



Professional Master's Degree

Sports Nutrition

» Modality: online

» Duration: 12 months

» Certificate: TECH Technological University

» Dedication: 16h/week

» Schedule: at your own pace

» Exams: online

Website: www.techtitute.com/in/pharmacy/professional-master-degree/master-sports-nutrition

Index

01		02			
Introduction		Objectives			
	p. 4		p. 8		
03		04		05	
Skills		Course Management		Structure and Content	
	p. 14		p. 18		p. 22
		06		07	
		Methodology		Certificate	
			p. 30		p. 38





tech 06 | Introduction

Professional and amateur athletes should pay close attention to their nutrition both before and after physical activity. To do this, they should drink isotonic drinks and supplement it with foods such as nutritional bars and products offered in pharmacies.

The pharmacist must have advanced knowledge in Sports Nutrition to be able to give correct advice to any customer interested in improving their health. By specializing in Sports Nutrition, the pharmacist's recommendations will be much more tailored to the needs of the athlete, especially those with higher physical demands.

The Professional Master's Degree in Sports Nutrition aims to be a tool to help pharmacists in relation to the comprehensive care of the user who practices some type of physical-sports activity, both for healthy purposes and in competition, and aims to study the relationship and importance of nutrition and physical-sports activity and provide current scientific knowledge that demonstrates the beneficial effects of exercise, as well as the mechanisms by which it enhances health.

As it is an online program, 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 **Professional Master's Degree in Sports Nutrition** contains the most complete and up-to-date scientific program on the market. The most important features include:

- The graphic, schematic and practical contents of the course are designed to provide all the essential information required for professional practice
- Exercises where the self-assessment process can be carried out to improve learning
- An algorithm-based interactive learning system, designed for decision making for patients with nutritional challenges
- 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



People who perform intense physical exercise on a regular basis need to eat a balanced diet rich in nutrients, so it is important to have professionals capable of guiding them in nutritional matters"

Introduction | 07 tech



This Professional Master's Degree is the best investment you can make when selecting a refresher program, for two reasons: in addition to update your knowledge in Sports Nutrition, you will obtain a qualification endorsed by: TECH Technological University"

It includes, in its teaching staff, professionals belonging to the pharmaceutical field, who bring to this program their work experience, as well as recognized specialists from reference societies and prestigious universities.

Its multimedia content, developed with the latest educational technology, will allow the pharmacist a situated and contextual learning, that is, a simulated environment that will provide an immersive education 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 course. For this purpose, the pharmacist will be assisted by an innovative interactive video system created by renowned and experienced experts in Sports Nutrition.

You will learn how to elaborate the most suitable diets for each type of athlete and recommend the products that best suit their physical needs.

This refresher program will generate a sense of confidence in the performance of your daily practice, which will help you grow personally and professionally.







tech 10 | Objectives

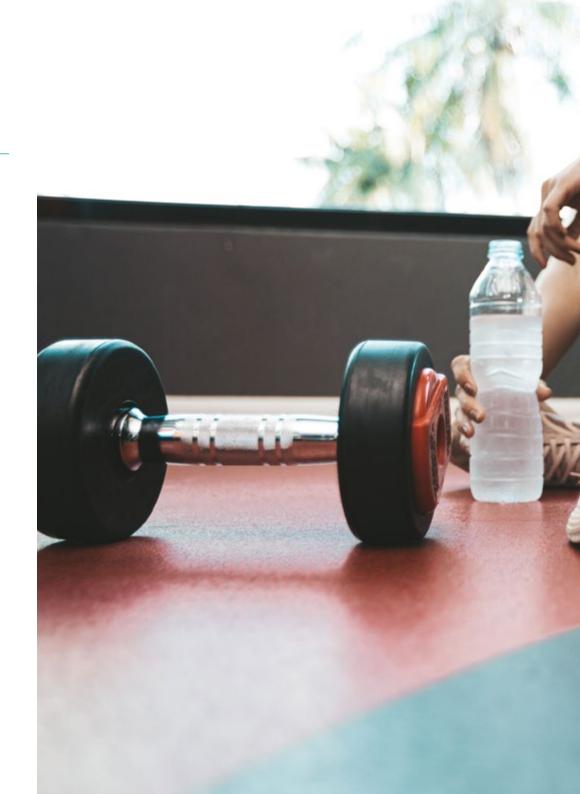


General Objectives

- Update the nutritionist's knowledge of new trends in human nutrition, both in health and in pathological situations through evidence-based medicine
- Promote work strategies based on the practical knowledge of the new trends in nutrition and its application to adult pathologies, where nutrition plays a fundamental role in treatment
- Encourage the acquisition of technical skills and abilities, through a powerful audiovisual system, and the possibility of development through online simulation workshops and/or specific education
- Encourage professional stimulation through continuing education and research
- Prepare the professional for research into patients with nutritional problems



A path to achieve education and professional growth that will propel you towards a greater level of competitiveness in the employment market"







Specific Objectives

Module 1. New Developments in Food

- Analyze the different methods for assessing nutritional status
- Interpret and integrate anthropometric, clinical, biochemical, hematological, immunological, and pharmacological data in the patient's nutritional assessment and dietary-nutritional treatment

Module 2. Current Trends in Nutrition

- Early detection and assessment of quantitative and qualitative deviations from the nutritional balance due to excess or deficiency
- Describe the composition and utilities of new foods

Module 3. Assessment of Nutritional Status and Diet. Practical Application

- Explain the different techniques and products of basic and advanced nutritional support related to the nutrition of the patient
- Explain the correct use of ergogenic aids

Module 4. Sports Nutrition

• Identify psychological disorders related to the practice of sport and nutrition

tech 12 | Objectives

Module 5. Muscle and Metabolic Physiology Associated with Exercise

- Gain an in-depth understanding of the structure of skeletal muscle
- Understand in depth the functioning of skeletal muscle
- Delve into the understanding of the most important changes that occur in athletes
- Delve into the mechanisms of energy production based on the type of exercise performed
- Explore the interaction between the different energy systems that make up the muscle energy metabolism

Module 6. Vegetarianism and Veganism

- Differentiate between the different types of vegetarian athletes
- Gain an in-depth understanding of the main mistakes made
- Treat the notable nutritional deficiencies of sportsmen and sportswomen
- Manage skills to provide the athlete with the best tools when combining foods

Module 7. Different Stages or Specific Population Groups

- Explain the specific physiological characteristics to be taken into account in the nutritional approach of different groups
- Gain a deep understanding of the external and internal factors that influence the nutritional approach to these groups





Module 8. Nutrition for Functional Recovery and Rehabilitation

- Approach the concept of integral nutrition as a key element in the process of readaptation and functional recovery
- Distinguish the different structures and properties of both macronutrients and micronutrients
- Prioritize the importance of both water intake and hydration in the recovery process
- Analyze the different types of phytochemicals and their essential role in improving the state of health and regeneration of the organism

Module 9. Food, Health and Disease Prevention: Current Issues and Recommendations for the General Population

- Analyze patient's eating habits, as well as their problems and motivation
- Update nutritional recommendations based on scientific evidence for their application in clinical practice
- Prepare for the design of nutritional education strategies and patient care

Module 10. Assessment of Nutritional Status and Calculation of Personalized Nutritional Plans, Recommendations and Monitoring

- Adequate assessment of the clinical case, interpretation of causes and risks
- Personalized calculation of nutritional plans taking into account all individual variables
- Draw up nutritional plans and models in order to provide comprehensive and practical recommendations





tech 16 | Skills



General Skills

- Apply new trends in Sport Nutrition with their patients
- Apply the new trends in nutrition depending on the adult's pathologies
- Investigate the nutritional problems of your patients









Specific Skills

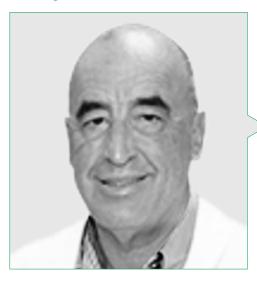
- Assess patients' nutritional status
- Identify patients' nutritional problems and apply the most appropriate treatments and diets in each case
- Know about food compositions, identify their uses and add them to the diets of patients who need them
- Seek help for patients with psychological disorders related to nutrition and the practice of sports
- Stay up to date on food safety and be aware of potential food hazards
- Identify the benefits of the Mediterranean diet
- Identify athletes' energy needs and provide them with appropriate diets





tech 20 | Course Management

Management



Dr. Pérez de Ayala, Enrique

- Head of the Sports Medicine Department at Policlinica Gipuzkoa
- Degree in Medicine from the Autonomous University of Barcelona
- Specialist in Physical Education and Sports Medicine
- Honorary Member of the AEMEF
- Former head of the Sports Medicine Department of the Real Sociedad de Fútbol



Course Management | 21 tech

Professors

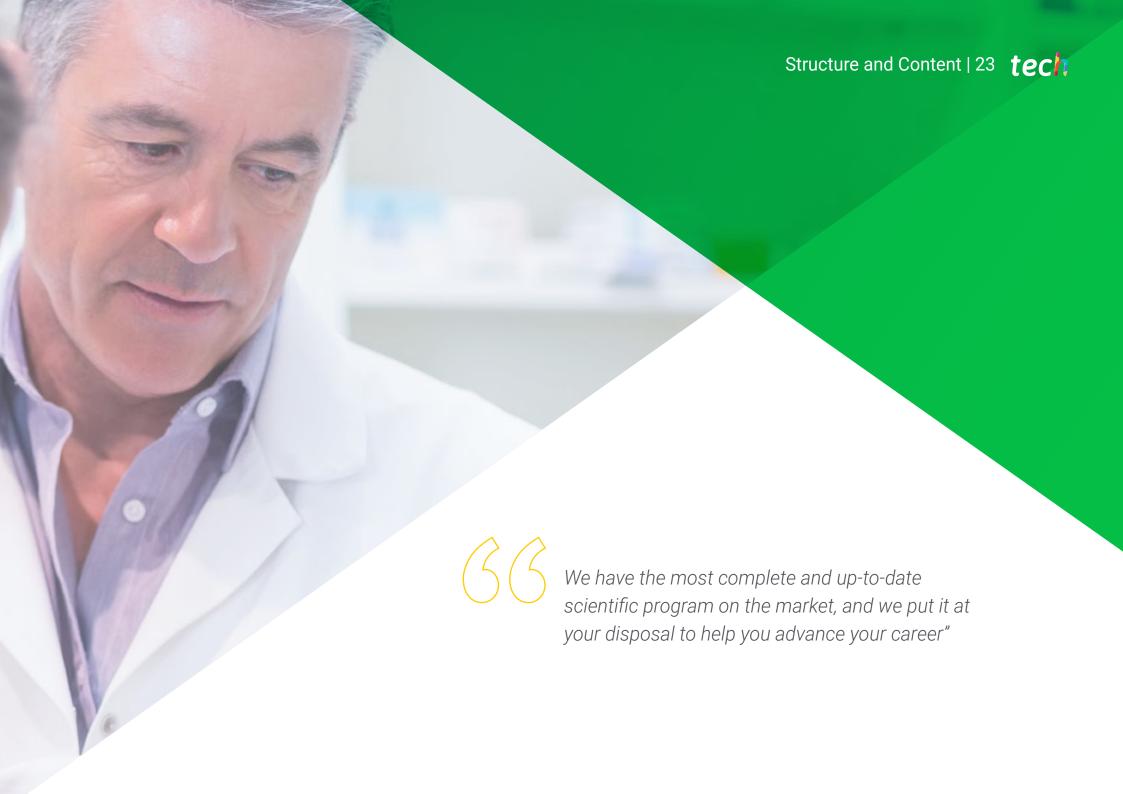
Ms. Aldalur Mancisidor, Ane

- Expert in Eating Disorders and Sports Nutrition
- Part of the dietetics office and the Basque Health Service
- Degree in Nursing
- Degree in Dietetics

Ms. Urbeltz, Uxue

- Dietician in Policlínica Gipuzkoa
- BPX Instructor, Patronato de Deportes de San Sebastian
- Diploma in Dietetics and Nutrition





tech 24 | Structure and Content

Module 1. New Developments in Food

- 1.1. Molecular Foundations of Nutrition
- 1.2. Update on Food Composition
- 1.3. Food Composition Tables and Nutritional Databases
- 1.4. Phytochemicals and Non-Nutritive Compounds
- 1.5. New Food
 - 1.5.1. Functional Nutrients and Bioactive Compounds
 - 1.5.2. Probiotics, Prebiotics, and Symbiotics
 - 1.5.3. Quality and Design
- 1.6. Organic food
- 1.7. Transgenic Foods
- 1.8. Water as a Nutrient
- 1.9. Food Safety
 - 1.9.1. Physical Hazards
 - 1.9.2. Chemical Hazards
 - 1.9.3. Microbiological Hazards
- 1.10. New Food Labelling and Consumer Information
- 1.11. Phytotherapy Applied to Nutritional Pathologies

Module 2. Current Trends in Nutrition

- 2.1. Nutrigenetics
- 2.2. Nutrigenomics
 - 2.2.1. Fundamentals
 - 2.2.2. Methods
- 2.3. Immunonutrition
 - 2.3.1. Nutrition-Immunity Interactions
 - 2.3.2. Antioxidants and Immune Function
- 2.4. Physiological Regulation of Feeding. Appetite and Satiety
- 2.5. Psychology and Nutrition
- 2.6. Nutrition and Sleep
- 2.7. Update on Nutritional Objectives and Recommended Intakes
- 2.8. New Evidence on the Mediterranean Diet



Module 3. Assessment of Nutritional Status and Diet. Practical Application

- 3.1. Bioenergy and Nutrition
 - 3.1.1. Energy Needs
 - 3.1.2. Methods of Assessing Energy Expenditure
- 3.2. Assessment of Nutritional Status
 - 3.2.1. Body Composition Analysis
 - 3.2.2. Clinical Diagnosis. Symptoms and Signs
 - 3.2.3. Biochemical, Hematological and Immunological Methods
- 3.3. Intake Assessment
 - 3.3.1. Analysis Methods for Food and Nutrient Intake
 - 3.3.2. Direct and Indirect Methods
- 3.4. Update on Nutritional Requirements and Recommended Intakes
- 3.5. Nutrition in a Healthy Adult. Objectives and Guidelines. The Mediterranean Diet
- 3.6. Nutrition in Menopause
- 3.7. Nutrition in the Elderly

Module 4. Sports Nutrition

- 4.1. Physiology of Exercise
- 4.2. Physiological Adaptation to Different Types of Exercise
- 4.3. Metabolic Adaptation to Exercise. Regulation and Control
- 4.4. Assessing Athletes' Energy Needs and Nutritional Status
- 4.5. Assessing Athletes' Physical Ability
- 4.6. Nutrition in the Different Phases of Sports Practice
 - 4.6.1. Pre-Competition
 - 4.6.2. During
 - 4.6.3. Post-Competition
- 4.7. Hydration
 - 4.7.1. Regulation and Needs
 - 4.7.2. Drink Types
- 4.8. Dietary Planning Adapted to Different Sports
- 4.9. Ergogenic Aids
 - 4.9.1. AMA Recommendations

- 4.10. Nutrition in Sports Injury Recovery
- 4.11. Psychological Disorders Related to Sport
 - 4.11.1. Eating Disorders: Bigorexia, Orthorexia, Anorexia
 - 4.11.2. Fatigue Caused by Overtraining
 - 4.11.3. The Female Athlete Triad
- 4.12. The Role of the Coach in Sports Performance

Module 5. Muscle and Metabolic Physiology Associated with Exercise

- 5.1. Cardiovascular Adaptations Related to Exercise
 - 5.1.1. Increased Systolic Volume
 - 5.1.2. Decreased Heart Rate
- 5.2. Ventilatory Adaptations Related to Exercise
 - 5.2.1. Changes in Ventilatory Volume
 - 5.2.2. Changes in Oxygen Consumption
- i.3. Hormonal Adaptations Related to Exercise
 - 5.3.1. Cortisol
 - 5.3.2. Testosterone
- 5.4. Muscle Structure and Types of Muscle Fibers
 - 5.4.1. Muscle Fiber
 - 5.4.2. Type I Muscle Fiber
 - 5.4.3. Type II Muscle Fibers
- 5.5. The Concept of Lactic Threshold
- 5.6. ATP and Phosphagen Metabolism
 - 5.6.1. Metabolic Pathways for ATP Resynthesis during Exercise
 - 5.6.2. Phosphagen Metabolism
- 5.7. Carbohydrate Metabolism
 - 5.7.1. Carbohydrate Mobilization during Exercise
 - 5.7.2. Types of Glycolysis
- 5.8. Lipid Metabolism
 - 5.8.1. Lipolysis
 - 5.8.2. Fat Oxidation during Exercise
 - 5.8.3. Ketone Bodies

tech 26 | Structure and Content

- 5.9. Protein Metabolism
 - 5.9.1. Ammonia Metabolism
 - 5.9.2. Amino Acid Oxidation
- 5.10. Mixed Bioenergetics of Muscle Fibers
 - 5.10.1. Energy Sources and their Relation to Exercise
 - 5.10.2. Factors Determining the Use of One or Another Energy Source during Exercise

Module 6. Vegetarianism and Veganism

- 6.1. Vegetarianism and Veganism in the History of Sport
 - 6.1.1. The Beginnings of Veganism in Sport
 - 6.1.2. Vegetarian Athletes Today
- 6.2. Different Types of Vegetarian Food
 - 6.2.1. The Vegan Athlete
 - 6.2.2. The Vegetarian Athlete
- 6.3. Common Errors in the Vegan Athlete
 - 6.3.1. Energy Balance
 - 6.3.2. Protein Consumption
- 6.4. Vitamin B12
 - 6.4.1. B12 Supplementation
 - 6.4.2. Bioavailability of Spirulina Algae
- 6.5. Protein Sources in the Vegan/Vegetarian Diet
 - 6.5.1. Protein Quality
 - 6.5.2. Environmental Sustainability
- 6.6. Other Key Nutrients in Vegans
 - 6.6.1. Conversion of ALA to EPA/DHA
 - 6.6.2. Fe, Ca, Vit-D and Zn
- 6.7. Biochemical Assessment/Nutritional Shortcomings
 - 6.7.1. Anaemia
 - 6.7.2. Sarcopenia
- 6.8. Vegan Diet vs. Omnivorous Diet
 - 6.8.1. Evolutionary Food
 - 6.8.2. Current Food

- 6.9. Ergogenic Aids
 - 6.9.1. Creatine
 - 6.9.2. Vegetable Protein
- 6.10. Factors that Decrease Nutrient Absorption
 - 6.10.1. High Fiber Intake
 - 6.10.2. Oxalates

Module 7. Different Stages or Specific Population Groups

- 7.1. Nutrition in the Female Athlete
 - 7.1.1. Limiting Factors
 - 7.1.2. Requirements
- 7.2. Menstrual Cycle
 - 7.2.1. Luteal Phase
 - 7.2.2. Follicular Phase
- 7.3. Triad
 - 7.3.1. Amenorrea
 - 7.3.2. Osteoporosis
- 7.4. Nutrition in the Pregnant Female Athlete
 - 7.4.1. Energy Requirements
 - 7.4.2. Micronutrients
- 7.5. The Effects of Physical Exercise on the Child Athlete
 - 7.5.1. Strength Training
 - 7.5.2. Endurance Training
- 7.6. Nutritional Education in the Child Athlete
 - 7.6.1. Sugar
 - 7.6.2. Eating Disorders
- 7.7. Nutritional Requirements in the Child Athlete
 - 7.7.1. Carbohydrates
 - 7.7.2. Proteins
- 7.8. Changes Associated with Aging
 - 7.8.1. % Body Fat
 - 7.8.2. Muscle Mass



Structure and Content | 27 tech

- 7.9. Main Problems in the Older Athlete
 - 7.9.1. Joints
 - 7.9.2. Cardiovascular Health
- 7.10. Interesting Supplements for Older Athletes
 - 7.10.1. Whey Protein
 - 7.10.2. Creatine

Module 8. Nutrition for Functional Recovery and Rehabilitation

- 8.1. Integral Nutrition as a Key Element in Injury Prevention and Recovery
- 8.2. Carbohydrates
- 8.3. Proteins
- 8.4. Fats
 - 8.4.1. Saturation
 - 8.4.2. Unsaturated
 - 8.4.2.1. Monounsaturated
 - 8.4.2.2. Polyunsaturated
- 8.5. Vitamins
 - 8.5.1. Water Soluble
 - 8.5.2. Fat Soluble
- 8.6. Minerals
 - 8.6.9. Macrominerals
 - 8.6.2. Microminerals
- 8.7. Fibre
- 8.8. Water
- 8.9. Phytochemicals
 - 8.9.1. Phenols
 - 8.9.2. Tioles
 - 8.9.3. Terpenes
- 8.10. Food Supplements for Prevention and Functional Recovery

tech 28 | Structure and Content

Module 9. Food, Health and Disease Prevention: Current Issues and Recommendations for the General Population

- 9.1. Feeding Habits in the Current Population and Health Risks
- 9.2. Mediterranean and Sustainable Diet
 - 9.2.1. Recommended Dietary Pattern
- 9.3. Comparison of Dietary Patterns or "Diets"
- 9.4. Nutrition in Vegetarians
- 9.5. Childhood and Adolescence
 - 9.5.1. Nutrition, Growth and Development
- 9.6. Adults
 - 9.6.1. Nutrition for the Improvement of Quality of Life
 - 9.6.2. Prevention
 - 9.6.3. Treatment of Disease
- 9.7. Pregnancy and Lactation Recommendations
- 9.8. Recommendations in Menopause
- 9.9. Advanced Age
 - 9.9.1. Nutrition in Aging
 - 9.9.2. Changes in Body Composition
 - 9.9.3. Abnormalities
 - 9.9.4. Malnutrition
- 9.10. Nutrition in Athletes

Module 10. Assessment of Nutritional Status and Calculation of Personalized Nutritional Plans, Recommendations and Monitoring

- 10.1. Medical History and Background
 - 10.1.1. Individual Variables Affecting Nutritional Plan Response
- 10.2. Anthropometry and Body Composition
- 10.3. Assessment of Eating Habits
 - 10.3.1. Nutritional Assessment of Food Consumption





Structure and Content | 29 tech

- 10.4. Interdisciplinary Team and Therapeutic Circuits
- 10.5. Calculation of Energy Intake
- 10.6. Calculation of Recommended Macro- and Micronutrient Intakes
- 10.7. Quantity and Frequency of Food Consumption Recommendations
 - 10.7.1. Dietary Patterns
 - 10.7.2. Planning
 - 10.7.3. Distribution of Daily Feedings
- 10.8. Diet Planning Models
 - 10.8.1. Weekly Menus
 - 10.8.2. Daily Intake
 - 10.8.3. Methodology by Food Exchanges
- 10.9. Hospital Nutrition
 - 10.9.1. Dietary Models
 - 10.9.2. Decision Algorithms
- 10.10. Educational
 - 10.10.1. Psychological Aspects
 - 10.10.2. Maintenance of Feeding Habits
 - 10.10.3. Discharge Recommendations



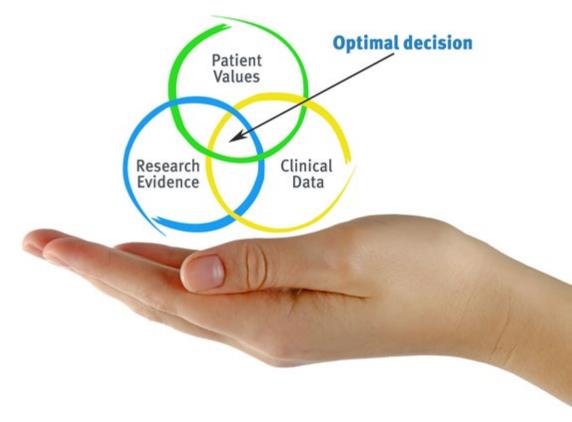


tech 32 | Methodology

At TECH we use the Case Method

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

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



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



Did you know that this method was developed in 1912, at Harvard, for law students? The case method consisted of presenting students with real-life, complex situations for them to make decisions and justify their decisions on how to solve them. In 1924, Harvard adopted it as a standard teaching method"

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

- 1. Pharmacists who follow this method not only grasp concepts, but also develop their mental capacity, by evaluating real situations and applying their 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.





Relearning Methodology

At TECH we enhance the case method with the best 100% online teaching methodology available: Relearning.

Our University is the first in the world to combine the study of clinical cases with a 100% online learning system based on repetition, combining a minimum of 8 different elements in each lesson, which represent a real revolution with respect to simply studying and analyzing cases.

Pharmacists will learn through real cases and by solving complex situations in simulated learning environments. These simulations are developed using state-of-the-art software to facilitate immersive learning.



Methodology | 35 tech

At the forefront of world teaching, the Relearning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best online university (Columbia University).

With this methodology, more than 115,000 pharmacists have been trained with unprecedented success in all clinical specialties, regardless of the surgical load. This pedagogical methodology is developed in a highly demanding environment, with a university student body with a high socioeconomic profile and an average age of 43.5 years.

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

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

The overall score obtained by TECH's learning system is 8.01, according to the highest international standards.

tech 36 | Methodology

This program offers the best educational material, prepared with professionals in mind:



Study Material

All teaching material is created specifically for the course by specialist pharmacists who will be teaching the course, so that the didactic development is highly specific and accurate.

These contents are then applied to the audiovisual format, to create the TECH online working method. All this, with the latest techniques that offer high quality pieces in each and every one of the materials that are made available to the student.



Video Techniques and Procedures

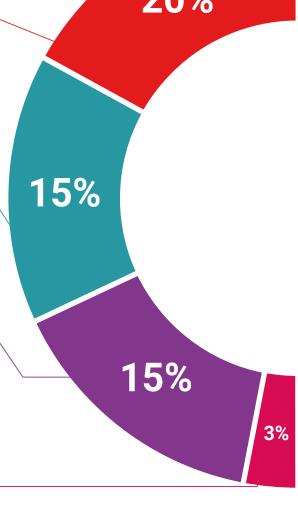
TECH introduces students to the latest techniques, to the latest educational advances, to the forefront of current pharmaceutical care procedures. All of this, first hand, and explained and detailed with precision to contribute to assimilation and a better understanding. And best of all, you can watch them as many times as you want.



Interactive Summaries

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

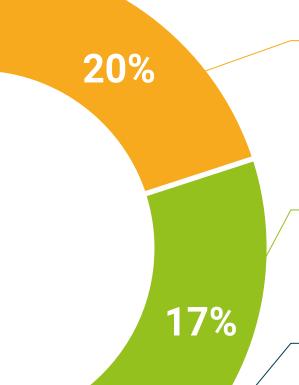
This unique multimedia content presentation training system was awarded by Microsoft as a "European Success Story".





Additional Reading

Recent articles, consensus documents and international guidelines, among others. In TECH's virtual library, students will have access to everything they need to complete their course.



7%

Expert-Led Case Studies and Case Analysis

Effective learning ought to be contextual. Therefore, we will present you with real case developments in which the expert will guide you through focusing on and solving the different situations: a clear and direct way to achieve the highest degree of understanding.



Testing & Retesting

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



Classes

There is scientific evidence on the usefulness of learning by observing experts.

The system known as Learning from an Expert strengthens knowledge and memory, and generates confidence in future difficult decisions.



Quick Action Guides

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







tech 40 | Certificate

This Professional Master's Degree in Sports Nutrition contains the most complete and up-to-date scientific program on the market.

After the student has passed the assessments, they will receive their corresponding **Professional Master's Degree** diploma issued by **TECH Technological University** via tracked delivery*.

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

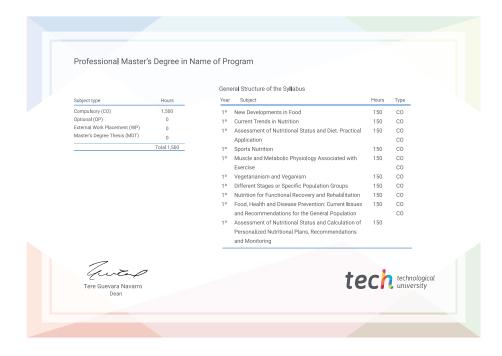


Title: Professional Master's Degree in Sports Nutrition

Official No of Hours: 1,500 h.

Endorsed by the NBA





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

technological university **Professional Master's**

Degree Sports Nutrition

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

