Advanced Master's Degree

High-Performance and Competitive Volleyball

Endorsed by the NBA

tech global university

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Advanced Master's Degree
High-Performance and Competitive Volleyball

- Modality: **online**
- Duration: **2 years**
- Certificate: **TECH Global University**
- Accreditation: **120 ECTS**
- Schedule: **at your own pace**
- Exams: **online**

Website: www.techtitute.com/us/sports-science/advanced-master-degree/advanced-master-degree-high-performance-competitive-volleyball

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01

Introduction

Competition at the highest level in the world of volleyball requires a preparation that includes a comprehensive approach to technical-tactical work, as well as nutritional, psychological and new technologies applied to the sport. Based on the most recent developments in the field of High Performance, this academic institution has designed this 100% online proposal of 24 months duration, which provides students with a complete learning about this sport discipline, training planning, improving leadership skills and team management, applications for game analysis, among others. All this with a syllabus prepared by distinguished players of this sport and specialists in Physical Activity Sciences.

Specialize with TECH in High-Performance and Competitive Volleyball with the best educational content, accessible from any digital device with an Internet connection"

From the strategic complexes, the mastery of a floating serve, the most precise shot to the capacity for tactical readjustment in the most transcendental game, the coaching staff must be highly qualified to take the athletes and their teams to High Performance.

Therefore, in this race it is not only necessary to get to the top, but also to stay there, so in addition to physical work, the professional must master other relevant areas such as nutrition and psychology. For this reason, TECH has designed this Grand Master in High-Performance and Competitive Volleyball, which brings together over 3,600 teaching hours the most advanced and current syllabus of the academic field.

Therefore, in this pedagogical itinerary, the students will delve into the Physical Activity oriented to this sport, the most effective training exercises to improve Strength, Speed, Endurance and Mobility.

In addition, thanks to multimedia teaching resources, you can dynamically delve into the technique, tactics or evaluation of the athlete by applying the latest technology. In addition, the Relearning system, based on the continuous repetition of key concepts, will reduce the hours of study and memorization.

All this, in addition to a program characterized by its flexibility and ease of access. The graduate only needs an electronic device with an Internet connection to be able to visualize, at any time of the day, the content hosted on the virtual platform. Therefore, without the need to go to centers in person, or have classes with fixed schedules, this program makes it easier to reconcile daily activities with quality education. In addition, graduates will benefit from 10 additional Masterclasses, taught by a renowned international professor.

This specialist in Sports Performance will guide students to excel in this exciting field of study.

This **Advanced Master's Degree in High-Performance and Competitive Volleyball** contains the most complete and up-to-date scientific program on the market. The most important features of the program include:

- The development of case studies presented by experts in Volleyball, Physical Activity and Sports Sciences, Nutrition and Psychology
- The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice
- Practical exercises where the self-assessment process can be carried out to improve learning
- Its special emphasis on innovative methodologies in the direction, management and training of professional volleyball teams
- 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
- Complementary resource banks that are permanently available

Make the most of this unique opportunity to participate in 10 exceptional Masterclasses, focused on Sports Performance, and led by an outstanding international specialist"

Adapt the nutrition of your players according to their characteristics, position and moment of the competition and increase the progression of your team"

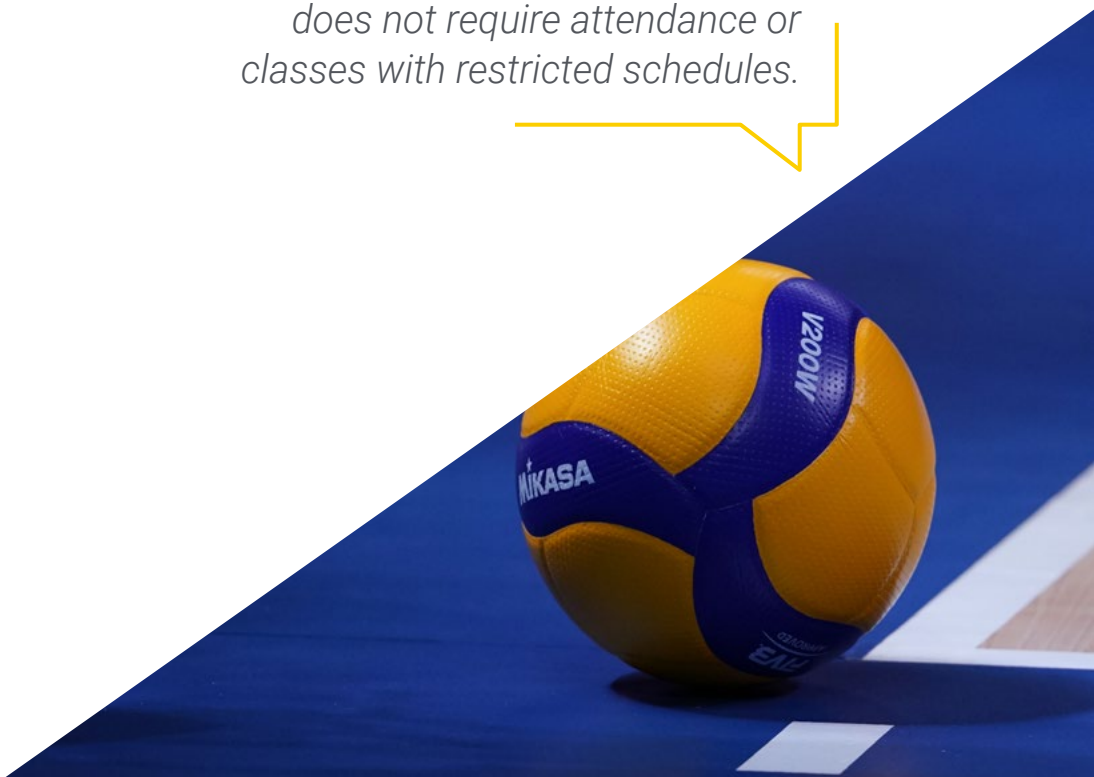
Work on offensive and defensive tactics through the content developed by top athletes in the world of volleyball.

TECH adapts to your personal daily activities. That is why you have before you a program that does not require attendance or classes with restricted schedules.

The program's teaching staff includes professionals in the sector who contribute their work 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 professionals with situated and contextual learning, i.e., a simulated environment that will provide immersive specialization, designed for specializing oneself in real situations.

This program is designed around Problem-Based Learning, whereby the professional must try to solve the different professional practice situations that arise during the course. For this purpose, students will be assisted by an innovative interactive video system created by renowned experts in the field of educational coaching with extensive experience.



02

Objectives

One of the premises of this academic institution is to make it easier for students to achieve their goals. In this case, at the end of the 3,600 teaching hours of this program, students will have obtained a global learning of volleyball at the highest level of performance, which includes a deep knowledge of physical preparation, improvement of sports performance, technical-tactical study and the incorporation of the latest technology applied to the field of maximum competition.

Get ready to improve your training planning and the physical capabilities of your volleyball players thanks to this program"

General Objectives

- Master and apply with certainty the most current training methods to improve sports performance
- Acquire knowledge based on the most current scientific evidence with full applicability in the practical field
- Master all the most advanced methods of sports performance evaluation
- Master the principles governing Exercise Physiology, as well as Biochemistry
- Master the principles that govern Biomechanics directly applied to Sports Performance to Sports Performance
- Master the principles governing Nutrition applied to sports performance
- Successfully integrate all the knowledge acquired in the different modules in real practice
- Plan specific training for the full development of the volleyball player
- Structure general training for the achievement of team objectives
- Apply recovery strategies adapted to the needs of the athlete
- Assess and develop the player's capabilities to bring them to their maximum potential
- Lead the training area in a high level team
- Develop the correct physical preparation of a player

Specific Objectives

Module 1. Exercise Physiology and Physical Activity

- Specialize and interpret key aspects of biochemistry and thermodynamics
- Gain in-depth knowledge of the energy metabolic pathways and their exercise-mediated modifications and their role in human performance
- Manage key aspects of the neuromuscular system, motor control and its role in physical training
- Know in-depth muscle physiology, the process of muscle contraction and the molecular basis of this process
- Specialize in the functioning of the cardiovascular and respiratory systems and oxygen utilization during exercise
- Interpret the general causes of fatigue and impact in different types and modalities of exercises
- Interpret the different physiological milestones and their application in practice

Module 2. Fitness and Physical Preparation

- Acquire advanced learning about stress theories and their application in volleyball
- Analyze the physical capacities of flexibility, strength, endurance, speed and their manifestations
- Design physical training for volleyball teams
- Know the essential elements of physical training planning

Module 3. Strength Training, from Theory to Practice

- Correctly interpret all theoretical aspects defining force and its components
- Master the most effective strength training methods
- Develop sufficient criteria to be able to support the choice of different training methods in practical application training methods in practical application

- Be able to objectify the strength needs of each athlete
- Master the theoretical and practical aspects that define power development
- Correctly apply strength training in the prevention and rehabilitation of injuries

Module 4. Speed Training, from Theory to Practice

- Interpret the key aspects of speed and change of direction technique
- Compare and differentiate the speed of situational sport with respect to the track and field model
- Incorporate elements of observational judgment, a technique that allows discrimination of errors in the mechanics of the race and the procedures for their correction
- Become familiar with the bioenergetic aspects of single and repeated sprinting and how they relate to the training processes
- Differentiate the mechanical aspects that may influence performance impairment and injury-producing mechanisms in sprinting
- Analytically apply the different means and methods of training for the development of the different phases of speed
- Program speed training in situational sports

Module 5. Endurance Training, from Theory to Practice

- Study the different adaptations generated by aerobic endurance
- Apply the physical demands of situational sports
- Select the most appropriate tests to evaluate, monitor, tabulate and fractionate aerobic workloads
- Carry out the different methods to organize training sessions
- Design training sessions taking into account the sport

Module 6. Mobility: from Theory to Performance

- Approach mobility as a basic physical capacity from a neurophysiological perspective
- Know in depth the neurophysiological principles that influence the development of mobility on the development of mobility
- Apply the stabilizing and mobilizing systems within the movement pattern of movement
- Unravel and specify the basic concepts and objectives related to mobility training
- Develop the ability to design tasks and plans for the development of mobility manifestations
- Apply the different methods of performance optimization through recovery methods.
- Develop the ability to carry out a functional and neuromuscular assessment of the athlete
- Recognize and address the effects produced by an injury at the neuromuscular level in the athlete

Module 7. Individual Technique

- Delve into the different technical fundamentals of volleyball
- Delve into volleyball training methods
- Explain the different techniques and the most frequent errors in high competition
- Describe the strategies to train placement, reception, touch, finger touch, block, serve and attack fingers, forearms, block, service and attack

Module 8. Tactic

- Address the systems of play used in volleyball and training methods
- Delve into serving, receiving and offensive tactics and their practice on the court
- Investigate the strategic complexes and their training in volleyball
- Explain the different options to choose the game system according to the opponent's technique

Module 9. Other Modalities

- Explain the differences between beach volleyball and Sitting volleyball
- Delve into the specific physical preparation for each volleyball modality
- Know the specific rules of beach volleyball and Sitting volleyball
- Analyze the most effective psychological techniques for the player practicing different types of volleyball

Module 10. Team Structures, Organization and Rules

- Obtain a comprehensive overview of volleyball rules and regulations
- Know how national competitions are structured
- Delve into the structure of international competitions
- Identify the roles of physical trainers, team managers and physiotherapists in a volleyball club

Module 11. Planning Applied to High Performance in Sports

- Understand the internal logic of planning, such as its proposed core models
- Apply the Dose-Response concept in training
- Clearly differentiate the impact of programming with planning and its dependencies
- Acquire the ability to design different planning models according to the work reality
- Apply the concepts learned in an annual and/or multi-year planning design

Module 12. Sports Performance Assessment

- Become familiar with different types of assessment and their applicability to the field of practice
- Select the most appropriate tests for your specific needs
- Correct and safe administration of the different test protocols and interpretation of collected data
- Apply different types of technologies currently used in the field of exercise assessment, whether in the field of health and fitness performance at any level of demand

Module 13. Statistics Applied to Performance and Research

- Develop the ability to analyze data collected in the laboratory and in the field through various evaluation instruments
- Describe the different types of statistical analysis and their application in various situations for the understanding of phenomena that occur during training
- Develop strategies for data exploration to determine the best models to describe them
- Establish the generalities of predictive models through regression analysis that favor the incorporation of different units of analysis in the field of training
- Generate the conditions for the correct interpretation of results in different types of research

Module 14. Biomechanics and Injuries

- Understand what happens in the athlete's body in each and every movement they perform
- Know the techniques for the treatment of injuries
- Delve into the strategies to be used in volleyball teams to prevent injuries
- Delve into the latest advances in biomechanics and their application in volleyball

Module 15. Sports Psychology

- Delve into the most effective motivational strategies in a sports team
- Delve into the management of players' emotions
- Understand the leadership role of a volleyball team
- Know the team dynamics in order to put them into practice

Module 16. Sports Nutrition

- Learn about the latest developments in sports nutrition
- Understand the relevance of the post-match recovery process
- Establish proper nutritional guidelines before, during and after the game
- Discover the micronutrient and macronutrient needs of a volleyball player

Module 17. Technology in Volleyball

- Know the existing technological systems for the extraction of data on the technique and play of each player
- Know how to perform an exhaustive analysis of the extracted data and thus improve player and team performance
- Delve into how to use video as a tool for analysis and game improvement
- Indicate how to effectively present the results of a match study through new technologies

Develop your capabilities for physical exercise preparation to strengthen muscles and prevent injuries throughout the season"

03

Skills

Thanks to the completion of this Advanced Master's Degree, the graduate will obtain sufficient skills and abilities to be able to be inserted in the management and coaching of first-level volleyball teams. Some indispensable elements in the achievement of this goal are the case studies and multimedia pills, provided by the specialized teaching staff of this program. Pedagogical tools that provide a practical approach and direct application in teams of this sport discipline.

Exercise in an adequate way the leadership of a team thanks to the strategies of Sport Psychology shown in this program"

General Skills

- Acquire knowledge based on the most current scientific evidence with full applicability in the practical field
- Master all the most advanced methods of sports performance evaluation
- Master the necessary technological tools to be able to analyze the teams training sessions and matches
- Design and plan high competition training sessions
- Schedule the duration and number of training sessions in accordance with the competition
- Plan optimal nutrition for the athlete
- Analyze and Interpret Statistical and Video Data
- Understand the positive effects of a correct application of psychology in sports
- Correctly plan the recovery after load and/or injury of the athlete
- Organize exercises for the technical and tactical development of the player
- Obtain a global vision of the objectives set by the club and transfer them correctly to the team
- Achieve professional sporting success with the broadest possible mastery of all the elements involved in volleyball
- Improve the ability to communicate with the volleyball team staff
- Improve the choice of the strategy for each match depending on the opponent
- Improve the ability to manage beach volleyball and setting volleyball modalities
- Use qualitative and qualitative analysis based on the visualization of videos
- Understand the specific functions of the scoutman and physiotherapist
- Perform biomechanical analysis of each player and in the different phases of the game
- Reinforce the dialogue with the team and the appropriate decision making at each moment of the season
- Know the relevance of the nutritional adaptation according to the injuries suffered by the athletes
- Enable students to detect technical and tactical errors in training sessions
- Establish motivation strategies for players
- Develop interpersonal skills of the volleyball player

Specific Skills

- Correctly interpret all theoretical aspects defining force and its components.
- Incorporate elements of judgment of technical observation that make it possible to discern errors in the mechanics of the race and the procedures for their correction
- Select the most appropriate tests to evaluate, monitor, tabulate and fractionate aerobic workloads
- Apply stabilizing and mobilizing systems within the movement pattern
- Unravel and specify the basic concepts and objectives related to mobility training
- Correct and safe administration of the different test protocols and interpretation of collected data
- Apply the concepts learned in an annual and/or multi-year planning design
- Apply the basic knowledge and technologies of biomechanics as a function of physical education, sport, performance and daily life
- Handle the nutritional aspects that are associated with eating disorders and sports injuries
- Manage key aspects of the neuromuscular system, motor control and its role in physical training
- Describe the different types of statistical analysis and their application in various situations for the understanding of phenomena that occur during training

04

Course Management

This Advanced Master's Degree is integrated by athletes who have marked a before and after in the world of volleyball, professionals specialized in High Performance, Psychology and Nutrition. A multidisciplinary team that will lead students to acquire a first level learning from the best experts in volleyball and competition at the highest level. In addition, thanks to their proximity, graduates will be able to resolve any doubts they may have about the content of this program.

The excellent teaching staff of this Advanced Master's Degree is made up of renowned volleyball elite athletes, specialists in physical preparation, nutrition and psychology"

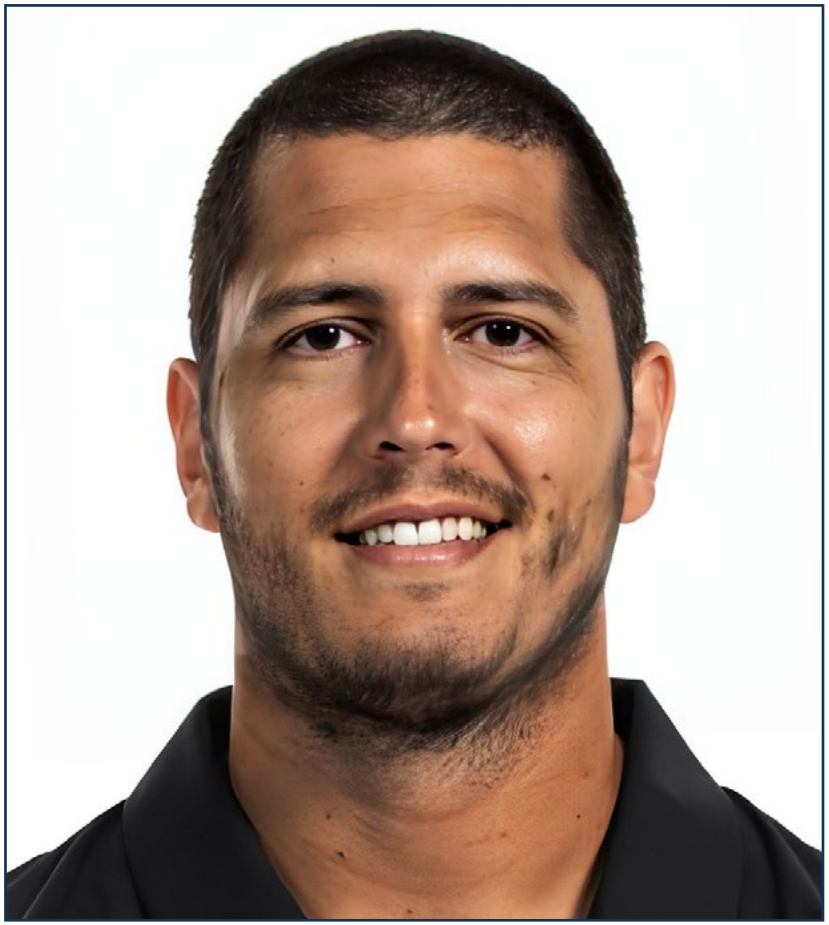
International Guest Director

Dr. Tyler Friedrich is a leading figure in the international field of Sports Performance and Applied Sports Science. With a strong academic background, he has demonstrated an exceptional commitment to excellence and innovation, and has contributed to the success of numerous **elite athletes internationally.**

Throughout his career, Dr. Friedrich has deployed his expertise in a wide range of sporting disciplines, from soccer **to** swimming, volleyball **to** field hockey. **His work in** performance **data** analysis**, especially through the** Catapult athlete GPS system**, and his integration of** sports technology **into** performance programs**, has established him as a leader in** athletic performance**optimization.**

As Director **of** Sports Performance **and** Applied Sports Science**, Dr. Friedrich has led strength and conditioning training, as well as the implementation of specific programs for several** Olympic sports**, including volleyball, rowing and gymnastics.** Here, he has been responsible for integrating equipment services, sports performance in soccer and sports performance in Olympic sports. **In addition, incorporating** DAPER sports nutrition within an athlete performance team.

Also, certified by USA Weightlifting**and the** National Strength and Conditioning Association**, he is recognized for his ability to combine theoretical and practical knowledge in the development of** high-performance athletes**. In this way, Dr. Tyler Friedrich has left an indelible mark on the world of** Sports Performance**, being an outstanding leader and a driving force of innovation in his field.**

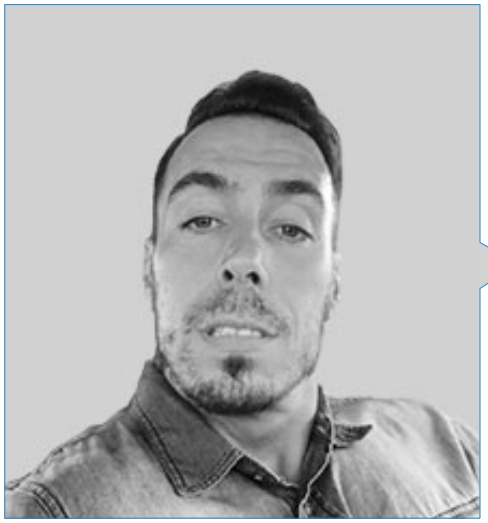


Dr. Friedrich, Tyler

- Director of Sports Performance and Applied Sports Science at Stanford, Palo Alto USA.
- Sports Performance Specialist
- Associate Director of Athletics and Applied Performance at Stanford University
- Director of Olympic Sports Performance at Stanford University
- Sports Performance Coach at Stanford University
- Doctorate in Philosophy, Health and Human Performance from Concordia University Chicago
- Master's Degree of Science in Exercise Science from the University of Dayton
- Bachelor of Science, Exercise Physiology from the University of Dayton

Thanks to TECH you will be able to learn with the best professionals in the world"

Management



Dr. Rubina, Dardo

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

Ms. Tabeayo Martínez, Nerea

- Voley Murcia player
- Graduate in Physical Activity and Sports Sciences from the Faculty of Physical Activity and Sports Sciences at UCAM - San Antonio Catholic University of Murcia
- Volleyball Coach Level 1

Professors

Ms. Rey López, Raquel

- Volleyball Coach
- Coach of CV Zalaeta
- Coach of CV Calasancias
- Graduated in Business Administration and Management at the University of A Coruña
- Volleyball Coach Level 1

Ms. Campos Blanc, María Fernanda

- Beach volleyball player in Volley Murcia
- Degree in Physical Therapy by the Autonomous University of Guadalajara
- Master's Degree in Sports Physiotherapy from the UCAM- Catholic University of Murcia

Ms. Romero Lobeiras, María

- Nutritionist
- Former volleyball player CV Zalaeta
- Ex-player of volleyball CV Calasancias
- Dietetics and Nutrition Course at La Paz High School

Mr. Masse, Juan Manuel

- Physical Trainer for High-Performance Athletes
- Director of the Athlon Science Study Group
- Physical trainer for several professional football teams in South America

Mr. Vaccarini, Adrián Ricardo

- Physical Trainer Specialized in Top Level Soccer
- Head of the Applied Sciences Area of the Peruvian Football Federation
- Second Physical Trainer of the Peruvian Absolute Soccer Team
- Physical Trainer of the Peruvian Under 23 National Team
- Responsible for the Research and Performance Analysis Area of Quilmes Atlético Club
- Responsible for the Research and Performance Analysis Area of Club Atlético Vélez Sarsfield
- Regular speaker at conferences on High-Performance Sports
- Degree in Physical Education
- National Physical Education Teacher

Mr. Jareño Díaz, Juan

- Physical Preparation and Sports Specialist
- Coordinator of the education and physical preparation area at the Moratalaz Sports School
- University Professor
- Personal Trainer and Sports Coach at 9.8 Gravity Training Studio
- Graduate in Physical Activity and Sports Sciences from the University of Castilla - la Mancha
- Master's Degree in University Law and Bioethics from the University of Castilla-La Mancha
- Postgraduate in Therapeutic Personal from University of Castilla – La Mancha

Dr. Represas Lobeto, Gustavo Daniel

- Physical trainer and researcher oriented to High Performance Sports
- Responsible for the Laboratory of Sports Biomechanics of the National Center of High Performance Sports of Argentina
- Responsible for the Laboratory of Biomechanics, Functional Analysis of Movement and Human Performance at the National University of San Martín
- Physical trainer and Scientific Advisor of the Olympic Taekwondo team for the Sydney Olympic Games
- Physical trainer for clubs and professional rugby players
- Teacher in university studies
- Doctor in High Performance Sports by the University of Castilla-La Mancha
- Graduate in Physical Education and Sports from the Interamerican Open University
- Master's Degree in High Performance Sports by the Autonomous University of Madrid.
- National Physical Education Teacher

Ms. González Cano, Henar

- Sports Nutritionist
- Nutritionist and Anthropometrist at GYM SPARTA
- Nutritionist and Anthropometrist at Promentium Center
- Nutritionist of male football teams
- Lecturer in courses related to Strength and Physical Conditioning
- Speaker at training events on Sports Nutrition
- Graduate in Human Nutrition and Dietetics from the University of Valladolid
- Master's Degree in Nutrition in Physical Activity and Sports from the San Antonio Catholic University in Murcia
- Nutrition course and Dietetics Applied to Physical Exercise by the University of Vich

Dr. Del Rosso, Sebastián

- Expert researcher in Sports Biochemistry
- Postdoctoral Researcher at the Clinical Biochemistry and Immunology Research Center
- Researcher in the Lifestyles and Oxidative Stress Research Group
- Co-author of numerous scientific publications
- Director of the Editorial Board of the journal *PubliCE Standard*
- Director of the Editorial Department of G-SE
- Doctorate in Health Sciences from the National University of Cordoba
- Graduate in Physical Education from the National University of Catamarca
- Master's Degree in Physical Education from the Catholic University of Brasilia

Dr. César García, Gastón

- Expert Hockey and Rugby Fitness Trainer
- Physical trainer of the professional field hockey player Sol Alias
- Carmen Tennis Club Hockey Team Physical Trainer
- Personal Trainer for Rugby and Hockey Athletes
- Physical Trainer for U18 Rugby Clubs
- Physical Education Teacher for Children
- Co-author of the book *Strategies for the Evaluation of Physical Condition in Children and Adolescents*
- Graduate in Physical Education from the National University of Catamarca
- National Professor of Physical Education from the ESEF of San Rafael
- Level 1 and 2 Anthropometry Technician

Mr. Añon, Pablo

- Physical Trainer for the Women's National Volleyball Team for the Olympic Games
- Physical Trainer for volleyball teams of the Argentine Men's First Division
- Physical trainer of professional golfers Gustavo Rojas and Jorge Berendt
- Swimming coach at Quilmes Athletic Club
- National Professor of Physical Education from the INEF of Avellaneda
- Postgraduate degree in Sports Medicine and Applied Sports Sciences from the National University of La Plata
- Master's Degree in Sports High Performance Universidad Católica San Antonio de Murcia
- Training courses oriented to the field of High-Performance Sports

Mr. Carbone, Leandro

- Strength Training and Fitness Teacher
- CEO of the LIFT project, a training and coaching company
- Head of the Department of Sports Evaluation and Exercise Physiology, WellMets - Sport & Medicine Institute in Chile
- CEO Manager at Complex I
- University Professor
- External Consultant for Speed4lift, a leading company in the area of Sports Technology
- Bachelor's Degree in Physical Activity from the University of Salvador
- Specialist in Exercise Physiology from the National University of La Plata
- MSc. Strength and Conditioning at the University of Greenwich, U.K.

05

Structure and Content

In this academic option, students will have at their disposal an excellent syllabus made up of numerous innovative teaching materials. Therefore, through video summaries of each topic, videos in detail, complementary readings and simulations of case studies, you will obtain a complete understanding of volleyball training, the incorporation of the most advanced technology for the analysis of players and game tactics, as well as the advances in Nutrition and Psychology oriented to High Performance.

The multimedia teaching resources of this program undoubtedly make the difference in this 24-month learning process"

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. Carbohydrate Metabolism
  - 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 Cross-Talk

1.3. Signaling Pathways
- 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. Mecano Signal Transduction
- 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. Fitness and Physical Preparation

2.1. Lower Categories and Motor Skills
- 2.1.1. Importance of Physical Preparation in Lower Categories
- 2.1.2. Motor Skills Training
- 2.1.3. From Motor Skills to Physical Abilities
- 2.1.4. Planning in Lower Categories

2.2. Threshold Law
- 2.2.1. Definition
- 2.2.2. How Does It Affect Training?
- 2.2.3. Evolution of the Organism During Training
- 2.2.4. Application in Volleyball

2.3. Theories on Stress
- 2.3.1. Definition
- 2.3.2. Stress as a Physiological Process
- 2.3.4. Types of Stress
- 2.3.5. Application in Volleyball

2.4. Principle of Supercompensation
- 2.4.1. Definition
- 2.4.2. Phases
- 2.4.3. Determining Factors
- 2.4.4. Application in Volleyball

2.5. Physical Capabilities
- 2.5.1. What Are They?
- 2.5.2. Flexibility
- 2.5.3. Strength and Its Manifestations
- 2.5.4. Resistance and Its Manifestations
- 2.5.5. Speed and Its Manifestations

2.6. Specific Jumping Training
- 2.6.1. Technical Characteristics of Jumping in Volleyball
- 2.6.2. Influence of a Correct Jumping Technique on the Game
- 2.6.3. Importance of a Correct Technique in Health
- 2.6.4. Designing a Jump Training Plan

2.7. Design of a Training Plan
- 2.7.1. Importance of a Correct Planning
- 2.7.2. Planning Criteria and Objectives
- 2.7.3. Training Structure
- 2.7.4. Models: Precursors, Traditional and Contemporary

2.8. Periodization of Training
- 2.8.1. Definition
- 2.8.2. Planning Units
- 2.8.3. Planning Models
- 2.8.4. Specific Needs

2.9. Training Load
- 2.9.1. Definition
- 2.9.2. Load Distribution
- 2.9.3. Parallel-Complex Method
- 2.9.4. Sequential-Contiguous Method

2.10. Recovery and Rest
- 2.10.1. Definition
- 2.10.2. Importance of the Recovery Phase
- 2.10.3. Examples of Exercises
- 2.10.4. Feedback as the Ultimate Goal

Module 3. Strength Training, from Theory to Practice

3.1. Strength: Conceptualization
- 3.1.1. Strength Defined from a Mechanical Point of View
- 3.1.2. Strength Defined from a Physiology Point of View
- 3.1.3. Define the Concept of Applied Strength
- 3.1.4. Time-Strength Curve
  - 3.1.4.1. Interpretation
- 3.1.5. Define the Concept of Maximum Strength
- 3.1.6. Define the Concept of RFD
- 3.1.7. Define the Concept of Useful Strength
- 3.1.8. Strength-Speed-Power Curves
  - 3.1.8.1. Interpretation
- 3.1.9. Defining the Concept of Strength Deficit

3.2. Training Load
- 3.2.1. Defining the Concept of Strength Training Load
- 3.2.2. Defining the Concept of Load
- 3.2.3. Load Concept: Volume
  - 3.2.3.1. Definition and Applicability in Practice
- 3.2.4. Load Concept: Intensity
  - 3.2.4.1. Definition and Applicability in Practice
- 3.2.5. Load Concept: Density
  - 3.2.5.1. Definition and Applicability in Practice
- 3.2.6. Define the Concept of Effort Character
  - 3.2.6.1. Definition and Applicability in Practice

3.3. Strength Training in the Prevention and Rehabilitation of Injuries
- 3.3.1. Conceptual and Operational Framework in Injury Prevention and Rehabilitation
  - 3.3.1.1. Terminology
  - 3.3.1.2. Concepts
- 3.3.2. Strength Training and Injury Prevention and Rehabilitation under Scientific Evidence
- 3.3.3. Methodological Process of Strength Training in Injury Prevention and Functional Recovery
  - 3.3.3.1. Defining the Method
  - 3.3.3.2. Applying the Method in Practice
- 3.3.4. Role of Central Stability (Core) in Injury Prevention
  - 3.3.4.1. Definition of Core
  - 3.3.4.2. *Core Training*

3.4. Plyometric Method
- 3.4.1. Physiological Mechanisms
  - 3.4.1.1. Specific General Information
- 3.4.2. Muscle Actions in Plyometric Exercises
- 3.4.3. The Stretch-Shortening Cycle (SSC)
  - 3.4.3.1. Use of Energy or Elastic Capacity
  - 3.4.3.2. Reflex Involvement. Series and Parallel Elastic Energy Accumulation
- 3.4.4. Classification of CEA
  - 3.4.4.1. Short CEA
  - 3.4.4.2. Long CEA
- 3.4.5. Properties of the Muscle and Tendon
- 3.4.6. Central Nervous System

3.4.6.1. Recruitment
3.4.6.2. Frequency (F)
3.4.6.3. Synchronization
3.4.7. Practical Considerations
3.5. Power Training
3.5.1. Definition of Power
3.5.1.1. Conceptual Aspects of Power
3.5.1.2. The Importance of Power in a Context of Sport Performance
3.5.1.3. Clarification of Power Terminology
3.5.2. Factors Contributing Peak Power Development
3.5.3. Structural Aspects Conditioning Power Production
3.5.3.1. Muscle Hypertrophy
3.5.3.2. Muscle Structure
3.5.3.3. Ratio of Fast and Slow Fibers in a Cross Section
3.5.3.4. Muscle Length and its Effect on Muscle Contraction
3.5.3.5. Quantity and Characteristics of Elastic Components
3.5.4. Neural Aspects Conditioning Power Production
3.5.4.1. Action Potential
3.5.4.2. Speed of Motor Unit Recruitment
3.5.4.3. Muscle Coordination
3.5.4.4. Intermuscular Coordination
3.5.4.5. Prior Muscle Status (PAP)
3.5.4.6. Neuromuscular Reflex Mechanisms and Their Incidence
3.5.5. Theoretical Aspects for Understanding the Strength-Time Curve
3.5.5.1. Strength Impulse
3.5.5.2. Phases of the Strength-Time Curve
3.5.5.3. Phases of Acceleration in the Strength-Time Curve
3.5.5.4. Maximum Acceleration Area of the Strength-Time Curve
3.5.5.5. Deceleration Phase of the Strength-Time Curve
3.5.6. Theoretical Aspects for Understanding Power Curves
3.5.6.1. Energy-Time Curve
3.5.6.2. Energy-Displacement Curve
3.5.6.3. Optimal Workload for Maximum Energy Development
3.5.7. Practical Considerations
3.6. Vector Strength Training
3.6.1. Definition of Force Vector
3.6.1.1. Axial Vector
3.6.1.2. Horizontal Vector
3.6.1.3. Rotational Vector
3.6.2. Benefits of Using this Terminology
3.6.3. Definition of Basic Vectors in Training
3.6.3.1. Analysis of the Main Sporting Actions
3.6.3.2. Analysis of the Main Overload Exercises
3.6.3.3. Analysis of the Main Training Exercises
3.6.4. Practical Considerations
3.7. Main Methods for Strength Training
3.7.1. Own Body Weight
3.7.2. Free Exercises
3.7.3. PAP
3.7.3.1. Definition
3.7.3.2. Application of the PAP prior to Power-Related Sports Disciplines
3.7.4. Exercises with Machines
3.7.5. *Complex Training*
3.7.6. Exercises and Their Transfer
3.7.7. Contrasts
3.7.8. *Cluster Training*
3.7.9. Practical Considerations

3.8. VBT
- 3.8.1. Conceptualization of the Application of VBT
  - 3.8.1.1. Degree of Stability of Execution Speed with Each Percentage of 1MR
- 3.8.2. Difference Between Scheduled Load and Actual Load
  - 3.8.2.1. Definition of the Concept
  - 3.8.2.2. Variables Involved in the Difference Between Programmed Load and Actual Training Load
- 3.8.3. VBT as a Solution to the Problem of Using 1MR and nMR to Program Loads
- 3.8.4. VBT and Degree of Fatigue
  - 3.8.4.1. Connection to Lactate
  - 3.8.4.2. Connection to Ammonium
- 3.8.5. VBT in Relation to the Loss of Speed and Percentage of Repetitions Performed
  - 3.8.5.1. Define the Different Degrees of Effort in the Same Series
  - 3.8.5.2. Different Adaptations According to the Degree of Speed Loss in the Series
- 3.8.6. Methodological Proposals According to Different Authors
- 3.8.7. Practical Considerations

3.9. Strength in Connection to Hypertrophy
- 3.9.1. Hypertrophy-Inducing Mechanism: Mechanical Stress
- 3.9.2. Hypertrophy-Inducing Mechanism: Metabolic Stress
- 3.9.3. Hypertrophy-Inducing Mechanism: Muscle Damage
- 3.9.4. Hypertrophy Programming Variables
  - 3.9.4.1. Frequency (F)
  - 3.9.4.2. Volume
  - 3.9.4.3. Intensity
  - 3.9.4.4. Cadence
  - 3.9.4.5. Series and Repetitions
  - 3.9.4.6. Density
  - 3.9.4.7. Order in the Execution of Exercises
- 3.9.5. Training Variables and Their Different Structural Effects
  - 3.9.5.1. Effect on Different Types of Fiber
  - 3.9.5.2. Effects on the Tendon
  - 3.9.5.3. Bundle Length
  - 3.9.5.4. Peneation Angle
- 3.9.6. Practical Considerations

3.10. Eccentric Strength Training
- 3.10.1. Conceptual Framework
  - 3.10.1.1. Definition of Eccentric Training
  - 3.10.1.2. Different Types of Eccentric Training
- 3.10.2. Eccentric Training and Performance
- 3.10.3. Eccentric Training in the Prevention and Rehabilitation of Injuries
- 3.10.4. Technology Applied to Eccentric Training
  - 3.10.4.1. Conical Pulleys
  - 3.10.4.2. Isoinertial Devices
- 3.10.5. Practical Considerations

Module 4. Speed Training, from Theory to Practice

4.1. Speed
- 4.1.1. Definition
- 4.1.2. General Concepts
  - 4.1.2.1. Manifestations of Speed
  - 4.1.2.2. Factors that Determine Performance
  - 4.1.2.3. Difference Between Speed and Quickness
  - 4.1.2.4. Segmental Speed
  - 4.1.2.5. Angular Speed
  - 4.1.2.6. Reaction Time

4.2. Dynamics and Mechanics of Linear Sprint (100m Model)
- 4.2.1. Kinematic Analysis of the Take-off
- 4.2.2. Dynamics and Strength Application During Take-off
- 4.2.3. Kinematic Analysis of the Acceleration Phase
- 4.2.4. Dynamics and Strength Application During Acceleration
- 4.2.5. Kinematic Analysis of Running at Maximum Speed
- 4.2.6. Dynamics and Strength Application During Maximum Speed

4.3. Phases of Sprinting (Technique Analysis)
- 4.3.1. Technical Description of the Take-off
- 4.3.2. Technical Description of the Race During the Acceleration Phase
  - 4.3.2.1. Technical Model of the Kinogram for the Acceleration Phase
- 4.3.3. Technical Description of the Race During the Maximum Speed Phase
  - 4.3.3.1. Technical Kinogram Model (ALTIS) for Technique Analysis
- 4.3.4. Speed Endurance

4.4. Speed Bioenergetics
- 4.4.1. Bioenergetics of Single Sprints
  - 4.4.1.1. Myoenergetics of Single Sprints
  - 4.4.1.2. ATP-PC System
  - 4.4.1.3. Glycolytic System
  - 4.4.1.4. Adenylate Kinase Reaction
- 4.4.2. Bioenergetics of Repeated Sprints
  - 4.4.2.1. Energy Comparison Between Single and Repeated Sprints
  - 4.4.2.2. Behavior of Energy Production Systems During Repeated Sprints
  - 4.4.2.3. Recovery of PC
  - 4.4.2.4. Connection Between Aerobic Power and Recovery Processes of PC
  - 4.4.2.5. Determinants of Performance in Repeated Sprints

4.5. Analysis of Acceleration Technique and Maximum Speed in Team Sports
- 4.5.1. Description of the Technique in Team Sports
- 4.5.2. Comparison of Sprinting Technique in Team Sports vs. Athletic Events
- 4.5.3. Timing and Motion Analysis of Speed Events in Team Sports

4.6. Methodological Approach to Teaching the Technique
- 4.6.1. Technical Teaching of the Different Phases of the Race
- 4.6.2. Common Errors and Ways to Correct Them

4.7. Means and Methods for Speed Development
- 4.7.1. Means and Methods for Acceleration Phase Training
  - 4.7.1.1. Connection of Force to Acceleration
  - 4.7.1.2. Sled
  - 4.7.1.3. Slopes
  - 4.7.1.4. Jumpability
    - 4.7.1.4.1. Building the Vertical Jump
    - 4.7.1.4.2. Building the Horizontal Jump
  - 4.7.1.5. Training the ATP/PC System
- 4.7.2. Means and Methods for Training Top Speed
  - 4.7.2.1. Plyometry
  - 4.7.2.2. *Overspeed*
  - 4.7.2.3. *Interval-Intensive Methods*
- 4.7.3. Means and Methods for Speed Endurance Development
  - 4.7.3.1. Interval-Intensive Methods
  - 4.7.3.2. Repetition Method

4.8. Agility and Change of Direction
- 4.8.1. Definition of Agility
- 4.8.2. Definition of Change of Direction
- 4.8.3. Determinants of Agility and COD
- 4.8.4. Change of Direction Technique
  - 4.8.4.1. *Shuffle*
  - 4.8.4.2. *Crossover*
  - 4.8.4.3. *Agility and COD Training Drills*

4.9. Assessment and Control of Speed Training
- 4.9.1. Strength-Speed Profile
- 4.9.2. Test With Photocells and Variants With Other Control Devices
- 4.9.3. RSA

4.10. Programming Speed Training

Module 5. Endurance Training, from Theory to Practice

5.1. General Concepts
- 5.1.1. General Definitions
  - 5.1.1.1. Education
  - 5.1.1.2. Trainability
  - 5.1.1.3. Sports Physical Preparation
- 5.1.2. Objectives Endurance Training
- 5.1.3. General Principles of Training
  - 5.1.3.1. Principles of Load
  - 5.1.3.2. Principles of Organization
  - 5.1.3.3. Principles of Specialization

5.2. Physiology of Aerobic Training
- 5.2.1. Physiological Response to Aerobic Endurance Training
  - 5.2.1.1. Responses to Continuous Stress
  - 5.2.1.2. Responses to Intervallic Stress
  - 5.2.1.3. Responses to Intermittent Stress
  - 5.2.1.4. Responses to Stress in Small-Space Games
- 5.2.2. Factors Related to Aerobic Endurance Performance
  - 5.2.2.1. Aerobic Power
  - 5.2.2.2. Anaerobic Threshold
  - 5.2.2.3. Maximum Aerobic Speed
  - 5.2.2.4. Economy of Effort
  - 5.2.2.5. Use of Substrates
  - 5.2.2.6. Characteristics of Muscle Fibers
- 5.2.3. Physiological Adaptations to Aerobic Endurance
  - 5.2.3.1. Adaptations to Continuous Stress
  - 5.2.3.2. Adaptations to Intervallic Stress
  - 5.2.3.3. Adaptations to Intermittent Stress
  - 5.2.3.4. Adaptations to Stress in Small-Space Games

5.3. Situational Sports and Their Relation to Aerobic Endurance
- 5.3.1. Group I Situational Sport Demands; Football, Rugby and Hockey
- 5.3.2. Group II Situational Sport Demands; Basketball, Handball, Futsal
- 5.3.3. Group III Situational Sport Demands; Tennis and Volleyball

5.4. Monitoring and Assessment of Aerobic Endurance
- 5.4.1. Direct Treadmill Versus Field Evaluation
  - 5.4.1.1. VO2max Treadmill Versus Field
  - 5.4.1.2. VAM Treadmill Versus Field
  - 5.4.1.3. VAM versus VFA
  - 5.4.1.4. Time Limit (VAM)
- 5.4.2. Continuous Indirect Tests
  - 5.4.2.1. Time Limit (VFA)
  - 5.4.2.2. 1,000m Test
  - 5.4.2.3. 5-Minute Test
- 5.4.3. Incremental and Maximum Indirect Tests
  - 5.4.3.1. UMTT, UMTT-Brue, VAMEVAL and T-Bordeaux
  - 5.4.3.2. UNCa Test; Hexagon, Track, Hare
- 5.4.4. Indirect Back-and-Forth and Intermittent Tests
  - 5.4.4.1. 20m. Shuttle Run Test (Course Navette)
  - 5.4.4.2. YoYo Test
  - 5.4.4.3. Intermittent Test; 30-15 IFT, Carminatti, 45-15 Test
- 5.4.5. Specific Tests With Ball
  - 5.4.5.1. Hoff Test
- 5.4.6. Proposal Based on the VFA
  - 5.4.6.1. VFA Contact Points for Football, Rugby and Hockey
  - 5.4.6.2. FSR Contact Points for Basketball, Futsal and Handball

5.5. Planning Aerobic Exercise
- 5.5.1. Exercise Model
- 5.5.2. Training Frequency
- 5.5.3. Duration of the Exercise
- 5.5.4. Training Intensity
- 5.5.5. Density

5.6. Methods to Develop Aerobic Endurance
- 5.6.1. Continuous Training
- 5.6.2. Interval Training
- 5.6.3. Intermittent Training
- 5.6.4. SSG Training (Small-Space Games)
- 5.6.5. Mixed Training (Circuits)

5.7. Program Design
- 5.7.1. Pre-Season Period
- 5.7.2. Competitive Period
- 5.7.3. Post-Season Period

5.8. Special Aspects Related to Training
- 5.8.1. Concurrent Training
- 5.8.2. Strategies to Design Concurrent Training
- 5.8.3. Adaptations Generated by Concurrent Training
- 5.8.4. Differences Between Genders
- 5.8.5. De-Training

5.9. Aerobic Training in Children and Youth
- 5.9.1. General Concepts
  - 5.9.1.1. Growth, Development and Maturation
- 5.9.2. Evaluation of VO2max and VAM
  - 5.9.2.1. Indirect Measurement
  - 5.9.2.2. Indirect Field Measurement
- 5.9.3. Physiological Adaptations in Children and Youth
  - 5.9.3.1. VO2máx and VAM Adaptations
- 5.9.4. Design of Aerobic Training
  - 5.9.4.1. Intermittent Method
  - 5.9.4.2. Adherence and Motivation
  - 5.9.4.3. Games in Small Spaces

Module 6. Mobility: from Theory to Performance

6.1. Neuromuscular System
- 6.1.1. Neurophysiological Principles: Inhibition and Excitability
  - 6.1.1.1. Adaptations of the Nervous System
  - 6.1.1.2. Strategies to Modify Corticospinal Excitability
  - 6.1.1.3. Keys to Neuromuscular Activation
- 6.1.2. Somatosensory Information Systems
  - 6.1.2.1. Information Subsystems
  - 6.1.2.2. Types of Reflexes
    - 6.1.2.2.1. Monosynaptic Reflexes
    - 6.1.2.2.2. Polysynaptic Reflexes
    - 6.1.2.2.3. Muscle-Tendinous-Articular Reflexes
  - 6.1.2.3. Responses to Dynamic and Static Stretches

6.2. Motor Control and Movement
- 6.2.1. Stabilizing and Mobilising Systems
  - 6.2.1.1. Local System: Stabilizer System
  - 6.2.1.2. Global System: Mobilizing System
  - 6.2.1.3. Respiratory Pattern
- 6.2.2. Movement Pattern
  - 6.2.2.1. Co-Activation
  - 6.2.2.2. Joint by Joint Theory
  - 6.2.2.3. Primary Motion Complexes

6.3. Understanding Mobility
- 6.3.1. Key Concepts and Beliefs in Mobility
  - 6.3.1.1. Manifestations of Mobility in Sport
  - 6.3.1.2. Neurophysiological and Biomechanical Factors Influencing Mobility Development
  - 6.3.1.3. Impact of Mobility on Strength Development
- 6.3.2. Objectives of Training Mobility in Sport
  - 6.3.2.1. Mobility in the Training Session
  - 6.3.2.2. Benefits of Mobility Training
- 6.3.3. Mobility and Stability by Structures
  - 6.3.3.1. Foot-Ankle Complex
  - 6.3.3.2. Knee-Hip Complex
  - 6.3.3.3. Spine-Shoulder Complex

6.4. Training Mobility
- 6.4.1. Fundamental Block
  - 6.4.1.1. Strategies and Tools to Optimize Mobility
  - 6.4.1.2. Specific Pre-Exercise Scheme
  - 6.4.1.3. Specific Post-Exercise Scheme
- 6.4.2. Mobility and Stability in Basic Movements
  - 6.4.2.1. *Squat & Dead Lift*
  - 6.4.2.2. *Acceleration and Multidirection*

6.5. Methods of Recovery
- 6.5.1. Proposal for Effectiveness Based on Scientific Evidence

6.6. Methods for Training Mobility
- 6.6.1. Tissue-Centered Methods: Passive Tension and Active Tension Stretching
- 6.6.2. Methods Focused on Arthro-Coinematics: Isolated Stretching and Integrated Stretching
- 6.6.3. Eccentric Training

6.7. Mobility Training Programming
- 6.7.1. Effects of Stretching in the Short and Long Term
- 6.7.2. Optimal Timing for Applying Stretching

6.8. Athlete Assessment and Analysis
- 6.8.1. Functional and Neuromuscular Assessment
  - 6.8.1.1. Key Concepts in Assessment
  - 6.8.1.2. Evaluation Process
    - 6.8.1.2.1. Analyze the Movement Pattern
    - 6.8.1.2.2. Identify the Test
    - 6.8.1.2.3. Detect the Weak Links
- 6.8.2. Athlete Assessment Methodology
  - 6.8.2.1. Types of Tests
    - 6.8.2.1.1. Analytical Assessment Test
    - 6.8.2.1.2. General Assessment Test
    - 6.8.2.1.3. Specific-Dynamic Assessment Test
  - 6.8.2.2. Assessment by Structures
    - 6.8.2.2.1. Foot-Ankle Complex
    - 6.8.2.2.2. Knee-Hip Complex
    - 6.8.2.2.3. Spine-Shoulder Complex

6.9. Mobility in Injured Athletes
- 6.9.1. Pathophysiology of Injury: Effects on Mobility
  - 6.9.1.1. Muscle Structure
  - 6.9.1.2. Tendon Structure
  - 6.9.1.3. Ligament Structure
- 6.9.2. Mobility and Preventiion of Injuries: Practical Case
  - 6.9.2.1. Ruptured Ischialis in the Runner

Module 7. Individual Technique

7.1. What Is Technique?
- 7.1.1. Technique Definition

7.2. Importance with Respect to Other Sports
- 7.2.1. Athlete Development
- 7.2.2. How to Train It?
- 7.2.3. Importance of Correct Technique in the Game and Health
- 7.2.4. Development of Physical Skills
- 7.2.5. Applications in Play Reading
- 7.2.6. Key Aspects of an Athlete's Health
- 7.2.7. The Impact of Individual Technique on Team Play

7.3. Serves
- 7.3.1. What Is It?
- 7.3.2. Types of Serves
- 7.3.3. Service Phases
- 7.3.4. How to Train Them?

7.4. Blockages
- 7.4.1. What Is It?
- 7.4.2. Upper Trunk
- 7.4.3. Lower Trunk
- 7.4.4. How to train it?

7.5. Attack
- 7.5.1. What Is It?
- 7.5.2. Types of Attacks
- 7.5.3. Attack Phases
- 7.5.4. How to Train Them?

7.6. Reception
- 7.6.1. What Is It?
- 7.6.2. Pre-Reading
- 7.6.3. Body Position
- 7.6.4. How to Train Them?

7.7. Defense
- 7.7.1. What Is It?
- 7.7.2. Pre-Reading
- 7.7.3. Body Position
- 7.7.4. How to Train Them?

7.8. Positioning
- 7.8.1. What Is It?
- 7.8.2. Types of Placement
- 7.8.3. Importance in Games
- 7.8.4. How to Train Them?

7.9. Forearm
- 7.9.1. What Is It?
- 7.9.2. Body Positioning
- 7.9.3. Applications
- 7.9.4. How to Train Them?

7.10. Finger Touch
- 7.10.1. What Is It?
- 7.10.2. Body Positioning
- 7.10.3. Applications
- 7.10.4. How to Train Them?

Module 8. Tactics

8.1. Concept of Tactics and Game Systems
- 8.1.1. What Is It?
- 8.1.2. Game Systems
- 8.1.3. Importance
- 8.1.4. How to Train Them?

8.2. Player Disposition and Specialization
- 8.2.1. Game Roles
- 8.2.2. Functional Specialization
- 8.2.3. Positional Specialization
- 8.2.4. Universality vs. Specialization

8.3. Tactics of the Serve
- 8.3.1. Types of Serve
- 8.3.2. Objective
- 8.3.3. Serve Selection
- 8.3.4. How to Train Them?

8.4. Reception Tactics
- 8.4.1. Tactical Variants
- 8.4.2. Objective
- 8.4.3. Tactical Selection
- 8.4.4. How to Train Them?

8.5. Offensive Tactics
- 8.5.1. Types of Attacks
- 8.5.2. Objective
- 8.5.3. Attack Selection
- 8.5.4. How to Train Them?

8.6. Offensive Tactics
- 8.6.1. Tactical Variants
- 8.6.2. Objective
- 8.6.3. Tactical Selection
- 8.6.4. How to Train Them?

8.7. Blocking Tactics
- 8.7.1. Blocking Types
- 8.7.2. Objetive: Offensive or Defensive Tactics
- 8.7.3. Selection
- 8.7.4. How to Train Them?

8.8. Phases of the Game
- 8.8.1. What Are They?
- 8.8.2. Offensive Phase
- 8.8.3. Defensive Phase
- 8.8.4. How to Train Them?

8.9. Strategic Complexes (K0, K1, K2...)
- 8.9.1. What are Strategic Complexes?
- 8.9.2. K0, K1 and K2
- 8.9.3. K2 and K4
- 8.9.4. How to Train Them?

8.10. Choice of the Game System
- 8.10.1. Technical Capacity
- 8.10.2. Physical-Anthropometric Conditions
- 8.10.3. Opponent's Tactics
- 8.10.4. External Agents and Type of Competition

Module 9. Other Modalities

9.1. Beach Volleyball
- 9.1.1. What Is It?
- 9.1.2. Rules and Characteristics
- 9.1.3. Competitions
- 9.1.4. Evolution Over Time

9.2. Beach Volleyball Technique
- 9.2.1. Differences with Volleyball
- 9.2.2. Offensive Techniques
- 9.2.3. Defensive Techniques
- 9.2.4. How to Train Them?

9.3. Tactics in Beach Volleyball
- 9.3.1. Differences with Volleyball
- 9.3.2. Offensive Phase
- 9.3.3. Defensive Phase
- 9.3.4. How to Train Them?

9.4. Physical Preparation in Beach Volleyball
- 9.4.1. Differences with Volleyball
- 9.4.2. Periodization
- 9.4.3. Preparation Plan
- 9.4.4. Examples

9.5. Psychology in Beach Volleyball
- 9.5.1. Differences with Volleyball
- 9.5.2. Benefits
- 9.5.3. Motivation Techniques
- 9.5.4. Skills

9.6. *Sitting Volleyball*
- 9.6.1. What Is It?
- 9.6.2. Rules and Characteristics
- 9.6.3. Competitions
- 9.6.4. Evolution Over Time

9.7. Sitting Volleyball Technique
- 9.7.1. Differences with Volleyball
- 9.7.2. Offensive Techniques
- 9.7.3. Defensive Techniques
- 9.7.4. How to Train Them?

9.8. Sitting Volleyball Tactics
- 9.8.1. Differences with Volleyball
- 9.8.2. Offensive Phase
- 9.8.3. Defensive Phase
- 9.8.4. How to Train Them?

9.9. Physical Preparation in Sitting Volleyball
- 9.9.1. Differences with Volleyball
- 9.9.2. Periodization
- 9.9.3. Preparation Plan
- 9.9.4. Examples

9.10. Psychology in Sitting Volleyball
- 9.10.1. Differences with Volleyball
- 9.10.2. Benefits of Paralympic Sport
- 9.10.3. Motivation Techniques
- 9.10.4. Skills

Module 10. Team Structures, Organization and Rules

10.1. Volleyball Regulations
- 10.1.1. Philosophy of Rules and Referee
- 10.1.2. Games
- 10.1.3. Referees, Responsibilities and Signals
- 10.1.4. Diagrams
- 10.1.5. Definitions

10.2. Interpretation of the Rules: How to Interpret and Apply the Rules in Specific Situations during the Game
- 10.2.1. Importance of Knowing the Regulations
- 10.2.2. Downtime Management
- 10.2.3. Attention to Your Own and Your Opponent'sTeam
- 10.2.4. Complex Situations Enabled by the Regulations

10.3. Age Categories
- 10.3.1. *Minivolley*
- 10.3.2. Children's
- 10.3.3. Cadet and Youth
- 10.3.4. Senior

10.4. Competition Categories
- 10.4.1. Municipal and Regional Competitions
- 10.4.2. National Competitions
- 10.4.3. Professional National Competitions
- 10.4.4. International Competitions

10.5. International Competitions
- 10.5.1. FIVB Structure
- 10.5.2. International Combinations
- 10.5.3. Continental Competitions
- 10.5.4. International Competitions

10.6. Trainer's and Assistants' Duties
- 10.6.1. Capabilities according to Category
- 10.6.2. Group Management
- 10.6.3. Importance of Interdepartmental Communication
- 10.6.4. Types of Coaches

10.7. Functions of the Physical Trainer
- 10.7.1. What Is It?
- 10.7.2. Individual Objectives
- 10.7.3. Collective Objectives
- 10.7.4. Alternatives in Their Absence

10.8. Team Manager Functions
- 10.8.1. What Is It?
- 10.8.2. Objectives
- 10.8.3. Functions
- 10.8.4. Alternatives in Their Absence

10.9. Scout Functions
- 10.9.1. What Is It?
- 10.9.2. Objectives
- 10.9.3. Functions
- 10.9.4. Alternatives in Their Absence

10.10. Physiotherapist Functions
- 10.10.1. What Is It?
- 10.10.2. Objectives
- 10.10.3. Functions
- 10.10.4. Alternatives in Their Absence

Module 11. Planning Applied to High Performance in Sports

11.1. Basic Fundamentals
- 11.1.1. Adaptation Criteria
  - 11.1.1.1. General Adaptation Syndrome
  - 11.1.1.2. Current Performance Capability, Training Requirement
- 11.1.2. Fatigue, Performance, Conditioning as Tools
- 11.1.3. Dose-Response Concept and its Application

11.2. Basic Concepts and Applications
- 11.2.1. Concept and Application of the Plan
- 11.2.2. Concept and Application of Periodization
- 11.2.3. Concept and Application of Programming
- 11.2.4. Concept and Application of Load Control

11.3. Conceptual Development of Planning and its Different Models
- 11.3.1. First Historical Planning Records
- 11.3.2. First Proposals, Analyzing the Bases
- 11.3.3. Classic Models
  - 11.3.3.1. Traditional
  - 11.3.3.2. Pendulum
  - 11.3.3.3. High Loads

11.4. Models Focused on Individuality and/or Load Concentration
- 11.4.1. Blocks
- 11.4.2. Integrated Macrocycle
- 11.4.3. Integrated Model
- 11.4.4. ATR
- 11.4.5. Keeping in Shape
- 11.4.6. By Objectives
- 11.4.7. Structural Bells
- 11.4.8. Self-Regulation (APRE)

11.5. Models Focused on Specificity and/or Movement Capacity
- 11.5.1. Cognitive (or Structured Microcycle)
- 11.5.2. Tactical Periodization
- 11.5.3. Conditional Development by Movement Capacity

11.6. Criteria for Correct Programming and Periodization
- 11.6.1. Criteria for Programming and Periodization in Strength Training
- 11.6.2. Criteria for Programming and Periodization in Endurance Training
- 11.6.3. Criteria for Programming and Periodization in Speed Training
- 11.6.4. "Interference" Criteria in Programming and Periodization in Concurrent Training

11.7. Planning Through Load Control With a GNSS Device (GPS)
- 11.7.1. Basis of Session Saving for Appropriate Control
  - 11.7.1.1. Calculation of the Average Group Session for a Correct Load Analysis
  - 11.7.1.2. Common Errors in Saving and Their Impact on Plannning
- 11.7.2. Relativization of the Load, a Function of Competence
- 11.7.3. Load Control by Volume or Density, Range and Limitations

11.8. Integrating Thematic Unit 1 (Practical Application)
- 11.8.1. Construction of a Real Model of Short-Term Planning
  - 11.8.1.1. Selecting and Applying the Periodization Model
  - 11.8.1.2. Designing the Corresponding Planning

11.9. Integrating Thematic Unit 2 (Practical Application)
- 11.9.1. Producing a Pluri-Annual Plannification
- 11.9.2. Producing an Annual Plannification

Module 12. Sports Performance Assessment

12.1. Assessment
- 12.1.1. Definitions: Test, Assessment, Measurement
- 12.1.2. Validity, Reliability
- 12.1.3. Purposes of the Evaluation

12.2. Types of Tests
- 12.2.1. Laboratory Test
  - 12.2.1.1. Strengths and Limitations of Laboratory Tests
- 12.2.2. Field Tests
  - 12.2.2.1. Strengths and Limitations of Field Tests
- 12.2.3. Direct Tests
  - 12.2.3.1. Applications and Transfer to Training
- 12.2.4. Indirect Tests
  - 12.2.4.1. Practical Considerations and Transfer to Training

12.3. Assessment of Body Composition
- 12.3.1. Bioimpedance
  - 12.3.1.1. Considerations in Its Field Application
  - 12.3.1.2. Limitations on the Validity of Its Data

12.3.2. Anthropometry
12.3.2.1. Tools for Its Implementation
12.3.2.2. Models of Analysis for Body Composition
12.3.3. Body Mass Index (IMC)
12.3.3.1. Restrictions on the Data Obtained for Interpretation of Body Composition
12.4. Assessing Aerobic Fitness
12.4.1. Vo2max Test on the Treadmill
12.4.1.1. Astrand Test
12.4.1.2. Balke Test
12.4.1.3. ACSM Test
12.4.1.4. Bruce Test
12.4.1.5. Foster Test
12.4.1.6. Pollack Test
12.4.2. Cycloergometer VO2max Test
12.4.2.1. Astrand. Ryhming
12.4.2.2. Fox Test
12.4.3. Cycloergometer Power Test
12.4.3.1. Wingate Test
12.4.4. Vo2max Test in the Field
12.4.4.1. Leger Test
12.4.4.2. Montreal University Test
12.4.4.3. Mile Test
12.4.4.4. 12-Minute Test
12.4.4.5. 2.4Km Test
12.4.5. Field Test to Establish Training Areas
12.4.5.1. 30-15 IFT Test
12.4.6. UNca Test
12.4.7. Yo-Yo Test
12.4.7.1. Yo-Yo Endurance. YYET Level 1 and 2
12.4.7.2. Yo-Yo Intermittent Endurance. YYEIT Level 1 and 2
12.4.7.3. Yo-Yo Intermittent Recovery. YYERT Level 1 and 2
12.5. Neuromuscular Fitness Evaluation
12.5.1. Submaximal Repetition Test
12.5.1.1. Practical Applications for its Assessment
12.5.1.2. Validated Estimation Formulas for the Different Training Exercises
12.5.2. 1 RM Test
12.5.2.1. Protocol for its Performance
12.5.2.2. Limitations of 1 RM Assessment
12.5.3. Horizontal Jump Test
12.5.3.1. Assessment Protocols
12.5.4. Speed Test (5m,10m,15m, Etc.)
12.5.4.1. Considerations on the Data Obtained in Time/Distance Type Assessments
12.5.5. Maximum/Submaximum Incremental Progressive Tests
12.5.5.1. Validated Protocols
12.5.5.2. Practical Applications
12.5.6. Vertical Jump Test
12.5.6.1. SJ Jump
12.5.6.2. CMJ Jump
12.5.6.3. ABK Jump
12.5.6.4. DJ Test
12.5.6.5. Continuous Jump Test
12.5.7. Strength/Speed Vertical/Horizontal Profiles
12.5.7.1. Morin and Samozino Assessment Protocols
12.5.7.2. Practical Applications from a Strength/Speed Profile
12.5.8. Isometric Tests With Load Cell
12.5.8.1. Voluntary Isometric Maximal Strength Test (IMS)
12.5.8.2. Bilateral Deficit Isometry Test (%BLD)
12.5.8.3. Lateral Deficit (%LD)
12.5.8.4. Hamstring/Quadriceps Ratio Test

12.6. Assessment and Monitoring Tools
- 12.6.1. Heart Rate Monitors
  - 12.6.1.1. Device Characteristics
  - 12.6.1.2. Training Areas by Heart Rate
- 12.6.2. Lactate Analyzers
  - 12.6.2.1. Device Types, Performance and Characteristics
  - 12.6.2.2. Training Zones According to the Lactate Threshold Limit (LT)
- 12.6.3. Gas Analyzers
  - 12.6.3.1. Laboratory vs Portable Devices
- 12.6.4. GPS
  - 12.6.4.1. GPS Types, Characteristics, Strengths and Limitations
  - 12.6.4.2. Metrics Established to Interpret the External Load
- 12.6.5. Accelerometers
  - 12.6.5.1. Types of Accelerometers and Characteristics
  - 12.6.5.2. Practical Applications of Data Obtained From an Accelerometer
- 12.6.6. Position Transducers
  - 12.6.6.1. Types of Transducers for Vertical and Horizontal Movements
  - 12.6.6.2. Variables Measured and Estimated by of a Position Transducer
  - 12.6.6.3. Data Obtained from a Position Transducer and Its Applications to Training Programming
- 12.6.7. Strength Platforms
  - 12.6.7.1. Types and Characteristics.of Strength Platforms
  - 12.6.7.2. Variables Measured and Estimated by Means of a Strength Platform
  - 12.6.7.3. Practical Approach to Training Programming
- 12.6.8. Load Cells
  - 12.6.8.1. Cell Types, Characteristics and Performance
  - 12.6.8.2. Uses and Applications for Sports Performance and Health
- 12.6.9. Photoelectric Cells
  - 12.6.9.1. Characteristics and Limitations of the Devices
  - 12.6.9.2. Practical Uses and Applicability
- 12.6.10. Movile Applications
  - 12.6.10.1. Description of the Most Used Apps on the Market: My Jump, PowerLift, Runmatic, Nordic

12.7. Internal and External Load
- 12.7.1. Objective Means of Assessment
  - 12.7.1.1. Speed of Execution
  - 12.7.1.2. Average Mechanical Power
  - 12.7.1.3. GPS Device Metrics
- 12.7.2. Subjective Means of Assessment
  - 12.7.2.1. PSE
  - 12.7.2.2. sPSE
  - 12.7.2.3. Chronic/Acute Load Ratio

12.8. Fatigue
- 12.8.1. General Concepts of Fatigue and Recovery
- 12.8.2. Assessments
  - 12.8.2.1. Laboratory Objectives: CK, Urea, Cortisol, Etc.
  - 12.8.2.2. Field Objectives: CMJ, Isometric Tests, etc.
  - 12.8.2.3. Subjective: Wellness Scales, TQR, etc.
- 12.8.3. Recovery Strategies: Cold-Water Immersion, Nutritional Strategies, Self-Massage, Sleep

12.9. Considerations for Practical Applications
- 12.9.1. Vertical Jump Test. Practical Applications
- 12.9.2. Maximum/Submaximum Incremental Progressive Test. Practical Applications
- 12.9.3. Vertical Strength-Speed Profile. Practical Applications

Module 13. Statistics Applied to Performance and Research

13.1. Notions of Probability
- 13.1.1. Simple Probability
- 13.1.2. Conditional Probability
- 13.1.3. Bayes' Theorem

13.2. Probability Distributions
- 13.2.1. Binomial Distribution
- 13.2.2. Poisson distribution
- 13.2.3. Normal Distribution

13.3. Statistical Inference
- 13.3.1. Population Parameters
- 13.3.2. Estimation of Population Parameters
- 13.3.3. Sampling Distributions Associated with the Normal Distribution
- 13.3.4. Distribution of the Sample Mean
- 13.3.5. Point Estimators
- 13.3.6. Properties of Estimators
- 13.3.7. Estimator Comparison Criteria
- 13.3.8. Estimators by Confidence Regions
- 13.3.9. Method of Obtaining Confidence Intervals
- 13.3.10. Confidence Intervals Associated With Normal Distribution
- 13.3.11. Central Limit Theorem

13.4. Hypothesis Test
- 13.4.1. P-Value
- 13.4.2. Statistical Power

13.5. Exploratory Analysis and Descriptive Statistics
- 13.5.1. Graphs and Tables
- 13.5.2. Chi-Square Test
- 13.5.3. Relative Risk
- 13.5.4. Odds Ratio

13.6. The T-Test
- 13.6.1. One-Sample T-Test
- 13.6.2. T-Test for Two Independent Samples
- 13.6.3. T-Test for Paired Samples

13.7. Correlation Analysis

13.8. Simple Linear Regression Analysis
- 13.8.1. The Regression Line and its Coefficients
- 13.8.2. Residuals
- 13.8.3. Regression Assessment Using Residuals
- 13.8.4. Coefficient of Determination

13.9. Variance and Analysis of Variance (ANOVA)
- 13.9.1. One-way ANOVA
- 13.9.2. Two-Way ANOVA
- 13.9.3. ANOVA for Repeated Measures
- 13.9.4. Factorial ANOVA

Module 14. Biomechanics and Injuries

14.1. Most Common Injuries in Volleyball
- 14.1.1. Knee Injuries
- 14.1.2. Shoulder Injuries
- 14.1.3. Back Injuries
- 14.1.4. Ankle Injuries

14.2. First Aid: How to Deal with an Injury on the Playing Field
- 14.2.1. Identify and Assess Severity
- 14.2.2. Provide Immediate Attention
- 14.2.3. Offer Comfort and Safety
- 14.2.4. Communication

14.3. Injury Treatment: How to Treat Injuries Properly to Minimize Recovery Time
- 14.3.1. Process
- 14.3.2. Highly Competitive
- 14.3.3. Recovery Times
- 14.3.4. Objectives

14.4. Injury Prevention: How to Prevent Injuries through Fitness and Proper Technique
- 14.4.1. Physical Preparation
- 14.4.2. Injuries Resulting from Poor Physical Preparation
- 14.4.3. Technique and Prevention
- 14.4.4. Injuries Resulting from Bad Technique

14.5. What Is Biomechanics?
- 14.5.1. Definition
- 14.5.2. Evolution Over Time
- 14.5.3. Objectives
- 14.5.4. Performance Applications

14.6. Biomechanical System of Volleyball Technique
- 14.6.1. Biomechanical Fundamentals
- 14.6.2. Mechanical Properties
- 14.6.3. Muscle Qualities
- 14.6.4. Muscle Functional Status

14.7. Characteristics of Volleyball Movements
- 14.7.1. Objectives
- 14.7.2. Quantitative Technical Structures
- 14.7.3. Qualitative Technical Structures
- 14.7.4. Evaluation of Motor Behavior

14.8. Phases in the Biomechanical Analysis of the Player
- 14.8.1. Information Gathering
- 14.8.2. Final Objective
- 14.8.3. Principles
- 14.8.4. Assessment Criteria

14.9. Biomechanical Analysis of the Attack
- 14.9.1. Characteristics of the Attack
- 14.9.2. Strength
- 14.9.3. Levers and Movements Generated
- 14.9.4. Muscle Action
- 14.9.5. Chain and Kinematic Grade

14.10. Movement According to the Reference Plane
- 14.10.1. Horizontal Plane
- 14.10.2. Sagittal Plane
- 14.10.3. Frontal Plane
- 14.10.4. Axes of Motion

Module 15. Sports Psychology

15.1. Pressure Management
- 15.1.1. Definition
- 15.1.2. Importance of a Correct Management
- 15.1.3. Impact of Pressure on the Volleyball Player
- 15.1.4. How to Work It?

15.2. United Volleyball Team
- 15.2.1. Group Cohesion
- 15.2.2. Importance and Benefits of a Cohesive Team
- 15.2.3. Objectives
- 15.2.4. Dynamics

15.3. Emotional Management of the Volleyball Player on the Court
- 15.3.1. Emotional Education
- 15.3.2. Management of Positive and Negative Emotions
- 15.3.3. Learning Emotional Control
- 15.3.4. Dynamics

15.4. How to Motivate a Volleyball Team?
- 15.4.1. Motivation
- 15.4.2. Personal Goal Development
- 15.4.3. Intrinsic Motivation Techniques for Players
- 15.4.4. Extrinsic Motivation Techniques for Players

15.5. Leadership Role of a Volleyball Team
- 15.5.1. Leadership
- 15.5.2. Types of Team Leaders
- 15.5.3. Qualities of a Leader
- 15.5.4. How to Motivate a Volleyball Team?

15.6. Dynamics for a Volleyball Team
- 15.6.1. What Are They?
- 15.6.2. Benefits of Its Implementation
- 15.6.3. Planning and Objectives
- 15.6.4. Examples

15.7. Attention and the Volleyball Player
- 15.7.1. Attentional Skills
- 15.7.2. Importance in Volleyball
- 15.7.3. Influencing Factors in Attention
- 15.7.4. How to Train Them?

15.8. Development of Interpersonal Skills of the Volleyball Player
- 15.8.1. Interpersonal Skills
- 15.8.2. Benefits in a Volleyball Team
- 15.8.3. Effective Communication in a Team
- 15.8.4. How To Work Them?

15.9. Volleyball Player Activation
- 15.9.1. Activation Control
- 15.9.2. Activation Levels
- 15.9.3. N.O.A. Search
- 15.9.4. Dynamics

15.10. Relaxation and Visualization before the Game
- 15.10.1. What is Relaxation?
- 15.10.2. What is Visualization?
- 15.10.3. Impact in Volleyball
- 15.10.4. Dynamics

Module 16. Sports Nutrition

16.1. Concept of Sports Nutrition
- 16.1.1. Definition
- 16.1.2. Objective
- 16.1.3. Differences with Clinical Nutrition
- 16.1.4. Impact on Performance

16.2. Volleyball Nutritional Requirements
- 16.2.1. What Is It?
- 16.2.2. Body Positioning
- 16.2.3. Applications
- 16.2.4. How to Train Them?

16.3. Pre-Match Volleyball Nutrition
- 16.3.1. Importance in Performance
- 16.3.2. Glycogen Stores
- 16.3.3. Periodization
- 16.3.4. Examples

16.4. Food during the Match
- 16.4.1. Importance in Performance
- 16.4.2. Rhythm and Energy
- 16.4.3. Difficulty of Carbohydrate Re-Loading
- 16.4.4. Examples

16.5. Post-Match Recovery Process
- 16.5.1. Importance in Performance
- 16.5.2. Rehydration
- 16.5.3. Muscle Recovery
- 16.5.4. Examples

16.6. Hydration in the Volleyball Player
- 16.6.1. What Is It?
- 16.6.2. Electrolytes
- 16.6.3. Sweat Rate
- 16.6.4. Hydration Needs

16.7. Supplementation in the Volleyball Player
- 16.7.1. Definition
- 16.7.2. ABCD Systems
- 16.7.3. Individualized Study
- 16.7.4. Ergonutritional Aids

16.8. Volleyball Energy Systems
- 16.8.1. Definition
- 16.8.2. Aerobic System
- 16.8.3. Anaerobic System
- 16.8.4. Importance of Nutrition in Energy Systems

16.9. Periodization of the Volleyball Player
- 16.9.1. Definition
- 16.9.2. Macronutrient Requirements
- 16.9.3. Micronutrient Requirements
- 16.9.4. Nutritional Periodization

16.10. BCM, ECM AND FFM in the Volleyball Team
- 16.10.1. Definitions
- 16.10.2. BCM of a Volleyball Team according to Roles
- 16.10.3. ECM and FFM in a Volleyball Team according to Roles
- 16.10.4. BCM/ECM Ratio in a Volleyball Team according to Roles

Module 17. Technology in Volleyball

17.1. Using Video: How to Use Video as a Tool for Game Analysis and Improvement
- 17.1.1. Why Is It Important?
- 17.1.2. Objectives
- 17.1.3. Study Elements
- 17.1.4. Application after Analysis

17.2. Tactical Analysis: How to Analyze the Team's and the Opponent's Play
- 17.2.1. Why Is It Important?
- 17.2.2. Objectives
- 17.2.3. Opponent's Tactics
- 17.2.4. Tactics of Our Team

17.3. Analysis of Individual Technique: How to Analyze the Individual Technique of Players through Video
- 17.3.1. Why Is It Important?
- 17.3.2. Objectives
- 17.3.3. Application after Analysis
- 17.3.4. Visual Support of Statistical Data

17.4. Presenting Results: How to Present the Results of Video Analysis in an Effective Way
- 17.4.1. Selection
- 17.4.2. Study
- 17.4.3. Exhibition
- 17.4.4. Objective

17.5. Applications for Technical Analysis
- 17.5.1. Video Delay
- 17.5.2. Coach's Eye
- 17.5.3. Huddle Technique
- 17.5.4. Kinovea

17.6. Applications for Tactical Analysis
- 17.6.1. Coachnote
- 17.6.2. Settex
- 17.6.3. Data Volley
- 17.6.4. Volley Scout

17.7. Applications for Physical Analysis
- 17.7.1. My Jump
- 17.7.2. Powerlift
- 17.7.3. Nordics
- 17.7.4. Dorsiflex

17.8. Scouting in Volleyball
- 17.8.1. What Is It?
- 17.8.2. Information Gathering
- 17.8.3. Statistical Analysis
- 17.8.4. Application of Information

17.9. Quantitative Analysis: Data
- 17.9.1. What Is It?
- 17.9.2. Main Tool
- 17.9.3. Data Selection
- 17.9.4. Application after Analysis

17.10. Qualitative Analysis: Spreadsheets and Video
- 17.10.1. What Is It?
- 17.10.2. Tools
- 17.10.3. Data Selection
- 17.10.4. Application after Analysis

06

Study Methodology

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

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

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

The student: the priority of all TECH programs

In TECH's study methodology, the student is the main protagonist.
The teaching tools of each program have been selected taking into account the demands of time, availability and academic rigor that, today, not only students demand but also the most competitive positions in the market.

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

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

The most comprehensive study plans at the international level

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

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

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

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

Case Studies and Case Method

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

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

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

Relearning Methodology

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

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

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

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

A 100% online Virtual Campus with the best teaching resources

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

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

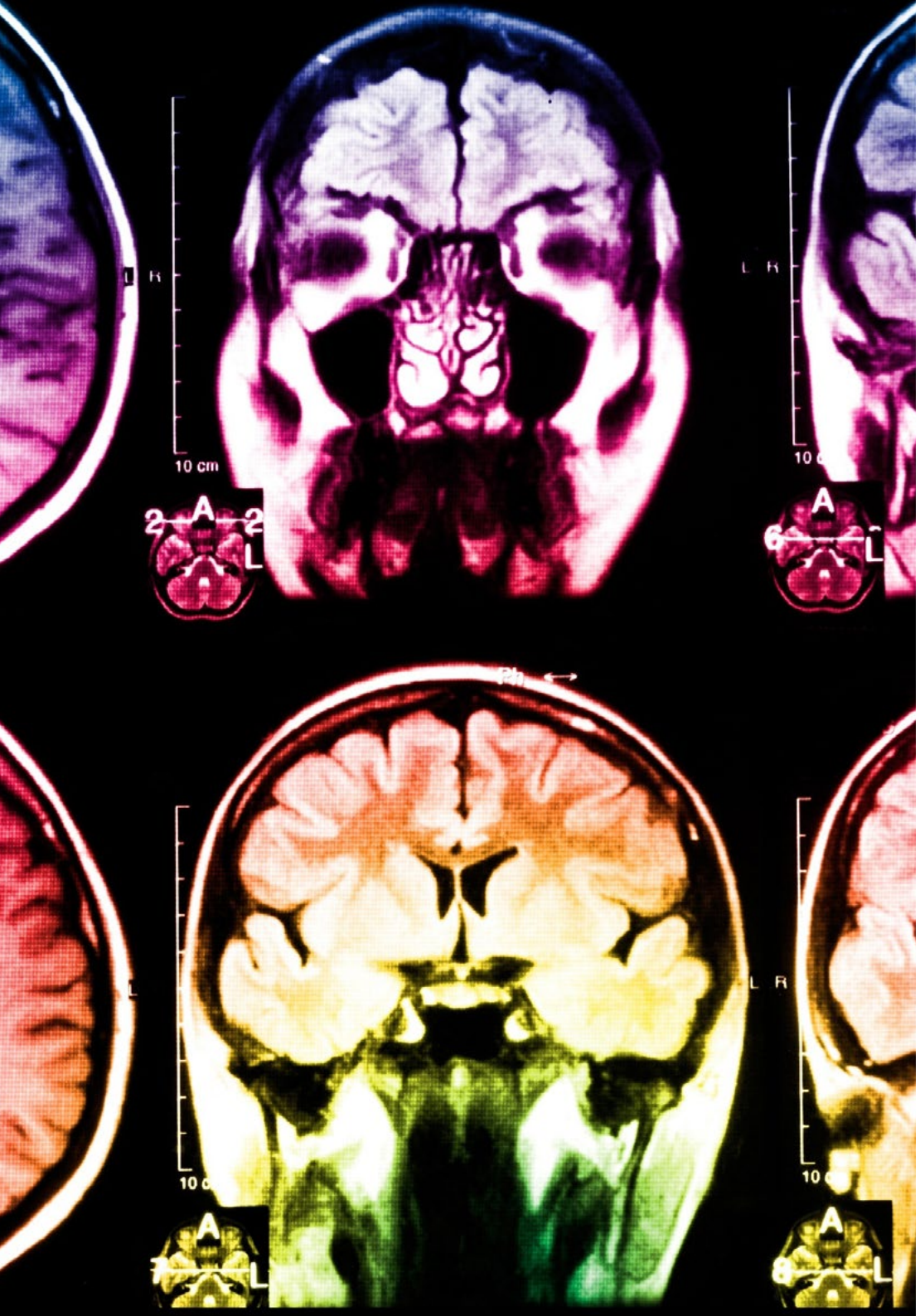
In order to facilitate tutor-student contact as much as possible, you will have a wide range of communication possibilities, both in real time and delayed (internal messaging, telephone answering service, email contact with the technical secretary, chat and videoconferences).

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

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

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

1. Students who follow this method not only achieve the assimilation of concepts, but also a development of their mental capacity, through exercises that assess real situations and the application of knowledge.
2. Learning is solidly translated into practical skills that allow the student to better integrate into the real world.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.



The university methodology top-rated by its students

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

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

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

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

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

Study Material

All teaching material is produced by the specialists who teach the course, specifically for the course, so that the teaching content is highly specific and precise.

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

Practicing Skills and Abilities

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

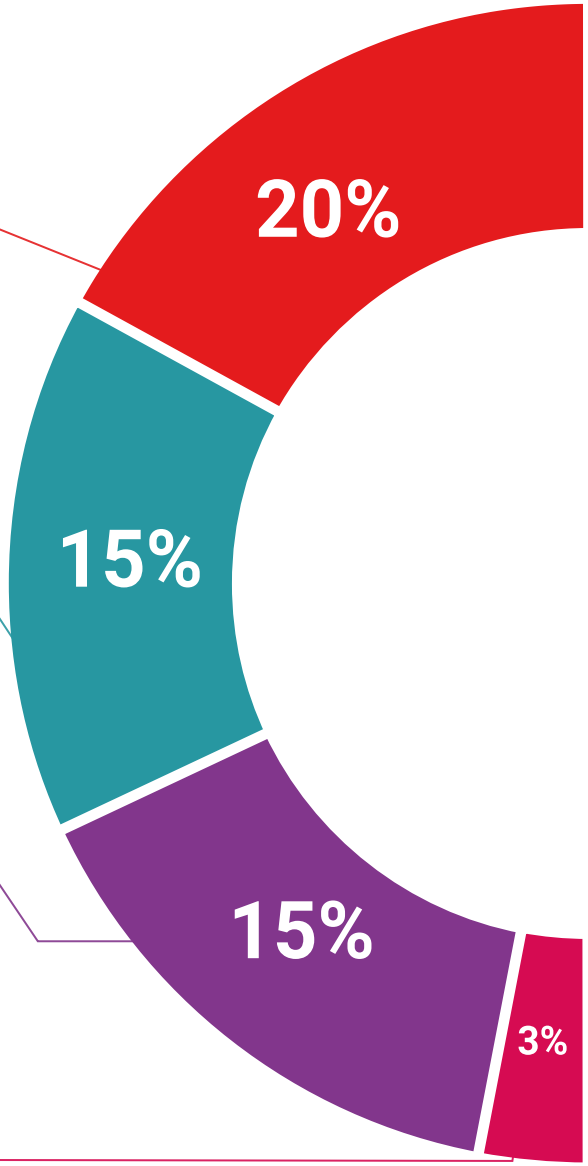
Interactive Summaries

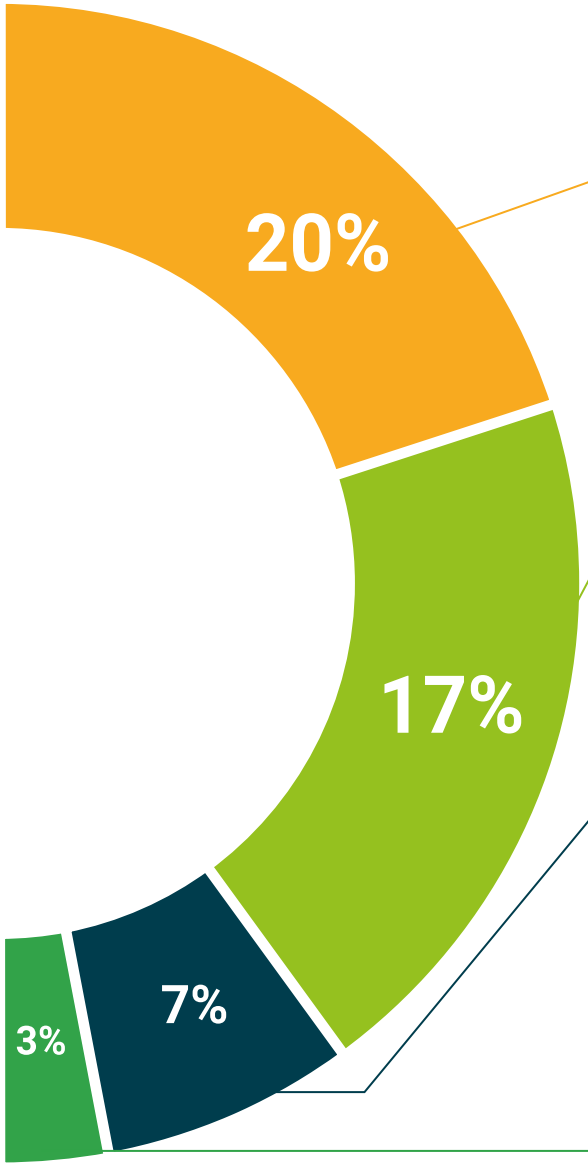
We present the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

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

Additional Reading

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





Case Studies

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

Testing & Retesting

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

Classes

There is scientific evidence suggesting that observing third-party experts can be useful.

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

Quick Action Guides

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical and effective way to help students progress in their learning.

07

Certificate

The Advanced Master's Degree in High-Performance and Competitive Volleyball guarantees students, in addition to the most rigorous and up-to-date education, access to an Advanced Master's Degree issued by TECH Global University.

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

This private qualification will allow you to obtain an **Advanced Master's Degree diploma in High-Performance and Competitive Volleyball** endorsed by **TECH Global University**, the world's largest online university.

TECH Global University, is an official European University publicly recognized by the Government of Andorra (***official bulletin***). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

This **TECH Global University private qualification**, is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Advanced Master's Degree in High-Performance and Competitive Volleyball**

Modality: **online**

Duration: **2 years**

Accreditation: **120 ECTS**


tech global university

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

Advanced Master's Degree in High-Performance and Competitive Volleyball

This is a private qualification of 3,600 hours of duration equivalent to 120 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

Dr. Pedro Navarro Illana
Dean

The Official Online University of the NBA

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


Advanced Master's Degree in High-Performance and Competitive Volleyball

General Structure of the Syllabus

Year	Subject	ECTS	Type
1º	Exercise Physiology and Physical Activity	6	CO
1º	Fitness and Physical Preparation	6	CO
1º	Strength Training, from Theory to Practice	6	CO
1º	Speed Training, from Theory to Practice	6	CO
1º	Endurance Training, from Theory to Practice	6	CO
1º	Mobility: from Theory to Performance	6	CO
1º	Individual Technique	6	CO
1º	Tactics	6	CO
1º	Other Modalities	6	CO
1º	Team Structures, Organization and Rules	6	CO
2º	Planning Applied to High Performance in Sports	6	CO
2º	Sports Performance Assessment	6	CO
2º	Statistics Applied to Performance and Research	6	CO
2º	Biomechanics and Injuries	6	CO
2º	Sports Psychology	6	CO
2º	Sports Nutrition	6	CO
2º	Technology in Volleyball	6	CO

Dr. Pedro Navarro Illana
Rector

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*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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Advanced Master's Degree
High-Performance and Competitive Volleyball

- Modality: **online**
- Duration: **2 years**
- Certificate: **TECH Global University**
- Accreditation: **120 ECTS**
- Schedule: **at your own pace**
- Exams: **online**

Advanced Master's Degree

High-Performance and Competitive Volleyball

Endorsed by the NBA

tech global university