

Postgraduate Certificate Nutrition Applied to High Performance in Sports

Endorsed by the NBA



tech technological
university



Postgraduate Certificate

Nutrition Applied to High Performance in Sports

Course Modality: Online

Duration: 2 months.

Certificate: TECH - Technological University

6 ECTS Credits

Teaching Hours: 150 hours.

Website: www.techtitute.com/pk/sports-science/postgraduate-certificate/nutrition-applied-high-performance-sports

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01

Introduction

Nutrition applied to high performance sports has undergone major changes in recent years. One of the differentiating characteristics of this nutrition course with respect to others that deal with the same subject is the very high level of updating on which the information is based but, above all, is the wide range of topics that the student will address in high performance sports, from nutrition in different sports disciplines to eating disorders.

This course is a must for professionals who want to achieve success in the world of sports performance.



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The most up-to-date academic training taught by extraordinary teachers experienced in the world of sports and academia”.

In this course you will find detailed training on key aspects of sports performance, treated with a unique didactic and depth in the current academic offer. Each subject will be taught by true specialists in the field, which guarantees the highest level of knowledge in the subject.

This Postgraduate Certificate in Nutrition Applied to High Performance Sports will provide the student with theoretical contents of the highest quality and depth. One of the characteristics that differentiate this Diploma from others is the relationship between the different topics of the program at a theoretical level but, above all, at a practical level, making the student obtain real examples of teams and athletes of the highest sports performance worldwide, as well as from the professional world of sports, resulting in the student being able to build knowledge in the most complete way.

Another strong point of this Diploma in Nutrition Applied to High Performance Sports is the training of students in the use of new technologies applied to Sports Performance. The student will not only learn about new technology in the field of performance, but will learn how to use it and, more importantly, how to interpret the data provided by each device to make better decisions regarding training programming.

The teaching team of this Diploma in Nutrition Applied to High Performance Sports has made a careful selection of each of the topics of this training to offer the student a study opportunity as complete as possible and always linked to current events.

Thus, at TECH we have set out to create contents of the highest teaching and educational quality that will turn our students into successful professionals, following the highest quality standards in teaching at an international level. Therefore, we show you this Postgraduate Certificate with a rich content that will help you reach the elite of High Performance Sports. In addition, as it is an online course, the student is not conditioned by fixed schedules or the need to move to another physical location, but can access the contents at any time of the day, balancing their work or personal life with their academic life.

This **course in Nutrition Applied to High Performance Sports** contains the most complete and up-to-date scientific program on the market. The most important features of the program include:

- ♦ The study of numerous case studies presented by specialists in high-performance sports training.
- ♦ The graphic, schematic and eminently practical contents of the course are designed to provide all the essential information required for professional practice.
- ♦ Exercises where the self-assessment process can be carried out to improve learning.
- ♦ Algorithm-based interactive learning system for decisionmaking.
- ♦ Special emphasis on innovative methodologies in personal training
- ♦ Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- ♦ Content that is accessible from any fixed or portable device with an Internet connection



Immerse yourself in the study of this high level course and improve your skills in High Performance Sports".

“

This course is the best investment you can make in selecting a refresher program for two reasons: in addition to updating your knowledge as a personal trainer, you will earn a degree from the leading online university in Spanish: TECH”

The teaching staff includes professionals from the field of sports science, who bring their experience to this training program, as well as renowned specialists from leading societies and prestigious universities.

Its multimedia content, developed with the latest educational technology, will allow the professional a situated and contextual learning, that is, a simulated environment that will provide an immersive training programmed to train in real situations.

This program is designed around Problem Based Learning, whereby the professional must try to solve the different professional practice situations that arise during the academic year. For this purpose, the professional will be assisted by an innovative interactive video system created by renowned , and experienced experts in High Performance in Sports with extensive experience.

This course allows training in simulated environments, which provide immersive learning programmed to train for real situations.

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



02 Objectives

The main objective of this program is to conduct theoretical and practical learning, so that the sports science professional can master in a practical and rigorous way the novelties in High Performance in Sports.



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



General Objectives

- ♦ Master and apply with certainty the most current training methods to improve sports performance
- ♦ To effectively master statistics and thus be able to make a correct use of the data obtained from the athlete, as well as to initiate research processes
- ♦ Acquire knowledge based on the most current scientific evidence with full applicability in the practical field
- ♦ To master all the most advanced methods in Applied Nutrition for High Performance Sports.
- ♦ Master the principles governing Exercise Physiology, as well as Biochemistry
- ♦ Master the principles governing Biomechanics applied directly 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





Specific Objectives

- ♦ Learn the physiological and biochemical bases of energy metabolism during physical exertion
- ♦ Learn the processes and methods of nutritional evaluation of the athlete, as well as his body composition
- ♦ Learn the different options to assess the athlete's energy expenditure
- ♦ Learn all the variables regarding nutrition in sports disciplines of very different characteristics
- ♦ Familiarize yourself with the latest scientific evidence on sports supplementation
- ♦ Handle the nutritional aspects that are associated with eating disorders and sports injuries



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

03

Course Management

Our teachers, made up of Progression in High Performance in Sports, are well known in the profession and are professionals with years of teaching experience who have come together to help you boost your career. To this end, they have developed this Postgraduate Progression with the latest developments in the field that will allow you to train and increase your skills in this sector.





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

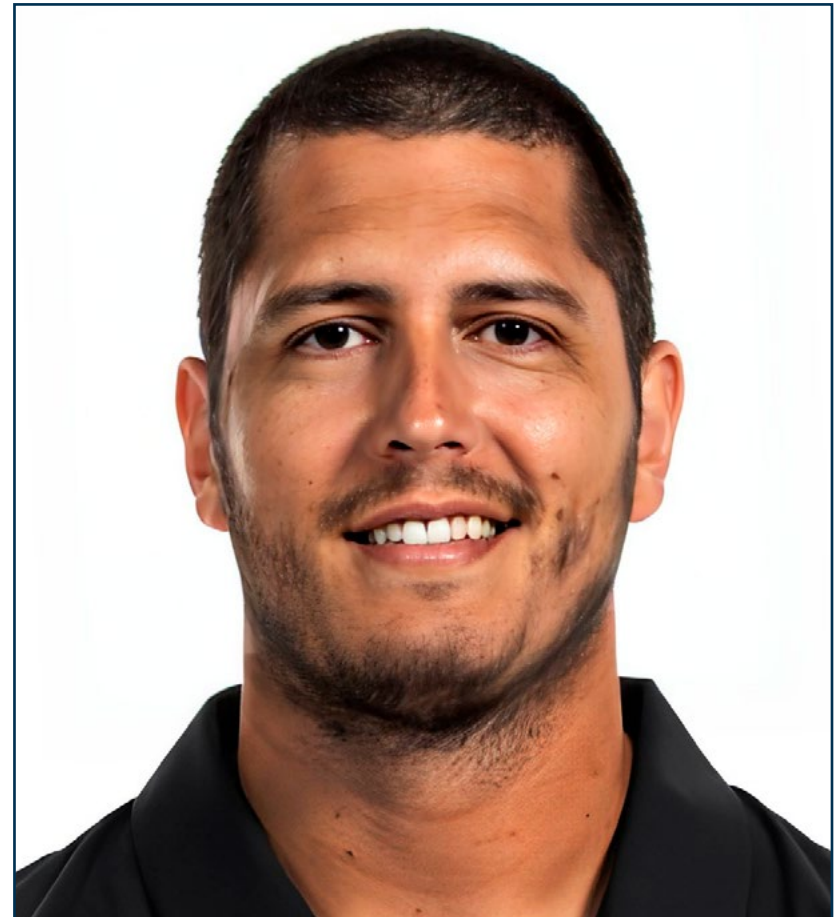
International Guest Director

Tyler Friedrich, Ph.D., is a leading personality 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, Tyler Friedrich has deployed his expertise in a wide range of sporting disciplines, from football 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 driver of innovation in his field.



Dr. Friedrich, Tyler

- Director of Sports Performance and Applied Sports Science at Stanford University
- Sports Performance Specialist
- Associate Director of Athletics and Applied Performance at Stanford University
- Director of Olympic Sport Performance at Stanford University
- Sports Performance Coach at Stanford University
- Ph.D. in Philosophy, Health and Human Performance from Concordia University Chicago
- Master 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



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
- Certification in Weight Management and Physical Performance Technologies
- Postgraduate course in Physical Activity in Populations with Pathologies
- Diploma in Advanced Studies (DEA) University of Castilla la Mancha
- PhD Candidate in ARD



Professors

Dña. González Cano, Henar

- ◆ Professor of Nutrition and Body Composition at the National School of Strength and Fitness and Physical Conditioning School (ENFAF).
- ◆ Nutritionist and Anthropometrist at GYM SPARTA
- ◆ Nutritionist and Anthropometrist at Promentium Center
- ◆ Degree in Human Nutrition and Dietetics. Valladolid
- ◆ Master in Nutrition in Physical Activity and Sport. San Antonio Murcia Catholic University



Our teaching team will provide you with all their knowledge so that you are up to date with the latest information on the subject".

04

Structure and Content

The structure of the contents has been designed by a team of professionals who recognise the implications that training has on daily practice, who are aware of the relevance of current quality training in the field of High Performance in Sports, and are committed to quality teaching using new educational technologies.



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

Module 1. Nutrition Applied to High Performance in Sports

- 1.1. Energy Metabolism of Physical Effort
 - 1.1.1. Matter and Energy: Introduction to Thermodynamics
 - 1.1.2. Physicochemical Characteristics of Macronutrients
 - 1.1.3. Digestion and Metabolism of Carbohydrates
 - 1.1.4. Digestion and Metabolism of Lipids
 - 1.1.5. Digestion and Metabolism of Proteins
 - 1.1.6. Phosphagen System
 - 1.1.7. Glycolytic System
 - 1.1.8. Oxidative System
 - 1.1.9. Metabolic Integration
 - 1.1.10. Classification of Physical Effort
- 1.2. Assessing Nutritional Status and Body Composition
 - 1.2.1. Retrospective and Prospective Methods
 - 1.2.2. ABCDE Model
 - 1.2.3. Clinical Evaluation
 - 1.2.4. Body composition
 - 1.2.5. Indirect Methods.
 - 1.2.6. Double Indirect Methods
 - 1.2.7. Dual X-ray Absorptiometry
 - 1.2.8. Vector Analysis of Electrical Bioimpedance
 - 1.2.9. Cineanthropometry
 - 1.2.10. Data Analysis in Kinanthropometry
- 1.3. Assessing Energy Expenditure
 - 1.3.1. Components of Total Daily Energy Expenditure
 - 1.3.2. Basal Metabolic Rate and Resting Energy Expenditure
 - 1.3.3. Thermal Effect of Food
 - 1.3.4. NEAT and Energy Expenditure Due to Physical Exertion
 - 1.3.5. Technologies for Quantifying Energy Expenditure
 - 1.3.6. Indirect Calorimetry
 - 1.3.7. Estimation of Energy Expenditure
 - 1.3.8. Ex-Post Calculations
 - 1.3.9. Practical Recommendations

- 1.4. Bodybuilding Nutrition and Body Recomposition
 - 1.4.1. Characteristics of Bodybuilding
 - 1.4.2. Nutrition for Bulking
 - 1.4.3. Nutrition for Preparation
 - 1.4.4. Post-Competition Nutrition
 - 1.4.5. Effective Supplements
 - 1.4.6. Body Recomposition
 - 1.4.7. Nutritional Strategies
 - 1.4.8. Macronutrient Distribution
 - 1.4.9. Diet Breaks, Refeeds and Intermittent Restrictions
 - 1.4.10. Principles and Dangers of Pharmacology
- 1.5. Nutrition in Strength-Based Sports
 - 1.5.1. Characteristics of Collective Sports
 - 1.5.2. Energy Requirements
 - 1.5.3. Protein Requirements
 - 1.5.4. Distribution of Carbohydrates and Fats
 - 1.5.5. Nutrition for Olympic Lifting
 - 1.5.6. Nutrition for Sprint Racing
 - 1.5.7. Nutrition for Powerlifting
 - 1.5.8. Nutrition in Jumping and Throwing Sports
 - 1.5.9. Nutrition in Combat-Based Sports
 - 1.5.10. Morphological Characteristics of the Athlete
- 1.6. Nutrition in Team Sports
 - 1.6.1. Characteristics of Collective Sports
 - 1.6.2. Energy Requirements
 - 1.6.3. Preseason Nutrition
 - 1.6.4. Competitive Nutrition
 - 1.6.5. Nutrition Before, During and After the Match
 - 1.6.6. Fluid Replenishment
 - 1.6.7. Recommendations for Lower Divisions
 - 1.6.8. Nutrition in Football, Basketball and Volleyball
 - 1.6.9. Nutrition in Rugby, Hockey and Baseball
 - 1.6.10. Morphological Characteristics of the Athlete

- 1.7. Nutrition in Endurance-Based Sports
 - 1.7.1. Characteristics of Endurance Sports
 - 1.7.2. Energy Requirements
 - 1.7.3. Glycogen Overcompensation
 - 1.7.4. Energy Replenishment During Competition
 - 1.7.5. Fluid Replenishment
 - 1.7.6. Beverages and Sports Confectionery
 - 1.7.7. Nutrition for Cycling
 - 1.7.8. Nutrition for Running and Marathon
 - 1.7.9. Nutrition for Triathlon
 - 1.7.10. Nutrition for Other Olympic Sports
- 1.8. Nutritional Ergogenic Aids
 - 1.8.1. Classification Systems
 - 1.8.2. Creatine
 - 1.8.3. Caffeine
 - 1.8.4. Nitrates
 - 1.8.5. β -alanin
 - 1.8.6. Bicarbonate and Sodium Phosphate
 - 1.8.7. Protein Supplements
 - 1.8.8. Modified Carbohydrates
 - 1.8.9. Herbal Extracts
 - 1.8.10. Contaminant Supplementation
- 1.9. Eating Disorders and Sports Injuries
 - 1.9.1. Anorexia
 - 1.9.2. Bulimia Nervosa
 - 1.9.3. Orthorexia and bigorexia
 - 1.9.4. Binge Eating and Purging Disorder
 - 1.9.5. Relative Energy Deficiency Syndrome
 - 1.9.6. Micronutrient Deficiency
 - 1.9.7. Nutrition Education and Prevention
 - 1.9.8. Sports Injuries
 - 1.9.9. Nutrition During Physical Rehabilitation

- 1.10. Advances and Research in Sports Nutrition
 - 1.10.1. Nutrigenetics.
 - 1.10.2. Nutrigenomics.
 - 1.10.3. Modulation of the Microbiota
 - 1.10.4. Probiotics and Prebiotics in Sport
 - 1.10.5. Emerging Products
 - 1.10.6. Systems Biology
 - 1.10.7. Non-Experimental Designs
 - 1.10.8. Experimental Designs
 - 1.10.9. Systematic Reviews and Meta-Analyses



05 Methodology

This training provides you with a different way of learning. Our methodology uses a cyclical learning approach: ***Re-learning***.

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



“

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

At TECH we use the Case Method

Our program offers you a revolutionary approach to developing your skills and knowledge. Our goal is to strengthen your skills in a changing, competitive, and highly demanding environment.

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



Our University is the first in the world to combine Harvard Business School case studies with a 100%-online learning system based on repetition.



A learning method that is different and innovative.

This Sports Science program at TECH Technological University is an intensive program that prepares you to face all the challenges in this field, both nationally and internationally. We are committed to promoting your personal and professional growth, the best way to strive for success, that is why at TECH you will use Harvard case studies, with which we have a strategic agreement that allows us to offer you material from the best university in the world.



We are the only online university that offers Harvard materials as teaching materials on its courses"

The case method is the most widely used learning system by the best faculties in the world. The case method was developed in 1912 so that law students would not only learn the law based on theoretical content. It consisted of presenting students with real-life, complex situations for them to make informed decisions and value judgments on how to resolve them. In 1924, Harvard adopted it as a standard teaching method.

In a given situation, what would you do? This is the question that you are presented with in the case method, an action-oriented learning method. Throughout the course, you will be presented with multiple real cases. You will have to combine all your knowledge, and research, argue, and defend your ideas and decisions.

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

Re-Learning Methodology

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

We enhance Harvard case studies with the best 100% online teaching method: Re-learning.

In 2019 we obtained the best learning results of all Spanish-language online universities in the world.

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

Our University is the only one in Spanish-speaking countries licensed to incorporate this successful method. In 2019 we managed to improve our students' overall satisfaction levels (teaching quality, quality of materials, course structure, objectives...) based on the best Spanish online university indicators.



In our program, learning is not a linear process, but rather a spiral (we learn, unlearn, forget, and re-learn). Therefore, we combine each of these elements concentrically.

With this methodology we have trained more than 650,000 university graduates with unprecedented success. In fields as diverse as biochemistry, genetics, surgery, international law, management skills, sports science, philosophy, law, engineering, journalism, history, markets, and financial instruments. All this in a highly demanding environment, where the students have a strong socio-economic profile and an average age of 43.5 years.

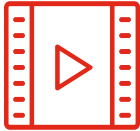
Re-learning will allow you to learn with less effort and better performance, involving you more in your training, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.

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

In this way, and in what is called neurocognitive context-dependent e-learning, the different elements in our program are connected to the context where the individual carries out their professional activity.



In this program you will have access to the best educational material, prepared with you in mind:



Study Material

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

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



Classes

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

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



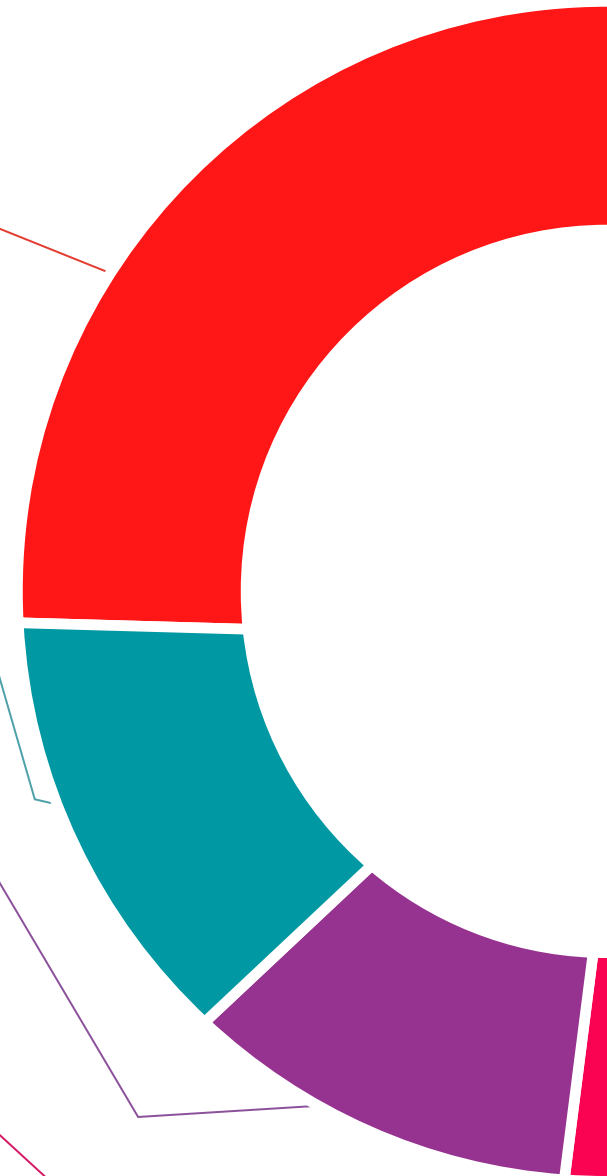
Practising Skills and Abilities

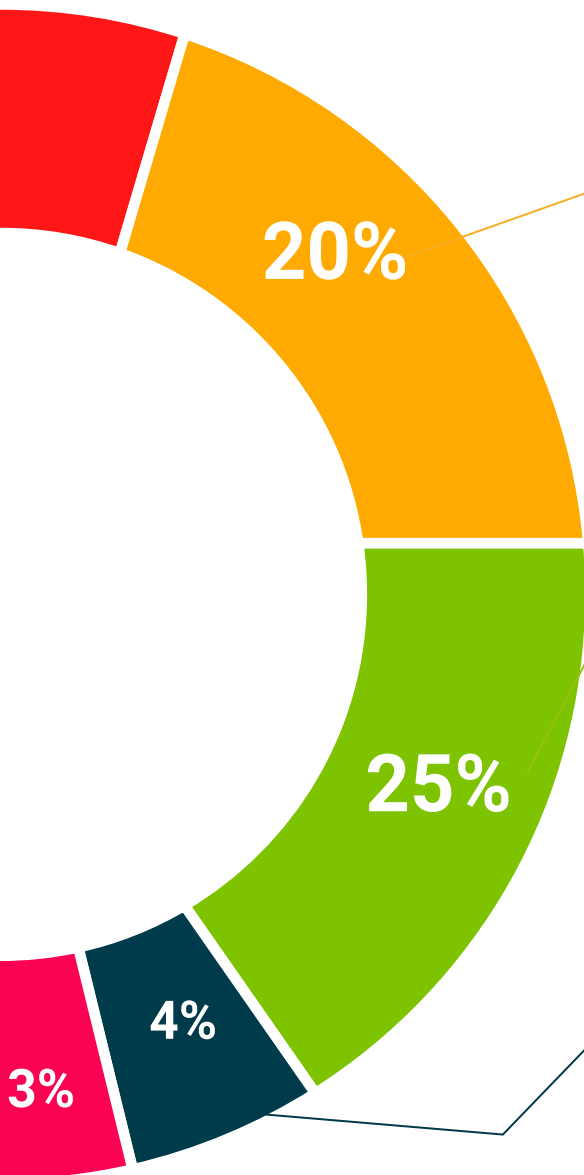
You will carry out activities to develop specific skills and abilities in each subject area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization we live in.



Additional Reading

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





Case Studies

You will complete a selection of the best case studies in the field used at Harvard. Cases that are presented, analyzed, and supervised by the best senior management specialists in Latin America.



Interactive Summaries

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

This unique multimedia content presentation training system was awarded by Microsoft as a "European Success Story".



Testing & Re-testing

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



06 Certificate

Through a different and stimulating learning experience, you will be able to acquire the necessary skills to take a big step in your training. An opportunity to progress, with the support and monitoring of a modern and specialized university, which will propel you to another professional level.



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Add to your CV a degree in Applied Nutrition Course for High Performance Sports in a highly competitive professional".

This course in **Nutrition Applied to High Performance Sports** contains the most complete and up-to-date scientific program on the market.

After the student has passed the assessments, they will receive their corresponding **Postgraduate Certificate** issued by **TECH - Technological University** via tracked delivery.

This degree contributes to the academic development of the professional and adds a high university curricular value to their training. It is 100% valid in all competitive examinations, labour exchanges and professional career evaluation committees.

Title: **Postgraduate Certificate in Nutrition Applied to High Performance in Sports**

ECTS: **6**

Official Number of Hours: **150 hours.**

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tech technological university

**Postgraduate
Certificate**
Nutrition Applied to High
Performance in Sports

Course Modality: Online
Duration: 2 months.
Certificate: TECH - Technological University
6 ECTS Credits
Teaching Hours: 150 hours.

Postgraduate Certificate Nutrition Applied to High Performance in Sports

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university

