Professional Master's Degree

Strength Training in Sports Performance

Endorsed by the NBA

tech technological university

tech technological university

Professional Master's Degree

Strength Training in Sports Performance

- Modality: **online**
- Duration: **12 months**
- Certificate: **TECH Technological University**
- Dedication: **16h/week**
- Schedule: **at your own pace**
- Exams: **online**

Website: www.techtitute.com/pk/physiotherapy/professional-master-degree/master-strength-training-sports-performance

Index

01

Introduction

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, and is an effective method to increase muscle mass and strength.

With this highly scientifically rigorous program, students will learn the latest developments in the sector and update their knowledge in strength training and programming for sports performance.

Improve your knowledge of Strength Training in Sports Performance with this high-level program"

In this Professional Master's Degree you will find detailed content on how to use strength training to improve performance, ranging from how strength training affects speed, endurance, and competitive sports, to how it affects acceleration, direction change, etc.

One of the usual objectives when starting a physical training routine in physiotherapy is to work on or recover muscle strength. To this end, this workout should include progressive resistance exercises, in order to achieve optimal physical fitness and prevent injuries.

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

Students of this Professional Master's Degree will have a differentiating qualification with respect to their professional colleagues, being able to work in all areas of sport as a specialist in Strength Training in the field.

Each subject has real specialists in the field to provide the best theoretical education and all their extensive practical experience, which makes this Professional Master's Degree unique.

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 offer you this Professional Master's Degree with extensive content that will help you reach the elite in physiotherapy. As it is an online Professional Master's Degree, the student is not bound by fixed schedules or the need to move to another physical location, rather, they can access the content at any time of the day, balancing their professional or personal life with their academic life.

This **Professional Master's Degree in Strength Training in Sports Performance** 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 decisionmaking
- 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

Immerse yourself in this Professional Master's Degree with high scientific rigor and improve your skills in strength training for high performance sports"

This Professional Master's Degree 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 certificate from the main online university in Spanish: TECH"

This Professional Master's Degree offers training in simulated environments, which provides an immersive learning experience designed to train for real-life situations.

This 100% online Professional Master's Degree will allow you to combine your studies with your professional work while increasing your knowledge in this field.

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 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 throughout the program. For this, the professional will be assisted by an innovative system of interactive videos made by renowned physiotherapists specialized in Strength Training for Sports Performance and with great experience.

02

Objectives

The main objective of the program is the development of theoretical and practical learning, so that the sports science professional is able to master the latest techniques in Strength Training for Sports Performance in a practical and rigorous manner.

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

General Objectives

- Deepen 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 and biochemistry
- DTo deepen in the principles governing 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

Module 1. Exercise Physiology and Physical Activity

- Specialize and interpret key aspects of biochemistry and thermodynamics
- In-depth knowledge of energy metabolic pathways and their exercise-mediated modifications and their role in human performance
- Specialize in the key aspects of the neuromuscular system, motor control and its role in physical training
- In-depth knowledge of muscle physiology, the process of muscle contraction and the molecular basis of this process
- Delve into the functioning of the cardiovascular and respiratory systems and oxygen utilization during exercise
- Manage the general causes of fatigue and the impact this has on the different types and forms of exercises
- Identify the different physiological breakthroughs and their practical application

Module 2. Strength Training to Improve Movement Skills

- Gain an in-depth understanding of the relationship between strength and *skills*
- Identify the main *skills* in sports in order, to analyze them, understand them and then enhance them through training
- Organize and systematize the *skill* development process
- Link and relate field and gym work to enhance the *skills*

Module 3. Strength Training Under the Paradigm of Complex Dynamic Systems

- 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

Module 4. Strength Training Prescription and Planning

- Specialize and interpret the key aspects of strength training
- In-depth knowledge of the different components of the load
- Delve into key aspects of load planning, periodization and monitoring
- Gain in-depth knowledge of the different session set-up schemes
- Manage the most common prescribing, monitoring and adjustment models

Module 5. Strength Training Methodology

- Gain in-depth knowledge of the different methodological proposals of strength training and their applicability to the field of practice
- Select the most appropriate methods for specific needs
- Recognize and safely apply the different methods proposed in the literature

Module 6. Theory of Strength Training and Basis for Structural Training

- Master the theoretical terms as far as strength training is concerned
- Master the theoretical terms as far as power training is concerned
- Master the methodological aspects of training for hypertrophic purposes
- Master the physiological aspects of training for hypertrophic purposes

Module 7. Strength Training to Improve Speed

- 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*

Module 8. Sports Performance Assessment in Strength Training

- Specialize in the different types of assessment and their applicability to the field of practice
- Select the most appropriate tests for your specific needs
- Correctly and safely administer the protocols of the different tests and the interpretation of the data collected
- Delve into and apply different types of technologies currently used in the field of assessment, in the field of health and fitness performance at any level of demand

Module 9. Strength Training in Situational Sports

- Gain an in-depth understanding of the logic of movement-based training design.
- Differentiate between means and methods for strength
- Detect priority movement patterns for applying force in the sport at hand
- Understand the functioning and application of technological means in the service of strength training

Module 10. Training in Medium and Long Duration Sports

- 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

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

03

Skills

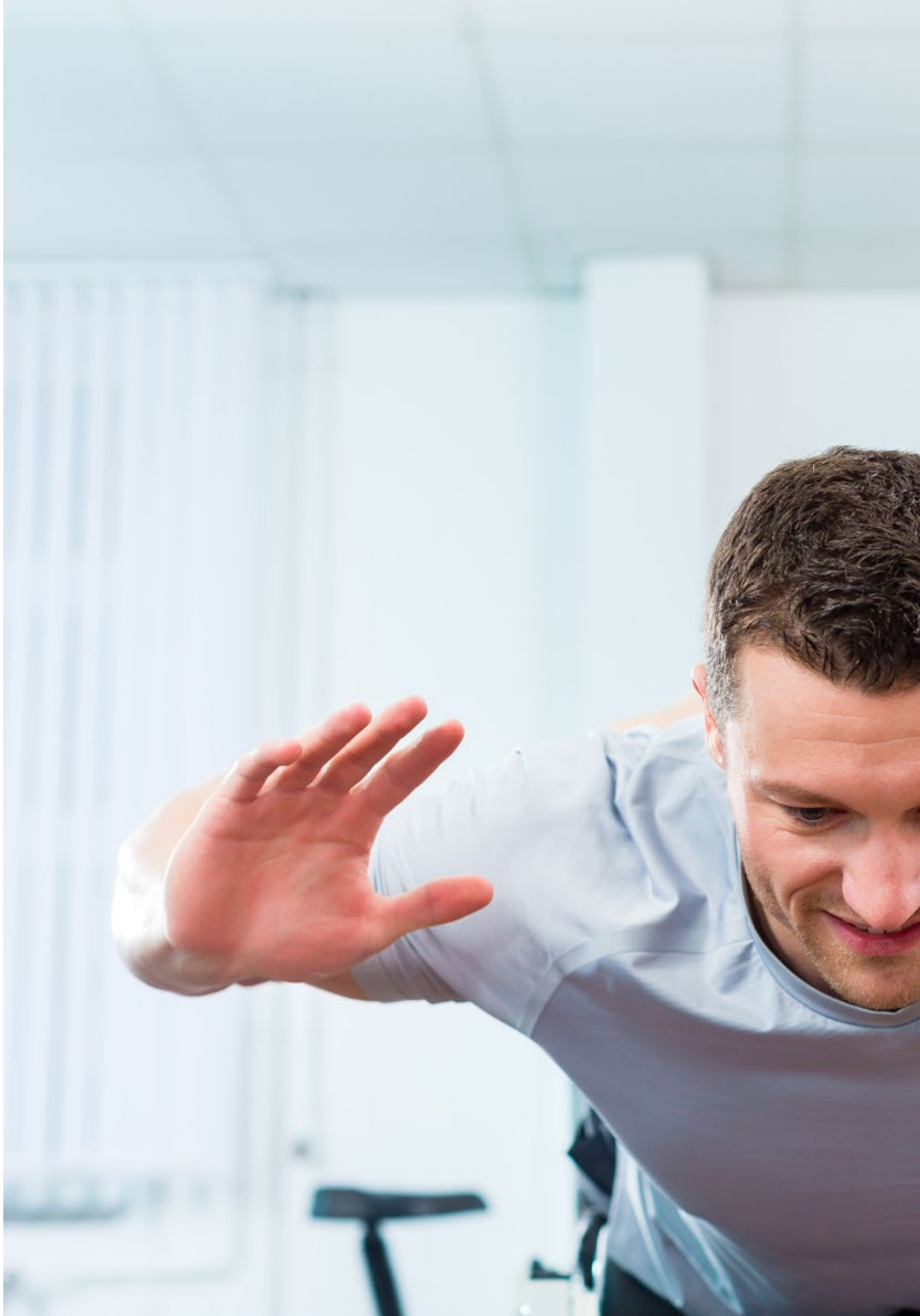
After passing the assessments of the Professional Master's Degree in Strength Training in Sports Performance, the professional will have acquired the necessary skills for a quality and up-to-date praxis based on the most innovative educational methodology.

This program will allow you to acquire the necessary skills to achieve professional success in this field"

General Skill

- Successfully integrate strength training to improve sports skills

Increase your skills with our high-quality program and give your career a boost"



Specific Skills

- Delve into the functioning of the cardiovascular and respiratory systems and oxygen utilization during exercise
- Organize and systematize the *skill* development process
- Analyze the different components that are interrelated in strength training and their application in situational sports
- Gain in-depth knowledge of the key aspects of planning, periodization and monitoring of strength training
- Master the theoretical terms regarding strength training
- Compare and differentiate the speed of situational sport with respect to the track and field model
- Correctly and safely administer the protocols of the different tests and the interpretation of the data collected
- Detect priority movement patterns for applying force in the sport at hand
- Identify and analyze the mechanisms of force production in different endurance disciplines

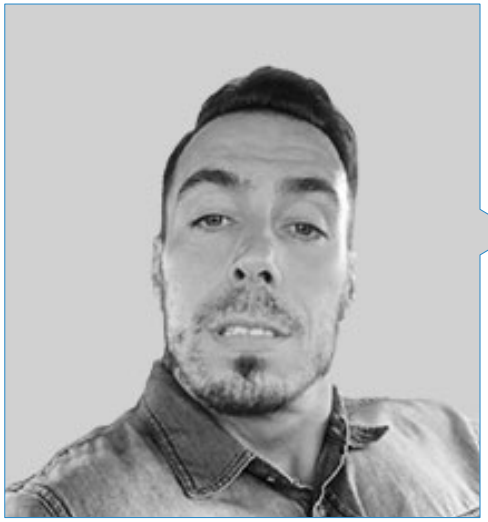
04

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. To this end, they have developed this Professional Master's Degree with the latest developments in the field that will allow you to learn and enhance your skills in the field.

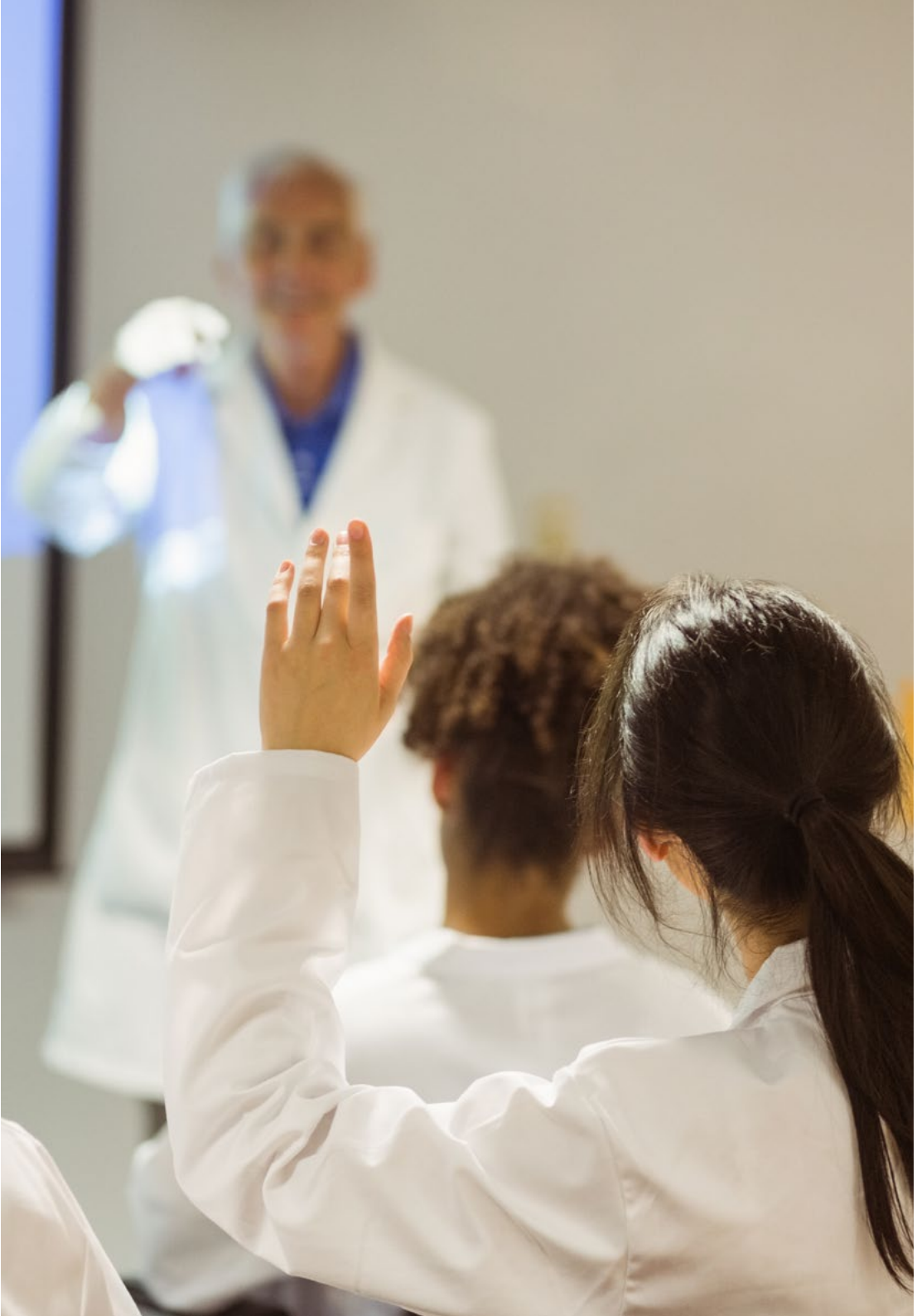
Learn from the best professionals and become a successful professional yourself"

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

Mr. Carbone, Leandro

- Degree in Physical Education
- Specialist in exercise physiology
- Msc Strength and Conditioning
- CSCS–NASCA, CISSN–ISSN
- Currently at Club The Strongest
- Collaborator with Olympic athletes

Mr. Garzon Duarte, Mateo

- Degree in Physical Activity and Sport
- MGD -Customized Training. S&C Coach
- Researcher and author of Papers

Mr. Gizzarelli, Matías Bruno

- Degree in Physical Education
- Training in Applied Neurosciences
- EXOS Performance Specialist
- Author of the Book "Basketball Training: Physical Preparation

Mr. Masse, Juan

- Director of the Athlon Science Study Group
- Physical trainer for several professional soccer teams in South America, experienced teacher

Mr. Palarino, Matías

- Degree in Physical Activity and Sport
- Physical trainer in Professional Soccer
- Physical Trainer in Field Hockey
- Physical Trainer in Rugby
- Extensive teaching experience in physical preparation and load control courses

Mr. 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

Mr. Tinti, Hugo

- Degree in Physical Activity and Sport
- Master's Degree in Big Data
- Specialist in Technologies and Injury Prevention in Soccer
- Specialist in load management

Mr. Trobadelo, Pablo Omar

- Strength and Physical Performance Coach, general and specific physical preparation of amateur athletes of different disciplines for national and international competitions. Handball, Tennis, Soccer, Taekwondo, Motocross Enduro, Jiu Jitsu, Wrestling, Street Racing and Ultra Endurance, etc
- Personal Physical Trainer for all types of population in search of sports performance goals, general physical conditioning, health, aesthetics and functional rehabilitation of injuries and movement reeducation
- Degree in High Performance in Sports. National University of Lomas de Zamora
- Physical Education Teacher at the Physical Education Higher Institute Nº1 "Dr. Enrique Romero Brest" (CeNARD -National Center for High Performance Sports)

Mr. Vaccarini, Adrián

- Degree in sports medicine
- Head of the Applied Sciences Department of the Peruvian soccer federation
- Physical trainer of the Peruvian National Soccer Team (present in the last World Cup)

Mr. Varela, Mauricio Carlos

- Physical Education Teacher. Faculty of Humanities and Educational Sciences. National University of La Plata
- Teacher of physical activity classes in a personalized way for older adults
- Physical Trainer, Personal Trainer of Elite Cyclists at the Astronomy Cycling Circuit
- Physical education trainer EES 62, EES 32, EET 5, EES56, EES 31
- Specialization in Exercise Programming and Evaluation (Postgraduate course, Faculty of Humanities and Education Sciences, La Plata National University) Cohort
- ISAK Anthropometrist level 1

Mr. Vilariño, Leandro

- Degree in Physical Activity and Sport
- Teacher at the Peruvian Federation of Soccer
- Teacher of the Postgraduate Diploma in Sports Medicine
- Physical trainer in professional soccer in the Argentine and Bolivian leagues

05

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 training in the field of physiotherapy, and committed to quality teaching through new educational technologies.

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

Module 1. Exercise Physiology and Physical Activity

1.1. Thermodynamics and Bioenergetics
- 1.1.1. Definition
- 1.1.2. General concepts
  - 1.1.2.1. Organic Chemistry
  - 1.1.2.2. Functional Groups
  - 1.1.2.3. Enzymes
  - 1.1.2.4. Coenzymes
  - 1.1.2.5. Acids and Bases
  - 1.1.2.6. PH

1.2. Energy Systems
- 1.2.1. General Concepts
  - 1.2.1.1. Capacity and Power
  - 1.2.1.2. Cytoplasmic Vs. Mitochondrial
- 1.2.2. Phosphagen Metabolism
  - 1.2.2.1. ATP - PC
  - 1.2.2.2. Pentose Pathway
  - 1.2.2.3. Nucleotide Metabolism
- 1.2.3. Metabolism of Carbohydrates
  - 1.2.3.1. Glycolysis
  - 1.2.3.2. Glycogenogenesis
  - 1.2.3.3. Glycogenolysis
  - 1.2.3.4. Gluconeogenesis
- 1.2.4. Lipid Metabolism
  - 1.2.4.1. Bioactive Lipids
  - 1.2.4.2. Lipolysis
  - 1.2.4.3. Beta-oxidation
  - 1.2.4.4. De Novo Lipogenesis

1.2.5. Oxidative Phosphorylation
1.2.5.1. Oxidative Decarboxylation of Pyruvate
1.2.5.2. Krebs Cycle
1.2.5.3. Electron Transport Chain
1.2.5.4. ROS
1.2.5.5. Mitochondrial *Crosstalk*

1.3. Signaling Routes
1.3.1. Second Messengers
1.3.2. Steroid Hormones
1.3.3. AMPK
1.3.4. NAD+
1.3.5. PGC1

1.4. Skeletal Muscle
1.4.1. Structure and Function
1.4.2. Fibers
1.4.3. Innervation
1.4.4. Muscle Cytoarchitecture
1.4.5. Protein Synthesis and Breakdown
1.4.6. mTOR

1.5. Neuromuscular Adaptations
1.5.1. Motor Unit Recruitment
1.5.2. Synchronization
1.5.3. *Neural Drive*
1.5.4. Golgi Tendon Organ and Neuromuscular Spindle

1.6. Structural Adaptations
1.6.1. Hypertrophy
1.6.2. Signal Translation Mechanism
1.6.3. Metabolic Stress
1.6.4. Muscle Damage and Inflammation
1.6.5. Changes in Muscular Architecture

1.7. Fatigue
1.7.1. Central Fatigue
1.7.2. Peripheral Fatigue
1.7.3. HRV
1.7.4. Bioenergetic Model
1.7.5. Cardiovascular Model
1.7.6. Thermoregulator Model
1.7.7. Psychological Model
1.7.8. Central Governor Model

1.8. Maximum Oxygen Consumption
1.8.1. Definition
1.8.2. Assessment
1.8.3. VO2 Kinetics
1.8.4. VAM
1.8.5. Running Economics

1.9. Thresholds
1.9.1. Lactate and Ventilatory Threshold
1.9.2. MLSS
1.9.3. Critical Power
1.9.4. HIIT and LIT
1.9.5. Anaerobic Speed Reserve

1.10. Extreme Physiological Conditions
1.10.1. Height
1.10.2. Temperature
1.10.3. Diving

Module 2. Strength Training to Improve Movement Skills

2.1. Strength in Skill Development
- 2.1.1. The Importance of Strength in Developing *Skills*
- 2.1.2. Benefits of*Skills-based* Strength Training
- 2.1.3. Types of Strength Present in *Skills*
- 2.1.4. Training Means Necessary for the Development of Strength in *Skills*

2.2. *Skills* in Team Sports
- 2.2.1. General Concepts
- 2.2.2. *Skills* in Performance Development
- 2.2.3. Classification of *Skills*
  - 2.2.3.1. *Locomotive Skills*
  - 2.2.3.2. *Manipulative Skills*

2.3. Agility and Movements
- 2.3.1. Basic Concepts
- 2.3.2. The Importance of Sports
- 2.3.3. Agility Components
  - 2.3.3.1. Classification of Movement skills
  - 2.3.3.2. Physical Factors: Strength
  - 2.3.3.3. Anthropometric Factors
  - 2.3.3.4. Perceptual-Cognitive Components

2.4. Posture
- 2.4.1. The Importance of Posture in *Skills*
- 2.4.2. Posture and Mobility
- 2.4.3. Posture and CORE
- 2.4.4. Posture and Center of Pressure
- 2.4.5. Biomechanical Analysis of Efficient Posture
- 2.4.6. Methodological Resources

2.5. *LinearSkills*
- 2.5.1. Characteristics of Linear *Skills*
  - 2.5.1.1. Main Planes and Vectors
- 2.5.2. Classification
  - 2.5.2.1. Starting, Braking and Deceleration
    - 2.5.2.1.1. Definitions and Context of Use
    - 2.5.2.1.2. Biomechanical Analysis
    - 2.5.2.1.3. Methodological Resources
  - 2.5.2.2. Acceleration
    - 2.5.2.2.1. Definitions and Context of Use
    - 2.5.2.2.2. Biomechanical Analysis
    - 2.5.2.2.3. Methodological Resources
  - 2.5.2.3. Backpedal
    - 2.5.2.3.1. Definitions and Context of Use
    - 2.5.2.3.2. Biomechanical Analysis
    - 2.5.2.3.3. Methodological Resources

2.6. Multidirectional *Skills*: *Shuffle*
- 2.6.1. Classification of Multidirectional*Skills*
- 2.6.2. *Shuffle*: Definitions and Context of Use
- 2.6.3. Biomechanical Analysis
- 2.6.4. Methodological Resources

2.7. Multi-Directional *Skills*: Crossover
- 2.7.1. Crossover as a Change of Direction
- 2.7.2. Crossover as a Transitional Movement
- 2.7.3. Definitions and Context of Use
- 2.7.4. Biomechanical Analysis
- 2.7.5. Methodological Resources

2.8. *Jump Skills I*
- 2.8.1. The Importance of Jumps in *Skills*
- 2.8.2. Basic Concepts
  - 2.8.2.1. Biomechanics of Jumps
  - 2.8.2.2. CEA
  - 2.8.2.3. *Stiffness*
- 2.8.3. Jump Classification
- 2.8.4. Methodological Resources

2.9. *Jump Skills II*
- 2.9.1. Methods
- 2.9.2. Acceleration and Jumps
- 2.9.3. *Shuffle* and Jumps
- 2.9.4. Crossover and Jumps
- 2.9.5. Methodological Resources

2.10. Programming Variables

Module 3. Strength Training Under the Paradigm of Complex Dynamic Systems

3.1. Introduction to Complex Dynamical Systems
- 3.1.1. Models Applied to Physical Preparation
- 3.1.2. The Determination of Positive and Negative Interactions
- 3.1.3. Uncertainty in Complex Dynamical Systems

3.2. Motor Control and its Role in Performance
- 3.2.1. Introduction to Motor Control Theories
- 3.2.2. Movement and Function
- 3.2.3. Motor Learning
- 3.2.4. Motor Control Applied to Systems Theory

3.3. Communication Processes in the Theory of Systems
- 3.3.1. From Message to Movement
  - 3.3.1.2. The Efficient Communication Process
  - 3.3.1.3. The Stages of Learning
  - 3.3.1.4. The Role of Communication and Sport Development in Early Ages
- 3.3.2. VAKT Principles
- 3.3.3. Knowledge of Performance vs. Knowledge of the Result
- 3.3.4. Verbal *feedback* in System Interactions

3.4. Strength as an Essential Condition
- 3.4.1. Strength Training in Team Sports
- 3.4.2. Manifestations of Strength Within the System
- 3.4.3. The Strength-Speed Continuum. Systemic Review

3.5. Complex Dynamical Systems and Training Methods
- 3.5.1. Periodization. Historical Review
  - 3.5.1.1. Traditional Periodization
  - 3.5.1.2. Contemporary Periodization
- 3.5.2. Analysis of Periodization Models in Training Systems
- 3.5.3. Evolution of Strength Training Methods

3.6. Strength and Motor Divergence
- 3.6.1. Developing Strength at Early Ages
- 3.6.2. The Manifestations of Strength in Infantile-Juvenile Ages
- 3.6.3. Efficient Programming at Youth Ages

3.7. The Role of Decision-Making in Complex Dynamical Systems
- 3.7.1. The Decision-Making Process
- 3.7.2. Decisional *Timing*
- 3.7.3. The Development of Decision Making
- 3.7.4. Programming Training Based on Decision Making

3.8. Perceptual Abilities in Sports
- 3.8.1. Visual Abilities
  - 3.8.1.1. Visual Recognition
  - 3.8.1.2. Central and Peripheral Vision
- 3.8.2. Motor Experience
- 3.8.3. Attentional Focus
- 3.8.4. The Tactical Component

3.9. Systemic Vision of Programming
- 3.9.1. The Influence of Identity on Programming
- 3.9.2. The System as a Path to Long-Term Development
- 3.9.3. Long-Term Development Program

3.10. Global Programming: from System to Need
- 3.10.1. Program Design
- 3.10.2. Practical System Assessment Workshop

Module 4. Strength Training Prescription and Planning

4.1. Introduction and Definition of Concepts
- 4.1.1. General Concepts
  - 4.1.1.1. Planning, Periodization, Prescription
  - 4.1.1.2. Qualities, Methods, Objectives
  - 4.1.1.3. Complexity, Risk and Uncertainty
  - 4.1.1.4. Complementary Pairs

4.2. Exercises
- 4.2.1. General vs. Specific
- 4.2.2. Simple vs. Complex
- 4.2.3. Thrust vs. Ballistic
- 4.2.4. Kinetics and Kinematics
- 4.2.5. Basic Patterns
- 4.2.6. Order, Emphasis and Importance

4.3. Variables in the Programming
- 4.3.1. Intensity
- 4.3.2. Effort
- 4.3.3. Intension
- 4.3.4. Volume
- 4.3.5. Density
- 4.3.6. Weight
- 4.3.7. Dose

4.4. Periodization Structure
- 4.4.1. Microcycle
- 4.4.2. Mesocycle
- 4.4.3. Macrocycle
- 4.4.4. Olympic Cycles

4.5. Structure of the Sessions
- 4.5.1. Hemispheres
- 4.5.2. Entries
- 4.5.3. Weider
- 4.5.4. Patterns
- 4.5.5. Muscle

4.6. Prescription
- 4.6.1. Load-Effort Tables
- 4.6.2. Based on %
- 4.6.3. Based on Subjective Variables
- 4.6.4. Based on Speed (VBT)
- 4.6.5. Others

4.7. Prediction and Monitoring
- 4.7.1. Speed-Based Training
- 4.7.2. Areas of Repetition
- 4.7.3. Load Areas
- 4.7.4. Time and Reps

4.8. Plan
- 4.8.1. Series– Repetition Schemes
  - 4.8.1.1. Plateau
  - 4.8.1.2. Step
  - 4.8.1.3. Waves
  - 4.8.1.4. Steps
  - 4.8.1.5. Pyramids
  - 4.8.1.6. *Light-Heavy*
  - 4.8.1.7. *Cluster*
  - 4.8.1.8. *Rest-Pause*

4.8.2. Vertical Planning
4.8.3. Horizontal Planning
4.8.4. Classifications and Models
4.8.4.1. Constant
4.8.4.2. Lineal
4.8.4.3. Reverse Linear
4.8.4.4. Blocks
4.8.4.5. Accumulation
4.8.4.6. Undulating
4.8.4.7. Reverse Undulating
4.8.4.8. Volume-Intensity
4.9. Adaptation
4.9.1. Dose-Response Model
4.9.2. Robust-Optimal
4.9.3. Fitness-Fatigue
4.9.4. Micro Doses
4.10. Assessments and Adjustments
4.10.1. Self-Regulated Load
4.10.2. Adjustments Based on VBT
4.10.3. Based on RIR and RPE
4.10.4. Based on Percentages
4.10.5. Negative Pathway

Module 5. Strength Training Methodology

5.1. Methods of Training From *Powerlifting*
5.1.2. Functional Isometrics
5.1.3. Forced Repetitions
5.1.4. Eccentrics in Competition Exercises
5.1.5. Main Characteristics of the Most Commonly Used Methods in *Powerlifting*
5.2. Methods of Training from Weightlifting
5.2.1. Bulgarian Method
5.2.2. Russian Method
5.2.3. Origin of the Popular Methodologies in the School of Olympic Lifting
5.2.4. Differences Between the Bulgarian and Russian Concepts
5.3. Zatiorsky's Methods
5.3.1. Maximum Effort Method (ME)
5.3.2. Repeated Effort Method (RE)
5.3.3. Dynamic Effort Method (DE)
5.3.4. Load Components and Main Features of the Zatsiorsky Methods
5.3.5. Interpretation and Differences of Mechanical Variables (Force, Power and Speed) Revealed Between ME, RE and DE and Their Internal Response (PSE)
5.4. Pyramidal Methods
5.4.1. Classic Ascending
5.4.2. Classic Descending
5.4.3. Double
5.4.4. Skewed Pyramid
5.4.5. Truncated Pyramid
5.4.6. Flat or Stable Pyramid
5.4.7. Load Components (Volume and Intensity) of the Different Proposals of the Pyramidal Method

5.5. Training Methods From Bodybuilding
- 5.5.1. Superseries
- 5.5.2. Triseries
- 5.5.3. Compound Series
- 5.5.4. Giant Series
- 5.5.5. Congestive Series
- 5.5.6. *Wave-Like loading*
- 5.5.7. ACT (Anti-*Catabolic Training*)
- 5.5.8. *Bulk*
- 5.5.9. *Cluster*
- 5.5.10. 10x10 Satziorsky
- 5.5.11. *Heavy Duty*
- 5.5.12. Ladder
- 5.5.13. Characteristics and Load Components of the Different Methodological Proposals of Training Systems Coming From Bodybuilding

5.6. Methods from Sports Training
- 5.6.1. Plyometry
- 5.6.2. *Circuit Training*
- 5.6.3. *Cluster Training*
- 5.6.4. Contrast
- 5.6.5. Main Characteristics of Strength Training Methods Derived from Sports Training

5.7. Methods from Unconventional Training and *CrossFit*
- 5.7.1. EMOM (Every Minute on the Minute)
- 5.7.2. Tabata
- 5.7.3. AMRAP (As Many Reps as Possible)
- 5.7.4. *For Time*
- 5.7.5. Main Characteristics of Strength Training Methods Derived from CrossFit Training

5.8. Speed-Based Training (VBT)
- 5.8.1. Theoretical Foundation
- 5.8.2. Practical Considerations
- 5.8.3. Own Data

5.9. The Isometric Method
- 5.9.1. Concepts and Physiological Fundamentals of Isometric Stresses
- 5.9.2. Yuri Verkhoshanski Proposal

5.10. Methodology of *Repeat Power Ability* (RPA) From Alex Natera
- 5.10.1. Theoretical Basis
- 5.10.2. Practical Applications
- 5.10.3. Published Data vs. Own Data

5.11. Training Methodology Proposed by Fran Bosch
- 5.11.1. Theoretical Basis
- 5.11.2. Practical Applications
- 5.11.3. Published Data vs. Own Data

5.12. Cal Dietz and Matt Van Dyke's Three-Phase Methodology
- 5.12.1. Theoretical Basis
- 5.13.2. Practical Applications

5.13. New Trends in Quasi-Isometric Eccentric Training
- 5.13.1. Neurophysiological Rationale and Analysis of Mechanical Responses Using Position Transducers and Force Platforms for Each Strength Training Approach

Module 6. Theory of Strength Training and Basis for Structural Training

6.1. Strength, its Conceptualization and Terminology
- 6.1.1. Strength from Mechanics
- 6.1.2. Strength from Physiology
- 6.1.3. Concept of Strength Deficit
- 6.1.4. Concept of Applied Strength
- 6.1.5. Concept of Useful Strength
- 6.1.6. Terminology of Strength Training
  - 6.1.6.1. Maximum Strength Training
  - 6.1.6.2. Explosive Strength
  - 6.1.6.3. Elastic Explosive Strength
  - 6.1.6.4. Reflective Elastic Explosive Strength
  - 6.1.6.5. Ballistic Strength
  - 6.1.6.6. Rapid Force
  - 6.1.6.7. Explosive Power
  - 6.1.6.8. Speed Strength
  - 6.1.6.9. Resistance Training

6.2. Concepts Connected to Power I
- 6.2.1. Definition of Power
  - 6.2.1.1. Conceptual Aspects of Power
  - 6.2.1.2. Importance of Power in the Context of Sports Performance
  - 6.2.1.3. Clarification of Power-Related Terminology
- 6.2.2. Factors Contributing to Peak Power Development
- 6.2.3. Structural Aspects Conditioning Power Production
  - 6.2.3.1. Muscle Hypertrophy
  - 6.2.3.2. Muscle Structure
  - 6.2.3.3. Ratio of Fast and Slow Fibers in a Cross Section
  - 6.2.3.4. Muscle Length and its Effect on Muscle Contraction
  - 6.2.3.5. Quantity and Characteristics of Elastic Components
- 6.2.4. Neural Aspects Conditioning Power Production
  - 6.2.4.1. Action Potential
  - 6.2.4.2. Speed of Motor Unit Recruitment
  - 6.2.4.3. Muscle Coordination
  - 6.2.4.4. Intermuscular Coordination
  - 6.2.4.5. Previous Muscle Status (PAP)
  - 6.2.4.6. Neuromuscular Reflex Mechanisms and Their Incidence

6.3. Concepts Connected to Power II
- 6.3.1. Theoretical Aspects for Understanding the Strength–Time Curve
  - 6.3.1.1. Strength Impulse
  - 6.3.1.2. Phases of the Strength–Time Curve
  - 6.3.1.3. Phases of Acceleration in the Strength–Time Curve
  - 6.3.1.4. Maximum Acceleration Area of the Strength–Time Curve
  - 6.3.1.5. Deceleration Phase of the Strength–Time Curve
- 6.3.2. Theoretical Aspects for Understanding Power Curves
  - 6.3.2.1. Power–Time Curve
  - 6.3.2.2. Power–Displacement Curve
  - 6.3.2.3. Optimal Workload for Maximum Energy Development

6.4. Relating Concepts of Strength and their Connection to Sports Performance
- 6.4.1. Objective of Strength Training
- 6.4.2. Relationship of Power to the Training Cycle or Phase
- 6.4.3. Connection of Maximum Force and Power
- 6.4.4. Connection Between Power and the Improvement of Athletic Performance
- 6.4.5. Connection Between Strength and Sports Performance
- 6.4.6. Relationship between Strength and Speed
- 6.4.7. Relationship between Strength and Jumps
- 6.4.8. Relationship between Strength and Changes in Direction
- 6.4.9. Relationship Between Strength and Other Aspects of Sports Performance
  - 6.4.9.1. Maximum Strength and Its Effects on Training

6.5. Neuromuscular System (Hypertrophic Training)
- 6.5.1. Structure and Function
- 6.5.2. Motor Unit
- 6.5.3. Sliding Theory
- 6.5.4. Types of Fiber
- 6.5.5. Types of Contraction

6.6. Neuromuscular System Responses and Adaptations (Hypertrophic Training)
- 6.6.1. Nerve Impulse Adaptations
- 6.6.2. Muscle Activation Adaptations
- 6.6.3. Motor Unit Synchronization Adaptations
- 6.6.4. Adaptations in Antagonist Coactivation
- 6.6.5. Adaptations in Doublets
- 6.6.6. Muscle Preactivation
- 6.6.7. Muscle *Stiffness*
- 6.6.8. Reflexes
- 6.6.9. Internal Models of Motor Engrams
- 6.6.10. Muscle Tone
- 6.6.11. Action Potential Speed

6.7. Hypertrophy
- 6.7.1. Introduction
  - 6.7.1.1. Parallel and Serial Hypertrophy
  - 6.7.1.2. Sarcoplasmic Hypertrophy
- 6.7.2. Satellite Cells
- 6.7.3. Hyperplasia

6.8. Mechanisms that Induce Hypertrophy
- 6.8.1. Hypertrophy-Inducing Mechanism: Mechanical Stress
- 6.8.2. Hypertrophy-Inducing Mechanism: Metabolic Stress
- 6.8.3. Hypertrophy-Inducing Mechanism: Muscle Damage

6.9. Variables for Hypertrophy Training Programming
- 6.9.1. Volume
- 6.9.2. Intensity
- 6.9.3. Frequency (F)
- 6.9.4. Weight
- 6.9.5. Density
- 6.9.6. Selecting Exercises
- 6.9.7. Order in the Execution of Exercises
- 6.9.8. Type of Muscle Action
- 6.9.9. Duration of Rest Intervals
- 6.9.10. Duration of Repetitions
- 6.9.11. Range of Movement

6.10. Main Factors Affecting Hypertrophic Development at the Highest Level
- 6.10.1. Genetics
- 6.10.2. Age
- 6.10.3. Sex
- 6.10.4. Training Status

Module 7. Strength Training to Improve Speed

7.1. Strength
- 7.1.1. Definition
- 7.1.2. General Concepts
  - 7.1.2.1. Manifestations of Strength
  - 7.1.2.2. Factors that Determine Performance
  - 7.1.2.3. Strength Requirements for *Sprint* Improvement Connection Between Force Manifestations and *Sprinting*
  - 7.1.2.4. Speed- Strength Curve
  - 7.1.2.5. Relationship of the S-S and Power Curve and its Application to *Sprint* Phases
  - 7.1.2.6. Development of Muscular Strength and Power

7.2. Dynamics and Mechanics of Linear *Sprint* (100m Model)
- 7.2.1. Kinematic Analysis of the Take-off
- 7.2.2. Dynamics and Strength Application During Take-off
- 7.2.3. Kinematic Analysis of the Acceleration Phase
- 7.2.4. Dynamics and Strength Application During Acceleration
- 7.2.5. Kinematic Analysis of Running at Maximum Speed
- 7.2.6. Dynamics and Strength Application During Maximum Speed

7.3. Analysis of Acceleration Technique and Maximum Speed in Team Sports
- 7.3.1. Description of the Technique in Team Sports
- 7.3.2. Comparison of Sprinting Technique in Team Sports vs. Athletic Events
- 7.3.3. Timing and Motion Analysis of Speed Events in Team Sports

7.4. Exercises as Basic and Special Means of Strength Development for *Sprint* Improvement
  7.4.1. Basic Movement Patterns
    7.4.1.1. Description of Patterns with Emphasis on Lower Limb Exercises
    7.4.1.2. Mechanical Demand of the Exercises
    7.4.1.3. Exercises Derived from Olympic Weightlifting
    7.4.1.4. Ballistic Exercises
    7.4.1.5. S-S Curve of the Exercises
    7.4.1.6. Strength Production Vector
7.5. Special Methods of Strength Training Applied to *Sprinting*
  7.5.1. Maximum Effort Method
  7.5.2. Dynamic Effort Method
  7.5.3. Repeated Effort Method
  7.5.4. French *Complex* and Contrast Method
  7.5.5. Speed-Based Training
  7.5.6. Strength Training as a Means of Injury Risk Reduction
7.6. Means and Methods of Strength Training for Speed Development
  7.6.1. Means and Methods of Strength Training for the Development of the Acceleration Phase
    7.6.1.1. Connection of Force to Acceleration
    7.6.1.2. Sledding and Racing Against Resistance
    7.6.1.3. Slopes
    7.6.1.4. Jumpability
      7.6.1.4.1. Building the Vertical Jump
      7.6.1.4.2. Building the Horizontal Jump
  7.6.2. Means and Methods for Top Speed Training
    7.6.2.1. Plyometry
      7.6.2.1.1. Concept of the *Shock* Method
      7.6.2.1.2. Historical Perspective
      7.6.2.1.3. *Shock* Method Methodology for Speed Improvement
      7.6.2.1.4. Scientific Evidence

7.7. Means and Methods of Strength Training Applied to Agility and Change of Direction
- 7.7.1. Determinants of Agility and COD
- 7.7.2. Multidirectional Jumps
- 7.7.3. Eccentric Strength

7.8 Assessment and Control of Strength Training
- 7.8.1. Strength-Speed Profile
- 7.8.2. Speed Load Profile
- 7.8.3. Progressive Loads

7.9. Integration
- 7.9.1. Case Study

Module 8. Sports Performance Assessment in Strength Training

8.1. Assessment
- 8.1.1. General Concepts on Assessment, Test and Measuring
- 8.1.2. Test Characteristics
- 8.1.3. Types of Tests
- 8.1.4. Assessment Objectives

8.2. Neuromuscular Technology and Assessments
- 8.2.1. Contact Mat
- 8.2.2. Strength Platforms
- 8.2.3. Load Cell
- 8.2.4. Accelerometers
- 8.2.5. Position Transducers
- 8.2.6. Cellular Applications for Neuromuscular Evaluation

8.3. Submaximal Repetition Test
- 8.3.1. Protocol for its Assessment
- 8.3.2. Validated Estimation Formulas for the Different Training Exercises
- 8.3.3. Mechanical and Internal Load Responses During a Submaximal Repetition Test

8.4. Progressive Incremental Maximal Test (TPImax)
- 8.4.1. Naclerio and Figueroa Protocol 2004
- 8.4.2. Mechanical (Linear Encoder) and Internal Load (PSE) Responses During a Max TPI
- 8.4.3. Determining the Optimal Zone for Power Training

8.5. Horizontal Jump Test
- 8.5.1. Assessment Without Using Technology
- 8.5.2. Assessment Using Technology (Horizontal Encoder and Force Platform)

8.6. Simple Vertical Jump Test
- 8.6.1. Squat Jump Assessment
- 8.6.2. Counter Movement Jump (CMJ) Assessment
- 8.6.3. Assessment of an Abalakov Salto ABK
- 8.6.4. Drop Jump Assessment

8.7. *Rebound Jump* Test
- 8.7.1. 5-second Repeated Jump Test
- 8.7.2. 15-second Repeated Jump Test
- 8.7.3. 30-second Repeated Jump Test
- 8.7.4. Fast Strength Endurance Index (Bosco)
- 8.7.5. Effort Exercise Rate in the *Rebound Jump* Test

8.8. Mechanical Responses (Strength, Power and Speed/Time) During Single and Repeated Jumps Tests
- 8.8.1. Strength/Time in Simple and Repeated Jumps
- 8.8.2. Speed/Time in Single and Repeated Jumps
- 8.8.3. Power/Time in Simple and Repeated Jumps

8.9. Strength/Speed Profiles in Horizontal Vectors
- 8.9.1. Theoretical Basis of an S/S Profile
- 8.9.2. Morin and Samozino Assessment Protocols
- 8.9.3. Practical Applications
- 8.9.4. Contact Carpet, Linear Encoder and Force Platform Evaluation of Forces.

8.10. Strength/Speed Profiles in Vertical Vectors
- 8.10.1. Theoretical Basis of an S/S Profile
- 8.10.2. Morin and Samozino Assessment Protocols
- 8.10.3. Practical Applications
- 8.10.4. Contact Carpet, Linear Encoder and Force Platform Evaluation of Forces.

8.11. Isometric Tests
- 8.11.1. McCall Test
  - 8.11.1.1. Evaluation Protocol and Values Recorded With a Force Platform
- 8.11.2. Mid-Thigh Pull Test
  - 8.11.2.1. Evaluation Protocol and Values Recorded With a Force Platform

Module 9. Strength Training in Situational Sports

9.1. Basic Fundamentals
- 9.1.1. Functional and Structural Adaptations
  - 9.1.1.1. Functional Adaptations
  - 9.1.1.2. Load-Pause Ratio (Density) as a Criterion for Adaptation
  - 9.1.1.3. Strength as a Base Quality
  - 9.1.1.4. Mechanisms or Indicators for Structural Adjustments
  - 9.1.1.5. Utilization, Conceptualization of the Muscular Adaptations Provoked, as an Adaptive Mechanism of the Imposed Load. (Mechanical Stress, Metabolic Stress, Muscle Damage)
- 9.1.2. Motor Unit Recruitment
  - 9.1.2.1. Recruitment Order, Central Nervous System Regulatory Mechanisms, Peripheral Adaptations, Central Adaptations Using Tension, Speed or Fatigue as a Tool for Neural Adaptation
  - 9.1.2.2. Order of Recruitment and Fatigue During Maximum Effort
  - 9.1.2.3. Recruitment Order and Fatigue During Sub-Maximum Efforts
  - 9.1.2.4. Fibrillar Recovery

9.2. Specific Fundamentals
- 9.2.1. Movement as a Starting Point
- 9.2.2. Quality of Movement as a General Objective for Motor Control, Motor Patterning and Motor Programming
- 9.2.3. Priority Horizontal Movements
  - 9.2.3.1. Accelerating, Braking, Change of Direction With Inside Leg and Outside Leg, Maximum Absolute Speed and/or Sub-Maximum Speed Technique, Correction and Application According to the Specific Movements in Competition
- 9.2.4. Priority Vertical Movements
  - 9.2.4.1. *Jumps, Hops, Bounds*. Technique, Correction and Application According to the Specific Movements in Competition

9.3. Technological Means for the Assessment of Strength Training and External Load Control
- 9.3.1. Introduction to Technology and Sport
- 9.3.2. Technology for Strength and Power Training Assessment and Control
  - 9.3.2.1. Rotary Encoder (Operation, Interpretation Variables, Intervention Protocols, Application)
  - 9.3.2.2. Load Cell (Operation, Interpretation Variables, Intervention Protocols, Application)
  - 9.3.2.3. Strength Platforms (Operation, Interpretation Variables, Intervention Protocols, Application)
  - 9.3.2.4. Electric Photocells (Operation, Interpretation Variables, Intervention Protocols, Application)
  - 9.3.2.5. Contact Mat (Operation, Interpretation Variables, Intervention Protocols, Application)
  - 9.3.2.6. Accelerometer (Operation, Interpretation Variables, Intervention Protocols, Application)
  - 9.3.2.7. Applications for Mobile Devices (Operation, Interpretation Variables, Intervention Protocols, Application)
- 9.3.3. Intervention Protocols for the Assessment and Control of Training

9.4. Controlling the Internal Load
- 9.4.1. Subjective Load Perception by Rating the Perceived Exertion
  - 9.4.1.1. Subjective Perception of Load to Estimate Relative Load (% 1MR)
- 9.4.2. Scope
  - 9.4.2.1. As Exercise Control
    - 9.4.2.1.1. Repetitions and PRE
    - 9.4.2.1.2. Repetitions in Reserve
    - 9.4.2.1.3. Scale of Speed
  - 9.4.2.2. Controlling the Overall Effect of a Session
  - 9.4.2.3. As a Tool for Periodization
    - 9.4.2.3.1. Use of (APRE) Self-Regulated Progressive Resistance Exercise, Interpretation of the Data and its Relation to the Correct Dosage of the Load in the Session
- 9.4.3. Recovery Quality Scale, Interpretation and Practical Application in the Session (TQR 0-10)
- 9.4.4. As a Tool for Daily Practice
- 9.4.5. Application
- 9.4.6. Recommendations

9.5. Resources for Strength Training
- 9.5.1. Role of Resources in Designing a Method
- 9.5.2. Resources at the Service of a Method and in Function of a Central Sporting Objective
- 9.5.3. Types of Resources
- 9.5.4. Movement Patterns and Activations as a Central Axis for Choosing Resources and Method Implementation

9.6. Building a Method
- 9.6.1. Defining the Types of Exercises
  - 9.6.1.1. Cross-Connectors as a Guide to the Movement Target
- 9.6.2. Exercise Evolution
  - 9.6.2.1. Modification of the Rotational Component and the Number of Supports According to the Plane of Motion
- 9.6.3. Exercise Organization
  - 9.6.3.1. Relationship With Priority Horizontal and Vertical Movements (2.3 and 2.4)

9.7. Practical Implementation of a Method (Programming)
- 9.7.1. Logical Implementation of the Plan
- 9.7.2. Implementation of a Group Session
- 9.7.3. Individual Programming in a Group Context
- 9.7.4. Strength in Context Applied to the Game
- 9.7.5. Periodization Proposal

9.8. ITU I (Integrating Thematic Unit)
- 9.8.1. Training Construction for Functional and Structural Adaptations and Recruitment Order
- 9.8.2. Constructing a Training Monitoring and/or Assessment System
- 9.8.3. Movement-Based Training Construction for the Implementation of Fundamentals, Means and External and Internal Load Control

9.9. ITU II (Integrating Thematic Unit)
- 9.9.1. Construction of a Group Training Session
- 9.9.2. Construction of a Group Training Session in Context Applied to the Game
- 9.9.3. Construction of a Periodization of Analytical and Specific Loads

Module 10. Training in Medium and Long Duration Sports

10.1. Strength
- 10.1.1. Definition and concept
- 10.1.2. *Continuum* of Conditional Abilities
- 10.1.3. Strength Requirements for Endurance Sports. Scientific Evidence
- 10.1.4. Strength Manifestations and Their Relationship to Neuromuscular Adaptations in Endurance Sports

10.2. Scientific Evidence on the Adaptations of Strength Training and its Influence on Medium and Long Duration Endurance Tests
- 10.2.1. Neuromuscular Adaptations
- 10.2.2. Metabolic and Endocrine Adaptations
- 10.2.3. Adaptations When *Performing* Specific Tests

10.3. Principle of Dynamic Correspondence Applied to Endurance Sports
- 10.3.1. Biomechanical Analysis of Force Production in Different Gestures: Running, Cycling, Swimming, Rowing, Cross-Country Skiing
- 10.3.2. Parameters of Muscle Groups Involved and Muscle Activation
- 10.3.3. Angular Kinematics
- 10.3.4. Rate and Duration of Force Production
- 10.3.5. Stress Dynamics
- 10.3.6. Amplitude and Direction of Movement

10.4. Concurrent Strength and Endurance Training
- 10.4.1. Historical Perspective
- 10.4.2. Interference Phenomenon
  - 10.4.2.1. Molecular Aspects
  - 10.4.2.2. Sports Performance
- 10.4.3. Effects of Strength Training on Endurance
- 10.4.4. Effects of Resistance Training on Strength Demonstrations
- 10.4.5. Types and Modes of Load Organization and Their Adaptive Responses
- 10.4.6. Concurrent Training. Evidence on Different Sports

10.5. Strength Training
- 10.5.1. Resources and Methods for Maximum Strength Development
- 10.5.2. Resources and Methods for Explosive Strength Development
- 10.5.3. Resources and Methods for Reactive Strength Development
- 10.5.4. Compensatory and Injury Risk Reduction Training
- 10.5.5. Plyometric Training and Jumping Development as an Important Part of Improving Running Economy

10.6. Exercises and Special Means of Strength Training for Medium and Long Endurance Sports
- 10.6.1. Movement Patterns
- 10.6.2. Basic Exercises
- 10.6.3. Ballistic Exercises
- 10.6.4. Dynamic Exercises
- 10.6.5. Resisted and Assisted Strength Exercises
- 10.6.6. Core Exercises

10.7. Strength Training Programming Based on the Microcycle Structure
- 10.7.1. Selection and Order of Exercises
- 10.7.2. Weekly Frequency of Strength Training
- 10.7.3. Volume and Intensity According to the Objective
- 10.7.4. Recovery Times

10.8. Strength Training Aimed at Different Cyclic Disciplines
- 10.8.1. Strength Training for Middle-Distance and Long-Distance Runners
- 10.8.2. Strength Training for Cycling
- 10.8.3. Strength Training for Swimming
- 10.8.4. Strength Training for Rowing
- 10.8.5. Strength Training for Cross-Country Skiing

10.9. Controlling the Training Process
- 10.9.1. Load Speed Profile
- 10.9.2. Progressive Load Test

A unique, key, and decisive program to boost your professional development"

06

Methodology

This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: **Relearning.**

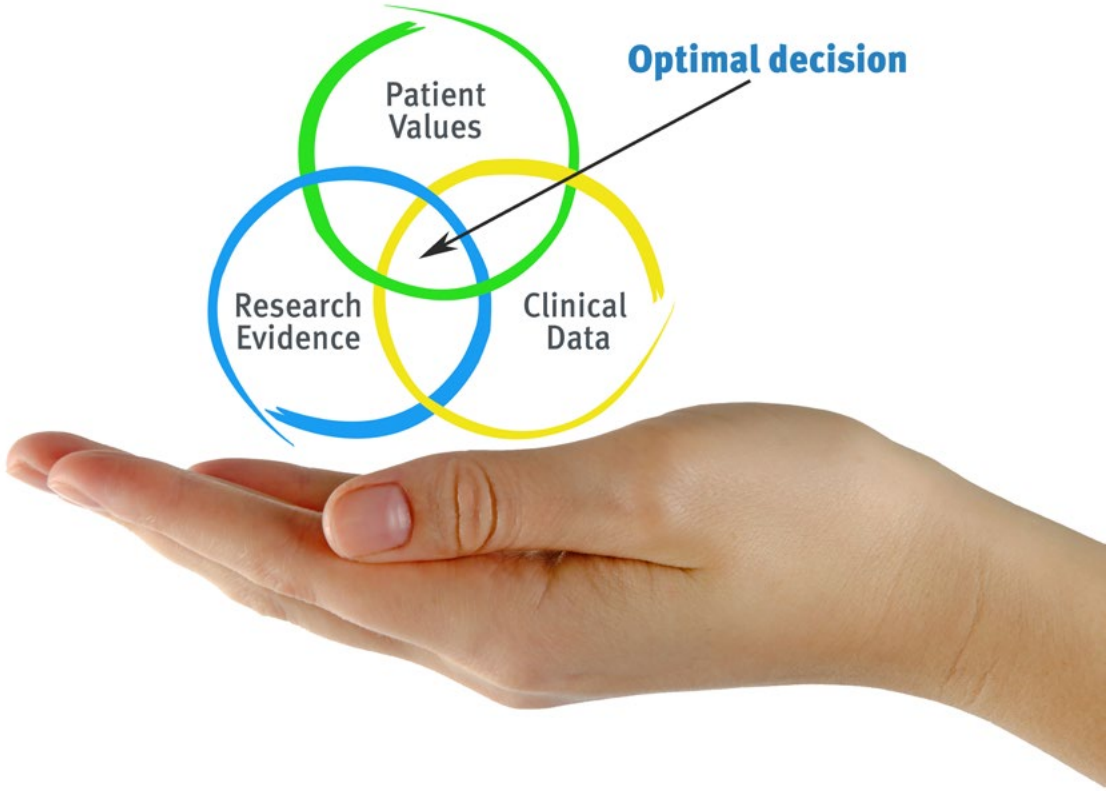
This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.

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

At TECH we use the Case Method

What should a professional do in a given situation? Throughout the program, students will face multiple simulated clinical cases, based on real patients, in which they will have to do research, establish hypotheses, and ultimately resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Physiotherapists/kinesiologists learn better, faster, and more sustainably over time.

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



According to Dr. Gérvas, the clinical case is the annotated presentation of a patient, or group of patients, which becomes a "case", an example or model that illustrates some peculiar clinical component, either because of its teaching power or because of its uniqueness or rarity. It is essential that the case is based on current professional life, trying to recreate the real conditions of professional physiotherapy practice.

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:

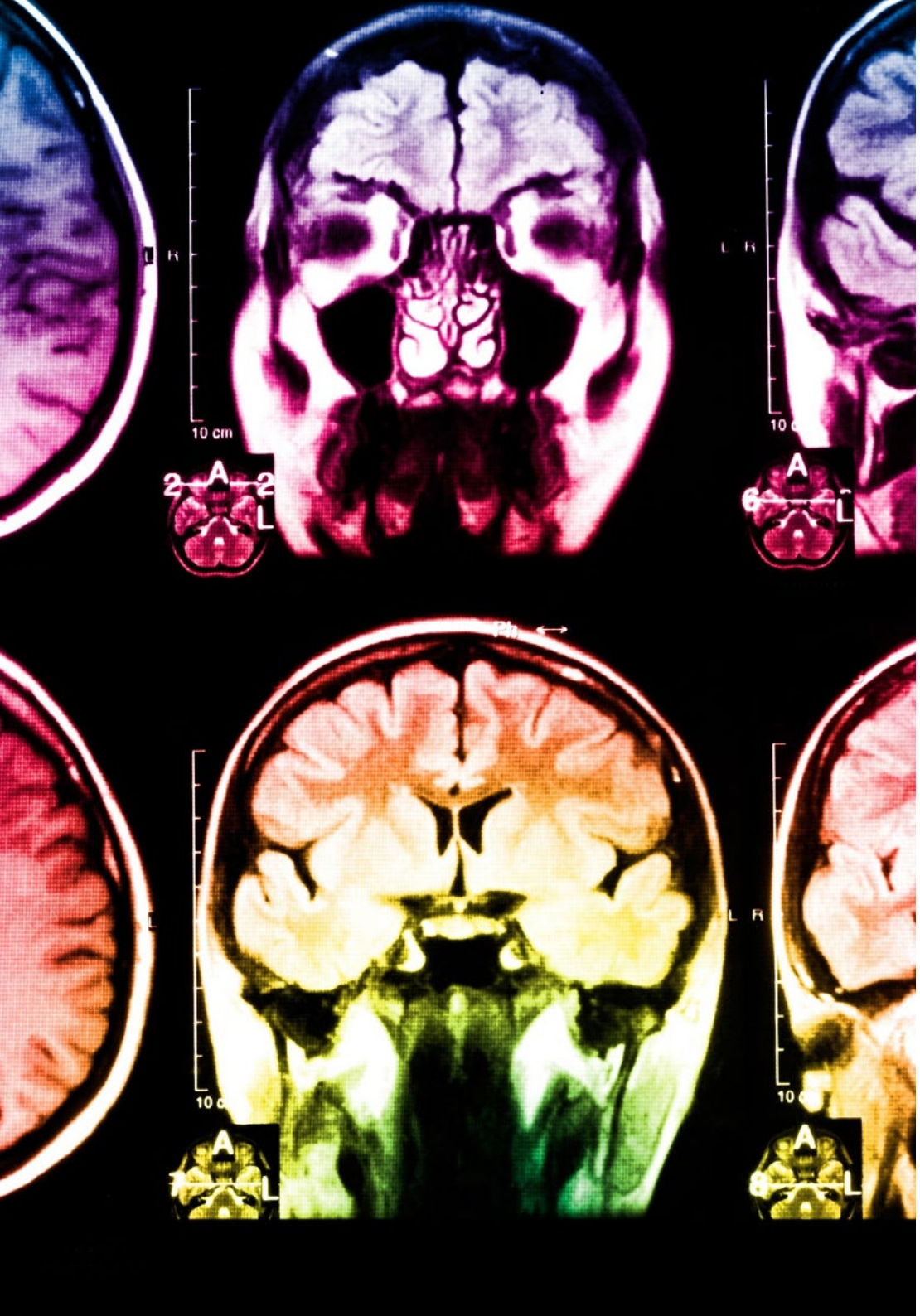
1. Physiotherapists/kinesiologists who follow this method not only grasp concepts, but also develop their mental capacity, by evaluating real situations and applying their knowledge.
2. The learning process has a clear focus on practical skills that allow the physiotherapist/kinesiologist to better integrate 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.

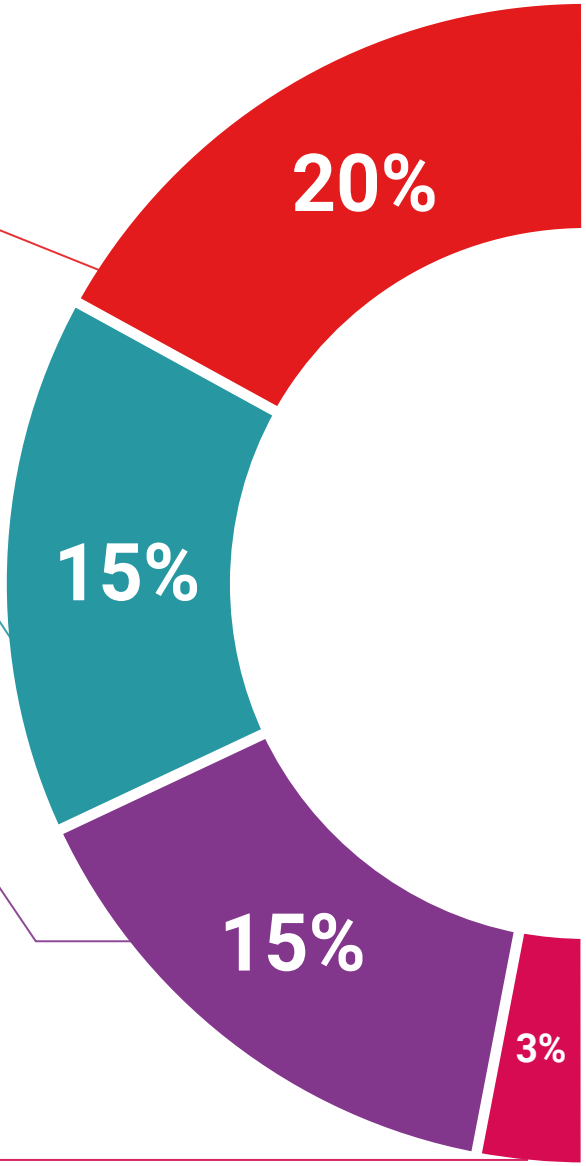
Interactive Summaries

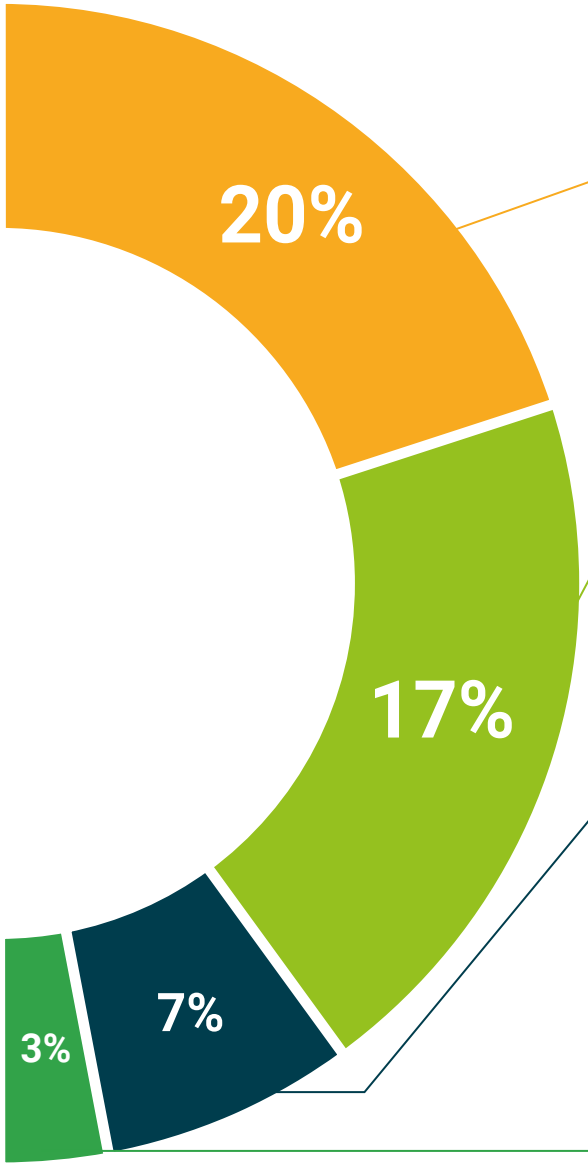
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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.

07

Certificate

The Professional Master's Degree in Strength Training in Sports Performance guarantees students, in addition to the most rigorous and up-to-date education, access to a Professional Master's Degree issued by TECH Technological University.

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

This **Professional Master's Degree in Strength Training in Sports Performance** 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 **Professional Master's Degree** diploma issued by **TECH Technological University** via tracked delivery*.

The certificate issued by **TECH Technological University** will reflect the qualification obtained in the Professional Master's Degree, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional career evaluation committees.

Title: **Professional Master's Degree in Strength Training in Sports Performance**

Official Nº of Hours: **1,500 h.**

Endorsed by the NBA

tech technological university

Awards the following

CERTIFICATE

to

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

For having successfully passed and accredited the following program

PROFESSIONAL MASTER'S DEGREE

in

Strength Training in Sports Performanc

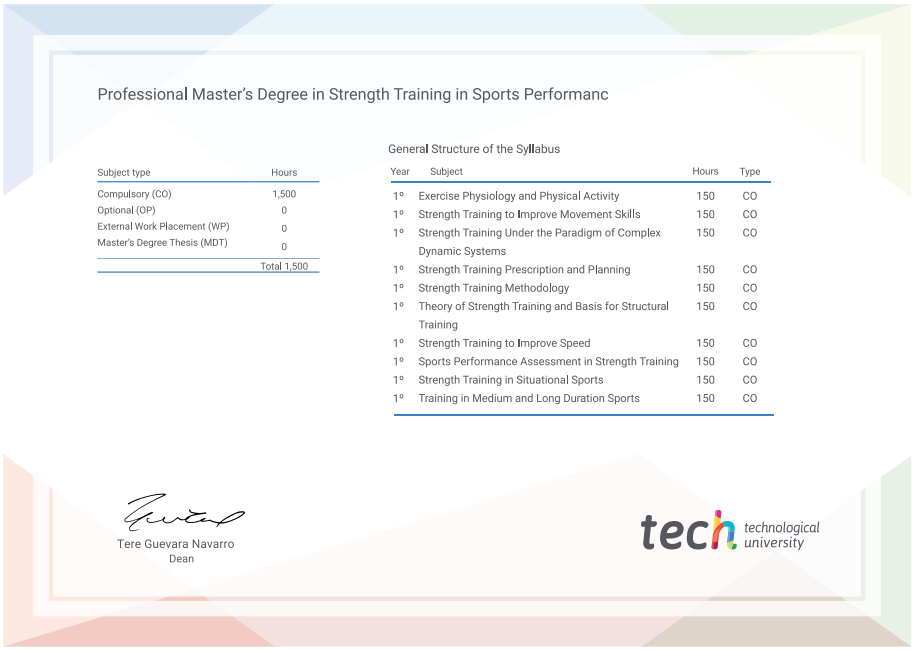
This is a qualification awarded by this University, equivalent to 1,500 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

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



Professional Master's Degree in Strength Training in Sports Performanc

Subject type	Hours
Compulsory (CO)	1,500
Optional (OP)	0
External Work Placement (WP)	0
Master's Degree Thesis (MDT)	0
	Total 1,500

General Structure of the Syllabus

Year	Subject	Hours	Type
1º	Exercise Physiology and Physical Activity	150	CO
1º	Strength Training to Improve Movement Skills	150	CO
1º	Strength Training Under the Paradigm of Complex Dynamic Systems	150	CO
1º	Strength Training Prescription and Planning	150	CO
1º	Strength Training Methodology	150	CO
1º	Theory of Strength Training and Basis for Structural Training	150	CO
1º	Strength Training to Improve Speed	150	CO
1º	Sports Performance Assessment in Strength Training	150	CO
1º	Strength Training in Situational Sports	150	CO
1º	Training in Medium and Long Duration Sports	150	CO

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*Apostille Convention. In the event that the student wishes to have their paper certificate issued with an apostille, TECH EDUCATION will make the necessary arrangements to obtain it, at an additional cost.

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Professional Master's Degree

Strength Training in Sports Performance

- Modality: **online**
- Duration: **12 months**
- Certificate: **TECH Technological University**
- Dedication: **16h/week**
- Schedule: **at your own pace**
- Exams: **online**

Professional Master's Degree

Strength Training in Sports Performance

Endorsed by the NBA

tech technological university