

# Postgraduate Certificate

## Strength Training for Speed Improvement

Endorsed by the NBA



**tech** global  
university



## Postgraduate Certificate Strength Training for Speed Improvement

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

Website: [www.techtitute.com/us/sports-science/postgraduate-certificate/strength-training-speed-improvement](http://www.techtitute.com/us/sports-science/postgraduate-certificate/strength-training-speed-improvement)

# Index

01

Introduction

---

*p. 4*

02

Objectives

---

*p. 8*

03

Course Management

---

*p. 12*

04

Structure and Content

---

*p. 16*

05

Study Methodology

---

*p. 20*

06

Certificate

---

*p. 30*

# 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.





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*This 100% online Postgraduate Certificate will allow you to balance 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 through 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.

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.

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

The faculty of this Postgraduate Certificate in Strength Training for Speed Improvement 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.

As such, TECH Technological University 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, student to this Postgraduate Certificate offers you a wide range of content that will help you to reach the elite of physical training. As it is an online program, students will not be bound by fixed schedules or the need to move to another physical location, but rather, they can access the content at any time of the day, balancing their professional or personal life with their academic life.

This **Postgraduate Certificate in Strength Training for Speed Improvement** 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 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 this Postgraduate Certificate of high scientific rigor and improve your skills in strength training for high-performance sports"*

“

*This Postgraduate Certificate is the best investment you can make when selecting a refresher program, for two reasons: in addition to updating your knowledge as a personal trainer, you will obtain a qualification from TECH Global University".*

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 provide the professional with situated and contextual learning, i.e. a simulated environment that will provide an 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 during the course. 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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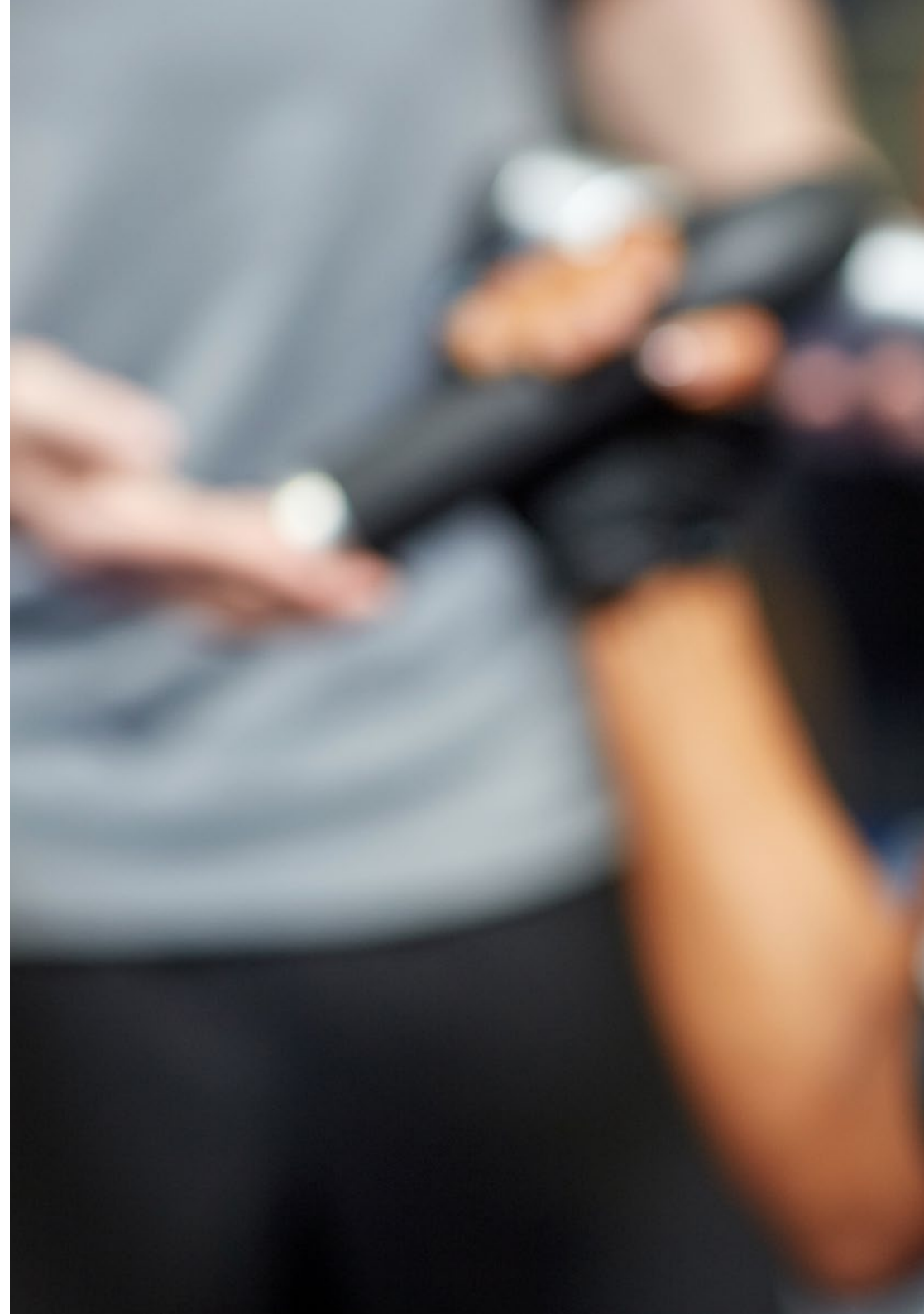
*Our goal is to achieve academic excellence and help you achieve professional success. Don't hesitate any longer and join us”*



## General Objectives

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- ◆ Delve into the knowledge based on the most current scientific evidence with full applicability in the practical field regarding Strength training
- ◆ Master all the most advanced methods of strength training
- ◆ Apply with certainty the most current educational 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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- ◆ Know and interpret the key aspects of the techniques for speed and changing direction
- ◆ 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 prepared professionals and we give you the keys to position yourself among the professional elite”*

03

# Course Management

The teaching staff, experts in Personal Training, enjoys considerable prestige in the profession and are professionals with years of teaching experience who have come together to help Students to give a boost to their career. To this end, they have developed this Postgraduate Certificate with recent updates on the subject that will allow you to train and increase your skills in this sector.





“

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

## Management



### Dr. Rubina, Dardo

- ◆ Specialist in High Performance Sports
- ◆ CEO of Test and Training
- ◆ Physical Trainer at Moratalaz Sports School
- ◆ Teacher of Physical Education in Football and Anatomy. CENAFE Schools Carlet
- ◆ Coordinator of Physical Preparation in Field Hockey. Club Gimnasia y Esgrima de Buenos Aires
- ◆ Doctorate in High Performance Sports
- ◆ Postgraduate Certificate in Advanced Research Studies (DEA), University of Castilla la Mancha
- ◆ Master's Degree in High Performance Sports by the Autonomous University of Madrid
- ◆ Postgraduate in Physical Activity in Populations with Pathologies by the University of Barcelona
- ◆ Competitive Bodybuilding Technician. Extremadura Federation of Bodybuilding and Fitness.
- ◆ Expert in Sports Scouting and Quantification of Training Load (specialization in Soccer), Sports Sciences. University of Melilla
- ◆ Expert in Advanced Weight Training by IFBB
- ◆ Expert in Advanced Nutrition by IFBB
- ◆ Specialist in Physiological Assessment and Interpretation of Physical Fitness by Bio
- ◆ Certification in Technologies for Weight Control and Physical Performance. Arizona State University



## Professors

### Mr. Añon, Pablo

- ◆ Physical trainer of the Women's National Volleyball Team for the Olympic Games
- ◆ Physical trainer of volleyball teams of the Argentinean Men's First Division
- ◆ Physical trainer of professional golfers Gustavo Rojas and Jorge Berent
- ◆ Swimming coach of Quilmes Atlético Club
- ◆ National Professor of Physical Education (INEF) in Avellaneda
- ◆ Postgraduate diploma in Sports Medicine and Applied Sports Sciences from the University of La Plata
- ◆ Master's Degree in High Performance Sports by the Catholic University of Murcia
- ◆ Training courses oriented to the field of High Performance Sports

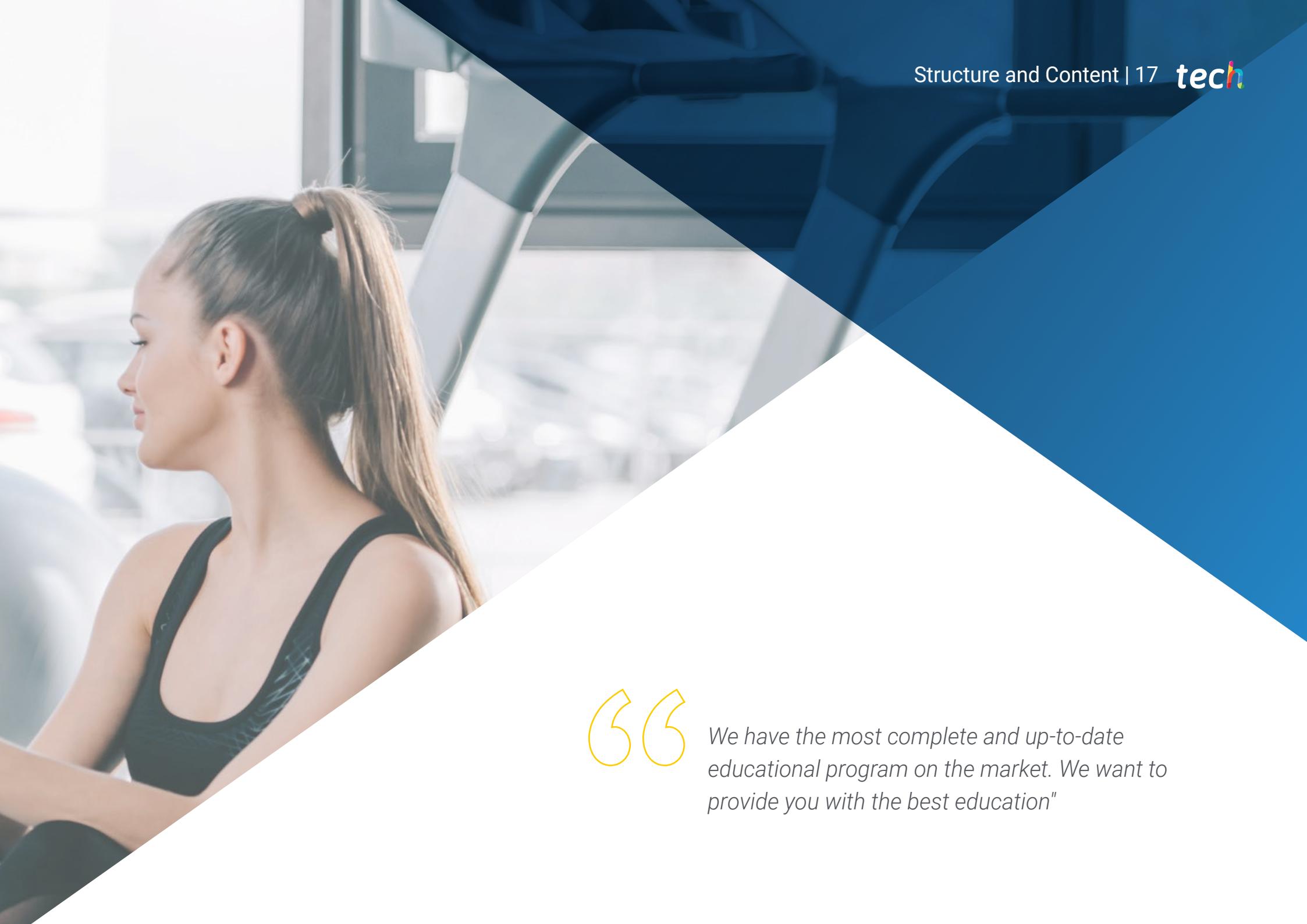
04

# Structure and Content

The structure of the contents has been designed by a team of professionals who possess extensive knowledge about the implications of specialization in daily practice, who are aware of the relevance of the current program in the field of Personal Training; and are committed to quality teaching through new educational technologies.







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

## Module 1. Strength Training for Speed Improvement

- 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. Speed- Strength Curve
    - 1.1.2.5. Relationship of the F-V and Power curve and its application to the Sprint Phases
    - 1.1.2.6. Development of Muscular 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. Force-Velocity 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 Training Top Speed
    - 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. Speed- Load Profile
  - 1.8.3. Progressive Loads
- 1.9. Integration.
  - 1.9.1. Case Study

# 05

# Study Methodology

TECH is the world's first university to combine the **case study** methodology with **Relearning**, a 100% online learning system based on guided repetition.

This disruptive pedagogical strategy has been conceived to offer professionals the opportunity to update their knowledge and develop their skills in an intensive and rigorous way. A learning model that places students at the center of the educational process giving them the leading role, adapting to their needs and leaving aside more conventional methodologies.



“

*TECH will prepare you to face new challenges in uncertain environments and achieve success in your career”*

## The student: the priority of all TECH programs

In TECH's study methodology, the student is the main protagonist.

The teaching tools of each program have been selected taking into account the demands of time, availability and academic rigor that, today, not only students demand but also the most competitive positions in the market.

With TECH's asynchronous educational model, it is students who choose the time they dedicate to study, how they decide to establish their routines, and all this from the comfort of the electronic device of their choice. The student will not have to participate in live classes, which in many cases they will not be able to attend. The learning activities will be done when it is convenient for them. They can always decide when and from where they want to study.

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*At TECH you will NOT have live classes  
(which you might not be able to attend)”*



### The most comprehensive study plans at the international level

TECH is distinguished by offering the most complete academic itineraries on the university scene. This comprehensiveness is achieved through the creation of syllabi that not only cover the essential knowledge, but also the most recent innovations in each area.

By being constantly up to date, these programs allow students to keep up with market changes and acquire the skills most valued by employers. In this way, those who complete their studies at TECH receive a comprehensive education that provides them with a notable competitive advantage to further their careers.

And what's more, they will be able to do so from any device, pc, tablet or smartphone.

“*TECH's model is asynchronous, so it allows you to study with your pc, tablet or your smartphone wherever you want, whenever you want and for as long as you want*”

## Case Studies and Case Method

The case method has been the learning system most used by the world's best business schools. Developed in 1912 so that law students would not only learn the law based on theoretical content, its function was also to present them with real complex situations. In this way, they could make informed decisions and value judgments about how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

With this teaching model, it is students themselves who build their professional competence through strategies such as Learning by Doing or Design Thinking, used by other renowned institutions such as Yale or Stanford.

This action-oriented method will be applied throughout the entire academic itinerary that the student undertakes with TECH. Students will be confronted with multiple real-life situations and will have to integrate knowledge, research, discuss and defend their ideas and decisions. All this with the premise of answering the question of how they would act when facing specific events of complexity in their daily work.





## Relearning Methodology

At TECH, case studies are enhanced with the best 100% online teaching method: Relearning.

This method breaks with traditional teaching techniques to put the student at the center of the equation, providing the best content in different formats. In this way, it manages to review and reiterate the key concepts of each subject and learn to apply them in a real context.

In the same line, and according to multiple scientific researches, reiteration is the best way to learn. For this reason, TECH offers between 8 and 16 repetitions of each key concept within the same lesson, presented in a different way, with the objective of ensuring that the knowledge is completely consolidated during the study process.

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



## A 100% online Virtual Campus with the best teaching resources

In order to apply its methodology effectively, TECH focuses on providing graduates with teaching materials in different formats: texts, interactive videos, illustrations and knowledge maps, among others. All of them are designed by qualified teachers who focus their work on combining real cases with the resolution of complex situations through simulation, the study of contexts applied to each professional career and learning based on repetition, through audios, presentations, animations, images, etc.

The latest scientific evidence in the field of Neuroscience points to the importance of taking into account the place and context where the content is accessed before starting a new learning process. Being able to adjust these variables in a personalized way helps people to remember and store knowledge in the hippocampus to retain it in the long term. This is a model called Neurocognitive context-dependent e-learning that is consciously applied in this university qualification.

In order to facilitate tutor-student contact as much as possible, you will have a wide range of communication possibilities, both in real time and delayed (internal messaging, telephone answering service, email contact with the technical secretary, chat and videoconferences).

Likewise, this very complete Virtual Campus will allow TECH students to organize their study schedules according to their personal availability or work obligations. In this way, they will have global control of the academic content and teaching tools, based on their fast-paced professional update.



*The online study mode of this program will allow you to organize your time and learning pace, adapting it to your schedule”*

### The effectiveness of the method is justified by four fundamental achievements:

1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that assess real situations and the application of knowledge.
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. 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.

## The university methodology top-rated by its students

The results of this innovative teaching model can be seen in the overall satisfaction levels of TECH graduates.

The students' assessment of the quality of teaching, quality of materials, course structure and objectives is excellent. Not surprisingly, the institution became the best rated university by its students on the Trustpilot review platform, obtaining a 4.9 out of 5.

*Access the study contents from any device with an Internet connection (computer, tablet, smartphone) thanks to the fact that TECH is at the forefront of technology and teaching.*

*You will be able to learn with the advantages that come with having access to simulated learning environments and the learning by observation approach, that is, Learning from an expert.*



As such, the best educational materials, thoroughly prepared, will be available in this program:



#### 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.



#### Practicing Skills and Abilities

You will carry out activities to develop specific competencies and skills in each thematic field. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop within the framework of the globalization we live in.



#### 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.

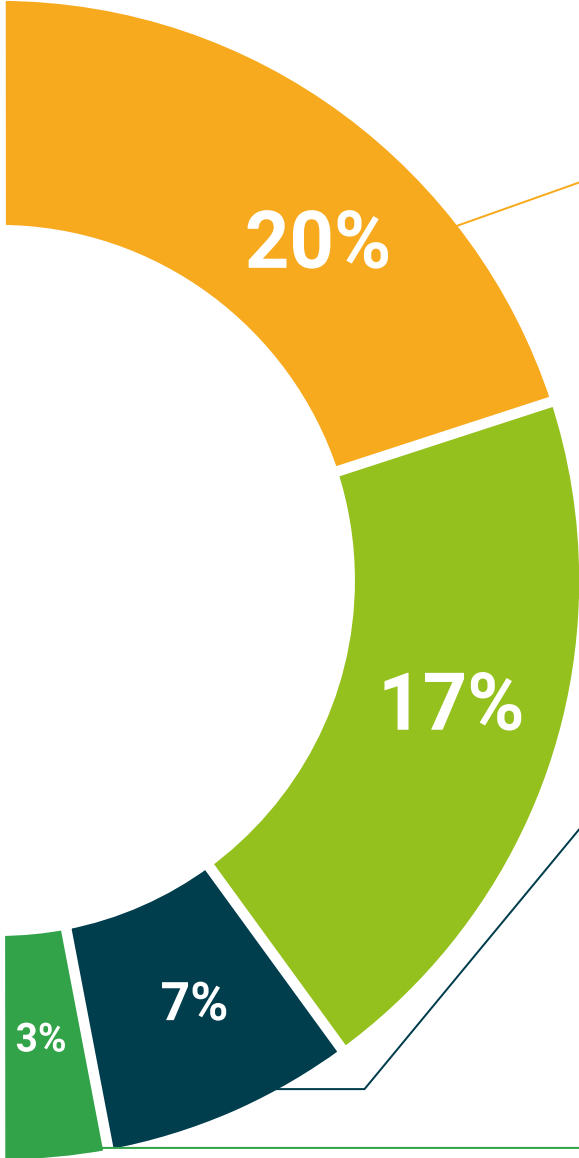
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



#### Additional Reading

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





**Case Studies**

Students will complete a selection of the best case studies in the field. Cases that are presented, analyzed, and supervised by the best specialists in the world.



**Testing & Retesting**

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



**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 for 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 Strength Training for Speed Improvement guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate 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 Certificate in Strength Training for Speed Improvement** 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 Certificate in Strength Training for Speed Improvement**

Modality: **online**

Duration: **6 weeks**

Accreditation: **6 ECTS**

Endorsed by the NBA



\*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.





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



## Postgraduate Certificate

Strength Training for  
Speed Improvement

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

# Postgraduate Certificate

## Strength Training for Speed Improvement

Endorsed by the NBA

