

# Hybrid Professional Master's Degree

## Rehabilitation and Readaptation of Sports Injuries





## Hybrid Professional Master's Degree

### Rehabilitation and Readaptation of Sports Injuries

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-rehabilitation-readaptation-sports-injuries](http://www.techtute.com/us/medicine/hybrid-professional-master-degree/hybrid-professional-master-degree-rehabilitation-readaptation-sports-injuries)

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# 01

# Introduction

Scientific and technological advances have allowed Rehabilitation and Readaptation of Sports Injuries to experience substantial growth with the emergence of more efficient therapeutic procedures and higher quality work instruments. At the same time, specialists fail to keep up to date on how to implement these innovations in their daily work. For this reason, TECH offers this program, which differs from others on the market in that it has two distinct stages. In the first stage, the physicians will analyze the advances in this discipline in a theoretical way, from a 100% online learning platform. Then, they will develop a first level clinical practice, in a prestigious hospital center, where they will directly apply their new competencies, under the supervision of prestigious experts.





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*With this first level Hybrid Professional Master's Degree, you will be up to date on the most modern intervention protocols in the Rehabilitation and Readaptation of Sports Injuries"*

In the relentless pursuit of science to provide more efficient therapeutic solutions, the medical discipline of Rehabilitation and Rehabilitation of Sports Injuries has benefited enormously. More precise technologies have appeared, aimed at determining the origin of a musculoskeletal condition down to the smallest detail. An example of these are the devices for digitized biomechanical studies that evaluate in depth the state of health of the locomotor system. At the same time, interventional procedures and other non-invasive methodologies have been developed to contribute to the recovery of high-performance athletes.

With this context in mind, TECH has taken the initiative and has designed this very complete Hybrid Professional Master's Degree. The program has an academic modality, pioneer in its kind, which differs from others in the market as it is divided into two fundamental stages. During the first stage, the doctors will examine the most updated theoretical bases in the field of Rehabilitation and Readaptation of Sports Injuries 100% online.

The second phase of this program consists of a rigorous clinical practice, where the specialists will be inserted in a first level hospital center. This qualification process will take place during 3 weeks, in 8-hour consecutive days, from Monday to Friday. During this period, the specialist will have access to the best musculoskeletal rehabilitation technology and will apply advanced readaptation procedures for athletes with serious conditions. All this, under the close supervision of an assistant tutor and a team of great experts.

In addition to this, professionals will have access to 10 additional Masterclasses, conducted by two internationally renowned professors in the field of Rehabilitation and Readaptation of Sports Injuries. Through the invaluable guidance of these experts, with vast experience in elite sports and the NBA, physicians will be kept up to date on the latest advances in preventing and rehabilitating these types of injuries.

This **Hybrid Professional Master's Degree in Rehabilitation and Readaptation of Sports Injuries** 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 professionals in Rehabilitation and Readaptation of Sports Injuries
- ♦ The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional practice
- ♦ Comprehensive systematized action plans for the main pathologies
- ♦ Presentation of practical workshops on procedures diagnosis, and treatment techniques
- ♦ An algorithm-based interactive learning system for decision-making in the clinical situations presented throughout the course
- ♦ 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 an Clinical Internship in one of the best hospital centers



*Thanks to the experience of experts from the NBA and the world of elite sports, you will have access to 10 exclusive Masterclasses, designed by leading coaches and therapists of international renown"*

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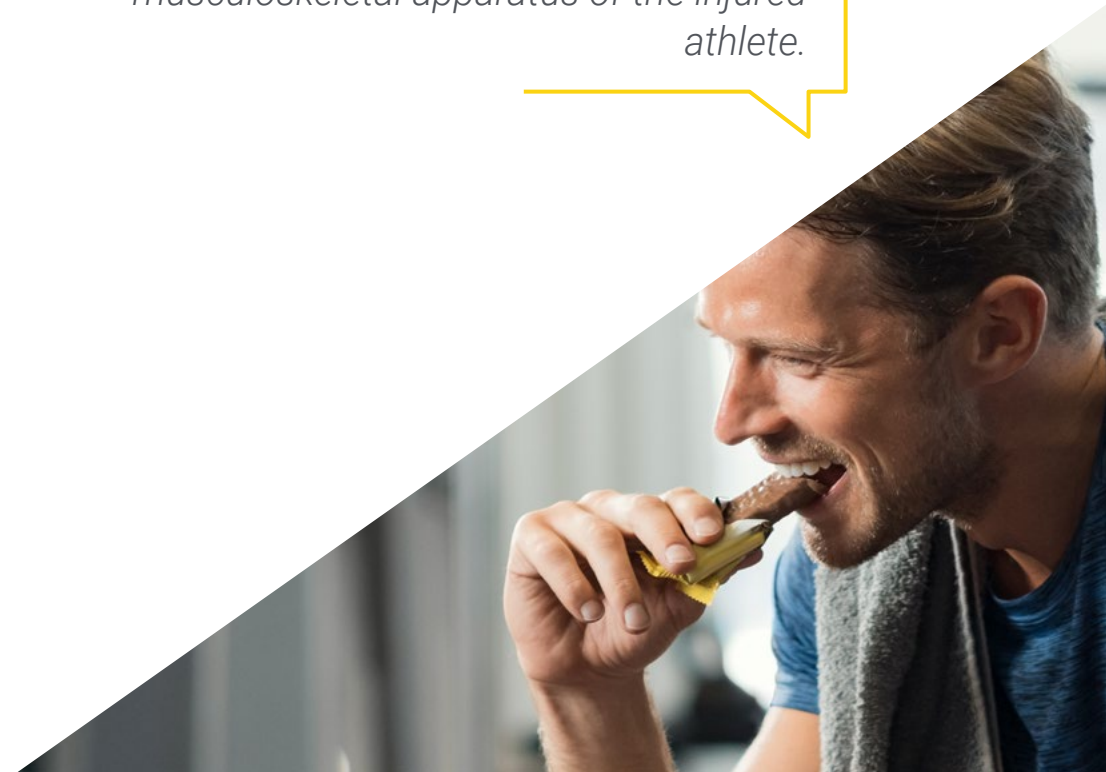
*The clinical practice of this 3-week Hybrid Professional Master's Degree will give you access to a hospital facility equipped with the latest diagnostic and therapeutic resources necessary for the rehabilitation of sports injuries"*

In this proposal for a Hybrid Professional Master's Degree, of a professionalizing nature and hybrid learning modality, the program is aimed at updating medical professionals who require a high level of qualification. The contents are based on the latest scientific evidence, and oriented in a didactic way to integrate theoretical knowledge into practice, and the theoretical-practical elements will facilitate the updating of knowledge and allow decision making in patient management.

Thanks to the multimedia content, developed with the latest educational technology, Medicine professionals will benefit from contextual learning, i.e., a simulated environment that will provide immersive learning programmed to train in real situations. This program is designed around Problem-Based Learning, whereby the physician must try to solve the different professional practice situations that arise during the course. For this purpose, the students will be assisted by an innovative interactive video system created by renowned and experienced experts.

*This rigorous Hybrid Professional Master's Degree will give you the opportunity to put into practice the theoretical knowledge learned, for the care of real patients, through a face-to-face and intensive clinical stay.*

*Through this program, you will be able to incorporate into your professional work the use of powerful digitalized tools for the biomechanical study of the locomotor and musculoskeletal apparatus of the injured athlete.*



# 02

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

This Hybrid Professional Master's Degree is ideal for updating doctors dedicated to the Rehabilitation and Readaptation of Sports Injuries. To facilitate its updating, TECH has organized an academic modality, pioneer in its type, divided into two fundamental stages. In the first, the specialists will be acquainted with the most recent theoretical framework for this branch of health and, in the second, they will carry out a practical, face-to-face and intensive stay in a renowned hospital facility. In this institution, they will have the opportunity to apply their new knowledge and skills to real cases.







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*During this program, you will examine the latest techniques in motivational coaching and emotional support for the high-performance athletes who must readapt their fitness and physical activity to the limitations of a serious injury"*

### 1. Updating from the Latest Technology Available

Medical technologies are constantly evolving to facilitate the work of healthcare professionals specialized in Sports Injury Rehabilitation. Therefore, it is essential that they can use them effectively in their daily work. This Hybrid Professional Master's Degree is ideal for all of them to master the most updated tools of this discipline, participating in an academic modality that combines theoretical and practical learning like no other in the educational market.

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

During the two phases of this Hybrid Professional Master's Degree, the physicians will be assisted at all times by professionals with extensive experience. First, in the theoretical stage, a renowned teaching staff will answer your questions and offer personalized guidance. Then, during the practical and face-to-face stay, prestigious experts will accompany the physicians in the treatment of real patients with sports injuries.

### 3. Entering First-Class Clinical Environments

In a second stage of this program, TECH has foreseen the needs of the specialist in the use of complex technological tools for the rehabilitation of high-performance athletes. For this reason, it has planned a practical on-site stay where the doctors will be able to learn how to use them directly, working alongside leading experts in this professional field, and in hospital facilities of international scope.





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

Existing academic programs do not manage to unify the theoretical field with practical activity with greater excellence than TECH. This makes this Hybrid Professional Master's Degree a unique study modality of its kind, which enables the specialists to better assimilate the techniques and therapeutic devices within their reach. The program allows the doctors to apply the most complex procedures for the benefit of real patients during 3 weeks of face-to-face and intensive educational activity.

#### 5. Expanding the Boundaries of Knowledge

With this program, TECH encourages all its graduates to expand their professional horizons from an international perspective. To this end, it has coordinated an Clinical Internship in renowned hospitals, located in different geographical locations, and willing to receive doctors to offer them a holistic and rigorous update in the field of Rehabilitation and Readaptation of Sports Injuries.

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

# 03 Objectives

This qualification is of great value for professionals who wish to acquire a more updated vision on the Rehabilitation and Readaptation of Sports Injuries. From it, they will be able to incorporate the latest diagnostic and treatment methods to their work practice. Likewise, to ensure the mastery of all theoretical and practical aspects related to this discipline, TECH has outlined a series of academic objectives. In order to pass this program, specialists will have to assimilate all of them and incorporate them more easily into their professional activity.



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*This program includes, in an exhaustive manner, the most modern techniques of fitness, functional and biomechanical assessment. Enroll now and you will learn how to apply them in your daily professional practice"*



## General Objective

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- This Hybrid Professional Master's Degree will add to the professional competences of the physician the most updated knowledge on sports rehabilitation, injury prevention and functional recovery. In particular, they will delve into the techniques for assessing the athlete from the physical and biomechanical point of view and from the latest tools that facilitate a precise diagnosis. They will also learn to design specific recovery programs and, in particular, strategies focused on the rehabilitation of the locomotor system



*This Hybrid Professional Master's Degree is the opportunity you were looking for to get up to date on the latest therapeutic tools for the rehabilitation of sports injuries"*





## Specific Objectives

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### Module 1. Personal Training

- ♦ Integrate the concepts of balance training, cardiovascular, strength, plyometrics, speed, agility, etc. as a key tool for personnel in injury prevention and rehabilitation
- ♦ Design training programs individualized to the characteristics of the subject to achieve better results

### Module 2. Preventive Work for Sports Practice

- ♦ Identify the risk factors involved in the practice of physical-sports activities
- ♦ Use different types of materials for the planning of different types of exercises in a customized training program
- ♦ Learning Pilates exercises with different types of machines designed to be fundamental in preventive work
- ♦ See *Stretching* and Postural Re-Education as essential methods for the prevention of injuries and alterations of the locomotor system

### Module 3. Structure of the Locomotor System

- ♦ Manage the different anatomical concepts: axes, planes and anatomical position
- ♦ Differentiate the different elements that make up the locomotor apparatus
- ♦ See the functioning processes of the integrated active and passive locomotor apparatus

### Module 4. Fitness, Functional and Biomechanical Assessment

- ♦ Use biomechanics of movement as a key tool in the prevention and rehabilitation process
- ♦ Clarify the importance of nutritional, biochemical, genetic and quality of life assessment from the initial period to the end of the process
- ♦ Evaluate the different parameters related to physical fitness: strength, speed, flexibility, endurance, etc
- ♦ Detect anomalies that hinder or prevent a correct recovery/rehabilitation process

### Module 5. Frequent Injuries in Athletes

- ♦ Determine the etiology of the most frequent injuries that occur in sports practice
- ♦ Identify the causes of the main injuries in sports
- ♦ Distinguish the different types of injuries: tendon, muscle, bone, ligament and joint injuries

### Module 6. Exercise for the Readaptation of Sports Injuries

- ♦ Establish exercise and physical activity as a strategy for improving health
- ♦ Classify the different types of exercises according to the planning of the personalized training to be performed
- ♦ Differentiate the different types of specific physical exercises according to the muscles or muscle groups to be readapted
- ♦ Manage the different techniques applied in the treatment of injuries produced in sports practice
- ♦ Employ proprioceptive re-education in all rehabilitation and recovery processes, as well as for a lower prevalence of injury recurrence
- ♦ Plan and design specific programs and protocols with preventive effects
- ♦ Manage the different types of sports and essential sports practices as adjuvants during the process of functional rehabilitation and recovery

### Module 7. Frequent Pathologies of the Locomotor System

- ♦ Analyze the severity of ligament diseases and their assessment for a better and more efficient rehabilitation
- ♦ Focus on the analysis of joint pathologies due to their high incidence in sports
- ♦ Examine the most common pathologies that usually occur in the spine
- ♦ Assess pain as an element to be taken into account in the diagnosis of a greater or lesser degree of injury

### Module 8. Exercise for Functional Recovery

- ♦ Analyze the different possibilities offered by functional training and advanced rehabilitation and advanced rehabilitation
- ♦ Apply the Pilates method as an integral system for the rehabilitation of the locomotor system in functional recovery
- ♦ Plan specific Pilates exercises and programs for the different zones of the locomotor apparatus with and without apparatus







### **Module 9. Nutrition for Functional Recovery and Rehabilitation**

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

### **Module 10. Coaching and Personal Coach Business**

- ♦ Acquire and understand the different healthy habits and lifestyles, as well as their implementation possibilities
- ♦ Apply motivational strategies to achieve better results in the process of sports rehabilitation and functional recovery
- ♦ Plan and design spaces that favor a better development of the specific personal training work to be carried out
- ♦ Understand the personal training process where the relationship with the client and the feedback provided by the client are fundamental to the process

# 04 Skills

The innovative modality of studies, implemented by TECH to conform this Hybrid Professional Master's Degree, provides the specialist with deep theoretical knowledge and the development of practical skills. Through both, the doctors will get updated on innovations in Rehabilitation and Readaptation of Sports Injuries, acquiring the most desired competencies in a professional of this health discipline.





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*By unifying with excellence the theoretical and practical study of Rehabilitation and Readaptation of Sports Injuries, this program will make you a specialist with broad competences and deep professional knowledge"*



## General Skills

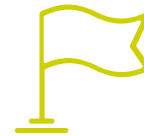
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- Plan and implement rehabilitation programs aimed at sports readjustment and functional recovery
- Master the particularities of personal training adapted to each person and design individualized and specific programs according to the needs of athletes
- Gain an in-depth understanding of the biomechanics of movement and apply it to rehabilitation processes

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*Update your knowledge about the nutrition of athletes with injuries in the process of readaptation through this comprehensive Hybrid Professional Master's Degree"*





## Specific Skills

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- ◆ In-depth examination of the locomotor system
- ◆ Plan the specific exercises for each training, applying machines for functional training or pilates method techniques
- ◆ Identify the main sports injuries
- ◆ Design and carry out customized training
- ◆ Master the main joint and ligament pathologies
- ◆ Plan rehabilitation exercises using the Pilates method for the rehabilitation of the locomotor system
- ◆ Provide nutritional diets adapted to the needs of each athlete and taking into account their type of injury
- ◆ Apply *coaching* techniques to personal training and apply motivation to obtain better results in the recovery of the athlete

# 05

# Course Management

After a thorough search, TECH has chosen renowned experts to make up the faculty of this program. The selected professors have the endorsement of a professional trajectory with numerous challenges and therapeutic successes. All of them have in-depth knowledge of the injuries that most frequently afflict the athletes, the tools to diagnose them accurately and the strategies to rehabilitate and readapt the athletes to their normal physical activity in the face of these incidences. With the utmost responsibility, they have put together an educational syllabus of the highest level and, throughout the theoretical phase of this Hybrid Professional Master's Degree, they will provide the physicians with personalized academic guidance.





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*All TECH teachers will provide you with personalized guidance during the theoretical phase of this program, so that you can achieve your educational goals with speed and rigor”*

## International Guest Director

Charles Loftis, Ph.D., is a renowned specialist who serves as a **sports performance therapist** for the **Portland Trail Blazers** in the **NBA**. His impact on the world's premier basketball league has been significant, bringing distinguished expertise in creating strength and conditioning programs.

Prior to joining the Trail Blazers, he was the head strength and conditioning coach for the Iowa Wolves, implementing and overseeing the development of a comprehensive player program. In fact, his experience in the sports performance field began with the establishment of XCEL Performance and Fitness, of which he was the founder and head coach. There, Dr. Charles Loftis worked with a wide range of athletes to develop strength and conditioning programs, as well as working on the **prevention and rehabilitation of sports injuries**.

His academic background in the field of chemistry and biology gives him a unique perspective on the science behind sports performance and physical therapy. As such, he holds CSCS and RSCC designations from the National Strength and Conditioning Association (NSCA), which recognise his knowledge and skills in the field. He is also certified in PES (Performance Enhancement Specialist), CES (Corrective Exercise Specialist) and dry needling.

All in all, Dr. Charles Loftis is a vital member of the NBA community, working directly with both the strength and performance of elite athletes as well as the necessary prevention and rehabilitation of various sports injuries.





## Dr. Loftis, Charles

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- Physical Coach at the Portland Trail Blazers, Portland, United States
- Head Strength and Conditioning Coach for the Iowa Wolves
- Founder and Head Coach at XCEL Performance and Fitness
- Head Performance Coach for Oklahoma Christian University men's basketball team
- Physical Therapist at Mercy
- PhD in Physical Therapy from Langston University
- Degree in Chemistry and Biology from Langston University

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

## International Guest Director

Isaiah Covington is a highly skilled performance coach, with extensive experience in treating and addressing a variety of injuries in elite athletes.

In fact, his professional career has been directed towards the **NBA**, one of the most important sports leagues in the world. He is the **performance coach of the Bolton Celtics**, one of the most important teams in the Eastern Conference and with the greatest projection in the United States.

His work in such a demanding league has made him specialize in maximizing the **physical** and **mental potential** of the players. Key to this has been his past experience with other teams, such as the Golden State Warriors and the Santa Cruz Warriors. This has also allowed him to work on sports injuries, focusing on the **prevention** and **rehabilitation** of the most common injuries in elite athletes.

In the academic field, his interest has focused on the field of **kinesiology**, **exercise science** and **high performance sport**. This has led him to excel prolifically in the NBA, working day-to-day with some of the most important basketball players and coaching staffs in the world.



## Mr. Covington, Isaiah

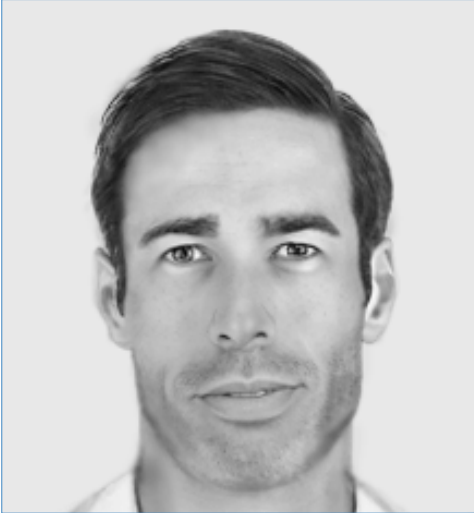
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- Performance Coach and Fitness Trainer for the Boston Celtics, Boston, USA
- Performance Coach of the Golden State Warriors
- Head Performance Coach, Santa Cruz Warriors, Santa Cruz, USA
- Performance Coach at Pacers Sports & Entertainment
- Degree in Kinesiology and Exercise Science from the University of Delaware
- Specialization in Training Management
- Professional Master's Degree in Kinesiology and Exercise Science from Long Island University
- Professional Master's Degree in Performance Sport from the Australian Catholic University

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*Take the opportunity to learn about the latest advances in this field in order to apply it to your daily practice"*

## Management



### Dr. González Matarín, Pedro José

- Technical researcher of Health Education in Murcia
- Teacher and researcher at the University of Almeria
- Teacher and researcher at the University of Almeria
- High Performance Coach
- PhD in Health Sciences
- Degree in Physical Education
- Professional Master's Degree in Functional Recovery in Physical Activity and Sport
- Professional Master's Degree in Regeneration Medicine
- Professional Master's Degree in Physical Activity and Health
- Professional Master's Degree in Dietetics and Diet Therapy
- Member of: SEEDO and AEEM



# 06

## Structure and Content

The academic modules of this Hybrid Professional Master's Degree are rigorous and demanding. In each of them, the physicians will find the latest scientific evidence on the therapeutic management of sports injuries. In particular, they will delve into biomechanical recovery techniques and other potentialities such as proprioceptive and kinesthetic training. At the same time, he will explore the most advanced diagnostic tools in the detection of pathophysiologicals of the high performance athlete. It will also delve into how personalized personal training can help prevent such incidents. The program is also supported by multimedia resources, such as infographics and videos, of great didactic value for learning.





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*The academic modules of this program are arranged on a 100% online platform, interactive and without pre-established study schedules and evaluations”*

### Module 1. Personal Training

- 1.1. Personal Training
- 1.2. Flexibility Training
- 1.3. Endurance and Cardiorespiratory Training
- 1.4. Core Training
  - 1.4.1. Core Musculature
  - 1.4.2. The Training of Stabilization Systems
  - 1.4.3. Core Science and Training
  - 1.4.4. Core Training Guidelines
  - 1.4.5. Core Training Program Design
- 1.5. Balance Training
- 1.6. Plyometric Training
  - 1.6.1. Principles of Plyometric Training
  - 1.6.2. Designing a Plyometric Training Program
- 1.7. Speed and Agility Training
- 1.8. Strength Training
- 1.9. Integrated Program Design for optimal performance
- 1.10. Exercise Modalities

### Module 2. Preventive Work for Sports Practice

- 2.1. Risk Factors in Sports
- 2.2. Working with Mat Exercises
- 2.3. Reformer and Cadillac
- 2.4. Wunda Chair
- 2.5. Active Global Stretching and Global Postural Re-education
- 2.6. Fitball
- 2.7. TRX
- 2.8. Body Pump
- 2.9. Medicine Ball y Kettlebells
- 2.10. Thera Band
  - 2.10.1. Advantages and Properties
  - 2.10.2. Individual Exercises
  - 2.10.3. Exercises in Pairs
  - 2.10.4. Respiratory muscles

### Module 3. Structure of the Locomotor System

- 3.1. Anatomical Position, Axes and Planes
- 3.2. Bone
- 3.3. Joints
  - 3.3.1. Etiology
  - 3.3.2. Synarthrosis
  - 3.3.3. Amphiarthrosis
  - 3.3.4. Diarthrosis
- 3.4. Cartilage
- 3.5. Tendons and Ligaments
- 3.6. Skeletal Muscle
- 3.7. Development of the Musculoskeletal System
- 3.8. Components of the Musculoskeletal System
- 3.9. Nervous Control of Skeletal Muscles
- 3.10. Muscle Contraction
  - 3.10.1. Functioning of Muscle Contraction
  - 3.10.2. Type of Muscle Contraction
  - 3.10.3. Muscle Bioenergetics

### Module 4. *Fitness*, Functional and Biomechanical Assessment

- 4.1. Anatomy and Kinesiology
- 4.2. The Science of Human Motion
- 4.3. Applied Biomechanics:
- 4.4. Initial Customer Inquiry
- 4.5. Physical Fitness Testing Protocols and Standards
- 4.6. Functional Movement Assessment
  - 4.6.1. Motion Detection, Testing and Assessment
  - 4.6.2. *Functional Movement Screen (FMS)*
  - 4.6.3. Selective Assessment of Functional Movement
  - 4.6.4. Specific Functional Performance Tests



- 4.7. Nutritional Assessment, Genetic Evaluation, Biochemistry and Quality of Life
- 4.8. Biomechanics
  - 4.8.1. Biomechanical Fundamentals
  - 4.8.2. Biomechanics of Human Movement
  - 4.8.3. Muscular Control of Movement
  - 4.8.4. Biomechanics of Resistance Exercise
- 4.9. Evaluation of Physical Fitness
- 4.10. Risk Detection and Stratification

### Module 5. Frequent Injuries in Athletes

- 5.1. Shoulder Injuries in Sports
  - 5.1.1. Relevant Aspects of the Shoulder
  - 5.1.2. Injuries and Disorders Related to Acute and Chronic Shoulder Instability
  - 5.1.3. Clavicular Injuries
  - 5.1.4. Nerve Injuries in the Shoulder Region
  - 5.1.5. Brachial Plexus Injuries
- 5.2. Upper Arm Injuries
- 5.3. Elbow Injuries in Sports
- 5.4. Forearm, Wrist and Hand Injuries in Sports
- 5.5. Head and Facial Injuries in Sports
- 5.6. Throat, Chest and Abdominal Injuries in Sports
- 5.7. Back/Spine Injuries in Sport
  - 5.7.1. Relevant Aspects of the Back and Spine
  - 5.7.2. Diagnosis of Back Pain
  - 5.7.3. Neck and cervical Injuries
  - 5.7.4. Injuries of the Thoracic and Lumbar Area
- 5.8. Hip Joint, Pelvic and Groin Injuries in Sports
- 5.9. Thigh, Knee and Leg Injuries in Sport
- 5.10. Ankle and Foot Injuries in Sport

### Module 6. Exercise for the Readaptation of Sports Injuries

- 6.1. Physical Activity and Physical Exercise for Health Improvement
- 6.2. Classification and Selection Criteria for Exercises and Movements
- 6.3. Principles of Sports Training
  - 6.3.1. Biological Principles
    - 6.3.1.1. Functional Unit
    - 6.3.1.2. Multilaterality
    - 6.3.1.3. Specificity
    - 6.3.1.4. Overload
    - 6.3.1.5. Supercompensation
    - 6.3.1.6. Individualization
    - 6.3.1.7. Continuity
    - 6.3.1.8. Progression
  - 6.3.2. Pedagogical Principles
    - 6.3.2.1. Transfer
    - 6.3.2.2. Efficacy
    - 6.3.2.3. Voluntary Stimulation
    - 6.3.2.4. Accessibility
    - 6.3.2.5. Periodization
- 6.4. Techniques Applied to the Treatment of Sports Injuries
- 6.5. Specific Action Protocols
- 6.6. Phases of the Process of Organic Recovery and Functional Recovery
- 6.7. Design of Preventive Exercises
- 6.8. Specific Physical Exercises by Muscle Groups
- 6.9. Proprioceptive Reeducation
  - 6.9.1. Bases of Proprioceptive and Kinesthetic Training
  - 6.9.2. Proprioceptive Consequences of Injury
  - 6.9.3. Development of Sport Proprioception
  - 6.9.4. Materials for Proprioception Work
  - 6.9.5. Phases of Proprioceptive Re-education
- 6.10. Sports Practice and Activity During the Recovery Process

## Module 7. Frequent Pathologies of the Locomotor System

- 7.1. Cervical pain, Dorsalgia and Lumbago
- 7.2. Scoliosis
- 7.3. Herniated Disc
- 7.4. Shoulder Tendinitis
- 7.5. Epicondylitis
  - 7.5.1. Epidemiology
  - 7.5.2. Pathologic Anatomy
  - 7.5.3. Clinical Symptoms
  - 7.5.4. Diagnosis
  - 7.5.5. Treatment
- 7.6. Hip Osteoarthritis
- 7.7. Gonarthrosis
- 7.8. Plantar Fasciitis
  - 7.8.1. Conceptualization
  - 7.8.2. Risk Factors
  - 7.8.3. Symptoms
  - 7.8.4. Treatment
- 7.9. Hallux Valgus and Flat Feet
- 7.10. Sprained Ankle

## Module 8. Exercise for Functional Recovery

- 8.1. Functional Training and Advanced Rehabilitation
  - 8.1.1. Function and Functional Rehabilitation
  - 8.1.2. Proprioception, Receptors and Neuromuscular Control
  - 8.1.3. Central Nervous System: Integration of Motor Control
  - 8.1.4. Principles for the Prescription of Therapeutic Exercise
  - 8.1.5. Restoration of Proprioception and Neuromuscular Control
  - 8.1.6. The 3-Phase Rehabilitation Model
- 8.2. The Science of Pilates in Rehabilitation
- 8.3. Principles of Pilates
- 8.4. The Integration of Pilates in Rehabilitation
- 8.5. Methodology and Equipment Necessary for Effective Practice

- 8.6. Cervical and Thoracic Spine
- 8.7. The Lumbar Spine
- 8.8. Shoulder and Hip
- 8.9. Knee
- 8.10. Foot and Ankle

## Module 9. Nutrition for Functional Recovery and Rehabilitation

- 9.1. Integral Nutrition as a Key Element in Injury Prevention and Recovery
- 9.2. Carbohydrates
- 9.3. Proteins
- 9.4. Fats
  - 9.4.1. Saturation
  - 9.4.2. Unsaturated
    - 9.4.2.1. Monounsaturated
    - 9.4.2.2. Polyunsaturated
- 9.5. Vitamins
  - 9.5.1. Water soluble
  - 9.5.2. Fat soluble
- 9.6. Minerals
  - 9.6.1. Macrominerals
  - 9.6.2. Microminerals
- 9.7. Fibre
- 9.8. Water:
- 9.9. Phytochemicals
  - 9.9.1. Phenols
  - 9.9.2. Tioles
  - 9.9.3. Terpenes
- 9.10. Food Supplements for Prevention and Functional Recovery



## Module 10. Coaching and Personal Coach Business

- 10.1. The Beginning of the Personal Trainer
- 10.2. Coaching for the Personal Trainer
- 10.3. The Personal Trainer as a Promoter of Exercise and the Effects on Health and Performance
  - 10.3.1. Basic Fundamentals of Physical Exercise
  - 10.3.2. Acute Exercise Responses
  - 10.3.3. Health Effects of Exercise
    - 10.3.3.1. Resistance
    - 10.3.3.2. Strength and Power
    - 10.3.3.3. Balance
  - 10.3.4. Health Effects of Exercise
    - 10.3.4.1. Physical Health
    - 10.3.4.2. Mental Health
- 10.4. Need for Behavioral Changes
- 10.5. The Personal Trainer and the Relationship with the Client
- 10.6. Motivational Tools
  - 10.6.1. Appreciative Exploration
  - 10.6.2. Motivational Interview
  - 10.6.3. Building Positive Experiences
- 10.7. Psychology for the Personal Trainer
- 10.8. Personal Trainer's Career Path
- 10.9. Design and Maintenance and Material Installations
- 10.10. Legal Aspects of Personal Training

07

# Clinical Internship

This Hybrid Professional Master's Degree concludes with an intensive and immersive face-to-face clinical practice, to be carried out in a prestigious health institution. This scenario, qualified with excellence for the practice of Rehabilitation and Readaptation of Sports Injuries, will give the doctors the opportunity to acquire skills in a direct way and that will make them stand out in the professional panorama.





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*Thanks to this qualification, you will deal with real cases of injured athletes, at the same time that you will discuss with great experts about their therapeutic management"*

During 3 weeks, the second half of this Hybrid Professional Master's Degree will offer the specialists a unique opportunity to develop precise skills for the management and rehabilitation of sports injuries. The educational process will take place in a renowned hospital facility, where each physician will have at their disposal state-of-the-art technologies and procedures for the treatment and recovery of sports injuries.

Therefore, the professionals will have the opportunity to evaluate real cases and expertly determine which medical strategy is ideal for their rehabilitation and readaptation. In this regard, they will be able to clarify their doubts with highly experienced experts and an assistant tutor, who will be in charge of supervising their academic progress at all times. They will also introduce you to the most complex dynamics of this professional field.

The practical part will be carried out with the active participation of the student performing the activities and procedures of each area of competence (learning to learn and learning to do), with the accompaniment and guidance of professors and other fellow students who facilitate teamwork and multidisciplinary integration as transversal competencies for medical practice (learning to be and learning to relate).

The procedures described below will form the basis of the practical part of the internship, 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>Latest generation diagnostic methods for Sports Injuries</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 through ultrasound   |
|  | Develop digitized biomechanical studies to address the health status of the foot health in particular and the locomotor system in general  |
| <b>Surgical rehabilitation and new therapeutic approaches to sports injuries</b> | Perform surgery for the reconstruction of the anterior cruciate ligament from the tearing of this soft tissue due to prolonged physical activity   |
|  | perform 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 |
|  | Manage the advantages and contraindications of injections in high performance athletes   |
|  | Applied nerve blocking techniques to reduce 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   |
|  | Treat the patient with cortisone injections in the patient with chronic or acute pain to enhance its relief  |
| <b>Latest trends in the rehabilitation of sports injuries</b>                    | Indicate physiotherapy specialized in the non-surgical management of musculoskeletal conditions, strengthen muscles, recover broken bones and prevent further breakage   |
|  | Manage the principles of proprioceptive and kinesthetic training and recognize how to apply them to benefit the patient's recovery   |
|  | Implement the benefits of the Pilates Method in the recovery and readaptation of patients with severe sports injuries  |
|  | <i>Apply motivational coaching techniques and emotional support to the high performance athletes who must readapt their physical condition and activity to the limitations of a serious injury</i>   |
| <b>New advances in food and nutrition for athletes</b>                           | Apply patient analysis techniques based on Nutrigenetics and Nutrigenomics   |
|  | Assess the implications of phytochemicals and non-nutritive compounds in the daily diet of the athlete   |
|  | Incorporate transgenic foods into contemporary dietary approaches  |
|  | Teach modern guidelines on Hydration in sports practice  |
|  | Periodically examine the basis of physiological regulation of nutrition, appetite and satiety  |
|  | Explore physiological adaptation to different types of physical exercises  |

## 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 purchasing 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 Clinical Internship at the center.





## General Conditions for Clinical Internship

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 Clinical Internship 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 students 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?

To complete this Hybrid Professional Master's Degree, it is essential to take the Clinical Internship. Throughout the internship, TECH has foreseen the incorporation of the doctor in a prestigious hospital institution for 3 weeks. This stay, face-to-face and intensive, will give the specialist access to first level technological resources for the Rehabilitation and Readaptation of high performance athletes with severe injuries. At the same time, they will be able to discuss procedures and management techniques for real patients with experts of distinguished trajectory in this field of health. In addition, you will not be limited by your geographic location as these programs have been coordinated with facilities located in different geographic locations.






“

*Get up to date with the latest techniques in Sports Injury Rehabilitation, in the company of experts qualified in a theoretical and practical way for this professional practice"*

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



The students will be able to complete the practical part of this Hybrid Professional Master centers:



Medicine

### Policlínica Longares

|         |        |
|---------|--------|
| Country | City   |
| Spain   | Madrid |

Address: Julia García Boután 18, Primero B.  
Madrid. 28022

For Policlínica Longares, patients are your family

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**Related Clinical Internships:**

- Rehabilitation Medicine in Geriatrics
- Rehabilitation and Readaptation of Sports Injuries





Medicine

### Policlínico HM Moraleja

Country: Spain  
City: Madrid

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

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

**Related Clinical Internships:**

- Rehabilitation Medicine in Acquired Brain Injury Management



Medicine

### Policlínico HM Matogrande

Country: Spain  
City: La Coruña

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

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

**Related Clinical Internships:**

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.



“

*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. Gérvas, the clinical case is the annotated presentation of a patient, or group of patients, which becomes a "case", an example or model that illustrates some peculiar clinical component, either because of its teaching power or because of its uniqueness or rarity. It is essential that the case is based on current professional life, 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.

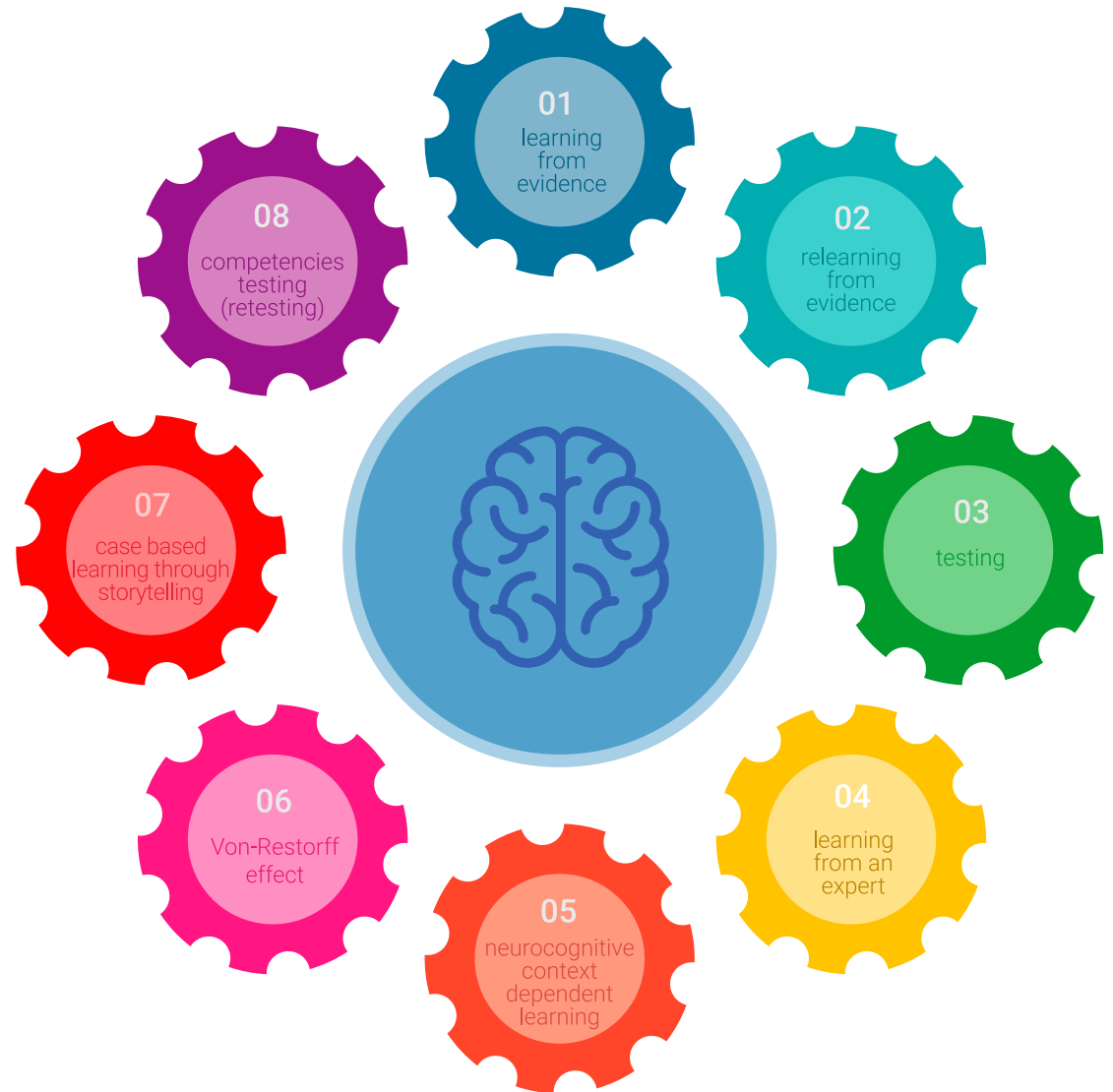


## Relearning Methodology

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.

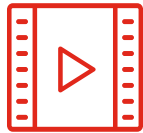
*Relearning will allow you to learn with less effort and better performance, involving you more in your specialization, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation to success.*

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

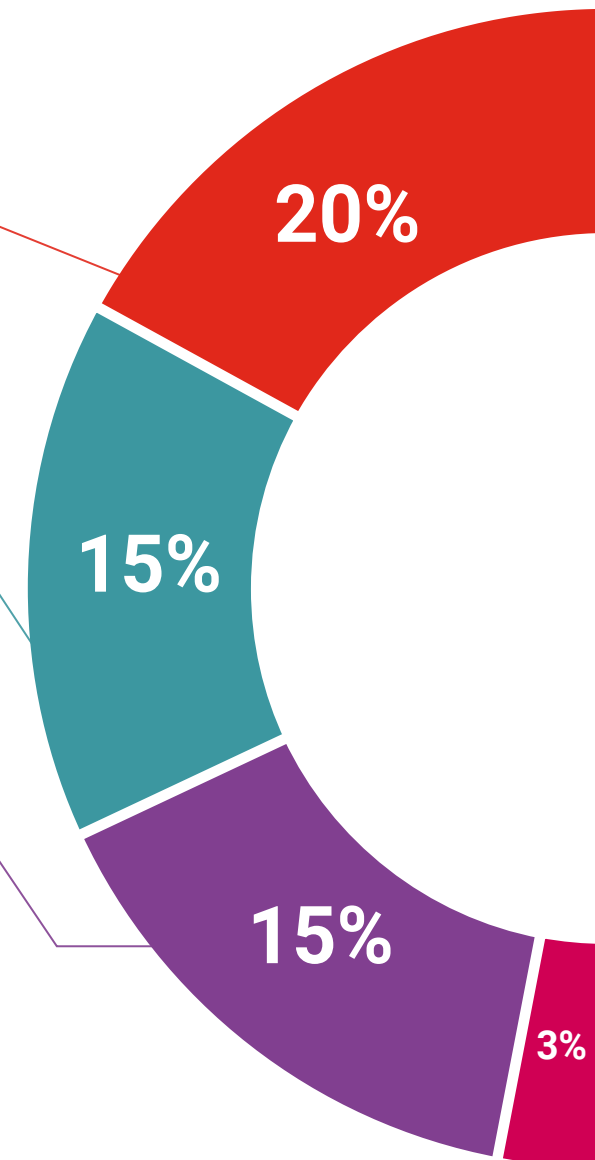
The TECH team presents the contents attractively and dynamically in multimedia lessons that include audio, videos, images, diagrams, and concept maps in order to reinforce knowledge.

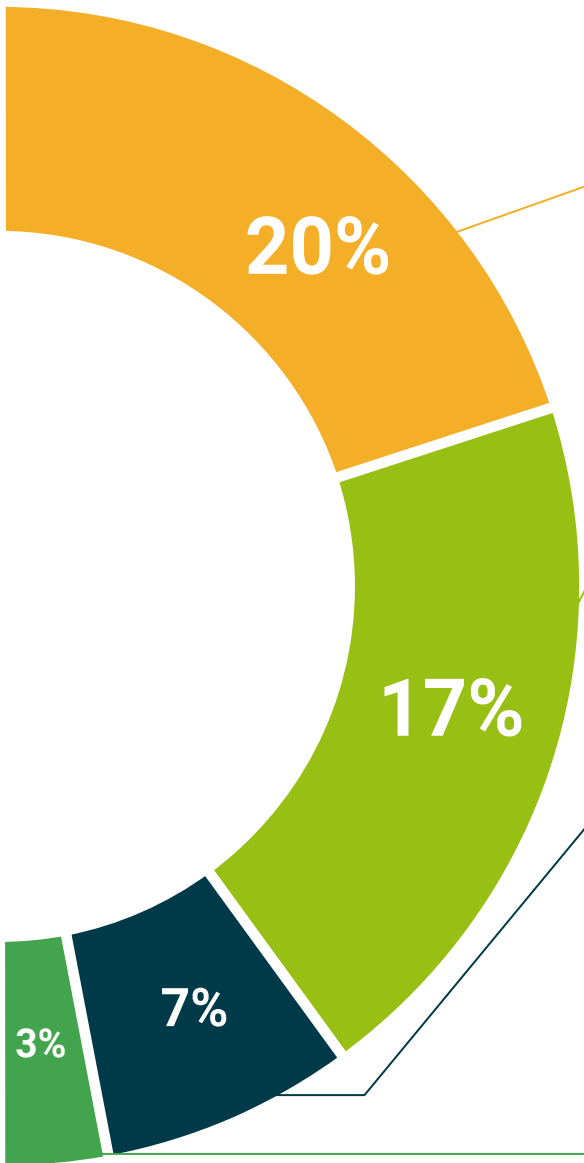
This exclusive educational system for presenting multimedia content was awarded by Microsoft as a "European Success Story".



#### 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

The Hybrid Professional Master's Degree in Rehabilitation and Readaptation of Sports Injuries guarantees students, in addition to the most rigorous and up-to-date education, access to a Hybrid Professional Master's Degree diploma issued by TECH Technological University.



“

*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 Rehabilitation and Readaptation of Sports Injuries** 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 Rehabilitation and Readaptation of Sports Injuries**

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

Duration: **12 months**

Certificate: **TECH Technological University**

Teaching Hours: **1,620 h.**



\*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

Rehabilitation and Readaptation of Sports Injuries

Modality: Hybrid (Online + Clinical Internship)

Duration: 12 months

Certificate: TECH Technological University

Teaching Hours: 1,620 h.

# Hybrid Professional Master's Degree

## Rehabilitation and Readaptation of Sports Injuries

