



Postgraduate Diploma

Prescription, Methodology and Principles for Strength Training

» Modality: online

» Duration: 6 months

» Certificate: TECH Global University

» Credits: 18 ECTS

» Schedule: at your own pace

» Exams: online

Website: www.techtitute.com/us/sports-science/postgraduate-diploma/postgraduate-diploma-prescription-methodology-principles-strength-training

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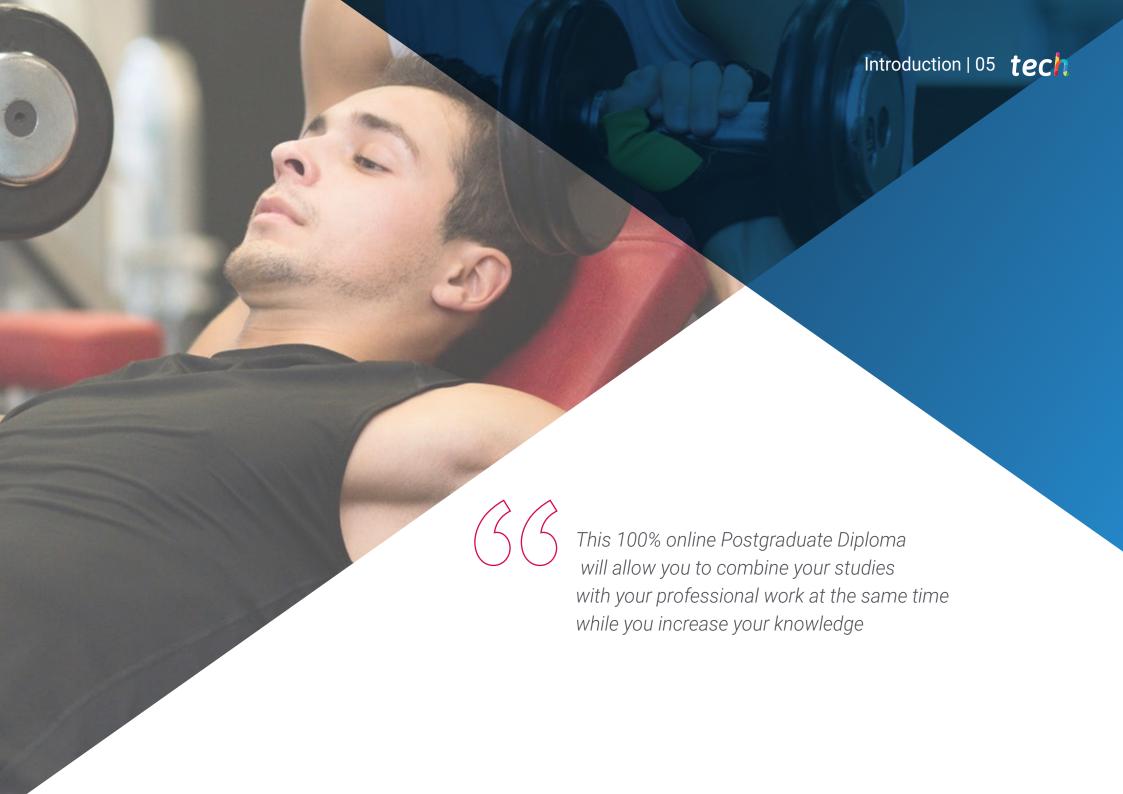
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Certificate

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In recent years, strength training has gained great momentum in the scientific community, covering multiple contexts ranging from performance in individual, time-based sports to competitive team sports, covering the whole range of sports disciplines.

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

The teaching team of this Postgraduate Diploma in Prescription, Methodology and Bases for Strength Training 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 current events.

Therefore, 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 Postgraduate Diploma, the student is not conditioned by fixed schedules or the need to move to another physical location, but can access the contents at any time of the day, balancing their work or personal life with their academic life.

This Postgraduate Diploma in Prescription, Methodology and Principles for Strength Training contains the most complete and up-to-date educational 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 the study of this
Postgraduate Diploma of high scientific rigor
and improve your skills in strength training
for high performance sports"



This Postgraduate Diploma is the best investment you can make in the selection of a refresher educational 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 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 education programmed to learn in real situations.

This educational 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 interactive video system created by recognized experts in Prescription, Methodology and Bases for Strength Training and with great experience.

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

Increase your knowledge in the Prescription, Methodology and Basis for Strength Training with this high-level program.







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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 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



The world of sports requires prepared professionals and we give you the keys to position yourself among the professional elite"







Specific Objectives

- Specialize and interpret the key aspects of strength training
- In-depth knowledge of the different components of the load
- Delve into key aspects of planning, periodization and load monitoring.
- Gain in-depth knowledge of the different session set-up schemes
- Manage the most common prescribing, monitoring and adjustment models
- 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
- Master in depth the theoretical terms as far as Strength Training is concerned.
- Master in depth 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







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Management



Mr. 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

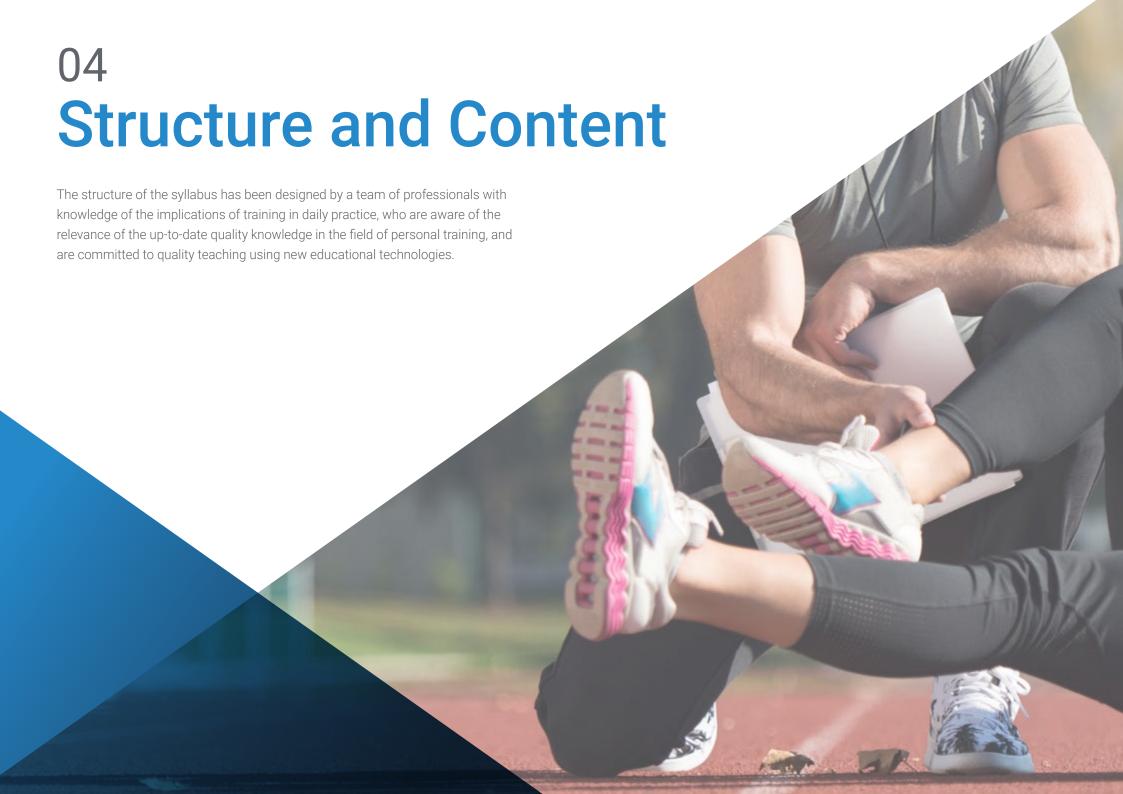
Mr. Carbone, Leandro

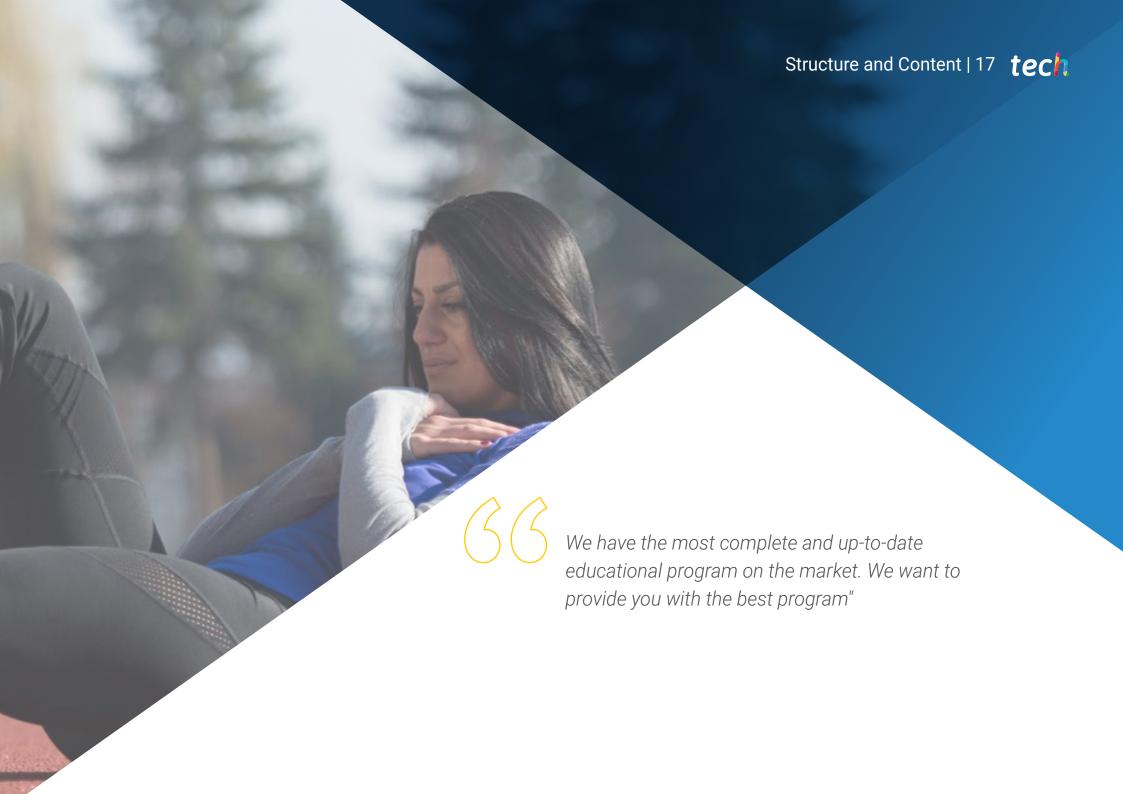
- Degree in Physical Education
- Specialist in exercise physiology
- Msc Strength and Conditioning
- CSCS-NASCA, CISSN-ISSN
- Currently at Club The Strongest
- Olympic Athlete Partners

Mr. Masse, Juan

- Degree in Physical Education
- Director of the Athlos study group
- Physical Trainer in various professional soccer teams in South America, experiences teacher







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Module 1. Prescription and Programming of Strength Training

- 1.1. Introduction and Definition of Concepts
 - 1.1.1. General concepts
 - 1.1.1.1. Planning, Periodization, Prescription
 - 1.1.1.2. Qualities, Methods, Objectives
 - 1.1.1.3. Complexity, Risk and Uncertainty
 - 1.1.1.4. Complementary Pairs
- 1.2. Exercises
 - 1.2.1. General vs Specific
 - 1.2.2. Simple vs Complex
 - 1.2.3. Thrust vs Ballistic
 - 1.2.4. Kinetics and Kinematics
 - 1.2.5. Basic Patterns
 - 1.2.6. Order, Emphasis, Importance
- 1.3. Variables in the Programming
 - 1.3.1. Intensity
 - 1.3.2. Effort
 - 1.3.3. Intension
 - 1.3.4. Volume
 - 1.3.5. Density
 - 1.3.6. Weight
 - 1.3.7. Dose
- 1.4. Periodization Structure
 - 1.4.1. Microcycle
 - 1.4.2. Mesocycle
 - 1.4.3. Macrocycle
 - 1.4.4. Olympic Cycles
- 1.5. Structure of the Sessions
 - 1.5.1. Hemispheres
 - 1.5.2. Entries
 - 1.5.3. Weider
 - 1.5.4. Patterns
 - 1.5.5. Muscle



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- 1.6.1. Load-Effort Tables
- 1.6.2. Based on %
- 1.6.3. Based on Subjective Variables
- 1.6.4. Based on Speed (VBT)
- 1.6.5. Others

1.7. Prediction and Monitoring

- 1.7.1. Velocity-Based Training (VBT)
- 1.7.2. Areas of Repetition
- 1.7.3. Load Areas
- 1.7.4. Time and Reps

1.8. Planning

- 1.8.1. Series Schemes Repetitions
 - 1.8.1.1. Plateau
 - 1.8.1.2. Step
 - 1.8.1.3. Waves
 - 1.8.1.4. Steps
 - 1.8.1.5. Pyramids
 - 1.8.1.6. Light-Heavy
 - 1.8.1.7. Cluster
 - 1.8.1.8. Rest-Pause
- 1.8.2. Vertical Planning
- 1.8.3. Horizontal Planning
- 1.8.4. Classifications and Models
 - 1.8.4.1. Constant
 - 1.8.4.2. Lineal
 - 1.8.4.3. Reverse Linear
 - 1.8.4.4. Blocks
 - 1.8.4.5. Accumulation
 - 1.8.4.6. Undulating
 - 1.8.4.7. Reverse Undulating
 - 1.8.4.8. Volume-Intensity

1.9. Adaptation

- 1.9.1. Dose-Response Model
- 1.9.2. Robust-Optimal
- 1.9.3. Fitness-Fatigue
- 1.9.4. Micro Doses

1.10. Assessments and Adjustments

- 1.10.1. Self-Regulated Load
- 1.10.2. Adjustments Based on VBT
- 1.10.3. Based on RIR and RPE
- 1.10.4. Based on Percentages
- 1.10.5. Negative Pathway

Module 2. Methodology of Strength Training

- 2.1. Training Methods Derived from Powerlifting
 - 2.1.2. Functional Isometrics
 - 2.1.3. Forced Repetitions
 - 2.1.4. Eccentrics in Competition Exercises
 - 2.1.5. Main Characteristics of the Most-Used Methods in Powerlifting
- 2.2. Training Methods from Weightlifting
 - 2.2.1. Bulgarian Method
 - 2.2.2. Russian Method
 - 2.2.3. Origin of the Popular Methodologies in the School of Olympic Lifting
 - 2.2.4. Differences Between the Bulgarian and Russian Concepts
- 2.3. Zatiorsky's Methods
 - 2.3.1. Maximum Effort Method (ME)
 - 2.3.2. Repeated Effort Method (RE)
 - 2.3.3. Dynamic Effort Method (DE)
 - 2.3.4. Load Components and Main Characteristics of Zatsiorsky's Methods
 - 2.3.5. Interpretation and Differences in Mechanical Variables (Force, Power and Speed) between ME, RE and DE and their Internal Response
- 2.4. Pyramidal Methods
 - 2.4.1. Classic Ascending
 - 2.4.2. Classic Descending

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- 2.4.3. Double
- 2.4.4. Skewed Pyramid
- 2.4.5. Truncated Pyramid
- 2.4.6. Flat or Stable Pyramid
- 2.4.7. Load Components (Volume and Intensity) of the Different Proposals of the Pyramidal Method.
- 2.5. Training Methods Derived from Bodybuilding
 - 2.5.1. Superseries
 - 2.5.2. Triseries
 - 2.5.3. Compound Series
 - 2.5.4. Giant Series
 - 2.5.5. Congestive Series
 - 2.5.6. Wave-Like Loading
 - 2.5.7. ACT (Anti-Catabolic Training)
 - 2.5.8. Bulk
 - 2.5.9. Cluster
 - 2.5.10. 10x10 Satziorsky
 - 2.5.11. Heavy Duty
 - 2.5.12. Ladder
 - 2.5.13. Characteristics and Load Components of the Different Methodological Proposals of Training Systems Coming From Bodybuilding
- 2.6. Methods from Sports Training
 - 2.6.1. Plyometry
 - 2.6.2. Circuit Training
 - 2.6.3. Cluster Training
 - 2.6.4. Contrast
 - 2.6.5. Main Characteristics of Strength Training Methods Derived from Sports Training
- 2.7. Methods From Non-Conventional and CROSSFIT Training
 - 2.7.1. EMOM (Every Minute on the Minute)
 - 2.7.2. Tabata
 - 2.7.3. AMRAP (As Many Reps as Possible)

- 2.7.4. For Time
- 2.7.5. Main Characteristics of Strength Training Methods Derived from Crossfit Training
- 2.8. Speed-Based Training (VBT)
 - 2.8.1. Theoretical Foundation
 - 2.8.2. Practical Considerations
 - 2.8.3. Own Data
- 2.9. The Isometric Method
 - 2.9.1. Concepts and Physiological Fundamentals of Isometric Stresses
 - 2.9.2. Yuri Verkhoshanski Proposal
- 2.10. Methodology of Repeat Power Ability (RPA) From Alex Natera
 - 2.10.1. Theoretical Foundation
 - 2.10.2. Practical Applications
 - 2.10.3. Published Data vs Own Data
- 2.11. Training Methodology Proposed by Fran Bosch
 - 2.11.1. Theoretical Foundation
 - 2.11.2. Practical Applications
 - 2.11.3. Published Data vs Own Data
- 2.12. Cal Dietz and Matt Van Dyke's Three-Phase Methodology
 - 2.12.1. Theoretical Foundation
 - 2.13.2. Practical Applications
- 2.13. New Trends in Quasi-Isometric Eccentric Training
 - 2.13.1. Neurophysiological Arguments and Analysis of Mechanical Responses
 Using Position Transducers and Force Platforms for Each Proposed
 Strength Training

Module 3. Theory of Strength Training and Basis for Structural Training

- 3.1. Strength, its Conceptualization and Terminology
 - 3.1.1. Strength from Mechanics
 - 3.1.2. Strength from Physiology

Structure and Content | 21 tech

3.1.3	Concept Strength Deficit
3.1.4	Concept of Applied Strength
3.1.5	Concept of Useful Strength
3.1.6	. Terminology of Strength Training
	3.1.6.1. Maximum Strength
	3.1.6.2. Explosive Strength
	3.1.6.3. Elastic Explosive Strength
	3.1.6.4. Reflective Elastic Explosive Strength
	3.1.6.5. Ballistic Strength
	3.1.6.6. Rapid Force
	3.1.6.7. Explosive Power
	3.1.6.8. Speed Strength
	3.1.6.9. Resistance Training
Cond	pepts Connected to Power 1
3.2.1	. Definition of Power
	3.2.1.1. Conceptual Aspects of Power
	3.2.1.2. The Importance of Power in a Context of Sport Performance
	3.2.1.3. Clarification of Power Terminology
3.2.2	. Factors Contributing to Peak Power Development
3.2.3	. Structural Aspects Conditioning Power Production
	3.2.3.1. Muscle Hypertrophy
	3.2.3.2. Muscle Structure
	3.2.3.3. Ratio of Fast and Slow Fibers in a Cross Section
	3.2.3.4. Muscle Length and its Effect on Muscle Contraction
	3.2.3.5. Quantity and Characteristics of Elastic Components
3.2.4	Neural Aspects Conditioning Power Production
	3.2.4.1. Action Potential
	3.2.4.2. Speed of Motor Unit Recruitment
	3.2.4.3. Muscle Coordination
	3.2.4.4. Intermuscular Coordination
	3.2.4.5. Prior Muscle Status (PAP)

3.2.

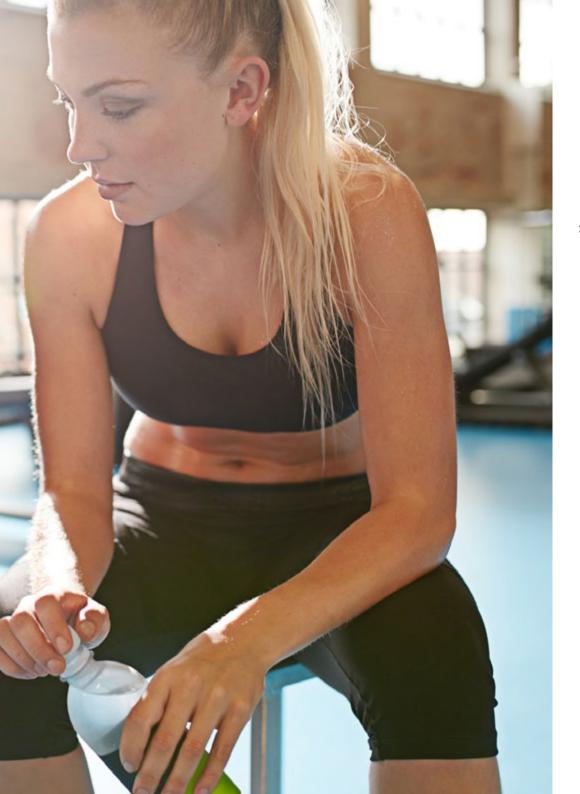
		3.2.4.6. Neuromuscular Reflex Mechanisms and Their Incidence		
3.3.	Concer	ots Connected to Power 2		
	3.3.1.	Theoretical Aspects for Understanding the Force-Time Curve		
		3.3.1.1. Strength Impulse		
		3.3.1.2. Phases of the Force-Time Curve		
		3.3.1.3. Phases of Acceleration in the Strength-Time Curve		
		3.3.1.4. Maximum Acceleration Area of the Force-Time Curve		
		3.3.1.5. Deceleration Phase of the Strength-Time Curve		
	3.3.2.	Theoretical Aspects for Understanding Power Curves		
		3.3.2.1. Power-Time Curve		
		3.3.2.2. Power-Displacement Curve		
		3.3.2.3. Optimal Workload for Maximum Power Development		
3.4.	Relatin	elating Concepts of Strength and Their Link to Sports Performance		
	3.4.1.	Objective of Strength Training		
	3.4.2.	Relationship of Power to the Training Cycle or Phase.		
	3.4.3.	Connection of Maximum Force and Power		
	3.4.4.	Connection Between Power and the Improvement of Athletic Performance		
	3.4.5.	Relationship Between Strength and Sports Performance		
	3.4.6.	Relationship between Strength and Speed		
	3.4.7.	Relationship between Strength and Jumps		
	3.4.8.	Relationship between Strength and Changes in Direction		
	3.4.9.	Relationship Between Strength and Other Aspects of Sports Performance		
		3.4.9.1. Maximum Strength and Its Effects on Training		
3.5.	Neuror	nuscular System (Hypertrophic Training)*		
	3.5.1.	Structure and Function		

3.5.2. Motor Unit3.5.3. Sliding Theory3.5.4. Types of Fiber3.5.5. Types of Contraction

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- 3.6. Responses and Their Adaptation to the Neuromuscular System (Hypertrophic Training)
 - 3.6.1. Nerve Impulse Adaptations
 - 3.6.2. Muscle Activation Adaptations
 - 3.6.3. Motor unit Synchronization Adaptations
 - 3.6.4. Adaptations in Antagonist Coactivation
 - 3.6.5. Adaptations in the Doublets
 - 3.6.6. Muscle Preactivation
 - 3.6.7. Muscular Stiffness
 - 3.6.8. Reflexes
 - 3.6.9. Internal Models of Motor Engrams
 - 3.6.10. Muscle Tone
 - 3.6.11. Action Potential Speed
- 3.7. Hypertrophy*
 - 3.7.1. Introduction
 - 3.7.1.1. Parallel and Serial Hypertrophy
 - 3.7.1.2. Sarcoplasmic Hypertrophy
 - 3.7.2. Satellite Cells
 - 3.7.3. Hyperplasia
- 3.8. Mechanisms that Induce Hypertrophy*
 - 3.8.1. Mechanism that Induces Hypertrophy: Mechanical Stress
 - 3.8.2. Mechanism that Induces Hypertrophy: Metabolic Stress
 - 3.8.3. Mechanism that Induces Hypertrophy: Muscle Damage
- 3.9. Variables for Hypertrophy Training Programming*
 - 3.9.1. Volume
 - 3.9.2. Intensity
 - 3.9.3. Frequency (F)
 - 3.9.4. Weight
 - 3.9.5. Density





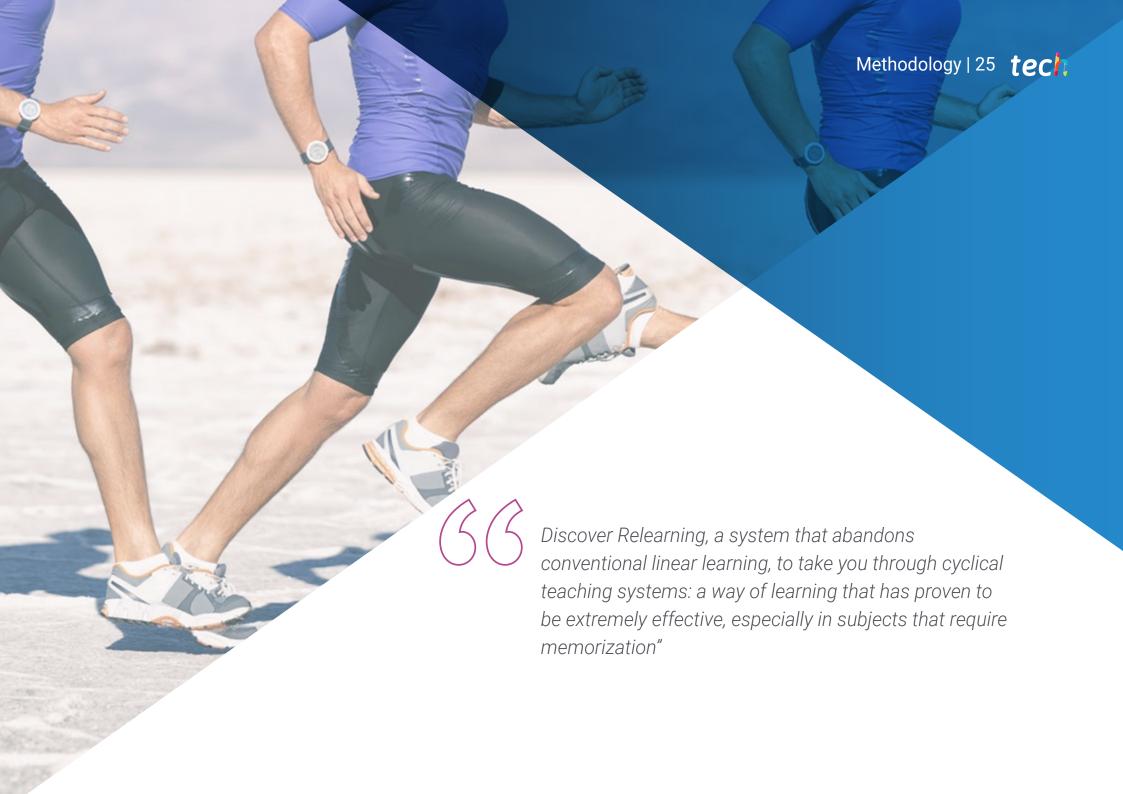
Structure and Content | 23 tech

- 3.9.6. Selecting Exercises
- 3.9.7. Order in the Execution of Exercises
- 3.9.8. Type of Muscle Action
- 3.9.9. Duration of Rest Intervals
- 3.9.10. Duration of Repetitions
- 3.9.11. Range of Movement
- 3.10. Main Factors Affecting Hypertrophic Development at the Highest Level
 - 3.10.1. Genetics
 - 3.10.2. Age
 - 3.10.3. Sex
 - 3.10.4. Training Status



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





tech 26 | Methodology

Case Study to contextualize all content

Our educational program offers a revolutionary method of developing skills and knowledge. Our goal is to strengthen skills in a changing, competitive, and highly demanding environment.



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



You will have access to a learning system based on repetition, with natural and progressive teaching throughout the entire syllabus.



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

A learning method that is different and innovative.

This TECH program is an intensive educational program, created from scratch, which proposes the most demanding challenges and decisions in this field, both nationally and internationally. This methodology promotes personal and professional growth, representing a significant step towards success. The case method, a technique that lays the foundation for this content, ensures that the most current economic, social and professional reality is taken into account.



Our educational program prepares you to face new challenges in uncertain environments and achieve success in your career."

The case method is the most widely used learning system in 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.

What should a professional do in a given situation? This is the question we face in the case method, an action-oriented learning method. Throughout the educational program, students will be confronted with multiple real cases. They will have to combine all their knowledge and research, and argue and defend their ideas and decisions.

Relearning Methodology

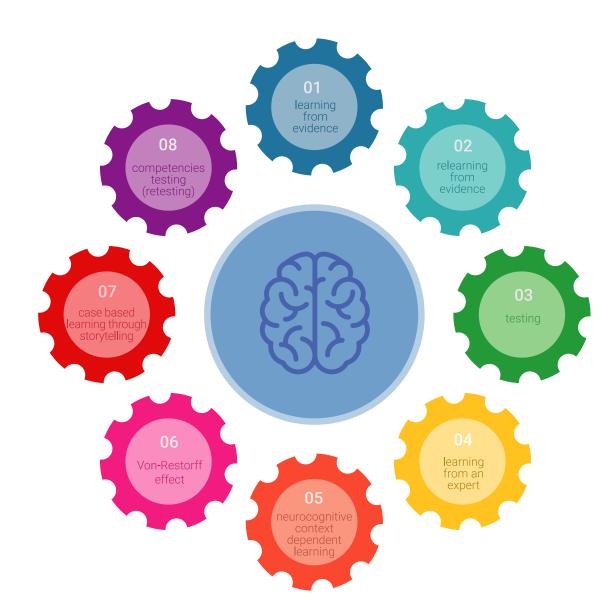
TECH effectively combines the Case Study methodology with a 100% online learning system based on repetition, which combines 8 different teaching elements in each lesson.

We enhance the Case Study with the best 100% online teaching method: Relearning.

In 2019, we obtained the best learning results of all online universities in the world.

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

Our university is the only one in the world authorized to employ 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 online university indicators.



Methodology | 29 tech

In our educational program, learning is not a linear process, but happens in a spiral (learn, unlearn, forget and relearn). Therefore, we combine each of these elements concentrically. With this methodology, we have enabled 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 socioeconomic profile and an average age of 43.5 years.

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

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

In this way, and in what is called Neurocognitive context-dependent e-learning, the different elements of our educational program are connected to the context where the participant develops his/her professional practice.

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 highly specific and precise.

These contents are then adapted in 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.



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 future difficult decisions.



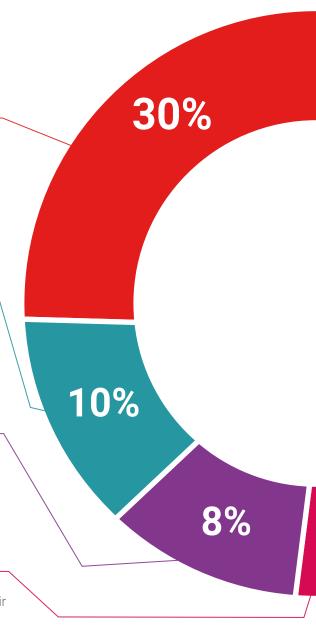
Practising Skills and Abilities

They 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 in the context of the globalization that we are experiencing.



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.





25%

Case Studies

Students will complete a selection of the best case studies chosen specifically for this situation. Cases that are presented, analyzed, and supervised by the best specialists in the world.



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



We periodically assess and re-assess students' knowledge throughout the program, through assessment and self-assessment activities and exercises, so that they can see how they are achieving their goals.



4%





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This program will allow you to obtain your **Postgraduate Diploma in Prescription, Methodology** and **Principles for Strength Training** 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** title 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 Diploma in Prescription, Methodology and Principles for Strength Training

Modality: online

Duration: 6 months

Accreditation: 18 ECTS



Mr./Ms. _____, with identification document _____ has successfully passed and obtained the title of:

Postgraduate Diploma in Prescription, Methodology and Principles for Strength Training

This is a program of 450 hours of duration equivalent to 18 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH Global University is a university officially recognized by the Government of Andorra on the 31st of January of 2024, which belongs to the European Higher Education Area (EHEA).

In Andorra la Vella, on the 28th of February of 2024



^{*}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.

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tech global university

Postgraduate Diploma

Prescription, Methodology and Principles for Strength Training

- » Modality: online
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