

# Postgraduate Diploma

Physical Exercise in Obesity, Pregnancy, Childhood, Adolescence, and Adults for Fitness Instructors

Endorsed by the NBA





## Postgraduate Diploma

### Physical Exercise in Obesity, Pregnancy, Childhood, Adolescence, and Adults for Fitness Instructors

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

Website: [www.techtute.com/us/sports-science/postgraduate-diploma/postgraduate-diploma-physical-exercise-obesity-pregnancy-childhood-adolescence-adults-fitness-instructors](http://www.techtute.com/us/sports-science/postgraduate-diploma/postgraduate-diploma-physical-exercise-obesity-pregnancy-childhood-adolescence-adults-fitness-instructors)

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# 01

# Introduction

A Fitness Instructor must face in their daily work different situations to which they must be able to respond successfully. Among them, one of the most common concerns for professionals is the attention to special groups, since it is necessary to know how to work with their needs in order to be able to offer them a correct service adapted to their requirements. Therefore, this academic program seeks to nurture the knowledge of sports professionals to be able to work with special groups such as pregnant women, people with obesity or children and adolescents, knowing how to adapt their physical possibilities to the training plan in order to offer them optimal results.





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*In a highly competitive world of work, specialization is the only differentiating tool at the service of sports professionals to make their professional profile stand out"*

This academic program offers the student in-depth knowledge in certain pathologies, such as metabolic syndrome, obesity or special conditions such as pregnancy, or other frequent cases in the day-to-day life of a Fitness Instructor and whose knowledge is ignored by the majority since it is not taught in most basic careers.

Among them is obesity, which has become one of the most common 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.

In the same way, the training process will also be addressed in different age stages such as infant, juvenile and elderly. The main characteristics of each of these stages will be broken down based on their morpho-functional changes, the incidence of neurosciences and nutrition with the objective of programming training sessions respecting the individuality of the physical workload.

Finally, during the Postgraduate Diploma, the contents associated with the state of pregnancy will be addressed. Throughout the classes, the different morphophysiological adaptations that are observed will be studied and emphasis will be placed on their repercussions on physical exercise plans. Postural modifications and care will be essential, as well as motor control adjustments as the pregnancy progresses. Possible pathologies, care and contraindications during this process as well as responses and adaptations to physical exercise will be taken into consideration. Lastly, the assigning a physical exercise program will be studied, dividing it into the three characteristic trimesters and a no less important proposal for the postpartum period.

This **Postgraduate Diploma in Physical Exercise in Obesity, Pregnancy, Childhood, Adolescence, and Adults for Fitness Instructors** contains the most complete and up-to-date scientific program on the market. The most important features include:

- ◆ Practical cases presented by experts in Physical Activity and Sport
- ◆ The graphic, schematic, and practical contents with which they are created, provide scientific and practical information on the disciplines that are essential for professional development
- ◆ Practical exercises where self-assessment can be used to improve learning
- ◆ Its special emphasis on innovative methodologies
- ◆ 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



*Provide the best care to your special needs customer and start competing with the best in the industry"*

“

*Welcome to the academic program that will lay the foundation for your professional growth and open the doors to a promising future"*

The program includes, in its teaching staff, professionals from the sector who bring their work experience to this refresher program, as well as renowned specialists from reference 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 throughout the program. For this purpose, the professional will be assisted by an innovative interactive video system created by renowned and experienced experts.

*Turn your professional career around by taking this Postgraduate Diploma.*

*Learn how to work with special groups such as pregnant women and become a much more sought-after fitness instructor.*



# 02 Objectives

The main objective of this academic program is to enhance students' acquisition of specific skills that will become the foundation on which they will base their daily practice. To this end, a ternary of the highest level has been established based on the latest developments in the sector and created with the utmost scientific rigor. These contents will be taught by a team of first-class professionals, who will provide the student with valuable tools to work as a Fitness Instructor, knowing how to work and attend special groups.







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*If your goal is to grow and start working as a Fitness Instructor knowing how to work with special age groups, then this program is for you”*



## General Objectives

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- ◆ Acquire knowledge based on the most current scientific evidence with full applicability in the practical field
- ◆ Master all the most advanced methods of sports performance evaluation
- ◆ Master and apply with certainty the most current training methods to improve sports performance and quality of life, as well as to improve the most common pathologies
- ◆ Master the principles governing exercise physiology, as well as biochemistry
- ◆ Successfully integrate all the knowledge acquired in the different modules in real practice



*Your goals and TECH's goals come together and materialize in this academic program with excellent curricular"*





## Specific Objectives

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### Module 1. 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 2. Physical Exercise, Adolescents and Older Adults

- ◆ In-depth understanding of the biopsychosocial aspects of children, adolescents and older adults
- ◆ In-depth knowledge of 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

### Module 3. Physical Exercise and Pregnancy

- ◆ Know in depth 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



# 03

## Course Management

The faculty of this program is made up of a group of active and highly qualified experts. Thus, the professional who decides to take this program with TECH, will learn from a faculty of excellence, with years of experience in the sector and with the greatest desire to graduate the best in this field. For this reason, this team has also designed the contents of the Postgraduate Diploma, ensuring the student a complete learning experience, based on the highest scientific rigor and the latest developments in the sector.





“

*TECH has made a major effort to bring you the most complete and multidisciplinary teaching staff in the sector. Don't miss the opportunity to study with the best"*

## Management



### Mr. Rubina, Dardo

- ◆ CEO of Test and Training
- ◆ EDM Physical Training Coordinator
- ◆ Physical trainer of the EDM First Team
- ◆ Master's Degree in High Performance in Sports (ARD) COE
- ◆ EXOS Certification
- ◆ Specialist in Strength Training for the Prevention of Injuries, Functional and Physical-Sports Rehabilitation
- ◆ Certification in Weight Management and Physical Performance Technologies
- ◆ Postgraduate course in Physical Activity in Populations with Pathologies
- ◆ Diploma in Advanced Studies (DEA) University of Castilla la Mancha
- ◆ PhD in High Performance Sports (ARD)



## Professors

### Mr. Renda, Juan

- ◆ National Professor of Physical Education. ISEF No. 1 "Dr. Enrique Romero Brest"
- ◆ Degree in Kinesiology and Physiatry. University Institute H.A. Foundation Babelo.
- ◆ Bachelor's Degree in Physical Education with a specialization in Physiology of General Physical Work at San Martin National University.
- ◆ Master's Degree in Physical Education at the National University of Lomas de Zamora

# 04

# Structure and Content

The contents of this Postgraduate Diploma have been designed based on highest scientific rigor and taking into account the latest developments in the sector. In the same way, a group of experts from prestigious institutions have been in charge of designing and shaping the syllabus. They have contributed to this academic up-to-date program with the experience of their years of work and their constant research in this field of study. This allows us to provide students with the most complete library of contents on the market, which will become their theoretical support when facing their daily work.







“

*Premium content designed by and for  
professionals of excellence”*

## Module 1. Obesity and Physical Exercise

- 1.1. Obesity
  - 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. Obesity and Health Risks
  - 1.2.2. Pathophysiological Aspects of Obesity
  - 1.2.3. Obesity and Associated Pathologies
- 1.3. Assessment and Diagnosis
  - 1.3.1. Body Composition: 2-Component and 5-Component Model
  - 1.3.2. Assessment: 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 Treatments
  - 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. Customer Level Specification
  - 1.5.2. Objectives
  - 1.5.3. Assessment Processes
  - 1.5.4. Operability with Respect to Spatial and Material Resources





- 1.6. Strength Training Programming 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
- 1.7. Programming of Resistance Training in the Obese Patient
  - 1.7.1. Objectives of Resistance Training in Obese People
  - 1.7.2. Volume and Intensity and Recovery from 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 for Obese People
- 1.8. Joint Health and Complementary Training in Obese Patients
  - 1.8.1. Complementary Training in Obesity
  - 1.8.2. Range of Motion (ROM)/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 Obesity Nutritional Intervention: Evidence
  - 1.10.4. Nutritional Recommendations for the Practice of Physical Exercise

## Module 2. Physical Exercise in Children, Adolescents and Older Adults

- 2.1. Physical Exercise in Children and Adolescents
  - 2.1.1. Growth, Maturation and Development
  - 2.1.2. Development and Individuality: Chronological Age vs. Biological Age
  - 2.1.3. Sensitive Phases
  - 2.1.4. Long-term Development (*Long-term Athlete Development*)
- 2.2. Evaluation of Physical Fitness in Children and Adolescents
  - 2.2.1. Main Assessment Tools
  - 2.2.2. Assessment of Coordinative Capacities
  - 2.2.3. Assessment of Conditional Capacities
  - 2.2.4. Morphological Assessments
- 2.3. Physical Exercise Programming for Children and Adolescents
  - 2.3.1. Muscle Strength Training
  - 2.3.2. Aerobic Fitness Training
  - 2.3.3. Speed Training
  - 2.3.4. Flexibility Training
- 2.4. Neurosciences and Child and Adolescent Development
  - 2.4.1. Neurolearning in Childhood
  - 2.4.2. Motor Skills. Basis of Intelligence
  - 2.4.3. Attention and Emotion. Early Learning
  - 2.4.4. Neurobiology and Epigenetic Theory in Learning
- 2.5. Approach to Physical Exercise in the Older Adult
  - 2.5.1. Aging Process
  - 2.5.2. Morphofunctional Changes in the Older Adult
  - 2.5.3. Objectives of Physical Exercise in the Older Adult
  - 2.5.4. Benefits of Physical Exercise in the Older Adult
- 2.6. Comprehensive Gerontological Assessment
  - 2.6.1. Coordination Skills Test
  - 2.6.2. Katz Index of Independence in Activities of Daily Living
  - 2.6.3. Test of Conditioning Capacities
  - 2.6.4. Fragility and Vulnerability in Older Adults
- 2.7. Instability Syndrome
  - 2.7.1. Epidemiology of Elderly Woman Obesity
  - 2.7.2. Detection of Patients at Risk without a Previous Fall
  - 2.7.3. Risk Factors for Falls in the Elderly
  - 2.7.4. Post-Fall Syndrome
- 2.8. Nutrition in Children, Adolescents and Older Adults
  - 2.8.1. Nutritional Requirements for Each Stage of Life
  - 2.8.2. Increased Prevalence of Childhood Obesity and Type 2 Diabetes in Children
  - 2.8.3. Association of Degenerative Diseases with Saturated Fat Consumption
  - 2.8.4. Nutritional Recommendations for the Practice of Physical Exercise
- 2.9. Neurosciences and Older Adults
  - 2.9.1. Neurogenesis and Learning
  - 2.9.2. Cognitive Reserve in Older Adults
  - 2.9.3. We Can Always Learn
  - 2.9.4. Aging is not Synonymous with Disease
  - 2.9.5. Alzheimer's and Parkinson's Disease, the Value of Physical Activity
- 2.10. Physical Exercise Planning for Older Adults
  - 2.10.1. Muscle Strength and Power Training
  - 2.10.2. Aerobic Fitness Training
  - 2.10.3. Cognitive Training
  - 2.10.4. Training Coordinative Capacities
  - 2.10.5. Conclusion and Closing of the Module

### Module 3. Physical Exercise and Pregnancy

- 3.1. Morphofunctional Changes in the Female Body during Pregnancy
  - 3.1.1. Body Mass Modification
  - 3.1.2. Modification of the Center of Gravity and Relevant Postural Adaptations
  - 3.1.3. Cardiorespiratory Adaptations
  - 3.1.4. Hematological Adaptations
  - 3.1.5. Adaptations of the Locomotor System
  - 3.1.6. Gastrointestinal and Renal Modifications
- 3.2. Pathophysiologicals Associated with Pregnancy
  - 3.2.1. Gestational Diabetes Mellitus
  - 3.2.2. Supine Hypotensive Syndrome
  - 3.2.3. Anaemia
  - 3.2.4. Lumbalgias
  - 3.2.5. Diastasis Recti
  - 3.2.6. Varicose Veins.
  - 3.2.7. Pelvic Floor Dysfunction
  - 3.2.8. Nerve Compression Syndrome
- 3.3. Kinesiology and Benefits of Physical Exercise in Pregnant Women
  - 3.3.1. Care to Be Taken into Account During Activities of Daily Life
  - 3.3.2. Preventive Physical Work
  - 3.3.3. Biological and Psychosocial Benefits of Physical Exercise
- 3.4. Risks and Contraindications of Physical Exercise in Pregnant Women
  - 3.4.1. Absolute Contraindications to Physical Exercise
  - 3.4.2. Relative Contraindications to Physical Exercise
  - 3.4.3. Precautions to be Taken into Account During Pregnancy
- 3.5. Nutrition in Pregnant Women
  - 3.5.1. Body Mass Weight Gain with Pregnancy
  - 3.5.2. Energy Requirements Throughout Pregnancy
  - 3.5.3. Nutritional Recommendations for the Practice of Physical Exercise
- 3.6. Training Planning for Pregnant Women
  - 3.6.1. First Quarter Planning
  - 3.6.2. Second Quarter Planning
  - 3.6.3. Third Quarter Planning
- 3.7. Musculoskeletal Training Programs
  - 3.7.1. Motor Control
  - 3.7.2. Stretching and Muscle Relaxation
  - 3.7.3. Muscle Fitness Work
- 3.8. Programming Speed Training
  - 3.8.1. Modality of Low-Impact Physical Work
  - 3.8.2. Weekly Workload
- 3.9. Postural and Preparatory Labor for Childbirth
  - 3.9.1. Pelvic Floor Exercises
  - 3.9.2. Postural Exercises
- 3.10. Return to Physical Activity after Giving Birth
  - 3.10.1. Medical Discharge and Recovery Period
  - 3.10.2. Care at the Beginning of Physical Activity
  - 3.10.3. Conclusions and Closing of the Module



*Study at TECH and start multiplying your job possibilities"*

# 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.





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*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.

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*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, students 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 adapted in 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.



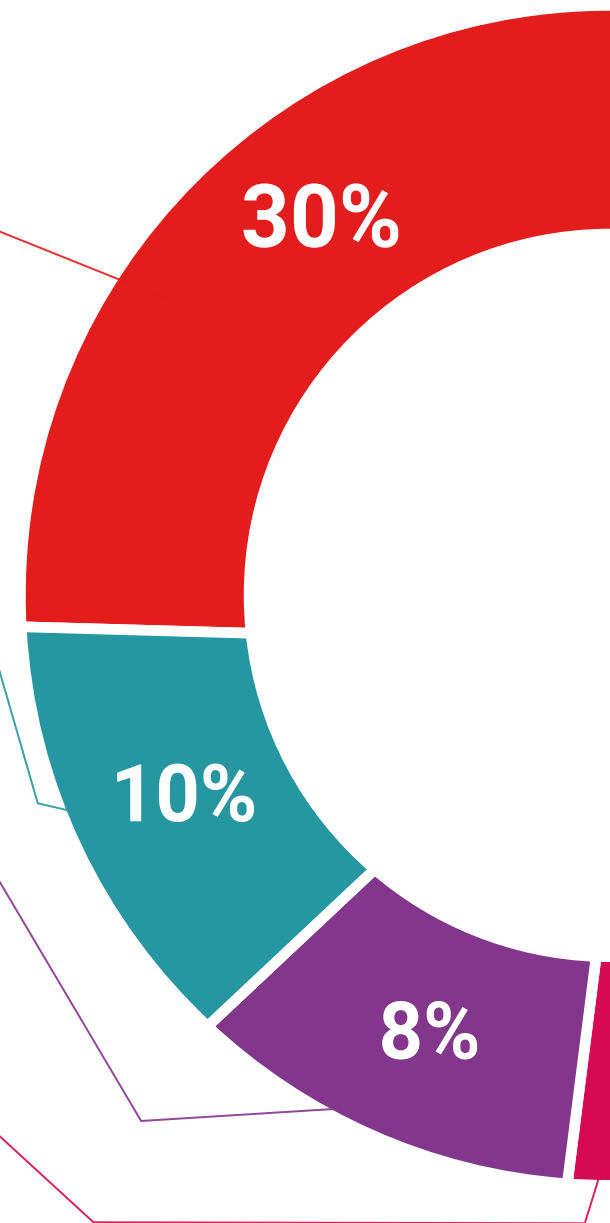
### Practising Skills and Abilities

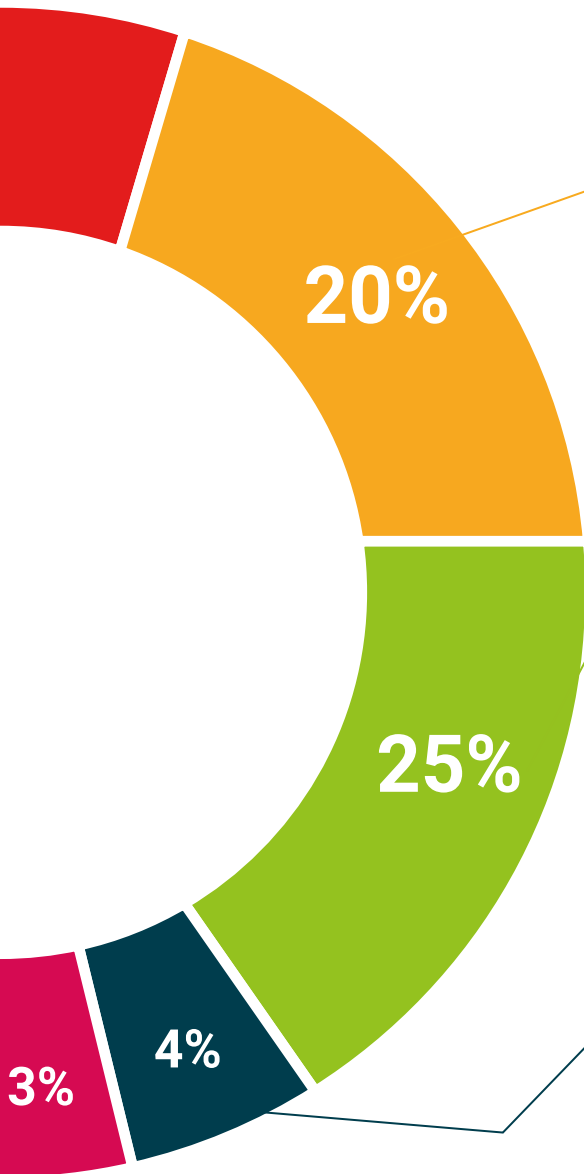
They will carry out activities to develop specific competencies and skills in each thematic area. Exercises and activities to acquire and develop the skills and abilities that a specialist needs to develop in the context of the globalization that we are experiencing.



### 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 Diploma in Physical Exercise in Obesity, Pregnancy, Childhood, Adolescence, and Adults for Fitness Instructors guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma issued by TECH Global University.



“

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

This program will allow you to obtain your **Postgraduate Diploma in Physical Exercise in Obesity, Pregnancy, Childhood, Adolescence, and Adults for Fitness Instructors** 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.

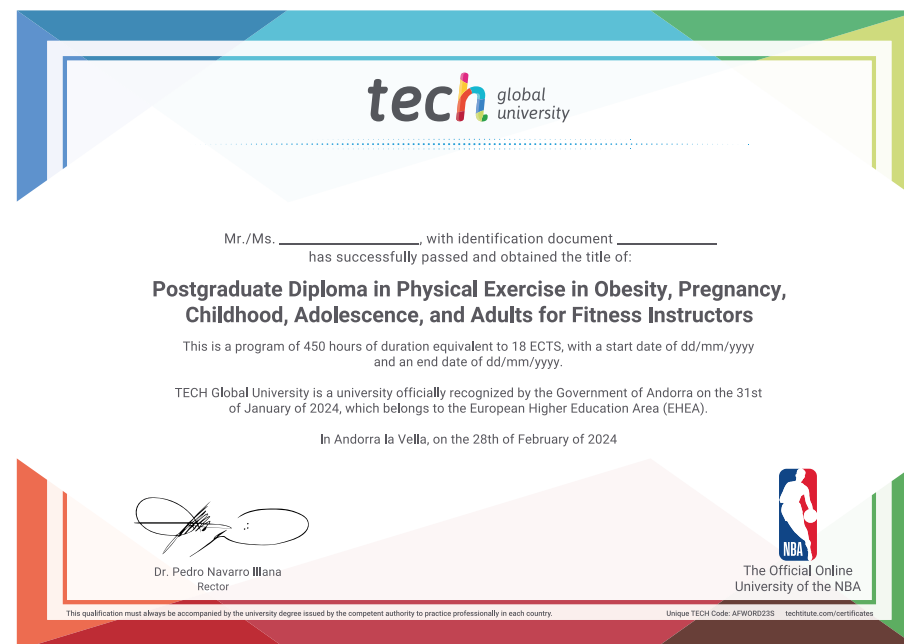
This **TECH Global University** title is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Diploma in Physical Exercise in Obesity, Pregnancy, Childhood, Adolescence, and Adults for Fitness Instructors**

Modality: **online**

Duration: **6 months**

Accreditation: **18 ECTS**



\*Apostille Convention. In the event that the student wishes to have their paper diploma issued with an apostille, TECH Global University will make the necessary arrangements to obtain it, at an additional cost.



health future confidence people  
education information tutors  
guarantee accreditation teaching



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