Postgraduate Certificate

Strength Training under the Paradigm of Complex Dynamic Systems

Endorsed by the NBA

tech technological university

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Postgraduate Certificate

Strength Training Under the Paradigm of Complex Dynamic Systems

Course Modality: **Online**
Duration: **6 weeks**
Certificate: **TECH - Technological University**
6 ECTS Credits
Teaching Hours: **150 hours.**
Website: www.techtitute.com/us/sports-science/postraduate-certificate-strenght-training-paradigm-complex-dynamic-systems

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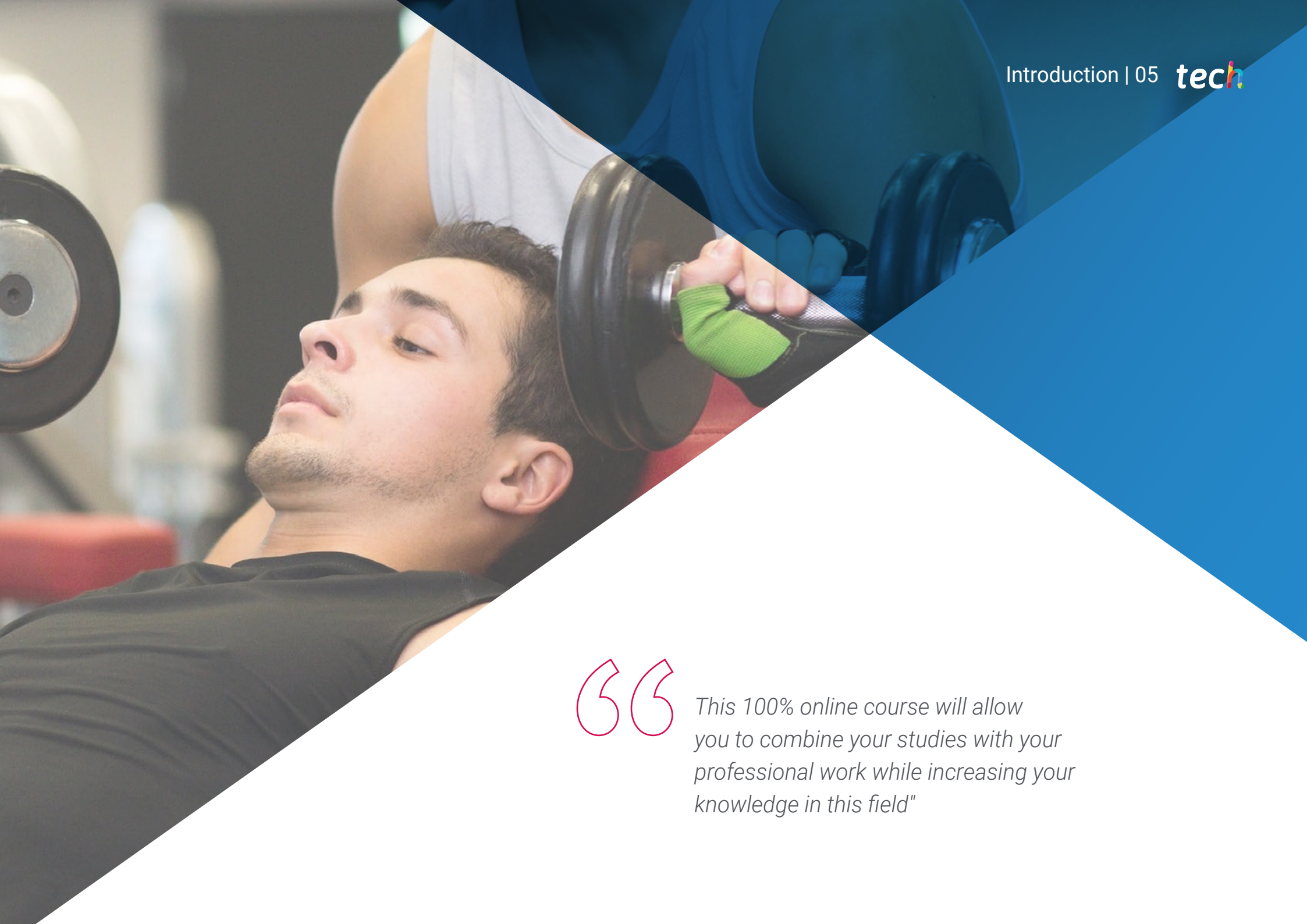
01

Introduction

The evolution of sports training is determined by a constant advance in science, methodologies and techniques, but also by the gradual incorporation of both individual and collective interactions.

In this module we will analyze the fundamental components of complex dynamic systems in sports training, delving not only into each one of them, but also into each interaction and how they constantly modify our environment.



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

The general theories of training have changed as the specific demands of each sport have become more pronounced; this specialization leads systems to perform different types of analysis that evaluate both the physical condition of athletes and the components that modify both decisional patterns and individual perception.

These patterns are fundamental when it comes to identifying sporting success, since human beings are no strangers to the context, which can modify decisions on the playing field at every moment.

Focusing on training as a unilateral path between action and response can be considered a mistake, since isolating the components to improve them individually may not end in the fulfillment of our objectives.

Strength training is no stranger to this reality, since over the decades the application of generic strength programs in situational athletes became popular, without taking into account the specific needs of this capacity in the sport in question.

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 under the Paradigm of Complex Dynamic Systems has made a careful selection of each of the topics of this program to offer the student a study opportunity as complete as possible and always linked to the present time.

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 Postgraduate Diploma 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 under the Paradigm of Complex Dynamic Systems** 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 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 decisionmaking.
- Special emphasis on innovative methodologies in personal training
- Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection work.
- 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"

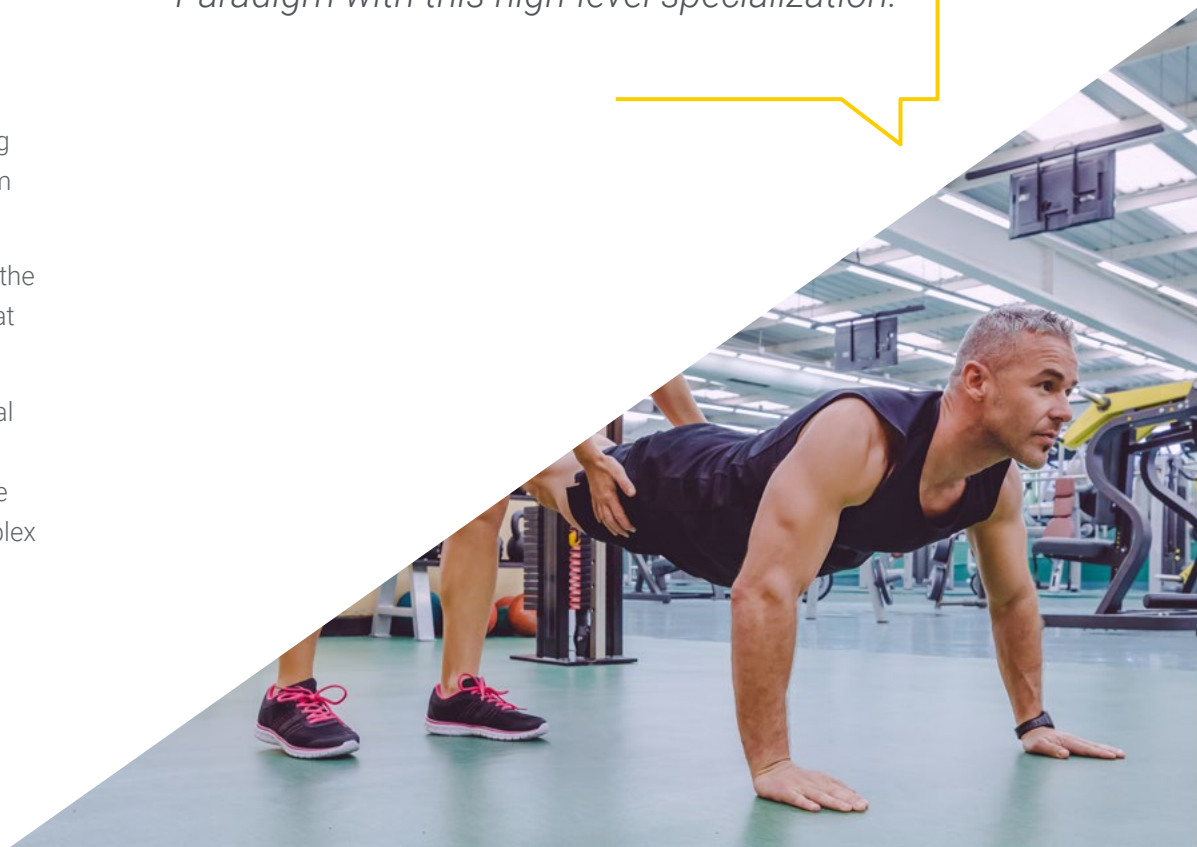
Specialize and stand out in a sector with high demand for professionals.

Increase your knowledge in Strength Training under the Complex Dynamic Systems Paradigm with this high-level specialization.

The teaching staff includes professionals from the field of sports science, who bring their experience to this specialization 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 training 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. For this, the professional will be assisted by an innovative interactive video system developed by recognized experts in Strength Training under the Complex Dynamic Systems Paradigm and with great experience.



02

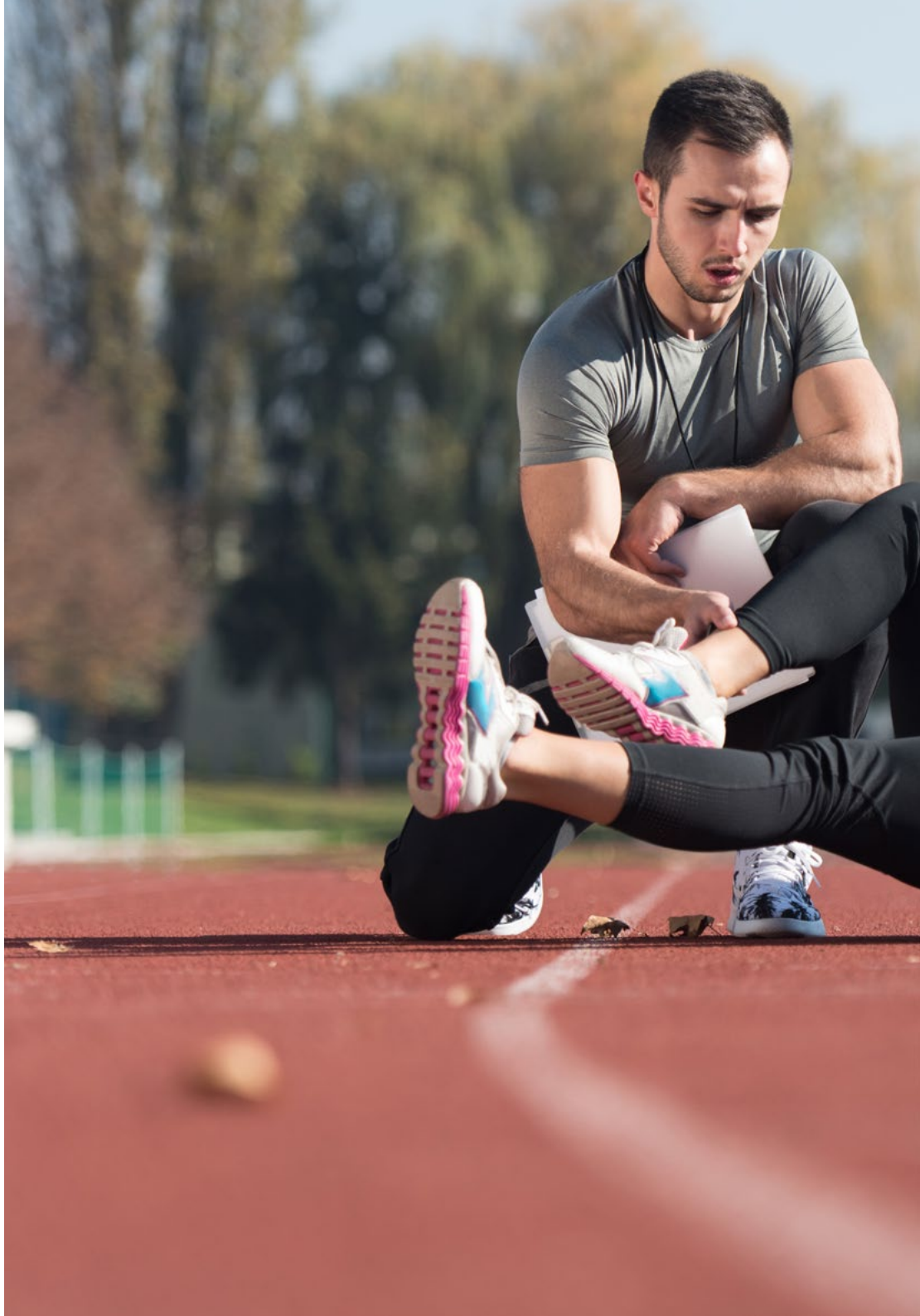
Objectives

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 under the Paradigm of Complex Dynamic Systems.

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

- Master specific knowledge about the theory of systems in sports training
- Analyze the different components that are interrelated in strength training and their application in situational sports
- Guide strength training methodologies towards a perspective that addresses the specific demands of sport
- Develop a critical view of the reality of strength training for athletic and non-athletic populations

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

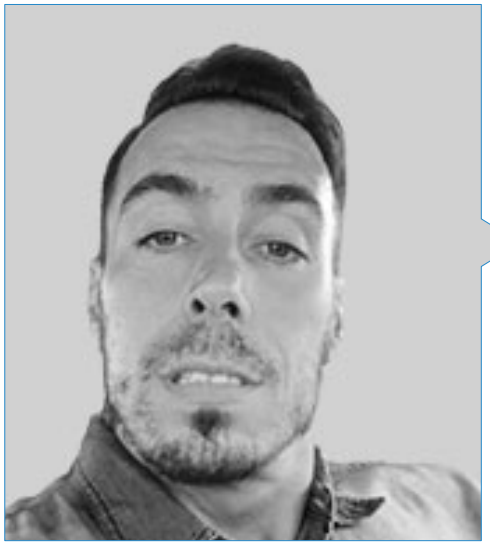
03

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 Certificate with the latest developments in the field 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



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

Rossanigo, Horacio

- BUILD Academy-Academic Services in Physical Training
- CEO, Jaguares–Rugby Union Argentina,
- Degree in Physical Education and Physiology of Physical Work, FMS 1&2.
- Lecturer in courses on sports performance

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.

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

Module 1. Strength Training Under the Paradigm of Complex Dynamic Systems

1.1. Introduction to Complex Dynamical Systems
- 1.1.1. Models Applied to Physical Preparation
- 1.1.2. Determination of Positive and Negative Interactions
- 1.1.3. Uncertainty in Complex Dynamical Systems.

1.2. Motor Control and its Role in Performance
- 1.2.1. Introduction to Motor Control Theories
- 1.2.2. Movement and Function
- 1.2.3. Motor Learning
- 1.2.4. Motor Control Applied to Systems Theory

1.3. Communication Processes in the Theory of Systems
- 1.3.1. From Message to Movement
  - 1.3.1.1. The Efficient Communication Process
  - 1.3.1.2. The Stages of Learning
  - 1.3.1.3. The Role of Communication and Sport Development in Early Ages
- 1.3.2. V.A.K.T. Principle
- 1.3.3. Performance Knowledge vs. Outcome Knowledge.
- 1.3.4. Verbal feedback in System Interactions.

1.4. Strength as an Essential Condition
- 1.4.1. Strength Training in Team Sports
- 1.4.2. Manifestations of Strength Within the System.
- 1.4.3. The Strength-Speed Continuum. Systemic Review

1.5. Complex Dynamical Systems and Training Methods
- 1.5.1. Periodization. Historical Review
  - 1.5.1.1. Traditional Periodization
  - 1.5.1.2. Contemporary Periodization
- 1.5.2. Analysis of Periodization Models in Training Systems.
- 1.5.3. Evolution of Strength Training Methods.

1.6. Strength and Motor Divergence
- 1.6.1. Developing Strength at Early Ages
- 1.6.2. The Manifestations of Strength in Infantile-Juvenile Ages.
- 1.6.3. Efficient Programming at Youth Ages.

1.7. The Role of Decision-Making in Complex Dynamical Systems

1.7.1. The Decision-Making Process
1.7.2. Decisional Timing
1.7.3. The Development of Decision Making.
1.7.4. Programming Training Based on Decision Making.

1.8. Perceptual Abilities in Sports
1.8.1. Visual Abilities
1.8.1.1. Visual Recognition.
1.8.1.2. Central and Peripheral Vision.
1.8.2. Motor Experience
1.8.3. Attentional Focus
1.8.4. The Tactical Component

1.9. Systemic Vision of Programming
1.9.1. The Influence of Identity on Programming.
1.9.2. The System as a Path to Long-Term Development.
1.9.3. Long-Term Development Program.

1.10. Global scheduling: From the system to the need
1.10.1. Program Design.
1.10.2. Practical System Assessment Workshop.

A 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.

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.

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

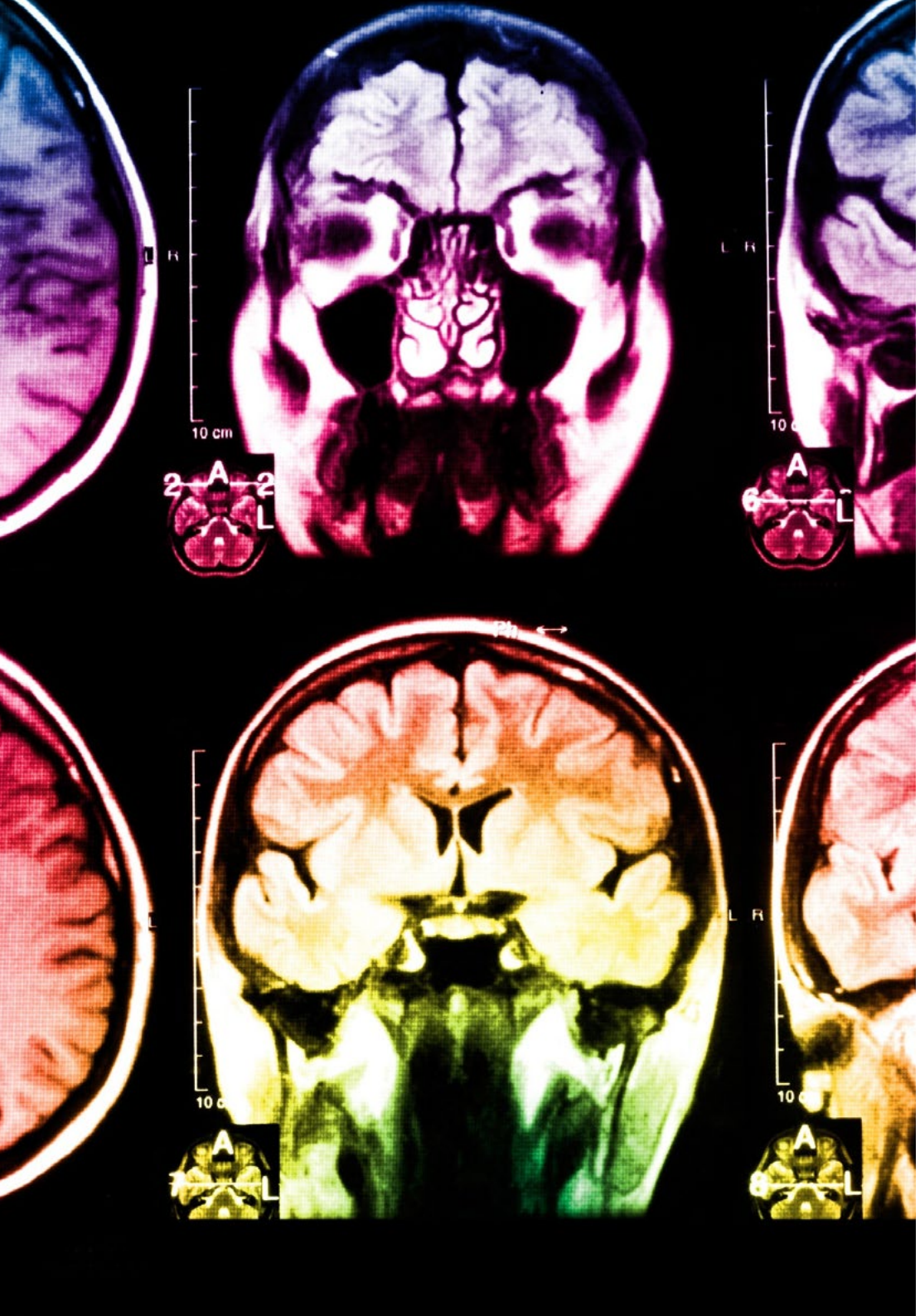
Our University is the first in the world to combine Harvard University case studies with a 100%-online learning system based on repetition, which combines 8 different teaching elements in each lesson.

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.

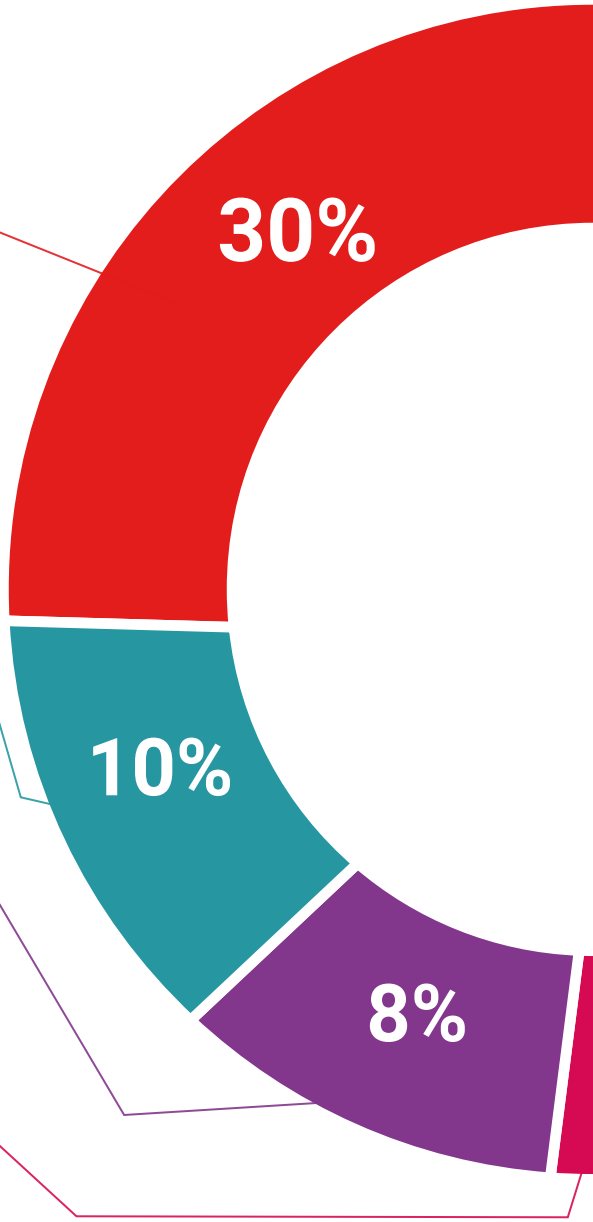
Learning from an expert strengthens knowledge and memory, and generates confidence in our future difficult decisions.

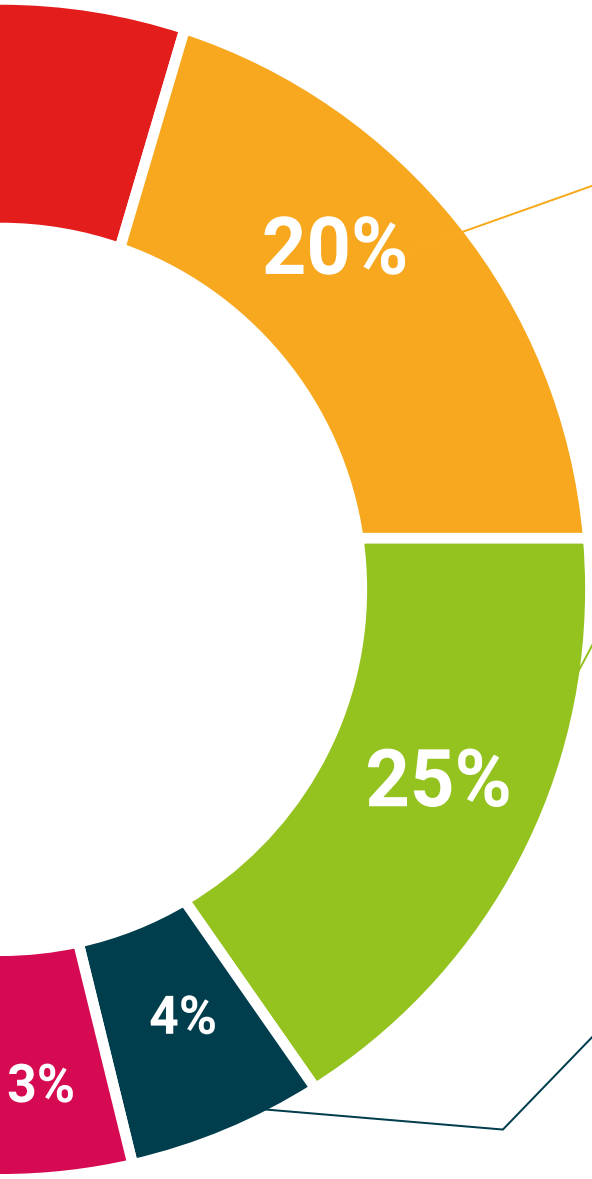
Practising Skills and Abilities

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 under the Paradigm of Complex Dynamic Systems guarantees you, in addition to the most rigorous and up-to-date training, the access to a Postgraduate Certificate issued by **TECH - Technological University.**

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

This **Postgraduate Certificate in Strength Training under the Paradigm of Complex Dynamic Systems** 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 under the Paradigm of Complex Dynamic Systems**

ECTS: 6 ECTS Credits

Official Number of Hours: **150**

Endorsed by the NBA


tech technological university

Awards the following

CERTIFICATE

to

Mr./Ms. _____, with identification number _____.

For having passed and accredited the following program

POSTGRADUATE CERTIFICATE

in

Strength Training under the Paradigm of Complex Dynamic Systems

This is a qualification awarded by this University, with 6 ECTS credits and equivalent to 150 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH is a Private Institution of Higher Education recognized by the Ministry of Public Education as of June 28, 2018.

June 17, 2020

Tere Guevara Navarro

Dean

This qualification must always be accompanied by the university degree issued by the competent authority to practice professionally in each country. Unique TECH Code: AFWORD23S techtitute.com/certificates

*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.

tech technological university

Postgraduate Certificate

Strength Training Under the Paradigm of Complex Dynamic Systems

Course Modality: **Online**

Duration: **6 weeks**

Certificate: **TECH - Technological University**

6 ECTS Credits

Teaching Hours: 150 hours.

Postgraduate Certificate

Strength Training under the Paradigm of Complex Dynamic Systems

Endorsed by the NBA

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