

Postgraduate Diploma

Fundamentals and Epidemiology
of Immunization. Vaccination
Process and its Future





Postgraduate Diploma Fundamentals and Epidemiology of Immunization. Vaccination Process and its Future

- » Modality: online
- » Duration: 6 months
- » Certificate: TECH Global University
- » Credits: 24 ECTS
- » Schedule: at your own pace
- » Exams: online

Website: www.techtute.com/us/nursing/postgraduate-diploma/postgraduate-diploma-fundamentals-epidemiology-immunisation-vaccination-process-future

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01

Introduction

Immunization and vaccination are two closely related concepts, since vaccination is the most effective way to achieve immunization to a disease without having previously suffered from it. In addition, through the vaccination process, a herd immunity can be achieved that will help to slow the spread of infectious diseases. If you want to specialize in this field, don't think twice. TECH Global University offers the most complete specialization, led by the leading experts in the field.





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Specialize in immunization epidemiology and add to your nursing education. You will achieve personal and professional growth in a short period of time”

The vaccination process carried out by nursing professionals involves extensive training, since it is not simply the act of pricking, but rather it is necessary to carry out a whole protocol that allows vaccination to be performed with all the guarantees of safety.

With this program, the student will learn everything related to the vaccination act and the immunity process, starting with the history of vaccines and their contextualization in the present time as a basis for a deeper understanding of more specific concepts related to immunity and immunogenicity.

The vaccination process is an act intimately associated with epidemiology as a study, since it relates in terms of health prevention different diseases and its fundamental primary prevention. The basis for understanding vaccines is knowledge of the diseases that cause them, their frequency of occurrence in vulnerable populations and the existing measures for their eradication and prevention. And, therefore, this specialization also aims to train nurses in this field.

The Diploma in Vaccination Process focuses on what might traditionally be expected from a study of the vaccine administration process. It begins with a small contextualization with basic aspects related to the act of vaccination and its legal basis to, once understood, continue with everything related to the transport and conservation of vaccines and the cold chain, concepts necessary prior to the administration of the vaccine and essential for nursing professionals.

Finally, the students study the future of vaccines: which vaccines are currently in development or in production, which diseases are expected to have a vaccine in the near future, and where they stand with the COVID-19 epidemic in relation to the act of vaccination.

With this program TECH has set out to offer the most comprehensive qualification on vaccination in a simple and easy-to-learn manner. Likewise, as it is a 100% online qualification, the student will have the opportunity to combine their study hours with the rest of their daily obligations, so that they will be able to learn in a comfortable way.

This **Postgraduate Diploma in Fundamentals and Epidemiology of Immunization. Vaccination Process and its Future** contains the most complete and up-to-date scientific program on the market. The most important features include:

- ♦ The development of clinical cases presented by vaccine experts
- ♦ The graphic, schematic, and practical contents with which they are created provide scientific and practical information on the disciplines that are essential for professional practice
- ♦ New developments in vaccinations
- ♦ Practical exercises where self-assessment can be used to improve learning
- ♦ An algorithm-based interactive learning system for decision-making in the clinical situations presented throughout the course
- ♦ 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



Increase your education in the field of vaccination and improve yourself thanks to this highly academic specialization”

“

Our training employs the best teaching methodology and the latest didactic tools, which will allow you to study from home, without sacrificing what is offered by on-site classes”

Its teaching staff includes professionals from the field of Vaccines in Nursing, who bring the experience of their work to this program, as well as recognized specialists from leading scientific societies.

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 an immersive program designed 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 vaccination and extensive experience Teachers.


We offer you the opportunity to study with a multitude of practical cases in such a way that you can learn new skills as if you were dealing with real patients.

This Postgraduate Diploma is the best investment you can make in education to acquire the best and most up-to-date education in vaccination.



02 Objectives

This Postgraduate Diploma in Fundamentals and Epidemiology of the Immunization. This Professional Master's Degree in Special Situations Vaccination is aimed at facilitating the nurse's performance and increasing their ability to treat patients who require this type of intervention with full guarantees of success.



Human
Papillo
Vaccine
Quadrivalen
(Types 6, 11



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Our goal is to offer our students the most complete Postgraduate Diploma on the market so they are able to excel and broaden their knowledge and, therefore, become more efficient at their profession”



General Objectives

- Up-to-date the knowledge related to the vaccination process and disease prevention and its applicability in the population served that will allow the nursing professional to improve La their skills when exercising their professional activity
- Know in depth and apply the research methodology at the clinical-care and methodological level in the field of the vaccination process
- Develop skills to transmit and sensitize the population to the importance and need for vaccines and the vaccination process, through health promotion strategies
- Training in the management of vaccines and vaccine and prevention strategies for communicable diseases susceptible to vaccination

“

Acquire the most up-to-date knowledge in this field of work and apply advanced protocols in this intervention in your day-to-day work”





Specific Objectives

Module 1. Fundamentals of Immunization

- Describe the history and major milestones of vaccination over time
- Know in depth the current vaccination status in the different countries of the world
- Establish the immunological bases on which to carry out the act of vaccination and the rationale for the same
- In-depth knowledge of the technologies used in the production of vaccines and their characteristics
- Establish the theoretical basis of vaccine safety, including the concept of pharmacovigilance and its practical application
- In-depth knowledge of how vaccines are created and the limitations of the process
- Determine the different compounds related to vaccines and their relationship with vaccines, such as adjuvants
- Identify the concept of vaccine response and how vaccine administration affects the body
- Recognize existing post-vaccine markers and their relationship to preventable disease

Module 2. Epidemiology of Immunization

- Contextualize the concept of epidemiology in in social environment
- Know in depth the different existing applications of epidemiology and the concept of causality
- Identify the concept of epidemiological surveillance, the existing application in vaccines and its importance in the health context
- Learn more about the different communicable diseases and their prevention, as well as their transmission mechanism
- Apply knowledge of health determinants and explanatory models of health in their daily practice to improve the quality of their care
- Deepen the concept of the ERCC, the coordinating center for health alerts and emergencies, and its functions
- Integrate the concept of epidemic curve in the current epidemiological context
- Determine the different existing theoretical explanatory models of health and their relationship with population health
- Understand the concept of health determinants and how they affect self-care and population health

Module 3. The Vaccine Process

- ♦ In-depth knowledge of the aspects of the vaccination process as a theoretical basis for learning the process itself, as well as its legal aspects
- ♦ Integrate cold chain knowledge into vaccine transport, control, preservation
- ♦ Correctly differentiate the different types of vaccines according to the classification determined between systematic and non-systematic vaccines and the different existing classifications
- ♦ Relate health safety in the concept of the vaccination process to the recording of vaccines in daily practice
- ♦ Identify the different patterns of vaccine administration, co-administration of vaccines with other products and existing vaccination routes
- ♦ Detect the real contraindications of vaccines versus false contraindications
- ♦ Integrate the necessary knowledge about vaccination emergencies to be able to act safely during daily practice





Module 4. The Future of Vaccines

- ◆ Know the different vaccines currently being created in the world and where they are in the process
- ◆ Relate the vaccination process to how it is exposed to the rest of the world through the media in its different ways
- ◆ Establish the basis of the concept called reverse vaccinology and to know the genome concept
- ◆ Identify the different vaccination strategies existing worldwide by the different existing organizations and their most important differences
- ◆ Have an in-depth knowledge of the current anti-vaccine movements and what should be a correct approach in daily practice
- ◆ Relate the current epidemiological situation to the COVID-19 situation and vaccines
- ◆ Become familiar with the different sources of reliable information available on the web about vaccines in order to be able to pass it on to patients at a later date
- ◆ Identify the *Vaccine Safety Network* concept and know its theoretical basis
- ◆ Establish different basic tips when finding reliable scientific information about vaccines on the Internet

03

Course Management

The program includes in its teaching staff renowned experts in nursing, who contribute their work experience to this Postgraduate Certificate. Additionally, other recognized specialists participate in its design and preparation, which means that the program is developed in an interdisciplinary manner.



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Leading experts in the field are at the best university to help you achieve professional success”

Management



Ms. Hernández Solís, Andrea

- ♦ Family and Community Nurse in the Madrid Health Service (SERMAS)
- ♦ Nurse in the Intensive Care Unit of the Puerta de Hierro University Hospital
- ♦ Nurse Specialist in Family and Community Nursing at Getafe University Hospital
- ♦ Professor in the Foundation for the Development of Nursing (FUDEN)
- ♦ Diploma in Nursing from the Autonomous University of Madrid

Professors

Ms. Anula Morales, Irene

- ♦ Nurse of the Mental Health Department of the Puerta de Hierro Majadahonda University Hospital
- ♦ Nurse specialist in in Mental Health the Foundation for the Development of Nursing
- ♦ Nurse Specialist in the Mid-Stay Unit for Adolescents with Severe Mental Disorder at Casta Salud
- ♦ Nephrology Nurse Unit of Acute of the university Fundación Jiménez Díaz Hospital
- ♦ Nurse at the Short Stay Hospitalization Unit for Children and Adolescents at Puerta de Hierro University Hospital
- ♦ Diploma in Nursing from the Autonomous University of Madrid

Ms. Rodrigues Fernández, Erica

- ♦ Nurse Pediatrician and Neonatology Specialist
- ♦ Neonatal Nurse the Fundación from Alcorcón University Hospital
- ♦ Nurse Pediatric at El Restón Health Center
- ♦ Radiology Room Nurse in Puerta de Hierro Majadahonda University Hospital
- ♦ Nurse of Intensive Care of the Puerta de Hierro Hospital Majadahonda
- ♦ Diploma in Nursing from the Autonomous University of Madrid



04

Structure and Content

The structure of the contents has been designed by a team of professionals from the best hospitals and universities in the country, aware of the current relevance of the program, and committed to quality teaching through new educational technologies.



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We have the most complete and up-to-date academic program in the market. We strive for educational excellence and we want you to achieve it too"

Module 1. Fundamentals of Immunization

- 1.1. History and Milestones of Vaccination
 - 1.1.1. Most Important Vaccination Milestones
- 1.2. Current Status of Vaccines in Spain and the World
- 1.3. Fundamentals and Immunological Basis of Vaccines
- 1.4. Vaccine Production Technologies
- 1.5. Vaccine Safety
 - 1.5.1. Features for Safe Vaccination
- 1.6. Pharmacovigilance in Vaccines
 - 1.6.1. Vaccine Surveillance Network
- 1.7. Vaccine Development
- 1.8. Vaccine Adjuvants and Other Compounds
 - 1.8.1. Types of Adjuvant Vaccines
 - 1.8.2. Vaccine Stabilizers
- 1.9. Vaccine Response
- 1.10. Post-vaccination Markers
 - 1.10.1. Types of Vaccine Markers
 - 1.10.2. Interpretation of Vaccine Markers

Module 2. Epidemiology of Immunization

- 2.1. Epidemiology in the Spanish Context
 - 2.1.1. Epidemiology in the Beginnings of Public Health
 - 2.1.2. Epidemiology in the Consolidation Stage
- 2.2. Application of Epidemiology Causality
 - 2.2.1. Koch-Henle Model
 - 2.2.2. Bradford-Hill Model
 - 2.2.3. Rothman Model
 - 2.2.4. Hume Model
- 2.3. Epidemiological Surveillance
 - 2.3.1. RENAVE Vaccine Surveillance Network
 - 2.3.2. Sentinel Physicians
 - 2.3.3. Mandatory Disease Reporting

- 2.4. Transmissible Diseases
 - 2.4.1. Most Prevalent Communicable Diseases
 - 2.4.2. Transmissible Digestive Transmitted Diseases
 - 2.4.3. Transmissible Diseases Transmitted Through Contact
- 2.5. Epidemiological Chain in Transmissible Diseases
 - 2.5.1. Stages Within the Epidemiological Chain
- 2.6. Coordinating Center for Health Alerts and Emergencies CCAES
 - 2.6.1. National Early Warning System
 - 2.6.2. Epidemiological Intelligence
- 2.7. Epidemiological Health Surveys
 - 2.7.1. Design of Epidemiological Surveys
 - 2.7.2. Seroprevalence Surveys
- 2.8. Epidemic Curves
 - 2.8.1. How to Design Epidemic Curves?
- 2.9. Theoretical Explanatory Models of Health
 - 2.9.1. Applications of Health Models
- 2.10. Health Determinants
 - 2.10.1. How Do the Determinants of Health Affect the Population?

Module 3. The Vaccine Process

- 3.1. Basic Aspects of Vaccination
 - 3.1.1. What Is the Vaccination Process?
- 3.2. Legal Aspects of Vaccination
 - 3.2.1. Institutions Involved in the Vaccination Process
- 3.3. Transport and Storage of Vaccines
 - 3.3.1. Cold Chain
 - 3.3.2. Elements Involved in the Transport and Conservation of Vaccines
- 3.4. Vaccine Classification
 - 3.4.1. Types of Vaccine Classification
 - 3.4.2. Viral and Bacterial Vaccines
 - 3.4.3. Attenuated and Inactivated Vaccines

- 3.5. Routine Vaccines
 - 3.5.1. What Are Routine Vaccines?
 - 3.5.2. Vaccines Included in Routine Immunizations
- 3.6. Non-routine Vaccines
 - 3.6.1. What Are Non-Routine Vaccines?
 - 3.6.2. Vaccines Included in Non-routine Vaccination
- 3.7. Vaccine Safety
- 3.8. Vaccine Administration and Registration
 - 3.8.1. Process of Vaccine Registration
 - 3.8.2. Process of Vaccine Administration
- 3.9. Co-Administration of Vaccines and Other Biological Products
 - 3.9.1. Vaccination Intervals Between Vaccines and Other Biological Products
 - 3.9.2. Vaccination Intervals Between Vaccines and Between Doses of the Same Vaccine
- 3.10. Vaccination Routes
 - 3.10.1. Different Existing Vaccination Routes
- 3.11. Contraindications and Adverse Effects of Vaccines
 - 3.11.1. False Contraindications in Vaccines
 - 3.11.2. Relative Contraindications in Vaccination
 - 3.11.3. Absolute Contraindications in Vaccination
 - 3.11.4. Most Frequent Adverse Effects in Vaccination
- 3.12. Vaccination Emergencies
 - 3.12.1. Possible Emergencies in the Vaccination Process
 - 3.12.2. Nursing Action in the Event of an Emergency During Vaccination

Module 4. The Future of Vaccines

- 4.1. Vaccines in Development
 - 4.1.1. Different Vaccines Currently in Development
- 4.2. Vaccines and the Media
- 4.3. Reverse Vaccinology: Genome
 - 4.3.1. What Is the Genome?
 - 4.3.2. Concept of Reverse Vaccinology
- 4.4. Global Vaccination Strategy
- 4.5. Anti-vaccine Movements Situation and Approach
- 4.6. Vaccines and COVID-19
 - 4.6.1. Vaccine and COVID-19
- 4.7. Vaccine Safety Network
- 4.8. Vaccine Web Query
- 4.9. Vaccine Website Credibility
 - 4.9.1. Tips for Checking the Reliability of a Vaccine Website
- 4.10. Tips for Finding Reliable Information Online
 - 4.10.1. Practical Tips for Finding Reliable Online Health Information



*A unique education opportunity
to advance your career"*

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.





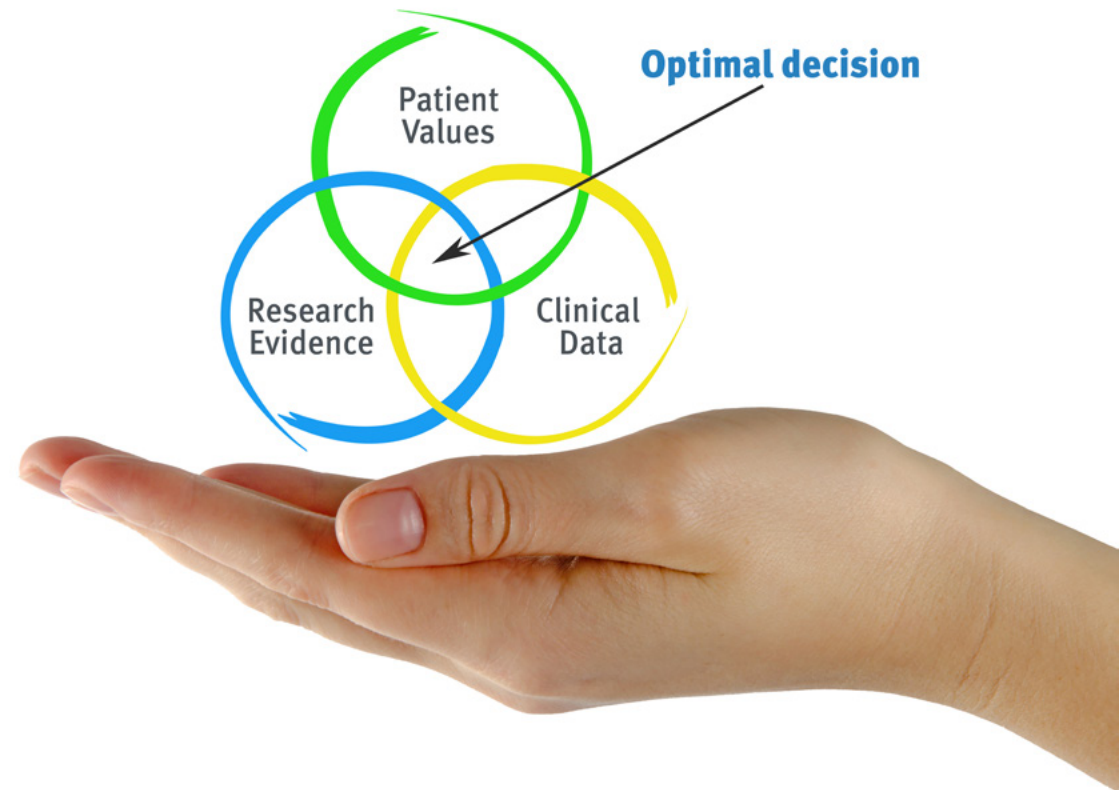
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Discover Relearning, a system that abandons conventional linear learning, to take you through cyclical teaching systems: a way of learning that has proven to be extremely effective, especially in subjects that require memorization"

At TECH Nursing School we use the Case Method

In a given situation, what should a professional do? Throughout the program, students will face multiple simulated clinical cases, based on real patients, in which they will have to do research, establish hypotheses, and ultimately resolve the situation. There is an abundance of scientific evidence on the effectiveness of the method. Nurses learn better, faster, and more sustainably over time.

With TECH, nurses can experience a learning methodology that is shaking the foundations of traditional universities around the world.



According to Dr. Gervas, the clinical case is the annotated presentation of a patient, or group of patients, which becomes a "case", an example or model that illustrates some peculiar clinical component, either because of its teaching power or because of its uniqueness or rarity. It is essential that the case is based on current professional life, in an attempt to recreate the real conditions in professional nursing practice.

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Did you know that this method was developed in 1912, at Harvard, for law students? The case method consisted of presenting students with real-life, complex situations for them to make decisions and justify their decisions on how to solve them. In 1924, Harvard adopted it as a standard teaching method”

The effectiveness of the method is justified by four fundamental achievements:

1. Nurses who follow this method not only grasp concepts, but also develop their mental capacity, by evaluating real situations and applying their knowledge.
2. The learning process has a clear focus on practical skills that allow the nursing professional to better integrate knowledge acquisition into the hospital setting or primary care.
3. Ideas and concepts are understood more efficiently, given that the example situations are based on real-life.
4. Students like to feel that the effort they put into their studies is worthwhile. This then translates into a greater interest in learning and more time dedicated to working on the course.



Relearning Methodology

At TECH we enhance the case method with the best 100% online teaching methodology available: Relearning.

This university is the first in the world to combine case studies with a 100% online learning system based on repetition combining a minimum of 8 different elements in each lesson, which is a real revolution compared to the simple study and analysis of cases.



The nurse will learn through real cases and by solving complex situations in simulated learning environments. These simulations are developed using state-of-the-art software to facilitate immersive learning.

At the forefront of world teaching, the Relearning method has managed to improve the overall satisfaction levels of professionals who complete their studies, with respect to the quality indicators of the best online university (Columbia University).

With this methodology we have trained more than 175,000 nurses with unprecedented success in all specialities regardless of practical workload. Our pedagogical methodology is developed in a highly competitive environment, with a university student body with a strong socioeconomic profile and an average age of 43.5 years old.

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

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.

The overall score obtained by TECH's learning system is 8.01, according to the highest international standards.



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 really 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.



Nursing Techniques and Procedures on Video

We introduce you to the latest techniques, to the latest educational advances, to the forefront of current medical techniques. All of this in direct contact with students and explained in detail so as to aid their assimilation and understanding. And best of all, you can watch them as many times as you want.



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"



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.





Expert-Led Case Studies and Case Analysis

Effective learning ought to be contextual. Therefore, TECH presents real cases in which the expert will guide students, focusing on and solving the different situations: a clear and direct way to achieve the highest degree of understanding.



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.



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.



Quick Action Guides

TECH offers the most relevant contents of the course in the form of worksheets or quick action guides. A synthetic, practical, and effective way to help students progress in their learning.



06

Certificate

The Postgraduate Diploma in Fundamentals and Epidemiology of Immunization. Vaccination Process and its Future guarantees students, in addition to the most rigorous and up-to-date education, access to a Postgraduate Diploma issued by TECH Global University.





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

This private qualification will allow you to obtain a **Postgraduate Diploma in Fundamentals and Epidemiology of Immunization. Vaccination Process and its Future** 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.

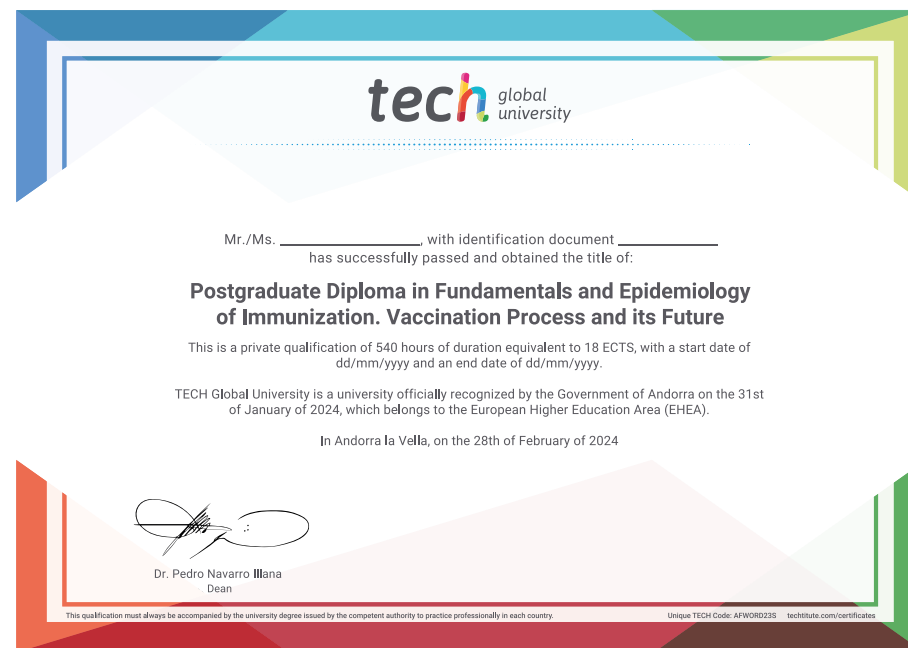
This **TECH Global University** private qualification is a European program of continuing education and professional updating that guarantees the acquisition of competencies in its area of knowledge, providing a high curricular value to the student who completes the program.

Title: **Postgraduate Diploma in Fundamentals and Epidemiology of Immunization. Vaccination Process and its Future**

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.



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