

# Hybrid Professional Master's Degree Sports Medicine

Endorsed by the NBA



**tech** technological  
university





## Hybrid Professional Master's Degree Sports Medicine

Course Modality: Hybrid (Online + Clinical Internship)

Duration: 12 months

Certificate: TECH Technological University

Teaching Hours: 1,620 h.

Website: [www.techtute.com/us/medicine/hybrid-professional-master-degree/hybrid-professional-master-degree-sports-medicine](http://www.techtute.com/us/medicine/hybrid-professional-master-degree/hybrid-professional-master-degree-sports-medicine)

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# 01

# Introduction

Scientific and technological progress has had a significant impact on Sports Medicine, leading to the appearance of new diagnostic and treatment methods for pathologies resulting from professional physical exercise. At the same time, physicians dedicated to this discipline find it difficult to keep themselves updated in this regard, due to the lack of programs that bring together all its potentialities. From this context, this Hybrid Professional Master's Degree emerges, which brings together in a theoretical and practical way the main novelties of this specialty. To this end, it is divided into two parts, the first of which focuses on the mastery of different concepts and essential topics. Then, it integrates a face-to-face and immersive stay, where the graduate will be able to apply everything learned in a direct way and in real patients.





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*With this Hybrid Professional Master's Degree you will be updated in a practical and participative way in the main advances in the field of Sports Medicine"*

Sports Medicine has implemented, in the last decades, sophisticated diagnostic procedures as a result of a continuous technological advance, and as a consequence, protocols have emerged that integrate Gammagraphy, Computerized Axial Tomography, among other tools, for the early detection of injuries or to identify the impact of precise musculoskeletal pathologies. Also, these advances have brought with them new therapeutic strategies such as the use of Radiofrequency equipment, or the revision of contraindications of others such as infiltrations. At the same time, sustaining the mastery of all these aspects is a challenge for professionals in the sector since there is a lack of educational programs that integrate this knowledge.

For this reason, TECH has developed an ambitious degree, composed of two distinct stages, where the specialist will have the opportunity to catch up on the main developments in this discipline. Thus, this Hybrid Professional Master's Degree in Sports Medicine brings together, at first, different theoretical contents on the clinical approach to sports pathologies and other related complications. At the same time, the professional will develop a deep understanding of the latest nutritional trends that, nowadays, contribute to athletic performance. This stage will take place in a 100% online learning platform, free of restrictive schedules and evaluation timetables. In this way, each student will be able to assimilate concepts and topics of interest through innovative methodologies such as Relearning.

In addition, the degree program includes a 3-week intensive face-to-face stay in a medical facility of international prestige. In the practical environment, the professional will learn first-hand the work dynamics of a specialist in Sports Medicine, providing direct care to real patients, analyzing technical data on their evolution and discussing innovative treatments with experts with extensive experience. A unique opportunity to incorporate the latest advances in this academic field into daily work practice, with a clinical perspective both in theory and care.

This **Hybrid Professional Master's Degree in Sports Medicine** contains the most complete and up-to-date scientific program on the market. The most important features include:

- ♦ Development of more than 100 clinical cases presented by experts in Sports Medicine, with extensive experience in the management of musculoskeletal injuries and nutritional assessments of the athlete
- ♦ Its graphic, schematic and practical contents provide scientific and assistance information on those medical disciplines that are essential for professional practice
- ♦ Assessment and monitoring of the patient with different pathologies that affect his adequate their adequate performance as an athlete, offering diagnostic and treatment methods of recent discovery and scientific application
- ♦ Comprehensive plans of systematized action for the main pathologies of the sports patient Interactive learning
- ♦ System based on algorithms for decision making on clinical situations raised
- ♦ Practical clinical guides on approaching different pathologies
- ♦ All of this will be complemented by 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
- ♦ Furthermore, you will be able to carry out a clinical internship in one of the best centers on the international scene



*With this Hybrid Professional Postgraduate Certificate, you will have access to the most updated theoretical contents in reference to the professional practice of Sports Medicine"*

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*Thanks to TECH, you will have 3 weeks of face-to-face and immersive stay, in a hospital institution equipped with state-of-the-art equipment for the recovery of high performance athletes, affected by musculoskeletal pathologies"*

In this Hybrid Professional Master's Degree, the program is aimed at updating specialists in Sports Medicine. The content is based on the latest scientific evidence and organized in a didactic way to integrate theoretical knowledge into nursing practice.

Thanks to its multimedia content elaborated with the latest educational technology, it will allow the Sports Medicine professional to obtain a situated and contextual learning, that is to say, a simulated environment that will provide an immersive learning 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 throughout the program. For this purpose, the student will be assisted by an innovative interactive video system created by renowned experts.

*Immersive, multidisciplinary and high-intensity, this Hybrid Professional Master's Degree will give you the opportunity to put into practice everything you have studied, putting your learning into practice in a real and direct way in patients with different pathologies.*

*Incorporate the latest trends in regenerative medicine, implementing stem cells and platelet-rich plasma, in athletes who require specific care.*



# 02

## Why Study this Hybrid Professional Master's Degree?

This Hybrid Professional Master's Degree is of vital importance for all those specialists who wish to update their knowledge in Sports Medicine. Through this innovative program, devised by TECH, the physician will master the most innovative diagnostic trends, based on high-level technological tools. It also includes, from a theoretical point of view, surgical and non-interventional strategies for the rehabilitation of the athlete. On the other hand, the degree has a practical and face-to-face stay, the only one of its kind in the educational market, which facilitates the direct assimilation of all these aspects through the assistance of patients with real pathologies.





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*Non-interventional techniques have become a valuable rehabilitation strategy in the field of Sports Medicine. Enroll now in this Hybrid Professional Master's Degree and become proficient in this discipline quickly and immediately”*

### 1. Updating from the latest technology available

Medical technologies are constantly evolving to improve the field of Sports Medicine. Therefore, it is essential for the physician to be able to use them effectively in his daily work. Through this Hybrid Professional Master's Degree, the specialist will be able to master all the tools within reach of this discipline, developing a greater competitiveness.

### 2. Gaining In-Depth Knowledge from the Experience of Top Specialists

Throughout this training, professionals will have a team of excellent teachers who will provide them with personalized guidance at all times. These professors have chosen the contents of the syllabus based on their daily practical experiences, thus providing the degree with an in-depth analysis of the most common problems of daily work practice.

### 3. Entering First-Class Clinical Environments

In a second stage of this Hybrid Professional Master's Degree, TECH has foreseen the needs of the specialist in the handling of the most complex technological tools within Sports Medicine. For this reason, it has foreseen a practical on-site stay where the doctor will be able to learn directly, working with leading experts in this professional field and in hospital facilities of international importance.





#### 4. Combining the Best Theory with State-of-the-Art Practice

At the academic level, few study programs manage to unify the theoretical field with the practical activity with greater excellence than TECH. From its Hybrid Professional Master's Degree model, the physician achieves a holistic mastery of the trends and techniques embodied in its educational content. They also have 3 weeks of classroom activity in a prestigious center to apply everything they have learned in healthcare interventions.

#### 5. Expanding the Boundaries of Knowledge

This degree aims for all its graduates to broaden their professional horizons from an international perspective. This is possible thanks to the wide range of contacts and collaborators available at TECH, the largest digital university in the world. This is possible thanks to the wide range of contacts and collaborators available at TECH, the largest digital university in the world.



*You will have full practical immersion  
at the center of your choice"*

# 03 Objectives

This Hybrid Professional Master's Degree is ideal for all those professionals who wish to acquire a more updated vision of Sports Medicine and incorporate new diagnostic methods and treatments of this discipline into their daily professional work. To ensure mastery of all theoretical and practical aspects of this branch of care, TECH and its experts have outlined a series of mandatory objectives. Thus, graduates of this degree will feel capable of practicing the profession, protected by a first level academic preparation.





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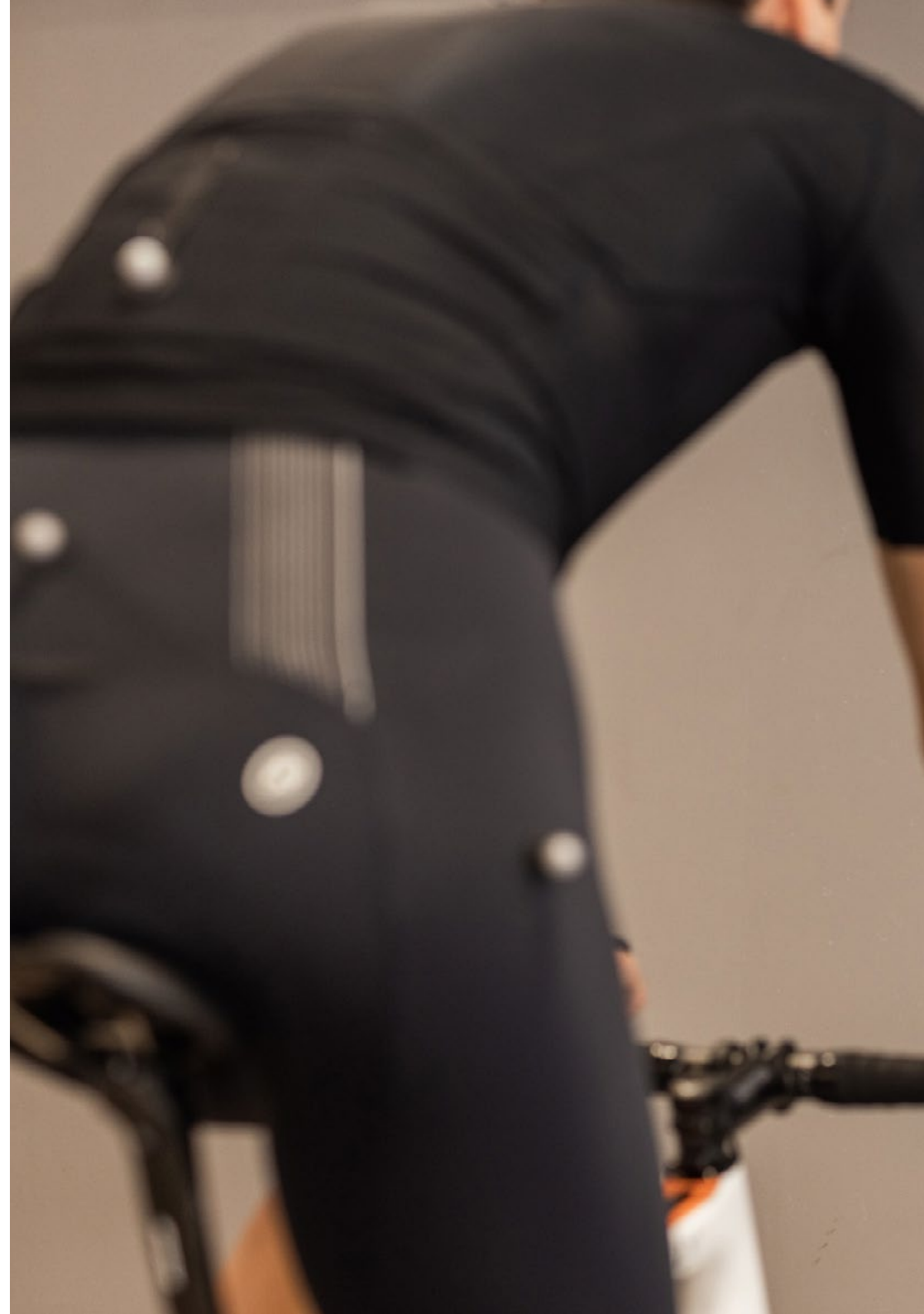
*Get up to date on anterior cruciate ligament reconstruction surgery, its advantages and disadvantages, with the help of this complete TECH syllabus"*



## General Objective

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- As part of its general goals, this Hybrid Professional Master's Degree in Sports Medicine focuses on the description of different injuries that may occur during athletic exercise. In addition, it delves into musculoskeletal pathologies and the most recommended clinical assessment for each of them. It also explores the most effective diagnostic methods and treatment options. It will also help the specialist to acquire more specific and current knowledge within the field of sports nutrition and dietetics for specific cases of sports activity and sports nutritional supplementation





## Specific Objectives

### Module 1. Sports Injuries

- ◆ Know how to differentiate types of sports injuries, a key aspect for an accurate diagnosis and therapeutic approach
- ◆ Determine the causes of sports injuries and their possible production mechanisms
- ◆ Manage the different phases in sports injuries
- ◆ Learn what a sports injury prevention program consists of
- ◆ Know the physiology of the different systems involved in physical exercise and their relevance in sports injuries
- ◆ Gain a deep understanding of the lactate metabolism and the new approaches to interpreting its functions

### Module 2. Athlete Assessment

- ◆ Know the clinical and functional tests to be performed on athletes
- ◆ Explore the mechanisms of strength, speed, power and physical condition production in athletes and their performance
- ◆ Know the main imaging tests that can be performed on athletes
- ◆ Explore the main specific functional tests to rule out pathologies in athletes and to adapt the types of training

### **Module 3. Injuries and Sport**

- ♦ Know the epidemiological data of different injuries according to sport and their relevance in daily practice
- ♦ Perform correct explorations for musculoskeletal pathologies in the different sports covered in the topics
- ♦ Know the most prevalent and most severe injuries and establish recovery times
- ♦ Learn how to request the correct imaging tests for each type of injury
- ♦ Explore how to identify when to resume sport activity
- ♦ Delve into the basics of optimal physical training
- ♦ Update on the effects of hormones on athletes' return to sporting activity
- ♦ Learn how to carry out nutritional interventions on athletes

### **Module 4. Upper Limb Sports Injuries**

- ♦ Adapt sports activity to upper limb injuries
- ♦ Adapt exercise for athlete recovery from upper limb injuries

### **Module 5. Lower Limb Sports Injuries**

- ♦ Know how to perform the most useful physical examination maneuvers
- ♦ Explore radiological findings for lower limb pathologies
- ♦ Know how to establish injury prognosis
- ♦ Know how to adapt sport activity to lower limb injuries
- ♦ Know how to adapt exercise for athlete recovery from lower limb injuries

### **Module 6. Spinal Sports Injuries**

- ♦ Know spinal injury biomechanics in athletes Injury-inducing movements: How to train the athlete to avoid them and, according to the location and characteristics of the pain, which segment or structure to think about at the time of diagnosis
- ♦ Distinguish which sports can produce a negative evolution of vertebral deformities and which combinations between deformity and specific sport present a greater tendency toward spinal injuries or pain
- ♦ Investigate what real benefit can be expected from new therapeutic alternatives that promise rapid recovery from injuries or the disappearance of spinal pain where classical treatments have failed

### **Module 7. Sport in Specific Situations**

- ♦ Know the indications and contraindications of exercise in these specific populations
- ♦ Explore the medical treatments commonly used in specific pathologies
- ♦ Know when to refer athletes to a medical specialist
- ♦ Explore specific training programs

### **Module 8. Therapeutic Management of Sports Injuries**

- ♦ Know the indications and contraindications of the different therapeutic options studied
- ♦ Explore the expected effects of each one of them as well as possible complications
- ♦ Enter the world of new technologies in the field of sports
- ♦ Know how to handle the high demands of professional or high-performance sports





### **Module 9. Doping and Nutrition in Sport**

- ◆ Apply the knowledge acquired in multiple work areas such as: medical assistance, anti-doping institutions, clubs, associations, sports federations, sports medicine centers, lawyers who work with athletes and pharmacists who work with the public

### **Module 10. Adapted Sports and Disability**

- ◆ Know the indications and contraindications of exercise in these athletes
- ◆ Know the specific needs for sports performance in athletes with disabilities
- ◆ Delve the knowledge of sports performance in people with disabilities

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*Meet your professional goals in a fast and flexible way with the help of the innovative contents of this blended learning degree”*

# 04 Skills

This innovative modality of studies, designed by TECH, enables the deep theoretical knowledge and the development of practical skills related to Sports Medicine. Thus, graduates of this degree will achieve the maximum update and the most requested skills for the proper development of this discipline.



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*Combining the practical and theoretical study of Sports Medicine, this Hybrid Professional Master's Degree will enhance your professional career towards excellence"*



## General Skills

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- Know the differences between physical activity, exercise and sport
- Learn the most relevant general aspects of sports injuries
- Consider and know the physiological aspects related to sports injuries
- Know how to assess the physical condition of an athlete
- Manage the clinical and functional tests to be performed on athletes
- Delve into the the main imaging tests that can be performed on athletes
- Explore the main specific functional tests to rule out pathologies in athletes and to adapt the types of training





## Specific Skills

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- ♦ Explore the mechanisms of strength, speed, power and physical condition production in athletes and their performance
  - ♦ Provide the necessary tools to understand the epidemiology, biomechanics and pathophysiology of the most prevalent injuries in different sports at both upper and lower limb levels, as well as spine injuries, based on the most relevant studies, including the latest publications
  - ♦ Gather study resources for an understanding of the therapeutics for the different injuries and the recovery process for these injuries
  - ♦ Explore the key points in rehabilitation processes to be able to carry out correct daily clinical practice
  - ♦ Know how to make a diagnosis and choose the appropriate treatment for the most frequent spine pathologies in athletes: Spondylolysis, discogenic pain, traumatic injuries (fractures, dislocations, sprains, etc.)
  - ♦ Delve into the main consequences of the most potentially injurious sports at the spinal level, and what training modifications or specific exercise guidance can prevent or minimize such pathologies. Among them we will talk specifically about weightlifting and bodybuilding
  - ♦ Identify why your athlete's spine hurts, what are the causes or mechanisms that have generated such pain and the diagnostic methods you can use to reach conclusions
- ♦ Master which treatments, within the therapeutic arsenal available, have proven benefits for athletes and when to use them
  - ♦ Present the specific elements of sport for people with disabilities such as the different modalities, organizational elements, sport classifications, most common injuries, elements associated with *doping*, most current lines of research and the personal experience of an elite athlete
  - ♦ Advise athletes whatever their sporting discipline, both in the field of competition and at the amateur level



*Get up to date on nutritional supplements and other dietary strategies that enhance high-performance sporting activity through the contents of this degree"*

# 05

# Course Management

Sports Medicine is a high-level health discipline that demands, for its proper development, the best professional skills. TECH has taken this aspect into account when selecting the teaching staff for this degree. Based on these principles, it has brought together a faculty of reference, with great specialists who currently implement modern technologies and strategies for the diagnosis and treatment of athletes with various complications. These experts have been in charge of the syllabus to be completed in this Hybrid Professional Master's Degree and, therefore, the physician will find in it the indispensable theoretical resources to achieve professional excellence.





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*All the teachers of this Hybrid Professional Master's Degree have successfully practiced Sports Medicine, offering their specialized knowledge to athletes of different disciplines"*

## International Guest Director

As Chairman of the Department of Physical Medicine and Rehabilitation at the Mayo Clinic in Arizona, Dr. Arthur De Luigi is one of the leading exponents in the field of Sports Medicine. In fact, he is the director of this specialty at the same clinic, also dedicating himself to the areas of pain medicine, brain injury medicine and musculoskeletal ultrasound.

Internationally, he is recognized as a leading figure in Adaptive Sports Medicine, serving as the director and lead physician for both the U.S. Paralympic Alpine Ski Team and the U.S. Para-Snowboard Team. In this role, he has served as a physician on the U.S. Olympic Committee, performing his work at the Colorado Olympic Training Center.

In fact, his involvement in sports is considerable, as he has treated players in basketball, soccer, soccer, golf, baseball, field hockey and other sports. Thus, he is the medical director of the Washington Wizards and Washington Mystics teams, being part of the medical staff of Phoenix Rising FC, Arizona Coyotes, Washington Nationals and DC United. He has also served as co-medical director of the Phoenix Open and chief medical advisor for the American 7 Football League.

In addition, he has had a prominent role on concussion task forces and research groups, including the NBA's own. His experience also extends to the U.S. Army, having held the rank of major and participated as a medic in Operation Iraqi Freedom. For this, he received numerous awards, including the Bronze Star and the Superior Unit Decoration.





## Dr. De Luigi, Arthur

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- Director of Sports Medicine - Mayo Clinic Arizona
- Chairman, Department of Physical Medicine and Rehabilitation - Mayo Clinic - Scottsdale/Phoenix, Arizona
- Phoenix Rising FC Team Physician
- Arizona Coyotes Team Physician
- Medical Director at Kilogear Cut
- Special Olympics Arizona Medical Director
- Co-Medical Director, Waste Management Phoenix Open
- Chief Medical Advisor for the American 7 Football League
- Professor of Rehabilitation Medicine at Georgetown University
- Director of Electrodiagnostic, Physical Medicine and Rehabilitation at Blanchfield Army Community Hospital, Fort Campbell
- Director of Research at Fort Belvoir Community Hospital
- Director of Sports Medicine at MedStar Montgomery Medical Center
- Team Physician, Washington Mystics
- Chief Medical Officer, Washington Wizards
- Doctor of Osteopathic Medicine from Lake Erie College of Osteopathic Medicine
- U.S. Army Major
- Graduate in Biology and Chemistry from George Washington University
- Resident Manager at Walter Reed Army Medical Center
- Master of Science in Health Management from Lake Erie College of Osteopathic Medicine
- Superior Unit Decoration from the U.S. Army
- Bronze Star awarded by the U.S. Army

## Professors

### Dr. Aguirre Sánchez, Irene

- ◆ Specialised Physician of Physical Medicine and Rehabilitation at the University Hospital Rey Juan Carlos de Madrid
- ◆ FEA of Physical Medicine and Rehabilitation at Nostra Senyora de Meritxell Hospital, Andorra
- ◆ FEA in the Department of Physical Medicine and Rehabilitation of Navarra Hospital
- ◆ Postgraduate Diploma in Musculoskeletal Ultrasound Francisco de Vitoria University
- ◆ Postgraduate Diploma in Physical Exercise and Health from the Public University of Navarre

### Dr. Fernández López, Juan Marcelo

- ◆ Manager and Clinical and Sports Nutritionist at Nutrir
- ◆ Co-founder and Director of the Spanish Society for the Study-Advancement of Sports Nutrition and Dietetics
- ◆ Specialist in Clinical-Sports Nutrition, treating amateur, semi-professional and professional athletes
- ◆ Degree in Nutrition from the University of Córdoba
- ◆ Professional Master's Degree and PhD in Nutrition and Metabolism, University of Cordoba
- ◆ Associate Professor at Isabel I University





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*TECH's faculty is proficient in the main diagnostic technologies that you will be able to apply with this updated degree"*

# 06

## Educational Plan

For the syllabus of this Hybrid Professional Master's Degree, TECH and its teachers have integrated rigorous and demanding academic modules. Its topics of interest cover different areas such as the latest diagnostic tools in Sports Medicine, the assessment criteria to be taken into account to develop a surgical or non-interventional procedure, among other aspects. In addition, the educational process will be accompanied by multimedia resources, such as infographics, videos and interactive summaries, as well as an innovative learning methodology based on Relearning.





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*With this syllabus, you will achieve a superior mastery of the latest therapeutic trends in relation to the approach to musculoskeletal pathology”*

## Module 1. Sports Injuries

- 1.1. Physical Activity
  - 1.1.1. Exercise
  - 1.1.2. Sports
- 1.2. Sports Injuries
  - 1.2.1. Relevance
  - 1.2.2. Etiology
  - 1.2.3. Sport Injuries Classification
- 1.3. Prevention and Sports Injury Phases
- 1.4. Sports Injury Mechanisms
- 1.5. Physiological Memory in the Musculoskeletal System
- 1.6. Physiological Memory in the Vascular System
- 1.7. Physiological Memory in the Cariorespiratory System
- 1.8. Physiological Memory in the Immune System
- 1.9. Lactate Metabolism
- 1.10. Physical Condition

## Module 2. Athlete Assessment

- 2.1. Anthropometric Measurements
  - 2.1.1. Anthropometry and Kineanthropometry
  - 2.1.2. The Anthropometric Method and Implementation
  - 2.1.3. Anthropometric Measurements Proportionality Topic: Body composition
- 2.2. Body composition
  - 2.2.1. Body Composition Assessment Methods
  - 2.2.2. Body Composition Fractionation
  - 2.2.3. Body Composition, Nutrition and Physical Activity
  - 2.2.4. Somatotype
- 2.3. Clinical Assessment
- 2.4. Usefulness of the Electrocardiogram and Echocardiogram in Cardiological Assessment in Healthy Athletes
- 2.5. Usefulness of Stress Tests in Cardiological Assessments of Healthy Athletes
- 2.6. Usefulness of Stress Tests with Oxygen Consumption in Athletes

- 2.7. Ultrasound in Sports Injuries
- 2.8. MRI in Sports Injuries
- 2.9. TC in Sports Injuries
- 2.10. Useful Tools in Sports Psychology

## Module 3. Injuries and Sport

- 3.1. Swimming
  - 3.1.1. Objectives
  - 3.1.2. Epidemiology and Etiology
  - 3.1.3. Most Common Injuries
  - 3.1.4. Prevention and Rehabilitation
  - 3.1.5. Conclusions
- 3.2. Cycling
  - 3.2.1. Objectives
  - 3.2.2. Epidemiology and Etiology
  - 3.2.3. Most Common Injuries
  - 3.2.4. Prevention and Rehabilitation
  - 3.2.5. Conclusions
- 3.3. Soccer
  - 3.3.1. Objectives
  - 3.3.2. Epidemiology and Etiology
  - 3.3.3. Most Common Injuries
  - 3.3.4. Prevention and Rehabilitation
  - 3.3.5. Conclusions
- 3.4. Track and Field Athletics
  - 3.4.1. Objectives
  - 3.4.2. Epidemiology and Etiology
  - 3.4.3. Most Common Injuries
  - 3.4.4. Prevention and Rehabilitation
  - 3.4.5. Conclusions

- 3.5. Racket Sports
  - 3.5.1. Objectives
  - 3.5.2. Epidemiology and Etiology
  - 3.5.3. Most Common Injuries
  - 3.5.4. Prevention and Rehabilitation
  - 3.5.5. Conclusions
- 3.6. Ski
  - 3.6.1. Objectives
  - 3.6.2. Epidemiology and Etiology
  - 3.6.3. Most Common Injuries
  - 3.6.4. Prevention and Rehabilitation
  - 3.6.5. Conclusions
- 3.7. Dance
  - 3.7.1. Objectives
  - 3.7.2. Epidemiology and Etiology
  - 3.7.3. Most Common Injuries
  - 3.7.4. Prevention and Rehabilitation
  - 3.7.5. Conclusions
- 3.8. Basketball
  - 3.8.1. Objectives
  - 3.8.2. Epidemiology and Etiology
  - 3.8.3. Most Common Injuries
  - 3.8.4. Prevention and Rehabilitation
  - 3.8.5. Conclusions
- 3.9. Other Sports: Hockey, Rugby and Triathlons
  - 3.9.1. Objectives
  - 3.9.2. Epidemiology and Etiology
  - 3.9.3. Most Common Injuries
  - 3.9.4. Prevention and Rehabilitation
  - 3.9.5. Conclusions
- 3.10. Return to Play

## Module 4. Upper Limb Sports Injuries

- 4.1. Rotator Cuff Pathology
  - 4.1.1. Anatomy and Biomechanics
  - 4.1.2. Injury Mechanism and Classification
  - 4.1.3. Diagnostic
  - 4.1.4. Treatment. Return to Play
- 4.2. Clavicle Fracture and Acromio-Clavicular Dislocation
  - 4.2.1. Anatomy and Biomechanics
  - 4.2.2. Injury Mechanism and Classification
  - 4.2.3. Diagnostic
  - 4.2.4. Treatment. Return to Play
- 4.3. Shoulder Instability
  - 4.3.1. Anatomy and Biomechanics
  - 4.3.2. Injury Mechanism and Classification
  - 4.3.3. Diagnostic
  - 4.3.4. Treatment. Return to Play
- 4.4. Proximal Humerus Limb Fracture
  - 4.4.1. Anatomy and Biomechanics
  - 4.4.2. Injury Mechanism and Classification
  - 4.4.3. Diagnostic
  - 4.4.4. Treatment. Return to Play
- 4.5. Bicep Pathology
  - 4.5.1. Anatomy and Biomechanics
  - 4.5.2. Injury Mechanism and Classification
  - 4.5.3. Diagnostic
  - 4.5.4. Treatment. Return to Play
- 4.6. Insertional Elbow Pathology: Epicondylitis and Epitrochleitis
  - 4.6.1. Anatomy and Biomechanics
  - 4.6.2. Injury Mechanism and Classification
  - 4.6.3. Diagnostic
  - 4.6.4. Treatment. Return to Play

- 4.7. Traumatic Elbow Pathology
  - 4.7.1. Anatomy and Biomechanics
  - 4.7.2. Injury Mechanism and Classification
  - 4.7.3. Diagnostic
  - 4.7.4. Treatment. Return to Play
- 4.8. Wrist Injuries: Fractures, Sprains and Dislocations
  - 4.8.1. Anatomy and Biomechanics
  - 4.8.2. Injury Mechanism and Classification
  - 4.8.3. Diagnostic
  - 4.8.4. Treatment. Return to Play
- 4.9. Hand Injuries
  - 4.9.1. Anatomy and Biomechanics
  - 4.9.2. Injury Mechanism and Classification
  - 4.9.3. Diagnostic
  - 4.9.4. Treatment. Return to Play
- 4.10. Upper Limb Neuropathies

## Module 5. Lower Limb Sports Injuries

- 5.1. Hip Injuries
  - 5.1.1. Anatomy and Biomechanics
  - 5.1.2. Injury Mechanism and Classification
  - 5.1.3. Diagnostic
  - 5.1.4. Treatment. *Return to Play*
- 5.2. Knee Extensor Apparatus Pathology
  - 5.2.1. Anatomy and Biomechanics
  - 5.2.2. Injury Mechanism and Classification
  - 5.2.3. Diagnostic
  - 5.2.4. Treatment. *Return to Play*
- 5.3. Knee Tendinopathies
  - 5.3.1. Anatomy and Biomechanics
  - 5.3.2. Injury Mechanism and Classification
  - 5.3.3. Diagnostic
  - 5.3.4. Treatment. *Return to Play*

- 5.4. Knee Ligament Injuries
  - 5.4.1. Anatomy and Biomechanics
  - 5.4.2. Injury Mechanism and Classification
  - 5.4.3. Diagnostic
  - 5.4.4. Postoperative Treatment and Rehabilitation
  - 5.4.5. Preventing Anterior Cruciate Ligament Tears
- 5.5. Meniscal Injuries
  - 5.5.1. Anatomy and Biomechanics
  - 5.5.2. Injury Mechanism and Classification
  - 5.5.3. Diagnostic
  - 5.5.4. Postoperative Treatment and Rehabilitation
  - 5.5.5. Preventing Meniscal Injuries
  - 5.5.6. Other Knee Ligament Injuries
  - 5.5.7. Medial Collateral Ligament and Posteromedial Corner
  - 5.5.8. Posterior Cruciate Ligament
  - 5.5.9. External Collateral Ligament and Posteromedial Corner
  - 5.5.10. Multiligament Injuries and Knee Dislocations
- 5.6. Ligament Injuries and Ankle Instability
  - 5.6.1. Anatomy and Biomechanics
  - 5.6.2. Injury Mechanism and Classification
  - 5.6.3. Diagnostic
  - 5.6.4. Treatment. *Return to Play*
- 5.7. Ankle Joint Pathology
  - 5.7.1. Anatomy and Biomechanics
  - 5.7.2. Injury Mechanism and Classification
  - 5.7.3. Diagnostic
  - 5.7.4. Treatment. *Return to Play*
- 5.8. Foot Injuries
  - 5.8.1. Anatomy and Biomechanics
  - 5.8.2. Injury Mechanism and Classification
  - 5.8.3. Diagnostic
  - 5.8.4. Treatment. *Return to Play*
- 5.9. Bruises and Muscle Tears
- 5.10. Lower Limb Neuropathies



**Module 6. Spinal Sports Injuries**

- 6.1. Spine Pathology and Injury Biomechanics in Sports
- 6.2. Cervical Pathology
  - 6.2.1. Anatomy and Biomechanics
  - 6.2.2. Injury Mechanism and Classification
  - 6.2.3. Diagnostic
  - 6.2.4. Treatment. *Return to Play*
- 6.3. Spondylolysis-Spondylolisthesis
  - 6.3.1. Anatomy and Biomechanics
  - 6.3.2. Injury Mechanism and Classification
  - 6.3.3. Diagnostic
  - 6.3.4. Treatment. *Return to Play*
- 6.4. Other Causes of Rachialgia
  - 6.4.1. Facet Pain
  - 6.4.2. Fractures
  - 6.4.3. Sprains
- 6.5. Disk Pathology
  - 6.5.1. Anatomy and Biomechanics
  - 6.5.2. Injury Mechanism and Classification
  - 6.5.3. Diagnostic
  - 6.5.4. Treatment. *Return to Play*
- 6.6. Weightlifting and Bodybuilding
  - 6.6.1. Spine Injuries
- 6.7. Vertebral Deformities and Sport
- 6.8. Treating Vertebral Orthoses in Sport
- 6.9. Spine Interventionism
- 6.10. The Spine in Athletes
  - 6.10.1. Diagnostic and Therapeutic Alternatives to Be Considered

**Module 7. Sport in Specific Situations**

- 7.1. Women and Sport
  - 7.1.1. Current Situation of Women in Sport
  - 7.1.2. Pregnancy and Sport
  - 7.1.3. Puerperium, Breastfeeding and Sport
  - 7.1.4. Conclusions
- 7.2. Cancer
  - 7.2.1. Sport Benefits in Cancer
  - 7.2.2. Physical Activity in Palliative Care
  - 7.2.3. Specific Intervention
  - 7.2.4. Conclusions
- 7.3. Respiratory Pathology
- 7.4. Osteoporosis
- 7.5. Fragility for
- 7.6. Rheumatic Diseases
- 7.7. Diabetes
  - 7.7.1. Effects of Different Types of Exercise on Glycemic Control
  - 7.7.2. Medical Evaluation Prior to Exercise
  - 7.7.3. Diet Modifications
  - 7.7.4. Adjusting Drugs
  - 7.7.5. Training Guidelines
- 7.8. COVID-19
- 7.9. Cardiovascular Disease in Sport
- 7.10. Child Population

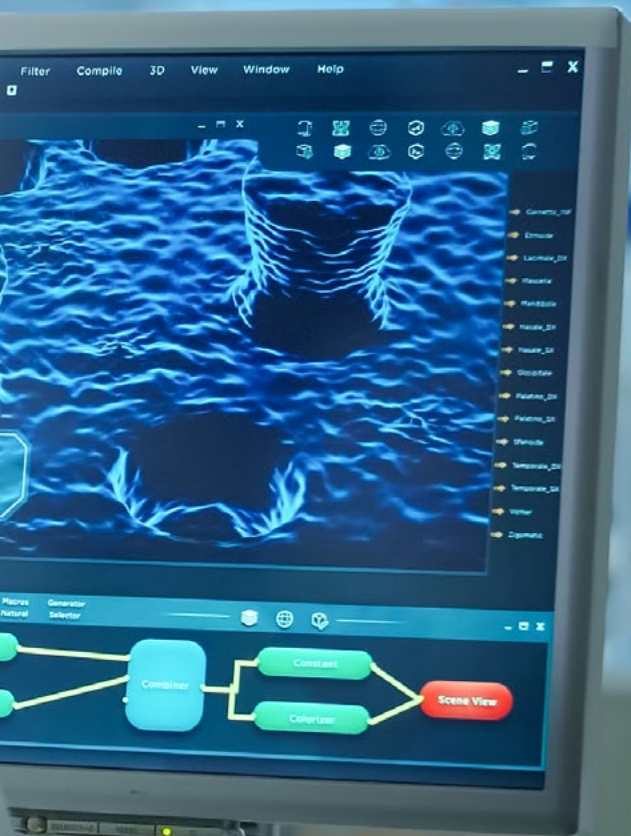
## Module 8. Therapeutic Management of Sports Injuries

- 8.1. Therapeutic Exercise
- 8.2. Physiotherapy
- 8.3. Bandages
- 8.4. Manual Therapy
- 8.5. Infiltrations
- 8.6. Nerve Blocks
- 8.7. Radiofrequency
- 8.8. Regenerative Medicine I
  - 8.8.1. Standards in Clinical Use
  - 8.8.2. Clinical and Administrative Considerations
- 8.9. Regenerative Medicine II
  - 8.9.1. PRP Therapies
  - 8.9.2. Stem Cell Therapies
  - 8.9.3. Amniotic and Other Products
  - 8.9.4. Rehabilitation after Regenerative Therapies
- 8.10. New Technologies

## Module 9. Doping and Nutrition in Sport

- 9.1. Basic Nutrition
  - 9.1.1. Energy Systems
  - 9.1.2. Basic Nutrient Absorption and Utilization Processes
  - 9.1.3. Regulating Body Temperature during Exercise
  - 9.1.4. Nutritional Intervention
  - 9.1.5. Communication in Nutritional Monitoring
- 9.2. Methods to Determine Dietary Intake
  - 9.2.1. Dietetic Assessments for Athletes
  - 9.2.2. Dietary Surveys
  - 9.2.3. Determining Energy Expenditure and Energy Needs
  - 9.2.4. Dietary Intake and Sufficiency Indicators
- 9.3. Sport Dietetics
  - 9.3.1. Nutrient Recommendation
  - 9.3.2. Athlete Monitoring Tests and Assessments
  - 9.3.3. Fluid and Electrolyte Replenishment





- 9.4. Sports Nutrition and Special Nutritional Needs
  - 9.4.1. Nutrition in Popular Races
  - 9.4.2. Nutrition in Trailrunning
  - 9.4.3. Nutrition in Team Sports
  - 9.4.4. Nutrition in Combat-Based Sports
- 9.5. Nutritional Supplements in Sport
  - 9.5.1. Classification of Nutritional Ergogenic Aids
  - 9.5.2. Main Nutritional Ergogenic Aids
  - 9.5.3. Supplement Nutrition Labeling
  - 9.5.4. Decisions in Prescribing Nutritional Dietary Supplements
- 9.6. Doping
- 9.7. Doping Substances and Laboratory Diagnostics
- 9.8. Genetic Doping and Unintentional Doping
- 9.9. Rules and Regulations
- 9.10. Sport and Doping
  - 9.10.1. Doping Prevention

## Module 10. Adapted Sports and Disability

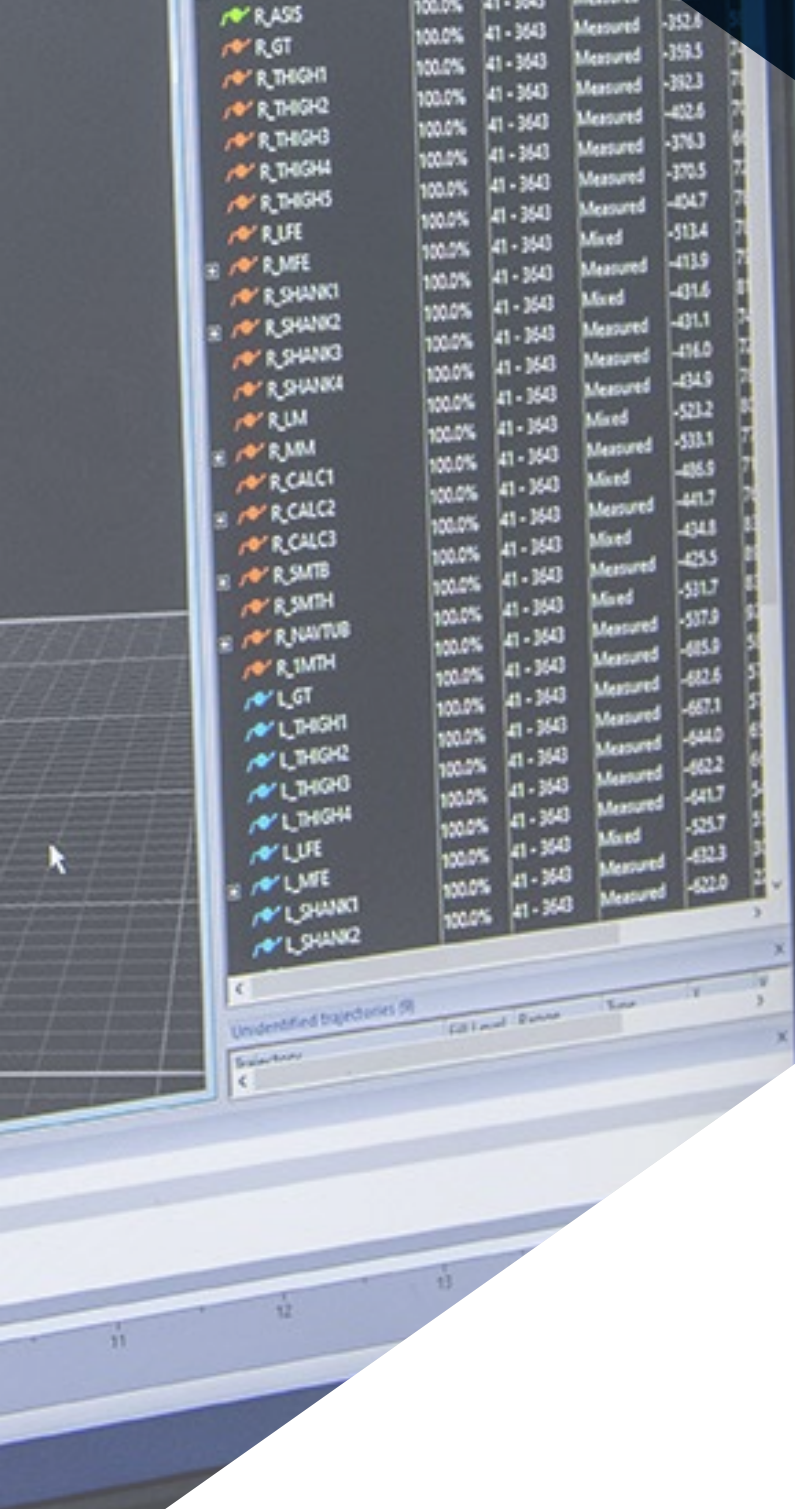
- 10.1. Disabled People
- 10.2. Disabled People and Doing Sport
  - 10.2.1. Specific Materials
- 10.3. Including People with Disabilities in Sports
  - 10.3.1. Good Practice Experience
- 10.4. Grassroots and Competitive Sports for People with Disabilities
- 10.5. The National and International Ecosystem of Sports for People with Disabilities
- 10.6. Classifications in Sports for People with Disabilities
- 10.7. Sports for People with Disabilities and Doping
- 10.8. Injuries in Disabled Athletes
- 10.9. Research in Sport for People with Disabilities
- 10.10. Paralympic Athlete's Personal Experience

07

# Clinical Internship

This Hybrid Professional Master's Degree ends with a practical, face-to-face and immersive stay in a prestigious center in the field of Sports Medicine. From the scenario of this clinical practice, the doctor will be able to acquire various skills that will immediately distinguish them in this professional field.





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*During this Hybrid Professional Master's Degree, you will join an elite medical team, professionally dedicated to the care of high-performance athletes with various pathologies derived from physical exercise”*

With 3 weeks of intense clinical practice, the second part of this Hybrid Professional Master's Degree guarantees the development of precise skills in the management of athletes who require specialized medical attention. For this educational process, the physician will travel to a hospital institution of the highest prestige, where he/she will have access to the latest technologies and strategies for diagnosis and treatment of musculoskeletal injuries and other pathologies. In addition, the specialist will evaluate in situ, and with real patients, the surgical and non-interventional rehabilitation techniques best suited to each case.

This training stage will take place from Monday to Friday, in consecutive 8-hour days, under the close supervision of an assistant tutor. This teaching figure will supervise the academic progress of the specialist and will help them to be inserted in the dynamics of greater professional demand.

In this completely practical Internship Program, the activities are aimed at developing and perfecting the skills necessary to provide healthcare care in areas and conditions that require highly qualified professionals, and are oriented towards specific expertise for practicing the activity, in a safe environment for the patient and with highly professional performance.

The practical part will be carried out with the active participation of the student performing the activities and procedures of each area of knowledge (learning to learn and learning to do), with the accompaniment and guidance of teachers and other fellow trainees that facilitate teamwork and multidisciplinary integration as transversal competencies for the practice of Sports Medicine (learning to be and learning to relate).

The procedures described below will form the basis of the practical part of the training, and their implementation is subject to both the suitability of the patients and the availability of the center and its workload, with the proposed activities being as follows:





Module	Practical Activity
<b>Diagnostic methods of the latest generation in Sports Medicine</b>	Implementation of the vision by sections and cuts of the anatomical area to be studied, relying on Computed Axial Tomography
	Detect anomalies in the joints as a consequence of traumatic sports injuries by means of Magnetic Resonance Imaging
	Diagnose injuries in very early stages, analyzing changes in bone metabolism before the structural change appears, by means of Gammagraphies
	Evaluate the state of muscular injuries and other soft tissues such as tendons or ligaments such as tendons or ligaments through ultrasound scans
<b>News in the therapeutic management of sports injuries</b>	Develop digitized biomechanical studies to address the health status of the of foot health in particular and the locomotor system in general
	Manage the advantages and contraindications of injections in high performance athletes in the high performance athlete
	Implement nerve blocking techniques to reduce acute or chronic pain acute or chronic pain during the practice of sports exercise
	Enhance the analgic, anti-inflammatory, anti-edematous and healing action, accelerate the recovery process and injury prevention through R200 Radiofrequency equipment
	Apply cortisone injections in the patient with chronic or acute pain to enhance or acute pain to enhance its relief
<b>Surgical rehabilitation for high-performance athletes</b>	Indicate physiotherapy specialized in the non-surgical management of musculoskeletal conditions, strengthen muscles, recover broken bones and prevent further breakage
	Apply orthopedic surgical intervention methods for hand, foot, and ankle bone in hand, foot and ankle, shoulder, knee and hip bones
	Perform surgery for the reconstruction of the anterior cruciate ligament from the tearing of this soft tissue due to prolonged physical activity
<b>Main trends in relation to Nutrition in Sport and Doping</b>	Implement regenerative medicine procedures such as bone marrow aspirated stem cell concentrate and platelet-rich plasma as an effective alternative for the treatment of osteoarthritis, sports injuries and other musculoskeletal pathologies
	Indicate a diet rich in nitrates to obtain more speed and power of the effort and power of effort in the athlete
	Enhance the intake of polyphenols and antioxidant supplements to counteract fatigue and improve the performance through better muscle irrigation during exercise
	Value the contribution of ergogenic nutritional aids as a strategy to provide energy fuel to the athlete
	Recognize the main doping substances and their most effective laboratory diagnostic methods

## Civil Liability Insurance

This institution's main concern is to guarantee the safety of the trainees and other collaborating agents involved in the internship process at the company. Among the measures dedicated to achieve this is the response to any incident that may occur during the entire teaching-learning process.

To this end, this entity commits to purchase a civil liability insurance policy to cover any eventuality that may arise during the course of the internship at the center.

This liability policy for interns will have broad coverage and will be taken out prior to the start of the practical training period. That way professionals will not have to worry in case of having to face an unexpected situation and will be covered until the end of the program at the center.





## General Conditions of the Internship Program

The general terms and conditions of the internship agreement for the program are as follows:

**1. TUTOR:** During the Hybrid Professional Master's Degree, students will be assigned with two tutors who will accompany them throughout the process, answering any doubts and questions that may arise. On the one hand, there will be a professional tutor belonging to the internship center who will have the purpose of guiding and supporting the student at all times. On the other hand, they will also be assigned with an academic tutor whose mission will be to coordinate and help the students during the whole process, solving doubts and facilitating everything they may need. In this way, the student will be accompanied and will be able to discuss any doubts that may arise, both clinical and academic.

**2. DURATION:** The internship program will have a duration of three continuous weeks, in 8-hour days, 5 days a week. The days of attendance and the schedule will be the responsibility of the center and the professional will be informed well in advance so that they can make the appropriate arrangements.

**3. ABSENCE:** If the student does not show up on the start date of the Hybrid Professional Master's Degree, they will lose the right to it, without the possibility of reimbursement or change of dates. Absence for more than two days from the internship, without justification or a medical reason, will result in the professional's withdrawal from the internship, therefore, automatic termination of the internship. Any problems that may arise during the course of the internship must be urgently reported to the academic tutor.

**4. CERTIFICATION:** Professionals who pass the Hybrid Professional Master's Degree will receive a certificate accrediting their stay at the center.

**5. EMPLOYMENT RELATIONSHIP:** The Hybrid Professional Master's Degree shall not constitute an employment relationship of any kind.

**6. PRIOR EDUCATION:** Some centers may require a certificate of prior education for the Hybrid Professional Master's Degree. In these cases, it will be necessary to submit it to the TECH internship department so that the assignment of the chosen center can be confirmed.

**7. DOES NOT INCLUDE:** The Hybrid Professional Master's Degree will not include any element not described in the present conditions. Therefore, it does not include accommodation, transportation to the city where the internship takes place, visas or any other items not listed.

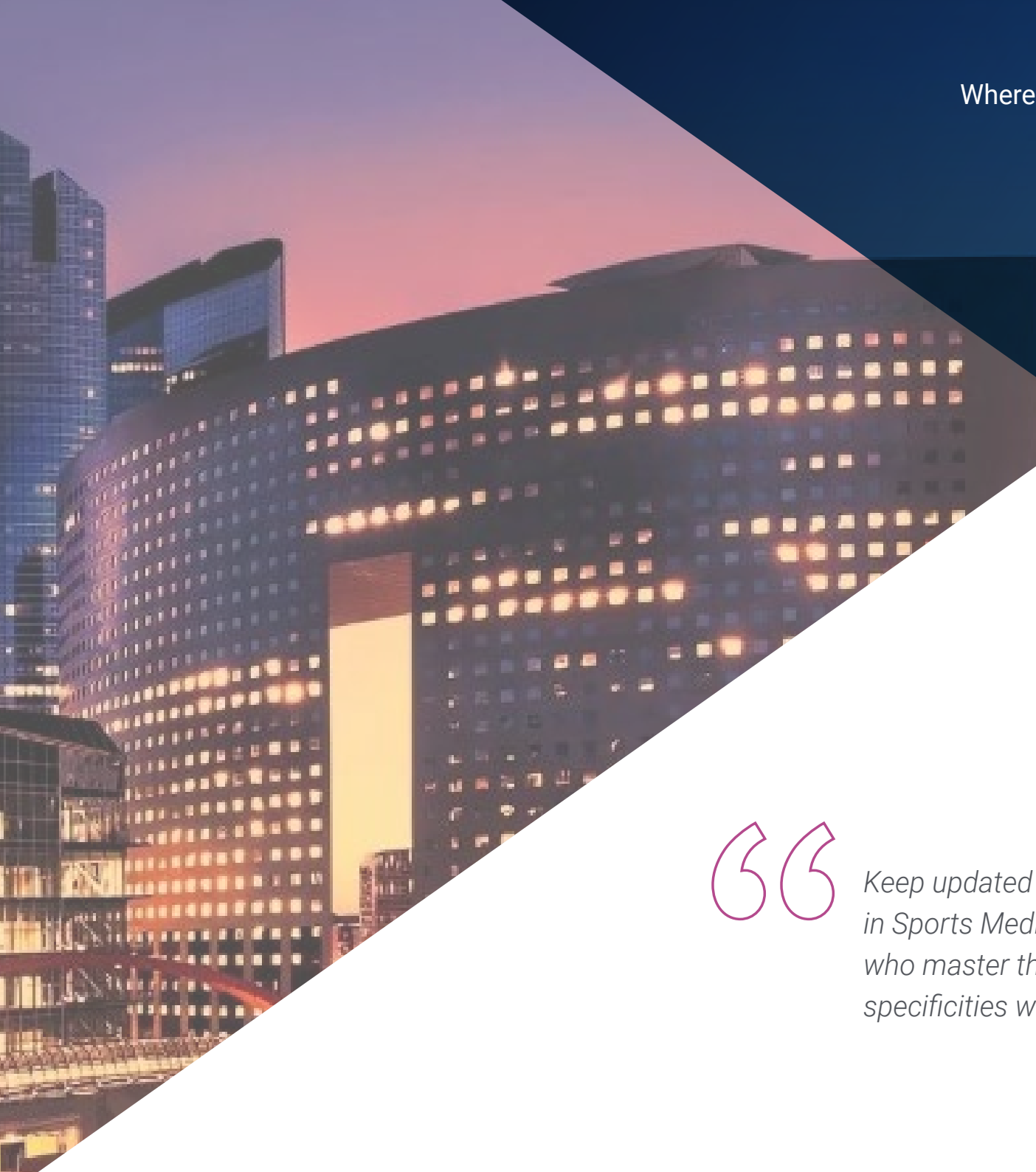
However, students may consult with their academic tutor for any questions or recommendations in this regard. The academic tutor will provide the student with all the necessary information to facilitate the procedures in any case.

# 08

## Where Can I Do the Clinical Internship?

Completing this refresher course in Sports Medicine, the physician will be required to complete a clinical internship in a prestigious health institution. This intensive, face-to-face stay will last 3 weeks and will give the specialist access to first class technological resources and to the most distinguished professionals in this field of healthcare. In addition, they will not be limited by their geographical location since TECH has coordinated the realization of this training in different facilities located in distant geographical points.






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*Keep updated on the most important developments in Sports Medicine, surrounded by professionals who master their theoretical and practical specificities with excellence”*

## tech 44 | Where Can I Do the Clinical Internship?



The student will be able to complete the practical part of this Hybrid Professional Master's Degree at The following centers:



**Medicine**

### Policlínico HM Moraleja

Country	City
Spain	Madrid

Address: P.º de Alcobendas, 10, 28109, Alcobendas, Madrid

Network of private clinics, hospitals and specialized centers distributed throughout Spain.

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**Related internship programs:**

- Rehabilitation Medicine in Acquired Brain Injury Management





Medicine

### Policlínico HM Matogrande

Country	City
Spain	La Coruña

Address: R. Enrique Mariñas Romero, 32G, 2º,  
15009, A Coruña

Network of private clinics, hospitals and specialized centers  
distributed throughout Spain.

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**Related internship programs:**

Sports Physiotherapy  
Neurodegenerative Diseases

09

# 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"*

## At TECH we use the Case Method

What should a professional do in a given situation? Throughout the program, students will face multiple simulated clinical cases, based on real patients, in which they will have to do research, establish hypotheses, and ultimately resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Specialists learn better, faster, 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. Gervas, 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, trying to recreate the real conditions in the physician's professional practice.



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



## Relearning Methodology

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

This 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, a real revolution with respect to the mere study and analysis of cases.

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



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 250,000 physicians have been trained with unprecedented success in all clinical specialties regardless of surgical load. Our pedagogical methodology is developed in a highly competitive environment, with a university student body with a strong socioeconomic profile and an average age of 43.5 years old.

*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.



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.



#### Surgical Techniques and Procedures on Video

TECH introduces students to the latest techniques, the latest educational advances and to the forefront of current medical techniques. All of this in direct contact with students and explained in detail so as to aid their assimilation and understanding. And best of all, you can watch the videos as many times as you like.



#### 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".



#### 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.





#### Expert-Led Case Studies and Case Analysis

Effective learning ought to be contextual. Therefore, TECH presents real cases in which the expert will guide students, 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.



# 10 Certificate

This Hybrid Professional Master's Degree in Sports Medicine guarantees, in addition to the most rigorous and updated training, access to a Hybrid Professional Master's Degree issued by TECH Technological University.





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

This **Hybrid Professional Master's Degree in Sports Medicine** contains the most complete and up-to-date program on the professional and educational field.

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

In addition to the diploma, students will be able to obtain an academic transcript, as well as a certificate outlining the contents of the program. In order to do so, students should contact their academic advisor, who will provide them with all the necessary information.

Title: **Hybrid Professional Master's Degree in Sports Medicine**

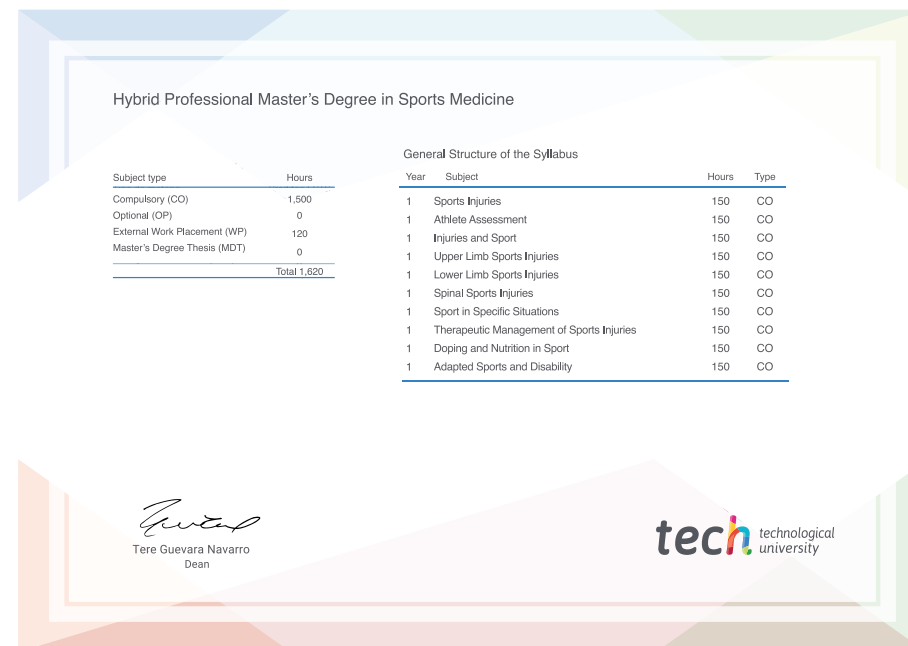
Course Modality: **Hybrid (Online + Clinical Internship)**

Duration: **12 months**

Certificate: **TECH Technological University**

Teaching Hours: **1,620 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.





## Hybrid Professional Master's Degree

### Sports Medicine

Course Modality: Hybrid (Online + Clinical Internship)

Duration: 12 months

Certificate: TECH Technological University

Teaching Hours: 1,620 h.

# Hybrid Professional Master's Degree Sports Medicine

Endorsed by the NBA



**tech** technological  
university

