





Professional Master's Degree

Therapeutic Personal Training

Course Modality: Online
Duration: 12 months

Certificate: TECH Technological University

Official N° of hours: 1,500 h.

 $We b site: \underline{\ \ } www.techtitute.com/pk/sports-science/professional-master-degree/master-the rapeutic-personal-training$

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The Professional Master's Degree in Therapeutic Personal Training has been specially designed for Sports Science professionals who work with people suffering from some kind of disease, so that the prescription of physical exercise can have significant improvements in their quality of life.

The Professional Master's Degree in Therapeutic Personal Training is an innovative program that provides students with in-depth and up-to-date knowledge of the most prevalent diseases in modern society, which can be treated through a carefully planned exercise regimen. In order to do so, an in-depth presentation of the pathophysiological characteristics of certain diseases and their epidemiology and characteristics, which will allow their assessment and diagnosis, will be made in order to later delve into planning and programming the training adjusted to the disease/s and the individual themselves

In addition, and as a differentiating aspect of this program, current topics related to health or disease development and prevention tools will be covered, as well as the necessary knowledge to understand the possible drug-exercise effects that are so relevant in this type of population group, which often includes polymedicated patients.

The teaching team of this Professional Master's Degree in Therapeutic Personal Training has made a careful selection of each of the topics of this program to offer the student a program as complete as possible which is always linked to current events.

Therefore, TECH has set out to create contents of the highest teaching and educational quality, that will turn students into successful professionals, following the highest quality standards in teaching at an international level. Therefore, we offer you this Professional Master's Degree with extensive content that will help you reach the elite of personal training. As it is an online Professional Master's Degree, the student is not bound by fixed schedules or the need to move to another physical location, rather, they can access the content at any time of the day, balancing their professional or personal life with their academic life.

This **Professional Master's Degree in Therapeutic Personal Training** contains the most complete and up-to-date scientific program on the market. The most important features of the program include:

- Practical cases presented by experts in personal training
- The graphic, schematic and practical contents of the course are designed to provide all the essential information required for professional practice.
- Exercises where the self-assessment process can be carried out to improve learning
- 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



Immerse yourself in the study of this high-level Professional Master's Degree and improve your skills as a personal trainer"

Introduction | 07 tech



This Professional Master's Degree is the best investment you can make when selecting a refresher program, for two reasons: in addition to updating your knowledge as a personal trainer, you will obtain a qualification from TECH Technological University"

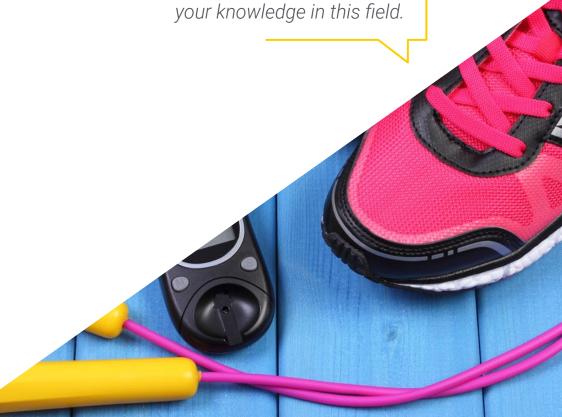
The teaching staff includes professionals from the field of sports science, who bring their experience to this training program, as well as renowned specialists from leading societies and prestigious universities.

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 knowledge programmed to learn in real situations.

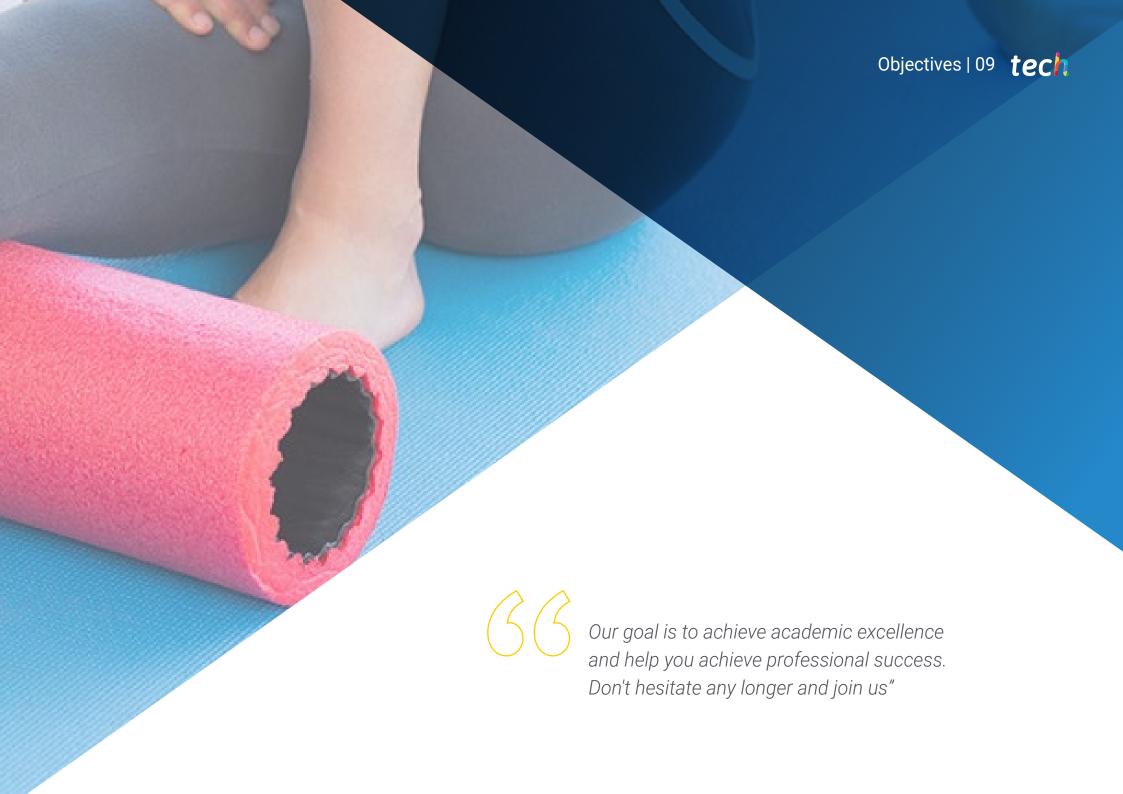
This program is designed around Problem-Based Learning, whereby the professional must try to solve the different professional practice situations that arise throughout the program. For this purpose, the professional will be assisted by an innovative interactive video system created by renowned and experienced experts in Therapeutic Personal Training.

The Professional Master's Degree provides training in simulated environments, which provides immersive learning designed to train professionals for real situations.

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







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General Objectives

- Understand the different variables of training and its 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 to prevent the onset of comorbidities or the disease itself
- Know the existing contraindications in the different pathologies to avoid possible counterproductive effects of physical exercise







Specific Objectives

Module 1. Pathology in the Current Social and Healthcare Context

- Gain an in-depth understanding of the current and future needs of the population with respect to physical exercise
- Explore other aspects that affect the health of the client/patient and that may have an impact on their physical development capacity
- Manage the reality and limitations of the most frequent diagnostic tests and their usefulness in physical exercise planning
- Interpret the interaction and impact of neuroscience and physical exercise
- Address and understand the influence of stress, nutrition and other habits on people's health
- Expand your vision of the microbiota on the health of the organism and the influence that certain factors, such as physical exercise, have on it

Module 2. General Criteria for the Design of Physical Exercise Programs for Special Populations

- Understand the most important variables of training in depth in order to know how to apply them in an individualized way
- Manage the general criteria for the design of physical exercise programs for people with pathology
- Obtain the necessary tools to develop training planning tailored to the client's needs

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Module 3. Obesity and Physical Exercise

- Understand in depth the pathophysiology of obesity and its repercussions on health
- Understand the physical limitations of the obese individual
- Be able to plan and program training in an individualized way for a person with obesity

Module 4. Diabetes and Physical Exercise

- In-depth understanding of the pathophysiology of diabetes and its impact on health
- Understanding the specific needs in diabetes
- Be able to plan and program training in an individualized way for a person with diabetes

Module 5. Metabolic Syndrome and Physical Exercise

- In-depth understanding of the pathophysiology of metabolic syndrome
- Understand the intervention criteria to improve the health and quality of life of patients with this disease
- Be able to plan and program training in an individualized way for a person with metabolic syndrome

Module 6. Cardiovascular Diseases

- Study the wide range of existing diseases with cardiovascular affectation
- 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 disease





Module 7. Osteoarticular Diseases and Non-Specific Lower Back Pain

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

Module 8. Respiratory Diseases and Physical Exercise

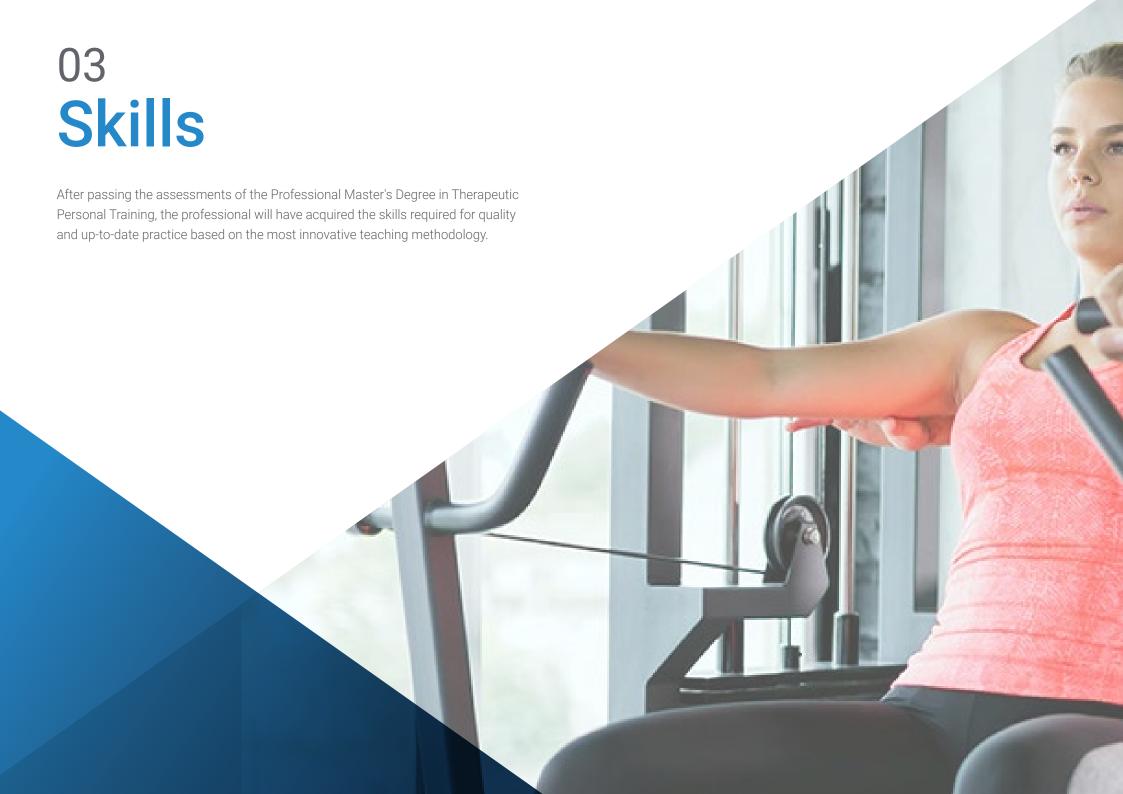
- Study the different pulmonary conditions
- Understand, in depth, the pathophysiologic characteristics of pulmonary diseases
- Be able to plan and program training in an individualized way for people with pulmonary diseases

Module 9. Physical Exercise and Pregnancy

- Manage the morphofunctional changes of the pregnancy process
- In-depth understanding of the biopsychosocial aspects of pregnancy
- Be able to plan and program training in an individualized way for a pregnant woman

Module 10. Physical Exercise in Children, Adolescents and Older Adults

- In-depth understanding of the biopsychosocial aspects of children, adolescents and older adults
- Know the particularities of each age group and their specific approach
- Be able to plan and program training in an individualized way for children, adolescents and older adults





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General Skills

- Design appropriate training programs for people with various diseases and adjust it to the needs of each individual
- Manage an appropriate technical vocabulary that will allow you to communicate
 with different health professionals and understand the multiple diagnostic tests,
 being able to generate synergy with multidisciplinary groups to improve the health
 of people with pathologies









Specific Skills from the Program

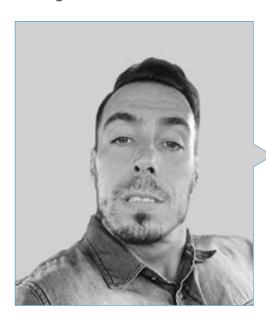
- Know the particularities of personal training adapted to each person and design individualized and specific programs according to their needs
- Address safe and effective intervention through physical exercise programs, in population groups with diseases
- Know the main diseases that people may suffer, especially those in which physical exercise can be an effective therapy to improve their quality of life
- Design and carry out personalized training for people with obesity
- Knowing the relationship between diabetes and exercise and how exercise can achieve great benefits in patients
- Design specific exercise programs for people with cardiovascular diseases
- Personalized training programs for users with respiratory diseases





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Management



Mr. Rubina, Dardo

- Coordinator of the performance stage at the Moratalaz Sports School, Moratalaz Football Club
- Physical trainer of cadet, youth and first teams at Escuela Deportiva Moratalaz
- CEO of Test and Training
- Personal trainer of athletes of all ages, high performance athletes, soccer players, etc. with more than 18 years of experience
- PhD student in Sports Performance at the University of Castilla la Mancha
- University Master's Degree in High-Performance Sports, Spanish Olympic Committee, Autonomous University of Madrid
- Master's Degree in coaching at IFBB
- Course in Strength Training Applied to Physical and Sports Performance at ACSM
- Specialist in Physiological Assessment and Interpretation of Physical Fitness by Biokinetics
- Soccer Coach Level 2 by the Royal Spanish Federation
- Expert in Sports Scouting and Load Quantification, University of Melilla (specialization in soccer)
- Diploma in Advanced Research Studies at the University of Castilla La Mancha
- Expert in Advanced Bodybuilding at the IFBBB
- Expert in Advanced Nutrition at the IFBBB
- Postgraduate degree in Pharmacology, nutrition and sports supplementation from the University of Barcelona

Professors

Ms. Avila, María Belén

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

Mr. Crespo, Guillermo Javier

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

Mr. Masabeu, Emilio José

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

Mr. Renda, 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 San Martín General National University
- Degree in Kinesiology and Physiatry at the University Institute Fundación H.A.
 Bacelo
- Postgraduate course in Physical Education at the National University of Lomas de Zamora

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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 Biological Sciences Department at ISEF 1 Romero Brest
- Degree in Kinesiology and Physiatry at the University of Buenos Aires

Mr. Vallodoro, Eric

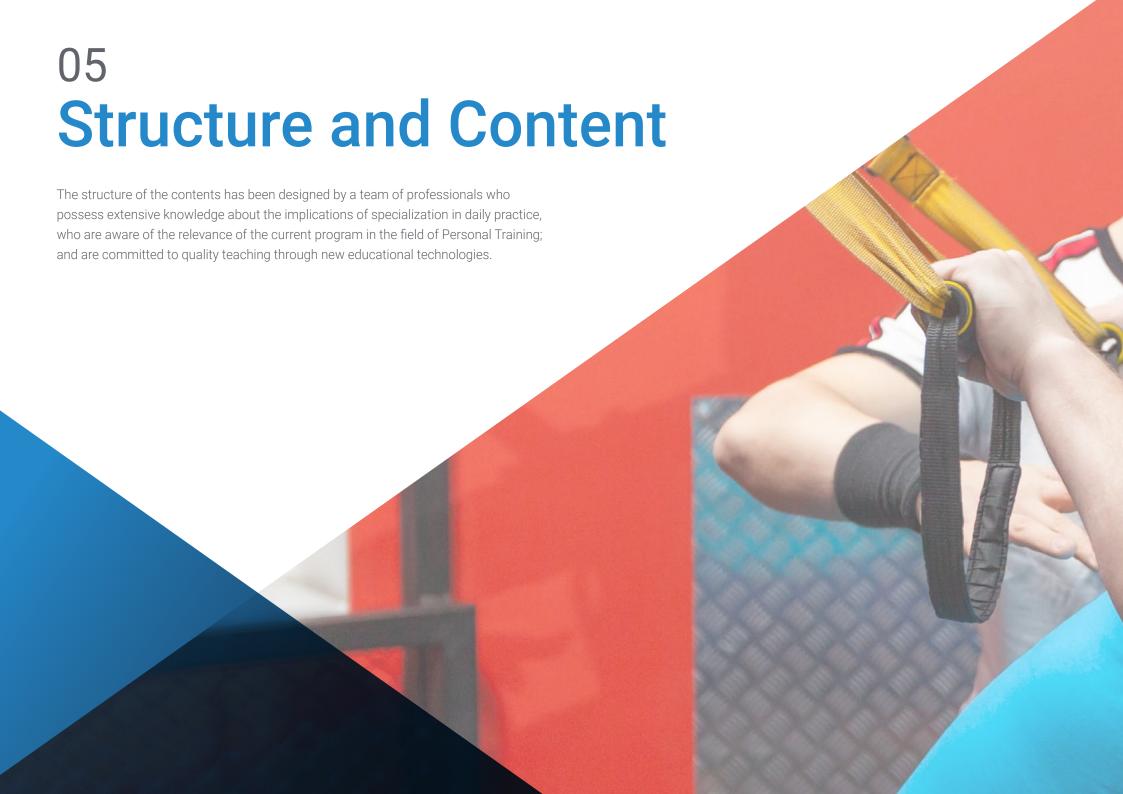
- Full Professor at Modelo Lomas Institute
- Coordinator of the Biomechanics and Exercise Physiology Laboratory at the Modelo Lomas Institute
- Graduate in High Performance Sports at the National University of Lomas in Zamora
- Graduate in Physical Education at Modelo Lomas Institute

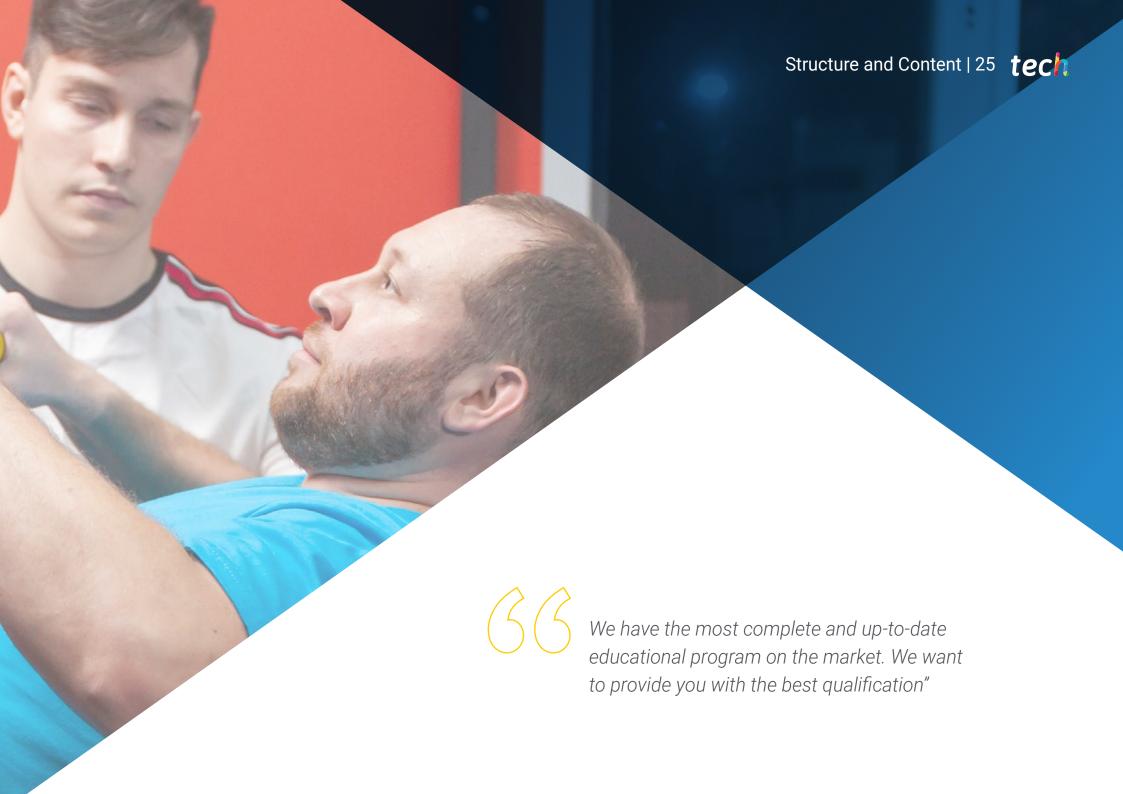






Sports requires trained professionals, and we give you the keys to position yourself among the professional elite"





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Module 1. Pathology in the Current Social and Healthcare Context

- 1.1. Introduction to the Concept of Health
 - 1.1.1 The Concept of Health
 - 1.1.2 Pathology, Disease and Syndrome
 - 1.1.3 Classification of Diseases According to Different Criteria
 - 1.1.4 Chronic Non-Communicable Diseases
 - 1.1.5 Self-Defense Mechanisms
- 1.2. Impact of Chronic Stress on Health
 - 1.2.1 Stress and Eustress: Differences and their Health Implications
 - 1.2.2 Stress in Today's Society
 - 1.2.3 Physiology and Psycho-Physical Stress
 - 1.2.4 Lifestyle Modification and Healthy Habits in the Prevention and Treatment of Stress-Related Diseases
 - 1.2.5 Psychological Benefits of an Active Lifestyle
- 1.3. Sedentary Lifestyle Modification and Sedentary Lifestyle
 - 1.3.1 Definition and Epidemiological Data
 - 1.3.2 Relationship between Sedentary Lifestyle and Diseases
 - 1.3.3 Lifestyle Modification as a Therapeutic Guideline
 - 1.3.4 Intervention Proposals for a More Active and Healthier Lifestyle
- 1.4. Physical Activity, Physical Exercise and Health
 - 1.4.1 Differences between Physical Activity and Physical Exercise
 - 1.4.2 Implications of Physical Activity on Health over the Years.
 - 1.4.3 Physical Exercise and the Biological Adaptation Process
- 1.5. Update on Anatomical and Physical Principles for Human Performance and Health
 - 1.5.1 Muscle and Strength and their Relationship to Health
 - 1.5.2 Bioenergetic Principles of Movement: An Update
 - 1.5.3 Biomolecular Principles of Physical Exercise
- 1.6. Nutrition and Health
 - 1.6.1 The Exercise Professional as a Transmitter of Healthy Habits: The Role of Nutrition
 - 1.6.2 Basic Criteria and Strategies for Healthy Nutrition



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- 1.7. Assessment of Physical Activity
 - 1.7.1 Classification of Physical Tests and Evaluations
 - 1.7.2 Quality Criteria for Physical Fitness Tests
 - 1.7.3 Objective Methods of Physical Activity Assessment
 - 1.7.4 Subjective Methods of Physical Activity Assessment
- 1.8. Relationship of the Gut Microbiota to Pathology and Exercise
 - 1.8.1 What Is the Gut Microbiota?
 - 1.8.2 Relationship of the Gut Microbiota to Health and Disease
 - 1.8.3 Modulation of the Gut Microbiota through Physical Exercise
- 1.9. Neurosciences and Health
 - 1.9.1 Implications of Neuroscience on Health
 - 1.9.2 Influence of Physical Activity on the Functionality of the Nervous System and its Relation to the Immune System
- 1.10. Benefits of Physical Exercise as a Kinephylactic and Therapeutic Tool
 - 1.10.1 Main Biological Benefits of Physical Exercise
 - 1.10.2 Main Cognitive Psychological Benefits of Physical Exercise
 - 1.10.3 Final Conclusions and Closing of Module 1

Module 2. General Criteria for the Design of Physical Exercise Programs for Special Populations

- 2.1. Design of Exercise Programs for Special Populations
 - 2.1.1 Competencies and Protocols: From Diagnosis to Intervention
 - 2.1.2 Multidisciplinarity and Interdisciplinarity as the Basis of the Intervention Process through Physical Exercise in Special Populations.
- 2.2. General Principles of Training and their Application to the Health Field
 - 2.2.1 Principles of Adaptation (Initiation and Development)
 - 2.2.2 Principles of Adaptation Guarantees
 - 2.2.3 Principles of Adaptation Specificity
- 2.3. Training Planning for Special Populations
 - 2.3.1 Planning Phase I
 - 2.3.2 Planning Phase II
 - 2.3.3 Planning Phase III

- 2.4. Training Objectives in Physical Conditioning Programas
 - 2.4.1 Strength Training
 - 2.4.2 Resistance Training
 - 2.4.3 Flexibility/ROM Training
- 2.5. The Applied Assessment
 - 2.5.1 Diagnostic Assessment as a Tool for Training Load Control
 - 2.5.2 Morphological and Functional Assessments
 - 2.5.3 Protocol and its Importance: Data Logging
 - 2.5.4 Processing of the Data Obtained, Conclusions and Practical Application to Training
- 2.6. The Programming of Training in Special Populations: Intervention Variables (I)
 - 2.6.1 Definition of the Training Load Concept
 - 2.6.2 Training Frequency
 - 2.6.3 Training Volume
- 2.7. The Programming of Training in Special Populations: Intervention Variables (II)
 - 2.7.1 Objective Training Intensity
 - 2.7.2 Subjective Training Intensity
 - 2.7.3 Recovery and Training Density
- 2.8. The Prescription of Training in Special Populations: Intervention Variables (I)
 - 2.8.1 Selection of Training Exercises
 - 2.8.2 Ordering Training Exercises
 - 2.8.3 Training Systems
- 2.9. The Prescription of Training in Special Populations: Intervention Variables (II)
 - 2.9.1 Strength Training Methods
 - 2.9.2 Resistance Training Methods
 - 2.9.3 Concurrent Training Methods in the Health Care Field.
 - 2.9.4 HIIT Training Method in the Field of Health
 - 2.9.5 Flexibility/ROM Training Methods
 - 2.9.6 Internal and External Training Load Control

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2.10.	The Design of Training Sessions					
	2.10.1	Training Preparation Phase				
	2.10.2	Main Phase of Training				
	2.10.3	Recovery Phase of the Training				
	2.10.4	Final Conclusions and Closing of Module 2				
Mod	ule 3. (Desity and Physical Exercise				
3.1.	Definition	on, Contextualization and epidemiology				
	3.1.1	Evolution of Obesity: Associated Cultural and Social Aspects				
	3.1.2	Obesity and Comorbidities: The Role of Interdisciplinarity				
	3.1.3	Childhood Obesity and its Impact on Future Adults				
3.2.	Pathop	Pathophysiological Principles				
	3.2.1	Definition of Obesity and Health Risks				
	3.2.2	Pathophysiological Aspects of Obesity				
	3.2.3	Obesity and Associated Diseases				
3.3.	Assess	Assessment and Diagnosis				
	3.3.1	Body Composition: 2-Component and 5-Component Model				
	3.3.2	Assessment: Main Morphological Evaluations				
	3.3.3	Interpretation of Anthropometric Data				
	3.3.4	Prescription of Physical Exercise for the Prevention and Improvement of Obesity				
3.4.	Protocols and Treatments					
	3.4.1	First Therapeutic Guideline: Lifestyle Modification				
	3.4.2	Nutrition: Role in Obesity				
	3.4.3	Exercise: Role in Obesity				
	3.4.4	Medical Treatment				
3.5.	Training	Planning in Patients with Obesity				
	3.5.1	Definition and Specification of Customer Level				
	3.5.2	Definition and Specification of Objectives				
	3.5.3	Definition and Specification of Assessment Processes				
	3.5.4	Definition and Specification of Operability with Respect to Spatial and Material Resources				

3.6.	Strengt	h Training Programming in Obese Patients
	3.6.1	Objectives of Strength Training in Obese People
	3.6.2	Volume, Intensity and Recovery of Strength Training in Obese Individuals
	3.6.3	Selection of Exercises and Methods of Strength Training in Obese People
	3.6.4	Design of Strength Training Programs in Obese People
3.7.	Progran	nming of Resistance Training in the Obese Patient
	3.7.1	Objectives of Resistance Training in Obese People
	3.7.2	Volume and Intensity and Recovery from Resistance Training in Obese People
	3.7.3	Selection of Exercises and Methods of Resistance Training in Obese People
	3.7.4	Design of Resistance Training Programs for Obese People
3.8.	Joint H	ealth and Complementary Training in Obese Patients
	3.8.1	Complementary Training in Obesity
	3.8.2	ROM/Flexibility Training in Obese People
	3.8.3	Improved Trunk Control and Stability in Obese People
	3.8.4	Other Training Considerations for the Obese Population
3.9. Psychosocial Aspects of Obesity		social Aspects of Obesity
	3.9.1	Importance of Interdisciplinary Treatment in Obesity
	3.9.2	Eating Disorders
	3.9.3	Childhood Obesity
	3.9.4	Adult Obesity
3.10. Nutrition		n and Other Factors Related to Obesity
	3.10.1	"Omics" Sciences and Obesity
	3.10.2	Microbiota and their Influence on Obesity
	3.10.3	Protocols for Obesity Nutritional Intervention: Evidence
	3.10.4	Nutritional Recommendations for the Practice of Physical Exercise

Module 4. Diabetes and Physical Exercise

- 4.1. Definition, Contextualization and Epidemiology
 - 4.1.1 Definition and Fundamentals of Diabetes Mellitus
 - 4.1.2 Signs and Symptoms of Diabetes Mellitus
 - 4.1.3 Definition and Classification of Diabetes Mellitus
 - 4.1.4 Type II Diabetes and Lifestyle
- 4.2. Pathophysiological Principles
 - 4.2.1 Anatomical and Physiological Principles
 - 4.2.2 The Pancreas and the Regulation of Glycemia
 - 4.2.3 Macronutrient Metabolism in Diabetes Mellitus
 - 4.2.4 Insulin Resistance
- 4.3. Assessment and Diagnosis
 - 4.3.1 Diabetes: Assessment in the Clinical Setting
 - 4.3.2 Complications in Diabetes Mellitus
 - 4.3.3 Diabetes: Assessment and Monitoring by the Exercise Physician
 - 4.3.4 Diagnosis and Intervention Protocol in Diabetes
- 4.4. Protocols and Treatments
 - 4.4.1 Glycemic Control and Nutritional Aspects
 - 4.4.2 Treatment of Type I and Type II Diabetes Mellitus
 - 4.4.3 Pharmacological Treatment: Basic Concepts to Consider
 - 4.4.4 Non-Pharmacological Treatment through Physical Exercise: Role in Diabetes
- 4.5. Training Planning in Patients with Diabetes
 - 4.5.1 Definition and Specification of Customer Level
 - 4.5.2 Definition and Specification of Objectives
 - 4.5.3 Definition and Specification of Evaluation Processes
 - 4.5.4 Definition and Specification of Operability with Respect to Spatial and Material Resources

- 4.6. Programming of Strength Training
 - 4.6.1 Objectives of Strength Training in Diabetes People
 - 4.6.2 Volume, Intensity and Recovery of Strength Training in Diabetes Individuals
 - 4.6.3 Selection of Exercises and Methods of Strength Training in Diabetes People
 - 4.6.4 Design of Strength Training Programs in Diabetes People
- 4.7. Programming Speed Training
 - 4.7.1 Objectives of Resistance Training in Diabetes People
 - 4.7.2 Volume and Intensity and Recovery from Resistance Training in Diabetes People
 - 4.7.3 Selection of Exercises and Methods of Resistance Training in Diabetes People
 - 4.7.4 Design of Resistance Training Programs for Diabetes People
- 4.8 Precautions and Contraindications
 - 4.8.1 Blood Glucose Values and Physical Exercise
 - 4.8.2 Contraindications to the Performance of Activity in Patients with Type I Diabetes Mellitus
 - 4.8.3 Care for Problems Related to Diabetes and Physical Exercise
 - 4.8.4 Safety and First Aid in Complications during Physical Exercise Programs with Diabetics
- 4.9. Nutrition and Lifestyle in Patients with Diabetes
 - 4.9.1 Nutritional Aspects of Diabetes
 - 4.9.2 Metabolic Control and Glycemic Index
 - 4.9.3 Nutritional Recommendations for Physical Exercise
- 4.10. Design of Training Programs for Patients with Diabetes
 - 4.10.1 Design of Training Programs for People with Diabetes
 - 4.10.2 Design of Training Sessions for People with Diabetes
 - 4.10.3 Design of Global Intervention Programs (Inter-Multidisciplinary) in Diabetes

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Module 5. Metabolic Syndrome and Physical Exercise

- 5.1. Definition, Contextualization and Epidemiology
 - 5.1.1 Definition of Metabolic Syndrome
 - 5.1.2 Epidemiology of Metabolic Syndrome
 - 5.1.3 The Syndromic Patient, Considerations for Intervention
- 5.2. Pathophysiological Principles
 - 5.2.1 Definition of Metabolic Syndrome and Health Risks
 - 5.2.2 Pathophysiological Aspects of the Disease
- 5.3. Assessment and Diagnosis
 - 5.3.1 Metabolic Syndrome and its Assessment in the Clinical Setting
 - 5.3.2 Biomarkers, Clinical Indicators and Metabolic Syndrome
 - 5.3.3 Metabolic Syndrome and its Assessment and Monitoring by the Physical Exercise Specialist.
 - 5.3.4 Diagnosis and Intervention Protocol for Metabolic Syndrome
- 5.4. Protocols and Treatments
 - 5.4.1 Lifestyle and its Relationship with Metabolic Syndrome
 - 5.4.2 Exercise: Role with Metabolic Syndrome
 - 5.4.3 The Patient with Metabolic Syndrome and Pharmacologic Treatment: Considerations for the Exercise Professional.
- 5.5. Training Planning in Patients with Metabolic Syndrome
 - 5.5.1 Definition and Specification of Customer Level
 - 5.5.2 Definition and Specification of Objectives
 - 5.5.3 Definition and Specification of Evaluation Processes
 - 5.5.4 Definition and Specification of Operability with Respect to Spatial and Material Resources

- 5.6. Programming of Strength Training
 - 5.6.1 Objectives of Strength Training for Metabolic Syndrome
 - 5.6.2 Volume, Intensity and Recovery of Strength Training in Metabolic Syndrome
 - 5.6.3 Selection of Exercises and Methods of Strength Training in Metabolic Syndrome People
 - 5.6.4 Design of Strength Training Programs in Metabolic Syndrome People
- 5.7. Programming Speed Training
 - 5.7.1 Objectives of Resistance Training for Metabolic Syndrome
 - 5.7.2 Volume Intensity and Recovery from Resistance Training for People with Metabolic Syndrome
 - 5.7.3 Selection of Exercises and Methods of Resistance Training in Metabolic Syndrome People
 - 5.7.4 Design of Resistance Training Programs for People with Metabolic Syndrome
- 5.8. Precautions and Contraindications
 - 5.8.1 Assessments for the Performance of Physical Exercise in a Population with Metabolic Syndrome
 - 5.8.2 Contraindications to the Development of Activity in Patients with Metabolic Syndrome
- 5.9. Nutrition and Lifestyle in Patients with Metabolic Syndrome
 - 5.9.1 Nutritional Aspects in Metabolic Syndrome
 - 5.9.2 Examples of Nutritional Intervention in Metabolic Syndrome
 - 5.9.3 Nutritional Recommendations for the Practice of Physical Exercise
- 5.10. Training Program Design in Patients with Metabolic Syndrome
 - 5.10.1 Design of Training Programs in Metabolic Syndrome
 - 5.10.2 Design of Training Sessions in Metabolic Syndrome
 - 5.10.3 Design of Global Intervention Programs (Inter-Multidisciplinary) in Metabolic Syndrome.
 - 5.10.4 Final Conclusions and Closing of Module 5

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Module 6. Cardiovascular Diseases

- 6.1. Definition, Contextualization and Epidemiology
 - 6.1.1 Definition and Prevalence
 - 6.1.2 Etiology of the Disease and Identification of Cardiovascular Risk Factors
 - 6.1.3 Cardiac and Metabolic Diseases
- 6.2. Pathophysiological Principles
 - 6.2.1 Cardiovascular System Physiology
 - 6.2.2 Atherosclerosis and Dyslipidemia
 - 6.2.3 High Blood Pressure
 - 6.2.4 Cardiopathies, Valvulopathies and Arrhythmias
- 6.3. Assessment and Diagnosis
 - 6.3.1 Initial Risk Assessment in Heart Disease
 - 6.3.2 Risk Assessment in Post-Surgical Patients
- 6.4. Protocols and Treatments
 - 6.4.1 Risk Stratification for Physical Exercise: Primary, Secondary and Tertiary Prevention
 - 6.4.2 Risk Factor Reduction Intervention Objectives and Protocols
 - 6.4.3 Considerations in the Treatment of Associated Co-Morbidities
- 6.5. Training Planning for Patients with Cardiovascular Diseases
 - 6.5.1 Definition and Specification of the Client's Level
 - 6.5.2 Definition and Specification of Objectives
 - 6.5.3 Definition and Specification of Evaluation Processes
 - 6.5.4 Definition and Specification of Operability with Respect to Spatial and Material Resources
- 6.6. Programming of Strength Training
 - 6.6.1 Objectives of Strength Training for Individuals with Cardiovascular Diseases
 - 6.6.2 Volume, Intensity and Recovery of Strength Training for Individuals with Cardiovascular Diseases
 - 6.6.3 Selection of Exercises and Methods of Strength Training for Individuals with Cardiovascular Diseases
 - 6.6.4 Design of Strength Training Programs for Individuals with Cardiovascular Diseases

- 6.7. Programming Speed Training
 - 6.7.1 Objectives of Resistance Training for Individuals with Cardiovascular Diseases
 - 6.7.2 Volume and Intensity and Recovery from Resistance Training for Individuals with Cardiovascular Diseases
 - 6.7.3 Selection of Exercises and Methods of Resistance Training for Individuals with Cardiovascular Diseases
 - 6.7.4 Design of Resistance Training Programs for Individuals with Cardiovascular Diseases
- 6.8. Cardiac Rehabilitation
 - 6.8.1 Benefits of Exercise in Patients with Cardiac Pathology
 - 6.8.2 Exercise Modalities
 - 6.8.3 Cardiac Rehabilitation: Phase I. II. III
 - 6.8.4 Predictability and Long-Term Adherence.
 - 6.8.5 Drug-Exercise Interactions
- 6.9. Nutrition in Patients with Cardiovascular Disease.
 - 6.9.1 Nutritional Aspects in Patients with Cardiovascular Disease
 - 6.9.2 Mediterranean Diet as a Tool for the Prevention of Cardiovascular Diseases
 - 6.9.3 Nutritional Recommendations for the Practice of Physical Exercise
- 6.10. Contraindications and Precautions
 - 6.10.1 Contraindications for the Beginning of the Practice of Physical Exercise
 - 6.10.2 Acting during an Emergency: Primary and Secondary Prevention
 - 6.10.3 CPR
 - 6.10.4 Regulations, Use and Management of Defibrillators in Sports Facilities
 - 6.10.5 Conclusions and Closing of Module 6

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Module 7. Osteoarticular Diseases and Non-Specific Lower Back Pain

- 7.1. Definition, Contextualization and Epidemiology
 - 7.1.1 Contextualization of Osteoarticular Diseases and Non-Specific Lower Back Pain
 - 7.1.2 Epidemiology
 - 7.1.3 Definition of the Different Diseases Associated with the Osteoarticular System
 - 7.1.4 Osteosarcopenic Patients
- 7.2. Pathophysiological Principles
 - 7.2.1 Pathophysiological Principles of Osteoporosis
 - 7.2.2 Pathophysiological Principles of Osteoarthritis
 - 7.2.3 Pathophysiologic Principles of Non. Specific Low Back Pain.
 - 7.2.4 Pathophysiological Principles of Rheumatoid Arthritis
- 7.3. Assessment and Diagnosis
 - 7.3.1 Functional Assessment in Lower Back Pain.
 - 7.3.2 Diagnostic Criteria in Osteoporosis and Predisposing Risk Factors for Fracture
 - 7.3.3 Diagnostic Criteria in Osteoarthritis and Coexisting Comorbidities
 - 7.3.4 Clinical Assessment of the Rheumatoid Arthritis Patient
- 7.4. Protocols and Treatments
 - 7.4.1 Non-Pharmacological Treatment and Intervention Protocol for Non-Specific Lower Back Pain
 - 7.4.2 Non-Pharmacological Treatment and Intervention Protocol in Osteoporosis
 - 7.4.3 Non-Pharmacological Treatment and Intervention Protocol in Osteoarthritis
 - 7.4.4 Non-Pharmacological Treatment and Intervention Protocol in Rheumatoid Arthritis
- 7.5. Training Planning
 - 7.5.1 Definition and Specification of Objectives
 - 7.5.2 Definition and Specification of Evaluation Processes
 - 7.5.3 Definition and Specification of Operability with Respect to Spatial and Material Resources
 - 7.5.4 Importance of the 1983 Team



- 7.6. Programming of Strength Training
 - 7.6.1 Objectives of Strength Training in Osteoarticular Diseases and Non-Specific Lower Back Pain
 - 7.6.2 Volume, Intensity and Recovery of Strength Training in Non-Specific Lower Back Pain
 - 7.6.3 Selection of Exercises and Methods of Strength Training in Non-Specific Lower Back Pain
 - 7.6.4 Design of Strength Training Programs for Osteoarticular Diseases and Non-Specific Lower Back Pain
- 7.7. Programming Speed Training
 - 7.7.1 Objectives of Resistance Training in Osteoarticular Diseases and Non-Specific Lower Back Pain
 - 7.7.2 Volume and Intensity and Recovery from Resistance Training in Back Pain
 - 7.7.3 Selection of Exercises and Methods of Resistance Training in Back Pain
 - 7.7.4 Design of Resistance Training Programs for Back Pain
- 7.8. The Importance of Photography as a Communication Tool
 - 7.8.1 Physical Exercise and its Implications for Bone Mass
 - 7.8.2 Functionality of the Lumbopelvic Region
 - 7.8.3 The Importance of Postural Hygiene
 - 7.8.4 The Importance of Ergonomics in the Home and Workplace
- 7.9. Physical, Psychological and Social Burden, and Recommendations for Improving Health and Quality of Life
 - 7.9.1 Key Considerations in the Postmenopausal Woman
 - 7.9.2 Understanding the Complex Interrelationship between Exercise and Pain
 - 7.9.3 Barriers to Participation in Physical Exercise Programs
 - 7.9.4 Strategies to Promote Adherence
- 7.10. Design of Training Programs for Patients with Osteoarticular Diseases and Non-Specific Lower Back Pain
 - 7.10.1 Design of Osteoporosis Training Programs
 - 7.10.2 Design of Osteoarthritis Training Programs
 - 7.10.3 Design of Training Programs for Non-Specific Lower Back Pain
 - 7.10.4 Conclusions and Closing of Module 7

Module 8. Respiratory Diseases and Physical Exercise

- 8.1. Definition, Contextualization and Epidemiology
 - 8.1.1 Definition the Respiratory Most Frequent Diseases
 - 8.1.2 Description of the Characteristics of the Disease
 - 8.1.3 Epidemiology and Outreach
 - 8.1.4 Triggering Factors and Comorbidities
- 8.2. Pathophysiological Principles
 - 8.2.1 Respiratory System Anatomy and Physiology
 - 8.2.2 Gas Exchange, Ventilation and Air Flow
 - 8.2.3 COPD
 - 8.2.4 Asthma
- 8.3. Assessment and Diagnosis
 - 8.3.1 Assessment of Lung Function and Functional Capacity
 - 8.3.2 Functional Assessment of the COPD Patient
 - 8.3.3 Physical Tests and Practical Application
- 8.4. Protocols and Treatments
 - 8.4.1 Respiratory Rehabilitation Protocols for the COPD Patient
 - 8.4.2 Pharmacological Treatment and Interactions
 - 8.4.3 Non-Pharmacological Treatment: Aerobic Fitness and Muscle Fitness Training
 - 8.4.4 Addressing Common Risk Factors and Comorbidities
- 8.5. Training Planning in Patients with COPD
 - 8.5.1 Definition and Specification of the Client's Level
 - 8.5.2 Definition and Specification of Objectives
 - 8.5.3 Definition and Specification of Assessment Processes
 - 8.5.4 Definition and Specification of Operability with Respect to Spatial and Material Resources
- 8.6. Programming of Strength Training
 - 8.6.1 Objectives of Strength Training for Individuals with Respiratory Diseases
 - 8.6.2 Volume, Intensity and Recovery of Strength Training in for Individuals with Respiratory Diseases
 - 8.6.3 Selection of Exercises and Methods of Strength Training for Individuals with Respiratory Diseases
 - 8.6.4 Design of Strength Training Programs for Individuals with Respiratory Diseases

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8.7.	Programming Speed Training				
	8.7.1	Objectives of Resistance Training for Individuals with Respiratory Diseases			
	8.7.2	Volume and Intensity and Recovery from Resistance Training for Individuals with Respiratory Diseases			
	8.7.3	Selection of Exercises and Methods of Resistance Training for Individuals with Respiratory Diseases			
	8.7.4	Design of Resistance Training Programs for Individuals with Respiratory Diseases			
8.8.	Lifestyle Change Recommendations				
	8.8.1	Sedentary Behavior			
	8.8.2	Physical Inactivity			
	8.8.3	Smoking, Alcohol and Nutrition			
8.9.	Malnutrition in the COPD Patient and Consequences on Respiratory Function.				
	8.9.1	Assessment Nutritional Status			
	8.9.2	Nutritional Support in COPD			
	8.9.3	Nutritional Guidelines in the COPD Patient			
8.10.	Considerations in the Practice of Physical Activity and Exercise				
	8.10.1	The Selection and Arrangement of Strength and Aerobic Exercises in Training			
	8.10.2	The Use of Concurrent Training as a Tool for the COPD Patient			
	8.10.3	Exercise Selection and Progression in the Population with Respiratory Pathology			
	8.10.4	Specific Pharmacological Interactions			
	8.10.5	Conclusions and Closing of Module 8			
Mod	ule 9. F	Physical Exercise and Pregnancy			

Morphofunctional Changes in the Female Body during Pregnancy

Modification of the Center of Gravity and Relevant Postural Adaptations

Body Mass Modification

Cardiorespiratory Changes

Locomotor System Changes

Gastrointestinal and Renal Changes

Hematological Changes

9.1.4

9.1.5

9.1.6

9.2. Pathophysiology of Pregnancy-Related Conditions Gestational Diabetes Mellitus 9.2.1 9.2.2 Supine Hypotensive Syndrome 9.2.3 Anemia 9.2.4 Lower Back Pain 9.2.5 Diastasis Recti 9.2.6 Varicose Veins 9.2.7 Pelvic Floor Dysfunction Nerve Compression Syndrome Kinephylaxis and Benefits of Physical Exercise in Pregnant Women 9.3.1 Care to Be Taken into Account during Daily Activities Preventive Physical Work 9.3.2 Biological and Psychosocial Benefits of Physical Exercise Risks and Contraindications of Physical Exercise in Pregnant Women Absolute Contraindications to Physical Exercise 9.4.2 Relative Contraindications to Physical Exercise Precautions to be Taken into Account during Pregnancy 9.4.3 Nutrition during Pregnancy Body Mass Weight Gain with Pregnancy Energy Requirements throughout Pregnancy 9.5.2 Nutritional Recommendations for the Practice of Physical Exercise Training Planning for Pregnant Women 9.6.1 First Trimester Planning 9.6.2 Second Trimester Planning Third Trimester Planning 9.6.3 9.7. Musculoskeletal Training Program 9.7.1 Motor Control Stretching and Muscle Relaxation Muscle Fitness Work

Speed Training Program

Weekly Workload

9.8.1 9.8.2 Modality of Low-Impact Physical Work

9.9.	9.9.1	l and Preparatory Labor for Childbirth Pelvic Floor Exercises Postural Exercises
9.10.		o Physical Activity after Delivery
	9.10.1	Medical Discharge and Recovery Period
		Care at the Beginning of Physical Activity
	9.10.3	Conclusions and Closing of Module 9
Mod	ule 10.	Physical Exercise in Children, Adolescents and OlderAdults
10.1.	Approac	ch to Physical Exercise in Children and Adolescents
	10.1.1	Growth, Maturation and Development
	10.1.2	Development and Individuality: Chronological Age vs. Biological Age
	10.1.3	Sensitive Phases
	10.1.4	Long-Term Development (Long-Term Athlete Development)
10.2.	Assessr	ment of Physical Fitness in Children and Adolescents
	10.2.1	Main Assessment Tools
	10.2.2	Assessment of Coordinative Capacities
	10.2.3	Assessment of Conditional Capacities
	10.2.4	Morphological Assessments
10.3.	Physica	I Exercise Program for Children and Adolescents
	10.3.1	Muscle Strength Training
	10.3.2	Aerobic Fitness Training
	10.3.3	Speed Training
	10.3.4	Flexibility Training
10.4.	Neuroso	ciences and Child and Adolescent Development
	10.4.1	Neurolearning in Childhood
	10.4.2	Motor Skills: Basis of Intelligence
	10.4.3	Attention and Emotion: Early Learning
	10.4.4	Neurobiology and Epigenetic Theory in Learning

10.5.	Approac	sh to Physical Exercise in the Older Adult			
	10.5.1	Aging Process			
	10.5.2	Morphofunctional Changes in the Older Adult			
	10.5.3	Objectives of Physical Exercise in the Older Adult			
	10.5.4	Benefits of Physical Exercise in the Older Adult			
10.6.	Compre	hensive Gerontological Assessment			
	10.6.1	Coordination Skills Test			
	10.6.2	Katz Index of Independence in Activities of Daily Living			
	10.6.3	Test of Conditioning Capacities			
	10.6.4	Fragility and Vulnerability in Older Adults			
10.7.	Instabili	Instability Syndrome			
	10.7.1	Epidemiology of Falls in the Elderly			
	10.7.2	Detection of At-Risk Patients without a Previous Fall			
	10.7.3	Risk Factors for Falls in the Elderly			
	10.7.4	Post-Fall Syndrome			
10.8.	Nutrition	n in Children, Adolescents and Older Adults			
	10.8.1	Nutritional Requirements for Each Stage of Life			
	10.8.2	Increased Prevalence of Childhood Obesity and Type II Diabetes in Children			
	10.8.3	Association of Degenerative Diseases with Saturated Fat Consumption			
	10.8.4	Nutritional Recommendations for the Practice of Physical Exercise			
10.9.	Neurosc	siences and Older Adults			
	10.9.1	Neurogenesis and Learning			
	10.9.2	Cognitive Reserve in Older Adults			
	10.9.3	We Can Always Learn			
	10.9.4	Aging is not Synonymous with Disease			
	10.9.5	Alzheimer's and Parkinson's Disease, the Value of Physical Activity			
10.10.	Physica	Exercise Planning for Older Adults			
	10.10.1	Muscle Strength and Power Training			
	10.10.2	Aerobic Fitness Training			
	10.10.3	Cognitive Training			
	10.10.4	Training Coordinative Capacities			
	10.10.5	Conclusions and Closing of Module 10			





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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 | 41 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.



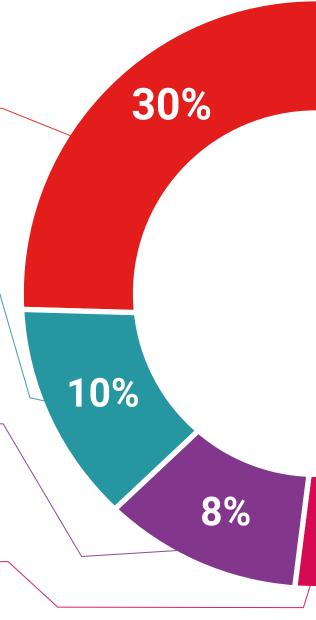
Practising Skills and Abilities

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.

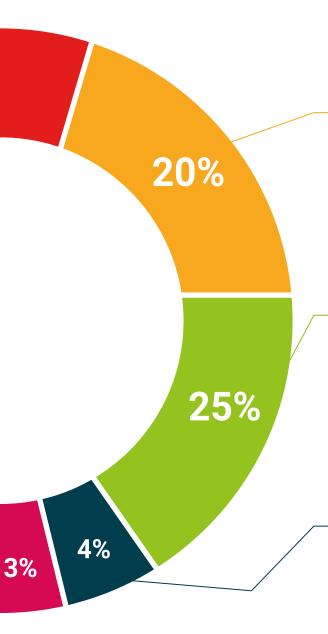


Additional Reading

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.



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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

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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 46 | Certificate

This **Professional Master's Degree in Therapeutic Personal Training** contains the most complete and up-to-date scientific program on the market.

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

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

Awards the following

CERTIFICATE

To

Mr./Ms. _____ with identification number ____
For having successfully passed and accredited the following program

PROFESSIONAL MASTER'S DEGREE

in

Therapeutic Personal Training

This is a qualification awarded by this University, equivalent to 1,500 hours, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH is a Private Institution of Higher Education recognized by the Ministry of Public Education as of June 28, 2018.

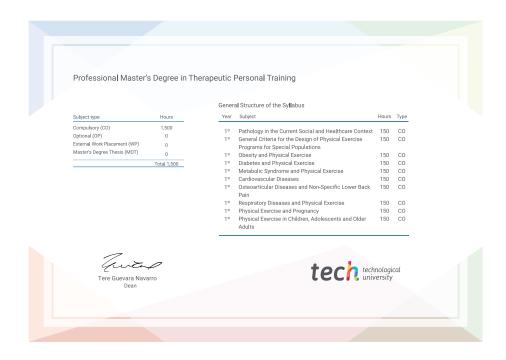
June 17, 2020

June 17, 2020

Title: **Professional Master's Degree in Therapeutic Personal Training**Official N° of hours: **1.500 h.**

Endorsed by the NBA







Professional Master's Degree

Therapeutic Personal Training

Course Modality: Online

Duration: 12 months

Certificate: TECH Technological University

Official N° of hours: 1,500 h.

