



Physical Exercise in

Osteoarticular and Respiratory Pathology

» Modality: online

» Duration: 6 months

» Certificate: TECH Technological University

» Dedication: 16h/week

» Schedule: at your own pace

» Exams: online

Website: www.techtitute.com/pk/sports-science/postgraduate-diploma/postgraduate-diploma-physical-exercise-osteoarticular-respiratory-pathology

Index

> 06 Certificate

> > p. 30





tech 06 | Introduction

Personal trainers who are dedicated to working with people with diseases must have a high level of specialization in the disease, which allows them to create sports routines according to the needs of each user according to their pathology. In this Postgraduate Diploma, the objective is to train these professionals in Osteoarticular and Respiratory Pathologies, in order to recognize the exercise needs of each user and be able to guide them in their training.

This Postgraduate Diploma addresses a series of pathologies that are related either to Structural and Functional Alterations of Osteoarticular Structures (bone, cartilage, capsule, ligaments), or to metabolic aspects of the bone: Osteoporosis (reduced bone mineral density); Arthritis (joint inflammation-degeneration involving cartilage degeneration) and Rheumatoid Arthritis (autoimmune features).

In addition, you will learn in depth about Respiratory Pathologies, including nasal passages, bronchi and lungs. Thus, chronic diseases such as asthma (airway inflammation) and chronic obstructive pulmonary disease have been included.

On the other hand, there will also be time to learn about Cardiovascular Diseases, which are the main cause of death in most of the world, affecting western society to a great extent.

Specifically, this Postgraduate Diploma will define in detail the characteristics of each pathology and the fundamental criteria for intervention through physical exercise programs in this population, also considering the important role in the intervention of lifestyle modification.

To train you in this field, at TECH we have designed this Postgraduate Diploma, which has contents of the highest teaching and educational quality, which aims to turn our students into successful professionals, following the highest quality standards in teaching at international level. In addition, as it is an online Postgraduate Diploma, the student is not constrained by fixed schedules or the need to move to another physical location, but can access the contents at any time of the day, balancing their work or personal life with their academic life as they wish.

This Postgraduate Diploma in Physical Exercise in Osteoarticular and Respiratory

Pathology contains the most complete and up-to-date scientific program on the market.

The most important features of the program include:

- The development of numerous case studies presented by specialists in personal training
- The graphic, schematic, and eminently practical contents with which they are created contain information that is indispensable for professional practice
- It contains exercises where the self-assessment process can be carried out to improve learning
- Algorithm-based interactive learning system for decision-making
- Special emphasis on innovative methodologies in personal training
- Theoretical lessons, questions to the expert, debate forums on controversial topics, and individual reflection assignments
- Content that is accessible from any fixed or portable device with an Internet connection



Introduction | 07 tech



This Postgraduate Diploma is the best investment you can make when choosing a refresher program for two reasons: in addition to updating your knowledge as a personal trainer you will obtain a certificate from the main online university in Spanish: TECH"

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

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

This program is designed around Problem-Based Learning, whereby the professional must try to solve the different professional practice situations that arise during the academic year. For this purpose, the professional will be assisted by an innovative interactive video system developed by recognized experts in the design of exercise programs for people with osteoarticular and respiratory problems, and with great experience.

This Postgraduate Diploma offers training in simulated environments, which provides an immersive learning experience designed to train for real-life situations.

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







tech 10 | Objectives



General Objectives

- Understand the different training variables and their application in people with pathologies
- Offer a broad vision of the pathology and its most relevant characteristics
- Obtain an overview of the most frequent pathologies in society
- Understand the most relevant disease triggers in order to prevent the onset of comorbidities or the disease itself
- Know the existing contraindications in the different pathologies in order to avoid possible counterproductive effects of physical exercise



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







Specific Objectives

Module 1. Cardiovascular Diseases

- Study the wide range of existing pathologies with cardiovascular involvement
- Understand the phases of action in cardiovascular rehabilitation
- Be able to plan and program training in an individualized way for a person with a cardiovascular pathology

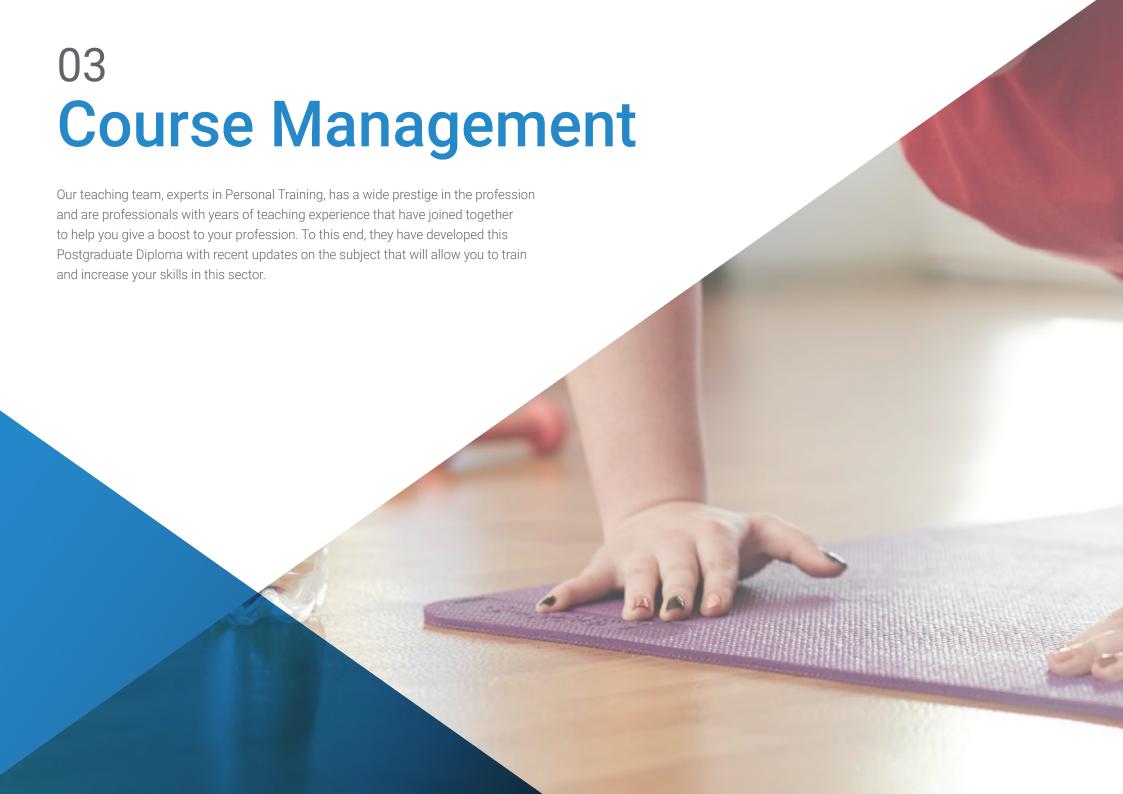
Module 2. Osteoarticular Pathologyr and Nonspecific Low Back Pain

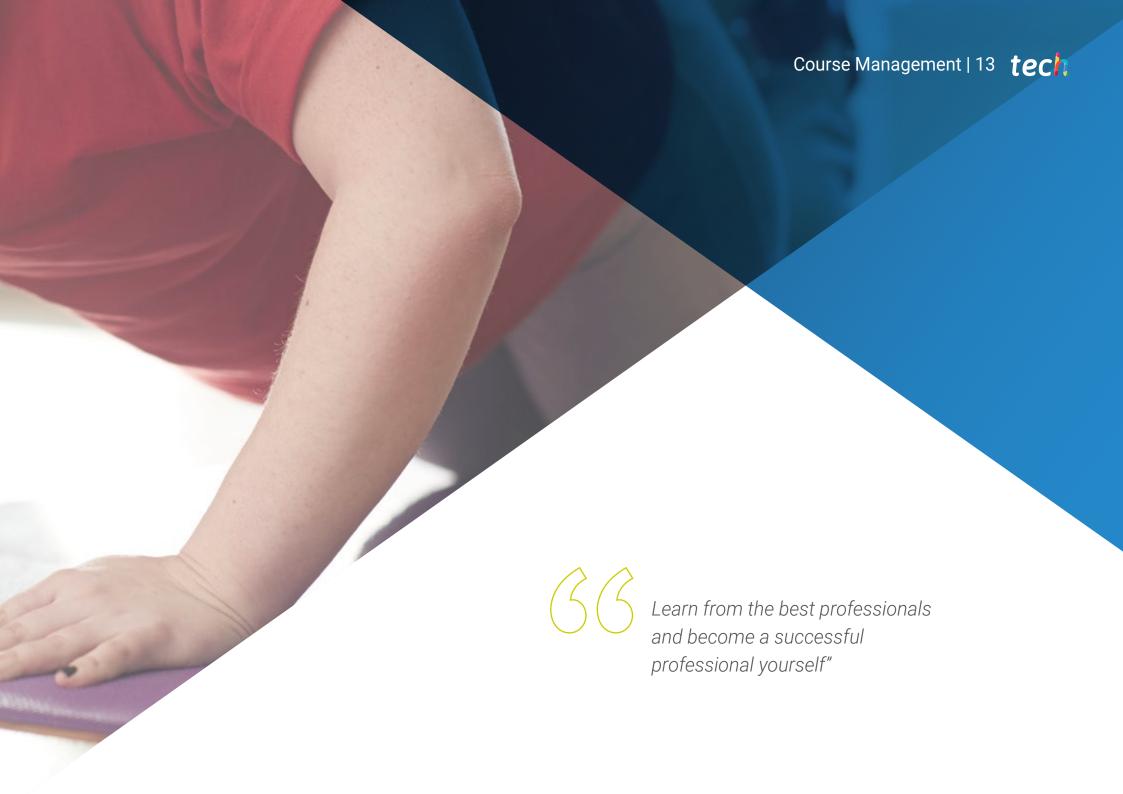
- Study the different pathologies affecting the osteoarticular system
- Understand the term fragility and its impact on the osteoarticular system and non-specific low back pain
- Be able to plan and program training in an individualized way in a person with different pathologies associated with the osteoarticular system and non-specific low back pain

Module 3. Respiratory Pathology and Physical Exercise

- Study the different pulmonary conditions
- Have a deep understanding of the pathophysiological characteristics of pulmonary pathologies
- Be able to plan and program training in an individualized way for people with pulmonary pathology

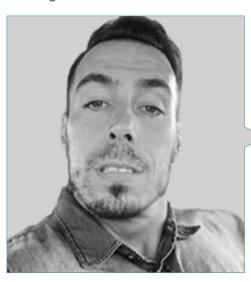






tech 14 | Course Management

Management



Mr. Rubina, Dardo

- Coordinator of the performance stage at Escuela Deportiva Moratalaz, Club de Fútbol
- Physical trainer of cadet, youth and first teams in the Moratalaz Sports School
- CEO of Test and Training
- Personal trainer for athletes of all ages, high performance athletes, soccer players, etc. with more than 18 years of experience
- D. candidate in Sports Performance at the University of Castilla la Mancha
- Master's Degree in High Performance Sports, Spanish Olympic Committee, Autonomous University of Madrid
- · Master coach by IFBB
- Strength Training Applied to Physical and Sports Performance Course by ACSM
- Specialist in Physiological Assessment and Interpretation of Physical Fitness by Biokinetics
- Level 2 soccer coach by the Royal Spanish Federation
- Expert in sports scouting and load quantification by the University of Melilla (specialization in soccer)
- Diploma in Advanced Research Studies from the University of Castilla La Mancha
- Expert in Advanced Bodybuilding by IFBB
- Expert in Advanced Nutrition from IFBB
- Postgraduate degree in Pharmacologynutrition and sports supplementation from the University of Barcelona

Professors

Mr. Render, Juan Manuel

- Professor of Physical Education at the Metropolitan University for Education and Work
- Professor in the Bachelor's Degree in High Performance Sports at the National University of Lomas de Zamora
- Degree in physical education with orientation in physiology of physical work at the National University General San Martín
- Degree in Kinesiology and Physiatry at the University Institute H.A. Foundation Bacelo
- Master's Degree in Physical Education at the National University of Lomas de Zamora

Mr. Vallodoro, Eric

- Full Professor at the Lomas Model Higher Institute
- Coordinator of the Biomechanics and Exercise Physiology Laboratory of the Lomas Model Higher Institute
- Degree in High Performance Sports at the National University of Lomas de Zamora
- Graduated as a Physical Education Teacher at Lomas Model Higher Institute

Mr. Masabeu, Emilio José

- Professor at the Motor Learning Seminar of the National University of Villa María
- Professor of Motor Neurodevelopment at the National University of La Matanza
- Lecturer of the seminar on Physical Activity and Obesity at Favaloro University
- Head of practical work at the Kinephylactic Department of the University of Buenos Aires
- Graduated in Kinesiology at the University of Buenos Aires

Mr. Supital Alejandro, Raúl

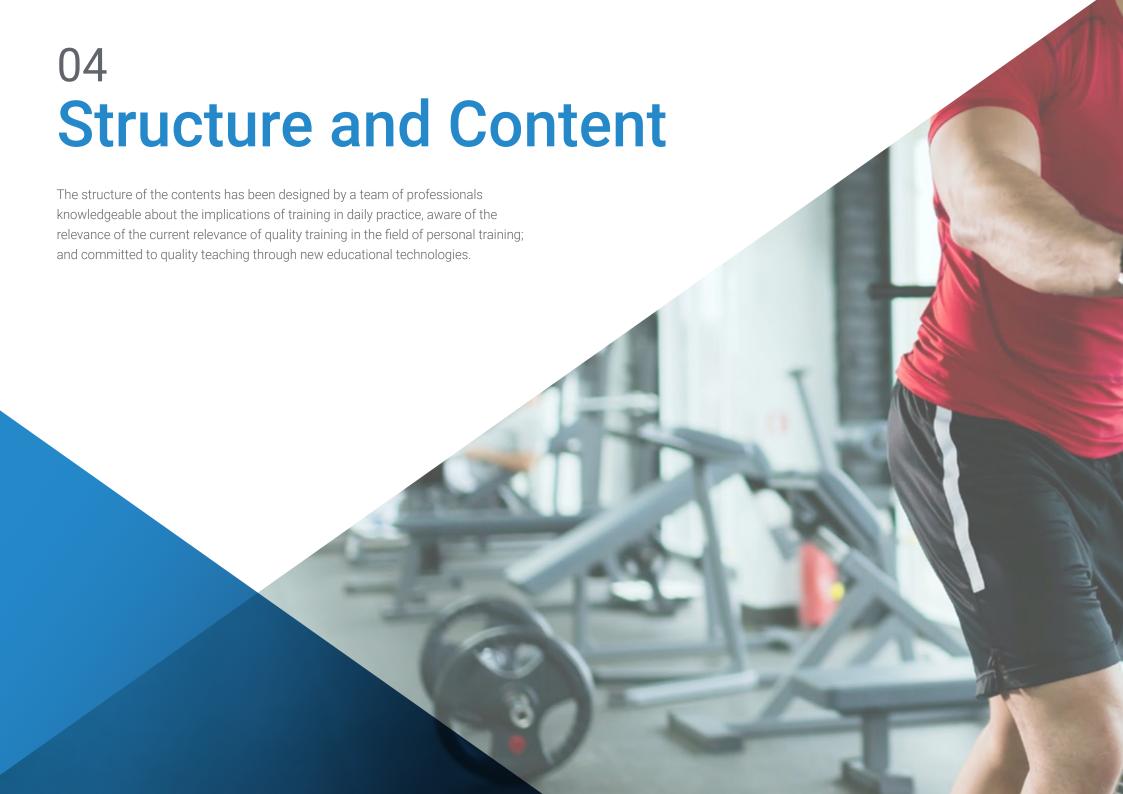
- Professor of Physical Activity and Health at the Catholic University of Salta
- Professor of Physical Education and Sports at the National University of Rio Negro
- Professor of Functional Anatomy and Biomechanics at the National University of Villa María
- Head of the Department of Biological Sciences, ISEF 1 Romero Brest
- Degree in Kinesiology and Physiatry from the University of Buenos Aires

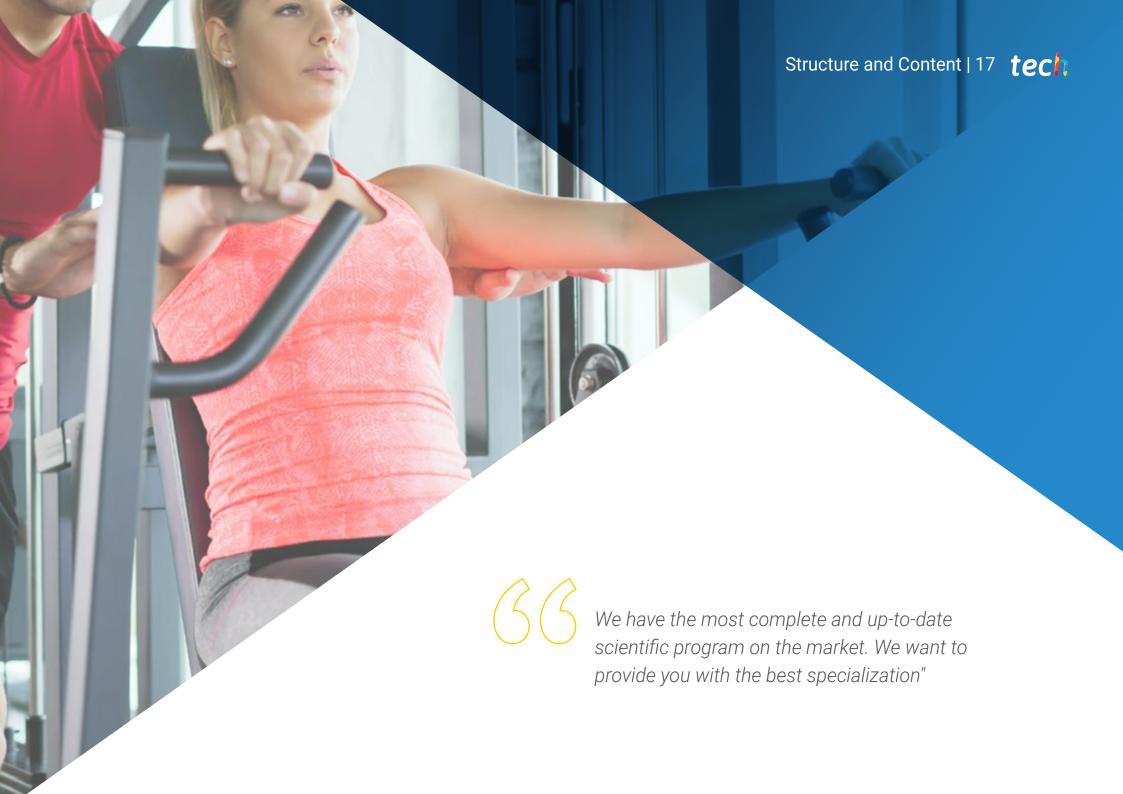
Mr. Javier Crespo, Guillermo

- · Coordinator of the Club Body gym
- · Coordinator of the gym and training center Asociación Calabresa
- Assistant coach in the detection and development program for youth weightlifting at the Calabrian Association and San Carlos Gymnasium
- Degree in Nutrition from the HA Barceló University Institute of Health Sciences

Ms. Ávila, María Belén

- Sports Psychologist at Club Atlético Vélez Sarsfield
- Specialist in the service of Nutrition and Diabetes in several centers such as the Hospital de Clínicas José de San Martín
- Specialist in the Integral Therapeutic Program for the treatment of Overweight and Obesity
- Degree in Psychology from the University of Salamanca
- Degree in High Performance Sports at the National University of Lomas de Zamora
- Specialization in Sport Psychology by APDA





tech 18 | Structure and Content

Module 1. Cardiovascular Diseases

- 1.1. Definition, Contextualization and Epidemiology
 - 1.1.1. Definition and Prevalence
 - 1.1.2. Disease Etiology and Identification of Cardiovascular Risk Factors
 - 1.1.3. Cardiac and Metabolic Pathologies
- 1.2. Pathophysiological Bases
 - 1.2.1. Physiology of the Cardiovascular System
 - 1.2.2. Atherosclerosis and Dyslipidemia
 - 1.2.3. High Blood Pressure
 - 1.2.4. Cardiopathies, Valvulopathies and Arrhythmias
- 1.3. Evaluation and Diagnosis
 - 1.3.1. Initial Risk Assessment in Cardiopathies
 - 1.3.2. Risk Assessment in Post-surgical Patients
- 1.4. Protocols and Treatment
 - 1.4.1. Risk Stratification for Physical Exercise: Primary, Secondary and Tertiary Prevention
 - 1.4.2. Risk Factor Reduction Intervention Objectives and Protocols
 - 1.4.3. Considerations in the Treatment of Associated Co-morbidities
- 1.5. Training Planning for Patients with Cardiovascular Disease
 - 1.5.1. Definition and Specification of Customer Level
 - 1.5.2. Definition and Specification of Objectives
 - 1.5.3. Definition and Specification of Evaluation Processes
 - 1.5.4. Definition and Specification of Operability with Respect to Spatial and Material Resources
- 1.6. Programming of Strength Training
 - 1.6.1. Objectives of Strength Training in Cardiovascular Pathologies
 - 1.6.2. Volume, Intensity and Recovery of Strength Training in Cardiovascular Pathologies
 - 1.6.3. Selection of Exercises and Methods of Strength Training in Cardiovascular Pathologies
 - 1.6.4. Design of Strength Training Programs in Cardiovascular Pathologies

- 1.7. Programming of Resistance Training
 - 1.7.1. Objectives of Strength Training in Cardiovascular Pathologies
 - 1.7.2. Volume, Intensity and Recovery of Resistance Training in Cardiovascular Pathologies
 - 1.7.3. Selection of Exercises and Methods of Resistance Training in Cardiovascular Pathologies
 - 1.7.4. Design of Resistance Training Programs in Cardiovascular Pathologies
- I.8. Cardiac Rehabilitation
 - 1.8.1. Benefits of Exercise in Patients with Cardiac Pathology
 - 1.8.2. Exercise Modalities
 - 1.8.3. Cardiac Rehabilitation: Phase I, II, III
 - 1.8.4. Telerehabilitation and Long-Term Adherence
 - 1.8.5. Drug-Exercise Interaction
- 1.9. Nutrition in Subjects with Cardiovascular Diseases
 - 1.9.1. Nutritional Aspects in Subjects with Cardiovascular Disease
 - 1.9.2. Mediterranean Diet as a Tool for the Prevention of Cardiovascular Diseases
 - 1.9.3. Nutritional Recommendations for Physical Exercise
- 1.10. Contraindications and Precautions
 - 1.10.1. Contraindications for the Beginning of the Practice of Physical Exercise
 - 1.10.2. Acting during an Emergency: Primary and Secondary Prevention
 - 1.10.3. CPR
 - 1.10.4. Regulations, Use and Management of Defibrillators in Sports Facilities
 - 1.10.5. Conclusions and Closing of the Module

Module 2. Osteoarticular Pathologyr and Nonspecific Low Back Pain

- 2.1. Definition, Contextualization and Epidemiology
 - 2.1.1. Contextualization of Osteoarticular Pathologies and Nonspecific Low Back Pain
 - 2.1.2. Epidemiology
 - 2.1.3. Definition of the Different Pathologies Associated with the Osteoarticular System
 - 2.1.4. The Osteosarcopenic Subject

Structure and Content | 19 tech

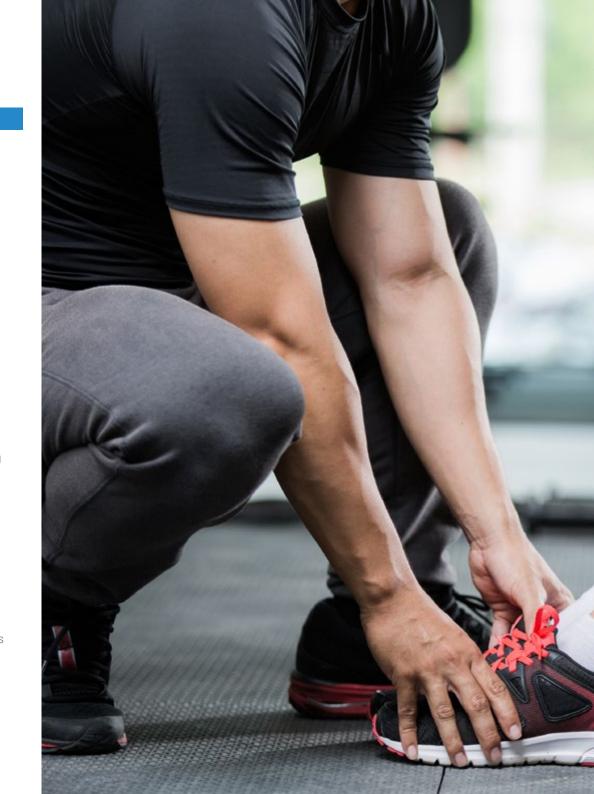
- 2.2. Pathophysiological Bases
 - 2.2.1. Pathophysiological Basis of Osteoporosis
 - 2.2.2. Pathophysiological Basis of Osteoarthritis
 - 2.2.3. Pathophysiologic Bases of Nonspecific Low Back Pain
 - 2.2.4. Pathophysiological Bases of Rheumatoid Arthritis
- 2.3. Evaluation and Diagnosis
 - 2.3.1. Functional Assessment in Low Back Pain
 - 2.3.2. Diagnostic Criteria in Osteoporosis and Predisposing Risk Factors for Fracture
 - 2.3.3. Diagnostic Criteria in Osteoarthritis and Coexisting Comorbidities
 - 2.3.4. Clinical Evaluation of Patients with Rheumatoid Arthritis
- 2.4. Protocols and Treatment
 - 2.4.1. Non-Pharmacological Treatment and Intervention Protocol for Nonspecific Low Back Pain
 - 2.4.2. Non-Pharmacological Treatment and Intervention Protocol in Osteoporosis
 - 2.4.3. Non-Pharmacological Treatment and Intervention Protocol in Osteoarthritis
 - 2.4.4. Non-Pharmacological Treatment and Intervention Protocol in Rheumatoid Arthritis
- 2.5. Training Planning
 - 2.5.1. Definition and Specification of Objectives
 - 2.5.2. Definition and Specification of Evaluation Processes
 - 2.5.3. Definition and Specification of Operability with Respect to Spatial and Material Resources
 - 2.5.4. Importance of the Interdisciplinary Team
- 2.6. Programming of Strength Training
 - 2.6.1. Objectives of Strength Training in Osteoarticular Pathologies and Nonspecific Low Back Pain
 - 2.6.2. Volume, Intensity and Recovery of Strength Training in Osteoarticular Pathologies and Nonspecific Low Back Pain
 - 2.6.3. Selection of Exercises and Strength Training Methods in Osteoarticular Pathologies and Nonspecific Low Back Pain
 - 2.6.4. Design of Strength Training Programs for Osteoarticular Pathologies and Nonspecific Low Back Pain

- 2.7. Programming of Resistance Training
 - 2.7.1. Objectives of Resistance Training in Osteoarticular Pathologies and Nonspecific Low Back Pain
 - 2.7.2. Volumen, Intensity and Recovery of Resistance Training in Osteoarticular Pathologies and Low Back Pain
 - Selection of Exercises and Resistance Training Methods in Osteoarticular Pathologies and Low Back Pain
 - 2.7.4. Design of Resistance Training Programs for Osteoarticular Pathologies and Low Back Pain
- The Importance of Kinephylactics as a Preventive Tool
 - 2.8.1. Physical Exercise and Its Implication on Bone Mass
 - 2.8.2. Functionality of the Lumbo-Pelvic Region
 - 2.8.3. The Importance of Postural Hygiene
 - 2.8.4. The Importance of Ergonomics in the Home and Workplace
- 2.9. Physical, Psychological and Social Burden, and Recommendations for Improving Health and Quality of Life
 - 2.9.1. Key Considerations in the Postmenopausal Woman
 - 2.9.2. Understanding the Complex Interrelationship Between Exercise and Pain
 - 2.9.3. Barriers to Participation in Physical Exercise Programs
 - 2.9.4. Strategies to Promote Adherence
- 2.10. Design of Training Programs in Patients with Osteoarticular Pathologies and Nonspecific Low Back Pain
 - 2.10.1. Design of Osteoporosis Training Programs
 - 2.10.2. Design of Training Programs in Osteoarthritis
 - 2.10.3. Design of Training Programs for Nonspecific Low Back Pain
 - 2.10.4. Conclusions and Closing of the Module

tech 20 | Structure and Content

Module 3. Respiratory Pathology and Physical Exercise

- 3.1. Definition, Contextualization and Epidemiology
 - 3.1.1. Definition of the Most Frequent Respiratory Pathologies
 - 3.1.2. Description of the Characteristics of the Disease
 - 3.1.3. Epidemiology and Outreach
 - 3.1.4. Triggering Factors and Comorbidities
- 3.2. Pathophysiological Bases
 - 3.2.1. Physiology of and Anatomy of the Respiratory System
 - 3.2.2. Gas Exchange, Ventilation and Air Flow
 - 3.2.3. COPD
 - 3.2.4. Asthma
- 3.3. Evaluation and Diagnosis
 - 3.3.1. Assessment of Lung Function and Functional Capacity
 - 3.3.2. Functional Assessment of the COPD Patient
 - 3.3.3. Physical Tests and Practical Application
- 3.4. Protocols and Treatment
 - 3.4.1. Respiratory Rehabilitation Protocols for the COPD Patient
 - 3.4.2. Pharmacological Treatment and Interactions
 - 3.4.3. Non-Pharmacological Treatment: Aerobic Fitness and Muscle Fitness Training
 - 3.4.4. Addressing Common Risk Factors and Comorbidities
- 3.5. Training Planning in Patients with COPD
 - 3.5.1. Definition and Specification of Customer Level
 - 3.5.2. Definition and Specification of Objectives
 - 3.5.3. Definition and Specification of Evaluation Processes
 - 3.5.4. Definition and Specification of Operability with Respect to Spatial and Material Resources
- 3.6. Programming of Strength Training
 - 3.6.1. Objectives of Strength Training in Respiratory Pathologies
 - 3.6.2. Volume, Intensity and Recovery of Strength Training in Respiratory Pathologies
 - 3.6.3. Selection of Exercises and Methods of Strength Training in Respiratory Pathologies
 - 3.6.4. Design of Strength Training Programs in Respiratory Pathologies





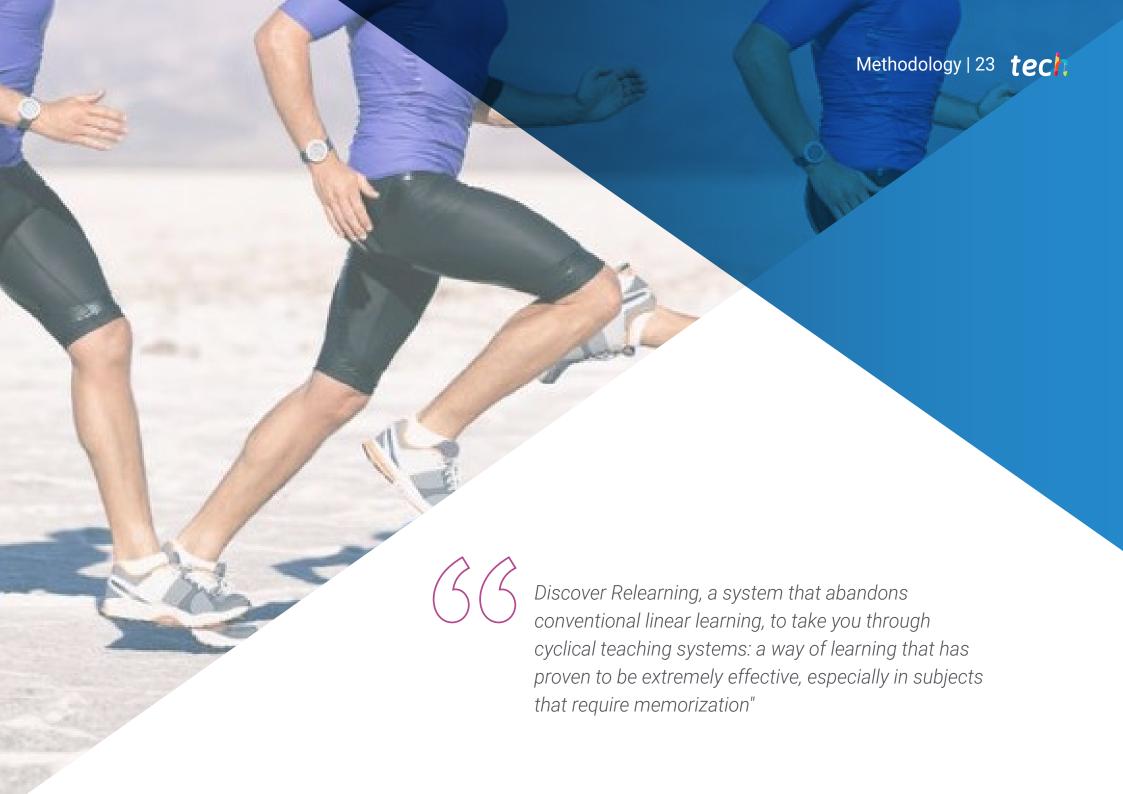
Structure and Content | 21 tech

- 3.7. Programming of Resistance Training
 - 3.7.1. Objectives of Resistance Training in Respiratory Pathologies
 - 3.7.2. Volume, Intensity and Recovery of Resistance Training in Respiratory Pathologies
 - 3.7.3. Selection of Exercises and Methods of Resistance Training in Respiratory Pathologies
 - 3.7.4. Design of Resistance Training Programs in Respiratory Pathologies
- 3.8. Lifestyle Modification Recommendations
 - 3.8.1. Sedentary Behavior
 - 3.8.2. Physical Inactivity
 - 3.8.3. Smoking, Alcohol and Nutrition
- 3.9. Malnutrition in COPD Patients and Consequences on Respiratory Function
 - 3.9.1. Nutritional Status Assessment
 - 3.9.2. Nutritional Support in COPD
 - 3.9.3. Nutritional Guidelines in the COPD Patient
- 3.10. Considerations in the Practice of Physical Activity and Exercise
 - 3.10.1. The Selection and Ordering of Strength and Aerobic Exercises in Training
 - 3.10.2. The Use of Concurrent Training as a Tool for the COPD Patient
 - 3.10.3. Exercise Selection and Progression in the Population with Respiratory Pathology
 - 3.10.4. Specific Pharmacological Interactions
 - 3.10.5. Conclusions and Closing of the Module



A unique specialization experience, key and decisive to boost your professional development"





tech 24 | Methodology

Case Study to contextualize all content

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



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



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



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

A learning method that is different and innovative

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



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

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

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



Relearning Methodology

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

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

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

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

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



Methodology | 27 tech

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

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

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

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

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



Study Material

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

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



Classes

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

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



Practising Skills and Abilities

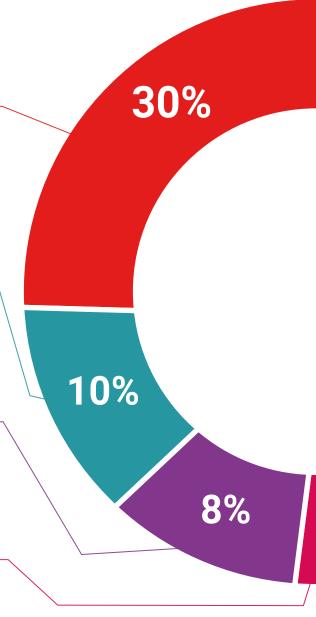
They will carry out activities to develop specific competencies and skills in each thematic area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization that we are experiencing.

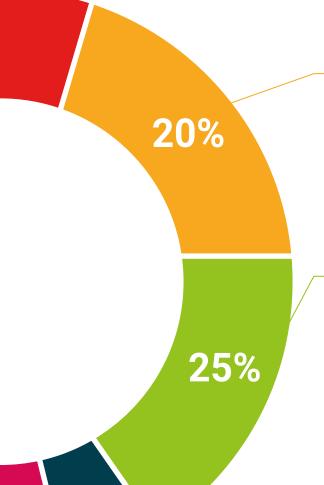


Additional Reading

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

their course.





4%

Case Studies

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



Interactive Summaries

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



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

Testing & Retesting

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







tech 32 | Certificate

This **Postgraduate Diploma in Physical Exercise in Osteoarticular and Respiratory Pathology** contains the most complete and up-to-date scientific program on the market.

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

The certificate issued by **TECH Technological University** will reflect the qualification obtained in the Postgraduate Certificate, and meets the requirements commonly demanded by labor exchanges, competitive examinations, and professional from career evaluation committees.

Title: Postgraduate Diploma in Physical Exercise in Osteoarticular and Respiratory Pathology

Official No of hours: 450 h.





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



Postgraduate Diploma Physical Exercise in

Osteoarticular and Respiratory Pathology

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Technological University
- » Dedication: 16h/week
- » Schedule: at your own pace
- » Exams: online

