

Postgraduate Certificate Strength Training for Speed Improvement

Endorsed by the NBA



tech technological
university



Postgraduate Certificate

Strength Training for Speed Improvement

Course Modality: **Online**

Duration: **6 weeks**

Certificate: **TECH - Technological University**

6 ECTS Credits

Teaching Hours: **150 hours.**

Website: techtute.com/us/sports-science/postgraduate-certificate/strength-training-speed-improvements

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01

Introduction

In recent years, speed training, especially its acceleration phase, has become very popular, perhaps as a result of the great records of the best specialists in the sports arena or because of the enormous impact it has begun to have in team sports, especially in rugby and soccer.

In this program the student will learn the means and methods of strength training for the development of the different phases of speed.



“

This 100% online course will allow you to combine your studies with your professional work while increasing your knowledge in this field"

In recent years, strength training has burst with great impetus in the scientific community, covering multiple contexts ranging from sports performance in time and brand sports to situational sports, including the whole range of sports modalities.

An increasing number of hamstring injuries are observed, 57% of which occur during sprints. It is therefore vital that athletes develop correct mechanics, not only to be more efficient and perform better, but also to reduce the risk of injury. Moreover, today sprint training is not only seen in isolation as an object of performance improvement, but is also considered to have a remarkable protective effect due to its higher level of electrical activity in the hamstrings than other means of training.

The student of this course will have a differentiating training with respect to their professional colleagues, being able to perform in all areas of sport as a specialist in Strength Training.

This course addresses the vital importance of strength in human performance in all its possible expressions with a unique level of theoretical depth and a level of descent to the practical totally different from what has been seen so far.

The teaching team of this Course in Strength Training for Speed Improvement has made a careful selection of each of the topics of this training in order to offer the student a study opportunity as complete as possible and always linked to current events.

Thus, at TECH we have set out to create contents of the highest teaching and educational quality that will turn our students into successful professionals, following the highest quality standards in teaching at an international level. Therefore, we show you this course with a rich content that will help you reach the elite of physical training. 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 **Course in Strength Training for Speed Improvement** contains the most complete and up-to-date scientific program on the market. The most important features of the program include:

- ◆ The development of numerous case studies presented by specialists in personal training.
- ◆ The graphic, schematic, and eminently practical contents with which they are created contain information that is indispensable for professional practice.
- ◆ It contains 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 personal training.
- ◆ 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.



Immerse yourself in the study of this Postgraduate Diploma of high scientific rigor and improve your skills in strength training for high performance sports"

“

This course 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 earn a degree from the leading online university in Spanish: TECH”

The teaching staff includes professionals from the field of sports science, who bring their experience to this training program, as well as renowned specialists from leading societies and prestigious universities.

Its multimedia content, developed with the latest educational technology, will allow the professional a situated and contextual learning, that is, a simulated environment that will provide an immersive education 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 during the academic year. To do so, the professional will be assisted by an innovative interactive video system created by renowned and experienced experts in Strength Training for Speed Improvement.

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

Increase your knowledge of Strength Training for Speed Improvement with this high-level training.



02 Objectives

The main objective of this program is the development of theoretical and practical learning, so that the sports science professional can master in a practical and rigorous way the Strength Training for Speed Improvement.





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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

- ◆ 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

- ◆ Learn and interpret the key aspects of speed and change of direction technique
- ◆ Compare and differentiate the speed of situational sport with respect to the track and field model
- ◆ Gain in-depth knowledge of the mechanical aspects that may influence performance impairment and the mechanisms of injury occurrence when sprinting.
- ◆ Analytically apply the different means and methods of strength training to develop sprinting.

“

The sports field requires trained professionals and we give you the keys to position yourself among the professional elite"

03

Course Management

Our teachers, made up of experts in personal training, are well known in the profession and are professionals with years of teaching experience who have come together to help you boost your career. To this end, they have developed this Postgraduate Progression with the latest developments in the field that will allow you to train and increase your skills in this sector.





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

Management



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

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 content structure has been designed by a team of professionals knowledgeable about the implications of training in daily practice, aware of the relevance of the current relevance of quality specialization in the field of personal training; and committed to quality teaching through new educational technologies.



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We have the most complete and updated scientific program on the market. We want to provide you with the best training"

Module 1. Strength Training to Improve Speed

- 1.1. Strength
 - 1.1.1. Definition
 - 1.1.2. General concepts
 - 1.1.2.1. Manifestations of Strength
 - 1.1.2.2. Factors that Determine Performance
 - 1.1.2.3. Strength Requirements for Sprint Improvement. Connection Between Force Manifestations and Sprint
 - 1.1.2.4. Strength-Speed Curve
 - 1.1.2.5. Relationship of the S-S and Power Curve and its Application to Sprint Phases
 - 1.1.2.6. Developing Muscle Strength and Power
- 1.2. Dynamics and Mechanics of Linear Sprint (100m Model)
 - 1.2.1. Kinematic Analysis of the Take-off
 - 1.2.2. Dynamics and Strength Application During Take-off
 - 1.2.3. Kinematic Analysis of the Acceleration Phase
 - 1.2.4. Dynamics and Strength Application During Acceleration
 - 1.2.5. Kinematic Analysis of Running at Maximum Speed
 - 1.2.6. Dynamics and Strength Application During Maximum Speed
- 1.3. Analysis of Acceleration Technique and Maximum Speed in Team Sports
 - 1.3.1. Description of the Technique in Team Sports
 - 1.3.2. Comparison of Sprinting Technique in Team Sports vs. Athletic Events
 - 1.3.3. Timing and Motion Analysis of Speed Events in Team Sports
- 1.4. Exercises as Basic and Special Means of Strength Development for Sprint Improvement
 - 1.4.1. Basic Movement Patterns
 - 1.4.1.1. Description of Patterns with Emphasis on Lower Limb Exercises
 - 1.4.1.2. Mechanical Demand of the Exercises
 - 1.4.1.3. Exercises Derived from Olympic Weightlifting
 - 1.4.1.4. Ballistic Exercises
 - 1.4.1.5. S-S Curve of the Exercises
 - 1.4.1.6. Strength Production Vector
- 1.5. Special Methods of Strength Training Applied to Sprinting
 - 1.5.1. Maximum Effort Method
 - 1.5.2. Dynamic Effort Method



- 1.5.3. Repeated Effort Method
- 1.5.4. French Complex and Contrast Method
- 1.5.5. Speed-Based Training
- 1.5.6. Strength Training as a Means of Injury Risk Reduction
- 1.6. Means and Methods of Strength Training for Speed Development
 - 1.6.1. Means and Methods of Strength Training for the Development of the Acceleration Phase
 - 1.6.1.1. Connection of Force to Acceleration
 - 1.6.1.2. Sledding and Racing Against Resistance
 - 1.6.1.3. Slopes
 - 1.6.1.4. Jumpability
 - 1.6.1.4.1. Building the Vertical Jump
 - 1.6.1.4.2. Building the Horizontal Jump
 - 1.6.2. Means and Methods for Top Speed Training
 - 1.6.2.1. Plyometry
 - 1.6.2.1.1. Concept of the Shock Method
 - 1.6.2.1.2. Historical Perspective
 - 1.6.2.1.3. Shock Method Methodology for Speed Improvement
 - 1.6.2.1.4. Scientific Evidence
- 1.7. Means and Methods of Strength Training Applied to Agility and Change of Direction
 - 1.7.1. Determinants of Agility and COD
 - 1.7.2. Multidirectional Jumps
 - 1.7.3. Eccentric Strength
- 1.8. Assessment and Control of Strength Training
 - 1.8.1. Strength-Speed Profile
 - 1.8.2. LoadSpeed Profile
 - 1.8.3. Progressive Loads
- 1.9. Integration.
 - 1.9.1. Case Study



A of knowledge unique, key, and decisive training experience to boost your professional development"

05

Methodology

This training provides you with a different way of learning. Our methodology uses a cyclical learning approach: ***Re-learning***.

This teaching system is used in the most prestigious medical schools in the world, and major publications such as the ***New England Journal of Medicine*** have considered it to be one of the most effective.





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

At TECH we use the Case Method

Our program offers you a revolutionary approach to developing your skills and knowledge. Our goal is to strengthen your skills in a changing, competitive, and highly demanding environment.

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With TECH you can experience a way of learning that is shaking the foundations of traditional universities around the world”



Our University is the first in the world to combine Harvard Business School case studies with a 100%-online learning system based on repetition.



The student will learn, through collaborative activities and real cases, how to solve complex situations in real business environments.

A learning method that is different and innovative.

This Sports Science program at TECH Technological University is an intensive program that prepares you to face all the challenges in this field, both nationally and internationally. We are committed to promoting your personal and professional growth, the best way to strive for success, that is why at TECH you will use Harvard case studies, with which we have a strategic agreement that allows us to offer you material from the best university in the world.



We are the only online university that offers Harvard materials as teaching materials on its courses"

The case method is the most widely used learning system by the best faculties in the world. The case method was developed in 1912 so that law students would not only learn the law based on theoretical content. It consisted of presenting students with real-life, complex situations for them to make informed decisions and value judgments on how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

In a given situation, what would you do? This is the question that you are presented with in the case method, an action-oriented learning method. Throughout the course, you will be presented with multiple real cases. You will have to combine all your knowledge, and research, argue, and defend your ideas and decisions.

Re-Learning Methodology

Our University is the first in the world to combine Harvard University case studies with a 100%-online learning system based on repetition, which combines 8 different teaching elements in each lesson.

We enhance Harvard case studies with the best 100% online teaching method: Re-learning.

In 2019 we obtained the best learning results of all Spanish-language online universities in the world.

At TECH you will learn using a cutting-edge methodology designed to train the executives of the future. This method, at the forefront of international teaching, is called Re-learning.

Our University is the only one in Spanish-speaking countries licensed to incorporate this successful method. In 2019 we managed to improve our students' overall satisfaction levels (teaching quality, quality of materials, course structure, objectives...) based on the best Spanish online university indicators.



In our program, learning is not a linear process, but rather a spiral (we learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

With this methodology we have trained more than 650,000 university graduates with unprecedented success. In fields as diverse as biochemistry, genetics, surgery, international law, management skills, sports science, philosophy, law, engineering, journalism, history, markets, and financial instruments. All this in a highly demanding environment, where the students have a strong socio-economic profile and an average age of 43.5 years.

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

Based on the latest evidence in neuroscience, not only do we know how to organize information, ideas, images, memories, but we also know that the place and context where we have learned something is crucial for us to be able to remember it and store it in the hippocampus, and retain it in our long-term memory.

In this way, and in what is called neurocognitive context-dependent e-learning, the different elements in our program are connected to the context where the individual carries out their professional activity.



In this program you will have access to the best educational material, prepared with you 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.

This content is then adapted in an audiovisual format that will create our way of working online, with the latest techniques that allow us to offer you high quality in all of the material that we provide you with.



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 our future difficult decisions.



Practising Skills and Abilities

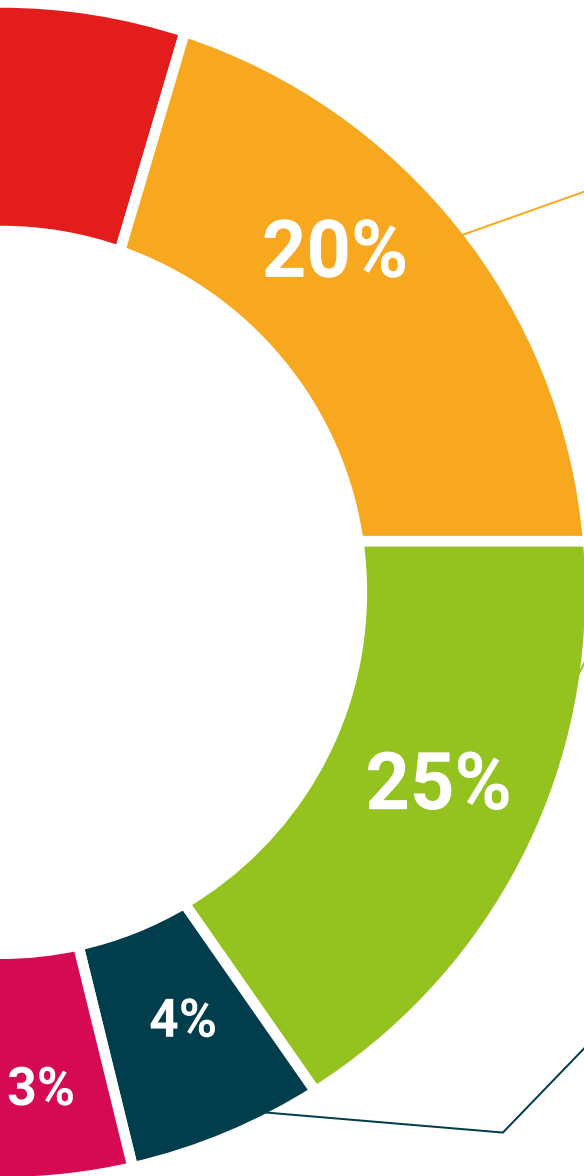
You will carry out activities to develop specific skills and abilities in each subject area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization we live in.



Additional Reading

Recent articles, consensus documents, international guides. in our virtual library you will have access to everything you need to complete your training.





Case Studies

You will complete a selection of the best case studies in the field used at Harvard. Cases that are presented, analyzed, and supervised by the best senior management specialists in Latin America.



Interactive Summaries

We present 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".



Testing & Re-testing

We periodically evaluate and re-evaluate your knowledge throughout the program. We do this on 3 of the 4 levels of Miller's Pyramid.



06

Certificate

This Postgraduate Certificate in **Strength Training for Speed Improvement** guarantees, in addition to the most rigorous and up-to-date training, access to a Course title issued by **TECH - Technological University**.



A photograph of several black graduation caps (mortarboards) against a bright blue sky with light, wispy clouds. The caps are positioned at various angles, some in the foreground and others in the background, creating a sense of depth. The image is partially overlaid by a white diagonal shape that contains text.

“

Successfully complete this training and receive your university degree without travel or laborious paperwork".

This **Postgraduate Certificate in Strength Training for Speed Improvement** 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**.

This diploma contributes to the academic development of the professional and adds a high university curricular value to their training. It is 100% valid in all competitive examinations, labour exchanges and professional career evaluation committees.

Title: **Postgraduate Certificate in Strength Training for Speed Improvement**

ECTS: **6**

Official Number of Hours: **150**

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.

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



**Postgraduate
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Strength Training for
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Course Modality: Online

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Certificate: TECH - Technological University

6 ECTS Credits

Teaching Hours: 150 hours.

Postgraduate Certificate

Strength Training to Improve Speed

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