

# Postgraduate Certificate

## Physical Exercise in Children, Adolescents and Older Adults

Endorsed by the NBA



**tech** technological  
university



## Postgraduate Certificate

### Physical Exercise in Children, Adolescents and Older Adults

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

Website: [www.techtute.com/pk/sports-science/postgraduate-certificate/physical-exercise-children-adolescents-older-adults](http://www.techtute.com/pk/sports-science/postgraduate-certificate/physical-exercise-children-adolescents-older-adults)

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# 01

# Introduction

Individuals should adapt physical exercise to their personal circumstances, taking into account their age and physical condition. For this reason, when it comes to sports carried out by physical trainers, they are the ones who should focus on the characteristics of each age group, in order to design activities appropriate to each user. TECH allows specialization in this sector and for this purpose offers this very complete specific program on children and adolescents and the elderly.





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*Children, young and old have different physical conditions. For this reason, they cannot perform the same the same exercises and with the same intensity. Train yourself to adapt your sports routines to each stage of the generational stage and give your career a boost”*

The Postgraduate Certificate in Physical Exercise in Children, Adolescents and Older Adults aims to train personal trainers to know the particularities of each person, according to their age, and to be able to design appropriate exercise programs for each generational stage, taking into account their physical conditions. For this, we have a team of professionals with extensive experience in the sector, trained to guide you in your study process.

Thus, this course will address the training process in different age stages, such as children and adolescents and the elderly. In this way, the main characteristics of each of these stages will be studied based on their morphofunctional changes, the incidence of neurosciences and nutrition with the objective of programming training sessions respecting the individuality of the appropriate physical workload for each person.

In this course, 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, as well as to create healthy life habits that they will be able to maintain for the rest of their lives.

To train you in this field, at TECH we have designed this course, 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 Certificate, 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 Certificate in Physical Exercise in Children, Adolescents and Older Adults** contains the most complete and up-to-date 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 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 program and improve your skills as a personal trainer"*

“

*This Postgraduate Certificate 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 created by recognized experts in the design of exercise programs for children, young and old, and with great experience.

*This program offers training in simulated environments, which provides an immersive learning experience designed to train for real-life situations”*

*This 100% online program's degree will allow you to combine your studies with your professional work while increasing your knowledge in this field”*



# 02 Objectives

The main objective of this program is the development of theoretical and practical learning, so that the sports science professional can master in a practical and rigorous way the application of therapeutic personal training.







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*Our goal is to achieve academic excellence and help you achieve professional success. Don't hesitate any longer and join us”*



## General Objectives

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- ◆ Understand the different variables of training and their application in people according to their age and physical conditions
- ◆ Obtain an overview of the most appropriate exercises, depending on the age of the users
- ◆ Know the existing contraindications in different people, according to their age, in order to avoid possible counterproductive effects of physical exercise







## Specific Objectives

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- ◆ 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 manner for children, adolescents and older adults



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

03

# Course Management

Our teaching team, experts in Personal Training, has a wide prestige in the profession and are professionals with years of teaching experience that have joined together to help you give a boost to your profession. To this end, they have developed this program with recent updates in the field that will allow you to train and increase your skills in this sector.







“

*Learn from the best professionals and become a successful professional yourself”*

## 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 Baceo
- ◆ 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

# 04

# Structure and Content

The structure of the contents has been designed by a team of professionals knowledgeable about the implications of training in daily practice, aware of the relevance of the current relevance of quality training in the field of personal training; and committed to quality teaching through new educational technologies.





“

*We have the most complete and updated scientific program on the market. We want to provide you with the best specialization"*

## Module 1. Physical Exercise in Children, Adolescents and Older Adults

- 1.1. Approach to Physical Exercise for Children and Adolescents
  - 1.1.1. Growth, Maturation and Development
  - 1.1.2. Development and Individuality: Chronological Age vs. Biological Age
  - 1.1.3. Sensitive Phases
  - 1.1.4. *Long-Term Athlete Development*
- 2.1. Evaluation of Physical Fitness in Children and Adolescents
  - 2.2.1. Main Evaluation Batteries
  - 2.2.2. Assessment of Coordinative Capacities
  - 2.2.3. Assessment of Conditional Capacities
  - 2.2.4. Morphological Evaluations
- 3.1. Physical Exercise Programming for Children and Adolescents
  - 3.3.1. Muscle Strength Training
  - 3.3.2. Aerobic Fitness Training
  - 3.3.3. Speed Training
  - 3.3.4. Flexibility Training
- 4.1. Neurosciences and Child and Adolescent Development
  - 4.4.1. Neurolearning in Childhood
  - 4.4.2. Motor Skills Basis of Intelligence
  - 4.4.3. Attention and Emotion Early Learning
  - 4.4.4. Neurobiology and Epigenetic Theory in Learning
- 5.1. Approach to Physical Exercise in Older Adults
  - 5.5.1. Aging Process
  - 5.5.2. Morphofunctional Changes in the Older Adult
  - 5.5.3. Objectives of Physical Exercise in the Elderly
  - 5.5.4. Benefits to Physical Exercise in Older Adults
- 6.1. Comprehensive Gerontological Assessment
  - 6.6.1. Coordination Skills Test
  - 6.6.2. Katz Index of Independence in Activities of Daily Living
  - 6.6.3. Test of Conditioning Capacities
  - 6.6.4. Fragility and Vulnerability in Older Adults





- 7.1. Instability Syndrome
  - 7.7.1. Epidemiology of Falls in the Elderly
  - 7.7.2. Detection of Patients at Risk without Previous Fall
  - 7.7.3. Risk Factors for Falls in the Elderly
  - 7.7.4. Post Fall Syndrome
- 8.1. Nutrition in Children and Adolescents and Older Adults
  - 8.8.1. Nutritional Requirements for Each Age Stage
  - 8.8.2. Increased Prevalence of Childhood Obesity and Type II Diabetes in Children
  - 8.8.3. Association of Degenerative Diseases with Saturated Fat Intake
  - 8.8.4. Nutritional Recommendations for Physical Exercise
- 9.1. Neurosciences and Older Adults
  - 9.9.1. Neurogenesis and Learning
  - 9.9.2. Cognitive Reserve in Older Adults
  - 9.9.3. We Can Always Learn
  - 9.9.4. Aging Is Not Synonymous with Disease
  - 9.9.5. Alzheimer's and Parkinson's Disease, the Value of Physical Activity
- 10.1. Physical Exercise Programming in 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 of Coordinative Capacities
  - 10.10.5. Conclusions and Closing of the Module



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



# 05 Methodology

This academic program offers students a different way of learning. Our methodology uses a cyclical learning approach: **Relearning**.

This teaching system is used, for example, in the most prestigious medical schools in the world, and major publications such as the **New England Journal of Medicine** have considered it to be one of the most effective.







“

*Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"*

### 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.





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.

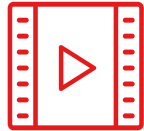
*Relearning will allow you to learn with less effort and better performance, involving you more in your training, developing a critical mindset, defending arguments, and contrasting opinions: a direct equation for success.*

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.



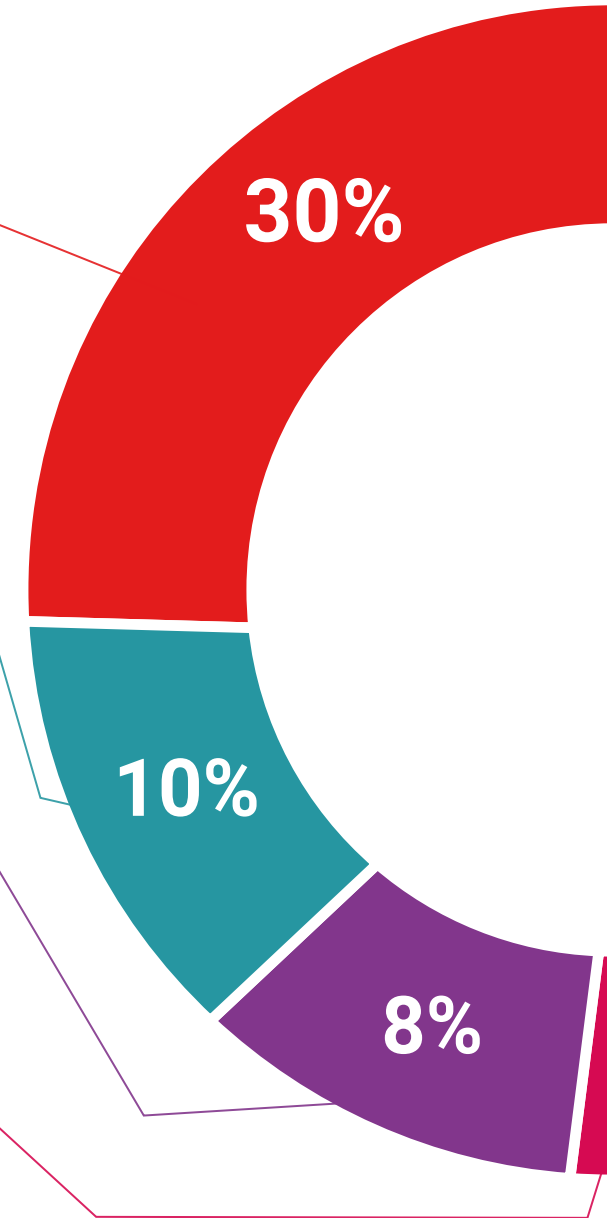
### Practising Skills and Abilities

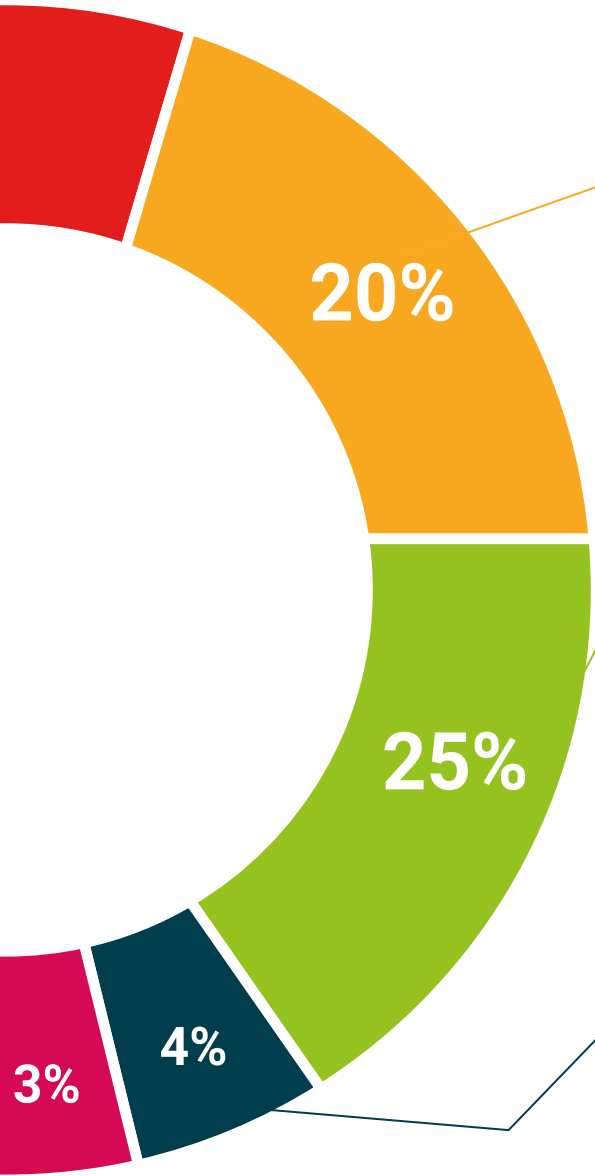
They will carry out activities to develop specific competencies and skills in each thematic area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization that we are experiencing.



### 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.





#### 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.





06

# Certificate

The Postgraduate Certificate in Physical Exercise in Children, Adolescents and Older Adults guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Certificate issued by TECH Technological University.



“

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

This **Postgraduate Certificate in Physical Exercise in Children, Adolescents and Older Adults** contains the most complete and up-to-date program on the market.

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

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

Title: **Postgraduate Certificate in Physical Exercise in Children, Adolescents and Older Adults**

Official N° of Hours: **150 h.**

Endorsed by the NBA



\*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.



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Physical Exercise in Children,  
Adolescents and Older Adults

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