

Advanced Master's Degree Comprehensive Sports Nutrition

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tech technological
university



Advanced Master's Degree Comprehensive Sports Nutrition

- » Modality: online
- » Duration: 2 years
- » Certificate: TECH Technological University
- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online

Website: www.techtitute.com/us/sports-science/advanced-master-degree/advanced-master-degree-comprehensive-sports-nutrition

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01

Introduction

The energy and nutritional needs of athletes are different from those of other people, due, to a great extent, to the excessive effort they make during sports practice. Knowing the most suitable diets for each professional, according to the exercise they practice, is a primary task for physical and nutritional advisors, so in this program we offer you the most complete information of the moment on the subject so you can achieve professional success.





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Food and sport must go hand in hand, as it is essential that athletes follow a proper diet to help them improve their performance"

People who perform prolonged efforts or high intensity exercises need to have a healthy lifestyle and a balanced diet that allows them to acquire the necessary nutritional components for their body. In this way, you will achieve a better performance during your sports practice.

Sports Science professionals who develop their activity in the field of advising athletes should not only have extensive knowledge in the field of exercise program design, but also in the field of nutrition, since it is the combination of both that will allow to obtain better results in the athlete. And, therefore, with this Advanced Master's Degree we want to offer you the most complete training in the field, with which you will obtain a superior specialization that will allow you to develop not only with elite professionals, but also with the multitude of amateur athletes who have emerged in recent years, and who demand specialists in this sector to help them improve their physical conditions.

This Program offers the possibility to deepen and update knowledge in Sports Nutrition, with the use of the latest educational technology. It offers a global vision of sports nutrition while focusing on the most important and innovative aspects: invisible training or adequate diet for athletes, and nutrition before, during, and after exercise.

The program includes information related to professionals with different personal situations and different sports activities, specifying in each case the best dietary recommendations, so that you have a complete knowledge that allows you to adapt to each user during the development of your daily practice.

In this sense, we will not only take you through the theoretical knowledge we offer, but we will show you another way of studying and learning, more organic, simpler and more efficient. We will work to keep you motivated and to develop your passion for learning, helping you to think and develop critical thinking skills. And we will push you to think and develop critical thinking.

And all this with the latest technologies of the moment, which will allow you to update in a comfortable and totally remote way, so that you are the only one who decides where and when to study, with total ease of organization and management of your time. This way, you will be able to easily combine your study time with the rest of your daily obligations.

This **Advanced Master's Degree in Comprehensive Sports Nutrition** contains the most comprehensive and up-to-date academic course on the university scene. The most important features include:

- ◆ The latest technology in online teaching software
- ◆ A highly visual teaching system, supported by graphic and schematic contents that are easy to assimilate and understand
- ◆ Practical cases presented by practising experts
- ◆ State-of-the-art interactive video systems
- ◆ Teaching supported by remote training
- ◆ Continuous updating and retraining systems
- ◆ Autonomous learning: full compatibility with other occupations
- ◆ Practical exercises for self-evaluation and learning verification
- ◆ Support groups and educational synergies: questions to the expert, debate and knowledge forums
- ◆ Communication with the teacher 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



A high level academic training program, supported by advanced technological development and the teaching experience of the best professionals"

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A training program created for professionals who aspire for excellence, and that will enable you to acquire new skills and strategies easily and effectively”

Our teaching staff is made up of working professionals. In this way, we ensure that we provide you with the up-to-date training we are aiming for. A multidisciplinary team of doctors with training and experience in different environments, who will develop the theoretical knowledge in an efficient way, but above all, they will bring their practical knowledge from their own experience to the course.

This command of the subject is complemented by the effectiveness of the methodological design of this Advanced Master’s Degree. Developed by a multidisciplinary team of elearning experts, it integrates the latest advances in educational technology. In this way, you will be able to study with a range of easy-to-use and versatile multimedia tools that will give you the necessary skills you need for your training.

The design of this program is based on Problem-Based Learning, an approach that conceives learning as a highly practical process. To achieve this remotely, we will use telepractice learning. With the help of an innovative interactive video system and Learning from an Expert, you will be able to acquire the knowledge as if you were actually dealing with the scenario you are learning about. A concept that will allow you to integrate and fix learning in a more realistic and permanent way.

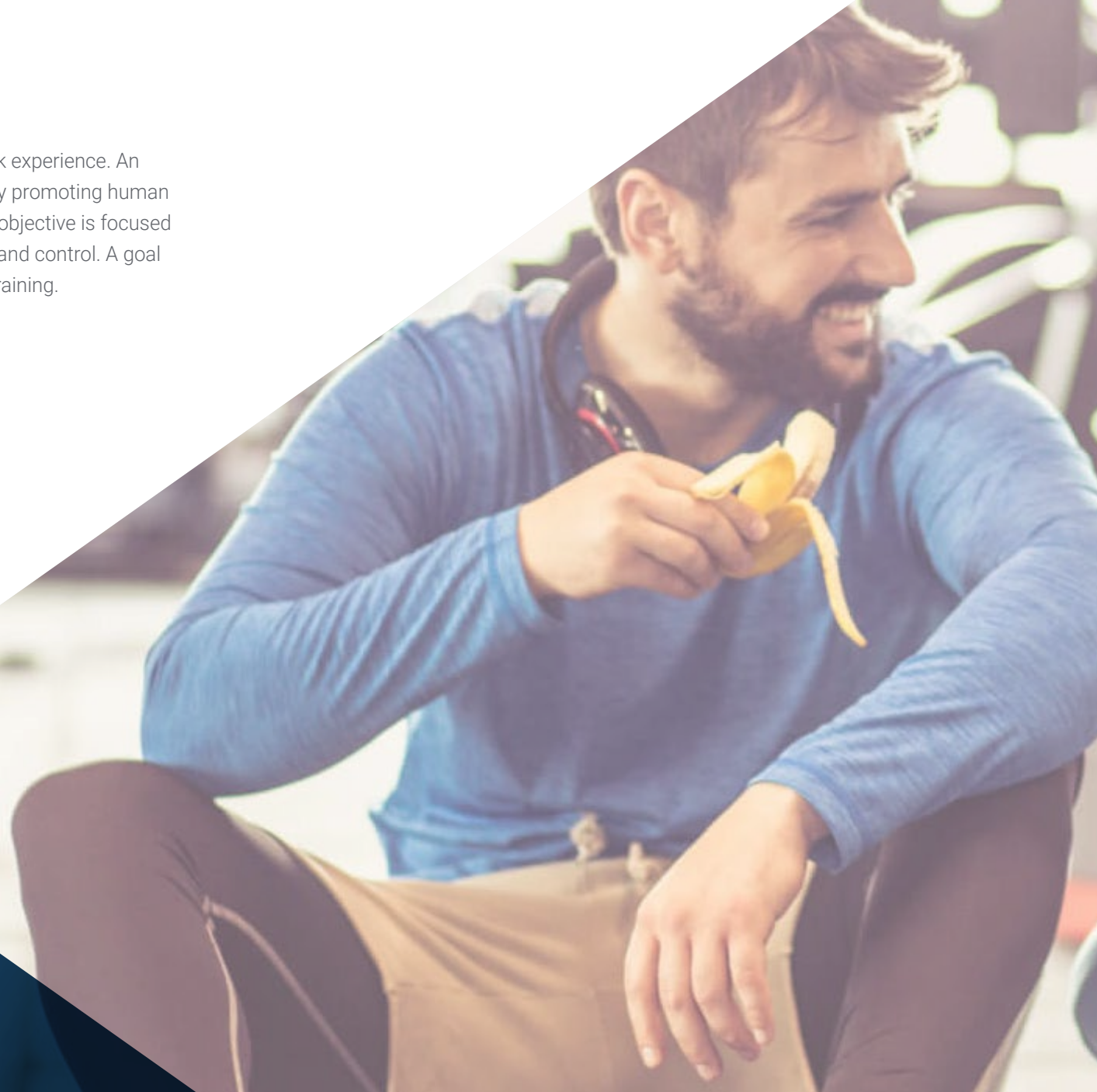
We have the best methodology, the most updated syllabus and a multitude of practical cases that will help you to train you for success.

Identifying the nutritional needs of athletes is essential to establish balanced diets adapted to each professional.



02 Objectives

Our objective is to prepare highly qualified professionals for work experience. An objective that is complemented, moreover, in a global manner, by promoting human development that lays the foundations for a better society. This objective is focused on helping professionals reach a much higher level of expertise and control. A goal that you can take for granted, with high intensity and precision training.





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If your goal is to acquire a qualification that will enable you to compete among the best, look no further. At TECH we have everything you need”



General objectives

- ◆ Update the professional's knowledge of new trends in human nutrition
- ◆ Promote work strategies based on the practical knowledge of the new trends in nutrition and their application to athletes
- ◆ 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 training
- ◆ Encourage professional stimulation through continuous education and research
- ◆ Train the professional for research in patients with nutritional problems
- ◆ Handle advanced knowledge on nutritional planning in professional and non-professional athletes for the healthy performance of physical exercise
- ◆ Manage advanced knowledge on nutritional planning in professional athletes of various fields in order to achieve maximum sports performance
- ◆ Learn advanced knowledge about nutritional planning in professional athletes from team sports to achieve the highest sports performance
- ◆ Manage and consolidate the initiative and entrepreneurial spirit needed to launch projects related to nutrition in physical activity and sport
- ◆ Know how to incorporate the different scientific advances into one's own professional field





- ◆ Ability to work in a multidisciplinary environment
- ◆ Advanced understanding of the context in which their area of expertise is being developed
- ◆ Manage advanced skills in the detection of possible signs of nutritional changes associated with sports activities
- ◆ Manage the necessary skills through the teaching-learning process that will allow them to continue training and learning in the field of sports nutrition, both through the contacts established with professors and professionals in the program, as well as in an autonomous way
- ◆ Specialize in the structure of muscle tissue and its role in sports
- ◆ Know the energetic and nutritional needs of athletes in different pathophysiological situations
- ◆ Specialize in the energetic and nutritional needs of athletes in the different situations specific to age and gender
- ◆ Become a specialist in the dietary strategies for the prevention and treatment of injured athletes
- ◆ Specialize in the energetic and nutritional needs of child athletes
- ◆ Specialize in the energetic and nutritional needs of Paralympic athletes



Specific objectives

- ♦ 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
- ♦ Early detection and evaluation of quantitative and qualitative deviations from the nutritional balance due to excess or deficiency
- ♦ Describe the composition and utilities of new foods
- ♦ Explain the different techniques and products of basic and advanced nutritional support related to patient nutrition
- ♦ Explain the correct use of ergogenic aids
- ♦ Explain the current anti-doping regulations
- ♦ Identify psychological disorders related to the practice of sport and nutrition
- ♦ Gain an in-depth understanding of the structure of skeletal muscle
- ♦ Understand in depth the functioning of skeletal muscle
- ♦ Deepen understanding of the most important changes that occur in athletes
- ♦ Delve into the mechanisms of energy production according to the type of exercise undertaken
- ♦ Further understanding of the interaction between the different energy systems that make up the muscle energy metabolism
- ♦ Interpretation of biochemical factors to detect nutritional deficits or overtraining states
- ♦ Interpretation of the different types of body composition in order to optimize the appropriate weight and fat percentage for the sport being practised
- ♦ Monitoring of the athlete throughout the season
- ♦ Planning of seasonal schedules according to individual requirements
- ♦ Deepen understanding of the most important characteristics of the principal watersports
- ♦ Understand the demands and requirements associated with sports activities in aquatic environments
- ♦ Distinguish between the nutritional needs of different watersports
- ♦ Differentiate between the main yield limiting factors caused by climate
- ♦ Develop an acclimatization plan appropriate to the situation given
- ♦ Deepen understanding of the physiological changes caused by high altitude
- ♦ Establish the correct individual hydration guidelines according to the climate
- ♦ Differentiate between the different types of vegetarian athletes
- ♦ Gain a 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 most effective tools to combine foods
- ♦ Establish the physiological and biochemical mechanism of diabetes both at rest and during exercise

- ◆ Deepen the understanding of how the different insulins or medications used by diabetics work
 - ◆ Assess the nutritional requirements for people with diabetes both in their daily life and in exercise, to improve their health
 - ◆ Deepen the knowledge necessary to plan nutrition for athletes of different disciplines with diabetes, in order to improve their health and performance
 - ◆ Establish the current state of evidence on Performance Enhancing Drugs in diabetics
 - ◆ Study in depth the differences between the different categories of athletes and their physiological-metabolic limitations
 - ◆ Determine the nutritional requirements of the different athletes in order to establish a specific nutritional plan
 - ◆ Further the knowledge necessary to establish interactions between the ingestion of pharmaceuticals in these athletes and nutrients, to avoid nutrient deficits
 - ◆ Understand the body composition of athletes in different sport categories
 - ◆ Apply current scientific evidence on nutritional performance enhancing drugs
 - ◆ Establish the different characteristics and needs within sports by weight category
 - ◆ Understand in depth the different nutritional strategies for preparing the athlete for competition
 - ◆ Optimize the improvement of body composition through nutritional approach
 - ◆ Explain the specific physiological characteristics to be taken into account in the nutritional approach of different groups
- ◆ Understand in depth the external and internal factors that influence the nutritional approach to these groups
 - ◆ Determine the different phases of the injury
 - ◆ Help in the prevention of injuries
 - ◆ Improve the prognosis of the injury
 - ◆ Develop a nutritional strategy to meet the changing nutritional requirements during the injury period



Get superior training in nutrition and apply the most appropriate diets for each athlete"

03 Skills

Once all the contents have been studied and the objectives of the Advanced Master's Degree in Comprehensive Sports Nutrition have been achieved, the professional will have superior competency and expertise in this area. A comprehensive approach, in a top-level training , that makes all the difference.



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Achieving excellence in any profession requires effort and perseverance. But, above all, the support of professionals, who will give you the boost you need, with the necessary means and assistance. At TECH, we offer you everything you need”



General Skills

- ◆ Apply new trends in nutrition, physical activity, and sport with their patients
- ◆ Apply the new trends in nutrition depending on the adult's characteristics
- ◆ Investigate the nutritional problems of your patients

“

Our objective is very simple: to offer you quality training, with the best teaching system available today, so that you can achieve excellence in your profession”





Specific Skills

- ◆ Assess the athlete's nutritional status
- ◆ Identify nutritional problems of users and apply the most accurate treatments and diets in each case
- ◆ Know food compositions, identify their utilities and add them to diets
- ◆ Know the anti-doping rules
- ◆ Seek help for patients with psychological disorders related to nutrition and the practice of sports
- ◆ Be 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
- ◆ Manage and consolidate the initiative and entrepreneurial spirit needed to launch projects related to nutrition in physical activity and sport
- ◆ Manage advanced skills in the detection of possible signs of nutritional changes associated with sports activities
- ◆ Specialize in the structure of muscle tissue and its role in sports
- ◆ Know the energetic and nutritional needs of athletes in different pathophysiological situations
- ◆ Specialize in the energetic and nutritional needs of child athletes
- ◆ Specialize in the energetic and nutritional needs of Paralympic athletes

04

Course Management

For our master's degree to be of the highest quality, we are proud to work with a teaching staff of the highest level, chosen for their proven track record in the field of education. Professionals from different areas and fields of expertise that make up a complete, multidisciplinary team. A unique opportunity to learn from the best.





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Our teachers will put their experience and teaching skills at your disposal to offer you a stimulating and creative training process”

Management



Dr. Marhuenda Hernández, Javier

- ♦ Full Member of the Spanish Academy of Human Nutrition and Dietetics. Professor and researcher at UCAM
- ♦ Ph.D. in Nutrition
- ♦ Master's Degree in Clinical Nutrition
- ♦ Graduate in Nutrition



Dr. Pérez de Ayala, Enrique

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

Professors

Ms. Aldalur Mancisidor, Ane

- ◆ Part of the dietetics office and the Basque Health Service
- ◆ Degree in Nursing Degree in Nursing
- ◆ Advanced Degree in Dietetics
- ◆ Expert in TCA and Sports Nutrition

Ms. Ramírez, Marta

- ◆ Graduate in Human Nutrition and Dietetics
- ◆ Professional Master's Degree in Nutrition in Physical Activity and Sport
- ◆ Anthropometrist ISAK level 1
- ◆ Extensive professional experience, both in the Clinical and Sports field, where she works with athletes in Triathlon, Athletics, Bodybuilding, CrossFit, Powerlifting, among others, specializing in strength sports
- ◆ Experience as a instructor and speaker giving seminars, courses, workshops and conferences on Sports Nutrition for Dietitians-Nutritionists, Students of Health Sciences and the general population, in addition to a continual training in nutrition and sport in international congresses, courses and conferences

Ms. Montoya Castaño, Johana

- ◆ Nutritionist Dietician from the University of Antioquia
- ◆ Master's Degree in Nutrition in Physical Activity and Sport from UCAM
- ◆ Sports Nutrition from the University of Barcelona
- ◆ Member of the DBSS Network, G-SE and Research and Associates of the Exercise and Sport Nutrition Laboratory of the Health and Kinesiology, Texas A&M University

Mr. Arcusa, Raúl

- ◆ Graduate in Human Nutrition and Dietetics
- ◆ Professional Master's Degree in Nutrition in Physical Activity and Sport
- ◆ Anthropometrist ISAK level 1
- ◆ Currently a Doctoral student in the Department of Pharmacy of the UCAM, researching Nutrition and Oxidative Stress, in addition to his work as a Nutritionist in the Youth Team of C.D. Castellón
- ◆ Possesses experience in different soccer teams in the Valencian community, as well as extensive experience in face to face clinical consultation



Leading professionals in the subject have joined forces to offer you the most comprehensive knowledge in this field, so that you can progress with total guarantees of success"

05

Structure and Content

The contents of this Advanced Master's Degree have been developed by the different experts on this course, with a clear purpose: to ensure that our students acquire each and every one of the necessary skills to become true experts in this field. The content of this Advanced Master's Degree enables you to learn all aspects of the different disciplines involved in this field. A complete and well-structured program that will take you to the highest standards of quality and success.



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We offer you the most advanced knowledge of the moment in this field so that you can acquire a higher level of training that will allow you to compete with the best”

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 Synbiotics
 - 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. 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 Requirements
 - 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. Methods for Analyzing 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 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 Competition
 - 4.6.3. Post-Competition
- 4.7. Hydration
 - 4.7.1. Regulation and Needs
 - 4.7.2. Types of Beverages
- 4.8. Dietary Planning Adapted to Different Sports
- 4.9. Ergogenic Aids and Current Anti-Doping Regulations
 - 4.9.1. AMA and AEPSAD Recommendations
- 4.10. Nutrition in Sports Injury Recovery

- 4.11. Psychological Disorders Related to Practising 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 the Ventilatory Volume
 - 5.2.2. Changes in Oxygen Consumption
- 5.3. 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

- 5.9. Protein Metabolism
 - 5.9.1. Ammonium 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. The Evaluation of the Athlete at Different Moments of the Season

- 6.1. Biochemical Evaluation
 - 6.1.1. Blood count
 - 6.1.2. Overtraining Markers
- 6.2. Anthropometric Evaluation
 - 6.2.1. Body Composition
 - 6.2.2. ISAK Profile
- 6.3. Preseason
 - 6.3.1. High Workload
 - 6.3.2. Assuring Caloric and Protein Intake
- 6.4. Competitive Season
 - 6.4.1. Sports Performance
 - 6.4.2. Recovery between Games
- 6.5. Transition Period
 - 6.5.1. Vacation Period
 - 6.5.2. Changes in Body Composition
- 6.6. Travel
 - 6.6.1. Tournaments during the Season
 - 6.6.2. Off-season Tournaments (World Cups, European Cups and The Olympic Games)
- 6.7. Athlete Monitoring
 - 6.7.1. Basal Athlete Status
 - 6.7.2. Evolution during the Season
- 6.8. Sweat Rate Calculation
 - 6.8.1. Hydric losses
 - 6.8.2. Calculation Protocol

- 6.9. Multidisciplinary Work
 - 6.9.1. The Role of the Nutritionist in the Athlete's Environment
 - 6.9.2. Communication with the Rest of the Areas
- 6.10. Doping
 - 6.10.1. WADA List
 - 6.10.2. Anti-doping Tests

Module 7. Watersports

- 7.1. History of Watersports
 - 7.1.1. Olympics and Major Tournaments
 - 7.1.2. Watersports Today
- 7.2. Performance Limitations
 - 7.2.1. Aquatic Sports in the Water (Swimming, Water polo.)
 - 7.2.2. Aquatic Sports on the Water (Surfing, Sailing, Canoeing.)
- 7.3. The Basic Characteristics of Water Sports
 - 7.3.1. Water Sports in the Water (Swimming, Water Polo...)
 - 7.3.2. Water Sports on the Water (Surfing, Sailing, Canoeing...)
- 7.4. Aquatic Sports Physiology
 - 7.4.1. Energy Metabolism
 - 7.4.2. Athlete Biotype
- 7.5. Training
 - 7.5.1. Strength
 - 7.5.2. Resistance
- 7.6. Body Composition
 - 7.6.1. Swimming
 - 7.6.2. Water polo
- 7.7. Pre-competition
 - 7.7.1. 3 Hours Before
 - 7.7.2. 1 Hour Before
- 7.8. Per Competition
 - 7.8.1. Carbohydrates
 - 7.8.2. Hydration

- 7.9. After the Competition
 - 7.9.1. Hydration
 - 7.9.2. Protein
- 7.10. Ergogenic Aids
 - 7.10.1. Creatine
 - 7.10.2. Caffeine

Module 8. Adverse Conditions

- 8.1. The History of Sport in Extreme Conditions
 - 8.1.1. Winter Competitions throughout History
 - 8.1.2. Competitions in Hot Environments Today
- 8.2. Performance Limitations in Hot Climates
 - 8.2.1. Dehydration
 - 8.2.2. Fatigue
- 8.3. Basic Characteristics in Hot Climates
 - 8.3.1. High Temperature and Humidity
 - 8.3.2. Acclimatization
- 8.4. Nutrition and Hydration in Hot Climates
 - 8.4.1. Hydration and Electrolytes
 - 8.4.2. Carbohydrates
- 8.5. Performance Limitations in Cold Climates
 - 8.5.1. Fatigue
 - 8.5.2. Bulky Clothing
- 8.6. Basic Characteristics in Cold Climates
 - 8.6.1. Extreme Cold
 - 8.6.2. Reduced V_Omax
- 8.7. Nutrition and Hydration in Cold Climates
 - 8.7.1. Hydration
 - 8.7.2. Carbohydrates

Module 9. Vegetarianism and Veganism

- 9.1. Vegetarianism and Veganism in the History of Sport
 - 9.1.1. The Beginnings of Veganism in Sport
 - 9.1.2. Vegetarian Athletes Today
- 9.2. Different Types of Vegan Food
 - 9.2.1. The Vegan Athlete
 - 9.2.2. The Vegetarian Athlete
- 9.3. Common Errors in the Vegan Athlete
 - 9.3.1. Energy Balance
 - 9.3.2. Protein Consumption
- 9.4. Vitamin B12
 - 9.4.1. B12 Supplementation
 - 9.4.2. Bioavailability of Spirulina Algae
- 9.5. Protein Sources in the Vegan/Vegetarian Diet
 - 9.5.1. Protein Quality
 - 9.5.2. Environmental Sustainability
- 9.6. Other Key Nutrients in Vegans
 - 9.6.1. Conversion of ALA to EPA/DHA
 - 9.6.2. Fe, Ca, Vit-D and Zn
- 9.7. Biochemical Assessment/Nutritional Deficiencies
 - 9.7.1. Anaemia
 - 9.7.2. Sarcopenia
- 9.8. Vegan vs. Omnivorous Food
 - 9.8.1. Evolutionary Food
 - 9.8.2. Current Food
- 9.9. Ergogenic Aids
 - 9.9.1. Creatine
 - 9.9.2. Vegetable Protein
- 9.10. Factors that Decrease Nutrient Absorption
 - 9.10.1. High Fiber Intake
 - 9.10.2. Oxalates

Module 10. The Type 1 Diabetic Athlete

- 10.1. Knowing about Diabetes and its Pathology
 - 10.1.1. The Incidence of Diabetes
 - 10.1.2. Pathophysiology of Diabetes
 - 10.1.3. The Consequences of Diabetes
- 10.2. Exercise Physiology in People with Diabetes
 - 10.2.1. Maximal, Submaximal Exercise and Muscle Metabolism during Exercise
 - 10.2.2. Differences in the Metabolic Level during Exercise in People with Diabetes
- 10.3. Exercise in People with Type 1 Diabetes
 - 10.3.1. Exercise in People with Type 1 Diabetes
 - 10.3.2. Exercise Duration and Carbohydrate Intake
- 10.4. Exercise in People with Type 2 Diabetes. Blood Sugar Control
 - 10.4.1. Risks of Physical Activity in People with Type 2 Diabetes
 - 10.4.2. Benefits of Exercise in People with Type 2 Diabetes
- 10.5. Exercise in Children and Adolescents with Diabetes
 - 10.5.1. Metabolic Effects of Exercise
 - 10.5.2. Precautions during Exercise
- 10.6. Insulin Therapy and Exercise
 - 10.6.1. Insulin Infusion Pump
 - 10.6.2. Types of Insulins
- 10.7. Nutritional Strategies during Sport and Exercise in Type 1 Diabetes
 - 10.7.1. From Theory to Practice
 - 10.7.2. Carbohydrate Intake Before, During and After Physical Exercise
 - 10.7.3. Hydration Before, During and After Physical Exercise
- 10.8. Nutritional Planning in Endurance Sports
 - 10.8.1. Marathon
 - 10.8.2. Cycling
- 10.9. Nutritional Planning in Team Sports
 - 10.9.1. Soccer
 - 10.9.2. Rugby
- 10.10. Sports Supplements and Diabetes
 - 10.10.1. Potentially Beneficial Supplements for Athletes with Diabetes

Module 11. Para-Athletes

- 11.1. Classification and Categories in Para-Athletes
 - 11.1.1. What is a Para Athlete?
 - 11.1.2. How are Para Athletes Classified?
- 11.2. Sports Science in Para Athletes
 - 11.2.1. Metabolism and Physiology
 - 11.2.2. Biomechanics
 - 11.2.3. Psychology
- 11.3. Energy Requirements and Hydration in Para-Athletes
 - 11.3.1. Optimal Energy Demands for Training
 - 11.3.2. Hydration Planning before, during and after Training and Competitions
- 11.4. Nutritional Problems in the Different Categories of Para Athletes According to Pathology or Anomaly
 - 11.4.1. Spinal Cord Injuries
 - 11.4.2. Cerebral Palsy and Acquired Brain Injuries
 - 11.4.3. Amputees
 - 11.4.4. Vision and Hearing Impairment
 - 11.4.5. Intellectual Impairments
- 11.5. Nutritional Planning in Para Athletes with Spinal Cord Injury and Cerebral Palsy and Acquired Brain Injuries
 - 11.5.1. Nutritional Requirements (Macro and Micronutrients)
 - 11.5.2. Sweating and Fluid Replacement during Exercise
- 11.6. Nutritional Planning in Amputee Para Athletes
 - 11.6.1. Energy Requirements
 - 11.6.2. Macronutrients
 - 11.6.3. Thermoregulation and Hydration
 - 11.6.4. Nutritional Issues Related to Prosthetics
- 11.7. Planning and Nutritional Problems in Para Athletes with Vision-Hearing Impairment and Intellectual Impairment
 - 11.7.1. Sports Nutrition Problems with Visual Impairment: Retinitis Pigmentosa, Diabetic Retinopathy, Albinism, Stargardt's Disease and Hearing Pathologies
 - 11.7.2. Sports Nutrition Problems in Para-Athletes with Intellectual Deficiencies: Down Syndrome, Autism and Asperger's and Phenylketonuria

- 11.8. Body Composition in Para Athletes
 - 11.8.1. Measurement Techniques
 - 11.8.2. Factors Influencing the Reliability of Different Measurement Methods
- 11.9. Pharmacology and Nutrient Interactions
 - 11.9.1. Different Types of Drugs Taken by Para Athletes
 - 11.9.2. Micronutrient Deficiencies in Para Athletes
- 11.10. Ergogenic Aids
 - 11.10.1. Potentially Beneficial Supplements for Para Athletes
 - 11.10.2. Adverse Effects on Health and Contamination and Doping Problems Due to the Intake of Performance Enhancing drugs

Module 12. Sports by Weight Category

- 12.1. Characteristics of the Main Sports by Weight Category
 - 12.1.1. Regulation
 - 12.1.2. Categories
- 12.2. Programming of the Season
 - 12.2.1. Competitions
 - 12.2.2. Macrocycle
- 12.3. Body composition
 - 12.3.1. Combat Sports
 - 12.3.2. Weightlifting
- 12.4. Stages of Muscle Mass Gain
 - 12.4.1. % Body Fat
 - 12.4.2. Programming
- 12.5. Definition Stages
 - 12.5.1. Carbohydrates
 - 12.5.2. Protein
- 12.6. Pre-competition
 - 12.6.1. Peek Week
 - 12.6.2. Before Weighing
- 12.7. Per Competition
 - 12.7.1. Practical Applications
 - 12.7.2. Timing

- 12.8. After the Competition
 - 12.8.1. Hydration
 - 12.8.2. Protein
- 12.9. Ergogenic Aids
 - 12.9.1. Creatine
 - 12.9.2. Whey Protein

Module 13. Different Stages or Specific Population Groups

- 13.1. Nutrition in the Female Athlete
 - 13.1.1. Limiting Factors
 - 13.1.2. Requirements
- 13.2. Menstrual Cycle
 - 13.2.1. The Luteal Phase
 - 13.2.2. The Follicular Phase
- 13.3. Triad
 - 13.3.1. Amenorrhea
 - 13.3.2. Osteoporosis
- 13.4. Nutrition in the Pregnant Female Athlete
 - 13.4.1. Energy Requirements
 - 13.4.2. Micronutrients
- 13.5. The Effects of Physical Exercise on the Child Athlete
 - 13.5.1. Strength Training
 - 13.5.2. Endurance Training
- 13.6. Nutritional Education in the Child Athlete
 - 13.6.1. Sugar
 - 13.6.2. Eating Disorders
- 13.7. Nutritional Requirements in the Child Athlete
 - 13.7.1. Carbohydrates
 - 13.7.2. Proteins
- 13.8. Changes Associated with Aging
 - 13.8.1. % Body Fat
 - 13.8.2. Muscle Mass

- 13.9. Main Problems in the Older Athlete
 - 13.9.1. Joints
 - 13.9.2. Cardiovascular Health
- 13.10. Interesting Supplements for Older Athletes
 - 13.10.1. Whey Protein
 - 13.10.2. Creatine

Module 14. The Injury Period

- 14.1. Introduction
- 14.2. Prevention of Injuries in Athletes
 - 14.2.1. Relative Energy Availability in Sport
 - 14.2.2. Oral Health and Injury Implications
 - 14.2.3. Fatigue, Nutrition and Injuries
 - 14.2.4. Sleep, Nutrition and Injuries
- 14.3. Phases of Injury
 - 14.3.1. Immobilization Phase. Inflammation and Changes Occurring during this Phase
 - 14.3.2. Return of Activity Phase
- 14.4. Energy Intake during the Period of Injury
- 14.5. Macronutrient Intake during the Period of Injury
 - 14.5.1. Carbohydrate Intake
 - 14.5.2. Fat Intake
 - 14.5.3. Protein Intake
- 14.6. Intake of Micronutrients of Special Interest during Injury
- 14.7. Sports Supplements with Evidence during the Period of Injury
 - 14.7.1. Creatine
 - 14.7.2. Omega 3
 - 14.7.3. Others
- 14.8. Tendon and Ligament Injuries
 - 14.8.1. Introduction to Tendon and Ligament Injuries. Tendon Structure
 - 14.8.2. Collagen, Gelatin and Vitamin C. Can they Help?
 - 14.8.3. Other Nutrients Involved in Collagen Synthesis
- 14.9. The Return to Competition
 - 14.9.1. Nutritional Considerations in the Return to Competition
- 14.10. Interesting Case Studies in Scientific Injury Literature





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Our curriculum has been designed with teaching effectiveness in mind: so that you learn faster, more efficiently, and on a more permanent basis”

06

Methodology

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

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





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

Case Study to contextualize all content

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



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



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



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

A learning method that is different and innovative

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

“*Our program prepares you to face new challenges in uncertain environments and achieve success in your career”*

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

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

Relearning Methodology

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

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

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

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

Our university is the only one in the world authorized to employ this successful method. In 2019, we managed to improve our students' overall satisfaction levels (teaching quality, quality of materials, course structure, objectives...) based on the best online university indicators.



In our program, learning is not a linear process, but rather a spiral (learn, unlearn, forget, and relearn). 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.

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

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

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



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



Study Material

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

These contents are then 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.



Classes

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

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



Practising Skills and Abilities

They will carry out activities to develop specific competencies and skills in each thematic area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization that we are experiencing.



Additional Reading

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





Case Studies

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



Interactive Summaries

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

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



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.



07 Certificate

The Advanced Master's Degree in Comprehensive Sports Nutrition guarantees you, in addition to the most rigorous and updated training, access to a Advanced Master's Degree issued by TECH Technological University.



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*Successfully complete this training
and receive your university degree
without travel or laborious paperwork”*

This **Advanced Master's Degree in Comprehensive 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 **Advanced Master's Degree** issued by **TECH Technological University** via tracked delivery*.

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

Title: **Advanced Master's Degree in Comprehensive Sports Nutrition**

Official N° of hours: **3,000 h.**

Endorsed by the NBA



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

future

health confidence people

education information tutors

guarantee accreditation teaching

institutions technology learning

community commitment

tech technological
university

personalized service innovation

knowledge present
online training

Advanced Master's Degree Comprehensive Sports Nutrition

- » Modality: online
- » Duration: 2 years
- » Certificate: TECH Technological University
- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online

development languages

virtual classroom

Advanced Master's Degree Comprehensive Sports Nutrition

Endorsed by the NBA



tech technological
university