



Postgraduate Diploma Physical Exercise in Obesity, Metabolic Syndrome and Diabetes

» Modality: online

» Duration: 6 months

» Certificate: TECH Global University

» Credits: 18 ECTS

» Schedule: at your own pace

» Exams: online

Website: www.techtitute.com/us/sports-science/postgraduate-diploma/postgraduate-diploma-physical-exercise-obesity-metabolic-syndrome-diabetes

Index

> 06 Certificate

> > p. 28





tech 06 | Introduction

The Postgraduate Diploma in Physical Exercise in Obesity, Metabolic Syndrome, Diabetes has been designed to specialize the personal trainer in the care and work with users with these pathologies, so that they can perform specific activities to help them improve their health. In this way, the program will present all the criteria, based on evidence, that should serve to make operational decisions regarding the design of exercise programs and, in this way, to design individualized training programs for each subject and their pathology, whether obesity or diabetes.

It should be taken into account that obesity has become one of the most frequent diseases in the world, although the most underestimated of all, being perceived by the population as a simple aesthetic problem. A sedentary lifestyle and an excessive and inadequate diet are two of the elements with the greatest impact on the development of this disease. However, the simplistic belief that an increase in physical activity and a decrease in intake is sufficient for its treatment has been seen as an ineffective treatment, given that the system in this pathological state does not respond in the same way. Therefore, in this Postgraduate Diploma, special emphasis will be placed on the planning and programming of training adjusted to the dysfunctionality of these individuals in order to generate perceptible changes in their health.

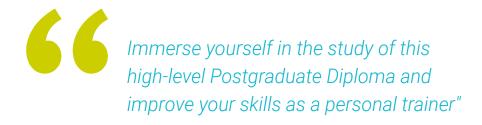
Although there is no single definition of metabolic syndrome, most international institutions define it as a disorder in which obesity, altered glucose levels, dyslipidemia and/or hypertension coexist. This scenario places us before a patient with an alteration at different levels that constitutes a health problem of the first order.

Diabetes Mellitus is a metabolic disorder that causes hyperglycemia, due to the impossibility of the pancreas to secrete insulin or due to a defective action of insulin for various reasons. There are different types of Diabetes, the most frequent or known being Type I Diabetes and Type II Diabetes. In both cases, lifestyle is of great importance and should be adjusted to the specific needs of the disease, both from a nutritional and physical exercise point of view, which has been shown to be a very important tool as part of the treatment of diabetes, as long as it is carried out in an appropriate manner and knowing the difficulties and risks involved in the presence of hypo- and hyperglycemia.

To train in this field, TECH has designed this Postgraduate Diploma, which has contents of the highest teaching and educational quality, which aims to turn 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 Physical Exercise in Obesity, Metabolic Syndrome and Diabetes 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 diploma 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 obesity, metabolic syndrome and diabetes, and with great experience.

This Specialist 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

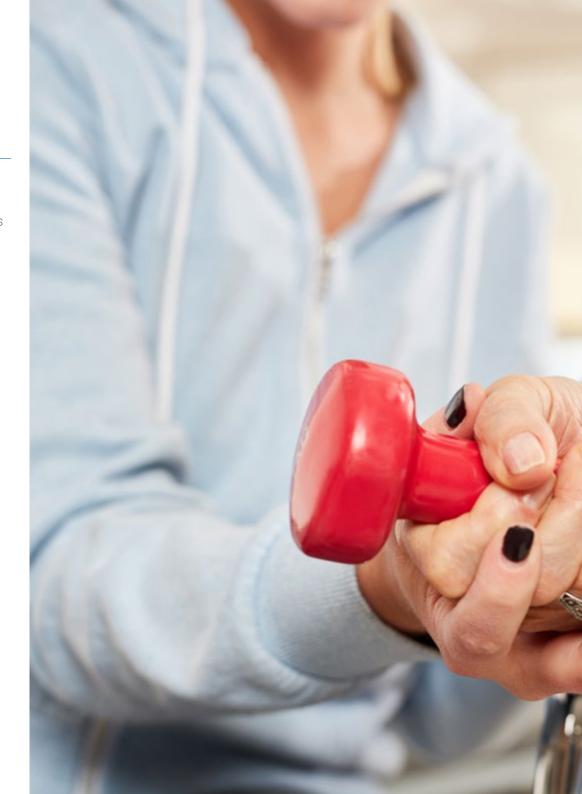


General Objectives

- 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.

- In-depth understanding of the pathophysiology of obesity and its impact 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 2.

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

Module 3.

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

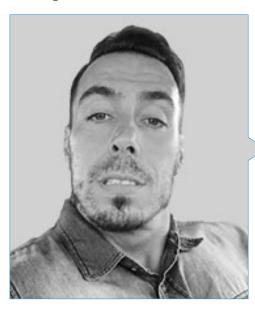






tech 14 | Course Management

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. Obesity and Physical Exercise

- 1.1. Definition, Contextualization and Epidemiology
 - 1.1.1. Evolution of Obesity: Associated Cultural and Social Aspects
 - 1.1.2. Obesity and Comorbidities: The Role of Interdisciplinarity
 - 1.1.3. Childhood Obesity and Its Impact on Future Adults
- 1.2. Pathophysiological Bases
 - 1.2.1. Definition of Obesity and Health Risks
 - 1.2.2. Pathophysiological Aspects of Obesity
 - 1.2.3. Obesity and Associated Pathologies
- 1.3. Evaluation and Diagnosis
 - 1.3.1. Body Composition: 2-Component and 5-Component Model
 - 1.3.2. Evaluation: Main Morphological Evaluations
 - 1.3.3. Interpretation of Anthropometric Data
 - 1.3.4. Prescription of Physical Exercise for the Prevention and Improvement of Obesity
- 1.4. Protocols and Treatment
 - 1.4.1. First Therapeutic Guideline: Lifestyle Modification
 - 1.4.2. Nutrition: Role in Obesity
 - 1.4.3. Exercise: Role in Obesity
 - 1.4.4. Medical Treatment
- 1.5. Training Planning in Patients with Obesity
 - 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 in Obese Patients
 - 1.6.1. Objectives of Strength Training in Obese People
 - 1.6.2. Volume, Intensity and Recovery of Strength Training in Obese Individuals
 - 1.6.3. Selection of Exercises and Methods of Strength Training in Obese People
 - 1.6.4. Design of Strength Training Programs in Obese People





Structure and Content | 19 tech

- 1.7. Programming of Resistance Training in the Obese Patient
 - 1.7.1. Objectives of Resistance Training in Obese People
 - 1.7.2. Volume, Intensity and Recovery of Resistance Training in Obese People
 - 1.7.3. Selection of Exercises and Methods of Resistance Training in Obese People
 - 1.7.4. Design of Resistance Training Programs in Obese People
- 1.8. Joint Health and Complementary Training in Obese Patients
 - 1.8.1. Complementary Training in Obesity
 - 1.8.2. WMD/Flexibility Training in Obese People
 - 1.8.3. Improved Trunk Control and Stability in Obese People
 - 1.8.4. Other Training Considerations for the Obese Population
- 1.9. Psycho-Social Aspects of Obesity
 - 1.9.1. Importance of Interdisciplinary Treatment in Obesity
 - 1.9.2. Eating Disorders
 - 1.9.3. Childhood Obesity
 - 1.9.4. Adult Obesity
- 1.10. Nutrition and Other Factors Related to Obesity
 - 1.10.1. Omic Sciences and Obesity
 - 1.10.2. Microbiota and Its Influence on Obesity
 - 1.10.3. Protocols for Nutritional Intervention in Obesity: Evidence
 - 1.10.4. Nutritional Recommendations for Physical Exercise

tech 20 | Structure and Content

Module 2. Diabetes and Physical Exercise

- 2.1. Definition, Contextualization and Epidemiology
 - 2.1.1. Definition and Basic of Diabetes Mellitus
 - 2.1.2. Signs and Symptoms of Diabetes Mellitus
 - 2.1.3. Definition and Classification of Diabetes Mellitus
 - 2.1.4. Type II Diabetes and Lifestyle
- 2.2. Pathophysiological Bases
 - 2.2.1. Anatomo-Physiological Bases
 - 2.2.2. The Pancreas and the Regulation of Glycemia
 - 2.2.3. Macronutrient Metabolism in Diabetes Mellitus
 - 2.2.4. Insulin Resistance
- 2.3. Evaluation and Diagnosis
 - 2.3.1. Diabetes: Assessment in the Clinical Setting
 - 2.3.2. Diabetes Mellitus Complications
 - 2.3.3. Diabetes: Its Evaluation and Follow-Up by the Physical Exercise Specialist
 - 2.3.4. Diabetes Diagnosis and Intervention Protocol
- 2.4. Protocols and Treatment
 - 2.4.1. Glycemic Control and Nutritional Aspects
 - 2.4.2. Treatment of Diabetes Mellitus Type 1 and 2
 - 2.4.3. Pharmacological Treatment. Basic Aspects to Consider
 - 2.4.4. Non-Pharmacological Treatment by Physical Exercise: Role in Diabetes
- 2.5. Training Planning in Patients with Diabetes
 - 2.5.1. Definition and Specification of Customer Level
 - 2.5.2. Definition and Specification of Objectives
 - 2.5.3. Definition and Specification of Evaluation Processes
 - 2.5.4. Definition and Specification of Operability with Respect to Spatial and Material Resources
- 2.6. Programming of Strength Training
 - 2.6.1. Objectives of Strength Training in Diabetes
 - 2.6.2. Volume, Intensity and Recovery of Strength Training in Diabetes
 - 2.6.3. Selection of Exercises and Methods of Strength Training in Diabetes
 - 2.6.4. Design of Strength Training Programs in Diabetes

- 2.7. Programming of Resistance Training
 - 2.7.1. Objectives of Resistance Training in Diabetes
 - 2.7.2. Volume, Intensity and Recovery of Resistance Training in Diabetes
 - 2.7.3. Selection of Exercises and Methods of Resistance Training in Diabetes
 - 2.7.4. Design of Resistance Training Programs in Diabetes
- 2.8. Precautions and Contraindications
 - 2.8.1. Blood Glucose Values and Physical Exercise
 - 2.8.2. Contraindications in the Development of Activity in Patients with Diabetes Mellitus Type I
 - 2.8.3. Attention to Problems Related to Diabetes and Physical Exercise
 - 2.8.4. Safety and First Aid in Complications during the Development of Physical Exercise Programs in Diabetics
- 2.9. Nutrition and Lifestyle in Diabetic Patients
 - 2.9.1. Nutritional Aspects of Diabetes
 - 2.9.2. Metabolic Control and Glycemic Index
 - 2.9.3. Nutritional Recommendations for Physical Exercise
- 2.10. Design of Training Programs for Diabetic Patients
 - 2.10.1. Design of Resistance Training Programs in Diabetes
 - 2.10.2. Design of Resistance Training Session in Diabetes
 - 2.10.3. Design of Global Intervention Programs (Inter-multidisciplinary) in Diabetes
 - 2.10.4. Final Conclusions and Closing of the Module

Module 3. Metabolic Syndrome and Physical Exercise

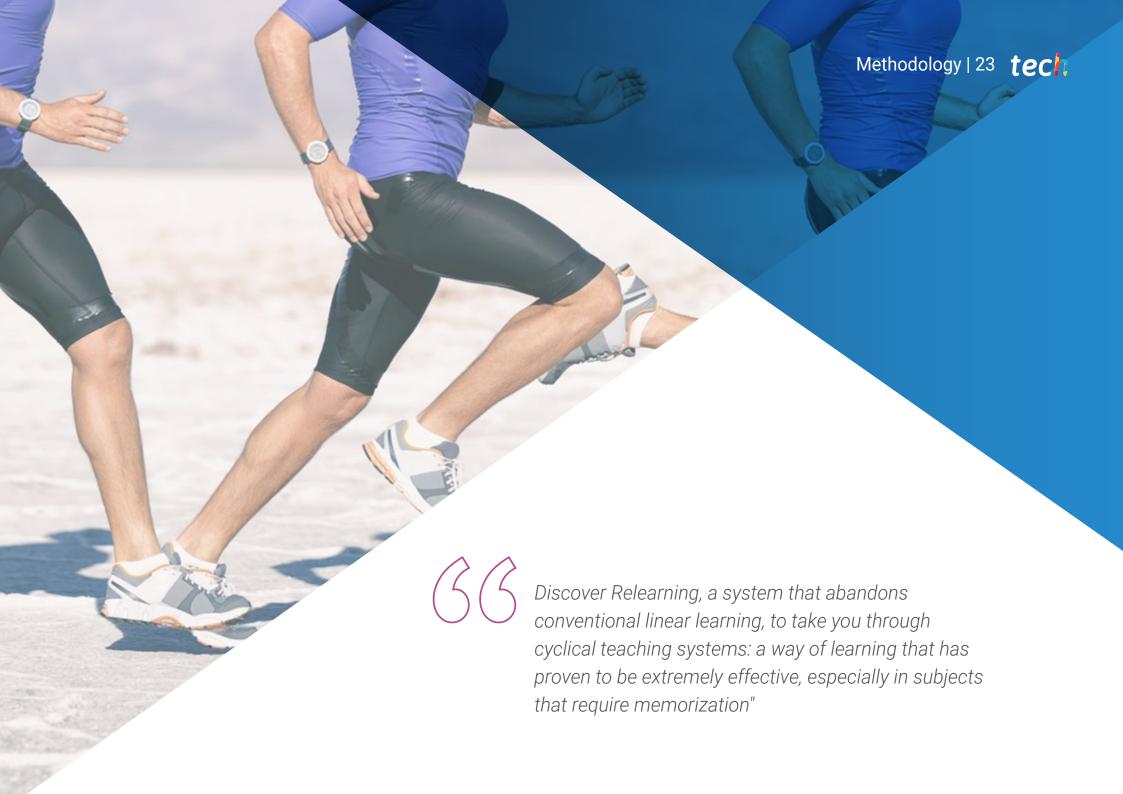
- 3.1. Definition, Contextualization and Epidemiology
 - 3.1.1. Definition of Metabolic Syndrome
 - 3.1.2. Epidemiology of Metabolic Syndrome
 - 3.1.3. The Patient with Syndrome, Considerations for Intervention
- 3.2. Pathophysiological Bases
 - 3.2.1. Definition of Metabolic Syndrome and Health Risks
 - 3.2.2. Pathophysiological Aspects of the Disease
- 3.3. Evaluation and Diagnosis
 - 3.3.1. Metabolic Syndrome and Its Assessment in the Clinical Setting
 - 3.3.2. Biomarkers, Clinical Indicators and Metabolic Syndrome
 - 3.3.3. Metabolic Syndrome and Its Assessment and Follow-up by the Physical Exercise Specialist
 - 3.3.4. Diagnosis and Intervention Protocol in Metabolic Syndrome
- 3.4. Protocols and Treatment
 - 3.4.1. Lifestyle and Its Relationship to Metabolic Syndrome
 - 3.4.2. Exercise: Role in the Metabolic Syndrome
 - 3.4.3. The Metabolic Syndrome Patient and Pharmacological Treatment: Considerations for the Exercise Professional
- 3.5. Training Planning in Patients with Metabolic Syndrome
 - 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 Metabolic Syndrome
 - 3.6.2. Volume, Intensity and Recovery of Strength Training in Metabolic Syndrome
 - 3.6.3. Selection of Exercises and Methods of Strength Training in Metabolic Syndrome
 - 3.6.4. Design of Strength Training Programs in Metabolic Syndrome
- 3.7. Programming of Resistance Training

- 3.7.1. Objectives of Strength Training in Metabolic Syndrome
- 3.7.2. Volume, Intensity and Recovery of Resistance Training in Metabolic Syndrome
- 3.7.3. Selection of Exercises and Methods of Resistance Training in Metabolic Syndrome
- 3.7.4. Design of Resistance Training Programs in Metabolic Syndrome
- 3.8. Precautions and Contraindications
 - 3.8.1. Assessments for Physical Exercise in the Population with Metabolic Syndrome
 - 3.8.2. Contraindications in the Development of Activity in Patients with Metabolic Syndrome
- 3.9. Nutrition and Lifestyle in Patients with Metabolic Syndrome
 - 3.9.1. Nutritional Aspects in Metabolic Syndrome
 - 3.9.2. Examples of Nutritional Intervention in Metabolic Syndrome
 - 3.9.3. Nutritional Recommendations for Physical Exercise
- 3.10. Design of Training Programs in Patients with Metabolic Syndrome
 - 3.10.1. Design of Training Programs in Metabolic Syndrome
 - 3.10.2. Design of Training Sessions in Metabolic Syndrome
 - 3.10.3. Design of Global Intervention Programs (Inter-multidisciplinary) in Metabolic Syndrome
 - 3.10.4. Final 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

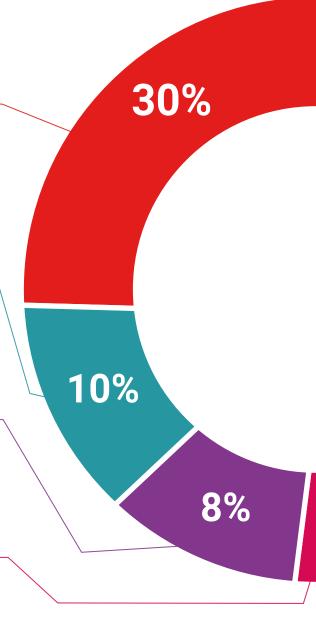
They will carry out activities to develop specific competencies and skills in each thematic area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization that we are experiencing.

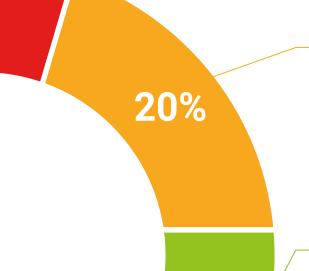


Additional Reading

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.





25%

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.



4%





tech 32 | Certificate

This program will allow you to obtain your **Postgraduate Diploma in Physical Exercise in Obesity, Metabolic Syndrome and Diabetes** endorsed by **TECH Global University**, the world's largest online university.

TECH Global University is an official European University publicly recognized by the Government of Andorra (*official bulletin*). Andorra is part of the European Higher Education Area (EHEA) since 2003. The EHEA is an initiative promoted by the European Union that aims to organize the international training framework and harmonize the higher education systems of the member countries of this space. The project promotes common values, the implementation of collaborative tools and strengthening its quality assurance mechanisms to enhance collaboration and mobility among students, researchers and academics.

This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: Postgraduate Diploma in Physical Exercise in Obesity, Metabolic Syndrome and Diabetes

Modality: online

Duration: 6 months

Accreditation: 18 ECTS



Mr./Ms. _____, with identification document _____ has successfully passed and obtained the title of:

Postgraduate Diploma in Physical Exercise in Obesity, Metabolic Syndrome and Diabetes

This is a program of 450 hours of duration equivalent to 18 ECTS, with a start date of dd/mm/yyyy and an end date of dd/mm/yyyy.

TECH Global University is a university officially recognized by the Government of Andorra on the 31st of January of 2024, which belongs to the European Higher Education Area (EHEA).

In Andorra la Vella, on the 28th of February of 2024



health somition people information guarantee as a seaching technology community tech global university

Postgraduate Diploma

Physical Exercise in Obesity, Metabolic Syndrome and Diabetes

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Global University
- » Credits: 18 ECTS
- » Schedule: at your own pace
- » Exams: online

