improve learning
- ◆ Algorithm-based interactive learning system for decision-making
- ◆ Special emphasis on innovative methodologies in physiotherapy
- ◆ 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



*Specialize and stand out  
in a sector with a high  
demand for professionals"*

“

*This Postgraduate Certificate is the best investment you can make in selecting a refresher program for two reasons: in addition to updating your knowledge as a personal trainer, you will obtain a qualification from the leading online university in Spanish TECH”*

Its teaching staff includes professionals who contribute their work experience to this educational 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 learning programmed to train 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. To do so, the professional will be assisted by an innovative interactive video system developed by renowned and experienced experts in Performance Assessment and Strength Training.

*This Postgraduate Certificate allows studying in simulated environments, which provide immersive learning programmed to train for real situations.*

*Increase your knowledge in Strength Training in Medium and Long Duration and Endurance Sports with this high-level program.*





# 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 in Sports Performance Assessment in Strength Training.





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*Our goal is to achieve academic excellence and help you achieve professional success. Don't hesitate any longer and join us”*



## General Objectives

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- ◆ Delve into the knowledge based on the most current scientific evidence with full applicability in the practical field of strength training
- ◆ Master all the most advanced methods of strength training
- ◆ Apply with certainty the most current training methods to improve sports performance regarding strength
- ◆ Effectively master strength training for performance enhancement in time and mark sports as well as situational sports
- ◆ Master the principles governing Exercise Physiology, as well as Biochemistry
- ◆ Delve into the principles that govern the Theory of Complex Dynamic Systems as they relate to strength training
- ◆ Successfully integrate strength training for the improvement of Motor Skills immersed in sport
- ◆ Successfully master all the knowledge acquired in the different modules in real practice





## Specific Objectives

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- ◆ Identify and analyze the mechanisms of force production in different endurance disciplines
- ◆ Gain in-depth knowledge of the different means and methods of strength training and their practical application
- ◆ Delve into the effects of concurrent training and its responses on endurance
- ◆ Program and organize strength training

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*Sports requires trained professional physiotherapists and we give you the tools you need to be among the professional elite"*



03

# Course Management

Our teaching team has a wide prestige in the sector and are professionals with years of teaching experience who have joined forces to help you give a boost to your profession. For this reason, they have developed this Postgraduate Certificate with recent updates on the subject that will allow you to train and increase your skills in the field.







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*Learn from the best professionals and become a successful professional yourself”*

## Management



### Dr. Rubina, Dardo

- ♦ CEO of Test and Training
- ♦ EDM Physical Training Coordinator
- ♦ Physical trainer of the EDM First Team
- ♦ Master's Degree in (ARD) COE
- ♦ EXOS CERTIFICATION
- ♦ Specialist in Strength Training for the Prevention of Injuries, Functional and Physical-Sports Rehabilitation
- ♦ Specialist in Strength Training Applied to Physical and Sports Performance
- ♦ Specialist in Applied Biomechanics and Functional Evaluation
- ♦ Certification in Weight Management and Physical Performance Technologies
- ♦ Postgraduate course in Physical Activity in Populations with Pathologies
- ♦ Postgraduate diploma in Injury Prevention and Rehabilitation
- ♦ Functional Assessment and Corrective Exercise Certificate
- ♦ Certificate in Functional Neurology
- ♦ Diploma in Advanced Studies (DEA) University of Castilla la Mancha
- ♦ PhD Candidate in (ARD)

## Professors

### Mr. Añon, Pablo

- ◆ Degree in Physical Activity and Sport
- ◆ Postgraduate diploma in Sports Medicine and Sciences Applied to Sport
- ◆ Physical trainer of the National Volleyball team that will attend the next Olympic Games
- ◆ Certified strength and conditioning specialist, NSCA certification.
- ◆ NSCA National Conference



# 04

# Structure and Content

The structure of the contents has been designed by a team of professionals knowledgeable about the implications of training in daily practice, aware of the relevance of quality education in the field of physiotherapy and committed to quality teaching through new educational technologies.





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*We have the most complete and up-to-date academic program on the market. We want to provide you with the best qualification”*

## Module 1. Strength Training in Medium and Long Duration and Endurance Sports

- 1.1. Strength
  - 1.1.1. Definition and concept
  - 1.1.2. *Continuum* of Conditional Abilities
  - 1.1.3. Strength Requirements for Endurance Sports. Scientific Evidence
  - 1.1.4. Strength Manifestations and Their Relationship to Neuromuscular Adaptations in Endurance Sports
- 1.2. Scientific Evidence on the Adaptations of Strength Training and its Influence on Medium and Long Duration Endurance Tests
  - 1.2.1. Neuromuscular Adaptations
  - 1.2.2. Metabolic and Endocrine Adaptations
  - 1.2.3. Adaptations When *Performing* Specific Tests
- 1.3. Principle of Dynamic Correspondence Applied to Endurance Sports
  - 1.3.1. Biomechanical Analysis of Force Production in Different Gestures: Running, Cycling, Swimming, Rowing, Cross-Country Skiing.
  - 1.3.2. Parameters of Muscle Groups Involved and Muscle Activation
  - 1.3.3. Angular Kinematics
  - 1.3.4. Rate and Duration of Force Production
  - 1.3.5. Stress Dynamics
  - 1.3.6. Amplitude and Direction of Movement
- 1.4. Concurrent Strength and Endurance Training
  - 1.4.1. Historical Perspective
  - 1.4.2. Interference Phenomenon
    - 1.4.2.1. Molecular Aspects
    - 1.4.2.2. Sports Performance
  - 1.4.3. Effects of Strength Training on Endurance
  - 1.4.4. Effects of Resistance Training on Strength Demonstrations
  - 1.4.5. Types and Modes of Load Organization and Their Adaptive Responses
  - 1.4.6. Concurrent Training. Evidence on Different Sports





- 1.5. Strength Training
  - 1.5.1. Resources and Methods for Maximum Strength Development
  - 1.5.2. Resources and Methods for Explosive Strength Development
  - 1.5.3. Resources and Methods for Reactive Strength Development
  - 1.5.4. Compensatory and Injury Risk Reduction Training
  - 1.5.5. Plyometric Training and Jumping Development as an Important Part of Improving Running Economy
- 1.6. Exercises and Special Means of Strength Training for Medium and Long Endurance Sports
  - 1.6.1. Movement Patterns
  - 1.6.2. Basic Exercises
  - 1.6.3. Ballistic Exercises
  - 1.6.4. Dynamic Exercises
  - 1.6.5. Resisted and Assisted Strength Exercises
  - 1.6.6. Core Exercises
- 1.7. Strength Training Programming Based on the Microcycle Structure
  - 1.7.1. Selection and Order of Exercises
  - 1.7.2. Weekly Frequency of Strength Training
  - 1.7.3. Volume and Intensity According to the Objective
  - 1.7.4. Recovery Times
- 1.8. Strength Training Aimed at Different Cyclic Disciplines
  - 1.8.1. Strength Training for Middle-Distance and Long-Distance Runners
  - 1.8.2. Strength Training for Cycling
  - 1.8.3. Strength Training for Swimming
  - 1.8.4. Strength Training for Rowing
  - 1.8.5. Strength Training for Cross-Country Skiing
- 1.9. Controlling the Training Process
  - 1.9.1. Load Speed Profile
  - 1.9.2. Progressive Load Test



# 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

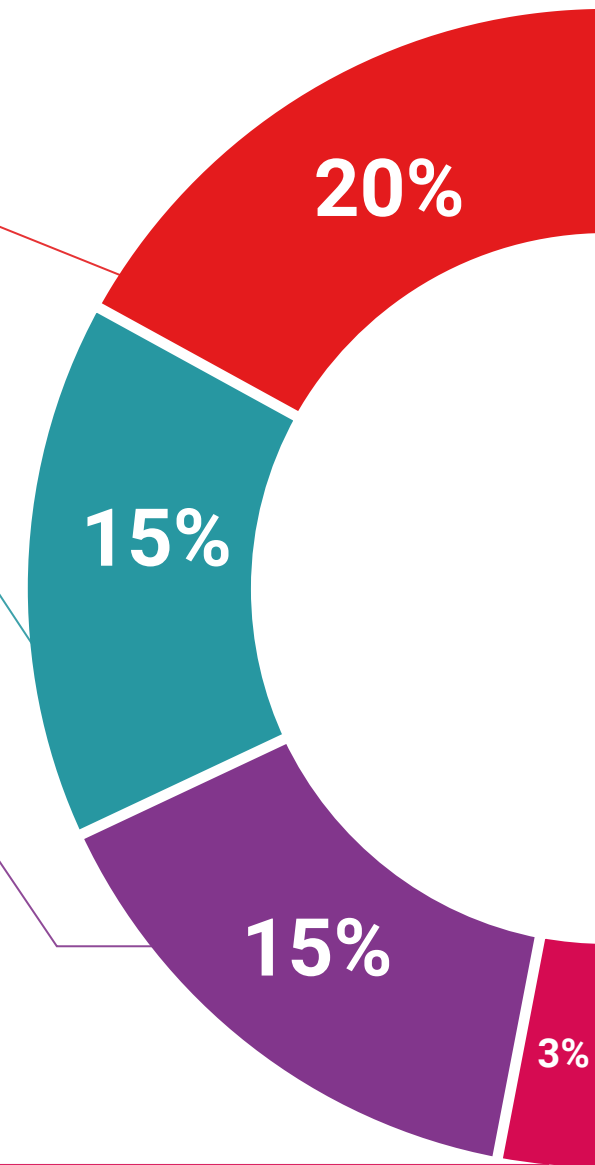
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

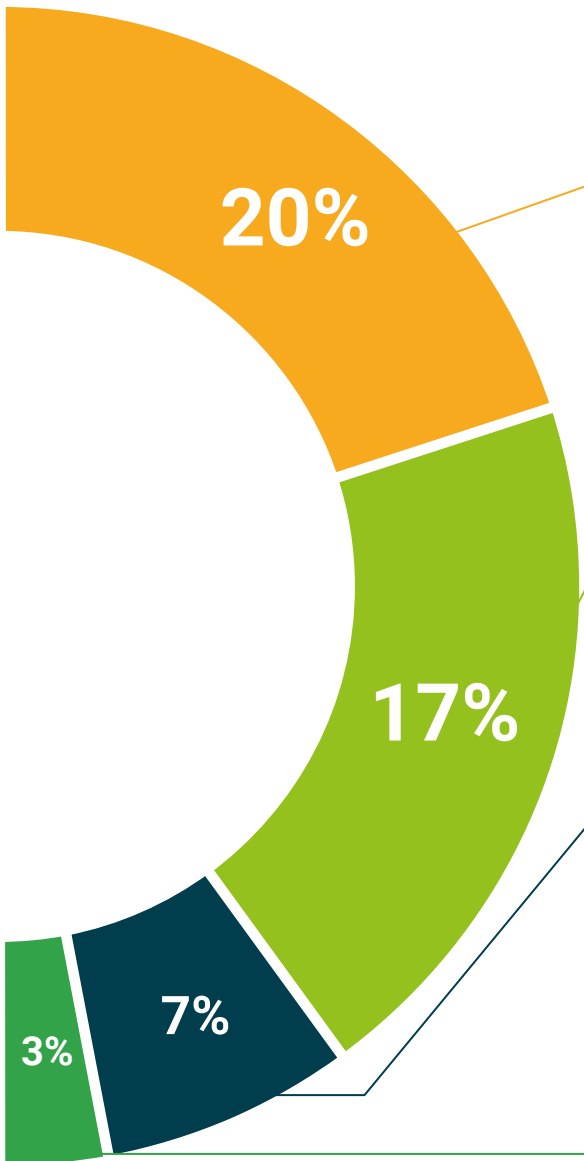
This unique multimedia content presentation training system was awarded by Microsoft as a "European Success Story".



#### 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

This Postgraduate Certificate in Strength Training in Medium and Long Duration and Endurance Sports guarantees students, 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 Strength Training in Medium and Long Duration and Endurance Sports** 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 Strength Training in Medium and Long Duration and Endurance Sports**

Official N° of Hours: **150 h.**

**Endorsed by the NBA**



\*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  
virtual classroom



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